Environmental Assessment and Review Framework

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PAK: Sindh Secondary Education Improvement Project

Prepared by Sindh Province School Education and Literacy Department (SELD) for the Asian Development Bank.

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A) INTRODUCTION

A-I Project Background

1. Education indicators for Pakistan are grim, with a low adult literacy rate, low expected years of schooling, as well as considerable challenges in terms of access and quality of learning.[1] Educational challenges in Sindh are more acute than in Pakistan generally. They include limited access and poor quality education coupled with weak education governance and management. The performance of the education sector is weak in Sindh, especially at the secondary education level.[2] Wide disparities to access schooling and education are evident among geographical regions, socio-economic clusters and gender in Sindh.

In recent years, Sindh has initiated several reforms to address challenges in its education sector and has a well formulated education sector plan, the Sindh Education Sector Plan (SESP) 2014−2018. Sindh Government has engaged International Financial Institutions for implementing its education sector reforms agenda and the World Bank and the United States Agency for International Development (USAID) are the key development partners. The Sindh Government has requested ADB's assistance to invest in secondary level education infrastructure and strengthening institutional capacity strengthening for improved secondary level education quality through the $75 million Sindh Secondary Education Improvement Project (SSEIP).

A-II Environmental Assessment and Review Framework

2. The project will finance construction of around 160 new secondary school blocks within existing SELD school compounds in 10 districts in southern Sindh.[3] The site selection and prototype construction design activities are ongoing and will be completed by end of 2018. A long list of candidate primary schools is under review and the final list of about 160 project school sites following 4 types of prototype designs at this preliminary stage. Once the list of project schools fitting to preliminary prototype building design types is final, the environmental screening and assessment of each selected site will be done, site specific environmental assessment checklists will be finalized and the draft Initial Environmental Examination (IEE) with the Environmental Management Plan (EMP) will be finalized. However, the IEE with EMP will be reviewed and updated following modification in the building design at the project detailed design stage.

3. As project school sites and site-specific infrastructure requirements cannot be finalized before project approval by the Board, therefore, the approach outlined in para 31 and para 52 of ADB's OM F-1 (2013) is followed and the EARF is prepared and agreed on by the government. It will guide the project executors in streamlining environmental screening, impacts assessment with mitigation measures required and preparation of environmental assessment reports including IEEs/EMPs as and when the project school sites are finalized, and/or site-specific designs are ready. It defines the legal and policy framework, anticipated environmental impacts, environmental assessment of project school sites and physical infrastructure development components, consultation, information disclosure, grievance redress as well institutional responsibilities and costs for environmental management, monitoring and reporting etc. All candidate project school

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[1] World Development Indicators. World Bank; UNESCO Global Education Monitoring Report. 2016.

[2] Secondary education comprises middle school (grades 6-8), lower secondary school (grades 9−10) and higher secondary school (grades 11−12).

[3] These districts are: Badin, Matiari, Mirpur Khas, Sanghar, Sujawal, Tando Allah Yar, Tando M. Khan, Tharparkar, Thatta, and Umer Kot.

sites (that have been considered or have the potential to be considered) will be subject to screening, assessment, management and monitoring of environmental impacts during execution of the project in a manner consistent with the EARF provisions.

4. This EARF fulfills ADB Safeguard Policy Statement (SPS) 2009 requirements pertaining to environmental safeguards and complies with *Pakistan's National and Provincial (Sindh's) legal and policy frameworks.* The GOS has endorsed this EARF and SELD as EA will be responsible for its application in all project school sites financed under the project. This EARF will be subject to review and updating in case of major changes in the project scope (addition of additional project districts and school sites) or if any amendment or update in the country legal system or ADB's policy is observed during execution of the project.

B) ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

B-I Environmental Legislation of Pakistan and Sindh

5. The Constitution of Pakistan does not mention environmental protection per se, however, it covers the environment under its articles on right to life and property for all citizens in Pakistan. However, before the 18th amendment of 2010, the "Environment and Ecology" was included in Concurrent Legislative List of the Constitutions empowering both federal and provincial legislatures to enact laws on the Environment. Thus, the Pakistan Environmental Protection Act of 1997 (PEPA 1997) and rules and regulation under the Act ibid were promulgated and implemented throughout country. The PEPA 1997 provided establishment of Federal and Provincial Environment Protection Agencies for exercising functions and powers and enforcement of provisions of PEAP 1997 and IEE/EIA regulation 2000 to protect environment and promote sustainable development in their respective jurisdictions. Besides, Environmental protection Acts and IEE/EIA regulations explained above, following set of procedure and guidelines provided under PEPA 1997 are applicable for environmental assessment of development projects.

- Pakistan Environmental Assessment Procedures, 1997. Pakistan Environmental Protection Agency, Government of Pakistan.
- Guidelines for the Preparation and Review of Environmental Reports, 1997. Pakistan Environmental Protection Agency, Government of Pakistan.
- Guidelines for Public Consultation, 1997. Pakistan Environmental Protection Agency, Government of Pakistan.
- Guidelines for Sensitive and Critical Areas, 1997. Pakistan Environmental Protection Agency, Government of Pakistan.

6. Now, after 18th Constitutional Amendment of 2010, the concurrent legislative list is excluded from the constitution and authority and responsibility for legislation on "environment and ecology" is fully devolved to the provinces. Following, delegation of authority, the Sindh Government reviewed and revised the available laws and regulations on environment to fit provincial requirements. Accordingly, the Sindh Environment Protection Act 2014 (SEPA 2014) including Sindh Environment Protections Agency IEE/EIA regulation 2014 (SEPA IEE/EIA regulations, 2014) with Sindh Environment Equality Standards 2016 (SEQS 2016) have been promulgated and applicable for assessment, management auditing and monitoring of environmental impacts from development projects.

7. Under section 17 of SEPA 2014, every proponent of a development project is required to screen, assess and report environmental impacts to the Sindh Environment Protection Agency

for its review and approval before commencing project works in a manner prescribed in the SEPA IEE/EIA regulations, 2014, issued under SEPA 2014. The Non-compliance to the provisions of SEPA IEE/EIA regulations, 2014 is an offence to be penalized under section 22 of the SEPA 2014. The regulations 3, 4 and 5 of SEPA IEE/EIA regulations, 2014 elaborate preparation of IEE, EIA or environmental checklists for different project types enlisted in Schedule I, II and III of the regulations. Educational/Academic institutes to be constructed on an area less than 10 acres are subject to submission of an IEE as per schedule I of the SEPA IEE/EIA regulations 2014. However, construction of rural schools (Secondary or Higher Secondary) is enlisted in schedule III of the regulations and it require submission of an environmental assessment checklist for review and approval by the Sindh EPA.

8. The environmental screening, impact assessment and review process with responsibilities are outlined in table below:

Table 1: Steps in Environmental Assessment and Review Process under SEPA 2014

	Steps in the Process	Responsibility
1	Review and follow screening criteria and legal requirements for environmental assessment reports under SEPA 2014 and SEPA IEE/EIA Regulations 2014. In case of projects screened as Schedule III, prepare environmental checklists and submit to the SEPA for review and approval before commencing project works.	Proponent
2	For project listed in Schedule I and Schedule II of SEPA IEE/EIA Regulations 2014, assess anticipated impacts of proposed interventions, incorporate design measures to avoid, minimize and mitigate the impacts, conduct consultations with the stakeholders and prepare environmental assessment reports for review and approval by Sindh EPA. Commensurate with the impact significance following types of environmental assessment reports are required and National and Provincial Laws. a. IEE for projects listed in schedule-I of SEPA IEE/EIA Regulations 2016. b. EIA for projects listed in schedule-II of SEPA IEE/EIA Regulations 2016.	Proponent
3	Review and approval process of IEEs/EIAS under law. a. IEEs reviewed and approved within 60 days from the day of communication of its completeness by the SEPA or returned back for preparation of a full blown EIA. b. EIA reviewed and disclosed if complete, notices issued and published 30 days prior to the date of public hearing, public concerns are recorded and responded during hearing and the EIAs are modified to incorporate public concerns before its ultimate approval by SEPA. c. The SEPA accords it approval to IEE/EIAs with certain conditions to be met with during execution of project works.	SEPA

9. In addition to the above legislation, which is specifically related to the environmental assessment process, other environment related national and provincial policies, guidelines and legislation that are applicable for protection of environment, ecology and biodiversity, archeological and cultural heritage are listed in table below.

Table 2: Other Laws and guidelines applicable during Environmental Assessment and Review Process

Legislation/Guideline	Description
National Environmental Policy (2005) (NEP)	NEP is the primary policy of Government of Pakistan. The broad Goal of NEP is, "to protect, conserve and restore Pakistan's environment in order to improve the quality of life of the citizens through sustainable Development".
The Forest Act (1927)	The Act empowers the provincial forest departments to establish, watch and ward forest areas and declare any forest area as reserved or protected forest. Application of law to project school sites will be confirmed when final site selection is confirmed.
Provincial Wildlife Protection Ordinances	It empowers the government to protect wild life, control hunting and pouching of wildlife and declare certain areas reserved for its protection and propagation. It also provides protection to endangered species. Application of law to project school sites will be confirmed when final site selection is confirmed.
The Antiquities Act (1975)	It ensures the protection of Pakistan's cultural resources. The Act defines "antiquities" as ancient products of human activity, historical sites, or sites of anthropological or cultural interest, National monuments, etc. The Act is designed to protect sites and articles of archeological, cultural and historical significance. It prohibits any development activity in close vicinity of the sites so declared and listed under National laws or International Conventions, Pakistan has signed and requires the proponents for immediate reporting to the archeology department if any article or site of such significance is encountered during implementation of the project. Application of law to project school sites will be confirmed when final site selection is confirmed.
Sindh Cultural Heritage (Preservation) Act 1994	The Act promulgated in 1994 require Sindh Government to notify and declare buildings and artifacts of historical importance as protected cultural heritage. Causing any loss, damage or impact to protected cultural heritage is an offence punishable with fine, imprisonment or both. Application of law to project school sites will be confirmed when final site selection is confirmed.
Pakistan Penal Code, 1860 (PPC, 860)	Polluting/fouling of public springs or water reservoirs and air to make it less fit for ordinary use is an offence under PPC 1860. It inflicts fines, imprisonment or both for voluntary corruption or fouling of the public springs, reservoirs or water bodies and air. Application of law to project school sites will be confirmed when final site selection is confirmed.
Environmental Conservation and Sustainable Development Strategies	
National Conservation Strategy 1992	Pakistan formulated its National Conservation Strategy in 1992, which addressed the issues of conservation and sustainable use of natural resources for economic development. The NCS recommended actions to be taken in 14 core areas to address the issues of environmental degradation and to facilitate the sustainable use of natural resources. The strategy was followed by Pakistan Environment Protection Act, 1997, the National Environment Action Plan, 2001 and finally, in 2005 the National Environmental Policy was approved to provide an

	overarching framework for achieving the goals of sustainable development. It required provinces to develop their sustainable development strategies. Application of law to project school sites will be confirmed when final site selection is confirmed.
Sindh Strategy for Sustainable Development	The Sindh Strategy for Sustainable Development (SSSD) formulated in 2005 is aimed at good governance for sustainable development. For achieving is objectives SSSD suggests a ten-year sustainable development agenda for Sindh. It is focused on highlighting ecological, economic and social issues of the province with recommendations and strategic actions to address them. It promotes sustainable use of natural resources and encourages participation of people of Sindh in development process to achieve the objectives of poverty alleviation and social development.
Biodiversity Action Plan	Pakistan signed International Convention on Biological Diversity in 1992 that calls for three sequential processes: country studies (biodiversity assessment), national strategies (developing goals and operational objectives), and action plans (identifying actions and implementation measures). Pakistan developed Biodiversity Action Plan that encompasses all three sequential processes given under the Convention and provides a brief assessment of the status and trend of the nation's biodiversity, outlines strategic goals and objectives, and identifies a plan of action that includes coordination arrangements and implementation measures.

B-II Institutional set-up for enforcement of Environmental Laws

10. The relevant Sections of provincial and federal environmental laws in Pakistan require all project proponents for early screening and filing of an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA), whichever is applicable as per Schedule I or II of the IEE/EIA Regulations, to the Environmental Protection Agency for its review and approval prior to commencing project works/activities. Once submitted, the relevant EPA reviews the IEE and accords its approval, or requires submission of an EIA by the proponent if the project has an adverse environmental effect. After reviewing EIA and conducting public consultations as specified by law, respective provincial or federal EPA accord their approval subject to such conditions as they may deem fit or require that the EIA be re-submitted after such modifications as may be stipulated, or can reject the project as being contrary to environmental objectives.

11. In Sindh, the Sindh Environment Protection Agency headed by its Director General is the responsible authority to enforce provisions of Sindh Environment Protection Act 2014 and Rule and Regulations made under the Act ibid. The project proponents (any individual or government entity) are responsible for preparation and submission of required Environmental Assessment Reports for SEPA's review and approval. Environmental Assessment Reports i.e. IEE and EIA required and prepared for project listed in Schedule I and Schedule II while Environment Screening Checklists for project listed in Schedule III of SEPA IEE/EIA regulations 2014 are reviewed and approved by the SEPA.

B-III ADB's Safeguard Policy Statement (SPS) and other relevant policies

12. The goal of the ADB's Safeguard Policy Statement (SPS) is to promote the sustainability of project outcomes by protecting the environment and people from projects' potential adverse impacts. The objectives of the ADB's safeguards policy are to:

(i) avoid adverse impacts of projects on the environment and affected people where possible;
(ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and
(iii) help borrowers/clients to strengthen safeguards systems and develop capacity to manage environmental and social risks.

13. ADB's SPS 2009 sets out the policy objectives, scope and triggers, and principles for three key safeguard policy requirements including safeguards requirement-1 for environment and Safeguards Requirements 2 and 3 on Involuntary Resettlement and Indigenous People respectively. The objectives of safeguards requirement 1 are to ensure the environmental soundness and sustainability of the project and to include environmental considerations in project decision making.

14. The safeguards policy on environment is triggered when a project is likely to have potential environmental risks and impacts. The basic principles of ADB safeguards policy on environment are summarized in Table 3.

Table 3 List of Environmental Safeguard Policy Principles of SPS 2009

#	Policy principle	Summary
i	Screening and categorization	Use screening process for each project site at the earliest possible to determine appropriate extent and type of environmental assessment for undertaking appropriate studies commensurate with environment significance.
ii	Environmental assessment	Conduct an environmental assessment for each project sites to identify potential (direct, indirect and induced) impacts and risks to the physical, biological and socio-economic environment in the context of the project's area of influence.
iii	Alternatives	Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts, including no project alternative and document rationale for selecting a particular alternative.
iv	Impact mitigation	Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts. Prepare an environmental management plan (EMP) including proposed measures to mitigate adverse impacts to the level of no significant harm to third parties, environmental monitoring and reporting requirements.
v	Public consultations and grievance redress	Carry out meaningful consultation, preferably gender inclusive, with affected people and facilitate their informed participation. Involve stakeholders early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation and establish a grievance redress mechanism to receive and resolve concerns and grievances of project affected people about environmental performance.
vi	Disclosure of Environmental Assessment Reports	Disclose a draft environmental assessment (including EMP) in a timely manner, before project appraisal and disclose final

	including Environmental Management Plans.	environmental assessment reports in an accessible place and in a form and language(s) understandable to stakeholders and project affected communities.
vii	Implementation and Monitoring of Environmental Management Plan	Implement the EMP and monitor its effectiveness. Document monitoring results including development and implementation of corrective actions and disclose monitoring reports.
viii	Avoidance of critical habitats and conservation of natural habitat and biodiversity of a project area.	The project activities are not allowed in critical habitat unless it is confirmed that i) there will be no adverse impact that can impair functional viability of critical habitat ii) there will be no adverse impacts on endangered species and, iii) any lesser impacts mitigated fully. In case project is located in legally protected area, additional measures to enhance conservation of the area and natural habitat will be will be implemented.
ix	Application of pollution prevention and control technologies.	Avoid pollution or where avoidance is impossible minimize and mitigate the pollution by use of innovative technologies and practices consistent with the international good practices and internationally recognized standards as of WB EHS standards. Avoid use of the hazardous substances/materials banned under international protocols and conventions.
x	Occupational Health, Safety and Environment	Maintain healthy and safe working conditions and prevent accidents, injuries and diseases as well as establish measures to avoid or minimize adverse impacts and risks to health and safety of local communities.
xi	Conservation of physical cultural resources	Avoid damage to and conserve physical cultural resources. The Environmental assessments should include pre-approved management and conservation approach for cultural resources or material that could be discovered during execution of project.

15. Besides SPS 2009 the ADB's Public Communication Policy (2011) provisions related to consultations, participation and information disclosure will apply to enhance stakeholders' trust in and ability to engage with ADB, and thereby increase the development impact of ADB operations. The policy promotes transparency, accountability, and participatory development. It establishes the disclosure requirements for documents produced or to be produced through ADB assistance.

16. Further, to ensure integrity, transparency and accountability during execution of project and provide an effective forum to aggrieved persons/parties to raise their concerns and requesting solution to their problems or review of alleged non-compliances to ADB procedures and policies, the ADB's Accountability Mechanism Policy's (2012) will apply on all ADB assisted projects and/or components implemented through ADB proceeds. Nonetheless, the redress of grievances and concerns will be ensured at the project level through project based grievance redress mechanisms, while the Accountability Mechanism will be considered as a "last resort" mechanism.

B-IV Comparison of Environmental and laws and ADB Policy Principles and Practices

17. ADB's RETA 7548, assessed environmental safeguards capacity to determine equivalence and gaps of country safeguard systems with ADB safeguards requirements outlined in SPS 2009. A comparative analysis[4], based on a summary equivalence assessment indicated that country and provincial legal framework and regulations provide little detail on principles and procedures for environmental impact assessment, preparation of environmental assessment

[4] Pak: County Assessment of Environmental Safeguard Capacity and Capacity Development Plan conducted under TA 7548-REG: Improving the Implementation of Environmental Safeguards in Central and West Asia.

reports, and requirements for implementation of environmental terms and conditions of approvals. Such details are left to the i) Guidelines for the Preparation and Review of Environmental Reports, 1997; ii) Guidelines for Public Consultation, 1997; iii) Guidelines for Sensitive and Critical Areas, 1997 and iv) Sector specific guidelines prepared under the Act ibid. In addition, more technical guidance is provided in various sector guidelines.

18. The comparative analysis found that the Environmental Safeguards System of Pakistan and Provinces have full equivalence with the Environment Safeguards of the ADB SPS with respect to (i) objective; (ii) scope and triggers; (iii) examination of alternatives; and (iv) disclosure of draft and final environmental assessment reports (including the environmental management plan). Partial equivalence was found with respect to (i) screening; (ii) conducting an environmental impact assessment, (iii) avoiding, minimizing, mitigating and/or offsetting adverse impacts, enhancing positive impacts, and preparing an environmental management plan; (iv) carrying out meaningful consultation; (v) implementing the environmental management plan and monitoring its effectiveness; (vi) prohibiting implementation of projects in areas of critical habitats; (vii) applying pollution prevention and control technologies; (viii) provision of occupational health and safety, and establishing preventative and emergency preparedness and response measures; and (ix) conserving physical cultural resources.

19. Based on identified gaps, following gap bridging measures are proposed and agreed to ensure environmental screening and assessment, avoiding, minimizing and mitigating potential adverse impacts and preparation, implementation and monitoring of requisite assessment reports including EMPs are consistent with SPS 2009 requirements.

(i) All project's school sites shall be screened at an early stage of site selection and design with respect to potential adverse impacts on sensitive environments, such as school sites within or near environmentally sensitive areas; or near major industrial establishments, thermal power stations, hazardous substances storage facilities, and busy highways which would adversely affect schools.

(ii) Efforts will be made to avoid selecting school sites within an area of environmental significance or along a busy highway and near major industrial unit, thermal power station, sewage disposal or land fill sites etc. However, if necessary and unavoidable, the adverse impacts and risks on the environment and the students due to close proximity of any pollution source will be assessed in detail and appropriate design solutions and mitigation measures will be considered to protect the environment and avoid risks to the security, safety and health of students.

(iii) Selecting new school sites in an environmental sensitive area declared as critical habitat or conservation place for endangered species under national and provincial laws or international conventions/treatise either signed or not by Pakistan will be avoided.

(iv) Meaningful consultations (gender inclusive) will start early for screening, assessment and designing mitigation for anticipated environmental impacts and will continue during preparation and implementation. Monitoring of environmental assessment reports including environmental management plans will be prepared. The stakeholders including affected communities will be fully informed on project interventions, anticipated impacts and mitigations required and will be given an opportunity to participate in the environmental assessment process during planning, design and implementation phases of the project.

(v) A project-based grievance redress mechanism (GRM) with representation of relevant stakeholders will be established at the time of project inception and will be kept intact and functional throughout project implementation to address the

environmental concerns and issues related to project design, efficacy of environmental management, restriction of access to resources and basic amenities during construction and any other environmental issue that arises during implementation of the project.

(vi) Use of technologies and best housekeeping consistent with international good practices as reflected and recognized in Environment, Health and Safety Guidelines of World Bank's group will be ensured. In addition, the use of hazardous substances and banned construction materials will be avoided on all costs.

(vii) The EA/IA as executors of the project will maintain an efficient and responsive system to record, report and protect any physical cultural site or artifact discovered during execution of project works and will be responsible for effective implementation and monitoring of EMPs, development and implementation of corrective actions and submission of periodic monitoring reports.

B-V Capacity of EA/IA in Environmental Assessment and Environmental Management

20. The Secondary Education and Literacy Department (SELD) as the Executing Agency (EA) will have overall responsibility for the project including environmental assessment, preparation of environmental assessment reports i.e. IEEs with EMPs, cross-agency coordination to seek environmental approvals and implementation and monitoring of EMPs during execution of project works. The EA will execute project related functions and responsibilities through its dedicated Project Implementation Unit (PIU) to be established within SELD's reform support unit. Although some project specific units established in the SELD included some limited capacity to manage environmental safeguards during implementation of ongoing reforms agenda and school infrastructure development projects previously financed through assistance by development partners, SELD currently lacks this project specific institutional capacity and resources because the consultants and staff engaged under previous projects are no longer under contract.

21. The EA's capacity review indicates that the EA faces acute capacity constraints to conduct environmental screening, impact assessment as well as preparation, implementation and monitoring of environmental assessment reports including environment management plans in a manner consistent with ADB's safeguards requirements. For effective safeguards management for the project, a safeguards specialist will be hired as part of the PIU. The project will also hire a consulting firm for construction design and supervision including an environmental specialist who will support the PIU's safeguards specialist in delivering on the project's safeguards requirements during project design and execution of works. In addition, a project implementation firm will also be hired as consultants by ADB and this firm will include a safeguards specialist. Further, capacity building of PIU staff including engineers, safeguards specialists, and contractors' staff involved in environmental management will be undertaken through training workshops and on-site coaching activities. The budget for capacity building needs could be included in the EMP to be developed as part of the IEE.

B-VI Capacity Development Program

22. Besides engaging qualified environmental experts to support the PIU in managing safeguards requirements, the EA will implement a safeguards management capacity development program for PIU staff and the EA's district level engineering and education officers as well as contractors' staff engaged during the project. While the capacity development plan will be included in the IEE & EMP, the EARF outlines a capacity development program for EA, PIU and contractors staff to secure tentative costs for its implementation.

23. The project implementing firm's safeguard specialist will design and implement the environmental management training program for the PIU and EA's district level staff. The training will focus on the ADB and EAs environmental safeguards management requirements and shall include modules on screening and assessment of impacts, preparation, implementation and monitoring of environmental management plans. Meanwhile the PIC expert will continue providing on job coaching and assistance to PIU staff in environmental monitoring and preparation of quality environmental reports. Specific trainings sessions will be organized to guide and coach contractor and supervision consultant's staff for their better understanding of ADB's environmental safeguards, preparation and implementation of site specific environmental management plans and maintain steady environmental conditions at worksite by adopting best housekeeping practices.

24. The cost for engaging project implementation firm safeguards specialist is included in the consultancy costs for the project as are the PIU technical staff costs. PIU support staff costs are included under counterpart funding by the government. Three training workshops for EA, PIU, supervision consultants and contractors staff responsible for environmental safeguards management have been planned for which the costs are estimated and provided below. These costs will be charged to the safeguards mitigation costs provided in the PC-1.

Table 4. Indicative costs for Capacity Development Program.

Capacity Development and Training Program	Qty	Participants	Cost	
			PKR	USD
EA and PIU staff engaged to implement project and manage safeguards.	2	20x2 = 40	260,000	2,149
Contractor and Supervision Consultants staff engaged to implement project and manage safeguards.	1	25	140,000	1,157
Total Cost	**3**	**65**	400,000	3,306

C) DESCRIPTION OF THE PROJECT

25. The project has three outputs: (i) new secondary school blocks operated under EMO program constructed in 10 districts in southern Sindh, (ii) teaching capacity in five key subjects improved, and (iii) secondary education examination system strengthened.

26. The physical investment component will involve construction of around 160 secondary school blocks based on a small number of prototype building designs within identified existing SELD school compounds. Construction is planned using conventional building materials - i.e. burned bricks or cement blocks, cement and sand mortar, reinforced concrete roofing and paved flooring with aluminum window and door panels and electric installations etc. The number of class rooms and ancillary facilities – i.e. laboratories, staff facilities and toilets will be commensurate with site specific requirements and available facilities at each selected project school site.

D) ANTICIPATED ENVIRONMENTAL IMPACTS

27. It is anticipated that the SSEIP project will have limited and site specific environmental impacts relevant to construction related activities for small scale buildings. However, the magnitude and significance of construction related impacts will vary depending on project school sites; specifically whether they are within or close to environmental sensitive areas and locations of archeological or historical importance. It is also likely that nearby highways, industrial units and

landfill sites can potentially pose environmental and health risks to children and personnel of the schools and may adversely affect school operations if not mitigated and addressed.

28. **Impact during construction phase.** The potential adverse environmental impacts during construction are perceived to be localized and reversible in nature and can include but not be limited to:

(i) Physical environment. The physical environmental components including topographic features, air quality, and hydrology are likely to be affected during implementation of proposed project works. Some of the anticipated impacts on the physical environment with proposed mitigation measures are explained below.

- **Topography:** The project school building blocks will be constructed in existing school premises and potential impacts on topography within and surrounding school location are likely to occur in the early stage of construction due to possibilities for excavation of foundations, raising building floor above ground level, excavation of soil and building material from borrow pits and quarries etc. To avoid and minimize adverse impacts on topography at site, the excavation for foundation will strictly follow the design requirements and the excavated material could be used for filling to raise embankment and ground floor level to minimize the borrow material from borrow pits. In addition, the excavated excess soil will be disposed in low lying areas within and around the school and the borrow pits will be properly leveled and closed.

- **Air Quality**. Increased demand of burned bricks is likely to enhance operation of kilns to meet requirements by local brick kilns. Further, earth-moving operations and transportation of construction material can cause soil erosion and potential air quality impacts due to fugitive dust generated in and around the construction sites. In addition, chemical spills from laboratories or improper disposal of waste chemicals can be a matter of concern.

All anticipated adverse impacts will be assessed and documented during preparation of IEEs. Design built mitigation measures including use of alternate building blocks (concrete blocks), compaction of loose solids and water sprinkling on unpaved material transportation roads will be assessed and proposed in the IEEs and EMPs to avoid and minimize impacts to air quality. The SOP for laboratories outlining procedures to handle store and use of chemicals, handle and store/dispose spills will be developed and made part to EMP for operational phase. A general SOP for laboratories is drafted and added to this EARF (Annex-III).

- **Hydrology:** The raised floor embankment can restrict surface water flows and water extraction for construction activity and use for camp sites can result in resource use conflict at local level. In addition, during school operations the disposal of untreated wastewater from toilets and accidental loss of chemicals can cause potential impacts to the physical environments.

Efforts will be made to avoid restriction in surface water flows and if required aqueducts or sluices will be considered in design to ensure un-interrupted surface water drainage. The contractual provision will be embedded in bidding documents and civil work contracts to ensure contractors will avoid exploiting local drinking water resources.

- **Noise and vibration:** Material transportation vehicles and earth moving machinery/equipment on local roads/streets around school and within school premises can be a health and safety risk for the children in school. Further, noise and vibration impacts can be anticipated from construction machinery including material transportation vehicles and batching plants etc. In particular, the operation of machinery and resulting noise can interrupt classes in primary school buildings and adversely affect the children or any other noise sensitive receptor nearby i.e. hospital or environmentally protected area.

The anticipated impacts from material transportation vehicles and construction machinery will be avoided and mitigated through fencing the construction sites and regulating operation of machinery after school hours. Along roads used for transportation of construction materials and machinery, speed limits will be imposed and accordingly contractual provisions will be included in the bidding documents. The construction sites will be fenced to avoid entry of students at construction sites and acoustic sheets could be used to minimize the noise impacts on school operations.

(ii) Biological Resources. During construction stage, potential impacts related to biological resources may include limited clearance of vegetation and trees from proposed school sites. However, increased risk of poaching and physical disturbance to the wildlife could occur if school sites are in vicinity of environmentally sensitive areas.

To mitigate any adverse impacts on vegetation and trees grown in existing school land, secondary school building designs will be adapted and modified to fit site requirements and minimize the impact on vegetation. Only the vegetation or trees grown on the land parcel to be used for construction of school building will be removed and replacement trees will be planted with a ratio of 1:5 or above. To avoid poaching and physical disturbance to wild life, specific provisions will be included in the bidding documents and will be monitored throughout project implementation.

(iii) Socio-Economic Environment. The project is planned to be executed on available school land or nearby government land with no foreseeable adverse socio-economic impacts in and around the project school sites. However, construction of school buildings can impact existing electric, communication and water supply lines and impacts on archaeological sites and cultural heritage can occur if identified during construction activities. Nonetheless, positive economic impacts including labor and construction related business opportunities for local communities are anticipated.

To avoid and mitigate any adverse impacts to utility lines, an inventory of utilities will be prepared and included in the IEE. If required a utility lines relocation plan will be prepared in consultation with respective government departments and the relevant costs will be worked out and deposited with respective departments for timely relocation of utility lines. In case of finding any item of cultural or archeological importance during construction, the contractor will stop construction activity at site and shall report to the supervision consultants and the PIU immediately. The EMP will include specific provisos on restoration of utilities and finds of cultural or archeological importance.

23. **Impact during school operation:** Except for limited impacts due to discharge of sewerage from the toilets and any accidental impact due to mishandled storage or spillage of chemicals in laboratories, school operation will not cause significant adverse impact on the surrounding environment. However, environmental and health risks for children with

compromised school operations are likely if the project school sites located along busy highways or environmental hot spots like, major industrial units, thermal power stations and hazardous material storage facilities or sites used as sewage disposal and land fill are not avoided or adequate mitigation measures are not incorporated in design and implemented at site during execution of project works. Expected adverse impacts from such sites may include restricted access to schools with increased accidental risks due to fragmentation of school and settlement along highway, high noise levels, increased pollution loads and risks for vector diseases and epidemics due to proximity of school location with industrial settings and waste disposal facilities.

24. For proper toilet waste disposal, septic tanks will be provided, and the wastewater discharged from septic tanks will be used for plantation in school and its disposal in fresh water channels will be avoided. The SOPs for laboratories will be followed for handling, storage and use of chemicals in the laboratories. In case of schools located near highways or other environmental hotspots (major industries, thermal power stations, or waste disposal sites) site specific mitigation measures will be considered and incorporated in the EMPs for such school sites.

E) ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND/OR COMPONENTS

29. The project school blocks shall only be selected in 10 districts[5] in southern Sindh. The final list of project school sites will be determined following site visits, social analysis, safeguards screening and community consultation. However, following general criteria will be adopted for site screening and selection of the project school sites under SSEIP:

(i) The Feeder Primary/Elementary School with sufficient demand indicated through enrollment and other factors like out of school children aged 10-16 years and community support etc.
(ii) Number of boys and girls secondary schools in the project school catchment area.
(iii) Availability of government owned land for construction of new building block in existing school premises or at alternate new school sites selected for constructing project school.
(iv) Geographical spread of school sites across Talukas within project Districts.
(v) Project school sites including activities listed in ADB's Prohibited Investment Activities List (ADB SPS's Appendix 5) do not qualify for ADB's financing.
(vi) The school sites located in close proximity of major highways, Industrial units, thermal power stations, hazardous material storage facilities and sewage disposal/land fill sites or near highly sensitive environment and areas of critical habitat6 will not be considered for financing under the project unless, following provisions of this EARF and Safeguard Requirements 1 of SPS 2009 as well as country legal framework, requisite environmental assessment reports including environmental management plan explaining potential adverse environmental and social impacts, measures adopted to avoid, minimize and mitigate the adverse impacts and ensure security, safety and health of the children is approved by the relevant government department and accepted by ADB.
(vii) A final check on conformity with the selection criteria will be the submission of

[5] The selected are i) Sujawal, ii) Tharparkar,, iii) Umerkot, iv) Thatta , v) Sangar, vi) Tando Muhammad Khan, vii) Matiari, viii) Mirpur Khas, ix) Tando Allah Yar and x) Badin.

[6] Based on a preliminary assessment it is anticipated that none of the project school sites will be located within or in proximity to environmental sensitive and critical habitat areas.

selected subprojects for ADB's clearance. Any subproject, which does not meet the general criteria listed above, may be rejected.

30. Preliminary assessment of the project assumes both Category C and Category B project school sites. The environmental check lists including environmental baseline and site specific mitigation and management provisions required will be prepared for all project school sites to be included in the final list and an IEE including generic environmental assessment with EMP for all project school sites and filled check lists for all project school sites will be finalized following site selection and final building design to fulfill environmental assessment requirements outlined in this EARF, National Legal Framework and ADB'S SPS 2009 requirements.

E-I Requirements to Environmental Screening and Classification

31. All project school sites will be screened to determine to level of environmental assessment environmental management requirements for complying provisions outlined in the EARF, National legal framework and ADB's SPS 2009. Except enlisting different project types in schedule I, Schedule II and Schedule III for preparation and submission of IEE, EIA and Environment checklists, the country legal system lacks any procedural guidelines for screening of the project with respect to environmental sensitivities. The SPS provides a systematic approach to screen the projects following significance level of adverse environmental impacts of the project or any of its component. According to SPS 2009, the safeguards screening and categorization requirements outlined in OM (F-1) a proposed project is assigned to one of the following categories depending on the significance of the potential environmental impacts and risks:

(i) **Category A**. A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP), is required.

(ii) **Category B**. A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required.

(iii) **Category C**. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

32. All selected school sites in each project district will be reviewed to determine environmental assessment and management requirements based on the project school site, and design and construction activities to be implemented following the screening criteria outlined above. It is observed that construction of single story or double story secondary school buildings on most of the sites will have construction related site-specific minimal or no adverse environmental impacts. However, the school sites located along busy highways, industrial units or near sewage disposal or landfill sites of nearby urban settlements etc. will require consideration of site alternatives or design modifications to avoid, minimize and mitigate adverse environmental impacts on school operations and risks to health and safety of children. Accordingly, keeping in view the adverse impacts requiring appropriate measures to avoid, minimize and mitigate impacts through proper environmental management, the SSEIP is placed in category B. To streamline the environmental screening, impact assessment and incorporating appropriate environmental management measures, all project school sites will be subject to early environmental assessment

by using Rapid Environmental Assessment (REA) checklists (template of the REA (General) and REA (buildings) modified for the SSEIP which are provide as Annex-I of this EARF. The checklists include screening questions relating to (i) environmental baseline of the school location, (ii) site of project near or within the sensitive environment area, (iii) sensitivity and vulnerability of environmental resources in project area, (iv) the potential for the project to cause significant adverse environmental impacts on the physical, biological and socio-economic environment, and v) the likely adverse impacts on health, safety and security of the children due to close proximity of major highway or Industrial unit, thermal power station hazardous material storage facility or the sewage disposal and land fill sites.

E.II Requirements to Environmental Assessments and Environmental Management Plans

33. Environmental assessment of the project school sites will be conducted in accordance with the procedures outlined in this EARF to comply with Safeguard Requirement 1 (Environment) of ADB's SPS 2009. It shall be done at an early stage of selection and design of each project school site. The EA will identify potential direct, indirect, cumulative and induced environmental impacts on and risks to physical, biological, socioeconomic, and physical cultural resources as well as adverse impacts and risks to health, safety and security of children in consultation with stakeholders, including affected people, women, inline local government departments and local NGOs etc. If potentially adverse environmental impacts and risks are identified, the EA/IA will undertake an environmental assessment commensurate with the identified adverse impacts as early as possible in the project cycle.

34. The sites/locations with potentially significant adverse impacts that are diverse, irreversible, or unprecedented will not be included under the SSEIP. However, for the sites with less significant impact to the environment and/or perceived adverse impacts on school operations due to project siting near highways, industrial units or waste disposal sites (Sewage and landfill sites either declared or undeclared) the EA/IA will examine alternatives project school location to avoid the impacts or modify the school design to avoid, and, if avoidance is not possible, minimize and mitigate adverse environmental impacts and risks. Nonetheless, rationale for avoiding a particular project school site and selecting the alternative location and design modification with cost benefit analysis will be documented taking into account the corresponding environmental costs and benefits.

35. The IEE with EMP will include description of environmental and social baseline to provide an understanding of current conditions forming the benchmark against which project impacts are assessed. Both primary and secondary data can be used in environmental assessment. Baseline information should be provided in quantitative terms to the extent possible. Impacts and risks will be analyzed in the context of project school sites located in each district and a consolidated IEE reports including a generic environmental assessment and EMP will be finalized for all identified school sites while site specific environmental assessment and mitigations will be provided in the Environmental Check Lists including environmental baseline with adverse impacts and specific management provisions will be attached to the IEE report if not agreed otherwise.

36. The IEE with EMP will identify contractor's activities i.e. establishment of campsites, exploitation of borrow areas and transportation of borrow material at sites, use of local resources etc. and shall outline likely adverse impacts and mitigations measures including making it mandatory for the contractor to prepare and submit Site Specific Environmental Management Plans (SSEMPs) for Supervision Consultant's and EA's review and acceptance before handing over and commencing works at site.

37. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule and cost estimates etc. The EA will embed the provisions of the environmental management plan (EMP) into civil works contract to ensure the mitigation measures and environmental management programs are implemented and monitored during execution of construction activities.

38. The IEE with EMP including environmental checklists with site specific mitigation provisions will be finalized as and when the project school sites are identified and finalized based on prototype design. The IEE with EMP and environmental checklists will be subject to review and updating based on detailed design and/or in case unanticipated new school sites and adverse impacts are identified or project scope is changed.

39. The EA has the main responsibility for undertaking environmental due diligence and monitoring the implementation of environmental mitigation measures for all project school sites included in the project. However, the EA will ensure that ADB be given access to undertake environmental due diligence for all subprojects during project design and implementation. All environmental assessment and monitoring reports on implementation of the environmental management plan will be documented systematically and disclosed.

F) CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

F-1 Public Consultation

40. Consultations and information disclosure will be an integral part of the process for environmental assessment, project design and implementation of environmental management plans during execution of the project. The EA will devise and implement a comprehensive consultation and information disclosure strategy to ensure the stakeholders who are directly or indirectly involved are meaningfully consulted during environmental screening, assessment, management and mitigation of adverse environmental effects for selected project school sites. Consultation will be gender inclusive and carried out in a manner commensurate with the social fabric of the subproject area and the impacts on affected communities.

41. Consultation will be an ongoing process that will: (i) begin in the project preparation stage and carried out on an ongoing basis throughout the project cycle; (ii) provide timely disclosure of relevant and adequate information in a manner readily accessible and understandable to the stakeholders; (iii) enable to document and address the concerns of stakeholders including affected communities; and iv) will be undertaken in an atmosphere free of intimidation or coercion and v) will be gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups. The consultations and disclosure of information will enable project executors to consider and incorporate views of stakeholders and affected communities into project design, mitigation measures and the decision making process for addressing implementation related issues.

42. The timing and nature of consultations and information disclosure will vary depending upon the project design and implementation stages and program. Stakeholders including local communities facing project impacts (beneficial or adverse), local education authorities, other inline government departments and civil society organizations engaged in services delivery and

administration of environmental laws in the project districts will be identified and coordinated by the EA. Stakeholder consultations and information dissemination will be carried out over the preparation of the project through community meetings, focus group discussions and interviews of key informants for their views and recommendations for the project preparation, design and implementation. These recommendations will be included in the IEEs and EMPs to mitigate adverse impacts and make the project interventions sustainable. The consultation meetings with all stakeholders will be recorded and documented comprehensively, including signed attendance lists, photographs and minutes of the key issues addressed and agreements reached, observations made in the field, and outstanding issues in need of being addressed.

F-II Information Disclosure

43. Besides dissemination of project related information during consultative processes discussed above, the EARF for the project and the IEE reports including EMP and periodic environmental monitoring reports (if so required) will be subject to disclosure on EA and ADB's websites in a manner consistent with SPS 2009, Operational Manual F-1 2013 and ADB's Communication Policy 2011 requirements. The EARF and other environmental safeguards documents including IEEs and periodic monitoring reports will be disclosed to stakeholders by placing hard copies at accessible locations including the relevant school sites and Taluka/Tehsil offices of the respective districts.

44. The EARF and Executive Summary of the IEE (if required) detailing information about project description, legal and policy requirements, project adverse environmental impacts identified and mitigated in environmental management and monitoring plan, grievance redress mechanism and institutional arrangements put in place will be translated into local languages and will be disclosed to the affected local communities in close vicinity of the project sites. Any corrective action plan (CAP), if required and prepared during the project implementation, as well as Environmental Monitoring Reports for the project will be disclosed on the DPs and on EA's and ADB's website.

Table 5: Consultation, Participation and Information Disclosure Strategy

CID action	Stakeholders	Method	Outcome	Responsibility
During project design and preparation of environment safeguards documents				
Consultations for Screening, assessment and mitigation of environmental impacts.	Local communities in vicinity of project school sites and local government departments involved in protection of environment, and conservation of natural resources and ecology, archaeological/cultural heritage and civil society organizations etc.	Individual meetings focus group discussions, and key informant interviews etc.	Stakeholders including local communities informed on project impacts, potential mitigation measures and their concerns recorded and incorporated in project documents and design.	EA's/PIU's project staff and project design consultants.
Disclosure and consultations on draft Environment Assessment reports i.e EARF	Project affected communities in project districts, Local government departments involved in	Disclosure of EARF and IEE through formal meetings & workshops held in project districts.	The EARF and IEE provisions and Environmental Management	EA's/PIU's project staff, Project implementation & and project

CID action	Stakeholders	Method	Outcome	Responsibility
and IEE.	protection of environment, and conservation of natural resources and ecology, archaeological/cultural, and civil society organizations and ADB.		Monitoring measures disclosed and final documents uploaded on web for disclosure.	design consultants
During execution of the Project				
Grievance redress mechanism established and functional	Project affected local communities, relevant government departments responsible for conservation of nature/environment and EA's/IA's with consulting firm professionals and civil works contractors.	Individual meetings focus group discussions and through disseminating GRM related information bearing leaflets, broachers and other means as appropriate.	Affected communities fully informed on GRM and accessing project based GRM to address their concerns.	EA's/PIU's project staff and project implementation & supervision consultants
Institutional set-up, implementation timelines, and precautions as of EMP provisions and project execution activities.	Project affected local communities, relevant government departments responsible for conservation of nature/environment and EA's/IA's with consulting firm professionals and civil works contractors.	Individual and focus group meetings, dissemination of relevant information through installing hoardings and signage with relevant information.	DPs compensation claims processed and paid.	EA's/PIU's project staff and project implementation & supervision consultants
Environmental monitoring and reporting	EA's/IA's project safeguards staff including supervisions consultants and contractors, project affected communities, Civil Society Organizations and ADB.	Individual meetings, key informant interviews, FGDs and disclosure of monitoring results/reports on web.	Results of periodic monitoring reports disclosed to affected communities and other stakeholders through web.	EA's/IA's project staff and project implementation & supervision consultants

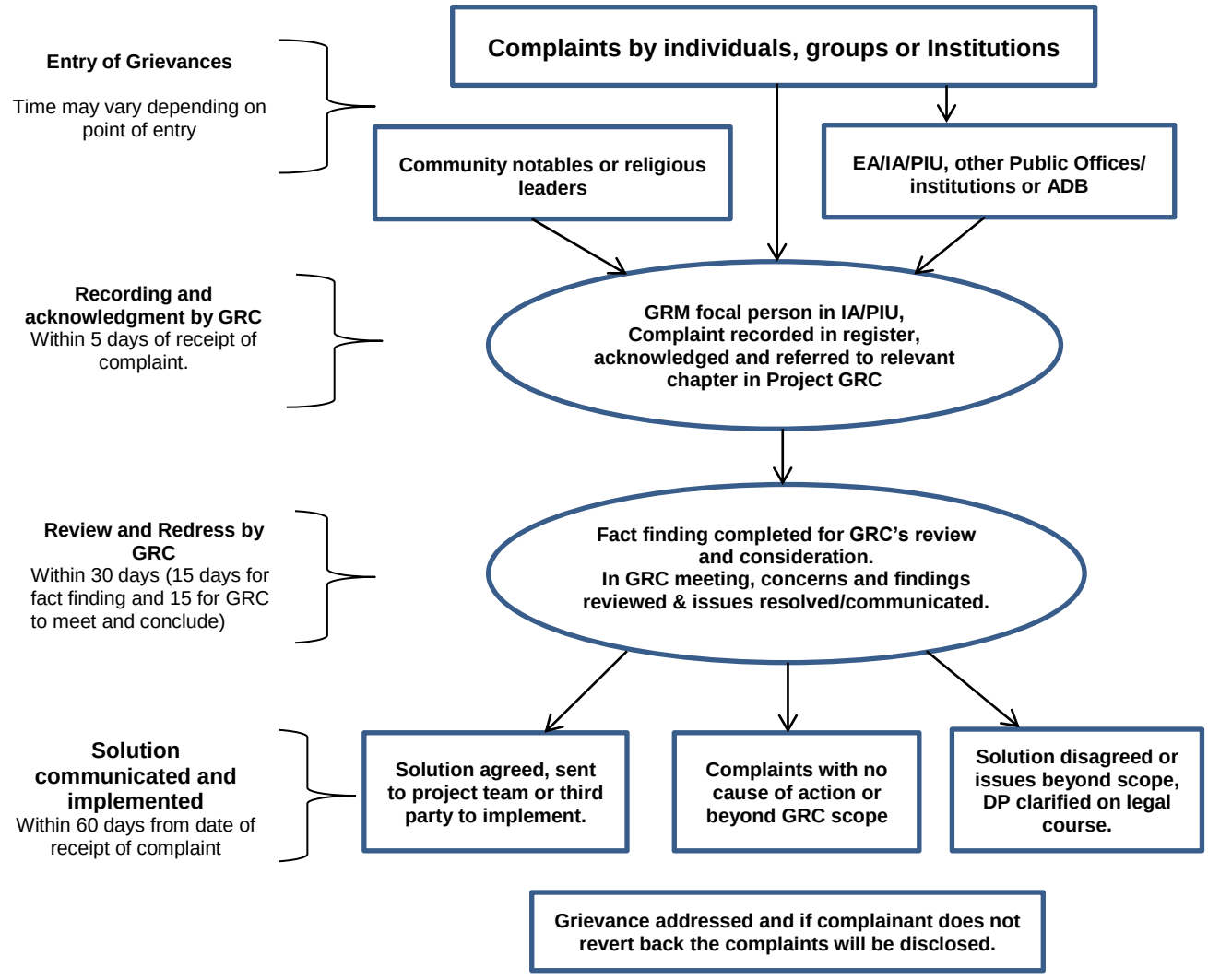
F-III Grievance Redress Mechanism

45. The concerns and grievances about project's environmental performance, handling and management of environmental issues at and around construction sites as well as restriction of access to or resource use conflicts are likely from the affected communities and other relevant stakeholders including CSO's. Therefore, a project based two level grievance redress mechanism will be established at project level and to streamline GRM functions a Project based Grievance Redress Committee (GRC) will be established in PIU. The Project GRC will be headed by the project director of the PIU with engineering and environmental staff of PIU and consultants as its members. The environment specialist mobilized by the construction supervision consultants will be notified as grievance redress officer (GRO) for each Civil works Contract package to act as

focal person for recording, review and coordinating with the relevant persons/authorities, complainants and Affected Persons Liaison Committee at project school sites for timely resolution of grievances.

46. The GRV will exercise its function to the extent of project related issues and concerns and the issue beyond project scope will be ineligible for consideration and review through project GRM. The project GRPs will be aware of the risks and adverse impacts of the project and will address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. They will attempt to address the concerns and complaints at contract package level; however, unresolved complaints will be escalated to and resolved through project GRC at the project level. Nonetheless, the project GRM will not impede access to the Pakistan's judicial or administrative remedies and if the complainants so desire they will be allowed to approach appropriate judicial forums. It will be ensured that the GRM is readily accessible to the affected communities at no cost and the complaints are resolved in minimum possible time. A typical structure showing complaints entry level and redress mechanism for project based GRC in SSEIP is presented in figure below:

Figure 1 Grievances flow and redress system for SSEIP



G) INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

G-I Executing Agency (EA): Secondary Education and Literacy Department (SELD)

The Secondary Education and Literacy Department (SELD) which is responsible for development of secondary level education in the province will be the Executing Agency (EA) for the project. It will have overall responsibility for the project planning, design and implementation including environmental assessment; preparation of environmental assessment reports i.e. IEEs with EMPs; cross-agency coordination to seek environmental approvals; and implementation and monitoring of Environmental Management Plans during execution of project works. The EA will execute project related functions and responsibilities through its dedicated Project Implementation Unit to be established within the SELD's reform support unit (RSU).

47. The capacity review of EA indicated capacity constraints and the need for establishing a dedicated unit in the EA for smooth implementation of ADB project and augmenting EA's capacity in sustainable management of the schools' infrastructure and implementation of similar projects subsequently. Accordingly, a dedicated Project Implementation Unit within the RSU headed by a Project Director with experts on safeguards management, engineering, procurement, financial administration and monitoring and evaluation, social and gender will be established. In addition, project implementation consultants are to be engaged to support PIU and strengthen the capacity of PIU staff. This PIU will be the responsible entity for day to supervision of project implementation and delivery of safeguards management following provisions outlined in the EARF in a manner consistent with the ADB policy principals and national legal framework. The PIU assisted by the project implementation consulting firm will screen and assess safeguard impacts (Environment) and deliver relevant safeguards documents including but not limited Environmental Screening Checklists, IEEs including EMPs and bid document with EMP provisions embedded before award of civil works.

a) Project Implementation Unit

48. All project level activities including day to day monitoring of project implementation and safeguards management progress will be managed by the PIU. As discussed above, the PIU will include dedicated professionals for safeguards management, engineering and design, procurement and financial administration. To augment PIU's capacity in planning, preparation and monitoring of requisite safeguard documents, a safeguards consultant will be hired as part of the project implementation firm.

b) Project implementation consulting firm

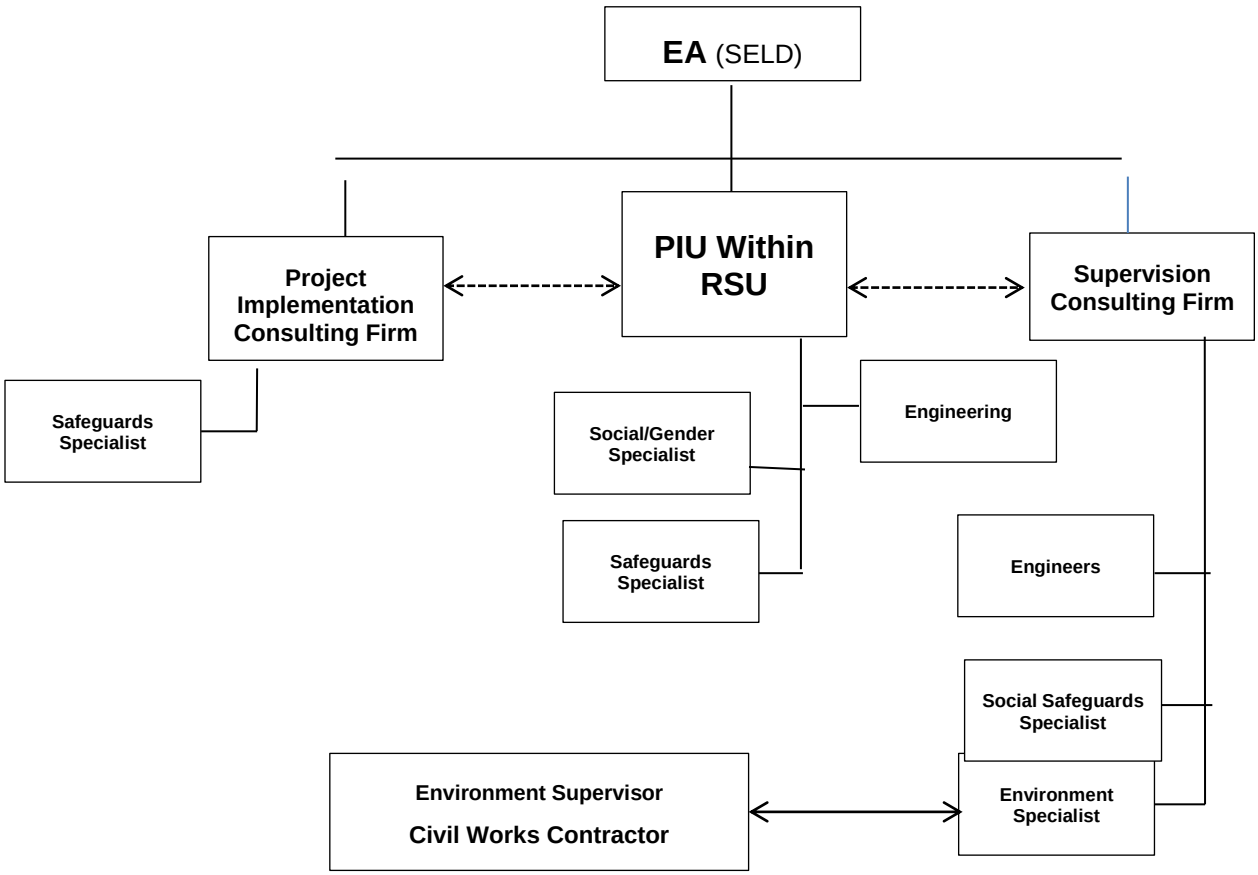
49. The project implementation consulting firm will be mandated to provide support to PIU in safeguards management, engineering planning and design, procurement and contract administration as well as oversight on construction related activities. The firm will mobilize the experts on environment with proven safeguards management capacity in development partner financed projects. The environment expert of the firm will coordinate with the safeguards management staff of the PIU to support it in dispensing day to day environmental safeguards tasks and deliver quality safeguards documents for IA's/EA's review and endorsement to ADB.

50. The project implementation consulting firm will be engaged before the award of civil work contracts and the environmental expert mobilized by the firm will have a university degree in environmental engineering/science with 7 years or more experience in environmental

management of development partner funded development projects. The Environmental Expert will be engaged for 24 months and her/his scope of work will include, i) support the PIU in discharge of its environmental management functions outlined under para 54 below, ii) design and implement training workshops for the EA and PIU staff as well as for construction contractors and construction supervision consultants responsible for safeguards management on the project sites; iii) provide on job assistance and coaching to PIU's safeguards staff for their better and improved understanding on ADB's environmental safeguards requirements, iv) prepare periodic monitoring reports and share with EA and ADB.

51. The safeguards management staff in PIU supported by environmental safeguards expert mobilized through the firm will ensure early screening and assessment of environmental impacts, review alternate site and design options to avoid, minimize and mitigate the impacts if avoidance is not possible and prepare IEEs with EMP for the project including environmental check lists for all project sites with site specific management provisions. They will also supervise and monitor EMP implementation progress, develop and implement corrective actions wherever required and shall prepare periodic Environmental Monitoring Reports for IA's and EA's review and endorsement to ADB. For improved safeguards management, the Safeguards staff in PIU will keep a close liaison with the ADB safeguards team to seek clarity and guidance on emerging safeguards issues and requirements during execution of the project. The safeguards professional in the PIU will have a university degree in environmental engineering/sciences with work experience in a public sector organization. The safeguards management institutional set-up of PIU is presented in Figure 2 below.

Figure 2: Institutional Set-up in EA/IA for safeguards management



52. Some specific safeguards management tasks to be performed by PIU with technical support through PIU support consultants will include but not limited to the following:

(i) Conduct environmental safeguards screening and impact assessment, determine project school site impact significance level following criterion explained in the project EARF and share screening check lists with responsible ADB's safeguards staff through project team leader for review and guidance; and prepare due diligence reports for project school sites without no or minimal adverse impacts and share with ADB for review and further guidance;

(ii) Initiate process of detailed impact assessment for project school sites with foreseeable adverse environmental impact on the sensitive environment or to the accidental risks on security, safety and health of children due to location of project school sites along main highways, major industries, thermal power stations and/or sewage disposal or land fill sites. Review alternatives (sites and design) to avoid the adverse impacts and if avoidance not possible, suggest design modification to minimize and mitigate such impacts. Prepare IEEs with EMPs commensurate with impact significance (as and when required) and submit IEEs and EMPs for ADB's review and acceptance and ensure the EMP provisions are embedded in the Civil Works Contracts and Site Specific Environmental Management Plans (SEMPs) are prepared by the contractor and approved by the Supervision Consultants before handing over of sites;

(iii) Coordinate with affected communities and other stakeholders including line government departments and Civil Society Organizations (CSOs) conduct meaningful consultation with all affected and other interested stakeholders on safeguards management issues and maintain a record of the consultation including consultation meeting attendance sheets, pictorial profile and meeting minutes;

(iv) Establish and operationalize project based GRM at PIU level with its nodes extended to civil works contract packages and project school sites; facilitate logging and tracking of complaints and conduct field investigation on complaints tendered by the DPs or other aggrieved parties; establish project GRC to review, investigate and address grievances in a time efficient manner; and establish record keeping system for complaint etc. Further, assist to constitute project school site (village level) affected community liaison committees (ACLC) to act as GRM nodes at village level for review and redress the grievances at project school sites in consultation with project GRC;

(v) Coordinate with line government departments at District and sub-District level including forest, wildlife and agricultural departments and those involved in protection of cultural heritage in the area, civil society organization and local community to ensure natural and cultural resources are conserved during execution of project;

(vi) Implement CPID strategy as outlined in this EARF and ensure timely disclosure of information to all stakeholders including affected communities about project design alignment, environment and social impacts with mitigation measures in place and facilitate information dissemination and consultation about the GRM made available to DPs and its roles and responsibilities;

(vii) Prepare periodic (biannual) environmental monitoring reports including progress on development and implementation of corrective actions during monitoring period.

G-II Construction Supervision Consultants

For day to day supervision of construction activities at project school sites, an engineering firm will be engaged as construction supervisions consultants. Besides supervising ongoing construction activities, the environmental specialist of this firm will be responsible for day to day supervision and monitoring of progress and compliance on the contractual provisions and EMP requirements included in civil works contracts. For the purpose of effective safeguards management, the firm will mobilize its environmental specialists (having a university degree in environmental engineering/science with 5 years of experience in environmental management of development projects) to supervise and monitor the compliance to environmental safeguards during execution of project works and provide monitoring results with non-compliance incidence with corrective actions developed and implemented. The monitoring results will be presented in the monthly progress reports. The environmental expert will be engaged preferably for a period required to implement the project works.

53. The environmental specialist will review and ensure:

(i) qualified personnel are mobilized by the contractor for environment management at each project sites;
(ii) clarify contractor on safeguards requirements particularly related to preparation and submission of Site Specific Environmental Management Plans (SSEMP) if so required in the EMPs embedded with civil works contracts;
(iii) sites requiring SSEMPs will not be open for construction activity unless the SSEMP submitted by the contractor is reviewed and accepted by Supervisions Consultants;
(iv) SSEMPs are shared with ADB through the PIU for its review and counter check the compliance levels during filed missions; and
(v) compliance to the contractual provisions on bonded, forced or child labor, use of protective equipment, installation of proper signage in and around construction sites, equal wages to men and women for similar work, human trafficking and health and safety measures including HIV and STDs etc.

G- III Contractor

54. The contractor will be responsible to execute the project works at the school sites in a manner consistent with provisions outlined in the EMP and embedded in the civil works contract. The contractor will mobilize environment, health and safety supervisors for preparation of SSEMPs and to ensure compliance with the EMP provisions. They will supervise implementation of environment related activities on construction sites and borrow areas and will maintain healthy and hygienic environment at construction camp sites. All borrow areas and quarries will be maintained and restored by the contractors as per agreed provisions in the EMP and SSEMPs. Besides, the contractor will ensure compliance to the contractual provisions on bonded and child labor, equal wages for similar work, human trafficking, HIVs and STD etc. and shall launch awareness raising campaigns on these issues for improved understanding of the labor engaged on the project and local community.

G- IV Staffing Requirements and Budget

55. EA/IA will recruit PIU staff and safeguard specialists through the consulting firm as presented in Fig 2. above for screening and assessment of environmental impacts preparation implementation and monitoring of consolidated Initial Environmental Examination reports including EMPs. The PC-I will include tentative costs for establishment of PIU, engaging human

resources through consultants and required environmental costs to (i) implement the environmental review and screening procedure, (ii) undertake the IEE/EIA studies for the follow-up subprojects, (iii) conduct stakeholder's consultations, (iv) monitor implementation of EMPs, and (v) undertake environmental mitigation measures as required.

H) MONITORING AND REPORTING

56. The monitoring and reporting enables the executing and/or implementing agency to review progress of safeguards compliance, make timely adjustments in implementation arrangements and take appropriate corrective measures as and when required during project implementation. The main objective of the monitoring will be to: (i) review progress on safeguards implementation and ascertain efficacy of the provisions to address the project safeguards requirements; (ii) collect information on day-to-day safeguards management activities of the project through site inspections and consultations, (iii) identify problems or potential issues and to develop corrective actions to rapidly mitigate issues of concern, and (iv) ensure that the EMP objectives are met with, and project implementation is compliant with safeguards requirements.

57. The extent of monitoring activities, including their scope and periodicity for SSEIP will be commensurate with the project's risks and impacts. The preliminary screening and impact assessment the SSEIP is screened as a category B project which will require periodic monitoring reports to be submitted to ADB. For monitoring and reporting purpose the EA/PIU will ensure day to day monitoring of compliance to environmental safeguards through the environment specialist of the supervision consulting firm. The environmental safeguards monitoring results will be presented in monthly progress reports. However, the monitoring results will be compiled and reported as biannual environmental monitoring reports for ADB/s review, acceptance and disclosure during construction period and on annual basis after completion of construction until project completion report is issued. However, for effective monitoring the EA/PIU will:

(i) establish and maintain procedures and measurable indicators for monitoring and reporting of compliance to EMP provision in each respective IEE and EMP of the project;
(ii) verify the compliance with environmental measures and their progress toward intended outcomes;
(iii) document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports;
(iv) follow up on these actions to ensure progress toward the desired outcomes;
(v) submit periodic monitoring reports on safeguard measures as agreed with ADB.

58. Besides monitoring through EA/PIU, the ADB will also carry out the following activities to supervise and monitor subprojects implementation:

(i) conduct periodic site visits for projects with adverse environmental or social impacts;
(ii) conduct supervision missions with detailed review by ADB's safeguard specialists/officers or consultants for sub-projects with significant adverse social or environmental impacts;
(iii) review the periodic monitoring reports submitted by EA/PIU to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB; and
(iv) prepare project completion reports that assesses whether the objective and desired outcomes of the EMPs have been achieved, considering the baseline conditions and the results of monitoring.

Annex-I Rapid Environmental Assessment (REA) Checklist(Building)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: **Pakistan/51126-002**: **Sindh Secondary Education Improvement Project**

Sector Division: CWRD/CWSS

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:		X	The schools will be located away from any protected areas, or cultural heritage sites within existing school compounds. No impacts on those areas are expected.
▪ Underground utilities		X	
▪ Cultural heritage site		X	
▪ Protected Area		X	
▪ Wetland		X	

Screening Questions	Yes	No	Remarks
▪ Mangrove		X	
▪ Estuarine		X	
▪ Buffer zone of protected area		X	
▪ Special area for protecting biodiversity		X	
▪ Bay		X	
B. Potential Environmental Impacts Will the Project cause…		X	
▪ Encroachment on historical/cultural areas?		X	Not anticipated.
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		X	Not anticipated.
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?	X		The project will establish improved sanitation and solid waste disposal system.
▪ Dislocation or involuntary resettlement of people?		X	Not anticipated.
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		X	The project will have positive impacts on vulnerable groups
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?		X	Not anticipated.

Screening Questions	Yes	No	Remarks
▪ Increased noise and air pollution resulting from increased traffic volume?	X		Temporary noise and air pollution impacts are expected during construction. Construction works will be conducted during summer breaks or out of school hours as much as possible. Mitigation measures such as noise source controls, dust suppression measures will be applied.
▪ Occupational and community health and safety risks?	X		As construction works will be conducted within existing school compounds they may pose risks to occupational health and safety. Construction works will be conducted during summer breaks or out of school hours as much as possible.
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	X		
▪ Generation of dust in sensitive areas during construction?	X		It is anticipated that some construction works can generate excessive dust. Construction works will be conducted during summer breaks or out of school hours as much as possible
▪ Requirements for disposal of fill, excavation, and/or spoil materials?		X	Not anticipated.
▪ Noise and vibration due to blasting and other civil works?	X		It is anticipated that some construction works can produce loud noise and/or strong vibration. Construction works will be conducted during summer breaks or out of school hours as much as possible.
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		X	Not anticipated.
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		X	Not anticipated.

Screening Questions	Yes	No	Remarks
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		X	Not anticipated
▪ Social conflicts if workers from other regions or countries are hired?		X	Mostly local workforce will be used
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		X	Installation of electric and fire safety systems will lower risks of electric shock and fire.
▪ Risks to community health and safety caused by management and disposal of waste?	X		It is anticipated that some construction works can generate construction waste. Waste management plans will be a part of the EMPs
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	X		It is anticipated that some repair works can pose safety risks. Those construction works will be conducted during summer break as much as possible.

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Islamic Republic of Pakistan: Sindh Secondary Education Improvement Project

Sector: Education

Subsector: Secondary Education

Division/Department: CWSS/CWRD

Screening Questions		Score	Remarks[1]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?	1	Sindh province is projected to experience changes in temperature and precipitation; these factors shall exacerbate the impacts of climate (i.e., floods[2], inundations, heatwaves, droughts). See Appendix A for further details.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?	1	
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	1	Appropriate site selection and detailed design of school infrastructure can mitigate risks due to extreme events. (e.g., floods, droughts, heatwaves)
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	1	

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result in a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which includes providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high-risk project.

Result of Initial Screening (Low, Medium, High): Medium

[1] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

[2] See Annex Figures 10a, 10b, 10c, 13a, 13b, 14

Annex-2 OUTLINE FOR GENERIC INITIAL ENVIRONMENTAL EXAMINATION REPORT

As per safeguards Requirement-1 of SPS 2009, An Environmental Assessment Report is required for all Category A[7] and Category B[8] Projects. The SPS provides an outline for preparation of Environmental Impact Assessment EIA Report that can also be used for IEEs by narrowing its scope depending on nature of the project. Ideally, each project site selected for physical interventions is subject to preparation of Environmental Assessment Report, however, in certain cases multiple small project sites could be clubbed to prepare a Generic Environmental Assessment Report including an umbrella Environmental management plan with proposed mitigation and monitoring measures for identified adverse impacts.

The SSEIP include some 160 project school sites in 10 Districts of Lower Sindh. Proposed physical intervention includes construction of secondary school building blocks in existing school premises. Keeping in view available site requirements, a site-specific building design will be adopted from available four prototype design types. Implementations of physical intervention are likely to cause construction related adverse impacts mostly reversible or few irreversible but readily mitigatable impacts in case of school sites within or adjacent to sensitive environmental areas and/or some adverse impacts to school facilities and operations are likely because of school location along highways and other environmental hot spots (major industrial units/thermal power houses are waste disposal/sanitation facilities). Screening and assessment of site specific impacts will be required for all 160 project school sites and site specific screening check lists will be prepared separately, while a generic Initial Environment Examination with an umbrella EMP including i) description on baseline environmental settings in all 10 project districts, ii) likely impacts due to siting, design and construction of school buildings with applicable mitigations measures to offset adverse impacts to environment as well as proposed actions/mitigation to avoid/minimize adverse impacts to school operations due to its close proximity with highways and other environmental hot spots. Accordingly, the IEE will include an Umbrella EMP providing crisp notes on environmental issues and mitigation actions with implementation and monitoring responsibility and corresponding costs if any.

The preparation of generic IEE with EMP will follow aspects outlined below and site-specific impact screening and assessment will be done following attached screening check lists. The substantive aspects of this outline are to guide on order and content to be provided in different sections for preparation of quality Generic Initial Environmental Examination report with EMP for the project.

EXECUTIVE SUMMARY

- This section describes concisely the critical facts, significant findings, and recommended actions.

POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

- This section will include briefly introduce, applicable national and provincial legal

[7] Project having significant adverse environmental impacts that are diverse, unprecedented, and irreversible and can affect an area larger than the project sites or facilities are classified as category A.

[8] Projects with less adverse environmental impacts that are site specific and reversible in nature or very few irreversible and readily manageable impacts through mitigation measures project B.

and institutional framework, as well as ADB's policy requirements to be followed for impacts screening, assessment, analysis, preparation and approval of Environmental Assessment Reports

- It will also identify and document project-relevant international environmental agreements to which the country is a party.
- Besides, it will provide a comparison of National/Provincial Laws with ADB policy requirements and include gap filling measures for finalizing the Environmental Report i.e. IEE with EMP in a manner consistent with both sets of legal and policy frameworks.

DESCRIPTION OF THE PROJECT AND ANALYSIS OF ALTERNATIVES

Description of the Project

It is likely that different site-specific design options will be adopted for 160 the selected project school sites. Keeping in view site requirements and space availability constraints, four prototype designs have been agreed for safeguards due diligence and processing of the project. This section will describe:

- the proposed project, its major components with design of the facilities applicable in site specific geographic, ecological and social context;
- any associated facility required by and/or for the project to ensure smooth implementation of works (for example, access roads for material transportation, power and water supplies, quarries and borrow pits with construction waste disposal sites); and
- additional facilities/actions to be ensured for smooth operations of the schools (for example, secure access to school for children, power and water supply, sanitation facilities and other requisite measure to minimize the impacts from nearby highways and other environmental hot spots etc.
- Efforts need to be ensured (to a possible extent) for including drawings and maps showing the project's layout and components, the project site, and the project's area of influence etc.

Analysis of Alternatives

This section will provide:

- a crisp information alternative considered and examined during project design including but not limited to i) project school site alternatives, ii) building design and operation alternatives and iii) no project alternative—in terms of their potential environmental impacts with feasibility of mitigating these impacts with implementation and recurrent costs etc.
- It will provide and explain basis and justification for selecting the particular project school sites and opted building design.

DESCRIPTION OF THE ENVIRONMENT (BASELINE INFORMATION AND DATA)

This section will describe relevant physical, biological, and socioeconomic environment and conditions for each project district separately that are included under the project. The focus of this section will be to:

- provide reliable environmental baseline for all 10 project districts in separate sections for each project district and the baseline will be substantiated with information and reliable data gathered from available secondary sources;
- include information about project school sites located within are along sensitive environmental areas or cultural heritage sites in each district and the environmental baseline settings in immediate vicinity of such school sites will be explained in detail;
- identify and document project school sites that are located along highways or other environmental hot spots like major industrial units, thermal power plants or waste disposal and sanitation sites with prevailing adverse environmental conditions associated to the sites that may require additional safety and security measures for smooth execution of the project

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section will explain:

- likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational as well as community health and safety, vulnerable groups and gender issues etc.) environment's and physical cultural resources in the project's area of influence; and
- quantitative assessment of impacts to the extent possible with applicable mitigation measures to address adverse impacts through optimal design and mitigation solution with best housekeeping practices during construction; and
- optimal design solutions to avoid and minimize adverse impacts on sensitive environmental areas and cultural heritage (if applicable) and readily executable mitigation measures to address any adverse impacts during construction and operation phases of the project.
- Further, in case the school operation is likely to be adversely affected due to proximity with environmentally hot spots (like highways, major industrial units including thermal power houses and waste disposal/sanitation sites), site specific issue with mitigation measure including school siting and provisions of additional facilities/barriers to safeguard security and safety of the children and smooth operation of schools will be considered and included in this section.

INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

This section will precisely describe process undertaken during project design and safeguards due diligence to engage stakeholders for information disclosure and meaningful consultation with affected people and other stakeholders. The stakeholders' concerns, suggestions and proposed solutions during consultations will be recorded in detail to the extent possible and consultation record including meeting minutes, attendance sheet and pictorial profile will be fully maintained.

It may include summarized description on:

- information disclosure and consultation methodology adopted;
- key stakeholders (gender segregated) consulted during project design and

safeguards due diligence exercises;

- consultations held including venue with consultation date, number of participants, co concerns raised with explanation on actions implemented/embedded or to be considered during detailed design stage and implementation of project works; while
- district wise consultation summary with lists of participants will be added as appendix to the IEE.
- Nonetheless, this section will also explain strategy for future consultation, participation and information disclosure (CPID) to be followed throughout project implementation period. Future CPID will illustrate:
  - information disclosure and consultation measures (including the type of information to be disseminated and the method of dissemination) planned;
  - the process to be followed for consultation and participation of affected people including community outreach and information disclosure responsibilities and measures etc.

GRIEVANCE REDRESS MECHANISM

A project specific Grievance Redress Mechanism including formal and informal channels will be proposed and established to record and address concerns, complaints and grievances raised by the affected people, community or any other stakeholder. This section will describe:

- the grievance redress mechanism (both informal and formal channels) with its procedure, time frame and mechanisms for resolving complaints on environmental performance;
- systems for complaints recording and maintaining a track on complaints resolution process and progress; and
- measures for communication and information disclosure to update complainants and aggrieved parties on complaint resolution status and decisions arrived and implemented.

ENVIRONMENTAL MANAGEMENT PLAN

Following identified adverse environmental impacts with mitigation and management measures suggested and to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority) an umbrella environmental management plan explaining potential adverse impact, corresponding mitigation measure with its management, implementation and monitoring responsibilities will be outlined in this this section. Based on prototype design types to be adopted for different site types, it may include multiple management plans with actions applicable specific to design and site requirements at different and multiple but similar project school locations in all district. The EMP may include following key components which will be commensurate with identified/anticipated adverse impacts and risks at different stages of project planning, design and implementation.

Adverse Impacts with Mitigation measures: this section will:

- summarize anticipated significant adverse environmental impacts and risks;
- describes optimal mitigation measure together with designs, equipment descriptions and operating procedures as appropriate and technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies); and
- suggest link to any other mitigation plans (for example, for involuntary

resettlement, Indigenous Peoples, or emergency response) required for the project.

Monitoring this section will:

- describe monitoring indicators (for process and compliance monitoring) and propose monitoring measures with technical details, including sampling techniques for monitor able parameters and suggest monitoring frequency;
- explain measures and detection limits of unanticipated adverse impacts and thresholds levels that will require corrective actions; and
- outline monitoring and reporting procedures and requirements for documenting implementation progress and early detection of issues requiring immediate attention and corrective actions etc.

Implementation arrangements: this section will:

- describe institutional/organizational capacity and arrangements for environmental safeguards management and suggest additional resource required for strengthening safeguards management institutional capacity;
- explain responsibility for implementing mitigation and monitoring measures, and suggest technical assistance and training programs, equipment and supplies required for environmental management, monitoring and meet organizational change requirements; and
- suggest capital and recurrent costs with funding sources for implementing proposed mitigation measures and the environmental management plan.

CONCLUSION AND RECOMMENDATION

Following impacts screening, assessment, mitigations proposed including EMP provisions explained in preceding sections, this section will recommend efficacy level of the this IEE or recommend additional measures to improve environmental performance of the project or guide on to conduct a detailed EIA as required under National/provincial legal frame works and ADB's SPS requirements.

Annex-3 STANDARD OPERATING PROCEDURES SECONDARY SCHOOL LABORATORY SINDH SECONDARY SCHOOLS EDUCATION IMPROVEMENT PROJECT (SSEIP)

1. OVERVIEW

1. It is responsibility of the Science teachers, lab staff and the students to ensure that their actions do not jeopardize their safety or that of other school staff and students while dealing with laboratory equipment and chemicals during transportation, handling, use and disposal etc. For effective handling, proper use and deal with accidental risks it is essential that lab staff and students should observe required laboratory practices and understand chemical handling international and national protocols, required laboratory practices and how to operate equipment properly.

2. It should be mandatory to familiarize the laboratory staff and students in particular with general procedure, addressing general safety and health requirements for work in the laboratory, as well as the specific handling requirements included in the SOP for each specific hazard class and/or process that students will be working with. For these reasons, it must be ensured that the lab supervisors/science teachers should have attended appropriate training and that the students have received relevant instructions from the Supervisor/Science Teacher or Laboratory Manager before start working in the laboratory. In case of any confusion or misunderstanding on the correct procedure, lab staff and students should contact their Laboratory Supervisors or Science Teacher before starting work.

2. GENERAL HEALTH AND SAFETY INFORMATION

3. Special Personnel Protective Equipment are required and used while working in laboratory for ensured health and safety. Particularly, eye protection, appropriate gloves, and laboratory coats are required in the laboratory when working with chemicals. Any additional or specific PPE must be considered following risk assessment of the work place and the equipment in use. These PPE should be removed before leaving the laboratory. It must be ensured that the disposable PPE or equipment is not re-used.

4. Specific dress codes are to be followed to work in laboratories, so besides wearing above indicated PPEs when working with chemicals, it should be ensured that cloths worn should cover all body parts and closed-toe shoes are used even if working on data entry and processing. The accident and safety equipment listed below should be placed/installed at easily accessible and marked places in laboratory and the lab staff and the students working therein must know where such equipment are located:

- First Aid Kit
- Eye Wash station and Safety Shower
- Chemical Response Spill Kits and Chemical Fume Hoods,
- Fire Extinguishers, fire Alarms and emergency shut-off on equipment along with their operation manuals and
- Location of Emergency Telephone numbers and telephone sets.

5. First aid kits, safety showers and eyewashes should be within the work area for immediate emergency use, availability of required first aid and rinsing stuff including water and required cleansing agents and functioning of the safety showers/ eye washers should be checked at the beginning of each shift. Similarly, the fire extinguishers and emergency shut-off equipment as well

as emergency numbers and telephone sets should be located near the exit or entry points of the laboratory. A clear path to access must be maintained at all times.

3. GENERAL LABORATORY RULES

6. Following general operating procedures will be observed by the laboratory staff while working in the laboratory:

- Laboratory staff and students will be responsible for maintaining their laboratory in a clean, tidy, safe condition. The staff will be responsible for the safe disposal of all spent up chemicals, solvents, cultures, etc before leaving laboratory at school closing time.
- Eating, drinking and smoking in laboratory will be avoided and if edible items are taken in laboratories, those will not be stored or processed in laboratory refrigerators/freezers or ovens used for laboratory processes.
- Use of contact lenses or applying cosmetics will not be permitted in the laboratories. Hands with forearms having exposure risk will be washed after handling chemical materials and removing gloves before leaving the laboratory.
- Mechanical pipettes will be provided, and mouth pipetting will be strictly prohibited. All procedures will be performed carefully to minimize the risk for creation of splashes or aerosols.
- High risk work will only be performed during working hours when other members of staff are present. Working after hours should only be allowed if it is unavoidable and on SOP's for which risk assessments deem the risk to be low and manageable. The Supervisor will be responsible for assessing the risk of work to be carried out and whether the person supposed to undertake the work is competent.
- Use of faulty equipment or self-repair efforts will be avoided and the faulty equipment will be marked and reported to the supervisor of laboratory manager. If a piece of equipment breaks down or needs maintenance, its decontamination will be ensured before asking someone to work on it.
- Before using any equipment for the first time, instruction manual will be studied, and proper taring will be asked from an experienced operator. All equipment, if not required otherwise, will be turn off when not in use.
- After finishing an experiment, or when taking a break following clean up measures will be considered:
  - Solution container tops and lids of pipettes will be affixed, and containers/pipettes will be placed at appropriate places.
  - All dirty glass ware and used reusable items will be rinsed, decontaminated, washed and placed in proper places.
  - Equipment in use and lights will be turned off and laboratory doors and windows will be closed before leaving.

4. SPECIAL HANDLING PROCEDURES AND STORAGE REQUIREMENTS

7. All chemical containers must have a legible, firmly attached label showing the contents of the container. Labels on incoming containers of hazardous chemicals must not be removed or defaced. Any labels that are damaged must be immediately replaced with labels containing the same identification, warnings, and source information.

8. A hazard review of new materials not previously used in the laboratory must be completed before actual handling of the material begins. Chemical substances (or by-products) developed in the laboratory are assumed to be hazardous in the absence of other information. Store all chemicals in a tightly closed, labelled container, and in a cool, dry, well ventilated area.

9. Follow any substance-specific storage guidance provided in Safety Data Sheet provided with the chemical by suppliers. Use small quantities whenever possible. Monitor school closely to assure that you have tight control over the materials.

5. SPILL AND INCIDENT PROCEDURES

10. Chemical Spills and likely incidents in laboratory may require specific attention and measures to overcome emergency situations and avoid damage from chemical spill or accidental hazards in laboratory. To combat any such untoward situation, the school management will designate a person responsible for Environment, Health and Safety (EH&S) and an emergency number to contact with EH&S to report the spills and accidents. In case of accidental spill of chemicals in laboratory or adverse incidents following procedures will be followed.

- Name of responsible EH&S person to be informed and emergency call number will be written on prominent place in laboratory.
- In case of spill, assess the extent of danger and help contaminated or injured persons by evacuating him from the spill area. Try to avoid breathing fumes and if possible, confine the spill to a small area using a spill kit or absorbent material. Inform other to keep away and abstain from entering in contaminated area by using caution tape and barriers, etc.). Keeping in view spill and risk types following measures should be considered:
  - Small – A trained responding person should use appropriate personal protective equipment and clean-up materials for the chemical spilled. Spill waste should be double bagged in in clear plastic bags duly labelled and proper chemical waste pick-up should be arranged.
  - Large– call on emergency response number for assistance form EH&S person. Notify others in area of spill, turn off ignition sources if any, evacuate the area and try to confine the spill area. Remain on the scene, but at a safe distance, to receive and direct safety personnel when they arrive.
- Chemical Spill on Body or Clothes – Remove clothing and rinse body thoroughly in emergency shower for at least 15 minutes. Seek medical attention and notify supervisor and EH&S person immediately.
- Chemical Splash into Eyes – Immediately rinse eyeball and inner surface of eyelid with water from the emergency eyewash station for 15 minutes by forcibly holding the eye open. Seek medical attention and notify supervisor and EH&S at emergency response number immediately.
- Medical Emergency - Inform supervisor and EH&S on emergency response number and call for medical emergency to shift the affected to nearby hospital for treatment.

6. OTHER PROTOCOL

11. The lab staff must have specific trainings on proper handling of the equipment and chemicals and must understand the hazards. They must review this SOPs demonstrate to the

supervisor and/or science teachers their competence and ability to: 1) identify the hazards and associated techniques to respond and handle the hazard; 2) list the foreseeable emergency situations and describe the proper response to the emergency situations, and 4) know the appropriate control measures to minimize the risks.

12. When working in the lab, the students must: 1) not work alone; 2) be cognizant of all safety information presented in this document; 3) follow all SOPs, lab dress code and use proper PPE while in laboratory; 4) employ only approved amounts of chemicals for any given reaction and 5) discuss issues or concerns regarding chemicals with the Lab Staff, supervisor or the science teacher prior to their use.

13. If there is an unusual or unexpected occurrence when using chemical materials or processes, the LAB staff should document and discuss the occurrence with the Supervisor, Science teacher or designated EH&S person and others who might be using the same chemical or process. Unusual or unexpected occurrences might include a fire, explosion, sudden rise or drop in temperature, increased rate of gas evolution, color change, phase change, or separation into layers that should be documented properly and reported immediately.

7. PRIOR APPROVAL/REVIEW REQUIRED

14. The standing operating procedures for laboratories must be approved by the Secondary School Administration or the District Education Authorities. The emergency response number with designated E&HS personal should be notified and specific staff trainings on laboratory techniques and processes to be used as well as on EH&S measures should be arranged. The SOPs should be reviewed periodically and in case insertion of new SOP or revisions in any of existing procedure then revised SOPs should be re-approved.

SOP reviewed and approved by

Name_____ Signature_____
Date_____