Environmental and Social Management Plan

District Tando Muhammad Khan Package-1

Sindh Early Learning Enhancement through Classroom Transformation (SELECT)

Reform Support Unit (RSU),
School Education and Literacy Department,
Government of Sindh

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G3 Engineering Consultants (Pvt.) Ltd.

DOCUMENT ISSUE

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ABBREVIATIONS & ACRONYMS

ADP	Annual Development Program
BOQ	Bill of Quantity
BOD	Biological Oxygen Demand
CC	Construction Contractor
COD	Chemical Oxygen Demand
CESMP	Contractor's Environmental & Social Management Plan
DC	Deputy Commissioner
DMC	District Municipal Corporations
DOH	Department of Health
EA	Environmental Assessment
ECA	Employment of Child Act
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EPA	Environmental Protection Agency
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMMP	Environmental and Social Management and Monitoring Plan
ESIA	Environmental and Social Impacts Assessment
ESS	Environmental and Social Standards
FGD	Focus Group Discussion
GRC	Grievance Redress Committee
GRFP	Grievance Redress Focal Person
GoS	Government of Sindh
GRM	Grievance redresser Mechanism
JHA	Job Hazard Analysis
IEE	Initial Environmental Examination
IPF	Investment Project Financing
LAA	Land Acquisition Act
LGD	Local Government Department
MoCC	Ministry of Climate Change
NW	North West
OHS	Occupational Health & Safety
OPs	Operational Policies
O & M	Operation & Maintenance
P&DD	Planning & Development Department
PAD	Project Appraisal Document
Pak-EPA	Pakistan Environmental Protection Agency
PAPs	Project Affected Persons
PBS	Pakistan Bureau of Statistics
PCRs	Physical Cultural Resources
PMIU	Project Management Implementation Unit
PM	Particulate Matter
PMD	Pakistan Meteorological Department
PPEs	Personal Protective Equipment's
PSC	Project Supervision and Contract
RPF	Resettlement Policy Framework
SEPA	Sindh Environmental Protection Agency
SEQs	Sindh Environmental Quality Standards
SLGA	Sindh Local Government Act 2013
SMMP	Social Management and Monitoring Plan
SSWMB	Sindh Solid Waste Management Board

TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UTC	Universal Time Coordinated
WB	World Bank

EXECUTIVE SUMMARY

ES1: School Education and Literacy Department (SELD) is responsible for providing education up to higher secondary school level (grade 12). the pressing educational challenges in Sindh, emphasizing the need for School Education Sector Plan and Roadmap for Sindh (SESP&R) 2019–2024, which sets the department's strategic direction. The focus of the SESP&R 2019–24 is early childhood education and care to secondary education. SELD has developed the Sindh Early Learning Enhancement through Classroom Transformation (SELECT) Project to address issues like low enrollment, outdated teaching practices, and inadequate infrastructure financed by World Bank (WB) in August 2021. The objective of the Project is to improve reading skills of early grade primary students and increase students' retention in primary schools, in the 12 selected districts of Sindh. The cost of the Project is US$154.7625 million which includes US$ 54.7625 grant from Global Partnership of Education (GPE). The Project has four Components, Under Component 2: Developing an effective and safe learning environment, 600 Primary schools will be constructed and upgraded into Middle & Secondary Schools (550 & 50). According to project ESMF the Project E&S rating is Moderate because the E&S risks & impacts which may arise during civil work of the Project are temporary, reversible and can easily manage through mitigation measures. This Environment and Social Management Plan (ESMP) has been prepared accordingly to meet the moderate risk level requirements. In Tando Muhammad Khan, 29 schools selected for reconstruction/rehabilitation as per the "School Selection Criteria" notified by the Secretary SELD. An E&S screening checklist was developed by Environment & Social Management Unit (ESMU) of the Project Management & Implementation Unit (PMIU), SELECT which is derived from the E&S Screening Checklist given in the Project ESMF. These 29 schools were screened through E&S Screening Checklist and 21 schools were found suitable for construction/rehabilitation. The schools were also screened through a separate "Technical Need Assessment Checklist". This ESMP provides baseline, E&S risks and impacts, the mitigating measures for the E&S risks and impacts of subprojects which were identified during E&S Screening of schools in the district Tando Muhammad Khan. During Screening of the Schools Stakeholders' Consultation was also conducted with affected parties, interested parties and vulnerable groups.

ES 2: The legal, regulatory, and administrative framework for the construction of schools in Tando Muhammad Khan under the SELECT Project involves compliance with constitutional provisions, national laws and the World Bank ESF. According to World Bank ESF (ESSs) this ESMP has been prepared to meet the moderate risk level requirements. However, according to Sindh EPA Regulations notification Sep 2021, the subproject falls the category of IEE study as per Schedule II of the Regulations. It says that construction of Educational and Academic institutions will be assessed through an IEE study. Please refer to Schedule II – J (5) of SEPA (Environmental Assessment) Regulations 2021.

ES 3: This chapter describes the sub-projects (21 schools) detailed description which are finalized after E&S screenings and Need Assessment Survey. It includes modular, architectural, engineering & site-specific designs, essential safety features, construction schedule, wash facilities, CRI and gender and inclusion features. Due to different climatic conditions in coastal and non-coastal districts, Initially 6 Modular designs prepared due to Non-Coastal; Hot and Dry and coastal; Hot and Humid Climate environment for elementary and Secondary schools' category but due to different shapes and variations in plot sizes, 4 more designs are developed to be implemented according to the shape and size of the plot of subproject sites for all 12 districts. Out of which 3 modular designs have been used for district Tando Muhammad Khan presented in table 6,7 & 8. This chapter also provides the details of building orientation, utilities, life & fire safety system & disaster resilience and hazard specific design features. Passive ventilation and heat reduction strategies are also mentioned. One of the important aspects during construction is labor management, the details of it given such labor camp & drinking and other source of water for labor. Another aspect which needs careful attention during construction is handling and storing construction material, especially hazard material, it also stated in this chapter. During construction

regular school classes will be interrupted, to avoid academic school loss “Alternate School Arrangement” has been done with the collaboration of DEOs, TEOs and Community as per the guidelines which were developed for this purpose. The details of it are given in this chapter as well.

ES 4: This chapter provides Environmental and Social Baseline for 21 school sub-projects across the Tando Muhammad Khan district. The district has a population of approximately 726,119 people residing in 143,956 households. The proposed interventions will be constructed in existing Primary schools. The selected schools are majority (95.24%) located in the rural areas while the remaining (4.76%) are within the urban (built-up areas) environment. The study encompasses a range of factors including topography, geology, climate, surface water and groundwater resources, air and noise quality, soil and flora, fauna, and socio-economic factors like demography, economy, and education. The district's topography is predominantly flat with fertile plains, supporting agriculture. Soils are primarily loamy and sandy, with low seismic activity. Tando Muhammad Khan experiences extreme temperatures and seasonal rainfall variations, with hot, dry summers and cool winters. Monsoon rains can cause significant damage to school structures. Drinking water sources vary across sub-projects, with most hand pumps, 1 subproject sites with communal scheme. However, water quality assessment reveals contamination risks, particularly from high TDS. Ambient air quality monitoring indicates compliance with SEQS, but construction activities may pose risks to air quality and noise levels, especially in rural areas. Limited biodiversity is observed in the project areas, with common flora and fauna species identified. No endemic or endangered species are recorded. No identified protected species or wildlife sanctuaries are found in proximity to project sites, minimizing adverse impacts. None of the Ramsar wetland sites in Sindh are located in Tando Muhammad Khan district. The district has a number of health facilities, but there are discrepancies in comparison to the overall healthcare infrastructure in Sindh. Groundwater is the primary source of water, but sanitation infrastructure is inadequate, leading to issues like open defecation. There are numerous schools in the district, but challenges exist in terms of infrastructure and gender parity. The MPI value indicates a higher incidence of multidimensional poverty in Tando Muhammad Khan compared to the Sindh average. Minor conflicts are resolved locally, indicating a relatively peaceful community. Access to mobile communication is reported to be good, but electricity availability varies across schools and areas. The district's economy is driven by agriculture, livestock, fish farming, industries, and manufacturing. Details of the project environment and pictures are provided in chapter and subprojects E&S screening summary is presented annex B of this report;

ES 5: The Stakeholder Consultation process for the SELECT Project in Tando Muhammad Khan District has been extensive and inclusive, engaging various stakeholders at multiple levels. Stakeholders are identified as project-affected parties, other interested parties, and disadvantaged/vulnerable groups. Thirteen taluka-level consultations reached 511 participants, with a noteworthy 50.09% female attendance, demonstrating robust community interest. These consultations involved representatives from education and social welfare departments, civil society organizations, disability rights groups, minority representatives, parents, teachers, and students. In-depth discussions addressed concerns ranging from school selection to WASH facilities and labor practices, ensuring a comprehensive understanding of community needs. The community's positive sentiment towards the project, recognizing its potential benefits for girls' education and overall school improvement, is emphasized. Specific details are provided in Annexure H & I.

ES 6: Positive Impacts: the proposed subproject is expected to be beneficial to the communities and the state at large including:

- Increased enrolment of school children especially supports to Girl child education
- New infrastructure schools will provide more conducive learning environment and reduce travel distance to access schools
- Construction of toilets and WASH facilities will promote hygiene and sanitation in the schools and thus better health status

- It will create short term employment for skilled and unskilled workers during the
- construction phase
- It will promote or increase the employment or recruitment of more female teachers to meet the demand of increased enrolment of students.
- It would improve to job satisfaction for the teachers that would be working in a better
- School environment.
- It will promote productive parent involvement in education system
- Potential Negative Impacts of the proposed project

The new construction and rehabilitation work for the 21 schools in district Tando Muhammmad Khan will inevitably predispose the bio-physical and social components of the environment to varying degrees of negative impacts such as temporary noise, air pollution, water contamination, increase solid waste burden, occupational health & safety risks, community health & safety risks, potential sexual exploitation and abuse/sexual harassment (SEA/SH) risks, child labor etc. Summary of these potential negative impacts are outlined in Table 39 of this report.

ES 7: Environmental And Social Management and Monitoring Plan (ESMMP) entails several critical components to ensure the effective implementation of environmental and social safeguards throughout the project lifecycle. Key components of the ESMMP include an institutional framework for implementation, monitoring, reporting mechanisms, third-party validation, and the role of various stakeholders. The SELD will serve as the implementing agency, with support from the Project Management Implementation Unit (PMIU), Design & Supervision Consultant (DSC), and other technical and financial support entities. Monitoring and reporting will be carried out at multiple levels, including PMIU, DSC, and contractor levels, ensuring effective implementation of mitigation plans. Third-party validation will further enhance accountability and compliance with environmental and social safeguards. The roles and responsibilities of various stakeholders, including the PMIU, DSC, environment, social safeguard, and gender specialists, are clearly defined to ensure effective coordination and implementation of the ESMP. Contractors will play a crucial role in on-field implementation and adherence to environmental and social management plans. Specific plans, such as the draft-Contractor's Environmental & Social Management Plan (CESMP), Labor Management Procedure (LMP), Camp Management Plan (CMP), and Pollution Control Plan, outline detailed strategies for waste management, traffic control, hazardous material handling, occupational health and safety and community health and safety.

The cost of Rs. 17,496,600/- is the allocated budget for the implementation (for one-year estimation) of the ESMP including the Grievance Redress Mechanism (GRM) running & general community support needs. This has been incorporated as a provisional sum item in the ESMP bill and Bill of Quantities (BOQ). The implementation of the ESMP involves inputs from CC, DSC and PMIU. The CC will be primarily responsible for ensuring the implementation of mitigation measures proposed in the ESMP, which will be part of the contract documents. Hence, the provision of environmental mitigation cost as a separate head in BOQs will be made mandatory in contract documents. However, if the CC fails to comply with the implementation of ESMP and reporting properly, the proponent will enforce compliance with the terms of the contract, including adherence to the ESMP. For the smooth execution of ESMP implementation activities, it has been recommended that all the bills/payments related to EMP implementation will be approved/authenticated by the DSC Environment & Social. ESMP implementation cost will be deducted from Interim Payment Certificates (IPC) until compliance has been done.

ES 8: Grievance Redress Mechanism (GRM) within the SELECT project is designed to efficiently address grievances related to project activities, adhering to World Bank Environmental and Social Standards (ESSs). At the site level, Grievance Redress Cells (GR Cells) led by Community Liaison Officers (CLOs) and Grievance Focal Persons (GFPs) ensure open communication and collaboration for resolving issues raised by Project Affected Persons (PAPs). Complex complaints are escalated to the central Grievance Redress Committee (GRC) at the PMIU level, which

maintains an electronic database and oversees the entire process, ensuring fair and swift resolution. Special attention is given to addressing sensitive grievances such as SEA/SH and VAC. Additionally, a Workers' Grievance Redress Mechanism ensures compliance with labor standards and promotes a harmonious work environment. The GRM emphasizes stakeholder involvement, gender responsiveness, and cultural appropriateness, contributing to positive service delivery and community well-being while aligning with international standards.

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1 INTRODUCTION

1.1 Background

According to 7th Population & Housing Census, which was held in 2023, the current population of Sindh is 55.69 M[1] out of which 46.27% live in rural areas while 53.73% live in urban areas. The gender wise breakdown of population is 52% male and 48 % female[2]. Sindh has 29 districts. The people belong to various ethnicities such as Sindhi, Urdu, Saraki, Punjabi and Pashto. Most of the Population is Muslim followed by Hindu and Christian.

Educational challenges in Sindh are more severe than in the rest of the provinces. At school level, major challenges are low enrolment of students specially girls' enrolment, low transition rate from primary to secondary school, lack of elementary and secondary schools, lack of teachers' capacity, students and teachers' absenteeism, poor quality of education coupled with weak education governance and management The situation of Education Indicators in some districts are worse than other districts in Sindh. The climatic challenges such as flood 2022 and heat waves also contributed to make situation the worse, many schools infrastructures fully and partially damaged due to flood.

The right to free and compulsory education is an internationally acknowledged right. It has been recognized in a few international conventions, covenants and declarations. The Constitution of Islamic Republic of Pakistan 1973 acknowledged the right to free and compulsory secondary education*, "The State shall remove illiteracy and provide free and compulsory Secondary Education within minimum possible period"*.3 In April 2010, Parliament passed Constitution (Eighteenth Amendment) Act, 2010.The amendment made the Right to Education justiciable, by insertion of Article 25-A, which obligates the state to provide free and compulsory education to all children of the age of 5 to 16 years in such a manner as may be determined by law. *"The State shall provide free and compulsory education to all children of the age of 5 to 16 years in such a manner as may be determined by law."*4 After the 18th Constitutional Amendment, Education was devolved to the provincial mandate, and it became the responsibility of the Parliament and Provincial assemblies to legislate for the provision of compulsory education in their respective jurisdictions. Sindh Right of Children to free and Compulsory Education Act was enacted on February 13, 2013[5].

School Education and Literacy Department (SELD) is responsible for providing education up to higher secondary school level (grade 12). SELD has developed the School Education Sector Plan and Roadmap for Sindh (SESP&R) 2019–2024[6], which sets the department's strategic direction takes into account human, technical and financial consideration. The focus of the SESP&R 2019–24 is early childhood education and care to secondary education under the overarching themes on ACCESS, QUALITY and GOVERNANCE taking into account the major challenges confronted by the education sector of the province. This focus is based on the Education Sector Analysis (ESA), which showed that the main constraints to achieving the education-related elements of the Sustainable Development Goals (SDGs) rest with school education. During 2023-24 the Sindh government allocated Rs 312.245 billion for Education sector[7].

1.2 Need for the SELECT Project

An overwhelming majority of the children enrolled in public schools in rural Sindh belong to lower socioeconomic classes. Provision of quality education remains a key challenge, particularly after the COVID-19 school disruption.

[1] https://www.pbs.gov.pk/sites/default/files/population/2023/Sindh.pdf
[2] Sindh Statistic 2022
[3] Article 37 (b), Part II, Chapter 2, Constitution of Islamic Republic of Pakistan 1973
[4] Article 25 A, Part-II, Chapter 1, Constitution of Islamic Republic of Pakistan 1973.
[5] http://www.pas.gov.pk/uploads/acts/Sindh%20Act%20No.XIV%20of%202013.pdf
[6] www.sindheducation.gov.pk
[7] https://www.thenews.com.pk/print/1079237-education-budget-for-new-fiscal-year

The out-of-school children in the province are estimated to be over 7.6 million[8]. It reflects both the large share of never enrolled children and a high rate of children dropping out from schools, especially among students from lower socioeconomic backgrounds, rural locations, and particularly girls. With the advance of the pandemic and continued disruption to education, it is likely that children may never return to school or may drop out. This fate is especially alarming for girls who, prior to COVID-19, lagged boys in the primary Gross Enrolment Ratio and primary completion rates.

Teachers' pedagogical practices in Sindh are based on outdated, teacher-centered, and passive student learning approaches in which teachers cover significant amounts of content, irrespective of the comprehension and learning needs of students in their classrooms. Children of different ages and different learning abilities often inhabit the same classroom. However, teachers do not have the instructional skills to adapt learning content and teaching methods for students with different abilities and across multiple ages.

The absence of a conducive learning environment in schools is a binding constraint for initial access, learning, safety, and retention in schools. Out of 49,103 schools in Sindh, 44,296 (90%) are primary schools which is one of the main reasons for students' dropout after primary. In Sindh, the ratio of government primary schools to government elementary schools (grades 6–8) is 16 to *1 (44,295 primary schools and 2,712 elementary or elementary schools),* meaning that space in government schools is very limited for students from grade 6 onward, increasing the potential for dropping out[9]. Almost 50% of children leave school by grade 5, and another 27% leave the education system during the transition from primary to elementary school. The gender wise ratio of school enrollment is 62% boys and 38% girls at Primary level[10].

In Sindh, 73 % Primary Schools are functional. Insufficient basic facilities, such as electricity and WASH, are also widespread issues across more than 34% of schools. The lack of these facilities is especially alarming given the importance of having access to clean water and sanitation practices that could keep students and teachers safe. In response, SELD developed the criteria for Basic Quality Standard Schools by using seven basic standards. However, in 2018 only 1,366 schools (roughly 3% of all schools in Sindh) satisfied these criteria. Thus, most of the schools in Sindh do not provide safe and conducive learning spaces for their students[11].

Climate change and its' effects on student access to safe learning spaces is a challenge for education continuity. Sindh experiences climate change-induced shocks due to incidences of severe droughts, heat waves & flooding. Natural disasters impact schools through damage to buildings with subsequent loss of school days due to school inaccessibility, and by influencing perceptions around student safety when in school. Providing safe learning spaces with appropriate learning environments is an important consideration when designing and maintaining school infrastructure and resources.

The SELD & the World Bank initiated "Sindh Early Learning Enhancement through Classroom Transformation (SELECT)" in July 2021, to address the above-mentioned educational challenges in Sindh.

1.3 Project Overview

The SELCT Project aim is to improve reading skills of early grade primary students and increase student retention in primary schools, in 12 selected districts of Sindh. The Project has the following four components:

[8] https://tribune.com.pk/story/2457519/262m-children-are-out-of-school
[9] PAD-SELECT
[10] https://rsu-sindh.gov.pk/contents/profiles/Profiling%202019%2013-01-2020.pdf
[11] PAD-SELECT

Component 1	**Transforming teaching practices in the early grades:** Subcomponent 1.1: Implementation of a Continuous Professional Development (CPD) model for improved literacy skills in the early grades Subcomponent 1.2: Behavioral nudges for improved learning Subcomponent 1.3: Technical Assistance for Transforming Teaching Practices
Component 2	**Developing an effective and Safe learning environment** – by school up-gradation to elementary level and school rehabilitation through refurbishing of existing classrooms and adding new classrooms to existing schools, provision of furniture, and adequate WASH facilities by actively pursuing eco-friendly materials and designs
Component 3	**Improving system capacity for effective school leadership and management support** Subcomponent 3.1: Establishing a technology-based student attendance monitoring system. Subcomponent 3.2: TA and capacity building for school leadership and local education office management to mitigate student dropout
Component 4	Technical Assistance and Project Management

1.4 Project Districts

The Project has been implemented in 12 selected districts of Sindh which include Sanghar, Tando Muhammad Khan, Matiari, Thatta, Badin, Sujawal, Mirpurkhas, Jacobabad, Ghotki, Kashmore, Kambar-Shadadkot & Shikarpur.

The main aim of Component 2 is to establish environment conducive to learning that maximize available academic/instructional space and create synergy with pedagogical approaches while supporting safe learning spaces, particularly for girls. Under Component 2 600 primary schools will be upgraded into middle & secondary (550 middle & 50 secondary) with the following initiatives.

i. Carrying out school rehabilitation through refurbishing existing classrooms;
ii. Adding new classrooms to existing schools;
iii. Providing furniture, Providing adequate Water, Sanitation and Hygiene (WASH) facilities with emphasis on eco-friendly materials and designs with special focus on gender.

School blocks will incorporate sustainable utilities including solar power, gender-responsive features and environmental considerations in the design. The existing School Management Committees (SMCs) are formed to ensure local correlation and support for effective implementation and improvements for construction of school building.

Out of 600 schools, 29 existing Primary schools were assessed in Tando Muhammad Khan Through E&S and need assessment screening checklists. Out of 29 schools in district Tando Muhammad Khan
, 21 have been shortlisted for upgrading: 19 to elementary schools and 2 to secondary schools. The schools have been selected based on the E&S screening and technical need assessment screening.
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1.5 District Tando Muhammad Khan Background

District Tando Mohammad Khan (TMK) is located between 68° 15' 14" to 68° 44' 2" East longitudes and 24° 45' 41" to 25° 17' 8" North latitudes and is situated at a distance of 35 km from Hyderabad. It is bordered by Hyderabad and Tando Allahyar districts to the North, Badin district to the South and East, and Thatta district to the West. River Indus flows in the Northwest. According to the 2023 census, the population of Tando Mohammad Khan (TMK) district is 726,119 with a total of 143,956 households.[12] Location map of District Tando Muhammad Khan with their surrounding is presented in Figure 1 below.

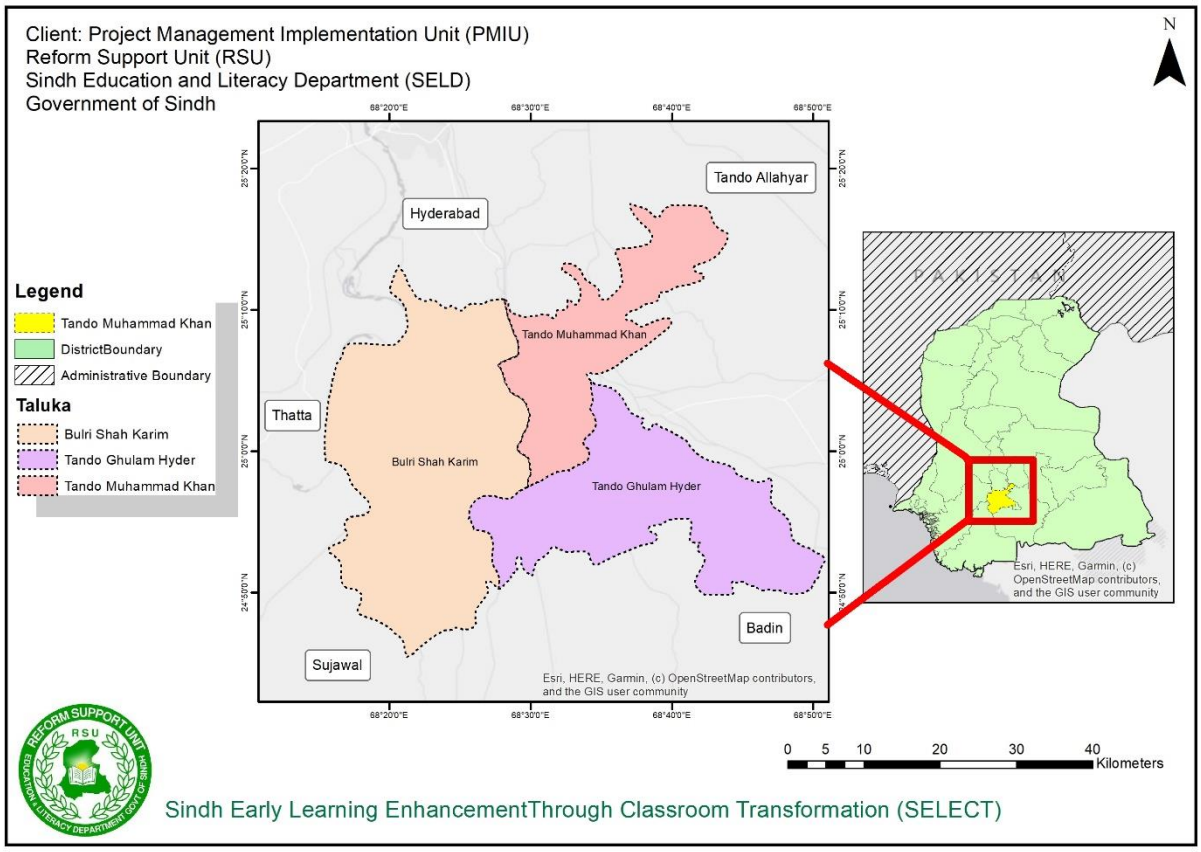


Figure 1: Tando Muhammad Khan District

1.6 Schools in Tando Muhammad Khan

Tando Muhammad Khan district has a significant number of government schools which are managed by SELD. According to the Annual School Census Report (2022-23), District Tando Muhammad Khan has 969 schools, out of which 653 (67.4%) are mixed schools, 191 (19.7%) are boys schools 125 (12.9%) are girls schools. The student enrollment is 78,186 out of which 47,714 (61%) are boys & 30,472 (39%) are girls. A total of 2,596 teachers are deployed in schools. The gender wise breakdown of teaching staff is 1,906 (73.4%) male & 690 (26.6%) females.[13]

[12] https://www.pbs.gov.pk/content/announcement-results-7th-population-and-housing-census-2023-digital-census

[13] Tando Muhammad Khan District Profile.pdf -RSU

1.7 Need & Purpose of the Environment and Social Management Plan (ESMP):

According to the Environment and Social Management Framework (ESMF), the Environmental and Social risk rating of the sub-projects is assessed as **moderate**, due to temporary, reversible, and localized nature of environmental and social risks and impacts that could be linked to low to moderate environmental degradation and social disturbance during civil works. According to the World Bank Environment and Social Standards (ESSs) & National & Provincial Environment & Social legislation of Pakistan, it is necessary to reduce and manage potential environment and social impacts of the sub-projects by proposing mitigating measures. This ESMP fulfills these requirements & derived from Project ESMF.

This Environmental and Social Management Plan (ESMP) has been developed for 21 school sub-projects located in Tando Muhammad Khan district. Following site screenings, a cumulative ESMP has been devised due to similar environmental and social risks across all sites. However, any specific risks and impacts unique to individual sites are addressed separately. The ESMP evaluates the environmental and social implications of the sub-projects, offers guidance on implementing appropriate measures in response to the scale of impacts, and presents an Environmental and Social Management and Monitoring Plan (ESMMP) along with estimated costs for its execution and capacity building requirements.

1.8 Objective of ESMP:

The objective of ESMP is to prepare a detailed roadmap to identify and address the anticipated environmental and social sub-projects risks & impacts and to propose their mitigation measures.

1.9 Methodology of ESMP

1.9.1 Meetings with SELECT Team

This was the very first step to embark on the study initiated through meetings held with the SELECT team and Design & Supervision Consultant (DSC) team. In the meetings, discussions were made to clarify the nature and location of sub-projects' sites in environmental and social perspectives.

1.9.2 Desk Research for Secondary data Analysis

Prior to the detailed site investigations, it is important to overview the relevant previous studies to ascertain their applicability and relevance to the area of proposed sub-projects. An extensive literature review was conducted to obtain environmental and social baseline information for the sub-projects site. In addition to that the applicable national and provincial policies, guidelines, legislations and World Bank 10 Environmental and Social Standards (ESS) were also studied. Beside this,

Following documents have also been reviewed:

- SELECT Project Appraisal Document (PAD)
- SELECT Environmental and Social Management Framework (ESMF)
- Environment and social commitment plan (ESCP)
- Stakeholder Engagement Plan (SEP)
- Labor Management Procedure (LMP)
- Implementation strategy for Climate Responsive Indicators (CRI)

1.9.3 Screening of Sub-project Sites

The SELECT Environmental and Social Management Unit (ESMU) team developed an Environment and Social Screening Checklist (see Annex A), which was customized from the E&S

screening checklist stated in the ESMF. An orientation session was conducted for the DSC team to develop an understanding and screening of subproject schools. The project site screening focused on collecting environmental and social (E&S) screening data from schools related to the overall suitability of proposed sites for construction and further development. For example: whether or not the locations are suitable for construction verified through the E&S screening checklist (Building), sensitive receptors (ecologically protected areas, cultural heritage sites), land use in the microenvironment, sources of water/electricity supply, sewerage, and drainage system exists, current and post solid waste management, land available for the construction and preliminary screening of impacts through the checklist. This screening also focuses on topics like gender, Sexual Exploitation & Abuse/ Sexual Harassment (SEA/SH), safety within the school environment, and access to resources. These screenings were performed through a digital tool, Kobo Toolbox. It is a free toolkit for collecting and managing data in challenging environments and is the most widely used tool in humanitarian emergencies.

1.9.4 Reconnaissance Surveys and Monitoring

Reconnaissance surveys during assessment of the microenvironment of all district Tando Muhammad Khan schools' sites were conducted and assessed any sensitive receptors as well as the baseline conditions. Monitoring of environmental components was also undertaken by G3EC Consultant. Following relevant attributes of environment and social were observed and monitored.

- Ambient air quality
- Groundwater / drinking water quality
- Ambient noise level measurement
- Identification of Cultural Heritage Sites adjacent to the subprojects
- Trees in the proposed site,
- Social settings close to the sites

1.9.5 Stakeholder Consultation

Stakeholder consultations were carried out during preparation of ESMP. A series of consultative meetings were undertaken with stakeholders which are the direct beneficiaries of the sub-projects including local residents (male and female), teachers, headteachers, Government Departments (DEOs and TEOs), and NGO/CBO.

Stakeholder Consultation sessions were conducted during the survey with following objectives:

- To inform the communities about the Project & gather feedback from them on the sub-projects
- To identify potential social and environmental impacts of the sub-projects and their mitigation measures. To document the concerns of the local community, and to identify issues that may require additional assessment in order to address these concerns.

1.9.6 Layout & Table of Content of ESMP:

This ESMP consists of 08 chapters.

- Chapter 1: introduces the project, including project background and need for the project & ESMP & its Methodology.
- Chapter 2: presents a review of national and provincial regulatory framework, and WB Environmental and Social Standards (ESS).
- Chapter 3: provides a detailed description of the sub-projects.
- Chapter 4: is an assessment of environmental and social baselines of sub-projects sites.

- Chapter 5: provides information on stakeholder consultations conducted for the sub-projects.
- Chapter 6: presents an assessment of potential environmental and social impacts, and proposed mitigation measures.
- Chapter 7: presents environmental and social impacts mitigation measures & their monitoring plan.
- Chapter 8: presents the Grievance Redress Mechanism for stakeholders and general public.

This ESMP Report is being submitted to PMIU SELECT to fulfil the conditions of deliverables as stated in the TORs.

2 LEGAL, REGULATORY AND ADMINISTRATIVE FRAMEWORK

During execution of civil work, it is compulsory to compliance with Environment and Social Provision in the Constitution of Pakistan, National and Provincial laws as well as the WB, ESSs related to the environmental and social issues.

Following are the details of the laws and regulations which will be applicable during construction of schools in Tando Muhammad Khan under Component 2 of the SELECT Project.

2.1 Constitution of Pakistan

The constitution of Pakistan contains provision for environmental protection and resource conservation. The Fourth Schedule of the Constitution of Pakistan established the concurrent legislative list of subjects for the Federal and Provincial legislatures. “Environmental Pollution and Ecology” was included in the concurrent legislative list, which meant that both Federal and Provincial governments have constitutionally mandated responsibilities for the management of pollution and natural resources.

2.2 National Laws & Regulations

The following national laws & regulations are applicable to the SELECT Project:

1) National Environmental Policy, 2005
2) National Conservation Strategy, 1993
3) Antiquities Act 1975
4) Pakistan Employment of Children Act 1991
5) The Protection against Harassment of Women at the Workplace Act 2010 (Amendment 2022)
6) Building Code of Pakistan 1986 (Seismic Provisions2007)

2.3 Provincial Laws & Regulations

After the 18th Amendment in the Constitution of Pakistan many Federal subjects devolved to Provincial legislation including Environment. The legislative assembly of the Sindh Province passed the bill on 24th February 2014 to enact the “Sindh Environmental Protection Act 2014”. The Act is the principal legislation for the protection, improvement, and rehabilitation of the legislation of environment of Sindh Province with the help of legal action against polluters and green awakening of communities. It equally lays emphasis for the preservation of the natural resources of Sindh and to adopt ways and means for restoring the balance in its ecosystem by avoiding all types of environmental hazards. GoS has established “Sindh Environmental Protection Agency” (SEPA) under the Environment Climate Change & Coastal, Department. It is headed by Director General (DG) who exercises powers delegated to him by the Provincial Government.

SEPA (Environmental Assessment) Regulations 2021 categorizes projects into three separate schedules depending on whether a project requires an Environmental Checklist (Schedule-I), IEE (Schedule-II) or an EIA (Schedule-III). The project falls the category of IEE study as per Schedule II of the Regulations. It says that construction of Educational and Academic institutions will be assessed through an IEE study. Please refer Schedule II – J (5) of SEPA (Environmental Assessment) Regulations 2021.

The following Provincial E&S laws are applicable to the SELECT Project:

1) Sindh Climate Change Policy 2022

2) Sindh Environmental Protection Act 2014
3) SEPA (Environmental Assessment) Regulations, 2021
4) Sindh Environmental Quality Standards 2016
5) Hazardous Substance Rule, 2014
6) The Sindh Cultural Heritage (Preservation) Act, 1994
7) Sindh Child Protection Authority Act 2011 (Amendment) 2021
8) Sindh Transparency and Right to Information, 2016
9) Sindh Minimum Wages Act, 2015
10) Sindh Solid Waste Management Board Act, 2014
11) Sindh Sanitation Policy 2017
12) Sindh Occupational Safety and Health Act, 2017
13) Sindh Bonded Labour Abolition Act 2015
14) The Sindh Terms of Employment (Standing Orders) Act, 2015
15) The Sindh Payment of Wages Act, 2015
16) The Sindh Minimum Wages Act, 2015
17) The Sindh Prohibition of Employment of Children Act, 2017
18) The Sindh Employees' Social Security Act, 2016 (Amendment) 2018
19) Sindh Resettlement & Rehabilitation Policy 2023

All the above-mentioned applicable regulatory requirements both at the Federal & Provincial level during schools' constructions are summarized in below Table 1.

Table 1: Regulatory requirements for the Sub-Projects

Policy/Legislation	**Summary**	**Compliance to the sub-projects**
Federal Laws & Legislations & Policy Requirements		
National Environmental Policy, 2005	The National Environmental Policy aims to protect, conserve and restore Pakistan's environment in order to improve the quality of life for the citizens through sustainable development	This ESMP document prepared aim to protect, conserve and restore the environment at the sub-projects sites by providing mitigation / compensation measures.
National Conservation Strategy, 1993	Under this strategy, the Project requires to be executed in such a way that it has approach towards promoting sustainable development, conserving and managing natural resources.	The sub-projects have low to insignificant environmental impacts as the footprints of the sub-projects do not intrude or disturb the ecological areas as well as natural resources. The designing of the new schools' buildings incorporates the features which will be sustainable and do not pose significant environmental impacts. Tree cutting will be avoided. Compensatory plantation of trees will be provided if trees will be cut down.
Statutory Requirements		
Antiquities Act 1975	Makes it illegal to undertake any construction work within	There is no gazette archeological / cultural

Policy/Legislation	Summary	Compliance to the sub-projects
	200 ft. (60 m) of a building, site or monument protected under the Act. Requires that the Department of Archaeology and Museum, Government of Pakistan should be informed if any archaeological artefact is found during excavation.	heritage site protected under this act falls within 200ft. of all proposed school sites. The possible discovery of heritage resources particularly archeological resources or random findings during the execution of civil works especially excavation for foundation, will require measures to manage chance finds. This ESMP includes “Chance Find" procedures for protection of any tangible cultural heritage (archeological) discovery during construction phase.
Pakistan Employment of Children Act 1991	According to this Act, no child shall be employed or permitted to work in any of the Project interventions e.g., skilled and unskilled labor work or in any other activity who has not completed his fourteenth (14) year of age.	There is a chance of employment of a child by a contractor. In accordance with this act contractor will be bound not to permit any child under 14 years to engage in construction activities.
The Protection against Harassment of Women at the Workplace Act 2010 (Amended 2022)	The Protection against Harassment of Women at the Workplace Act 2010, (Amended) 2022 aims to safeguard women's rights and create a safe working environment free from harassment.	This act protects women against all kinds of harassment at the workplace, in case of SELECT, schools’ sites will be considered as workplace and this law will be applicable for contractors, workers and staff.
Building Code of Pakistan 1986 (Seismic Provisions2007)	It obligates following: • The provisions of the Building Code of Pakistan (Seismic Provisions-2007) shall apply for engineering design of buildings, like structures and related components. • Construction of buildings in violation of the Building Code shall be considered as violation of professional engineering work as specified under clause (XXV) of section 2 of the Act	School buildings will be constructed and this code is applicable for comply with the seismic provision during design.
Land Acquisition Act 1894	This Act provides law for the acquisition of land needed for public purposes and for	This law is not applicable as land acquisition is not required for sub-projects.

Policy/Legislation	Summary	Compliance to the sub-projects
	companies and for determining the amount of compensation to be made on account of such acquisitions. The LAA comprises 55 sections pertaining to area notification and surveys, acquisition, compensation and appointment, awards and disputes resolution, penalties and exemptions. The LAA has been the de facto policy regarding resettlement and compensation to the Title holders only. It lays down procedure for acquisition of private properties for public purposes and their compensation.	
Provincial Laws & Regulations		
Sindh Climate Change Policy 2022	This policy actively engaged in addressing climate change through various initiatives, including measures to enhance climate resilience, promote sustainable development, and mitigate environmental degradation. These efforts likely involve strategies such as promoting renewable energy sources, improving water management practices, enhancing agricultural resilience, and increasing public awareness about climate change impacts and adaptation measures. Collaboration with international partners, capacity building, and policy integration across sectors are also crucial components of Sindh's approach to addressing climate change challenges.	Sub-projects will comply with climate change policy by incorporating Climate Responsive Indicators (CRI) implementation strategy to implement resilient design features such as proper insulation, natural ventilation, and energy-efficient lighting to reduce energy consumption and minimize greenhouse gas emissions.
Sindh Environmental Protection Act 2014	The Act envisages protection, improvement, conservation and rehabilitation of the environment of Sindh with	After the 18th amendment, the environment has become a provincial subject; therefore, this Act will govern the sub-projects activities.

Policy/Legislation	Summary	Compliance to the sub-projects
	the help of legal action against polluters. It green awakening of communities. It also equally lays emphasis for the preservation of the natural resources of Sindh and to adopt ways and means for restoring the balance in its eco-system by avoiding all types of environmental hazards.	Temporary noise and air pollution impacts are expected during construction. Impacts will be minimal & in short duration, only during the construction phase. No on-site rock crushing and major excavations are anticipated. No such heavy machinery is expected to be involved during the construction except during concrete mixing process using diesel engines. Suitable mitigation measures are proposed in this ESMP.
SEPA (Environmental Assessment) Regulations, 2021	SEPA (Environmental Assessment) Regulations 2021 categorizes projects into three separate schedules depending on whether a project requires an Environmental Checklist (Schedule-I), IEE (Schedule-II) or an EIA (Schedule-III). The subproject falls the category of IEE study as per Schedule II of the Regulations. It says that construction of Educational and Academic institutions will be assessed through an IEE study. Please refer Schedule II – J (5) of SEPA (Environmental Assessment) Regulations 2021.	The project will prepare district wise ESMPs, as the project cover 12 district of Sindh and the assessment will perform in three phases so, DSC E&S team requested the authority to allow for submission of District wise ESMP rather than a 12 district IEE/EIA. The ESMP will cover all the aspects and proposed mitigation measures with monitoring and management plans. Minutes of the meetings are attached in annexure I.
Sindh Environmental Quality Standards 2016	Sindh EPA has revised the Environmental Quality Standards (EQS) and developed Sindh Environmental Industrial Wastewater, Effluent, Domestic Sewerage, Industrial Air Emission, Ambient Air, Noise for vehicles, Air Emissions for Vehicles and Drinking Water Quality Standards which are applicable for all pollution streams.	The sub-projects will comply with SEQS 2016. A baseline for Air, Water and Noise is developed in this ESMP on the basis of this monitoring plan is made and includes in Chapter 7, which will guide the proponent and contractor(s) to monitor the compliance of SEQS for any pollutant streams. Concerns of unchecked fuel, oil & lubricant spills in soil & waterways cannot be ruled out. Drifts of such spills may

Policy/Legislation	Summary	Compliance to the sub-projects
		become dangerous to the eco-system. Mitigation measures are proposed in chapter 6. Construction workers, tool operators will regularly be educated & trained in safeguards. Safe practices and proper disposal of petrochemical drums are also proposed in ECP: 1 Waste Management.
Hazardous Substance Rule, 2014	The rules also specify procedures to be adopted for import, transport, and disposal of hazardous waste; and identify two hundred and forty-three hazardous substances and synthetic chemicals. The rules also specify the requirement of obtaining license from Sindh EPA for the import, transport, storage and disposal of hazardous substances as specified in Schedule I of the Rules.	It is least expected that during the construction of school buildings, any hazardous substances as specified in these Rules are used. However, if used, the provisions of this Rule will be followed.
The Sindh Wildlife Protection, Preservation, Conservation and Management Act, 2020 (Amended from Sindh Wildlife Protection Ordinance, 1972)	This Act provide the protection, conservation, preservation, sustainable use of wildlife for establishment, management and maintenance of protected areas in the Province of Sindh and to provide for matters connected therewith. The Act specifies classifications of the protected areas: national parks, wildlife sanctuaries and game reserves. Activities such as hunting, trapping wildlife, polluting / diverting resources, damaging infrastructure / cultural resources, cutting flora, cultivation, creating noise, quarrying / mining etc. is prohibited in protected areas.	In terms of project siting is concerned, 21 of the school sites are not located within an ecologically sensitive area protected under the said Act.
The Forest Act (Sindh Amendment) Act, 1994	The Act empowers the provincial forest departments to declare any forest area as reserved or protected.	The proposed school sites do not intrude upon or affect any reserved or protected forest areas designated under the

Policy/Legislation	Summary	Compliance to the sub-projects
	This Act prohibits the tree cutting in reserved and protected forest designated under the Act. Permission must be taken from the Sindh Forest department to execute the cutting of any tree. Section 1(1) of this Act mentions that illegal tree cutting is subjected to pose liability or punishment to the project owner.	Act. The planned schools will not be constructed on, nor will they negatively impact, any forest areas protected by relevant law (See Figure 30).
The Sindh Cultural Heritage (Preservation) Act, 1994	Makes it illegal to destroy, damage, remove or alter any cultural heritage site designated under this Act.	No cultural / religious heritage sites have been reported near the proposed school sites.
Sindh Child Protection Authority Act 2011 (Amendment) 2021.	This Act aimed to bolster the protection and welfare of children in the Sindh province of Pakistan. The amendment introduced several key provisions, including expanded definitions of child abuse, enhanced mechanisms for reporting and responding to cases of abuse, strengthened safeguards for child victims and witnesses, increased penalties for perpetrators, and improved coordination among relevant government agencies and stakeholders involved in child protection efforts. Additionally, the amendment likely addressed emerging issues and challenges in child protection, such as online abuse and exploitation, to ensure that the law remains relevant and effective in safeguarding the rights and well-being of children in Sindh.	This Act will be applicable at the sub-projects sites during construction and ensure that no child is abused or involved in child labor.
Sindh Transparency and Right to Information, 2016	The purpose of this Act is to provide transparency and freedom of information to ensure that all citizens have better access to public information, to make the government more accountable to citizens, to	The sub-projects will remain open in terms of information sharing throughout its lifecycle. Furthermore, the sub-projects will engage stakeholders and public at-large in a systematic and continuous manner.

Policy/Legislation	Summary	Compliance to the sub-projects
	enforce the fundamental right to information in all matters of public importance, to ensure transparency in all Government matters.	Moreover, the sub-project will establish a grievance redress mechanism to ensure transparency in all aspects.
Sindh Minimum Wages Act, 2015	The laws relating to the minimum wages, i.e., the minimum Wages for Unskilled Workers Ordinance 1969, Minimum Wages Ordinance 1961, Cost of Living Allowance, and Sindh Employees Special Allowance have been merged in the Sindh Minimum Wages Act 2015. The Act provides for the regulation of minimum rates of wages and various allowances for different categories of workers employed in certain industrial and commercial undertakings and establishments.	This act is applicable for the sub-projects as hiring of unskilled labor will be needed during construction. The contractor working for the sub-projects will be bound to pay the worker as per the guidelines of this Act.
Sindh Solid Waste Management Board Act, 2014	The SSWMB Act, 2014 enacted to establish a board for collection and disposal of all solid waste, to arrange effective delivery of sanitation services, to provide pollution free environment and to deal with other relevant matters.	Some activities under Sub-projects will generate the different types of wastes, e.g., construction related waste and e-waste etc. These wastes will bemangled accordance with the SSWMB Act.
Sindh Sanitation Policy 2017	The vision of the policy is to provide the population of Sindh with better sanitation service and to make sure that the entire population of Sindh has access to a safely managed sanitation service.	One of the reasons for adolescent girls' dropout from schools is the unavailability of proper WASH facilities in schools. The sanitation situation of schools will be improved by providing WASH facilities, therefore these sub-projects will directly contributing to achieve the outcome of the Sindh Sanitation Policy 2017.
Sindh Occupational Safety and Health Act, 2017	The act mentions health and safety requirements which need to be ensured to be complied by the employer/site in-charge and the workers.	Under the Sindh Occupational Safety and Health Act, 2017, the contractor will be responsible to ensure the health and safety of the workers at workplaces (construction

Policy/Legislation	Summary	Compliance to the sub-projects
		sites are also considered as workplace under the act).
Sindh Bonded Labour Abolition Act 2015	The Act abolishes the bonded labour system and decrees a laborer free. Section 4 (2) also mentions, “no person shall make any advance under, or in pursuance of, the bonded labour system or compel any person to render any bonded labour or other form of forced labour”. The practice of bonded labor has become a punishable offence after enactment of this act (with imprisonment for a term which shall not be less than two years nor more than five years and is to pay a fine not less than Rs. 100,000/=.	The projects contractor will be bound to abide by this Act.
The Sindh Terms of Employment (Standing Orders) Act, 2015	This law deals with terms of employment, appointment letter, inquiries, disciplinary proceedings, dismissal, gratuity, group insurance and closure of establishment.	This Act will be applicable for the workers during sub-projects construction.
The Sindh Payment of Wages Act, 2015	This law deals with payment of wages, deductions, fines and redress of grievance of workers in case of non-payment, delay in payment and less payment of wages.	This Act will be applicable for the workers during sub-projects construction.
The Sindh Minimum Wages Act, 2015	This law through tripartite Minimum Wages Boards deals with fixation of minimum rates of wages for various categories of workers in the province of Sindh.	This Act will be applicable for the workers during sub-projects construction.
Sindh Resettlement & Rehabilitation Policy 2023	The Sindh Resettlement & Rehabilitation Policy 2023 aims to provide comprehensive support for displaced persons, focusing on their resettlement and socioeconomic integration within the province. It emphasizes sustainable livelihoods and infrastructure development to ensure the well-being of affected communities.	This policy does not apply as the land sub-projects are situated within the established boundaries of government-owned school lands.

Policy/Legislation	Summary	Compliance to the sub-projects
The Sindh Prohibition of Employment of Children Act, 2017	The law prohibits employment of children below 14 years of age and engagement of adolescents (persons below 18 years) on hazardous work.	This Act will be applicable for the workers during sub-projects construction.
The Sindh Employees' Social Security Act, 2016 ((Amendment 2018)	This law provides health coverage, sick leave and work injury benefits to secured workers. It also covers medical treatment of dependents of secured workers.	This Act will be applicable for the workers during sub-projects construction.
The Sindh Workers' Compensation Act, 2015	This law deals with worker's compensation in case of injury and death.	This Act will be applicable for the workers during sub-projects construction
International Treaties and Conventions		
ILO Conventions	C138–- Minimum Age Convention, 1973 (No. 138) Minimum age specified: 14 years	It will be ensured that any of the construction labor/worker involved under the project is not less than 14 years of age.
The Montreal Protocol (a protocol to the Vienna Convention for the Protection of the Ozone Layer) on Substances that Deplete Ozone Layer and associated amendments, 1987	This convention makes it illegal to use such substances which may contribute to cause depletion to ozone layer.	It is least expected that during construction, any substance which contribute to cause depletion to ozone layer will be used. However, it will be ensured that any of the substance will be avoided during the project activities.
Ramsar Convention on Wetlands, 1971	One of the obligations of signatories of the Ramsar Convention are, to designate wetlands for the List of Wetlands of International Importance; There are nineteen Ramsar sites in Pakistan.	No subproject site is located within the Ramsar site.
IUCN Red List of Threatened Species	Identification of threatened species as per the IUCN Red List defines the global conservation status of biological species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies	No threatened species of animals or any birds are observed as per the IUCN Red List during the survey of proposed school sites

2.4 World Bank Environmental and Social Standards (ESSs)

Following is the summary of Environmental and Social Standards (ESSs) of the World Bank with an assessment of their relevance for SELECT.

Table 2: Relevant Environmental and Social legislations at Provincial Level

Environmental and Social Standards (ESSs)	Description	Relevance and Management
ESS-1: Assessment and Management of Environmental and Social Risks and Impacts	The Standard sets out the Client's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs)	Construction of schools comprise of site-specific interventions including construction of WASH facilities, rehabilitation through refurbishing existing classrooms, and new classrooms to existing schools. Though no major environmental or social issues are envisaged, low to moderate impacts are expected, if the activities are not carried out with proper environmental and social mitigation measures. This ESMP has been prepared to identify risks and related mitigations in the light of ESS1 requirements.
ESS-2: Labor and Working Conditions	This standard recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers including fulltime, part-time, temporary, seasonal and migrant workers.	Since the school will be constructed by independent contractors, ESS2 is relevant. Potential categories of workers are as follows: labor, workers & Primary supply workers (construction material suppliers, suppliers of essential/raw material like WASH equipment, etc.) Under the commitments of ESCP, the project level Labor Management Plan (LMP) and Codes of Practice are developed and will be part of bidding document. The contractor level CESMP will be prepared and added to all relevant contracts including OHS-related clauses. A labor specific Grievance Redressal Mechanism (GRM) has been developed and operationalized as per guidance of ESS2 and will be a part of the contractor level LMP.
ESS-3: Resource Efficiency and Pollution Prevention	This standard recognizes that economic activity and urbanization often generate	ESS3 is relevant as the Sub-Projects are likely to involve air emissions, use of fuels

Environmental and Social Standards (ESSs)	Description	Relevance and Management
	pollution to air, water, and land, and consume finite resources that may threaten people, eco- system services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable.	and other chemicals, and potential contamination of land and water during construction activities. There is a major risk associated with the quality of drinking water supplied to the schools, due to insufficient water quality in most districts of the province. Provision for water quality assessment and monitoring will be included in the district specific ESMPs. Risks are envisaged with disposal of waste due to lack of proper drainage systems in many of the schools. Therefore, proper disposal and drainage system needs to be devised for such schools. During the civil works, the Sub-Projects is anticipated to generate construction waste and wastewater. The potential risks and their impacts are assessed in this ESMP and necessary mitigation measures are proposed. Adequate awareness building trainings shall be included for the Contractor's staff for the efficient use of water and other resources during construction. Where possible, the sub-projects will pursue eco-friendly classroom design with natural lighting and temperature control, and will utilize cost-effective low carbon technology such as solar panels to generate electricity in schools and will ensure the rehabilitation activities are easy to maintain at low cost.
ESS-4: Community Health and Safety	This standard recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts	District Tando Muhammad Khan falls under Zone 2A according to severity of seismic hazard. This zone is characterized with low to moderate seismic hazard. Existing school buildings and

Environmental and Social Standards (ESSs)	Description	Relevance and Management
	from climate change may also experience an acceleration or intensification of impacts due to project activities.	all additional classrooms / buildings need to be screened against safety protocols suggested by the Sindh Provincial Disaster Management Authority (PDMA). School building designs will comply with the same. Construction activities and construction related vehicular movement can also have negative impacts on the school children and staff within the school premises and also to the nearby communities due to increase in air pollution, dust and noise. A Traffic and Road Safety Plan, proportional to the scope of the sub-project, will be prepared by contractors. In addition, exposure (and interaction in some cases) of school children and teachers with labor and other construction staff poses a security risk, including that Sexual Exploitation &Abuse/ Sexual Harassment & Violence Against Children (SEA/SH & VAC), culturally inappropriate behavior, etc. and the risk of conflict with local communities due to the mentioned risks and otherwise. Accidents and incidents reporting has been incorporated into the ESCP. To mitigate the above, a Community Health and Safety (CHS) Plan is prepared and part of this ESMP. An Emergency Response Plan, proportional to the sub-project risks, is part of Contractor's-ESMPS including early warning systems, evacuation plans, fire safety plans etc.
ESS8: Cultural Heritage	This standard recognizes that cultural heritage provides continuity in tangible and	ESS8 is relevant. There is no archeological, cultural or religious sites to be affected

Environmental and Social Standards (ESSs)	Description	Relevance and Management
	intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle.	by the Sub-projects as activities will occur within existing school locations. But as the Sub-projects involves digging and excavation activities, a Chance Finds Procedure is prepared and made part of the bidding document to require contractors' compliance with the specified measures.
ESS-10: Stakeholder Engagement and Information Disclosure	This standard recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.	The risk relevant to the stakeholders include: lack of engagement with directly affected parties, other interested parties and marginalized groups resulting in limited success for sub-Project activities; absence of regular beneficiary feedback; ineffective and inaccessible GRM etc. Sub-project has prepared a Stakeholder Engagement Plan (SEP) to adequately address such risks. This ESMP also has a section on GRM and will also be referring to the World Bank information disclosure policies to engage the stakeholders both these systems will enable the affected parties to raise sub-project related concerns and grievances for efficient and timely resolution.

3 PROJECT DESCRIPTION

Overview:

This Chapter presents sub-projects interventions in Tando Muhammad Khan District under Project Component 2: Developing an effective and safe learning environment which includes school up gradation from primary to elementary and secondary level, school rehabilitation through refurbishing of existing classrooms and adding new classrooms to existing schools, provision of furniture, and adequate WASH facilities by actively pursuing eco-friendly materials and designs intervention activities.

It also includes the sub-projects modular design which are gender friendly and inclusive, Climate Responsive Indicators (CRI), Engineering estimates and description. This is particularly significant prior to development of an ESMP as will support the basis for impact prediction and assessment and subsequently developing mitigation methods and strategies for the identified impacts and finally developing a practical ESMP and its monitoring plan.

Sub Project Description:

In the initial phase 29 schools were identified based on "School Selection Criteria" (See Table 3). The process prioritized School Clustering, with a primary focus on establishing Hub Schools and secondary consideration given to Cell Head Schools. Additionally, key factors such as School Enrolment, Area of School Plot, Gender Priority favoring girls' education, absence of Encroachment or Resettlement Issues on school land, School Functionality, absence of legal disputes, no duplication with other projects, and suitable School Location away from existing elementary and secondary schools were considered.

Table 3: Selection Criteria for Union Councils and Schools

1	Priority for upgradation to elementary	Target schools should be on the list of upgradations from primary (grades 1-5) to elementary (grades 1-8) under the school clustering policy 2021. Primary Cluster hub schools are the first priority and cell hub schools are the second priority for selection and where required, any other feeder schools which meet the school selection requirements and have potential to be upgraded to the elementary level is qualified (In each Union Council, one school that has the highest grade (typically campus school in urban areas or hub school in rural areas) is designated as the cluster hub school.)
2	Prioritization of girl's schools	Girls and/or mixed schools benefit both boys and girls.
3	Criteria based on the ESMF	Which broadly includes availability of physical space for building upgradation, no encroachment or safeguard issues etc.
4	Enrollment	Total enrollment of schools Greater than or equal to 15 in Girls. In case enrollment is not 15 feeder schools' have sufficient enrollment. Schools will need to have a sufficient number of children at least 50 enrollments in the catchment area (to ensure enrollment after upgradation).
5	School SEMIS Code	The school should have been in operation/functional and have valid SEMIS code
6	Location and accessibility of the schools:	Schools being considered for upgrading should not be too close to an existing government post primary school. They should preferably be in

		different blocks to enhance access to the underserved segments of the population.
7	No Duplication	No duplication in any other scheme or project
8	Legal Matters	There should be no legal dispute regarding ownership/usage of the land for the purpose of running the school.

29 schools (see locations in Figure 2) underwent thorough E&S screening and technical need assessment. Following this assessment, 21 schools were found fit for reconstruction, rehabilitation, and new construction. The selection process underscored aspects like the enrolment of girls, school plot size, gender priority, legal standing, and accessibility. Schools with more than 15 enrolments in girls' schools and a minimum of 50 total enrolments in the catchment area were given preference. Specific minimum size requirements for the school plot were outlined for elementary and secondary schools, respectively. Moreover, priority was given to schools operational for at least five years with valid SEMIS codes and devoid of encroachment, resettlement issues, legal disputes, or duplications with other projects.

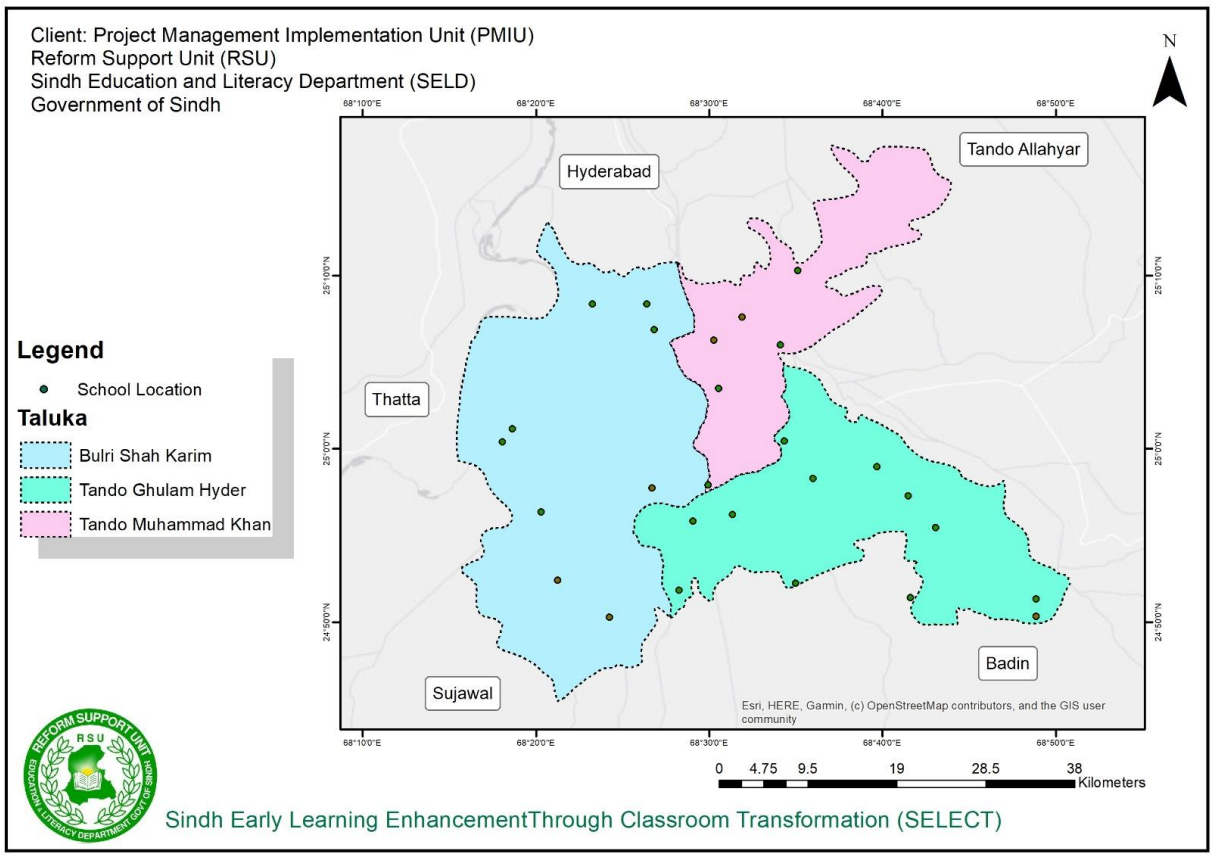


Figure 2: SELECT 29 Schools of district Tando Muhammad Khan.

Out of 21 selected schools, 3 are Government Girls Primary Schools (GGPS), comprising with exclusively girls' enrolment, while the remaining 18 are Government Boys Primary Schools (GBPS) with mixed enrolment of both boys and girls. Therefore, 21 finalized schools have mixed enrollment (1445 boys) and (1026 girls), prioritizing those with a substantial number of girls' enrolments. Among these schools, 2 have been earmarked for reconstruction and rehabilitation, while 19 are recommended for new construction. The locations of these 21 schools are detailed in Figure 3, and a comprehensive list categorizing them as qualified, disqualified, requiring reconstruction and rehabilitation, or new construction is provided in Table 4 below. Out of 8 disqualified schools, 06 schools were disqualified because of insufficient space and the absence of a specified boundary wall. These schools failed to meet the minimum space requirements necessary for reconstruction

and rehabilitation. Additionally, 02 schools were rejected due to duplication and conflict issues. Overall, these disqualifications highlight the importance of meeting specific criteria to ensure the success and effectiveness of the school construction initiative. Low enrolment of girls, falling below the required threshold. Lastly, certain schools faced challenges related to land disputes or conflicts within their communities, further complicating their eligibility for the project. Overall, these disqualifications highlight the importance of meeting specific criteria to ensure the success and effectiveness of the school construction initiative.

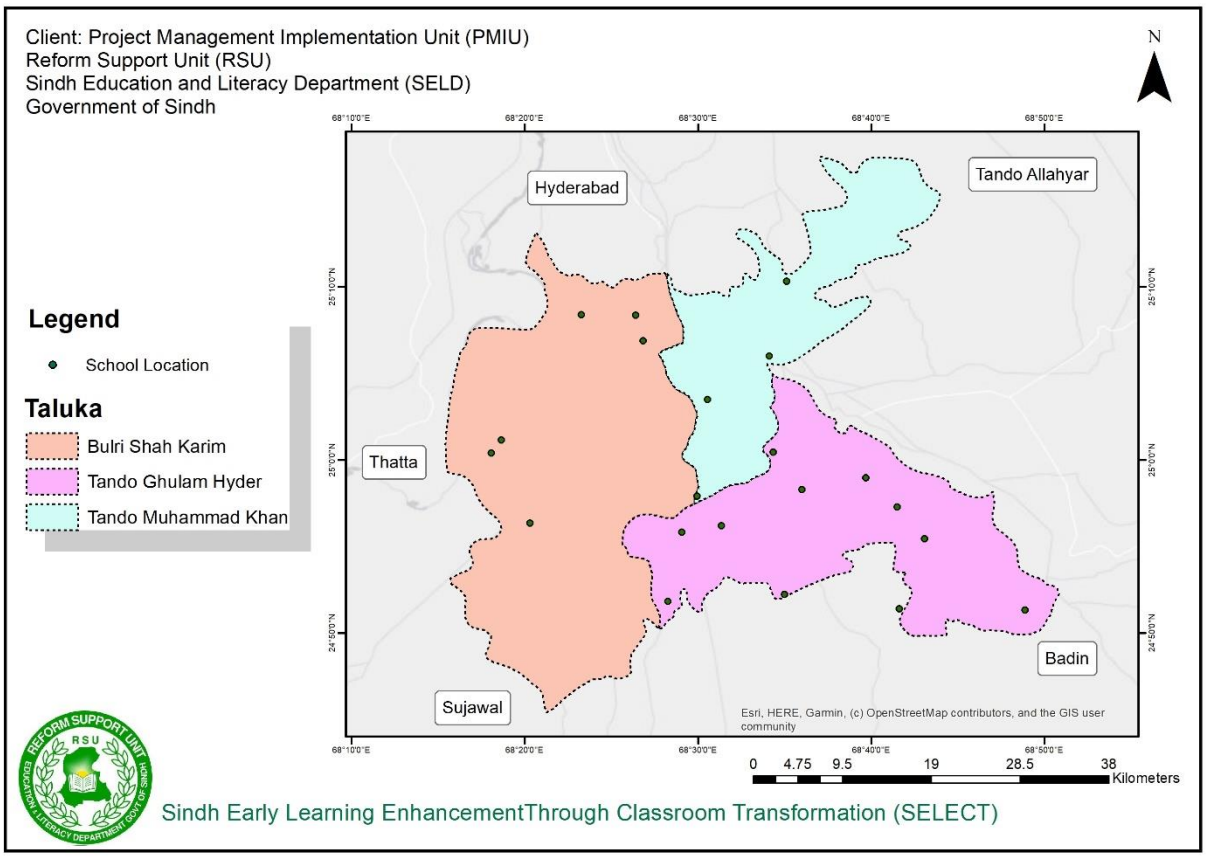


Figure 3: SELECT 21 shortlisted Schools Location of District Tando Muhammad Khan

Table 4: List of Proposed Sub Projects

Districts TMK schools for New construction							
S no.	**SEMIS ID**	**Name of Schools**	**District**	**Boundary wall status Yes/NO**	**Available space (Sft) total Area**	**Required Space (SFT)**	**Remarks**
1.	425030328	GBPS – GHULAM RASOOL CHANDIO	TMK	yes	8585	5000sft	• The school selected for new construction
2.	425030054	GBPS – JAN MUHAMMAD LASHARI	TMK	yes	12487	5000sft	• The school selected for new construction
3.	425030287	GBPS – MOHIB MIRBAHAR	TMK	yes	5261	5000sft	• The school selected for new construction
4.	425030157	GBPS – PUNHOON MIRBAHAR @HASSANABAD	TMK	yes	16324	5000sft	• The school selected for new construction for secondary
5.	425030061	GBPS – ABDUL RAZAQUE DARS	TMK	yes	5332	5000sft	• The school selected for new construction
6.	425030272	GBPS – QABOOL PUR	TMK	yes	9028	5000sft	• The school selected for new construction
7.	425020231	GBPS – KATH BANBHAN	TMK	yes	5396	5000sft	• The school selected for new construction.
8.	425020230	GBPS- WANGAI MAHERI	TMK	yes	6165	5000sft	• The school selected for new construction
9.	425020316	GBPS – ALLAH BUX SIYAL	TMK	yes	5649	5000sft	• The school selected for new construction
10.	425020106	GGPS – GAMANI NIZAMANI@ GAMANI KHASKHELI	TMK	yes	5742	5000sft	• The school selected for new construction

11.	425020112	GGPS – SHAHMIR KOLHI@ LIAQUAT ALI LAGHARI	TMK	yes	5737	5000sft	• The school selected for new construction
12.	425020096	GGPS – MEHAR LAGHARI	TMK	yes	5994	5000sft	• The school selected for new construction
13.	425020044	GBPS – JUMAN BEHRANI	TMK	yes	6972	5000sft	• The school selected for new construction
14.	425020143	GBPS – JAMALUDDIN JUNEJO	TMK	yes	6255	5000sft	• The school selected for new construction
15.	425010165	GBPS – HYDER SHAH	TMK	yes	6191	5000sft	• The school selected for new construction
16.	425010270	GBPS – WAHIDABAD MOHALLAH	TMK	yes	6308	5000sft	• The school selected for new construction
17.	425030059	GBPS – ZUFIQARABAD	TMK	yes	9589	5000sft	• The school selected for new construction
18.	425010041	GBPS – NANGO SHAH	TMK	yes	5552	5000sft	• The school selected for new construction
19.	425010036	GBPS Khamiso Laghari	TMK	yes	5550	5000sft	The school selected for new construction

Districts TMK schools
SCHOOLS QUALIFIED AND SELECT FOR REHABILITATION AND EXTENSION

S no.	SEMIS ID	Name of Schools	District	Boundary wall status Yes/NO	Available space (Sft) total Area	Required Space (SFT)	Remarks
1	425030259	GBPS – AALI JHARK	TMK	yes	8524	5000sft	Rehabilitation and Extensions
2	425030269	GBPS – YOUSUF LAGHARI	TMK	yes	11919	5000sft	Rehabilitation and Extensions and Select for secondary school

Districts TMK schools
Disqualified schools
Due to insufficient space and the lack of a specified boundary wall

S no.	SEMIS ID	Name of Schools	District	Boundary wall status Yes/NO	Available space (Sft)	Required Space	Remarks
1	425030032	GBPS-GHARO MORI	TMK	yes	1221	5000sft	Due to insufficient space at the school, it has been disqualified, and the constructed area is 929 square feet only. Operation time at least 5 years School is closed
2	425030038	GBPS - HAJI ADAM JAT	TMK	NA	Not specified	5000sft	Due to insufficient space and the lack of a specified boundary wall at the school, it has been disqualified, and the constructed area is 443 square feet.
3	425030223	GBPS-ILYAS GHIRANO	TMK	yes	7163	5000sft	There is a conflict between the works and service department and the school over area, so the school is disqualified.
4	425030085	GBPS - MUHAMMAD URS BEHRANI	TMK	NA	Not specified	5000sft	Due to insufficient space and the lack of a specified boundary wall at the school, it has been disqualified, and the constructed area is 434 square feet.

5	425020131	GBPS – BACHAL AHMEDANI	TMK	yes	4365	5000sft	Due to insufficient space at the school, it has been disqualified, and the constructed area is 1404 square feet only
6	425010070	GGPS – NASIRABAD	TMK	NA	1892	5000sft	Due to insufficient space and the lack of a specified boundary wall at the school, it has been disqualified, and the constructed area is 1243 square feet.
7	425010114	GGPS - WAHIDABAD	TMK	yes	6308	5000sft	The boy's school is recommended on the same compound wall, so it is disqualified.
8	425030342	GBPS – MOLE DINO SATHIO	TMK	yes	4400	5000sft	Due to insufficient space at the school, it has been disqualified, and the constructed area is only 1075 square feet.

3.1 Design Brief

School blocks will be designed with adapting climate response Indicators CRI in such a way that it will be pleasing with its culture and region. Design will be given meticulous thought, such as to materials and technology so to make the building more efficient. Natural light and ventilation to be made use of, to produce pleasant learning environment and working conditions with less energy consumption. Planning and design have taken into account the environmental impact and adequate provision for future expansion. The following guideline will be taken into consideration while designing the building modules. A detailed implementation strategy for Climate Response Indicators (CRIs) (attached as annexure C) is also developed and encourages to follow the strategy for aligning CRIs in Architecture and Engineering Design of the Proposed School Buildings.

The following six key "Climate Response Indicators" (CRI) Feature parameters are integrated in Architecture and Engineering Design of the Proposed School Buildings which will apply to all 600 schools are:

(i) Building orientation for natural/"passive" heating and lighting;
(ii) Thickness of walls; (iii) minimum height of classrooms;
(iii) Wind catchers—where applicable;
(iv) Position, size, and number of windows;
(v) Greenery and plantation of trees.
(vi) Renewable Energy

The two "advanced" CRI parameters which will apply to 4 secondary schools per district (48 total) are:

(i) Use of special rooftop and ceiling materials for heat reflection/capture; and
(ii) Selection and use of environment-friendly/energy-efficient building materials with considering alternate energy sources.

Modular Design:

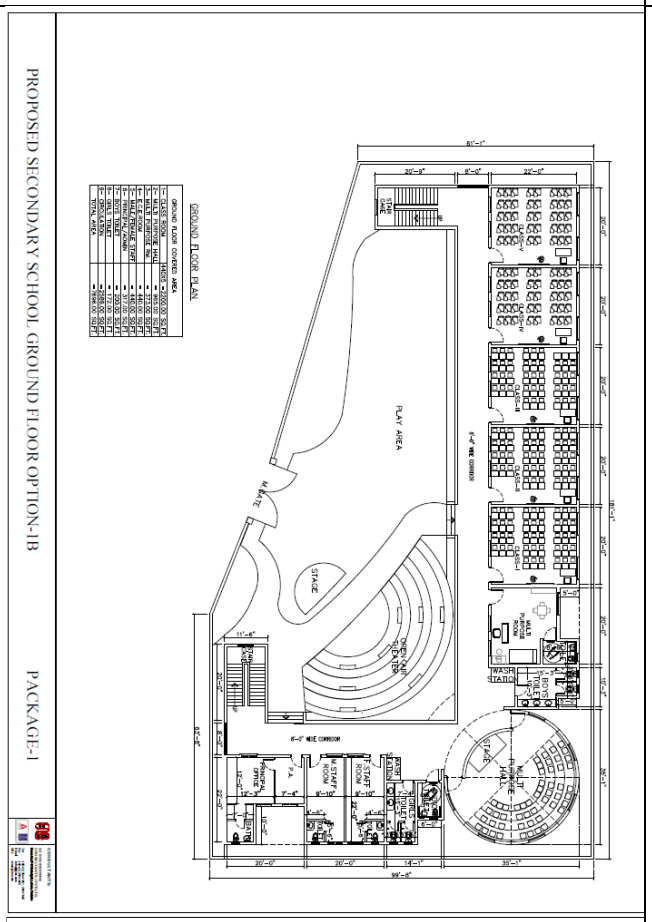
The 12 Districts selected under this project have different climatic and geographical locations, hence The G3EC Initially prepare 6 Modular designs by engaging renowned Architects for Coastal and Non-Coastal Districts for Hot and Dry and Hot and Humid Climate and elementary and Secondary schools' category but due to different subproject sites shapes and varietations in plot sizes, 4 more designs are developed to be implemented according to the shape and size of the plot of subproject sites. The details of these 10 Modular Designs are presented in table 5 below. It is important to share that out of these 10 modular designs, module plans 1, 5 and 10 are finalized for district Tando Muhammad Khan whose details are presented in table 6, 7 and 8 and their 3D modules are present in Figure 3, 4 and 5 respectively.

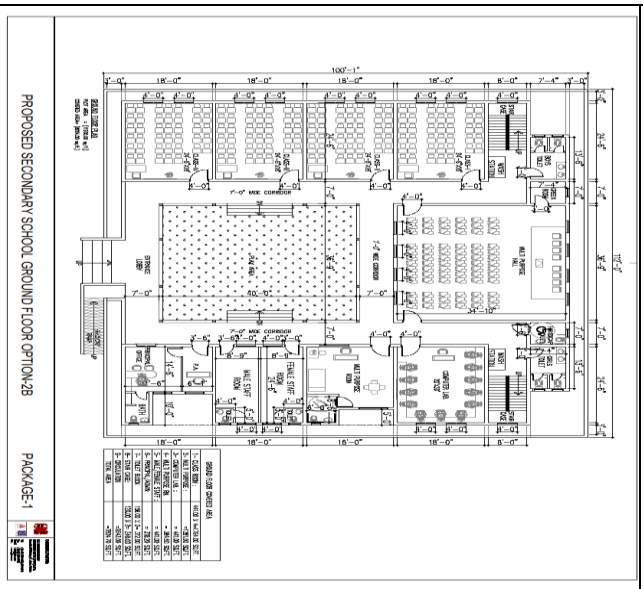
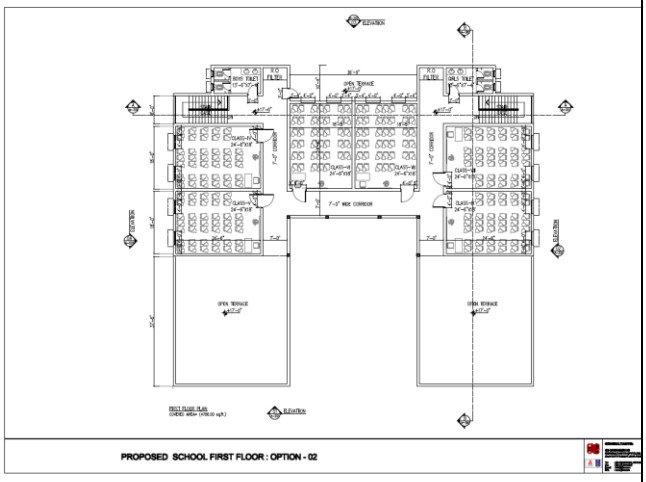
The specification of CRI elements covered in designs are as below:

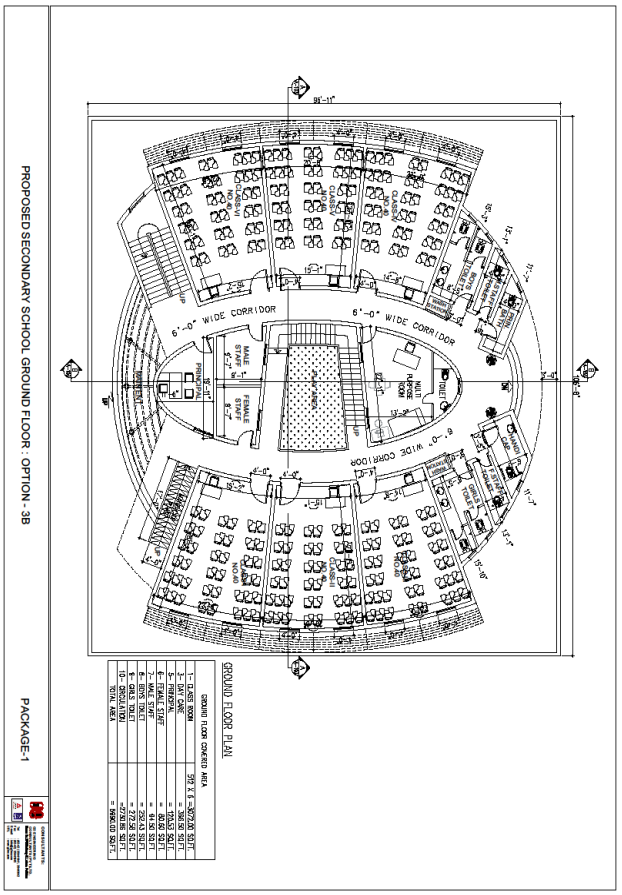
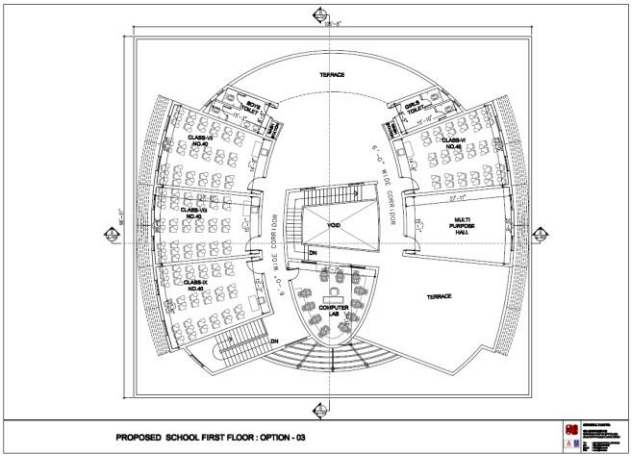
a. ***Building orientation:*** Building orientation focused on cross ventilation across the building.
b. ***Thickness of wall:*** Thickness of wall increased to 13-inch with Cavity walls for Thermal insulation to maintain inner temperature.
c. ***Height of classroom:*** Height of Classroom maximize to14 feet clear height for improved air circulation within the classroom.
d. ***Plinth raising/Level raising:*** Plinth level raised to 3 feet up from the road level to protect it from rainwater and floods.
e. ***Use of light colour:*** light paint colour will be used to absorb less solar radiation and for an environment friendly aesthetic.
f. ***Window wall ratio for ventilation:*** Wide windows and ventilators are provided for better air circulation within classroom.
g. ***Roof protection:*** The roof is protected with waterproofing and B-class tile to protect it from heat and rain.

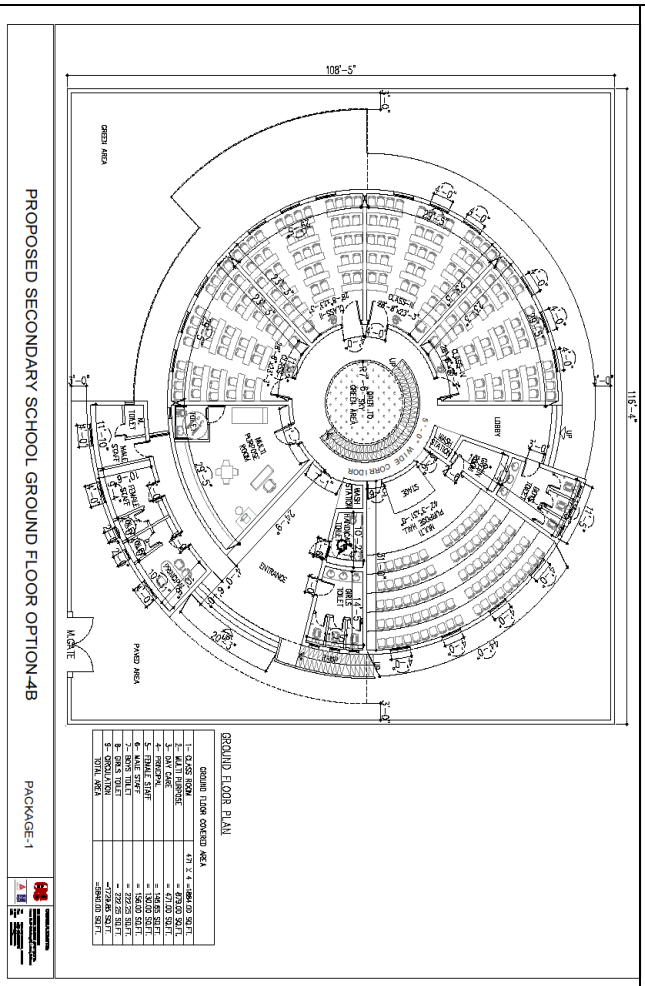
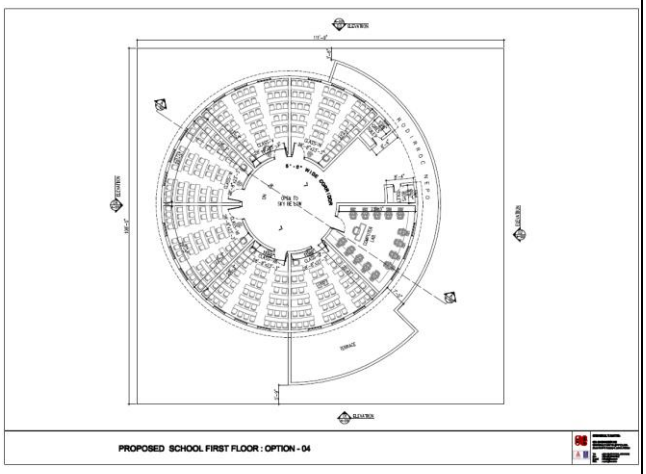
h. ***Seismic proof design:*** Structure designs are made with seismic resistance.
i. Greenery and Plantation around boundaries of school: Around the boundaries of the school, soft landscaping is made around the boundary wall of the school.
j. ***Water filtration:*** RO plants are provided to ensure availability of safe drinking water.
k. ***Water conservation***: Rainwater harvesting to utilize rainwater.
l. ***Green energy:*** Solar power generation systems are provided in every school.
m. ***Proper waste management:*** proper drainage system with septic tanks and soakage pits are to be provided, color coded bins will be installed.

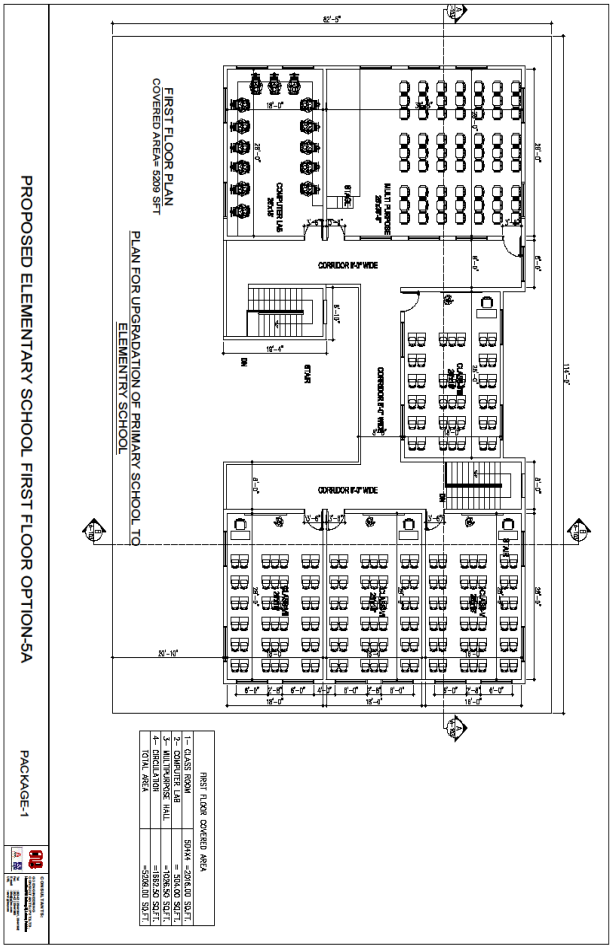
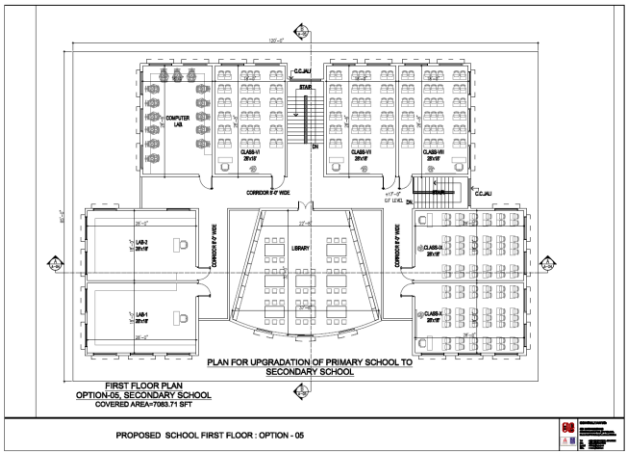
Table 5: Detail List of all 10 modular Designs

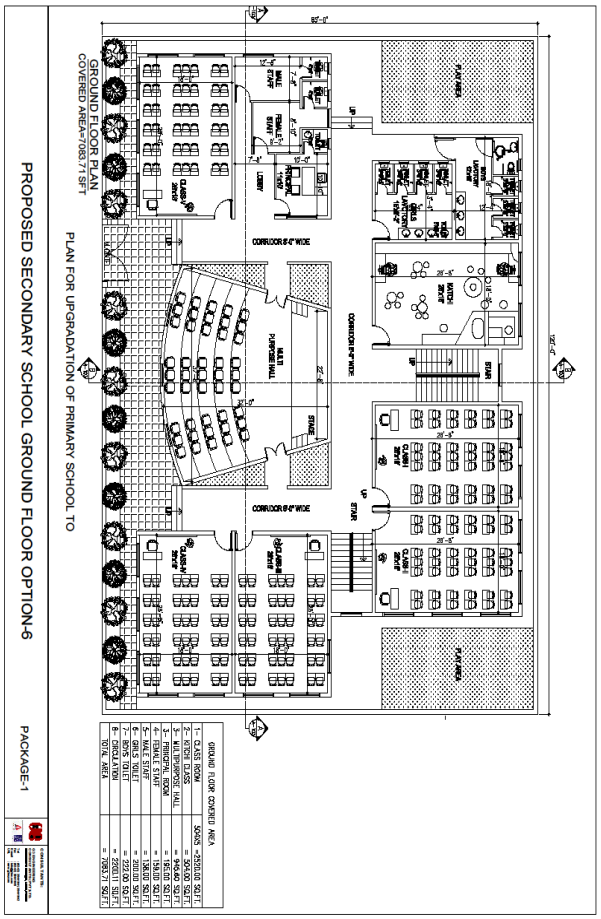
S #	Modular Design #	Modular plan	Elements covered as per Specification and CRI	Area type
01	Modular design no 1 (Ground +1 Floor)		• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Coastal belt

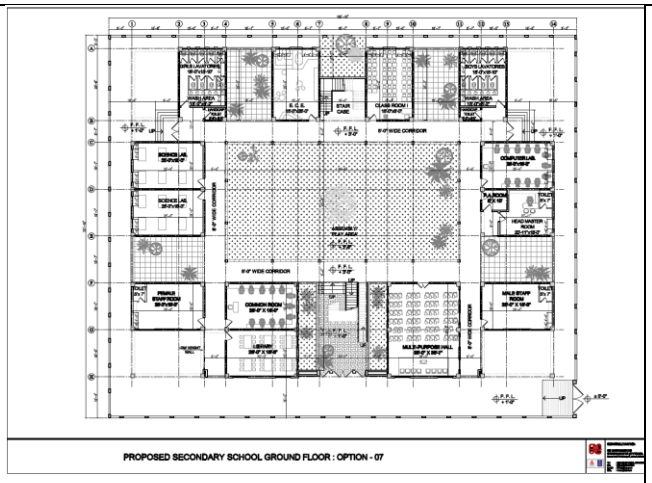
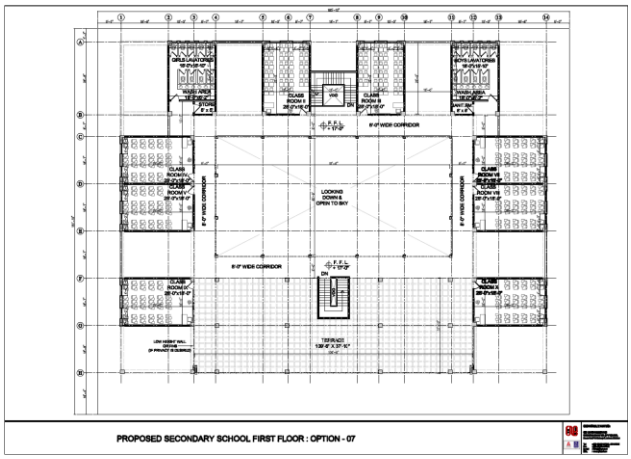
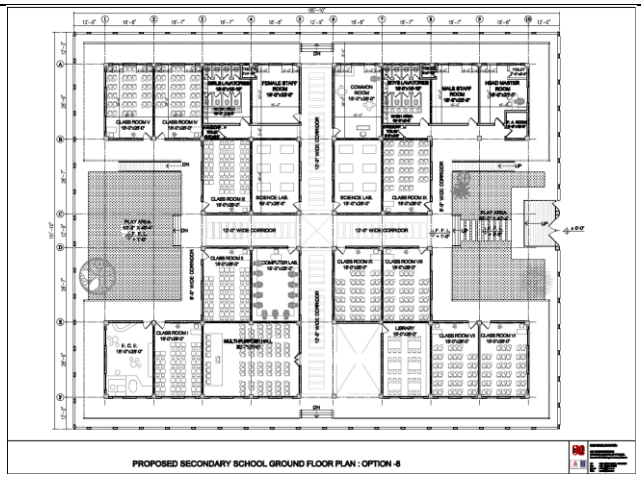
02	Modular design no 2 (Ground +1 Floor)	 	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Non costal

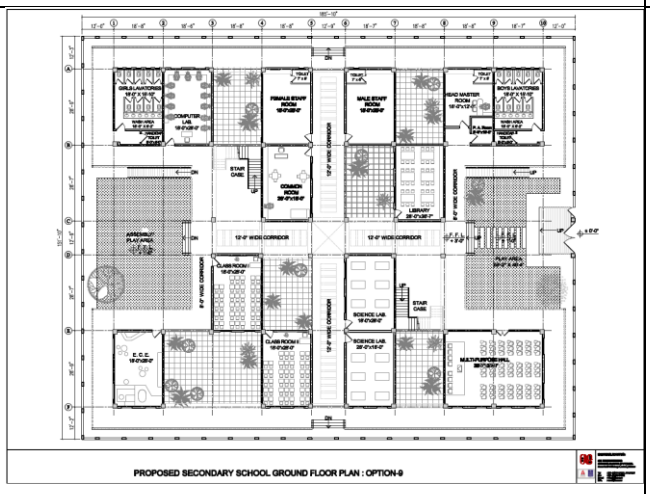
03	Modular design no 3 (Ground +1 Floor)	 	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Non costal

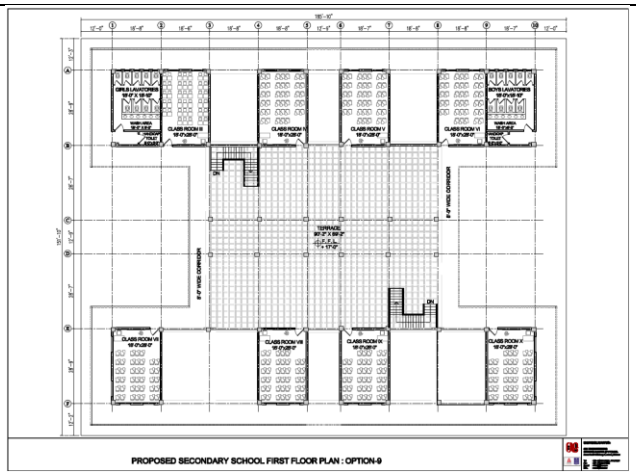
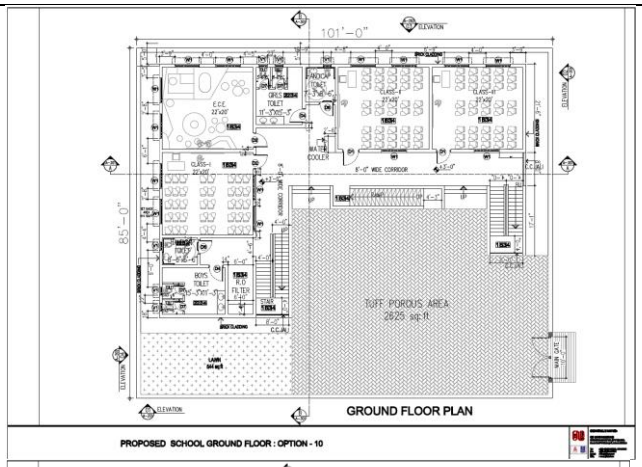
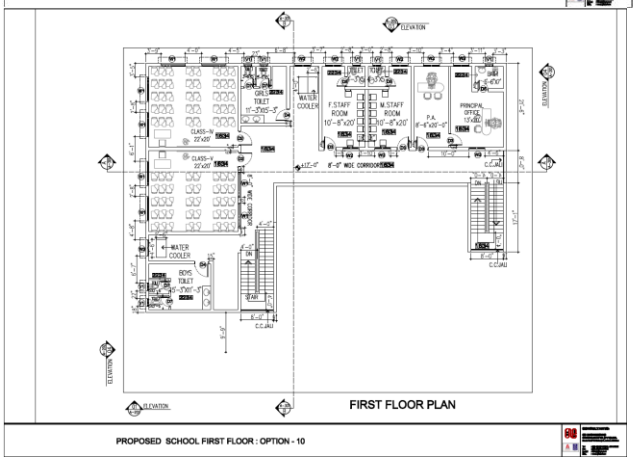
04	Modular design no 4 (Ground +1 Floor)	 	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Non costal

05	Modular design no 5 (Ground +1 Floor)	 	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Coastal belt

06	Modular design no6 (Ground floor)		• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	Non costal
07	Modular design no7 (Ground +1 Floor)		• Building orientation • Thickness of wall • Height of class Room • Plinth raising	Non costal

		 	• Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	
08	Modular design no8 (Ground Floor)		• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose	Non costal

			• Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	
09	Modular design no9 (Ground +1 Floor)	 PROPOSED SECONDARY SCHOOL GROUND FLOOR PLAN : OPTION-9	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design	Non costal

			• Greenery and Plantation around boundaries of school • Water filtration • Water conservation • Green energy • Proper waste management	
10	Modular design no10 (Ground +2 Floor)	 	• Building orientation • Thickness of wall • Height of class Room • Plinth raising • Level raising • Use of light color • Window wall ratio for ventilation purpose • Roof protection • Plinth protection • Seismic proof design • Greenery and Plantation around boundaries of school • Water filtration	Non costal

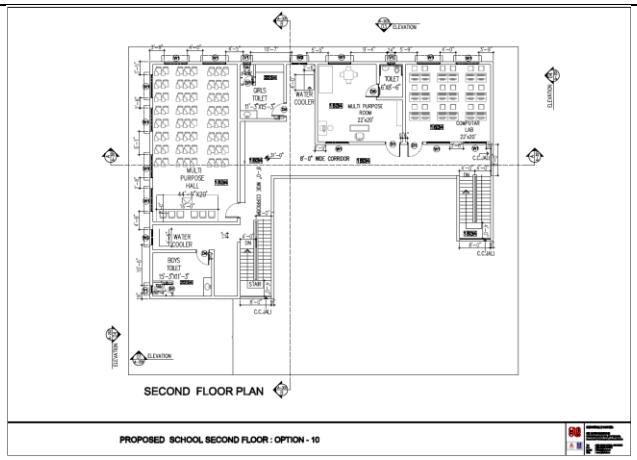
			• Water conservation • Green energy • Proper waste management	

Table 6: Area calculation of a typical G+1 module (MODULAR DESIGN 01) Elementary School

SR	Type of Room	Proposed Measurement/ Dimensions	NO OF ROOMS	AREA SQ-FT	Total AREA SQ-FT
1	CLASSROOMS	20'X22'	8	440	3520
2	COMPUTER LAB	20'X22'	1	440	440
3	PRINCIPAL OFFICE	20'X13'	1	260	260
4	PA OFFICE	20'X8'-6"	1	170	270
5	MULTIPURPOSE ROOM	20'X22'	1	440	440
6	STAFF ROOMS	20X10'-8"	2	216	432
7	BOYS TOILET BLOCK	11'-3"X15'	2	169.5	339
8	GIRLS TOILET	14'X11'-3"	2	157.5	315
9	HANDICAP TOILET	8'-6"X8'	1	68	68
10	MULTIPURPOSE HALL	40'-9"X22'	1	896.5	896.5
11	ECE	20'X22'	1	440	440
12	Utility Room	12'X12'	1	144	144
13	CIRCULATION	G1(2343)+G2(2261)	2	G1(2343)+G2(2261)	4604

Table 7: Area calculation of a typical G+1 module (MODULAR DESIGN 01) Secondary School

SR	Type of Room	Proposed Measurement/ Dimensions	NO OF ROOMS	AREA SQ-FT	Total AREA SQ-FT
1	CLASSROOMS	20'X22'	11	440	4840
2	COMPUTER LAB	20'X22'	1	440	440
3	PRINCIPAL OFFICE	20'X13'	1	260	260
4	PA OFFICE	20'X8'-6"	1	170	270
5	MULTIPURPOSE ROOM	20'X22'	1	440	440
6	STAFF ROOMS	20X10'-8"	2	216	432
7	BOYS TOILET BLOCK	11'-3"X15'	2	169.5	339
8	GIRLS TOILET	14'X11'-3"	2	157.5	315
9	HANDICAP TOILET	8'-6"X8'	1	68	68

10	MULTIPURPOSE HALL	40’-9”X22’	1	896.5	896.5
11	ECE	20’X22’	1	440	440
12	Utility Room	12’X12’	1	144	144
13	CIRCULATION	G1(2343)+G2(2261)	2	G1(2343)+G2(2261)	4604


Option-1 Elementary School


Option-1 Secondary School

Figure 4: 3D views of Modular Design 01 Elementary and Secondary School

Table 8: Area calculation of a typical G+1 module (MODULAR DESIGN 05) Elementary School

SR	Type of Room	Proposed Measurement/ Dimensions	NO OF ROOMS	AREA SQ-FT	Total AREA SQ-FT
1	CLASSROOMS	28'X18'	8	504	4032
2	COMPUTER LAB	28'X18'	1	504	504
3	PRINCIPAL	11'X10'	1	110	110

4	WAITING AREA	11'X8'	1	88	88
5	MULTI-PURPOSE ROOM	28'X18'	1	504	504
6	STAFF ROOMS	12'8"X8'-3"	2	105.5	211
7	BOYS-TOILET AND HANDICAP-TOILET BLOCK	12'-4"X18'	1	258	258
8	GIRLS TOILET BLOCK	15'X8'-2"	1	123.75	123.75
9	MULTI-PURPOSE HALL	28'X36'-8"	1	1029	1029
10	ECE	28'X18'	1	504	504
11	UTILITY ROOM	8'X13'	1	104	104
12	CIRCULATION	G1(1241) +G2(1119)	2	G1(1241) +G2(1119)	2360

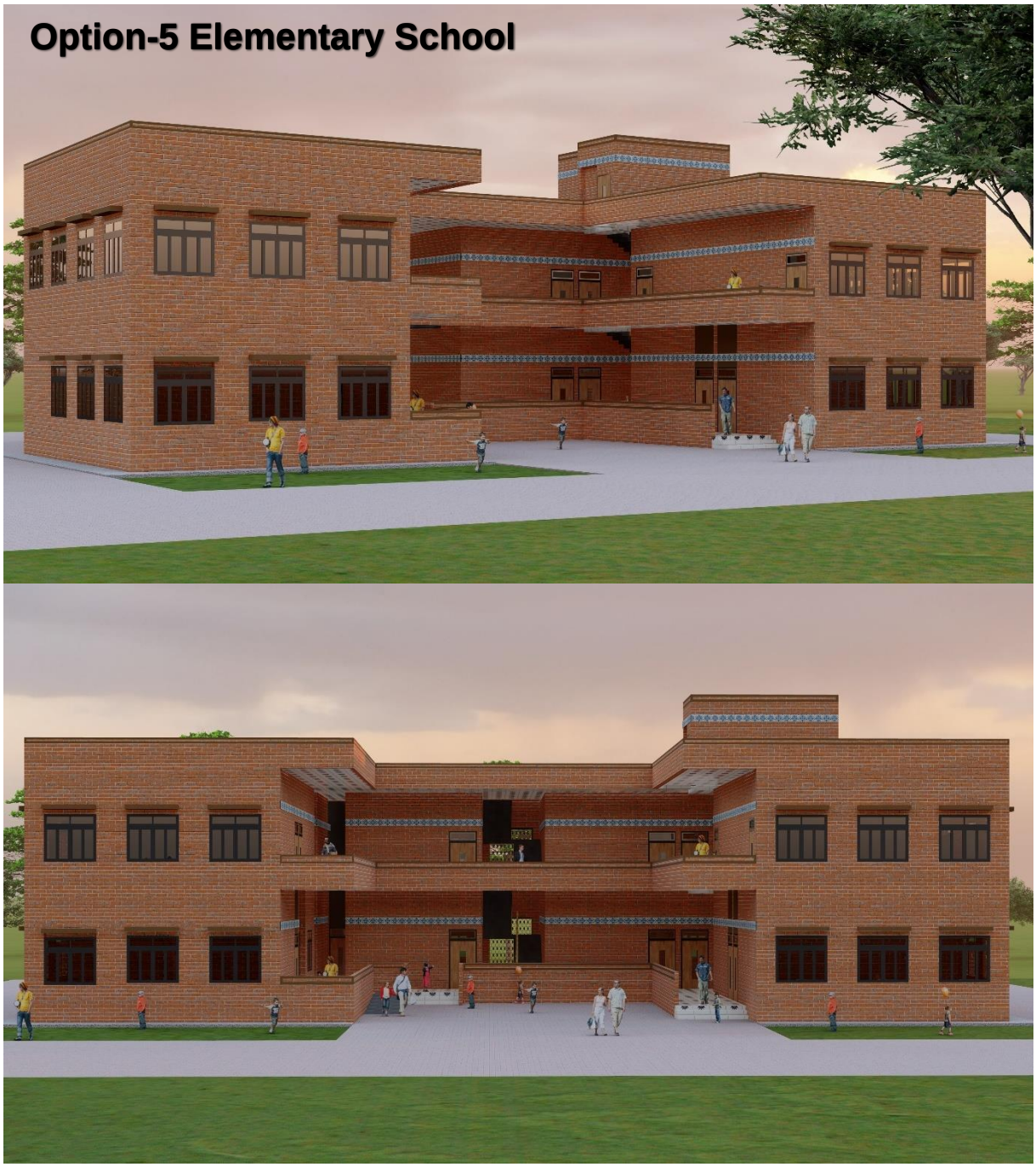
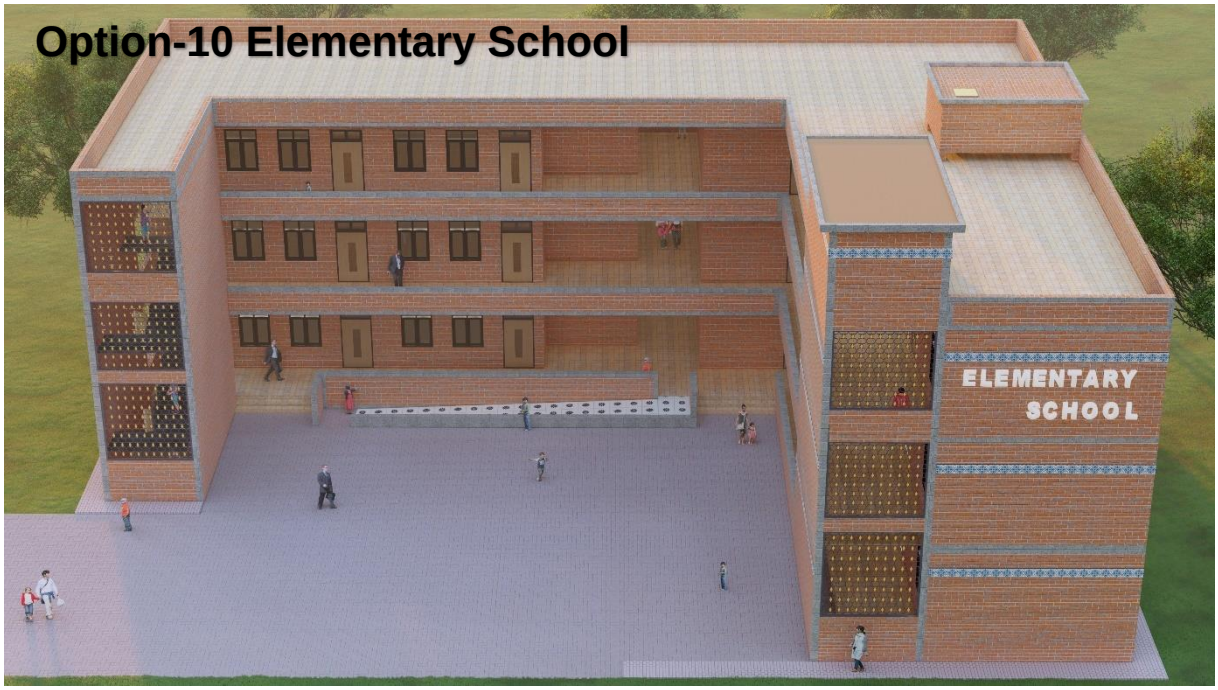


Figure 5: 3D views of Modular Design 05

Table 9: Area calculation of a typical G+2 module (MODULAR DESIGN 10)

SR	Type of Room	Proposed Measurement/ Dimensions	NO OF ROOMS	AREA
1	CLASS ROOMS	20'x22'	9	440
2	COMPUTER LAB	20'x22'	1	440
3	PRINCIPAL/ADMIN	11'x10'1+11'X8'	1	198
4	MULTI PURPOSE ROOM	20'X22'	1	440
5	STAFF ROOMS	10’-8”X20'	2	220
6	TOILET BLOCK	20'x10'3"	11	200
7	MULTI PURPOSE HALL	44'.9"x20'	1	900
8	ECE	20'X22'	1	440
9	CIRCULATION	2625	2	2625


Option-10 Elementary School
ELEMENTARY
SCHOOL


Option-10 Elementary School
ELEMENTARY
SCHOOL

Figure 6: 3D views of Modular Design 10 Elementary School

A layout plan of a typical prototype design for a two-story building is given in Table 5. Keeping in view the available land plot size and shape, the prototype design most suitable to the selected school site will be adopted by making site-specific adjustments to avoid the land acquisition and IR related risks.

3.2 Architectural Design

The detailed Architectural design development package includes detailed architectural design and drawings, 2D and 3D rendered elevations, plans and sections for all the proposed/finalized building modules and other components. The School Modules will include classrooms, laboratories, multi-purpose room (daycare facility specifically for female/girls), multi-purpose hall (for school indoor events) and staff rooms etc. Furniture and Equipment Layouts will also be included in the detailed design development. The design development package will also include the typical site-specific requirements such as common areas and facilities, separate male and female and especially abled person toilets, playgrounds etc. The overall aim will be to provide a safe, healthy, comfortable, attractive and stimulating environment.

3.3 Structural Design

The latest ACI and UBC code of practice for the design of structural elements and use of material strength shall be employed for a safe, stable, and yet economical structure, free from undue deformations and deflections, with provisions of the National Building Code of Pakistan 2007. Adequate provisions shall be made in the structure for housing, the services and extensions.

3.4 Orientation

The orientation of the building is kept in such a way that it will take care of its' functional repercussions i.e., north light and shading of the building by its own shadows, to make it more energy efficient and to have active and passive solar energy utilization in winter season.

The orientation of the building is based on climatic factors as well as on view and noise. Optimum orientation will reduce direct sunlight to the minimum during the hottest periods, while allowing sunlight with some heat gain during the cold months.

The basic design philosophy behind the design of the sub-projects is that the facility should provide a conducive environment, appropriate for studying purpose yet healthy and entertaining for the students. The building is designed in harmony with its ambiance and should be self-explanatory.

3.5 Utilities

Electricity required for the daily operations of the school is estimated to be 5-7 KW which will be generated from solar panels installed over the roof of the building, The overall capacity of the solar panels is estimated to be 6-7 KW.

Construction is planned to use conventional building materials–- i.e., for construction of base will use stone and for masonry will use blocks and for finishing will use stone cement and sand mortar, reinforced concrete roofing and paved flooring with aluminum window and door panels and electric installations etc. The number of classrooms and ancillary facilities – i.e., laboratories, staff facilities and toilets will be commensurate with site specific requirements and available facilities at each selected sub-project school site.

The water requirement for the school is estimated at 500 gallons per day. For this, a Reverse Osmosis (RO) plant of 500 lit/hr. capacity in each site is suggested and will be installed in each school site. The targeted input TDS for the RO is 1,000-4,000 mg/l. The reject water generated from the process will be around 80 gallons per day and will be utilize for washrooms or discharge into the proposed septic tank to dilute it with the sewerage and subsequently into the soakage pit or the sewerage drains of the village/city.

3.6 Life and Fire Safety

The design of the proposed building will incorporate safety features especially life and fire safety systems which will lower risks of life and fire hazard and eliminate / reduce the risk of accidents / injury of students and the staff.

The building will be designed as per Building Code of Pakistan (2007), Fire Safety Provisions 2016, National Fire Protection Association (NFPA) standards and WB Environmental, Health and Safety Guidelines (“EHS Guidelines).

a) Incorporation of Essential Safety Features:

The schools are designed in such a manner that all the classrooms open in an open corridor that has wall openings to the atmosphere primarily for the adequate dissipation of smoke in case of fire. Also, there will be two primary staircases for the 1st or 2nd floor and one can be used for the evacuation exit.

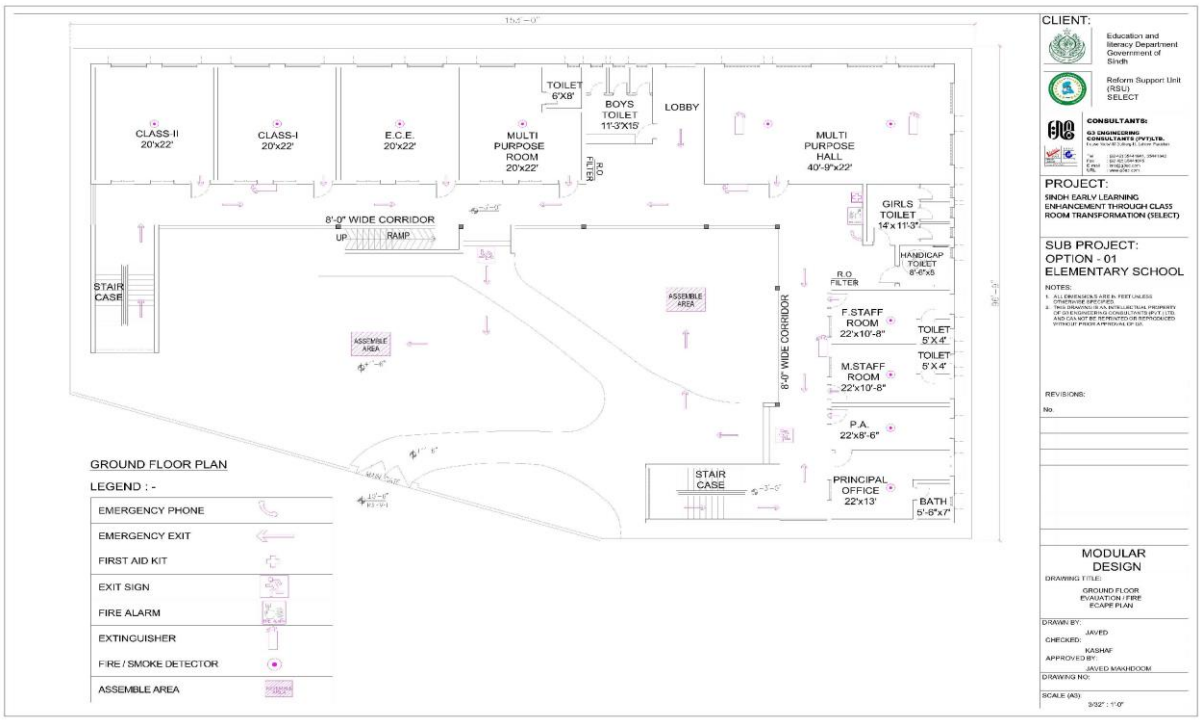
Fire protection system shall comprise of building fire detectors, emergency alarms, portable fire extinguishers of various type as per appropriate needs and requirements and clearly marked exit gates and staircases with assembly points.

All electric switches will comply with the standards to prevent electric shock. All the faulty switches will be repaired immediately.

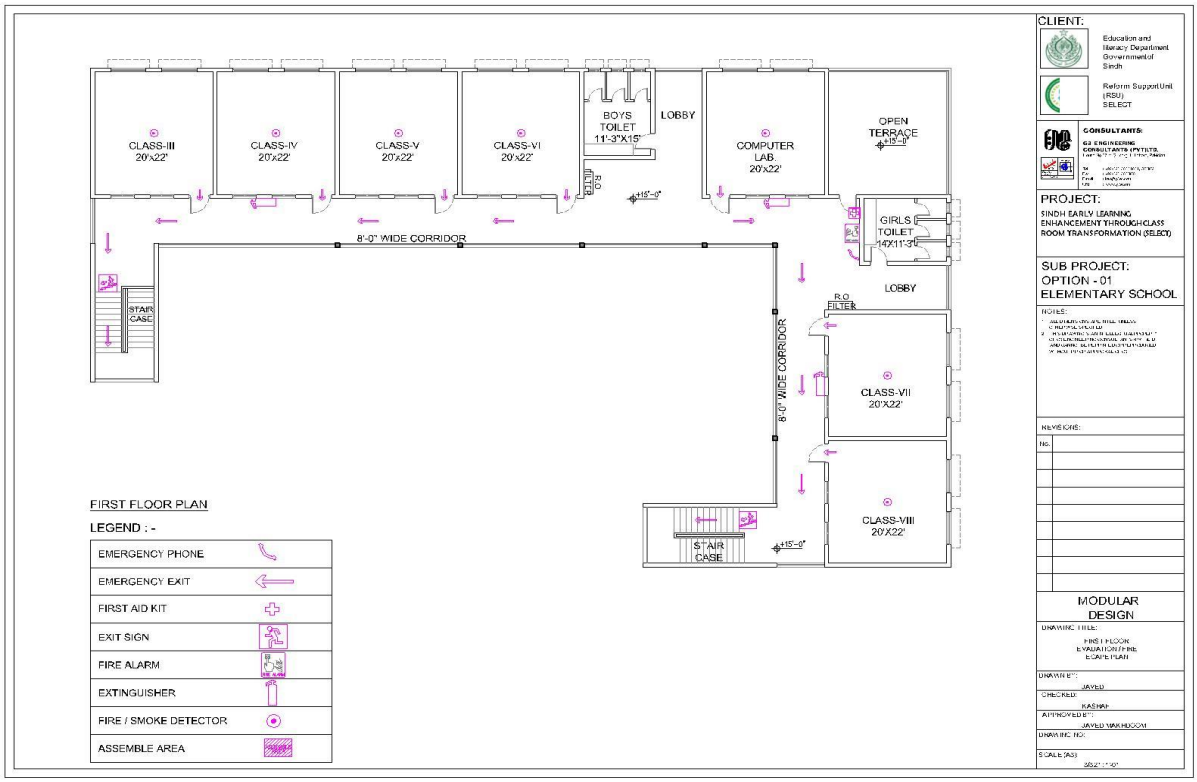
b) Emergency Response Maps:

An emergency response map has been meticulously prepared, providing a visual guide for swift and efficient responses in the event of an emergency. This map highlights key evacuation routes, assembly points, and emergency equipment locations, empowering stakeholders to respond effectively to potential threats. The emergency response map of Modular Designs (2,5 & 10) selected for district Tando Muhammad Khan are presented in Table 8, 9 & 10 below.

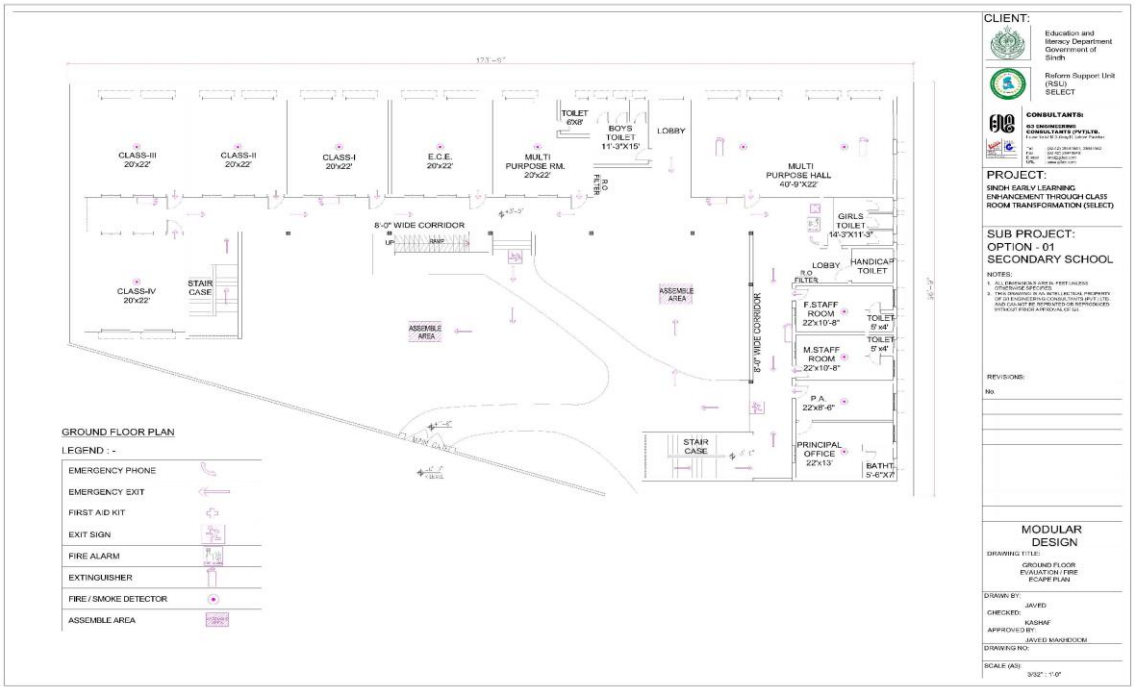
Table 10: Emergency Response Maps of Design Module 1 (Elementary & Secondary)



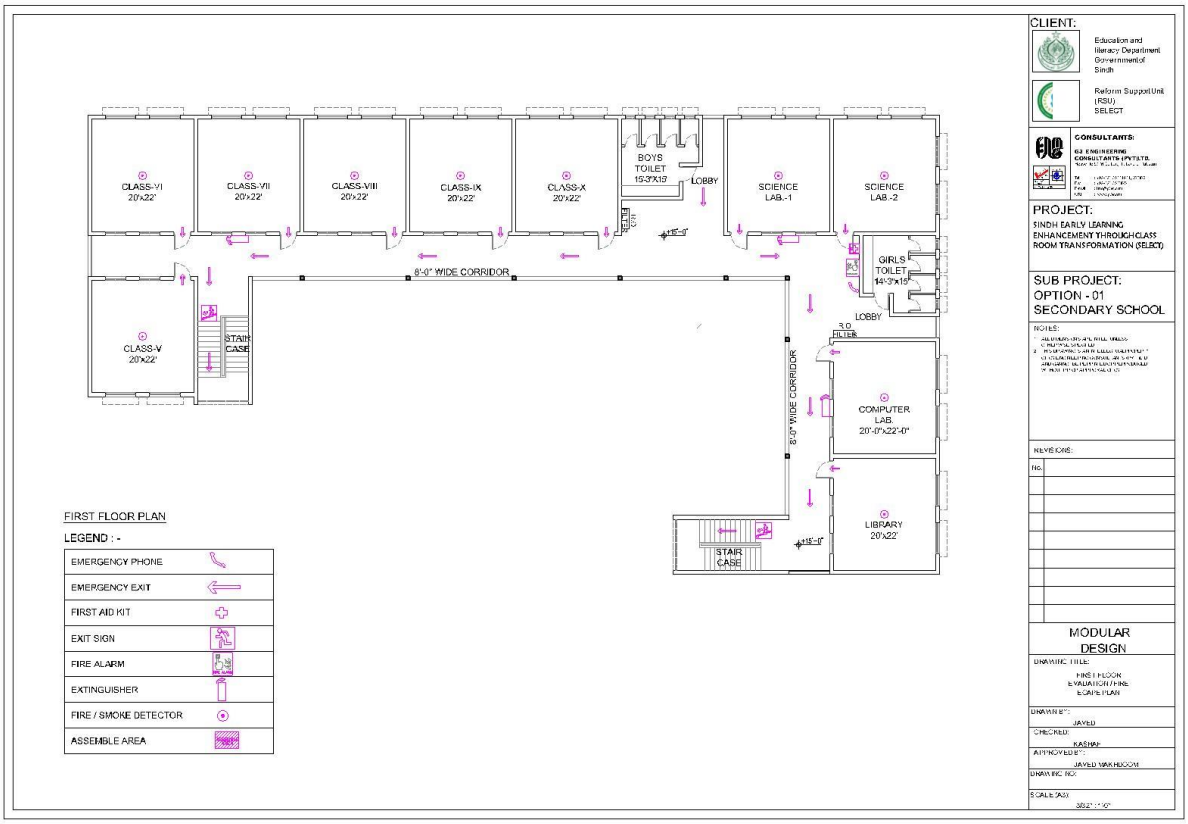
Modular Design 1: Elementary School
(Ground Floor)



Modular Design 1: Elementary School
(First Floor)

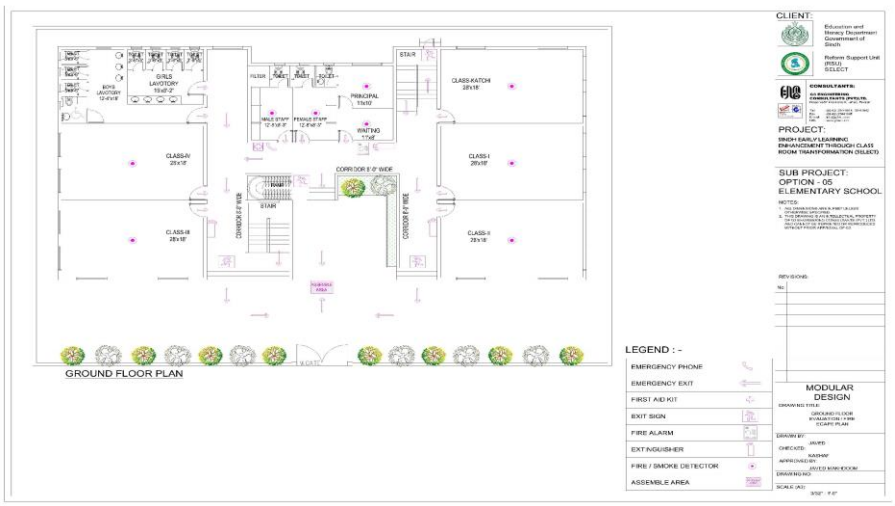


Modular Design 1: Secondary School
(Ground Floor)

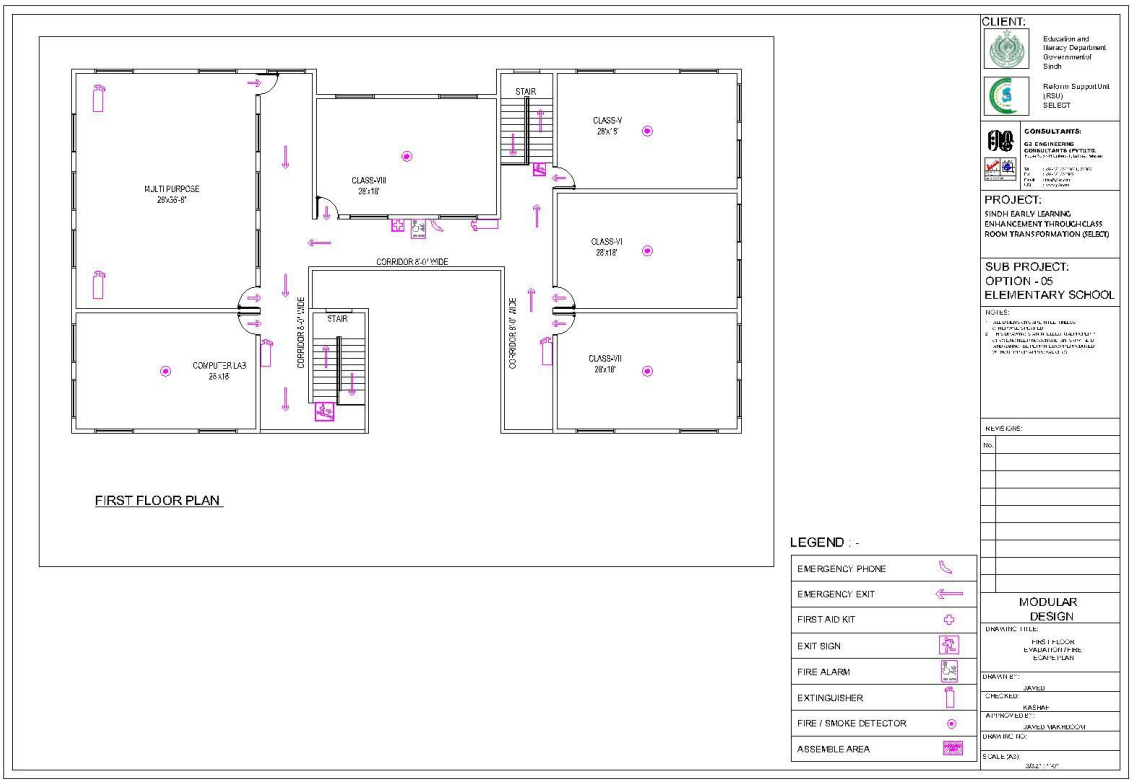


Modular Design 1: Secondary School
(First Floor)

Table 11: Emergency Response Maps of Design Module 5 (Elementary & Secondary)

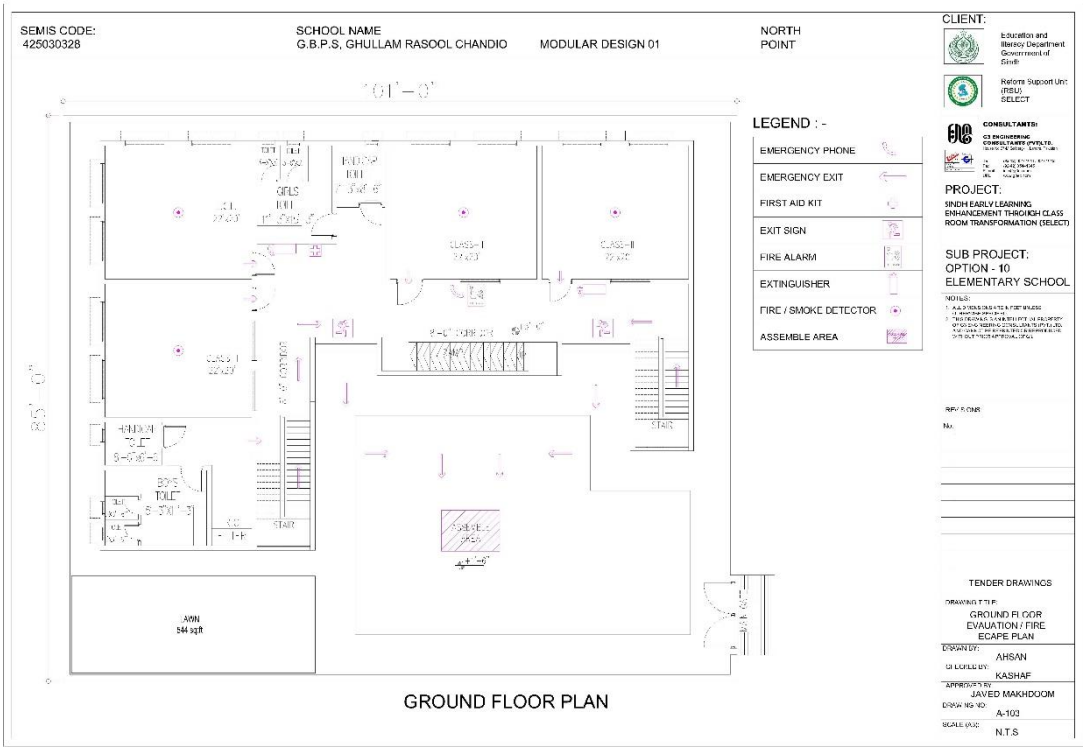


Modular Design 5: Elementary School
(Ground Floor)

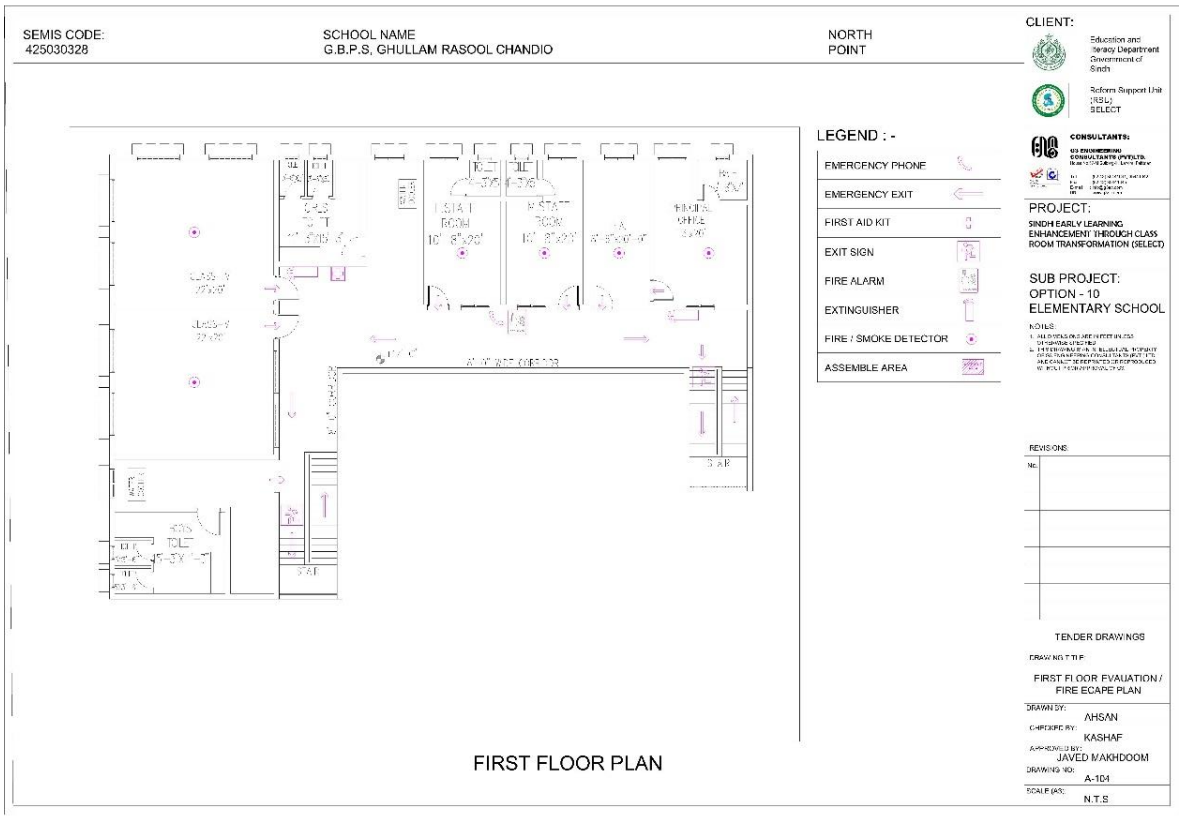


Modular Design 5: Elementary School
(First Floor)

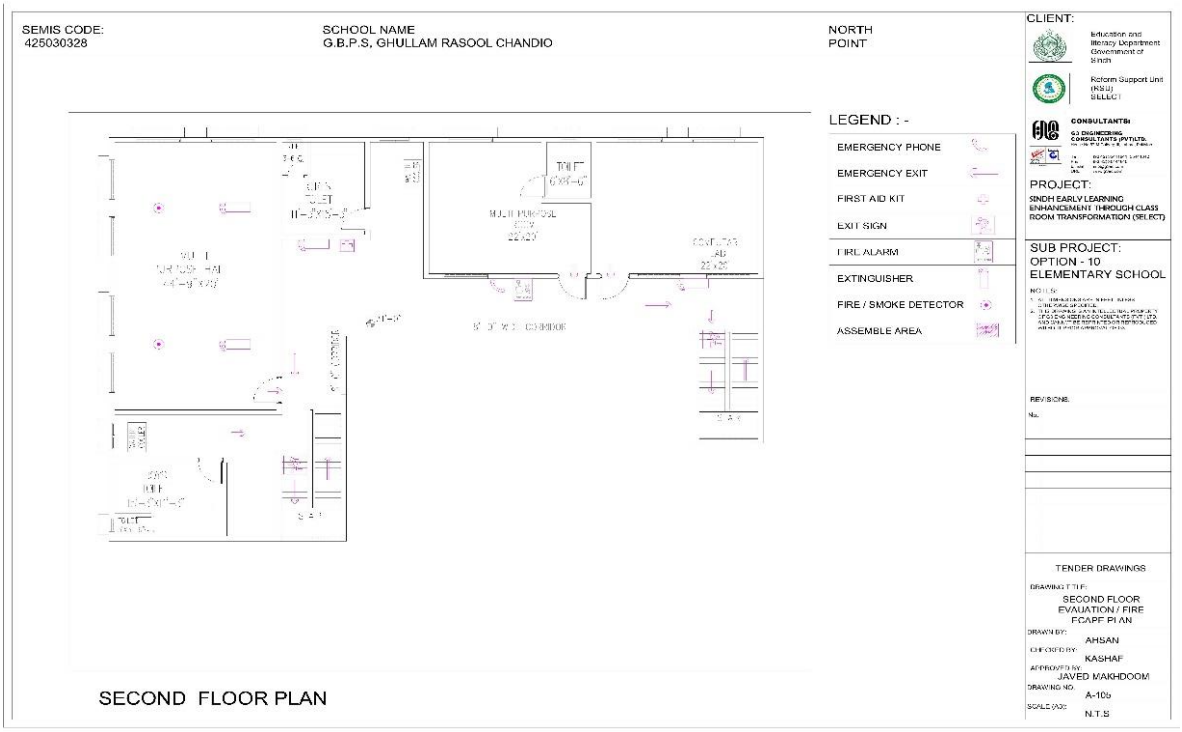
Table 10: Emergency Response Maps of Design Module 10



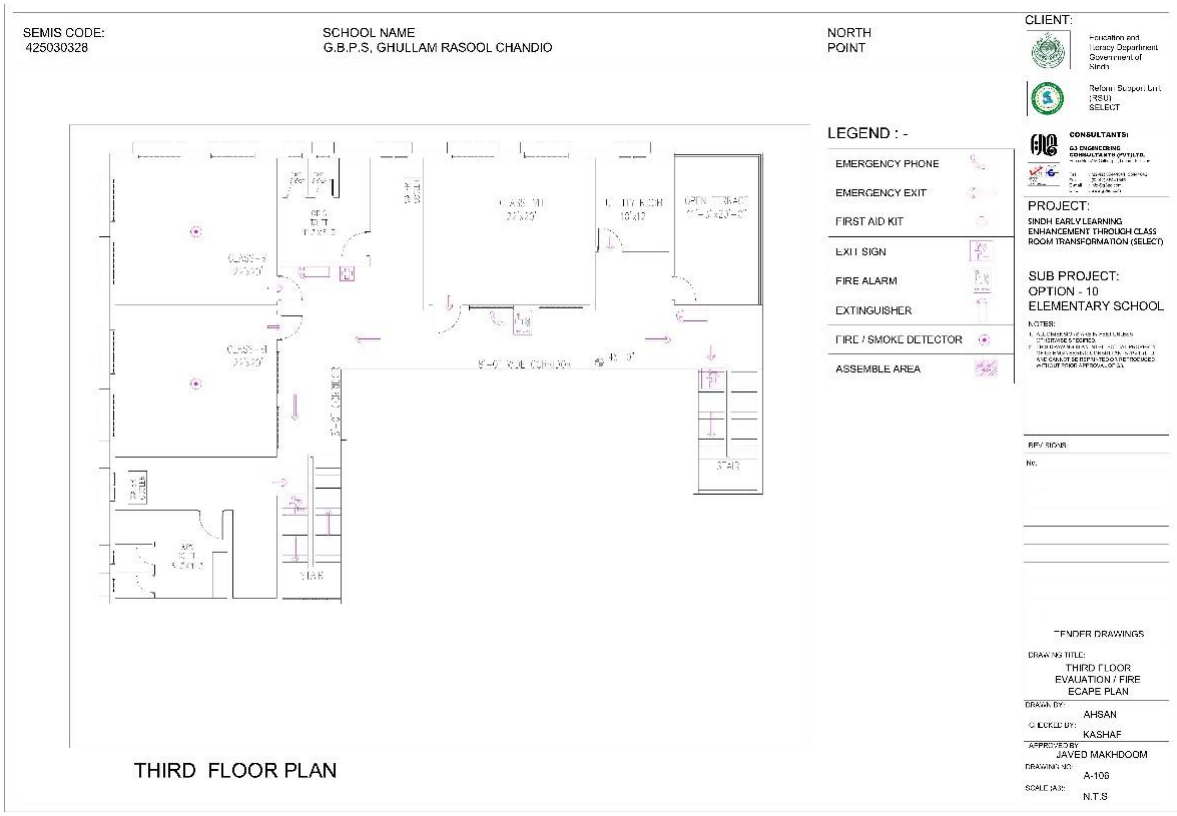
Modular Design 10: Elementary School
(Ground Floor)



Modular Design 10: Elementary School
(First Floor)



Modular Design 10: Elementary School
(Second Floor)



Modular Design 10: Elementary School

(Third Floor)

3.7 Disaster Resilience Design Features:

When designing new schools or renovating existing ones, special attention is given to ensure that they are resilient to natural disasters. The architects and engineers incorporate specific features in the design of these school buildings to mitigate the effects of hazards such as cyclone, floods, and hurricanes. These hazard-specific designs include advanced structural systems, reinforced roofing and walls, and strategically placed emergency exits and shelters. These measures help to ensure the safety of students, teachers, and staff in the event of a disaster and minimize the damage to the school building and its infrastructure.

3.7.1 Hazard-Specific Design:

- **Flood-Prone and Tsunami Areas:** For schools in flood-prone areas and Tsunami, consider elevating the building on stilts or platforms to minimize floodwater damage. Additionally, waterproof materials and flood doors incorporated for lower levels.
- **Accessibility:** Disaster preparedness plans and safety features will be inclusive and accessible for students with disabilities. Ensure ramps, wide hallways, and accessible restrooms are incorporated in the design.

3.8 Passive Ventilation and Heat Reduction

The school blocks are designed in such a way that passive ventilation system reduces the heat inside the halls. High ceilings and large windows will provide efficient ventilation in the halls. Besides this, the use of red bricks will further reduce the temperatures inside the buildings. The

installation of solar panels above the roof can further reduce the heating of the roof and restrict sunlight from striking directly over the roof.

3.9 Gender Friendly & Inclusive Design

A Gender and Inclusion Checklist (See Annexure J), to ensure the design of the school has considered the socio-cultural norms and provide spaces which are gender sensitive, especially to ensure women (staff and students) are not get disadvantaged. Separate lavatories are provided for females (staff and students) as well as separate female staff room and girls common room is provided in the design of the school blocks to ensure their comfort and privacy. The school design will also incorporate low-slope ramps and accessible washrooms for the especially abled students / teachers.

3.9.1 Prominent Features of Gender & inclusion Checklist

a. Maintain appropriate boundary walls for security or use fences.
b. Provide wheelchair ramps as per "The Accessibility Code of Pakistan 2006".
c. Designated play areas (where space available) with safe equipment.
d. Designated sports areas with equipment, where possible
e. Safe and accessible classrooms with outdoor learning spaces and age-appropriate furniture.
f. Separate toilets for boys, girls, and male and female teachers, with facilities as per "The Accessibility Code of Pakistan 2006".
g. Female and girls toilets have gender sensitive features such as wastebin with lid, long mirror & baby changing station
h. Provide safe drinking water, hand-washing areas, and waste bins.
i. Proper signage in multiple languages.
j. Use tactile and slip-resistant safety flooring tiles.
k. Multipurpose room (serve as a daycare facility specially for female/Girls)
l. A multi-purpose hall to accommodate indoor activities and events within the school premises.
m. Proper electrification to ensure well-lit classrooms and toilets, contributing to a safe & conducive learning environment for students.

3.10 Construction Camps and Workforce

The construction activity will spread over approximately 12 months. There shall be a number of contracts for a variety of works. The selected CC shall have the option to select suitable site(s) located near the sub-project site to establish labor camps. If private land is selected, CC will enter into a contract with the private owner.

Since the work is quite scattered in nature with many sites in the sub-project area, the work bases shall be set up by the CC in consultation with the engineering teams. Essential for the work bases are easy to approach and access roads, availability of a suitable place for temporary storage of material and availability of water for construction in the vicinity. The presence of shade from trees close to the work bases can add to the comfort of the laborers while taking a rest during the hot season.

The location of storage materials and camps will be critical. Since CC will be responsible for identifying suitable locations for storage and labor camps from the private sector, there will need to be clear guidelines for this process, which will need to be closely monitored by the implementing agency. As far as possible, the project design team shall be assigned for the task to identify the

suitable location(s) for storage of materials since inappropriate storage of materials may result disruption of the traffic movement.

A considerably small labor camp within each subproject site will be developed that can house around 8-10 construction workers. Local labor will be preferred by CC. CC will also allocate construction supervisors as well as dedicated HSE staff at each site. The number of human resources will be reliant upon CC, however, dedicated HSE staff is necessary for the implementation of mitigation measures.

For construction camp requirements, water for drinking and washing is necessary. Bottled water for drinking purposes will be provided as per need. For other uses like bathing, cooking, sanitary needs, ablution, washing of clothes and hand washing, a maximum of around 275 gallons/day of water is required for each subproject site. The water will be sourced from local resources, usually the groundwater from local tube wells. CC will purchase the water for other uses from the community. Where the water is scarce as mentioned in need assessment of some of the subproject sites, CC will need to find other sustainable sources to fetch the water. It will be the responsibility of CC to limit the use of water in water scarce areas like skipping bathing and washing clothes for a day or two.

A pit latrine will be developed for labor within the site. The resources utilized by the construction labor will not be significant and will not cause a burden on social infrastructure and services of the community as the resources will be insignificant and to be arranged by CC.

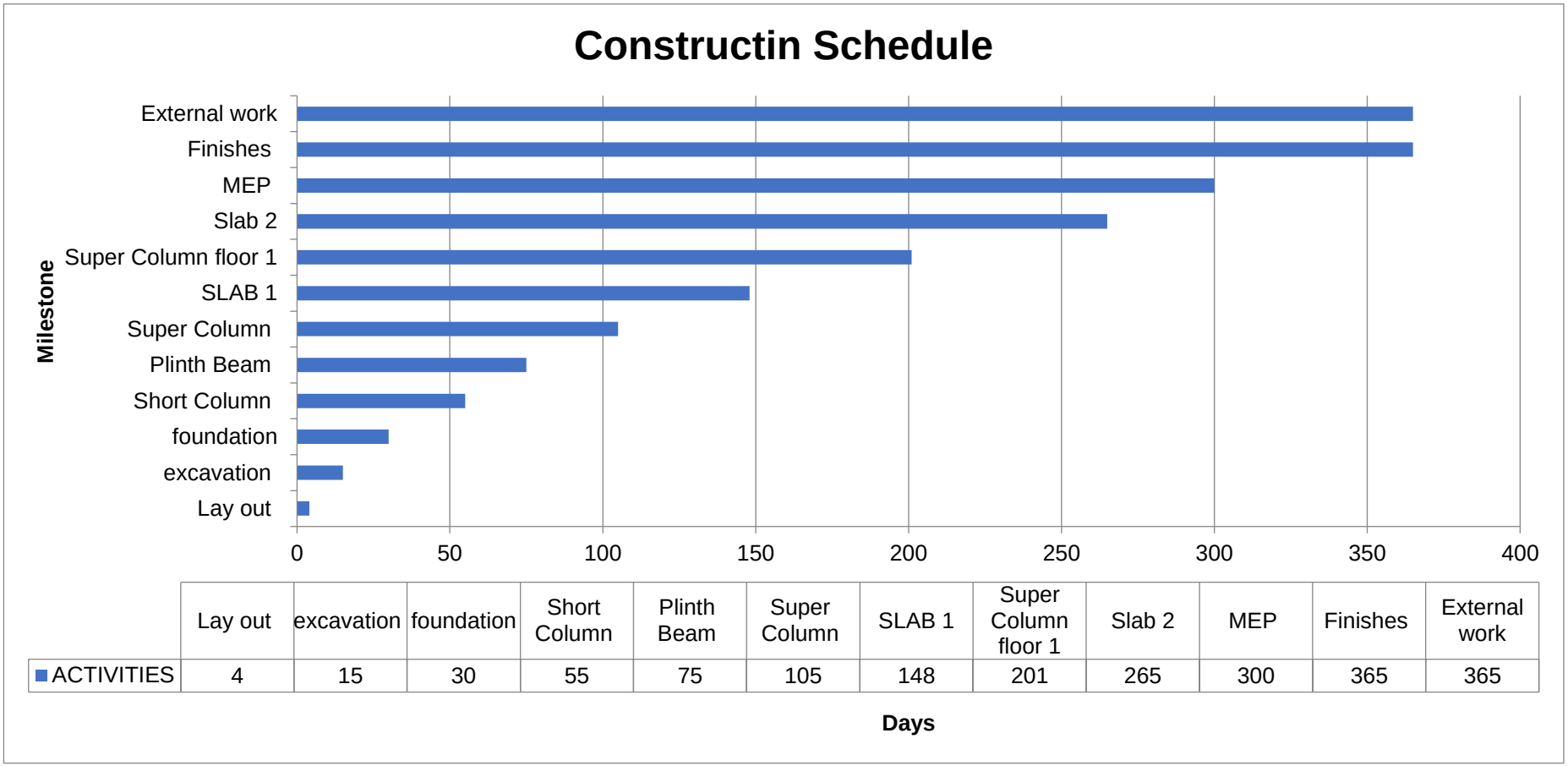
Maintaining community health and safety is crucial during a school construction project. This includes ensuring proper sanitation facilities and waste management practices at labor camps to prevent the spread of diseases. Providing clean water, adequate ventilation, and good living conditions also promotes worker well-being and reduces the risk of health problems.

To avoid conflicts that may arise from the proximity of labor camps to community spaces or private houses, the Contractor Community Liaison Officer will be in regular contact with community members. Camp locations will be carefully identified, and regular community consultations will be conducted to address any concerns and foster positive relationships.

For material storage sites, it's essential to take measures to suppress dust, such as sprinkling water and covering stockpiles. This helps to minimize air pollution that could impact the surrounding community. Additionally, it's important to secure the storage area with fencing and controlled access to prevent unauthorized entry and potential accidents.

3.11 Construction Schedule

The project construction phase is expected to last for a total of one year with the activity expected to commence in the third quarter of 2024 and completed by the fourth quarter of 2025 for all 21 school sites. The detailed Construction schedule is present in Figure 6.



	Lay out	excavation	foundation	Short Column	Plinth Beam	Super Column	SLAB 1	Super Column floor 1	Slab 2	MEP	Finishes	External work
ACTIVITIES	4	15	30	55	75	105	148	201	265	300	365	365

Figure 6: Construction schedule for 21 shortlisted schools of District Tando Muhammad Khan

3.12 Associated Project Activities:

Other associated activities include site clearing, staging areas and campsites, and material sourcing.

Table 10 below shows the various proposed project activities and staffing at the pre-rehabilitation, Rehabilitation and operation phases of the project.

Table 12: Project Activities and Facilities

N o.	Project Phase	Activities	Labor / Staffing	Support Facilities	Timeframe
1	Pre-Rehabilitation	• Site marking and pegging, • Site clearing Mobilization of equipment and workers to site Establishing of staging area and campsite	• Skilled labor (estimate) of 2x40 sites = 80 nos) • Unskilled Labor (estimate of 2x40=2,160 nos)	Staging Area for workers' Equipment Campsite (accommodation for workers) • Portable water and Sanitary Facilities including toilets. • Personal Protective Equipment (PPEs) • First Aid kits	2 Weeks
2	Rehabilitation	Partial demolition • Installation of traffic signage and cautions on site • Repairs of facilities: classrooms, toilets, labs etc. •Demobilization from site ✓ Removal of construction equipment. ✓ Disposal of construction waste in general ✓ Dismantling of	• Skilled labor (estimate of 2x40 = 80 nos) • Unskilled labor (estimate of 3x40= 120nos)	• Staging area • Campsite • First aid kits (1 kit would serve 10 staff) • Construction water and materials • Sanitary Facilities (male and female toilets) • PPEs • Portable water for workers, food and security	12 months months

		staging area and exit from campsite			
3	Operation and Maintenance	• Academic and school activities • Building maintenance • Maintenance of WASH facilities and sewage management	Skilled labor (estimate 1 x 40 = 40 nos) • Unskilled labor (estimate 2 X40 = 80 nos)	• Water for WASH facilities • Maintenance Workshop • Maintenance equipment	Routinely during operation phase

Material Sourcing:

Contractors often face a choice between purchasing materials from a local supplier or from their company's usual supplier. Sometimes, a wholesaler may be able to provide the required materials. Typically, quotes are requested from the company's usual suppliers. To check the availability of materials, one can make inquiries by phone to identify suppliers with good supplies and inquire about the quality of the available material. The next step involves soliciting quotes from these suppliers through written requests, email requests, faxed requests, or telephone requests, to identify the supplier with the most economical prices and the best service.

Staging Area:

When building a school in Tando Muhammad Khan, a staging area will be built near the construction site. It has several functions, such as storing building materials, housing construction equipment, providing facilities for workers, and managing waste.

Materials will be stored in a secure location in the staging area to keep them safe from damage or theft and to provide easy access for workers. Construction equipment, such as cranes, bulldozers, mixers, and trucks, are stored in a designated area, reducing congestion on the main construction site and ensuring that the equipment is secure and well-maintained.

Temporary facilities for workers, such as changing rooms, toilets, and a break area, are also available in the staging area. The laydown area can be used for pre-fabrication activities, such as assembling prefabricated building components or preparing materials for installation, freeing up space on the main site for critical construction tasks.

A designated area within the staging zone can be used to store construction waste before it is hauled off for disposal to maintain cleanliness and a safe work environment on the main site. The size and layout of the staging area will depend on the school construction project's size and the availability of space near the site.

To ensure the safety of the community, especially children and livestock, proper barriers and sufficient distance from residential areas will be maintained. These measures will help prevent unauthorized access and reduce the risk of accidents or health hazards.

3.13 Alternate Arrangements:

During the construction phase of ensuring uninterrupted learning for students is of paramount importance. To address this, the project team is exploring alternative arrangements to provide temporary classroom space for students, guided by the "Guidelines for Alternate Classroom Arrangements for Students" under the Sindh Early Learning Enhancement Through Classroom Transformation Project (SELECT).

The objective of these guidelines is to mitigate risks related to health and safety, access, student dropouts, and exclusion of vulnerable and disadvantaged groups during the relocation of students for construction activities. The process begins with a needs assessment survey, which determines whether students need to be relocated and identifies suitable alternate classroom arrangements. The preferred options for alternate arrangements include:

1. **Keeping students in existing school premises** by shifting to another block/classroom, which may involve a phased approach for construction and/or multiple shifts for students.
2. **Relocating students to nearby schools within easy access**, ensuring the alternate school is within 1km of the existing school, preferably 500 meters.
3. **Using temporary community donated spaces or local structures set up by the community for this purpose**, ensuring compliance with SELECT E&S requirements and accessibility for disadvantaged and vulnerable groups.

The identification of alternate classroom arrangements is confirmed through consultation with relevant education authorities & discussion with SMCs and Head Teachers. During the need Assessment survey by DSC team, a detailed screening of the identified selected arrangements is conducted to ensure structural stability, community health and safety, ease of access, and stakeholder engagement. Certain locations, such as private houses, buildings with compromised structural stability, tents, and open-air arrangements, are excluded from consideration.
Stakeholders play crucial roles in implementing alternate options. The District Education Officer (DEO) will finalize and shares the list of potential alternate sites, ensuring alignment with educational standards and mitigating dropout and academic activity disturbances. The Taluka Education Officer (TEO) consults with school authorities and communities to identify suitable locations, facilitate shifting of students and teachers, and mitigate potential disruptions. The DSC have evaluated the safety and accessibility of identified locations, conducts technical assessments, and ensures compliance with E&S Standards. The PMIU coordinates communication and execution among stakeholders to ensure the selected sites align with project objectives.

The DSC team identified the tentative alternate classrooms option through Need assessment survey, the list is present in Table 11. The following list of alternative schools comprises those identified during the need assessment. This list is tentative and will undergo further review before the construction of the schools in collaboration with district and taluka education officer.

Temporary Academic Facilities:

Special provisions for temporary academic facilities during the construction of the school include ensuring that classrooms, offices, labs, stores, washrooms, and other necessary operational facilities are provided and maintained for the entire duration of the construction project. These facilities can be arranged through rental buildings, provisions of missing facilities in identified alternate spaces, or rehabilitated government buildings. The contractor is responsible for ensuring these temporary facilities are well-ventilated, secure, and equipped with necessary utilities such as uninterrupted power supply, water, sanitation, and drainage systems. They must also provide a safe and healthy environment for students and faculty, including first aid stations and sufficient open space for student activities. Any missing facilities will be arranged by the contractor and are included in the Bill of Quantities (BOQs). Regular maintenance is required to keep these facilities

in good condition and the costs are included in the contractor's unit rates and measured for monthly payment.

Additional Information on Special Provisions:

These provisions ensure that temporary schooling facilities are adequately equipped to serve the academic needs of students and staff during the construction period. These facilities must be approved by the Engineer and should be near the existing school. The contractor must submit layout and location plans for approval before establishment. Upon project completion, the contractor is responsible for removing all utilities and restoring the site to a clean condition. If the contractor fails to provide the necessary facilities, the school administration may arrange them, and the actual cost will be deducted from the contractor’s due amount. The contractor must also comply with all applicable laws and regulations and ensure environmental, and health and safety standards are met.

Table 13: List of alternate Classroom Facility to continue Education activities

SR.No	School Name:	Alternate Classroom Arrangements School/ Community Hall	Distance From School to Alternate	DEO/TEO Endorsement	Condition (Structure stability, Safety & Security & Wash Facility)
1	GBPS QABOOL PUR (425030272)	School : Semis code 925000105 GBPS ANWER ALI SHAH (School)	145 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
2	GBPS PUNHOON MIRBAHAR @ HASSANABAD (425030157)	School : Semis code 425030257 GBPS ALI PUR (School)	495 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
3	GBPS ZULFIQAR ABAD (425030059)	School : Semis code 425030118 : GGPS :ZULFIQAR ABAD (School)	185 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
4	GBPS AALI JHARK (425030259)	School : Semis code 425030168 GGPS AHMED SHORO (School)	567 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: YES Need improvement of Washroom facilities: NO

5	GBPS JAN MUHAMMED LASHARI (425030054)	School : Semis code 425030058 : GBPS HAJI MOHB USMAN LASHARI (School)	387 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
6	GBPS MOHIB MIR BAHAR (425030287)	School : Semis code 425030102 : GBPS HAJI URIS KHASKHELI (School)	486 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
7	GBPS GHULAM RASOOL CHANDIO (425030328)	Community Hall: The parents, teachers and local community express their preference to utilize the nearby community hall as an alternative arrangement. They highlight its easy accessibility for both teachers and students.	200 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
8	GBPS ABDUL RAZAQUE DARS (425030061)	School : Semis code 425030349 GBPS BHALEDINO DARS (School)	70 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES

9	GBPS YOUSUF LAGHARI (425030269)	School : Semis code 425030330 GBPS ALI MURAD LAGHARI (School)	574 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
10	GBPS NANGO SHAH (425010041)	School : Semis code 425010187 GBPS KARAM KHAN MAGSI (School)	733 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: NO WASH facilities Available: NO Need improvement of Washroom facilities: YES
11	GBPS KHAMISO LAGHARI (425010036)	School : Semis code 425010110 GGPS KHAMISO KHAN LAGHARI (School)	22 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: YES Need improvement of Washroom facilities: NO
12	GGPS GAMANI NIZAMANI @ GHAMANI KHASKHELI (425020106)	School : Semis code 425020375 GBPS URS PANHWAR (School)	50 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: NO WASH facilities Available: NO Need improvement of Washroom facilities: YES
13	GBPS ALLAH BUX SIYAL (425020316)	School : Semis code 425020095 GGPS ISMAIL NIZAMANI (School)	436 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: YES Need improvement of Washroom facilities: NO

14	GGPS MEHAR LAGHARI (425020096)	School : Semis code 425020063 GBPS MEHAR LAGHARI (School)	231 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
15	GBPS HYDER SHAH (425010165)	School : Semis code 425010211 GBPS SHER MUHAMMED LANGA (School)	290 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
16	GBPS SHAHMIR KOLHI @ LIAQUAT ALI LAGHARI (425020112)	Community Hall: The parents, teachers and local community express their preference to utilize the nearby community hall as an alternative arrangement. They highlight its easy accessibility for both teachers and students.	150 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
17	GBPS JAMALU DDIN JUNEJO (425020143)	Community Hall: The parents, teachers and local community express their preference to utilize the nearby community hall as an alternative arrangement. They highlight its easy accessibility for both teachers and students.	300 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES

18	GBPS WAHIDABAD MOHALLA (425010270)	School : Semis code 425010283 BAQAR NIZAMAMI (School)	257 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: YES Need improvement of Washroom facilities: NO
19	GBPS WANGAI MAHERI (425020230)	School : Semis code 425020234 Gbps Yousuf lashari (School)	793 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: NO WASH facilities Available: NO Need improvement of Washroom facilities: YES
20	GBPS KATH BANBHAN (425020231)	Community Hall: The parents, teachers and local community express their preference to utilize the nearby community hall as an alternative arrangement. They highlight its easy accessibility for both teachers and students.	150 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: NO Need improvement of Washroom facilities: YES
21	GBPS JUMAN BEHRANI (425020044)	School : Semis code 425020186 GBPS AHMED SHEEDI (School)	425 meters	Yes	Structure stability: YES Safe and secure for students and teachers: YES Accessible to All: YES Drinking water Facility: YES WASH facilities Available: YES Need improvement of Washroom facilities: NO

4 DESCRIPTION OF ENVIRONMENT AND SOCIAL BASELINE

4.1 Introduction

This chapter focuses on the overview of environment and social baseline conditions across 21 sub-projects (Schools) sites of district. It not only aims to identify precise environmental and social conditions but also relevant issues within each area to inform mitigation strategies against potential risks and impacts. Among the selected schools in Tando Muhammad Khan district, 20 are located in rural areas, and 1 in urban settings. The sub-project sites visited for screening were mainly with uniform climatic conditions, lying in 7 elevated, 11 plain and 3 depressed areas but majorly the schools were found in plain areas, all 21 schools were affected from 2022 floods, no school site within the protected/sensitive area. However, the broader picture of the environmental and social baseline is reflected in relevant sections. The detailed summary of E&S Screening for 21 schools is attached as annexure B of this report.

4.2 Objectives of the Baseline:

The objectives of the environmental and social baseline study are to:

- Determine the existing environmental and social conditions before the sub-projects are executed.
- Use this information to assess potential environmental and social impacts which can alter the existing state of the environment.

4.3 Scope of Work:

The environment baseline studies explore existing topography and geology, seismicity, climate, surface water resources, groundwater resources and their quality, air quality, noise levels, road accessibility, soil and flora, fauna, forest and protected areas within the sub-project's boundaries.

The Social baseline study explores demography, religious minorities, economy, agriculture, access to safe drinking water and sanitation, road network and their accessibility, education & health profile.

4.4 Methodology

The following mixed method approach has applied to conduct baseline study:

4.4.1 Literature Review:

- Analysis of secondary data to characterize baselines, particularly topography, geology, seismicity, climate, demography, economy, health and education.
- E&S screening of school sites covering the microenvironment i.e., the sub-project premises and neighboring environmental and social settings covering different land uses like residents, agriculture, urban setup, vegetation (mainly trees) and services like infrastructure, roads, irrigation, etc.
- Field surveys for characterization of sub-project area - specifically: ambient air quality, groundwater, noise levels, and traffic.

4.5 Study Area

All the 21 sub-projects sites finalized for rehabilitation and new construction are in district Tando Muhammad Khan. Out of the 21 schools selected from the Tando Muhammad Khan district, 20 are in rural areas, 1 is positioned within urban settings. Therefore, the environment of the school site is a built environment with very limited natural characteristics.

Following are the specific settlement-based observations during screening of subproject sites.

1. **Rural Schools (20)**:
    - These schools are predominantly situated in rural areas, characterized by agricultural activities, fish farming, livestock farms, open spaces, barren land and scattered settlements.
    - Environmental Baseline: The surrounding environment is likely to be barren land or agrarian, with fields of crops, grazing lands, and potentially some natural habitats. Issues may include water scarcity, reliance on traditional farming methods, and vulnerability to natural disasters like floods, tsunami, cyclone and droughts.
    - Social Baseline: Communities in rural areas often have close-knit social structures, relying heavily on traditional values and communal support systems. Education may face challenges such as limited access to resources, lack of awareness about the importance of education, and gender disparities.

2. **Urban Schools (1)**:
    - This school is situated in densely populated urban centers characterized by infrastructure development, commercial activities, and high population density.
    - Environmental Baseline: Urban areas typically face challenges such as air and water pollution, waste management issues, and limited green spaces. Efforts to promote sustainability and mitigate environmental degradation are crucial.
    - Social Baseline: Urban communities often exhibit diverse socio-economic backgrounds, with access to education influenced by factors such as income levels, availability of educational facilities, and cultural attitudes towards schooling. Addressing issues like overcrowded classrooms, safety concerns, and quality of education is paramount.

4.6 Administrative Setup

District Tando Muhammad Khan comprises of 3 talukas, namely: Bulri Shah Karim, Tando Ghulam Hyder and Tando Muhammad Khan. District Tando Muhammad Khan has 3 Urban Centers, 17 Union Councils.[14] The figure 6 present the Union Councils of district Tando Muhammad Khan.

[14]https://pnd.sindh.gov.pk/storage/resourcePage/62u7SvClgi5XnYvm2a5n3vvTesu4DcqKnhbxeyJP.pdf

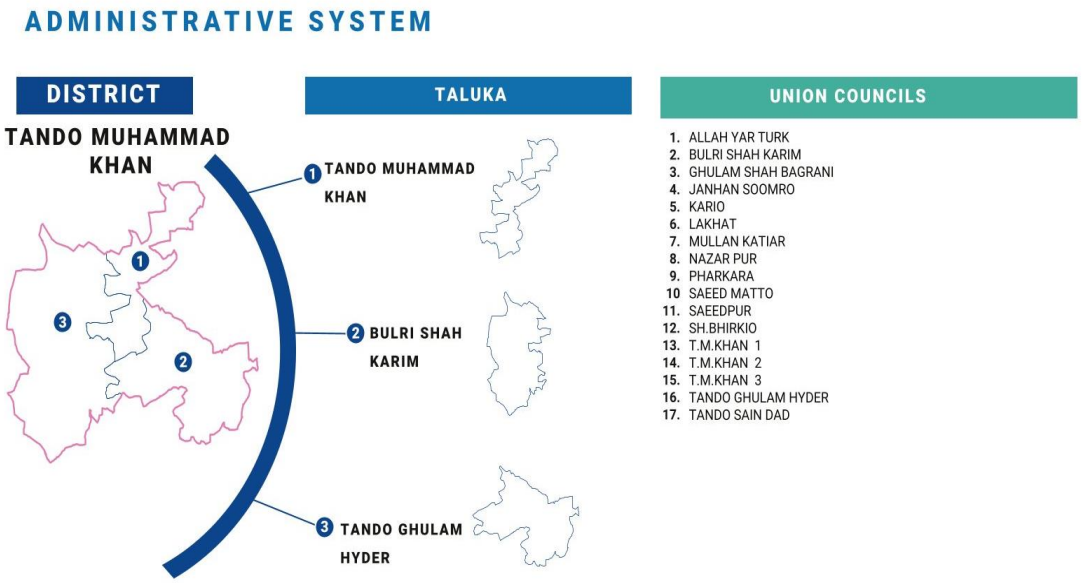


Figure 7: Union Councils of Tando Muhammad Khan

4.7 Disaster Profile

Tando Muhammad Khan district is exposed to a range of natural hazards. Its close location to the Indus River and reliance on its canal system make it vulnerable to flooding, especially during intense monsoon seasons. Additionally, flash floods resulting from heavy rainfall in the surrounding area can also present a significant threat. The district experiences extremely hot and arid summers with blistering temperatures, which can trigger heatwaves and pose health hazards, particularly for the more susceptible groups in the population.

The table 12 present the last 20 years recorded disasters its frequency and severity and its effect on schools' structures in district Tando Muhammad Khan. Additionally, the figure 7 present the hazard severity map of Tando Muhammad Khan. According to the baseline survey, floods and monsoon rains have caused severe damage to the schools. However, heatwaves caused damage to the sub-project sites.

Table 14: Following is the district hazard profile of Tando Muhammad Khan

Hazard	Frequency	Severity	Year	Number of Schools affected
Rain/Flood	Monsoon	Medium / High	2010, 2011, 2012, 2022	29

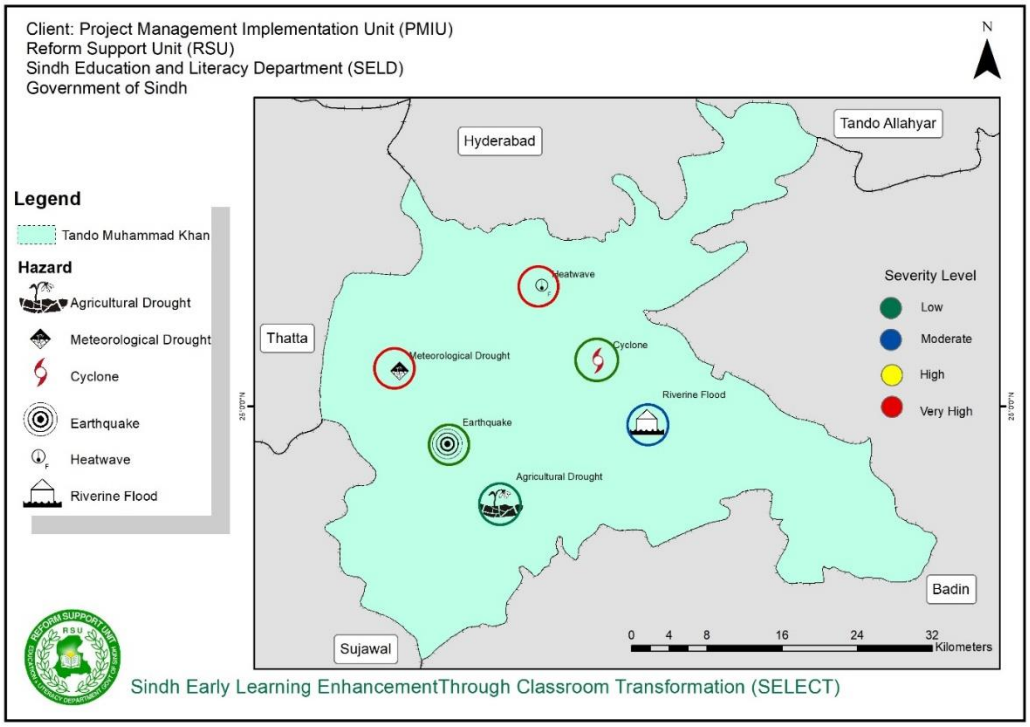


Figure 8: Tando Muhammad Khan Hazard Severity Map

Figure 9 below illustrates the summary of E&S screening of climatic impacts on subproject sites. In summary, floods and heatwaves significantly impact the proposed subproject sites, each affecting 21 sites. No sites are affected by drought.

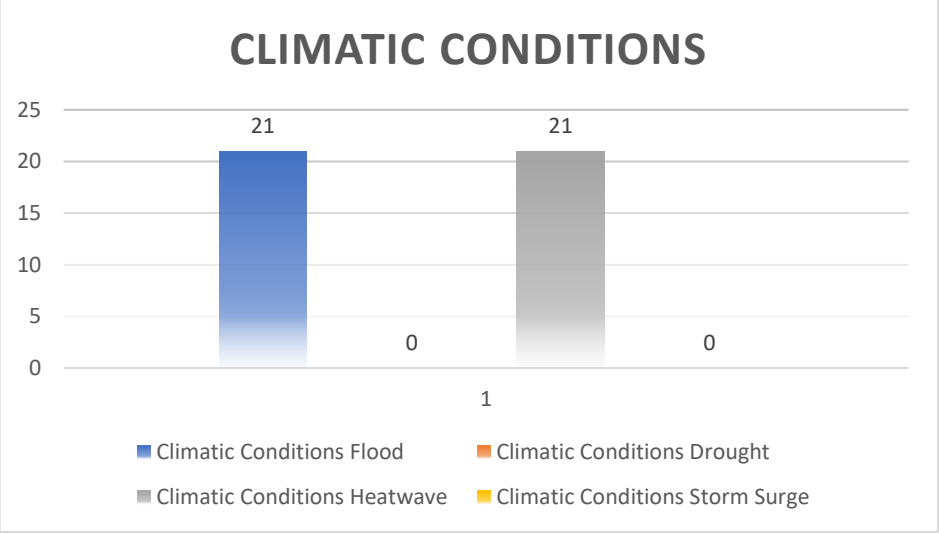


Figure 9: E&S Screening summary on climatic impact on subproject sites and community.

4.7.1 Flood 2022 damages on Sub Project School Sites

The flood of 2022 hit the district of Tando Muhmmad Khan which has left a devastating impact on the local schools, causing extensive damage to the infrastructure and rendering them almost unusable. The floodwaters have caused severe structural damage to the buildings, including classrooms, and administrative offices.

In addition to the damage caused by the floods, the area is also experiencing an extreme heatwave, making it almost impossible for students to attend school. The lack of electricity exacerbates the

situation, as fans are not functioning, making the environment unbearable for both students and teachers.

As a result of these adverse climate change conditions, all 21 schools in the area have been severely affected, with students and teachers unable to continue their academic activities. The situation has caused significant disruption to the education system, and it is imperative that urgent measures are taken to address the issues and restore the schools to a functional state.

The list of level of destructions is tabulated in the given table 15 below. Based on the assessment of needs, it has been determined that all schools have been impacted by the 2022 flood. The scale of destruction varies among the schools and has been categorized in partially damage and fully damage defined below for ease of understanding and reference.

Partially Damaged:

- **Structural Impact**: Some parts of the school building, such as classrooms, roofs, walls, or windows, are damaged but the building is still usable. This might include broken windows, minor roof leaks, damaged walls, or any damage that does not render the building completely unusable.
- **Infrastructure**: The infrastructure may have suffered some damage, but repairs are possible, and the building can still function with temporary measures.
- **Operational Status**: The school may continue to operate with limited functionality or require some classes to be relocated until repairs are made.

Fully Damaged:

- **Structural Impact**: The building has suffered severe structural damage, making it unsafe and unusable. This could include collapsed walls or roofs, severe foundation issues, or other critical damages that compromise the integrity of the building.
- **Infrastructure**: The infrastructure is so extensively damaged that major reconstruction or complete rebuilding is necessary.
- **Operational Status**: The school cannot operate in the current building, and students and staff need to be relocated to a different facility or temporary structures need to be set up for the continuity of education.

As per the need assessment, all 21 schools are affected by flood 2022. The list of level of destructions is tabulated in the given table below.

Table 15: Sub Project Sites - Flood 2022 and Cyclone 2021 Damages

S.no	Taluka	School Name	The level of destruction
1	Bulri Shah karim	GBPS QABOOL PUR (425030272)	Partially damaged
2	Bulri Shah karim	GBPS ZULFIQARABAD (425030059)	Partially damaged
3	Bulri Shah karim	GBPS PUNHOON MIRBAHAR @HASSANABAD (425030157)	Minor damages
4	Bulri Shah karim	GBPS AALI JHARK (425030259)	Minor damages
5	Bulri Shah Karim	GBPS MOHIB MIRBAHAR (425030287)	Partially damaged
6	Bulri Shah Karim	GBPS GHULAM RASOOL CHANDIO (425030328)	Partially damaged
7	Bulri Shah Karim	GBPS ABDUL RAZAQUE DARS (425030061)	Completed damaged
8	Tando Muhammad Khan	GBPS NANGO SHAH (425010041)	Partially damaged
9	TANDO MUHAMMAD KHAN	GBPS Khamiso Laghari (425010036)	Minor damages
10	Bulri Shah Karim	GBPS JAN MUHAMMAD LASHARI (425030054)	Partially damaged
11	Tando Muhammad Khan	GBPS HYDER SHAH (425010165)	Minor damages

12	Tando Ghulam Hyder	GGPS MEHAR LAGHARI (425020096)	Minor damages
13	Tando Ghulam Hyder	GBPS ALLAH BUX SIYAL (425020316)	Partially damaged
14	Tando Ghulam Hyder	GGPS GAMANI NIZAMANI@ GAMANI KHASKHELI (425020106)	Minor damages
15	Tando Ghulam Jyder	GGPS SHAHMIR KOLHI@ LIAQUAT ALI LAGHARI (425020112)	Partially damaged
16	Tando Ghulam Hyder	GBPS JAMALUDDIN JUNEJO (425020143)	Partially damaged
17	Tando Muhammad Khan	GBPS WAHIDABAD MOHALLA (425010270)	Partially damaged
18	Tando Ghulam Hyder	GBPS WANGAI MAHERI (425020230)	Partially damaged
19	Tando Ghulam Hyder	GBPS KATH BANBHAN (425020231)	Minor damages
20	Bulri Shah Karim	GBPS YOUSUF LAGHARI (425030269)	Minor damages
21	Tando Ghulam Hyder	GBPS JUMAN BEHRANI (425020044)	Partially damaged

The wrath of the 2022 monsoon floods wasn't spared from Tando Muhammad Khan. The recent floods in Sindh such as, in 2022, Tando Muhammad Khan experienced riverine flooding, which occurs when rivers overflow their banks.
Chief Minister Sindh Murad Ali Shah has declared Tando Muhammad Khan's calamity hit after heavy rainfall in the city. According to a statement issued by the CM House, Sindh Tando Muhammad Khan received record rainfall in July and August. [15]

The figure 10 shows a map of flood inundation extent in Tando Muhammad Khan District as of September 20, 2022, with data derived from Sentinel-2 imagery. It includes district profiles indicating area, population, and crop land affected by floods. Affected Union Councils and the percentage change in inundation over time are also listed

[15] https://arynews.tv/cm-sindh-declares-tando-muhammad-khan-calamity-hit/

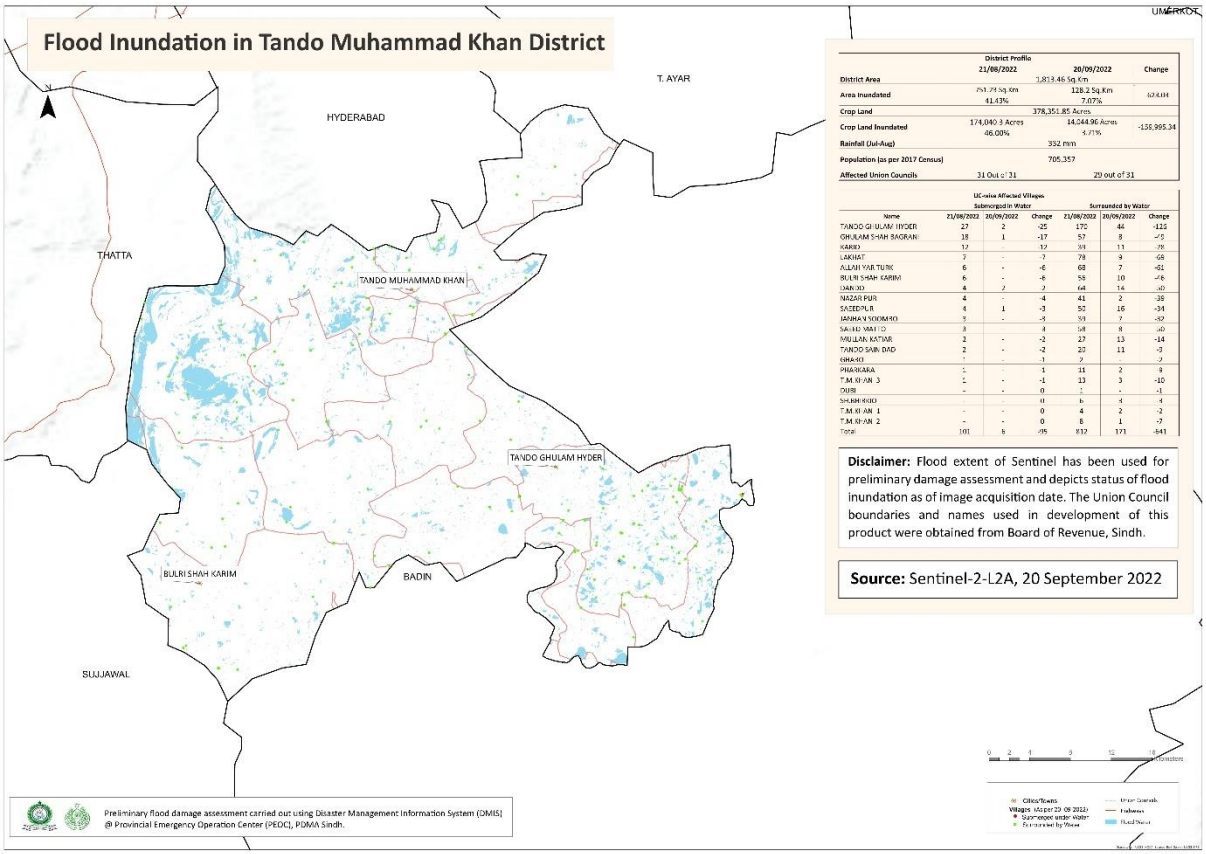


Figure 10: 2022 Flood Inundation in Tando Muhammad Khan [16]

The Figure 11 map displays the historical flood extents in Tando Muhammad Khan District, highlighting areas affected by floods in 2010, 2011, and 2015. Major settlements, district boundaries, rivers, and embankments are also indicated, based on data from the National Disaster Management Authority (NDMA).

16 https://pdma.gos.pk/Documents/Flood/Flood_2022/Flood%20Inundation%20GIS%20Maps/Flood%20Inundation%20Map-TandoMuhammadKhan_20-09-2022.pdf

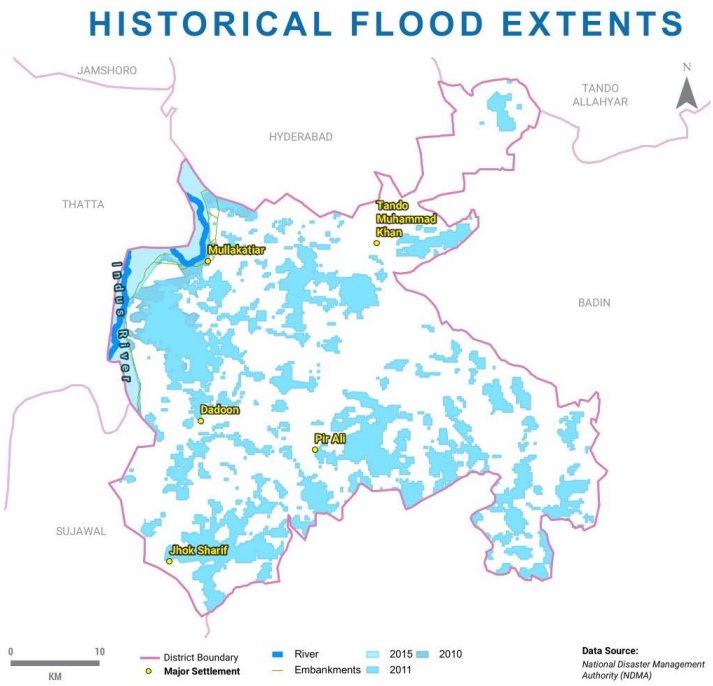


Figure 11: Historical Flood Extents in Tando Muhammad Khan

A comparison of recent floods in Sindh illustrates in below figure 12, the areal extent of significant floods in Sindh for the years 2010, 2011, 2020, and 2022, highlighting the impact of riverine, urban, and flash floods caused by breaches in the Indus River and heavy rains. The 2022 map shows the most extensive flooding, combining all three types of floods.

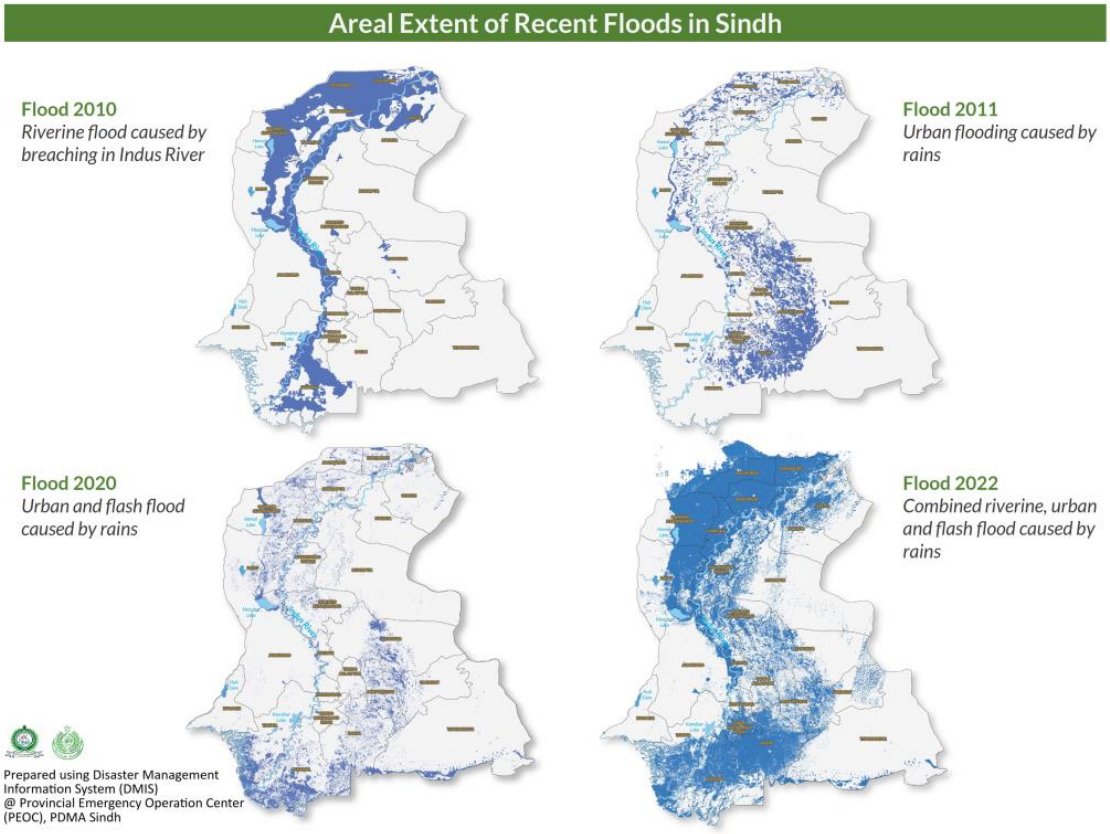


Figure 12: Impact of recent floods in 2010, 20111, 2020 & 2022

4.7.2 Extreme weather events:

Scorching temperatures and heatwaves, are common, placing stress on water resources and agricultural productivity. Conversely, heavy monsoon rains can lead to flash floods and waterlogging, damaging infrastructure and displacing communities.

4.7.3 Earthquakes:

The Tando Muhammad Khan region in Sindh falls under a low seismic risk zone (2A). Historical earthquake data for this specific area is limited due to the relatively recent implementation of comprehensive earthquake recording.

The figure 13 indicates that the sub-project area falls within Zone 2A, with Peak Ground Acceleration (PGA) ranging from 0.08 to 0.16 (Pakistan Building Code of Pakistan, 2007). All sub-project sites are located in Zone 2A seismic zones, posing no risk related to earthquakes and are considered safe.

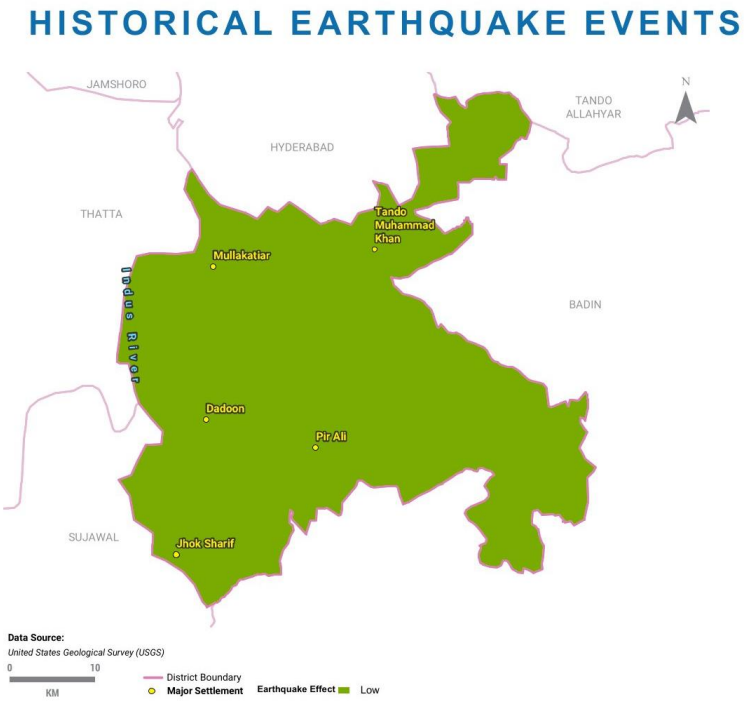


Figure 13: Historical Earthquake Event [17]

4.8 Physical Environment

4.8.1 Geography

District Tando Mohammad Khan (TMK) is located between 68° 15' 14" to 68° 44' 2" East longitudes and 24° 45' 41" to 25° 17' 8" North latitudes and is situated at a distance of 35 km from Hyderabad. It is bordered by Hyderabad and Tando Allahyar districts to the North, Badin district to the South and East, and Thatta district to the West. River Indus flows in the Northwest. Figure 14 present geological map depicting different types of deposits in project district. Key features of the map include:

[17] https://pdma.gos.pk/Documents/Atlas/Sindh%20Hazard%20&%20Risk%20Atlas-%20Tando%20Muhammad%20Khan.pdf

1. **Geological Features**:
    - **Flood Plain Deposits**: The light blue areas represent flood plain deposits. These are areas where sediments have been deposited by rivers during floods.
    - **Stream Bed and Meander Belt Deposits**: The dark blue areas indicate deposits found in stream beds and meander belts. These are typically found in active river channels and areas where the river frequently changes course.
    - **Older Flood Plain Deposits (Lower Terrace)**: The slightly darker blue areas show older flood plain deposits which are generally higher in elevation compared to active flood plains.
    - **Laki Formation**: Marked with a specific shade of brown, these are areas representing geological formations named after Laki.

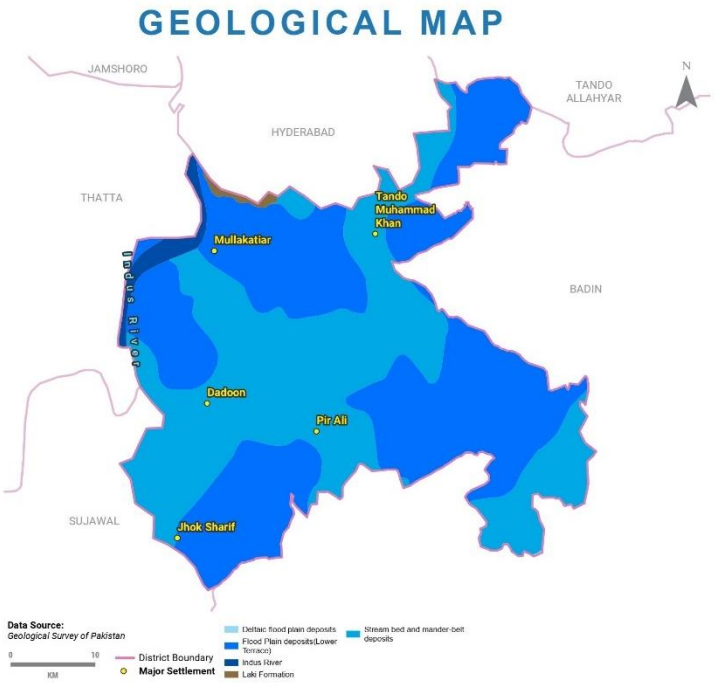


Figure 14: Geographic Map of Sub Project Area[18]

4.8.2 Topography

Tando Muhammad Khan district is part of the lower Indus plain formed by the alluvial deposits of the Indus River. The district is situated at the foot of Ganjo Takkar Hills Range that runs nearly due south, parallel to the Indus for about 22.5 km (14 miles). The hills have an elevation of just 31 meters (100 feet). Fuller's earth is mined in these hills. There are 2 small hillocks on the North of Tando Muhammad Khan town, called Budhaka Takkar. The rest of the district is fertile plain with an elevation of about 11 meters above sea level. [19]

During E&S screening, we found 7 school in elevated, 11 schools located in plain and 3 schools in depressed areas, the data summarized from subproject screening attached as annex: B, Figure 15 shows Topographic map of district Tando Muhammad Khan with Subprojects locations.

[18] https://pdma.gos.pk/Documents/Atlas/Sindh%20Hazard%20&%20Risk%20Atlas-%20Tando%20Muhammad%20Khan.pdf

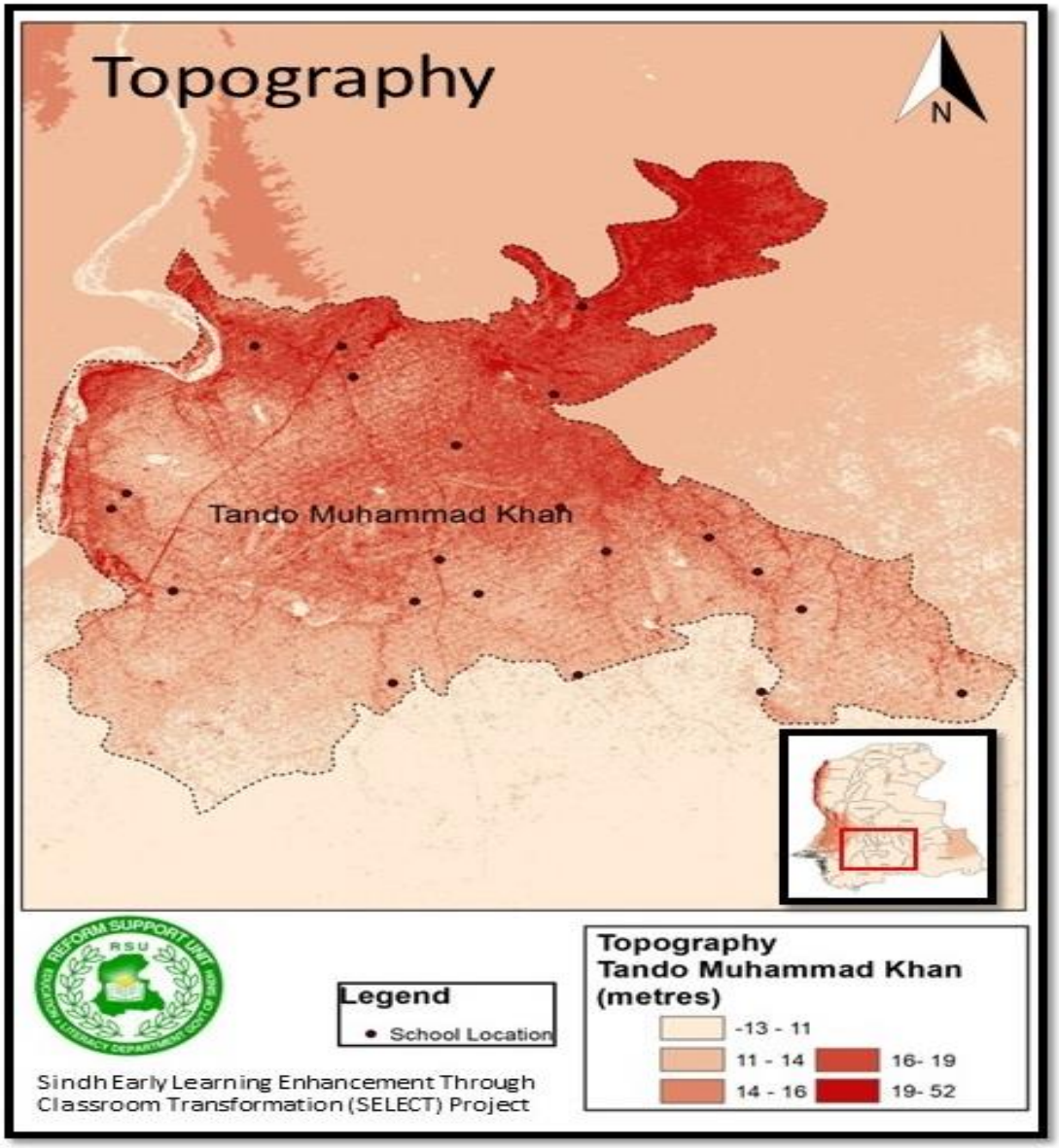


Figure 15: Topographic Condition of Subproject sites

4.8.3 Soils

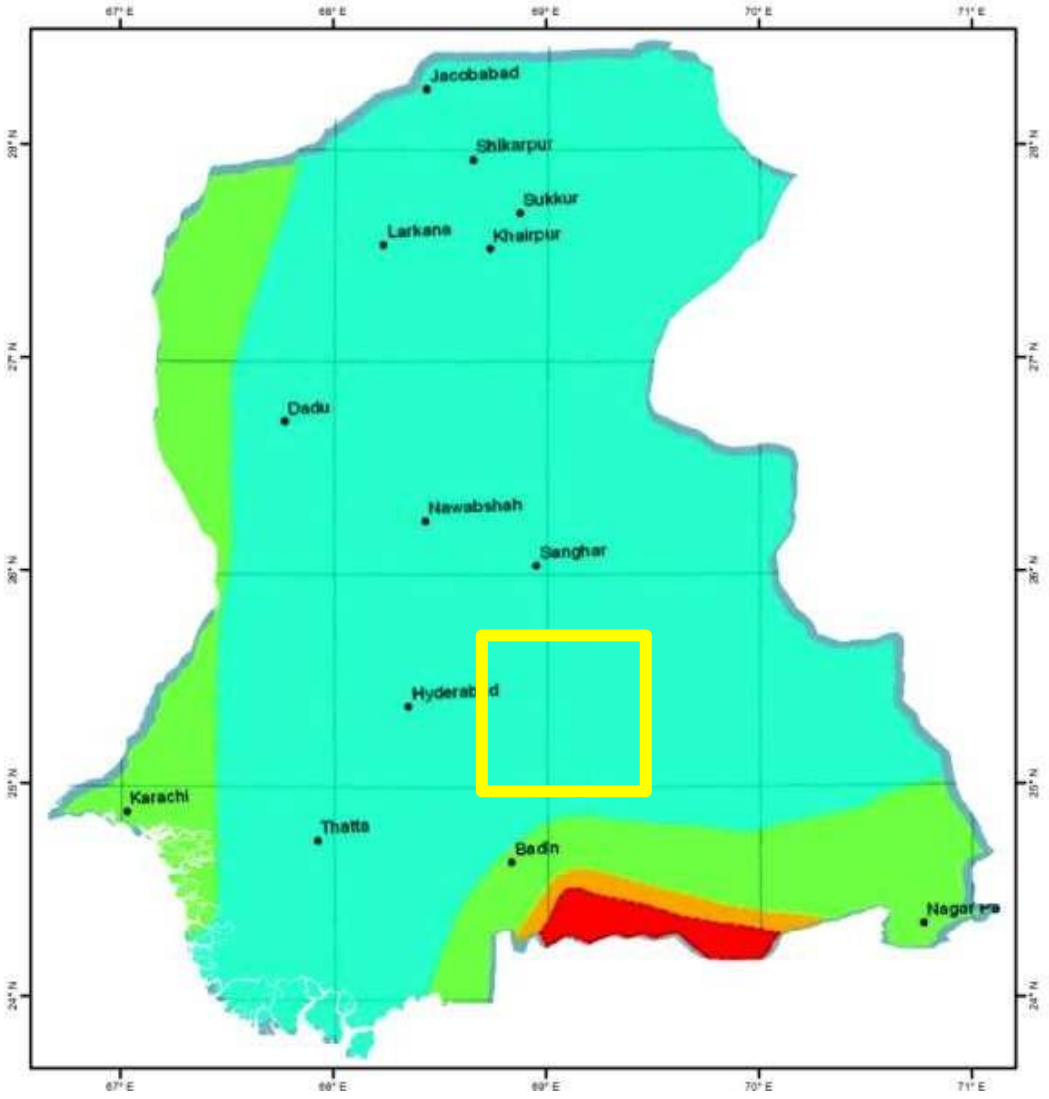
The soils of the district mainly consist of loamy and clayey soils of older river plains and are very fertile.[20] Tando Muhammad Khan is a district in the Sindh province of Pakistan known for its fertile soil. Surface soil comprises fine textured sediments dominated by silt and clay with subordinate sand.[21] The soil in Tando Muhammad Khan is ideal for agriculture, particularly for growing crops like wheat, cotton, sugarcane, and vegetables. Farmers in this region have been able to achieve high yields due to the rich quality of the soil.

[20] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497087354-b3c63ef2-64a3

[21] https://www.researchgate.net/publication/340627896_Soil_Minerals_Serving_as_Source_of_Arsenic_in_Alluvial_Aquifers_of_Holocene_A_Case_Study_from_Indus_Delta_Sindh_Pakistan?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6Il9kaXJlY3QiLCJwYWdlIjoiX2RpcmVjdCJ9fQ#pf2

4.8.4 Seismicity

The district lies in Zone 2 A of the Seismic Activity Zone Map of Sindh which means there is low to moderate damage to property due to earthquakes. [22] The district is not prone to seismic activities and is less affected by earthquakes. No fault line is present in the district. The map shown in Figure 16 indicates that the sub-project area is falling in Zone 2A., with Peak Ground Acceleration (PGA) varying from 0.08 to 0.16 (Pakistan Building Code of Pakistan, 2007). All the sub-project sites lie in 2A seismic zones not posing any risk related to earthquakes and are safe.



[22] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497087354-b3c63ef2-64a3

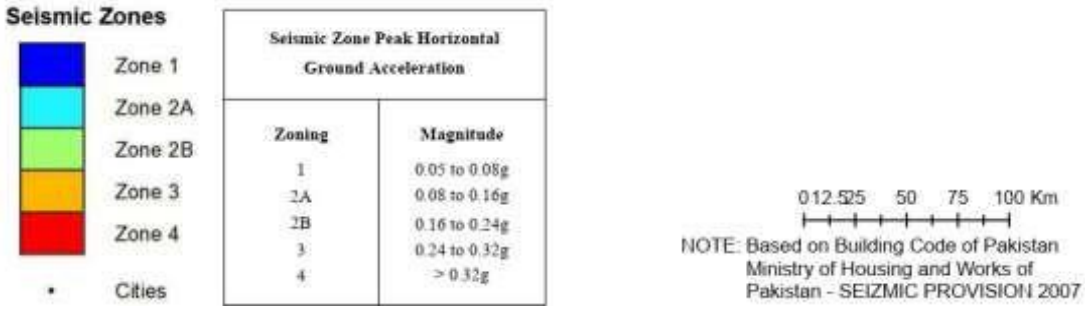


Figure 16: Seismic Activity Zone Map of Sindh

4.9 Climate

The climate of the district is extreme as shown in Figure 17. In Tando Muhammad Khān, the summers are short, sweltering, muggy, arid, and windy; the winters are short, comfortable, and dry; and it is mostly clear year round. Over the course of the year, the temperature typically varies from 12°C to 40°C and is rarely below 9°C or above 44°C.[23] All the sub-project sites have uniformed climatic conditions showing no variations among them.

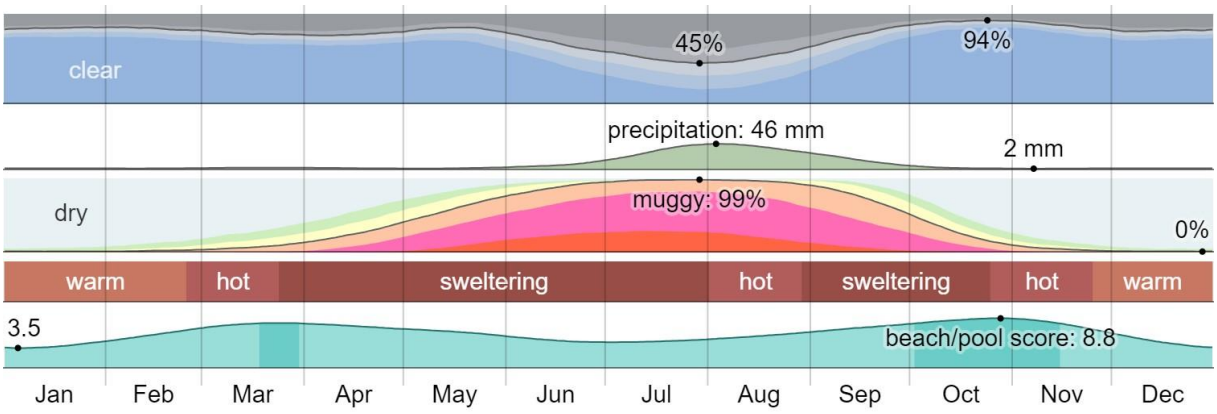


Figure 17: Climate in Tando Muhammad Khan

The hot season lasts for 3.0 months, from April 6 to July 5, with an average daily high temperature above 37°C. The hottest month of the year in Tando Muhammad Khān is June, with an average high of 39°C and low of 28°C.

The cool season lasts for 2.2 months, from December 6 to February 11, with an average daily high temperature below 27°C. The coldest month of the year in Tando Muhammad Khān is January, with an average low of 13°C and high of 25°C.24 (See Figure 18)

[23] https://weatherspark.com/y/106552/Average-Weather-in-Tando-Muhammad-Kh%C4%81n-Pakistan-Year-Round

[24] https://weatherspark.com/y/106552/Average-Weather-in-Tando-Muhammad-Kh%C4%81n-Pakistan-Year-Round

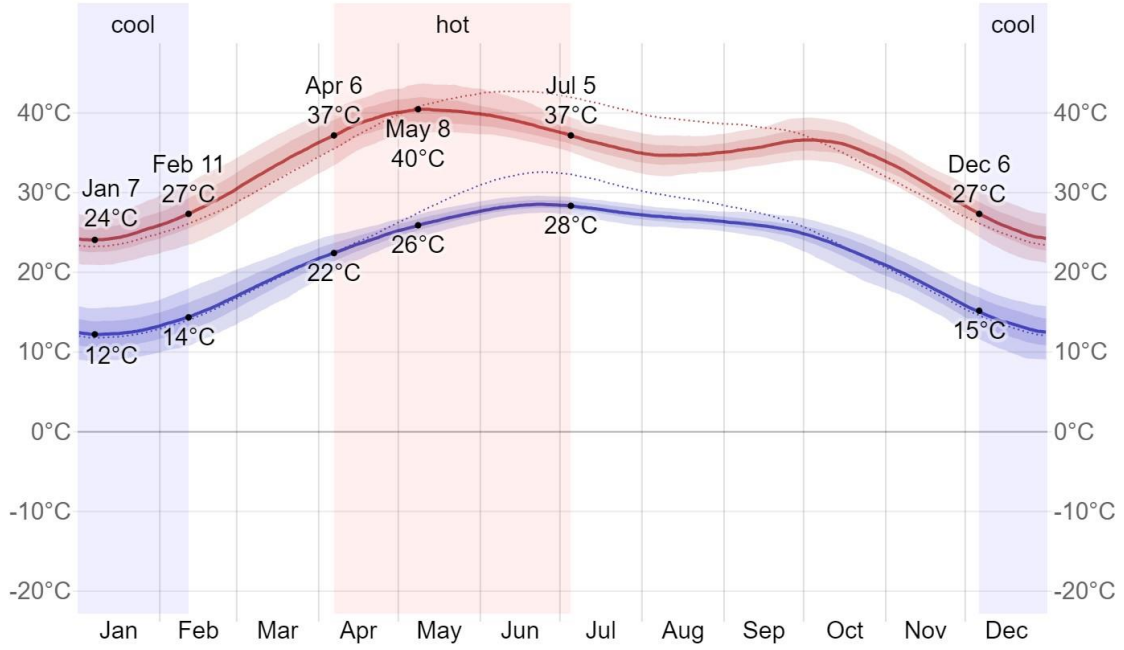


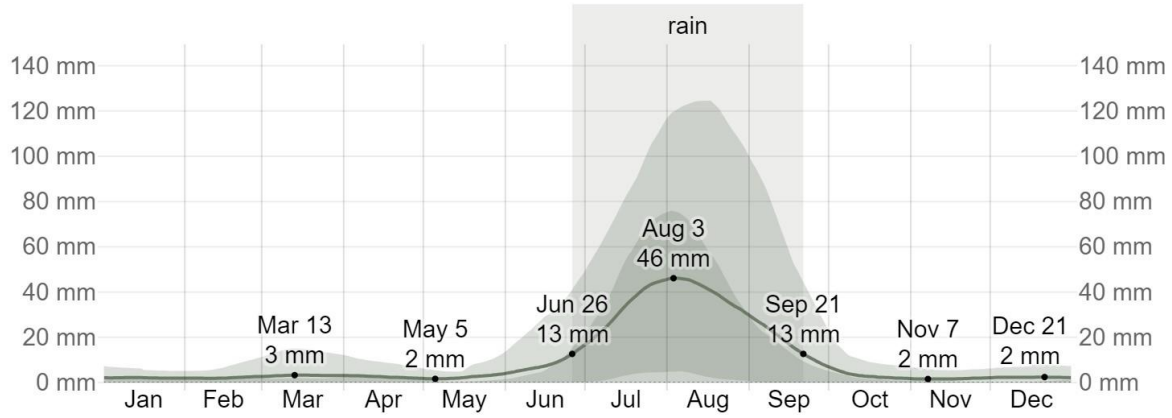
Figure 18: Average High and Low Temperature in Tando Muhammad Khan

4.9.1 Rainfall

To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. Tando Muhammad Khān experiences some seasonal variation in monthly rainfall.

The rainy period of the year lasts for 2.9 months, from June 26 to September 21, with a sliding 31-day rainfall of at least 13 millimeters. The month with the most rain in Tando Muhammad Khān is August, with an average rainfall of 41 millimeters.

The rainless period of the year lasts for 9.1 months, from September 21 to June 26. The month with the least rain in Tando Muhammad Khān is November, with an average rainfall of 2 millimeter. According to the baseline survey, the monsoon rains have caused severe damages to the structures of the schools (See below Figure). According to the baseline survey, the monsoon rains have caused severe damages to the structures of the schools.



4.9.2 Humidity:

Tando Muhammad Khān experiences extreme seasonal variation in the perceived humidity.

The muggier period of the year lasts for 6.0 months, from April 16 to October 16, during which time the comfort level is muggy, oppressive, or miserable at least 25% of the time. The month with the most muggy days in Tando Muhammad Khān is July, with 30.5 days that are muggy or worse. The month with the fewest muggy days in Tando Muhammad Khān is January, with 0.1 days that are muggy or worse. (See figure 19)

Figure 19: Humidity Comfort Levels in Tando Muhammad Khan

4.9.3 Wind:

The average hourly wind speed in Tando Muhammad Khān experiences extreme seasonal variation over the course of the year. The windier part of the year lasts for 4.9 months, from April 16 to September 13, with average wind speeds of more than 17.5 kilometers per hour. The windiest month of the year in Tando Muhammad Khān is June, with an average hourly wind speed of 24.8 kilometers per hour. The calmer time of year lasts for 7.1 months, from September 13 to April 16. The calmest month of the year in Tando Muhammad Khān is November, with an average hourly wind speed of 10.3 kilometers per hour. (See figure 20).

Figure 20: Average Wind Speed in Tando Muhammad Khan [25]

[25] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/tando-muhammad-khan_pakistan_1163952

4.9.4 Surface Water

The River Indus flows through the district, in the Northwest. There are a few intermittent streams that flow during rainy season; these include Dhadhko Wah, Mulchand Wah, Sapa Wah, and Mir Wah. There are a few small dhands/ lakes in the district. These include Chhari dhand, and Kulab lake/dhand.[26]

Tando Muhammad Khan district in Sindh, Pakistan, presents a complex picture regarding surface water. The district boasts the mighty Indus River as its primary source, offering a seemingly abundant supply. However, challenges lurk beneath the surface, demanding responsible management.

The Indus River serves as a lifeline, providing surface water for irrigation and potentially serving as a source for domestic use. However, its flow is not always reliable. Unpredictable monsoon seasons and upstream water usage can lead to scarcity during drier periods. Furthermore, dependence on a single source increases vulnerability to disruptions caused by factors like climate change.

Supplementing the Indus is a network of canals diverting water for irrigation. These canals are vital for Tando Muhammad Khan's agricultural sector, the foundation of the local economy. However, overuse of canal water contributes to waterlogging, a condition where the water table rises, rendering land unsuitable for farming and potentially salinating the soil.

While groundwater provides an additional source, its long-term sustainability is a concern. Excessive reliance on well extraction can deplete aquifers, impacting future availability. Moreover, reports of arsenic contamination in some areas raise concerns about water quality for human consumption.

4.9.5 Irrigation and Drainage system

Irrigated Area in District Tando Muhammad Khan is 31,704 hectares and Un-Irrigated area is 19,236 hectares. Canals are the mode of irrigation for 22,060 hectares in District Tando Muhammad Khan out of 1,287,845 hectares irrigated by Canals in Sindh. Tube-wells are the mode of irrigation for 9,644 hectares in Tando Muhammad Khan out of 361,199 hectares irrigated by Tube-wells in Sindh. Area sown in Tando Muhammad Khan is 50,940 hectares out of 2,645,545 hectares of area sown in Sindh (both irrigated and un-irrigated). Figure 21 shows the map is an irrigation and drainage map showing the various water management features within a region of Sindh province, Pakistan. Key elements of the map include:

1. **Irrigation and Drainage Features**:
    - **Rivers**: Depicted with dark blue lines, these are natural waterways that play a significant role in the irrigation system.
    - **Canals**: Shown with medium blue lines, these are man-made channels designed to distribute water from rivers or reservoirs to agricultural areas.
    - **Drainage**: Represented by light blue dashed lines, these features indicate the paths for excess water to be removed from the land, helping to prevent waterlogging and salinity.
    - **Wah**: Depicted with pink lines, "wah" refers to smaller irrigation channels or distributaries that branch off from main canals.
    - **Branches**: Indicated by solid blue lines, these are secondary channels that distribute water from the main canals.
    - **Distry./Distry**: Shown in light blue, these are distributaries or smaller channels branching off the main irrigation channels.
    - **Minor**: Represented by the lightest blue lines, these are the smallest branches in the irrigation network.

[26] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497087354-b3c63ef2-64a3

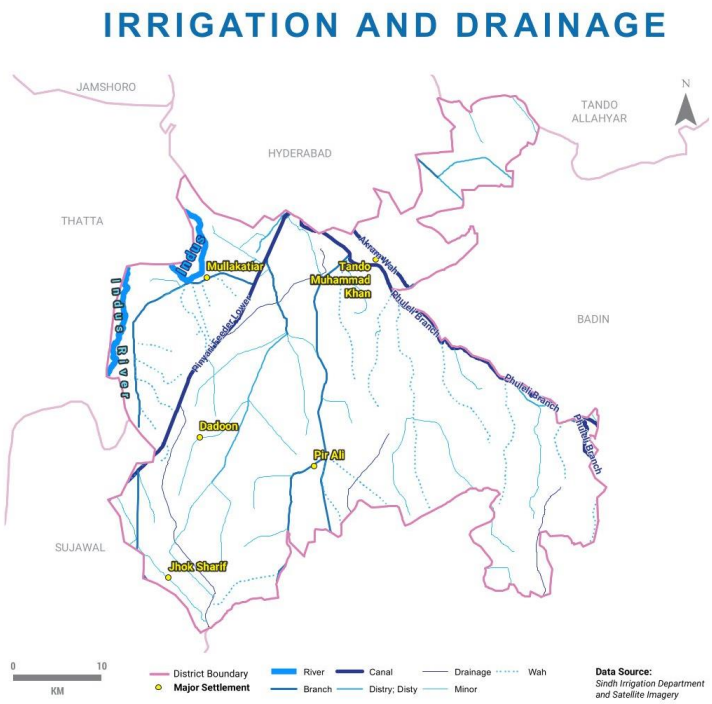


Figure 21: Tando Muhammad Khan Irrigation and Drainage

4.10 Ground Water

The Tando Muhammad Khan district in Sindh, Pakistan, presents a complex scenario regarding groundwater. While it appears as a readily available resource, its long-term sustainability faces significant challenges.

On the one hand, groundwater accessed through wells acts as a crucial supplement to surface water sources like the Indus River and canals. It sustains agricultural activities, fulfills domestic needs, and even supports some industries. This dependence, however, comes at a cost. Excessive extraction rates can outpace natural replenishment, leading to aquifer depletion and jeopardizing future water availability.

Furthermore, water quality is a growing concern. Over-extraction lowers the water table, potentially drawing in saline water from surrounding areas. This, along with agricultural runoff laden with pesticides and fertilizers, and inadequate sanitation practices, can contaminate groundwater with pollutants like arsenic and nitrates. This contamination poses significant health risks for communities who rely on well water for drinking and cooking.

During the E&S assessment of subproject sites, it was concluded that out of 21 schools, 10 schools have availability of drinking water; however, in 11 schools, due to the unavailability of drinking water facility at the school, the students and teachers used to buy water or bring water from Hand pumps outside the schools or bring water from water supply schemes connected with channels (others). Table 15 lists the origin of the drinking water source across 21 subproject sites. The data was secured from the screening checklist and summarized in a graphical representation presented in Figure 22. The summary of the E&S screening checklist is available in Annex B.

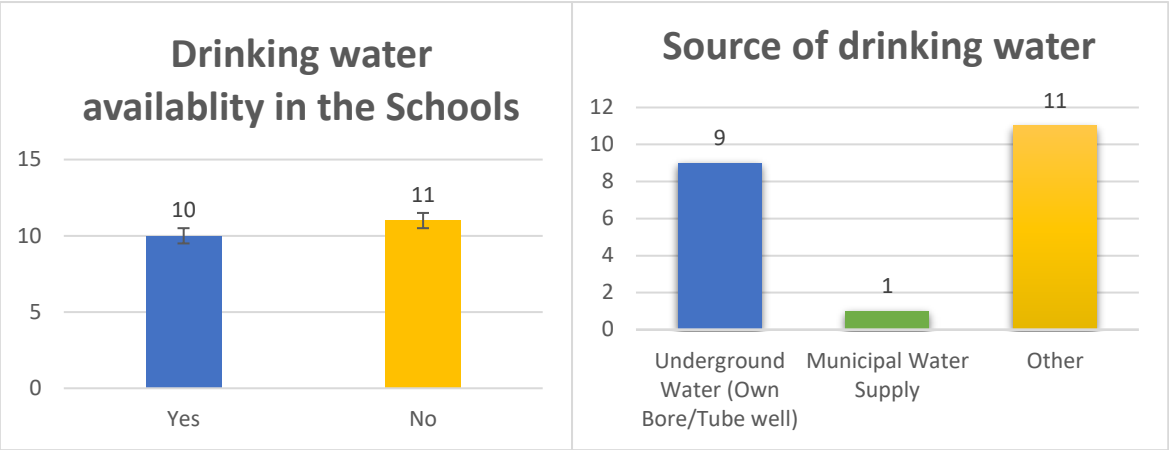


Figure 22: Drinking Water availability and Source in Subproject sites.

Table 16: Availability of Drinking Water and its sources

S.no	Tehsil	School Name:	Drinking Water facility	Source of Drinking Water
1	Bulri_Shah_Karim	GBPS QABOOL PUR (425030272)	No	Water coolers/bottles filled from nearby community
2	Bulri_Shah_Karim	GBPS PUNHOON MIRBAHAR @ HASSANABAD (425030157)	Yes	Underground Water (Own Bore/Tube well)
3	Bulri_Shah_Karim	GBPS ZULFIQAR ABAD (425030059)	No	Water coolers/bottles filled from nearby community
4	Bulri_Shah_Karim	GBPS AALI JHARK (425030259)	Yes	Underground Water (Own Bore/Tube well)
5	Bulri_Shah_Karim	GBPS JAN MUHAMMED LASHARI (425030054)	Yes	Underground Water (Own Bore/Tube well)
6	Bulri_Shah_Karim	GBPS MOHIB MIR BAHAR (425030287)	Yes	Underground Water (Own Bore/Tube well)
7	Bulri_Shah_Karim	GBPS GHULAM RASOOL CHANDIO (425030328)	Yes	Underground Water (Own Bore/Tube well)
8	Bulri_Shah_Karim	GBPS ABDUL RAZAQUE DARS (425030061)	No	Water coolers/bottles filled from nearby community
9	Bulri_Shah_Karim	GBPS YOUSUF LAGHARI (425030269)	No	Water coolers/bottles filled from nearby community
10	Tando_Ghulam_Hyder	GBPS NANGO SHAH (425010041)	No	Water coolers/bottles filled from nearby community
11	Tando_Mohd_Khan	GBPS KHAMISO LAGHARI (425010036)	Yes	Underground Water (Own Bore/Tube well)

12	Tando_Ghulam_Hyder	GGPS GAMANI NIZAMANI @ GHAMANI KHASKHELI (425020106)	No	Water coolers/bottles filled from nearby community
13	Tando_Ghulam_Hyder	GBPS ALLAH BUX SIYAL (425020316)	No	Water coolers/bottles filled from nearby community
14	Tando_Ghulam_Hyder	GGPS MEHAR LAGHARI (425020096)	No	Water coolers/bottles filled from nearby community
15	Tando_Mohd_Khan	GBPS HYDER SHAH (425010165)	No	Water coolers/bottles filled from nearby community
16	Tando_Ghulam_Hyder	GBPS SHAHMIR KOLHI @ LIAQUAT ALI LAGHARI (425020112)	Yes	Underground Water (Own Bore/Tube well)
17	Tando_Ghulam_Hyder	GBPS JAMALU DDIN JUNEJO (425020143)	No	Water coolers/bottles filled from nearby community
18	Tando_Mohd_Khan	GBPS WAHIDABAD MOHALLA (425010270)	Yes	Municipal Water Supply
19	Tando_Ghulam_Hyder	GBPS WANGAI MAHERI (425020230)	No	Water coolers/bottles filled from nearby community
20	Tando_Ghulam_Hyder	GBPS KATH BANBHAN (425020231)	Yes	Underground Water (Own Bore/Tube well)
21	Tando_Ghulam_Hyder	GBPS JUMAN BEHRANI (425020044)	Yes	Underground Water (Own Bore/Tube well)

4.11 Groundwater Quality

In consideration of the above information, this section describes primary data collection done through field sampling and testing for groundwater at the 3 sub-project representative locations considering urban and rural settlements. The sampling was done by a third-party instrumental environmental laboratory which is certified by SEPA as per Sindh Environmental Quality Standards (SEQS) 2016. The parameters selected for evaluation, based on the level of risk to human health posed by the presence of these parameters, are as follows:

- Physical Parameters: pH, temperature, Electrical Conductivity (EC), Turbidity, Total Suspended Solids (TSS).
- Chemical Parameters: Alkalinity, Total Dissolved Solids (TDS), Oil and Grease, Phenols, Chemical Oxygen Demand (COD), Dissolved Organic Carbon (DOC), Sulfides
- Biological: Total Coliforms, Fecal Coliforms, E. Coli)

The baseline survey aimed to determine the initial quality of water resources within the designated sub-project areas. Subsequently, each subproject's (school's) water source will undergo analysis before construction commences. These findings will aid in determining which water sources are suitable for use by the project during construction, as well as assist in selecting the appropriate

filtration/RO plants for installation during the operational phase. **Table 19** provides coordinates and rationale for selecting the sampling locations. **Figure 23** shows sampling locations map; and **Figure 24** shows pictorial profile of ground water sampling.

Table 17: Proposed Groundwater and Quality Sampling Locations

Sample ID	Coordinates	Description/Rationale of Selection
GW1	25.1717694 68.58512	Groundwater at the proposed Project site (425010270 GBPS WAHIDABAD MOHALLA)
GW2	24.9828618 68.6612817	Groundwater at the proposed Project site (425020096 GGPS MEHAR LAGHARI)
GW3	25.0066287 68.3008309	Groundwater at the existing Project site (425030287 GBPS MOHIB MIR BAHAR)

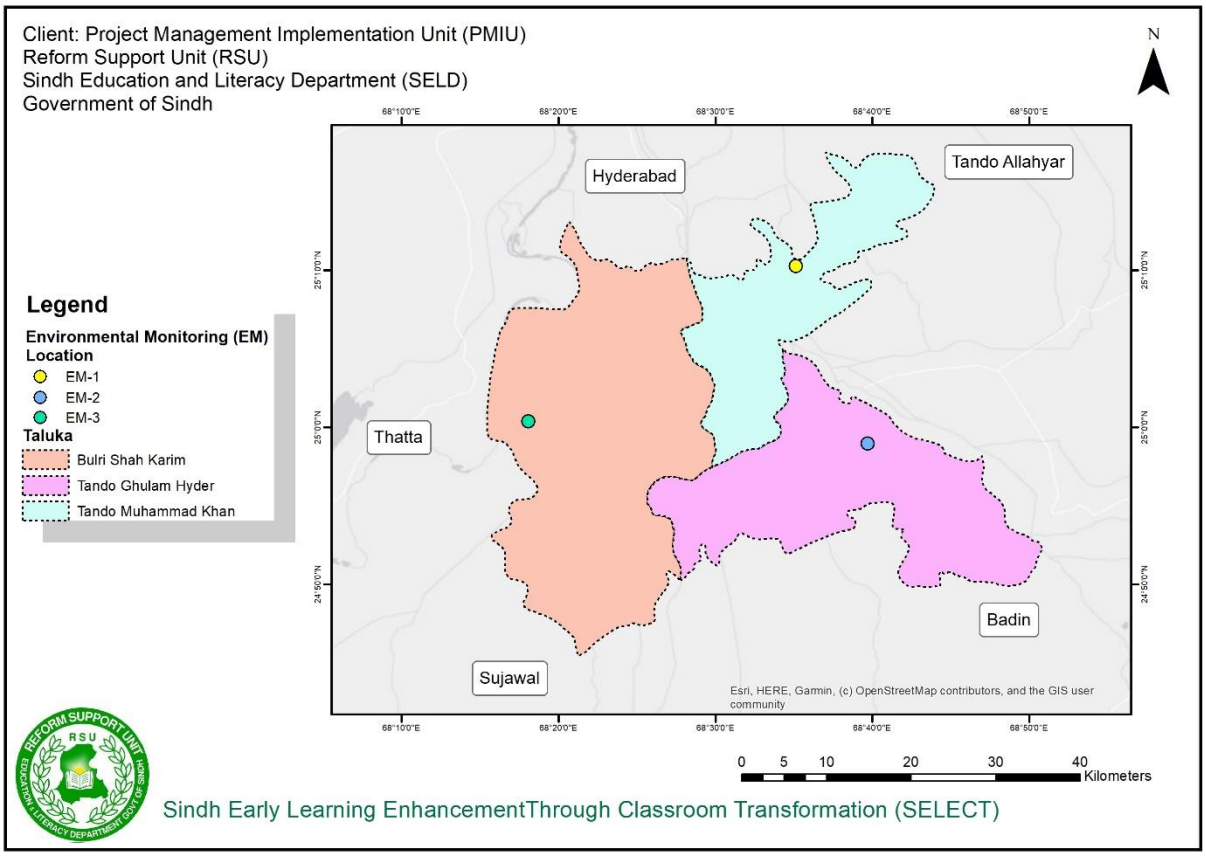
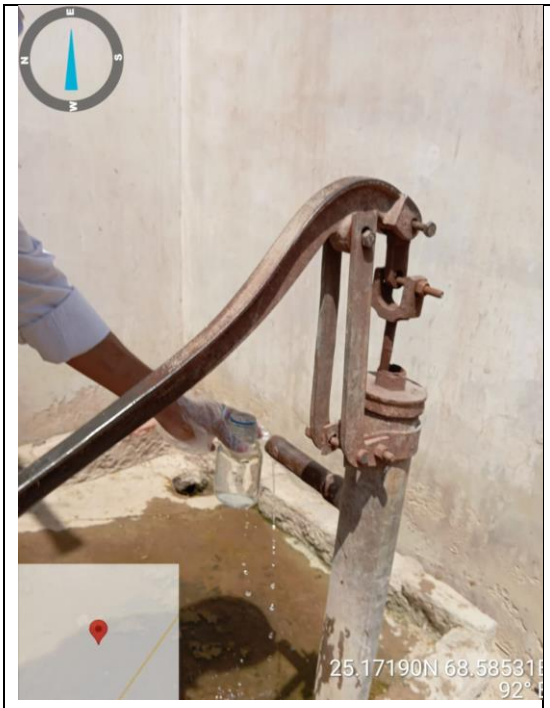
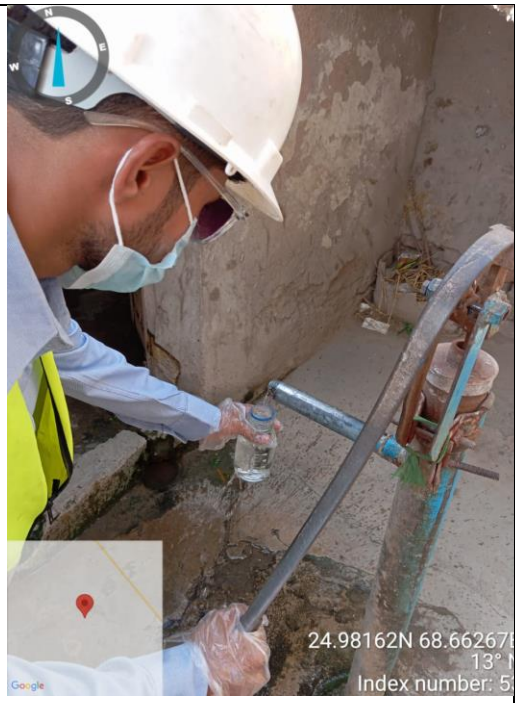


Figure 23: Environmental Monitoring & Sampling Locations



GBPS WAHIDABAD MOHALLA



GGPS MEHAR LAGHARI

GBPS MOHIB MIR BAHAR

Figure 24: Pictorial Profile of Water Sampling

Results and Analysis: The analytical test report shows that some of the important parameters related to water quality, which are hardness, taste, color, odor, and turbidity, were found to be within acceptable SEQ limits except TDS. On the other hand, the metals found in water are tested with a variety of methods which even resulted within the SEQS limits. The lab results are presented in Table 20. Moreover, the lab reports are given in Annexure D respectively.

Table 18: Water Quality Sampling Results

Parameters	SEQS	GBPS WAHIDABAD MOHALLA	GGPS MEHAR LAGHARI	GBPS MOHIB MIR BAHAR
pH @ 25°C	6.5-8.5	7.12	7.08	8.07
Odour	Acceptable	Acceptable	Acceptable	Acceptable
Color	15	<2	<3	<4
Taste	Acceptable	Acceptable	Acceptable	Acceptable
Total Hardness	500	190	155	107
Total Dissolved Solids	1000	1875	1516	1060
Turbidity	<5	2.39	2.5	3.83
Chloride	<250	54	35	47
Chlorine, Residual	0.2 - 0.5	0.02	0.02	0.02
Aluminium	0.2	0.01	0.00	0.00
Antimony	0.005	0.01	0.00	0.00
Barium (Ba)	0.7	0.4	00	00
Boron	0.3	0.02	0.01	0.01
Fluoride	1.5	0.016	0.04	0.03
Nitrate	0.5	0.1	0.0	0.0
Nitrite	3	0.0	0.3	0.6
Arsenic	<0.05	0.04	0.00	0.00
Cadmium	0.01	0.01	0.00	0.00
Chromium	<0.05	0.01	0.00	0.00
Copper	2	0.01	0.6	0.6
Cyanide	0.05	0.02	0.00	0.00
Lead	<0.05	0.01	0.00	0.00
Manganese	0.5	0.0	0.14	0.14
Mercury	0.001	0.01	0.00	0.00
Nickel	<0.02	0.02	0.00	0.00
Phenols	NoGL	0.02	0.00	0.00
Selenium	0.01	0.01	0.00	0.00
Zinc	5	0.43	0.24	0.14
Total Coliform	0/100ml	00	00	00
E-Coli	0/100ml	00	00	00
Fecal Coliform	0/100ml	00	00	00

4.12 Air Quality and Noise Level

This section describes the baseline ambient air quality and Noise levels in the sub-projects area during the survey where sub-project activities are proposed. As described earlier, 20 schools out of 21 are in rural areas and 1 is positioned within urban settings. So, during construction the rural and urban settlement livelihoods may be disturbed due to dust generation at different scales. The

baseline monitoring is performed at 3 representative subproject locations considering 2 locations in rural and 1 in urban settlements.

The pollutants selected for the survey were NO, NO_2, SO_2, PM (PM_{10} and $PM_{2.5}$), O_3, CO, Lead and Noise level. The selection of parameters for evaluation is based on the expected emissions from the planned construction and the level of risk to human health posed by these pollutants. Ambient air quality and noise levels were recorded for 24-hours duration at each location.

4.13 Methodology and Sampling Locations

Ambient Air quality and Noise level sampling was carried out at 3 subproject representative locations considering their urban and rural settlements in April 2024. **Table 21 -** provides details of proposed sampling locations and rationale for selection, **Table 22 -** provides pictorial profile of Air quality Monitoring. Locations map of air quality sampling is presented in Figure 24.

Table 19: Proposed Air Quality Sampling Locations and Parameters

Sample ID	Coordinates	Parameters	Description/Rationale of Selection
AN1	25.1717694 68.58512	NO, NO2, SO2, O3, SPM, PM10, PM2.5, CO. Lead and Noise	At (425010270 GBPS WAHIDABAD MOHALLA)to assess the baseline ambient air quality (Sampling upwind of Project facilities)
AN2	24.9828618 68.6612817		At (425020096 GGPS MEHAR LAGHARI) to assess the baseline ambient air quality (upwind of Project facilities)
AN3	25.0066287 68.3008309		At (425030287 GBPS MOHIB MIR BAHAR) to assess the baseline ambient air quality (upwind of Project facilities)

Table 20: Pictorial Profile of Ambient Air quality and Noise Monitoring

GBPS WAHIDABAD MOHALLA

GGPS MEHAR LAGHARI

GBPS MOHIB MIR BAHAR

Results and Analysis

The major air pollutants which cause the ambient air quality degradation at subproject sites are SO2, NO, NO2, CO, O3, PM 2.5, PM10, SPM and lead. These air pollutants are monitored in the analytical test report of ambient air quality monitoring. The SEQS limits are compared with the average reported air pollutants through air quality monitoring, as the results are examined air pollutants are deemed to be safe and within the SEQs limits. The Ambient Noise level results are also compared with SEQS (Residential, Commercial, day and Night) limits, values were found within limits. The baseline data for ambient air quality and Ambient Noise level are graphically represented in Figure 26 and Figure 27 along with a comparison with SEQS.

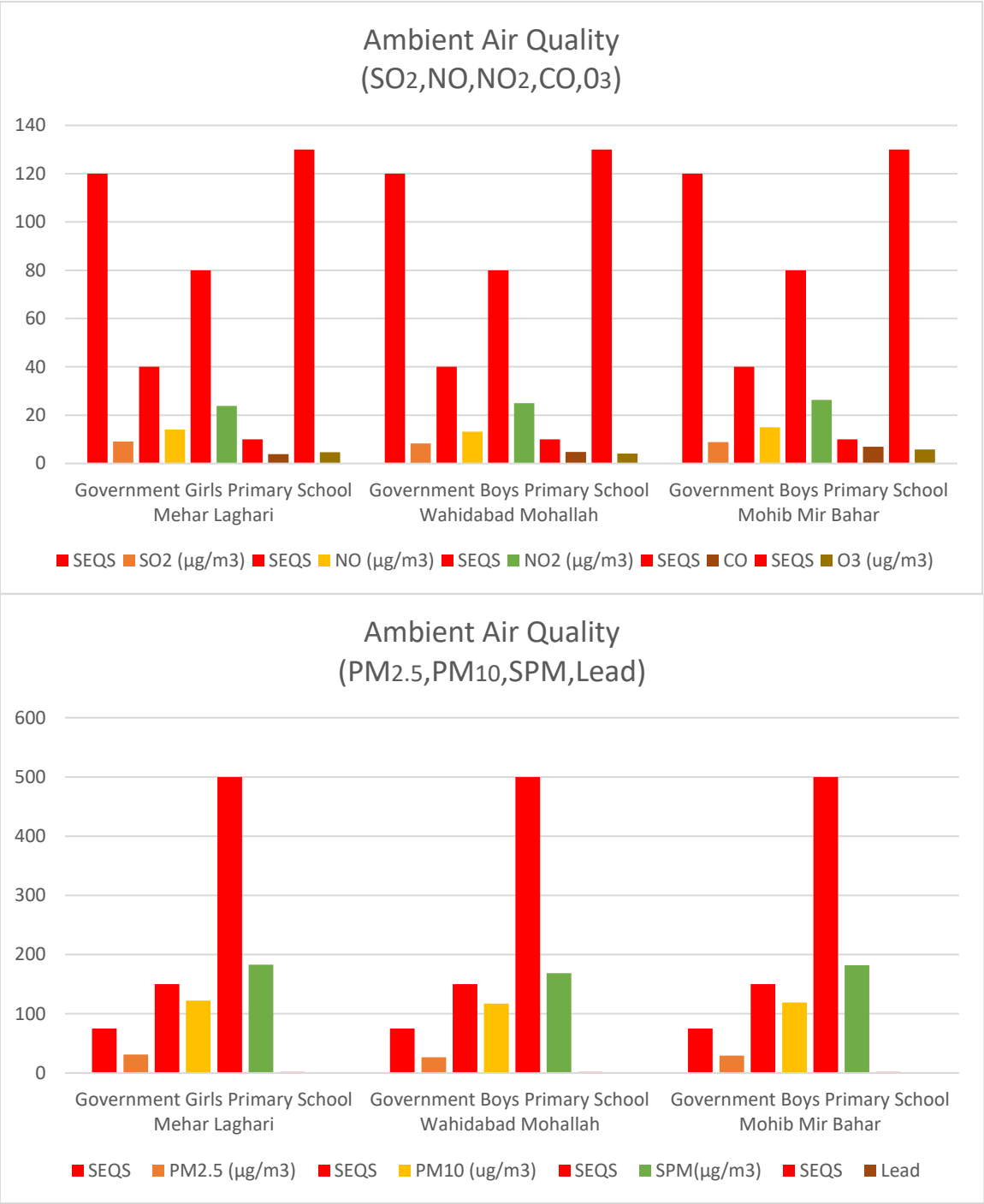


Figure 25: Graphical Representation of Ambient Air Quality

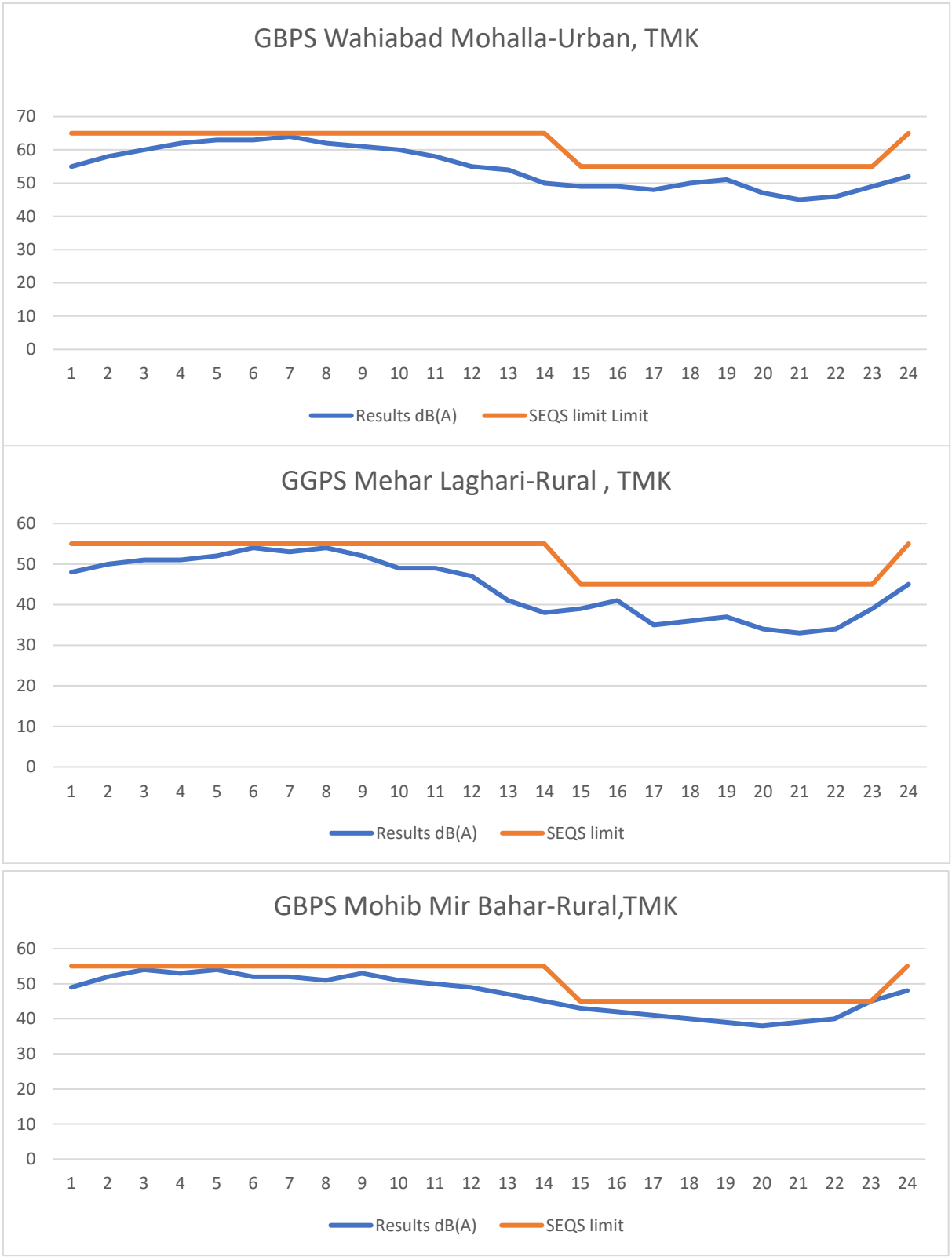


Figure 26: Graphical Representation of Ambient Noise Level

4.14 Biological Environment

The sub-projects area falls in the urban and rural locality and has a limited diverse habitat, which supports a few varieties of faunal and floral species. The following broad categories have been identified for this report focusing on the sub- project's areas.

4.14.1 Fauna of sub project area

The animal species has been distributed due to increase in population of the sub project area expect domestic animals no other specie has been found during need assessment. During the screening process, it was observed that at present, since there are no forests, and due to high population growth rate, the wildlife of the district is nearly non-existent. Jackals and foxes are seen in the dry rangelands. Birds of the area include black and grey partridges, buft-backed heron, Indian reef heron, Mongolian sand plover, little brown dove, cuckoo, Indian scoops owl, and Indian great-horned owl. Reptilian fauna includes Indian monitor, agama and garden lizard, cobra, and viper. [27] (see table 23).

Table 21: Fauna species within subproject surrounding.

	
Gray Partridge	Indian scoops owl
	
Mongolian sand plover	Little brown dove

4.14.2 Flora of Sub-Projects Area

The common flora observed during the screening process include babul or gum Arabica (Acacia nilotica), Indian walnut or white sirin (Albizia procera), neem or ash-leaved bead tree (Azadirachta

[27] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497144852-f0a014d6-aded

indica), amaltas or pudding pipe tree (Cassia fistula), Ethiopian teak or kono (Conocarpus lancifolius), shisham or tale (Dalbergia sisso), red gum or sufaida (Eucalyptus camaldulensis), Indian fig or banyan (Ficus benghalensis), jungle jalebi (Pithecellobium dulce), silk cotton tree or simal (Salmalia malabarica), Egyptian pea or jantar/jinjerh (Sesbania aegyptiaca), arjuna or white marudah (Terminalia arjuna), tulip tree or parus peepal (Thespesia populnea), kandi or jand (Prosopis spicegera), devi or mesquite (Prosopis glandulosa), karir or capparis (Capparis aphylla), ber (Zizyphus mauritiana), kikri or baveri (Acacia jacquemontii), khabar or peelu/ toothbrush tree (Salvadora oleoides), athel pine or frash (Tamarix aphylla), lai or salt cedar (Tamarix dioica), desert tamarisk (Tamarix articulate), and gum Arabic (Acacia senegal).[28] Table 23 enlists the key floral species within the sub-project area *and Table 24 shows the pictorial representation of floral species in subproject.*

Table 22: List of Flora in subprojects

S.no	School Name	Name of flora in the school premises	Nature of tree Mature	Nature of tree Immature
1	GBPS QABOOL PUR (425030272)	Safaida Conocarpus	5	0
2	GBPS PUNHOON MIRBAHAR @ HASSANABAD (425030157)	Conocarpus Safaida Neem	37	0
3	GBPS ZULFIQAR ABAD (425030059)	Neem Conocarpus	2	4
4	GBPS AALI JHARK (425030259)	Neem Conocarpus Safaida	15	0
5	GBPS JAN MUHAMMED LASHARI (425030054)	Kirrir	4	0
6	GBPS MOHIB MIR BAHAR (425030287)	Conocarpus Safaida	18	0
7	GBPS GHULAM RASOOL CHANDIO (425030328)	Neem Conocarpus	6	1
8	GBPS ABDUL RAZAQUE DARS (425030061)	Date	1	0
9	GBPS YOUSUF LAGHARI (425030269)	Neem	1	1
10	GBPS NANGO SHAH (425010041)	Babbur	2	1
11	GBPS KHAMISO LAGHARI (425010036)	Date Babbur	3	1
12	GGPS GAMANI NIZAMANI @ GHAMANI KHASKHELI (425020106)	Neem Conocarpus	5	0
13	GBPS ALLAH BUX SIYAL (425020316)	Neem Safaida Conocarpus Babbur	27	10

[28] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497144852-f0a014d6-aded

14	GGPS MEHAR LAGHARI (425020096)	Neem Safaida Conocarpus	6	0
15	GBPS HYDER SHAH (425010165)	Neem Safaida Conocarpus	22	10
16	GBPS SHAHMIR KOLHI @ LIAQUAT ALI LAGHARI (425020112)	Neem Conocarpus	9	2
17	GBPS JAMALU DDIN JUNEJO (425020143)	Neem	1	0
18	GBPS WAHIDABAD MOHALLA (425010270)	Neem	4	0
19	GBPS WANGAI MAHERI (425020230)	Neem Safaida Conocarpus	16	0
20	GBPS KATH BANBHAN (425020231)	Neem Safaida Babbur	6	0
21	GBPS JUMAN BEHRANI (425020044)	Neem Safaida Conocarpus	43	0
Total			**233**	**30**

Table 23: shows the pictorial representation of floral species in subproject

GBPS HYDER SHAH

GBPS JUMAN BEHRANI

GBPS PUNHOON MIRBAHAR @ HASSANABAD

GBPS JAN MUHAMMED LASHARI

4.15 Endemic and Endangered Species

As far as the sub-project area is concerned, none of the endemic or endangered species of both flora and fauna were recorded from sub-project sites. Figure 27 shows that no protected species identified at subproject sites during screening (refer Annex B). However, Figure 28 illustrates that there were no identified protected areas in proximity to the proposed sub-project locations.[29]

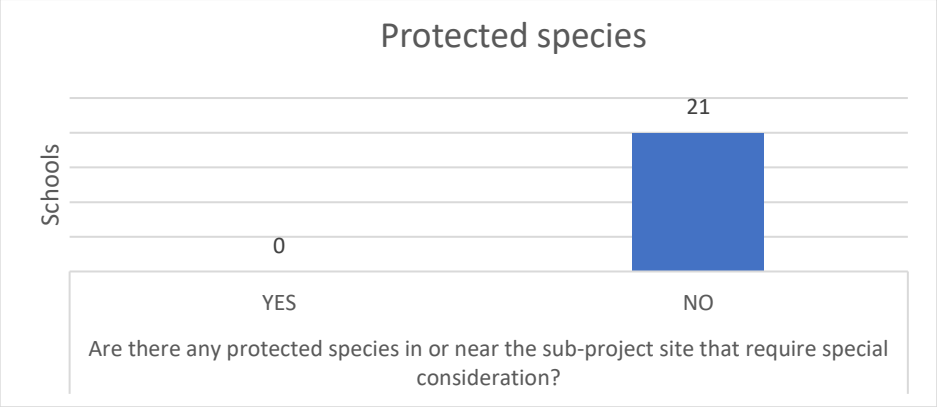


Figure 27: Protected Species in subproject sites

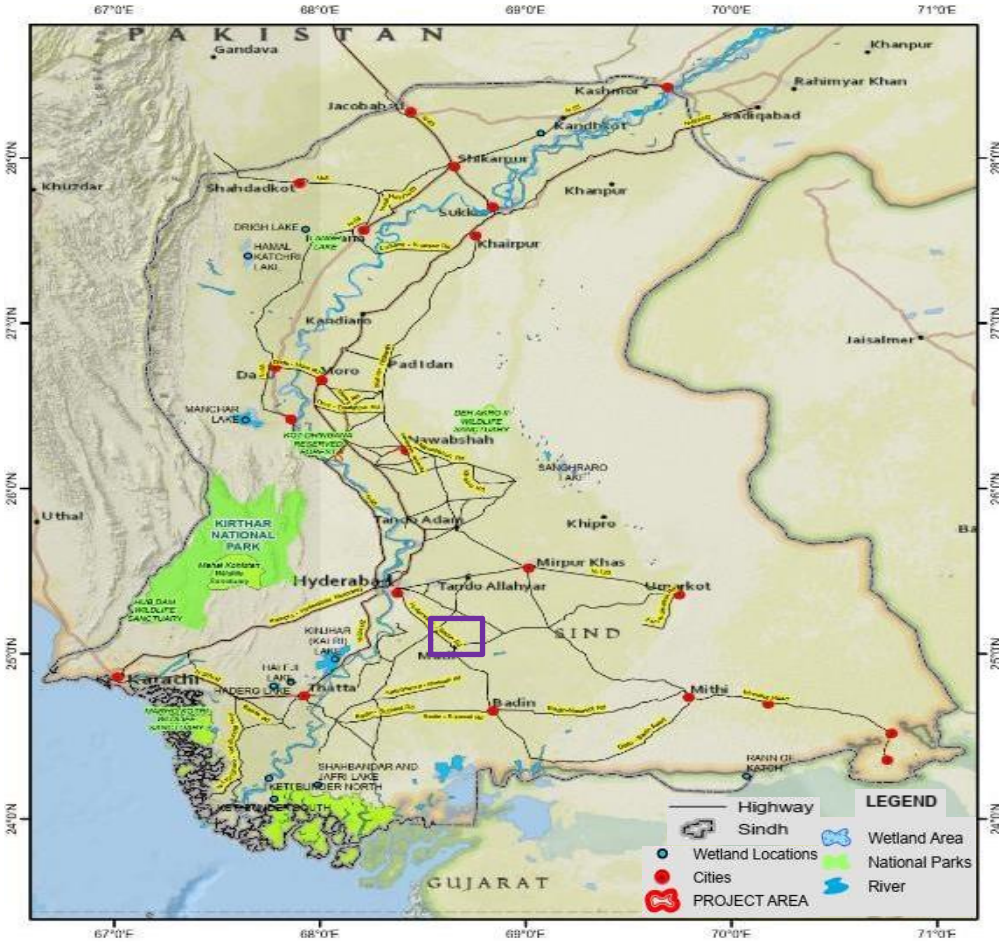


Figure 28: Locations of Project Area where no protected area is identified near the sub-project sites.

[29] https://pakistanalmanac.com/sindh-mirpurkhas/#1633497144852-f0a014d6-aded

4.16 Socio-Economic Profile

Location

District Tando Mohammad Khan (TMK) is located between 68° 15' 14" to 68° 44' 2" East longitudes and 24° 45' 41" to 25° 17' 8" North latitudes, and is situated at a distance of 35 km from Hyderabad. It is bordered by Hyderabad and Tando Allahyar districts to the North, Badin district to the South and East, and Thatta district to the West. River Indus flows in the Northwest.[30]

Demography

This section incorporates Tando Muhammad Khan District demographic data (see table 25) from the recently announced results of the 7th Population and Housing Census-2023 conducted by the Pakistan Bureau of Statistics (PBS). [31]

Table 24: Tando Muhammad Khan District Demographic Data

Name of Admin Unit	Households	Population 2023	Average Household Size	Population 2017	Growth Rate
SINDH	9,871,620	55,696,147	5.64	47,854,510	2.57
District Tando Muhammad Khan	143,956	726,119	5.04	667,098	1.18

Tando Muhammad Khan's population comprises of 350,010 males and 327,202 females with 52% and 48% of the district's population respectively. District of Tando Muhammad Khan spans over an area of 1,814 sq. km which is 4.6% of Sindh's total area of 140,914 sq. km. The population density of the district is 373/sq. km. District Tando Muhammad Khan comprises of 3 talukas, namely: Bulri Shah Karim, Tando Ghulam Hyder and Tando Muhammad Khan. District Tando Muhammad Khan has 3 Urban Centers and 17 Union Councils.[32]

4.17 Religion, Ethnicity, and Languages

Based on the 2017 census data provided by the Pakistan Bureau of Statistics (PBS), Tando Muhammad Khan district exhibits a predominantly Muslim population. Muslims account for approximately **524,945 (77.52%)** of the total district population of 677,098 (as per the 2017 Pakistan Census).[33]

Here's a breakdown of the religious minorities in Tando Muhammad Khan:

- **Hindu:** The second-largest religious group is Hinduism, with a population of 148,234 (21.89%). This signifies a significant Hindu minority presence in the district.
- **Scheduled Castes:** The data indicates a population of 2,419 (0.35%) belonging to Scheduled Castes. It's important to note that Scheduled Castes are often identified with Hinduism in South Asia.
- **Christian:** A Christian community of 1,372 (0.2%) resides in Tando Muhammad Khan.

[30] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497051692-7046db05-a3ea

[31] https://www.pbs.gov.pk/sites/default/files/population/2023/Sindh.pdf

[32] Sindh District Profiles 2021 by P&DD Sindh.

[33] https://www.pbs.gov.pk/sites/default/files/population/2017/results/09009.pdf

- **Others:** A small number of residents identify with other religions or preferred not to disclose their religious affiliation, categorized as "Others" at 55 (0.0081%).

Ethnicity and Language:

The 2017 census data provided by the Pakistan Bureau of Statistics (PBS) offers valuable insights into the ethnic and linguistic makeup of Tando Muhammad Khan district. Here's a detailed analysis:

Dominant Ethnicity:

- **Sindhi:** With Sindhi accounting for 639,945 (94.51%) of the total population as their mother tongue, Sindhi ethnicity is clearly dominant in Tando Muhammad Khan district.
- Linguistic Profile:
- **Urdu:** Urdu, the national language of Pakistan, holds the second position with 11,473 (1.69%) speakers, indicating its significance for communication across ethnicities.
- **Punjabi:** Punjabi is spoken by a minority of 7,261 (1.07%), suggesting a presence of Punjabi communities within the district.
- **Other Languages:** Minority languages spoken include Balochi 962(0.14%), Pushto 2,637 (0.38%), Saraiki 3,268 (0.48%), Hindko 3,392 (0.50%), and others 5,760 (0.85%).

4.18 Housing

In District Tando Muhammad Khan, 90.1% of population owns houses while 9.9% don't own their houses (5.8% rented) compared to 77.7% of the population in Sindh province who own their houses. According to MICS 2018-19, the average number of persons per room in TMK is 4.8 compared 4.1 persons per room in Sindh. Similarly, the mean household size of District TMK is 5.8 compared to mean household size of 6.5 in Sindh. 40.2% of households in TMK have Pacca roofing compared to 70.7% households in province that have Pacca roofing. Similarly, only 35.1% households in TMK have Pacca walls compared to 70.7% households in the province that have Pacca walls. [34]

4.19 Health Facilities

District Tando Muhammad Khan has a total of 4 Government, Departmental, Private and Local Bodies Hospitals with a capacity of 130 beds compared to 648 Hospitals in Sindh with a capacity of 30,126 beds. Tando Muhammad Khan has a total of 15 Basic Health Units (BHUs) with a capacity of 32 beds compared to 800 BHUs in Sindh with a capacity of 1,615 beds. Tando Muhammad Khan has a total of 3 Rural Health Centers (RHCs) with a capacity of 34 beds compared to 133 RHCs in Sindh with a capacity of 1,703 beds in Sindh. Tando Muhammad Khan has a total of 17 Dispensaries with no beds compared to 2996 Dispensaries with a capacity of 715 beds in Sindh. District Tando Muhammad Khan has a total of 3 TB Clinics with no beds compared to 228 TB Clinics with total capacity of 42 beds in Sindh. Tando Muhammad Khan has 1 Mother & Child Health Centers (MCHCs) with no beds compared to 227 MCHCs with a total of 181 beds. Similarly, Tando Muhammad Khan has no Maternity Homes out of 42 Maternity Homes in the province. Number of indoor patients served in District Tando Muhammad Khan are 8,619 out of 744,618 indoor patients in the province. Similarly, number of outdoor patients served in District Tando Muhammad Khan are 960,029 out of 43,718,506 outdoor patients in Sindh.[35]

[34] Sindh District Profiles 2021 by P&DD Sindh.
[35] Sindh District Profiles 2021 by P&DD Sindh

4.20 WASH Facilities

In remote areas of Tando Muhammad Khan, schools' lack of access to Water, Sanitation, and Hygiene (WASH) facilities poses significant challenges, especially for female students. This lack of facilities makes it difficult for girls to manage basic hygiene practices and hinders their access to education. According to a report by Water Aid, 53% of schools in Sindh do not have access to drinking water, and nearly half (49%) lack toilet facilities.[36]
Furthermore, recent data from the Reform Support Unit for the year 2022-23 reveals that out of 822 functional schools, only 528 have access to drinking water facilities, 435 have toilet facilities, 39 have handwashing facilities, and alarmingly, only 51 schools provide soap for toilet use. These statistics underscore the urgent need for improving WASH facilities in schools to ensure students' health and well-being and support their educational pursuits.

4.20.1 Potable Water Supply

In Tando Muhammad Khan, 3.1% of households have water piped directly to their dwelling, while 0.8% have piped water in their yard/plot. Additionally, 83.6% have access to a protected well, and 2.9% have access to a hand pump. In these areas, groundwater is used for all domestic purposes, and there are no community water supply schemes. The population relies on private sources, with most using hand pumps to access groundwater. Many houses have their own hand pumps, typically located in the courtyards. During the field needs assessment, many respondents reported that the groundwater had a brackish taste.[37] E&S Screening assessment conducted in 21 schools found that 10 schools have drinking water facilities available on the premises, from which 9 have hand pumps, and 1 has access to municipal water supply. The remaining schools required students and teachers to bring water from home or arrange for water from nearby villages (Refer table 16).

4.20.2 Sanitation

The sewerage /drainage system in the subproject area is not satisfactory. Most people discharge their wastewater into open drains and few have pit latrines and septic tank systems inside their houses. It is also a common practice to dispose of solid waste in nearby open land. In urban areas HHs have different types of latrines within their houses, whereas sanitation condition in rural areas is very poor, open defecation in field or designated areas in back side of house is common.[38]

The 18.2 % of people in Tando Muhammad Khan have basic service of sanitation, 3.5 % have limited services, 13.2% have unimproved service and 65.1% go for open defection. [39]

a) Utilities (Drinking Water, Sanitation, Cooking Facilities):

[36] https://www.wateraid.org/pk/sites/g/files/jkxoof326/files/WinS%20booklet.pdf

[37] https://www.rspn.org/wp-content/uploads/2019/03/Nutrition-Profile_Tando-Muhammed-Khan.pdf

[38] https://www.researchgate.net/publication/299234344_WASH_in_Sindh

[39] Sindh District Profiles 2021 by P&DD Sindh

In District Tando Muhammad Khan, 98.5% of households have improved sources of drinking water compared to 96.0% households in Sindh having improved sources of drinking water. In terms of access to sanitation services, 21.7% of households in Tando Muhammad Khan have access to improved sanitation services compared to 65.9% of households in Sindh with access to improved sanitation services. The prevalence of open defecation in Tando Muhammad Khan is 65.1% compared to 24.0% in Sindh. To ascertain whether environment-friendly practices are adopted at household level for cooking, heating and lighting, it is essential to gauge the prevalence of reliance on clean fuels. In District Tando Muhammad Khan, only 21.8% of the households rely primarily on clean fuels for cooking compared to 50.2% of households relying on clean fuel for cooking in Sindh. Similarly, only 18.2% of households in District Tando Muhammad Khan rely primarily on clean fuels for space heating compared to 30.2% of households in Sindh.

b) Washroom Facility

E&S Screening assessment conducted in 21 schools found that all 21 schools have washroom facilities available, but none were functional for various reasons, mostly due to the unavailability of water in the washrooms. The assessment revealed that all 21 schools had combined washroom facilities. Additionally, no school has dedicated facilities for female teachers and girls. The survey also found that all 21 schools lacked sanitation staff. Details are listed below.

S #	Semis code	School Name:	Drinking Water Facility Available in School	How drinking water arranged for Students and Teachers	Washroom facilities available in School	Washroom facilities functional	Washroom facility separately available for Teachers & Student	Sanitation staff available
1	425030272	GBPS QABOOLPUR	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
2	425030157	GBPS PUNHOON MIRBAHAR @ HASSANABAD	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
3	425030059	GBPS ZULFIQARABAD	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
4	425030259	GBPS AALI JHARK	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
5	425030054	GBPS JAN MUHAMMED LASHARI	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No

6	425030287	GBPS MOHIB MIR BAHAR	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
7	425030328	GBPS GHULAM RASOOL CHANDIO	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
8	425030061	GBPS ABDUL RAZAQUE DARS	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
9	425030269	GBPS YOUSUF LAGHARI	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
10	425010041	GBPS NANGO SHAH	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
11	425010036	GBPS KHAMISO LAGHARI	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
12	425020106	GGPS GAMANI NIZAMANI @ GHAMANI KHASKHELI	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
13	425020316	GBPS ALLAH BUX SIYAL	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
14	425020096	GGPS MEHAR LAGHARI	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
15	425010165	GBPS HYDER SHAH	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
16	425020112	GBPS SHAHMIR KOLHI @ LIAQUAT ALI LAGHARI	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
17	425020143	GBPS JAMALU	No	Water coolers/bottles filled from	Yes	No	Combine for All	No

		DDIN JUNEJO		nearby community				
18	425010270	GBPS WAHIDABAD MOHALLA	Yes	Municipal Water Supply	Yes	No	Combine for All	No
19	425020230	GBPS WANGAI MAHERI	No	Water coolers/bottles filled from nearby community	Yes	No	Combine for All	No
20	425020231	GBPS KATH BANBHAN	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No
21	425020044	GBPS JUMAN BEHRANI	Yes	Underground Water (Own Bore/Tube well)	Yes	No	Combine for All	No

4.21 Education

Tando Muhammad Khan district has 969 schools out of which 822 schools are functional. The gender wise breakdown of school is given in Table 26.

Table 25: List of Number of Schools in district Tando Muhammad Khan

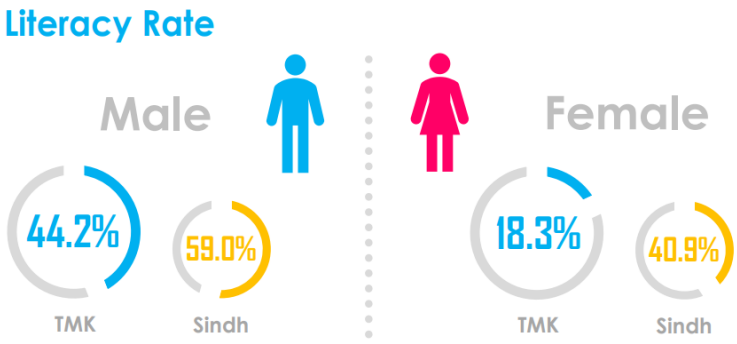
Location	Total	Girls	Boys	Mixed
Tando Muhammad Khan	969	125	191	653
Source: REFORM SUPPORT UNIT -2022-23				

969 schools in District Tando Muhammad Khan have a total enrollment of 78,186 with 47,714 boys and 30,472 girls (see table 27). There are 1,906 male teachers and 690 female teachers in the schools in Tando Muhammad Khan. There are 822 functional schools in Tando Muhammad Khan while 147 schools are dysfunctional. Total number of rooms in 2202 schools out of which 1985 are classrooms.

Table 26: Enrollments of Students in district Tando Muhammad Khan

Location	Girls	Boys
Tando Muhammad Khan	30,472	47,714
Source: REFORM SUPPORT UNIT -2022-23		

Male literacy rate (15-49 years) in Tando Muhammad Khan is 44.2% compared to 59.0% in Sindh while the female literacy rate is 18.3% compared to 40.9% in Sindh.



4.22 Schools Infrastructure:

The state of school infrastructure in Tando Muhammad Khan district, Sindh, Pakistan, presents a complex picture. Following challenges have been faced by the district government.

- **Limited Infrastructure:** The district face a shortage of schools, particularly in remote areas. Existing buildings might be overcrowded or in a state of disrepair, lacking proper facilities.
- **Inadequate Facilities:** Schools lack essential amenities like clean water sources, proper sanitation facilities, or functional electricity. Insufficient classrooms, furniture, and educational resources hinder the learning environment.
- **Accessibility Issues:** Schools not accessible for children with disabilities due to a lack of ramps, elevators, or adapted washrooms facilities.
- **Maintenance Needs:** Deteriorating infrastructure due to insufficient maintenance budgets can create safety hazards and impact the overall learning environment.

Table 28 presents the exact number of facilities in schools in Tando Muhammad Khan.[40]

Table 27: Facilities in Schools

District	Schools	Electricity	Washroom	Drinking Water	Boundary Wall
Tando Muhammad Khan	969	147	435	528	521
Source: REFORM SUPPORT UNIT -2022-23					

4.23 MPI (Multi-Dimensional Poverty Index)

Multi-Dimensional Poverty Index measures the number of people/households that are 'multidimensional' poor. Essentially, it means the number of people (or HHs) deprived in at least one third of the weighted indicators (H) along with the weighted average number of deprivations poor people experience at the same time (A). The weighted indicators are along three broad dimensions: -Education, -Health, and -Living Standards in District Tando Muhammad Khan, the MPI value is 0.5 which is higher than the average MPI Value of 0.25 in Sindh. Sindh District Profiles 2021 by P&DD Sindh. [41]

[40] https://pnd.sindh.gov.pk/storage/resourcePage/62u7SvClgi5XnYvm2a5n3vvTesu4DcqKnhbxeyJP.pdf

[41] Sindh District Profiles 2021 by P&DD Sindh.

4.24 Conflict Resolution within Tribes and Villages

According to the socio-economic need assessment, no major conflict was found in the sub-projects' areas. Minor conflicts like disputes related to marriages and petty property disputes at the village level were settled by the village head and the conflicts of similar nature among tribes were resolved by themselves. Mainly conflicts are settled at the village level.

4.25 Telecommunication

During the field need assessment the community reported that access to Mobile phone communication was good. In the sub-project area, Jazz, Telenor, and U phones are available networks.

4.26 Electricity Sources

21 of the subproject locations are in rural areas with unreliable grid electricity or frequent power outages, During E&S screening it was observed that out of 21 schools, only 15 schools have electricity availability (refer Annex: B). However, 6 schools don't have access to any facility. The following table 29 will give a clear picture of the electricity availability in our subproject schools. Project will install solar system in each subject site to avoid any power outage during operation phase.

Table 28: Energy Sources in Selected Schools

S.no	School Name:	Electricity System available in school
a	GBPS QABOOL PUR (425030272)	Yes
2	GBPS PUNHOON MIRBAHAR @ HASSANABAD (425030157)	Yes
3	GBPS ZULFIQAR ABAD (425030059)	No
4	GBPS AALI JHARK (425030259)	Yes
5	GBPS JAN MUHAMMED LASHARI (425030054)	Yes
6	GBPS MOHIB MIR BAHAR (425030287)	Yes
7	GBPS GHULAM RASOOL CHANDIO (425030328)	Yes
8	GBPS ABDUL RAZAQUE DARS (425030061)	No
9	GBPS YOUSUF LAGHARI (425030269)	Yes
10	GBPS NANGO SHAH (425010041)	No
11	GBPS KHAMISO LAGHARI (425010036)	Yes
12	GGPS GAMANI NIZAMANI @ GHAMANI KHASKHELI (425020106)	Yes
13	GBPS ALLAH BUX SIYAL (425020316)	Yes
14	GGPS MEHAR LAGHARI (425020096)	Yes
15	GBPS HYDER SHAH (425010165)	No

16	GBPS SHAHMIR KOLHI @ LIAQUAT ALI LAGHARI (425020112)	Yes
17	GBPS JAMALU DDIN JUNEJO (425020143)	No
18	GBPS WAHIDABAD MOHALLA (425010270)	Yes
19	GBPS WANGAI MAHERI (425020230)	Yes
20	GBPS KATH BANBHAN (425020231)	No
21	GBPS JUMAN BEHRANI (425020044)	Yes

4.27 Economic Profile

Agriculture:

Out of the area under cultivation for major crops, District Tando Muhammad Khan contributes to 60,656 hectares (2.0%) out of 3,028,496 hectares in Sindh. In terms of highest proportions of area under cultivation for major crops, rice and sugarcane are at the forefront in Tando Muhammad Khan with 22,224 hectares and 18,855 hectares under cultivation in the district. Similarly, the production of rice in Tando Muhammad Khan is 72,808 M. Tons and production of sugarcane is 1,211,407 M. Tons. Irrigated Area in District Tando Muhammad Khan is 31,704 hectares and Un-Irrigated area is 19,236 hectares. Canals are the mode of irrigation for 22,060 hectares in District Tando Muhammad Khan out of 1,287,845 hectares irrigated by Canals in Sindh. Tube-wells are the mode of irrigation for 9,644 hectares in Tando Muhammad Khan out of 361,199 hectares irrigated by Tube-wells in Sindh. Area sown in Tando Muhammad Khan is 50,940 hectares out of 2,645,545 hectares of area sown in Sindh (both irrigated and un-irrigated). [42]

Irrigation:

Tando Muhammad Khan district is irrigated by canals off-taking from Sukkur and Kotri Barrages. The Phulleli canal, Akram Wah, Pinyari Canal and Guni Wah are the main canals supplying water for irrigation as well as for domestic and other uses. In addition, there are 296 wells and tube wells in the district. The following table shows the mode of irrigation and area irrigated by each mode as per Sindh Development Statistics 2017-18.[43]

Irrigated Area in District Tando Muhammad Khan is 30,780 hectares and Un-Irrigated area is 19,223 hectares. Canals are the mode of irrigation for 21,132 hectares in District Tando Muhammad Khan. Tube-wells are the mode of irrigation for 9,648 hectares in Tando Muhammad Khan.

[42] Sindh District Profiles 2021 by P&DD Sindh.

[43] https://pakistanalmanac.com/sindh-tando-mohammad-khan/#1633497127938-b1d45416-be12

Livestock & Fisheries:

The livestock head-count in District Tando Muhammad Khan is 626,320 out of the total livestock count of 46,279,313 in Sindh (1.4%). District Tando Muhammad Khan has 57,416 cattle, 157,934 buffaloes, 24,233 sheep, 136,266 goats, and 239,491 poultry. Fish production in Tando Muhammad Khan is 240 M. Tons out of 133,150 M. Tons in Sindh (0.2%). Tando Muhammad Khan has a total of 60 fishermen out of 45,013 in Sindh (0.1%). Similarly, Tando Muhammad Khan has 20 boats out of 7,215 boats in Sindh. [44]

Manufacturing & Communications:

Number of reporting manufacturing establishments in District Tando Muhammad Khan is 0 out of the 1,825 manufacturing units in Sindh. In terms of communications, District Tando Muhammad Khan has a road network of 412 km out of the 22,283 km in Sindh (1.8%). [45]

Historical/Heritage Sites:

The Stupa locally known as "Sudheran jo Thulh" lies between Khatter and Tando Muhammad Khan Railway Stations on Kotri Badin Branch line and is about 5 miles from Tando Muhammad Khan. It is near the Railway line is visible from it. The site of the Stupa lies on the eastern outskirts of a big city remains which are all strewn with brick bats and immense quantity of potsherds.[46]

[44] Sindh District Profiles 2021 by P&DD Sindh.

[45] Sindh District Profiles 2021 by P&DD Sindh.

[46] https://pnd.sindh.gov.pk/storage/resourcePage/62u7SvClgi5XnYvm2a5n3vvTesu4DcqKnhbxeyJP.pdf

5 STAKEHOLDER CONSULTATION AND DISCLOSURE

According to the World Bank ESF, ESS Standard 10: Stakeholder Engagement and Information Disclosure requires the timely, relevant, understandable, and accessible disclosure of project information to all stakeholders in a way that is free of manipulation, interference, coercion, discrimination, and intimidation. This requirement of ESS10 is addressed through the Stakeholder Engagement Plan (SEP) which outlines the ways in which the project team will communicate with stakeholders and includes a mechanism by which stakeholders can raise concerns, provide feedback, and make grievances related to project activities. The SEP focuses on the identification of and engagement with project stakeholders and provides guidance on inclusive and meaningful engagement. The SELECT Project Stakeholder Engagement Plan already being developed and available on the RSU's website demonstrates a commitment to transparent communication and community involvement. This plan, outlining project stakeholders, their roles and engagement methods, serves as a valuable resource for further reference.

5.1 Objectives of the Consultations

The key objectives of stakeholder consultations are following:

- **Inclusive Participation:** To Identify, inform, and involve all relevant stakeholders, including local community, parents, school management committees, students, school staff, government officials, civil society organizations women, minorities, and people with disabilities in the consultation process.

- **Transparency and Information Sharing:** To share clear information with stakeholders regarding the project's goals, construction/rehabilitation activities, and potential environmental and social impacts.

- **Understanding Community Needs and Concerns:** To actively listen to stakeholder concerns and perceptions about various sub-project aspects, including existing facilities and potential impacts of construction and operation.

- **Incorporating Local Knowledge and Perspectives:** To integrate valuable local and indigenous knowledge into the sub-projects design and to ensure its' effectiveness and sustainability.

- **Enhancing Project Design:** Solicit and incorporate stakeholder suggestions related to:
    - Accessibility features for students and staff with disabilities.
    - Separate and adequate sanitation facilities for girls.
    - Improvements to the school design and construction plans.

- **Climate and Disaster Resilience:** To discuss the importance of incorporating climate-resilient building materials and design elements and to gather input on potential environmental challenges (floods, heatwave) and how schools can be built to withstand them.

- **Conflict Prevention and Collaborative Solutions:** To create a forum for open dialogue to address concerns and collaboratively develop solutions, minimizing the risk of future conflicts during sub-projects implementation.

5.2 Need of Consultation

Throughout the Stakeholder consultations in District Tando Muhammad Khan, participants engaged in extensive discussions on a range of topics pertaining to education. One important area of focus was school selection, with participants sharing their experiences and concerns about the process of choosing schools for their children. Additionally, alternate arrangements during construction were identified as a pressing issue, with participants highlighting the difficulties faced by students and teachers when schools undergo renovations or repairs.

Another significant topic that was discussed was girls' education. Participants shared information about the challenges that girls face in accessing education and how these barriers can be overcome. The safety of students was also a key concern, with participants discussing strategies for ensuring that schools are safe and secure environments where students can learn and grow without fear.

During the consultation, water and sanitation issues were discussed. Participants expressed their concern over the lack of access to WASH facilities in schools. Overall, the consultations were a valuable opportunity for stakeholders to come together and share their perspectives on the challenges facing educational institutions.

Furthermore, the ESMP has been developed through a consultative process that actively involves all concerned stakeholders. This collaborative approach plays a crucial role in minimizing potential negative environmental and social impacts, reducing the likelihood of conflicts during design and implementation stages and minimizing the risk of -project delays during construction stage. Ultimately, this fosters a project that is not only environmentally and socially responsible but also economically and socially acceptable to all the community. Public disclosure of the ESMP, along with other relevant project documents, will occur in a timely and accessible manner, this transparency is key to building a sense of ownership among stakeholders and ensuring they are kept informed about project activities.

5.3 Identification of Stakeholders

Project stakeholders have been engaged in the review, consultation and discussions on various project aspects, & social and environmental issues at the early stage of impact assessments for feedback. Successful projects require the involvement of a diverse group of stakeholders. The details of key stakeholders are following:

- **Project-Affected Parties:** The term “Affected Parties (APs)” includes “those likely to be affected by the project because of actual impacts or potential risks to their physical environment, health, security, cultural practices, wellbeing, or livelihoods.

- **Other Interested Parties:** The Other Interested Parties (OIPs) refer to individuals, groups, or organizations with an interest in the project, which may be because of the project location, its characteristics, or matters related to public interest. They may include regulators, government officials, the private sector, private academics, associations, educational organizations, and other civil society organizations.

- **Disadvantage / Vulnerable Groups:** Disadvantaged/vulnerable individuals or groups are potentially disproportionally affected and less able to benefit from opportunities offered by the project due to specific difficulties to access and/or understand information about the project and its environmental and social impacts and mitigation strategies. In this SELECT project context individuals or groups of individuals who should be the intended direct beneficiaries of the project but are at risk of being alienated/marginalized are therefore vulnerable or disadvantaged.

Socio-cultural demand-side barriers combined with economic factors and supply-related issues (such as availability of school facility), together are likely to hamper enrolment and retention of certain marginalized groups, in particular girls and differently abled children in acquiring and continuing primary and secondary education. Similarly female teachers are at risk of being sidelined.

5.4 Engagement approach

To ensure broad participation in the school construction/rehabilitation in District Tando Muhammad Khan under Project Component 2, a comprehensive consultation plan was developed.

- **Consultation Planning:** G3 Design and Supervision consultant firm played a key role in the planning and execution of consultations.

- **Meetings with Education Officers:** Collaboration with District and Taluka Education Officers to develop a detailed consultation plan tailored for each taluka (sub-district) and School clusters.

- **School & Cluster Level Sessions:** Taluka Education Officers, supported by Head Teachers, facilitated consultations at the school and cluster level, ensuring participation from local communities, School Management Committees (SMCs), parents women minority groups, and teachers.

- **District Level Meetings:** District Education Officers facilitated stakeholder meetings at the district level. These meetings included all Taluka Education Officers, Civil Society Organizations (CSOs), disability rights groups, and minority group representatives.

- **Provincial Institutional Engagement:** In addition to community outreach, the project also included engagement with relevant provincial government agencies:

    - **Provincial Institutional Meetings:** Meetings were held with representatives from key government line departments, including the Sindh Environment Protection Agency, Provincial Disaster Management Authority (PDMA Sindh), and the Climate Change and Coastal Development Department.

    - **Technical Input Requests:** CPM RSU/PD SELECT, through official letters, requested these departments to provide valuable technical input on school design, specifically regarding climate-smart and disaster-resilient features.

This multi-faceted approach ensured maximum outreach to all community segments, fostering a sense of inclusion, and encouraging diverse perspectives. Additionally, engaging provincial government agencies allowed for incorporating best practices in environmental protection, disaster preparedness, and climate resilience into the school design.

5.5 Stakeholder Consultation

The Design and Supervision Consultant (DSC) team, specifically the Environmental and Social (E&S) team, led comprehensive stakeholder consultations for the sub-projects in Tando Muhammad Khan. This E&S team comprised specialists Social/Gender, Environment, and architecture.

5.6 Community Consultation During E&S Screening Assessment:

Following the principles of comprehensive and inclusive community engagement, a series of consultations were held at 29 school sites in Tando Muhammad Khan district as part of the

Environmental and Social Screening Assessment for the SELCT project. These meetings ensured a well-rounded understanding of the community's needs and potential concerns surrounding the school upgradation & construction activities of the project. DSC team's E&S Officers conduct the assessment at the sub project sites.

Stakeholders Consulted at Sub Project sites:

- Parents of the School students
- School Management Committee (SMC) members
- Women Community members
- Teachers (including female teachers)
- Students
- Disadvantage/ Vulnerable groups (Minority women)

Community consultation Specific Topics Discussed:

- **Project Needs and Benefits:** Team explored community needs for the school and explained how the project will address these needs, such as improved learning environments, increased capacity, or better sanitation facilities.

- **School Selection:** The rationale behind selecting the specific school for rehabilitation or construction was clearly explained. Land size availability, priority to girl's enrolment Schools, Distance by nearby Elementary/ Secondary School, no disputes, no encroachment in School area.

- **Construction Impacts and Mitigation:** Potential disruptions caused by construction (noise, dust, traffic congestion) were discussed, along with proposed mitigation measures. This could include designated work hours, dust control measures (e.g., water sprinkling) and safe pedestrian walkways to ensure student & community safety.

- **Alternate Space for Student & Teachers Safety:** Concerns about student safety during construction were discussed. Option of the availability of the Alternate arrangements discussed and shared exclusion list from the PMIU SELECT. Plans for temporary classrooms or alternative learning arrangements, including the availability of suitable community space and basic accessibility features like accessibility of girls' student and female teachers, drinking water, toilets, structure stability.

Figure 29 Tando Muhammad Khan Community consultation meetings

- **Environmental and Social Risks:** A comprehensive discussion covered potential environmental and social risks associated with construction. This included:
    - **Health and Safety:** Plans for worker safety training, proper waste management (including hazardous materials, if applicable), and minimizing dust and noise pollution were presented.
    - **Labor Practices:** Ensuring fair Labor practices, availability of local Labor for construction work.
    - **Girls Education:** Discussed Girls Education in the School site villages, encourage girls' enrolment and participation in the project, if applicable, were explored, including addressing challenges faced by girls in attending mixed schools.
    - **Cultural Heritage:** Measures to identify and protect any cultural heritage sites that may be present during construction were discussed.
- **Community Employment:** We explored opportunities for local community members for the Labor work during construction, promoting economic benefits within the community.
- **Grievance Redress Mechanism:** Inform about the Project GRM, GRM channels and clear process for stakeholders to voice concerns and suggestions throughout the project lifecycle was briefed.

Outcomes of Consultation:

- Identifying and addressing community concerns, leading to a more socially acceptable and sustainable project design.
- Incorporating valuable local knowledge into the project planning, such as culturally sensitive school sites and discussed mitigation measure for coeducation in Elementary Schools.

- Fostering a sense of ownership and community buy-in for the project, promoting its success and long-term benefits for the community.
- Tentative identification of Alternative arrangement community spaces and nearby School sites.

The community expressed positive sentiment regarding the school upgrades, recognizing the project's potential to:

- Support girls' education by addressing challenges faced in mixed schools and promoting enrolment.
- Reduce student dropout rates by providing a more positive and well-equipped learning environment.
- Implement infrastructure development that improves school facilities, leading to a more positive impact on school attendance.

5.5.2 Inclusive Stakeholder Meetings:

In Tando Muhammad Khan, eight consultation sessions (see Table 30) were conducted at the taluka level, engaging a total of 511 participants (see table 31-32). The summary of community concerns, and feedback presented in table 33. Notably, of female participation reached 50.09% demonstrating a strong community interest. These sessions included representatives from:

- District Education Office: District Education Officer (DEO), Deputy DEO, Assistant Education Officers (AEOs)
- Taluka Education Offices (TEOs)
- Education Works Department (EWD)
- Social Welfare Department
- Civil Society Organizations (CSOs)
- Disability Rights Groups
- Minority Group Representatives
- Women particularly from minority groups
- Parents
- School Teachers
- School Management Committees (SMCs)
- Students

Sub Projects Taluka Wise Community Engagement: In the 2nd phase of the community consultations, DSC team conducted cluster level consultations in all talukas of the Tando Muhammad Khan District. The field team comprising the Environment and Social/Gender Safeguard and Architecture specialists directly visited the nearby communities of the sub-project schools to understand the perspectives of those most impacted by the project, both positively and negatively. Community representatives expressed their appreciation for the Govt. of Sindh initiative to upgrade schools, highlighting the potential benefits for their children.

Transparency and Public Participation:

- **Environmental and Social Management Plan (ESMP) Sharing:** The public consultations provided a platform to discuss the key features of the ESMP, which outlines measures to minimize environmental and social impacts during construction. This included addressing concerns raised by households and incorporating mitigation strategies like noise and air pollution control and Accessibility features for students and staff with disabilities, Separate and adequate sanitation facilities for girls.

- **Grievance Redress Mechanism (GRM):** Participants were informed about the well-defined GRM established under the Project. This mechanism ensures that any project-related complaints or grievances can be effectively addressed.

Through these comprehensive consultations, the project team fostered a sense of community ownership and ensured that local voices, including those from marginalized groups, are heard throughout the project's development.

Table 29: Schedule of Community Consultations at District level

S#	Date	Taluka	venue	Male	Female
1	2/5/2024	T.M.Khan	District Education Office T.M.Khan	6	1
2	6/5/2024	T.gulam.Hydir	High school T.G.hydir	82	12
3	6/5/2024	T.gulam.Hydir	High school T.G.hydir	6	75
4	7/5/2024	T.M.Khan	DEO Office T.M.Khan	16	6
5	8/5/2024	Buliri Shah Karim	GBPS Zulfiqarabad	34	6
6	8/5/2024	Buliri Shah Karim	GBPS Zulfiqarabad	0	79
7	9/5/2024	T.M.Khan	GGPS khaspura Baqar Nizamani	4	63
8	9/5/2024	T.M.Khan	MainPrimary School T.M.Khan	107	14

Table 30: Details of Institutional Consultations Participation

District	**Participation**									**Total**		
Tando Muhammad Khan	**District Education Officials**			**School Staff**			**SMC members**					
Taluka Wise	F	M	**T**	F	M	**T**	F	M	**T**	F	M	**T**
T.Gulam Hydir	1	14	**15**	5	14	**19**	0	1	**1**	6	29	**35**
T.M.Khan	4	27	**31**	9	14	**23**	1	7	**7**	14	48	**62**
Bulri Shah Karim	0	7	**7**	7	5	**12**	0	7	**7**	7	19	**26**
Total	5	48	**53**	21	33	**54**	1	14	**15**	27	96	**123**

Table 31: Details of Community Consultations Participation

District	**Participation**									**Total**		
Tando Muhammad Khan	**Parents**			**Others/ Community Members**			**Students**					
Taluka Wise	F	M	**T**	F	M	**T**	F	M	**T**	F	M	**T**
T.Gulam Hydir	7	27	**34**	0	0	**0**	74	32	**106**	81	59	**140**
T.M.Khan	30	0	**30**	2	4	**6**	38	81	**119**	70	85	**155**
Bulri Shah Karim	33	7	**40**	0	2	**2**	45	6	**51**	78	15	**93**
Total	70	34	**104**	2	6	**8**	157	119	**276**	229	159	**388**

5.7 Consultations with Females of the Sub-Project Areas

The stakeholder consultation process prioritized inclusive participation, ensuring women's voices were heard. Separate consultation sessions, led by Social/Gender Specialist, fostered a safe space for women to share their concerns and aspirations for their daughters' education. These sessions addressed critical topics, including:

- **Importance of Girls' Education:** Facilitators emphasized the long-term benefits of girls' education on personal growth, family well-being, and community development.
- **Addressing Local Concerns:** Open discussions explored local challenges hindering girls' education, such as:

    - **Access and Distance:** Transportation options and safe routes to and from school.
    - **Mobility:** Cultural norms or practical limitations on girls' movement.
    - **Privacy:** Adequate and separate sanitation facilities for girls.
    - **Parental Willingness for Mixed Education:** Discussions addressed concerns regarding co-education at the elementary/Secondary level, aiming to build confidence and encourage participation.

Engaging Vulnerable Groups:

Recognizing the importance of inclusive participation, the project made special efforts to ensure the participation of disadvantaged vulnerable minority groups, including women from other religion, from all talukas of the Tando Muhammad Khan district. These consultations aimed to understand their unique challenges in accessing education for their daughters and tailor solutions to address those needs.

Considering the potential challenges these women might face in attending consultations due to work commitments, it's commendable that they were still able to participate. The Stakeholder Engagement Report provides further details on their attendance in Annexure H, demonstrating the project's commitment to capturing diverse perspectives.

Focus on School Design:

Stakeholder meetings showcased the proposed school design, highlighting features that promote girls' education:

- Separate and well-maintained sanitation facilities for girls and female teachers.
- Accessible washrooms for students with disabilities.
- Safe and secure learning environments.
- Accessible washrooms for students with disabilities.
- Safe and secure learning environments.

Figure 30: Community Consultation Meeting

Feedback and Gender aspects of the School Design:

Stakeholders, including women, provided valuable feedback on the proposed design, specifically focusing on aspects that could enhance girls' comfort and encourage enrolment. This feedback will be incorporated into the final design plans to ensure the schools are truly inclusive and supportive of girls' educational aspirations (See table 33).

Table 32: Summary of concerns raised by the community during the consultation.

S#	Comments /Observations	Action /Response
1	**Concerns Regarding WASH Facilities:** The participants were generally satisfied with the proposed design. However, they brought up significant concerns regarding the absence of crucial WASH (Water, Sanitation, and Hygiene) facilities, particularly for female teachers and students.	In our subprojects, we have designed crucial WASH (Water, Sanitation, and Hygiene) facilities tailored to the needs of female teachers and girl students. These facilities have been thoughtfully designed to prioritize their comfort, privacy, and overall hygiene. This includes separate and well-equipped facilities to ensure that they have access to clean water, proper sanitation, and a hygienic environment, thereby promoting a healthier and more conducive learning and working environment for them.
2	**Beautification of School Area:** The stakeholders were generally in favor of the proposed design. However, they did express some concerns specifically related to the visual appeal and aesthetics of the school area. They felt that certain aspects of the design could be improved to enhance the overall look and feel of the space.	To enhance the school environment, we will explore adding greenery, plantations, landscaping, wall paintings, and a dedicated play area. The feasibility of these improvements depends on the available space within the school's premises.

3	**Waiting Room for Parents** The participants expressed their appreciation for the interventions implemented as part of the project. However, they also raised valid concerns regarding the absence of a dedicated waiting room, particularly noting the impact on mothers.	Consider integrating covered seating areas with comfortable benches designed for parents, especially mothers, to provide a welcoming and relaxed waiting space during pick-up times.
4	**RO Plant Addition:** During the discussion, the participants acknowledged the numerous benefits of the RO (Reverse Osmosis) plant. However, they strongly recommended its immediate installation to rectify the persistent issue of inadequate access to portable drinking water in the schools.	Consider integrating a reverse osmosis (RO) plant into the infrastructure to guarantee a sustainable supply of clean drinking water for the school and the surrounding community. This initiative will not only benefit the immediate stakeholders but also contribute to the overall health and well-being of the local area.
5	**Computer Lab Concerns:** The proposed computer lab received a positive reception from the participants. However, concerns were expressed regarding the availability of computers and teachers. Some participants questioned whether there would be enough computers for everyone to use, and others were worried about the availability of qualified teachers to facilitate the use of the computer lab.	Further discussions are necessary to address concerns regarding the unavailability of computers and staffing for the computer lab.
6	**Library Addition:** The participants in the discussion recommended including a comprehensive library with a wide range of books, digital resources, and comfortable reading spaces in the elementary school design. This was suggested as a means to cultivate a reading culture, provide opportunities for student engagement, and support overall academic success.	This needs discussion to include a fully equipped library to foster a culture of reading and enhance student engagement.
7	**Early Childhood Education Awareness:** The participants expressed their appreciation for the early childhood room, emphasizing its positive impact. However, they also raised concerns about the overall lack of awareness within the community regarding the critical importance of early childhood education. They highlighted the need for greater advocacy and recognition of the value of early childhood education at the community level.	Raise awareness about the importance of early childhood education in the local community through social media outreach and continuing professional development training of teachers.
8	**Alternate Electricity Arrangements:** There have been growing concerns about the reliability of electricity supply during periods of hot weather, especially in rural areas where the infrastructure may be less robust. This has raised questions about the capacity of the current electrical grid to	Participants were informed that Solar will be installed to ensure uninterrupted power supply, especially during extreme weather conditions.

	handle increased demand during heatwaves and the potential impact on residents and businesses in these areas.	
9	**Canteen Facility:** Participants recommended the addition of a canteen space within the school premises to offer a variety of food options for all students, with a particular focus on catering to the needs of female students.	Incorporate a canteen space to ensure students have access to food items during school hours.
10	**Playground and Sports Materials:** During the discussion, participants brought attention to the insufficient availability of playgrounds and sports materials for students, especially noting the lack of resources for girls.	Allocate space and budget for playgrounds and age-appropriate sports equipment
11	**First Aid Emergency Kit:** Participants recommended that a comprehensive first aid kit, complete with emergency medicines, should be included. They also suggested including sanitary pads and providing health sessions focused on personal and menstrual hygiene.	Provide a well-equipped first aid kit and consider health sessions by trained personnel to promote hygiene and health awareness.
12	**Labor Community Behaviors:** During discussions with community representatives regarding the planned construction activities for the proposed site, several concerns were raised about potential issues related to privacy and construction hazards. Specifically, the representatives highlighted concerns about residents' privacy in relation to the presence of construction labor and the potential hazards associated with the transfer and storage of construction materials. Additionally, it was suggested that storing construction materials within the school boundaries would be preferable, as some local streets are narrow and congested with traffic, making it safer and more practical..	Worker Code of Conduct: Implement a code of conduct for construction workers that emphasizes respectful behavior towards the community and students. Limited Worker Access: Restrict worker access to designated areas within the school compound. Clear Signage: Post clear signage around the construction site, reminding workers to maintain appropriate conduct. Community Liaison Officer: The contractor will designate a community liaison officer to address any privacy-related concerns raised by community members.
13	**Labor Recruitment**: During the consultation, participants from the sub-project sites emphasized the importance of hiring unskilled labor from the local area. They pointed out that there is a significant population of unemployed youth in the region who are eager to work. The participants highlighted the potential positive impact of providing employment opportunities to the local community and expressed a strong preference for sourcing labor locally to support the economic development of the area.	Participants were told that local community people would be preferred for School construction labor work, and the social specialist of G3EC & PMIU will monitor this during the construction phase.

14	**Climate:** When constructing schools, it is important to take into account the specific requirements of the local climate. For example, using tiles for roofs can help to insulate the building and protect it from extreme heat or cold. Additionally, using wood instead of steel in windows can better withstand the local weather conditions and provide natural insulation. Making classrooms well-ventilated can help regulate the indoor temperature and create a more comfortable learning environment for students.	Include all concerns in modular design with Climate Response and Disaster Resilience Indicators in the School Designs.
15	**Dust Pollution:** The nearby residents are expressing significant concern regarding the potential consequences of ongoing construction activities on the increase of dust pollution in the area.	The project management plan encompasses all mitigation measures, and will include the implementation of dust suppression techniques such as frequent water spraying at construction sites to minimize airborne particulates and maintain air quality.
16	**Traffic Congestion:** The local community has expressed concerns about the potential impact of transporting construction materials and equipment in the area. There are worries that this movement could lead to traffic congestion, disrupting daily commutes and overall accessibility within the vicinity.	The traffic management plan includes designated routes for construction vehicles and outlines strategies for implementing traffic management to minimize disruption.

Figure 31: Meeting with Stakeholders, NGOs, works and Services, DEOs and TEOs

5.8 Institutional Consultation

The Environmental and Social Management Plan (ESMP) for the SELECT Project prioritizes comprehensive stakeholder engagement throughout the project cycle. This includes consultations with relevant provincial government departments to ensure the project incorporates best practices in climate-resilient school design. In March 2024, the G3 Design and Supervision Consultant team (Environment, Social/Gender & Architecture specialists) conducted further meetings with key provincial departments to ensure the project incorporates best practices in climate-resilient school design.

Provincial level Meetings Conducted:

- **Director General, Directorate of Climate Change (DoCC) & Sindh Coastal Development Authority (SCDA):** Discussions focused on provincial strategies and best practices for climate-resilient infrastructure, particularly in coastal areas.

- **Director General, Sindh Environment Protection Agency (SEPA):** Collaboration with SEPA addressed environmental considerations for school construction, including sustainable material selection and waste management practices and SEPA NOC process.

- **Director General, Provincial Disaster Management Authority (PDMA) Sindh:** PDMA's expertise on disaster risk reduction informed discussions on structural design considerations, emergency preparedness measures, and the potential integration of PDMA's technical guidelines into the school design process.

Meeting Outcomes and Benefits:

- **Enhanced Climate Resilience:** Expert input from provincial departments will directly contribute to the development of school designs that can withstand various climate threats specific to Sindh province.

- **Knowledge Sharing and Collaboration:** These consultations fostered a collaborative environment for knowledge sharing between the SELECT project team and provincial government agencies, leading to a more robust approach to climate-resilient school construction.

- **Alignment with Best Practices:** The SELECT project will incorporate best practices in disaster risk reduction for educational facilities, as outlined by provincial disaster management authorities.

Details of consultations with line departments & a summary of concern and photographs have been presented in Tables 34 & Figure 32 respectively.

Figure 32: Meeting with Line Department

Table 33: Summary of Concerns Raised by Institutional Stakeholders

Department	Recommendation/Suggestion	Action/Suggestion
EPA Sindh & Climate Change & SCDA Department	1. Incorporate 50% environmental mitigation measures and 50% adaptation measures in school designs.	- Conduct a climate risk assessment for all school locations. - Integrate findings into the design process to address specific vulnerabilities (e.g., flood mitigation measures in flood-prone areas). - Prioritize sustainable building materials and construction practices.
	2. Include designated warehouse zoning for safe segregation of hazardous materials within schools.	- Revise school design plans to incorporate designated and properly ventilated storage spaces for hazardous materials (e.g., cleaning supplies, paints). - Develop clear protocols for safe handling and disposal of hazardous materials.
	3. Install and maintain overhead water tanks to address potential water shortages.	- Conduct a water resource assessment for all school locations. - Integrate rainwater harvesting systems and water-efficient fixtures into the school designs. - Develop a water management plan to promote water conservation practices within schools.
	4. Submit a collective Environmental Impact Assessment (EIA) report for all 600 schools to SEPA for review.	- The DSC team response SEPA representatives that the project will prepare district wise ESMPs, as the project cover 12 district of Sindh and the assessment is performed in three phases so, project team requested the authority to allow for submission of District wise ESMP rather than a 12 district IEE/EIA. The ESMP will cover all the aspects and proposed mitigation measures with monitoring and management plans (refer annex I)

		- In response to the PMIU Consultation letter, SEPA proposed a coordination meeting on further discussion which will be attended by PMIU & DSC team for further discussion.
PDMA Sindh	1. Conduct a site assessment to check for potential water logging, ponding, or depressions at school locations.	- Engage a qualified engineering firm to conduct site investigations and prepare topographic surveys for all school locations. - Review findings to identify and address any potential drainage issues that could compromise school safety or functionality.
	2. Utilize PDMA's district atlases (available on their website) to identify disaster-prone areas and prioritize school construction in less vulnerable locations.	- Review PDMA's district atlases to identify areas with high disaster risk. – Prioritize school construction in areas with lower disaster risk or incorporate additional mitigation measures in high-risk locations.
	3. Conduct soil testing at all sub-project sites.	- Engage a qualified geotechnical engineering firm to conduct soil testing at all school locations. - Review soil test results to inform foundation design and ensure structural stability of school buildings.
	5. Incorporate clearly marked emergency exits in the school designs.	- Revise school design plans to ensure clear and accessible emergency exits on all floors of the buildings. - Conduct evacuation drills with students and staff to familiarize them with emergency procedures.
	6. Designate a multi-purpose area/lawn for recreational activities within the schools.	- Revise school design plans to incorporate a designated outdoor space for students to engage in physical activity and recreation.
	7. Submit formal architectural designs for PDMA's inputs before finalizing sub-projects plans.	- Prepare and submit detailed architectural drawings and specifications for the school designs to PDMA for review and inputs. - Address any feedback or suggestions provided by PDMA before proceeding with construction.

5.9 Information Disclosure

The SELECT Project is committed to transparency and public access to project information. In accordance with this commitment, several key project documents have already been uploaded to the Reform Support Unit (RSU) SELECT Project website (rsu-sindh.gov.pk). These documents include:

- Environmental and Social Commitment Plan (ESCP)
- Environmental and Social Management Framework (ESMF)
- Project Stakeholder Engagement Plan (SEP)
- Labor Management Procedure (LMP)
- Following approval from the World Bank, ESMP document with translated executive summary in Urdu and Sindhi language will also be uploaded to the RSU/SELECT website.

To ensure accessibility for stakeholders at the local level, the full ESMP document as well as Executive Summary in Sindhi/Urdu will be made available in physical copies at the following locations:

- District Education Officer (DEO)/Taluka Education Officer (TEO) offices in relevant districts
- Project site camps.

5.10 Future Consultation Plan

The SELECT Project recognizes that stakeholder consultation is not a one-time event, but rather an ongoing process that fosters transparency and builds trust throughout the project lifecycle. The consultations documented in this ESMP represent the initial steps in this continuous engagement process.

Future Project Phases:

- The Supervision Consultants, in collaboration with PMIU staff, will continue to actively engage with project stakeholders throughout the construction and operation phases.
- Regular consultations will be held with local communities to gather feedback on project activities, address any concerns or complaints, and ensure the project continues to meet the needs of the community.

Benefits of Ongoing Engagement:

- Proactive identification and mitigation of potential issues
- Increased community ownership and support for the project
- Improved project outcomes that reflect the needs and priorities of stakeholders

6 ASSESSMENT OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATIONS

This chapter emphasizes the impacts of the 21 subprojects outlined in Annex B, along with their corresponding mitigation measures. These impacts can be categorized as either positive/beneficial or negative/adverse. It is anticipated that the school sites for these subprojects will predominantly yield positive outcomes for the communities, students, especially female students, and the School Education & Literacy Department, Government of Sindh.

On the other hand, the sub-projects activities which will take place within existing schools and will involve the use of heavy equipment, construction work, earthworks and labor influx, have likely chances of causing a number of associated potential risks and impacts on biophysical environment (air, water, aquatic and terrestrial ecology, soil), and socioeconomic environment (land use, employment, working condition and labor, hazard and health, Sexual exploitation Harassment & Abuse security, safety of graveyards, etc.).

6.1 Positive Environmental and Social Impacts of Sub-projects

Most of the sub-projects' environmental and social impacts will be beneficial in the operation phase. The beneficial impacts are described briefly hereunder:

- Poor and vulnerable communities will be immensely benefitted through the sub-projects by sending their children, especially girls for secondary education. According to the consultations with the schools' head teachers, poor and marginalized families only send their children to the government schools as they can't afford the exorbitant fees of private schools.
- During consultation, community members expressed their happiness about the upgradation (from primary to elementary/secondary) of schools. Local Community of rural areas, village elders appreciated and encouraged the initiative taken by the Government of Sindh.
- Girls' dropout ratio has been increased as majority of girls' students stopped their education after completion of the primary education due to tribal barriers and unavailability of elementary/secondary schools in close vicinity. In addition to that, inadequate WASH facilities in schools, and social stigma related to menstruation often lead to adolescent girls' absenteeism and dropout from the schools. SELECT Project addressing this issue by construction of elementary & secondary blocks in the existing primary schools with gender and inclusion design and WASH facilities which will support in reducing drop out of school children specially girls' dropout. . The school design will also incorporate facilities for especially abled people such as ramps for wheelchairs, tactile tiles & separate toilets for them with all necessary features.
- The new school buildings will be equipped with safety features, especially electric and fire safety systems which will lower risks of fire and electric shock and eliminate / reduce the risk of accidents / injury of students and the staff. SOPs will be developed and implemented for the safe handling of laboratory chemicals during the operation of school blocks.
- The design will incorporate environmentally friendly features such as renewable energy using solar panels, passive ventilation, wind catchers, locally available construction material, septic tank and trickling pit etc.

6.2 Impact Assessment Methodology

This ESMP has analyzed and assessed the anticipated impacts that are likely to arise due to the identified aspects in design, construction and operation phases of sub-projects. Each of the

potential impacts identified during the screening and consultation sessions was evaluated using the environmental, social, and project information collected. In general, the impact assessment discussion covers the following aspects:

- Present baseline conditions
- Potential change in environmental and social parameters due to sub-projects
- Prediction of potential impacts
- Evaluation of the potential impacts
- Defining of mitigation measures to reduce impacts to as low as practicable.
- Monitoring of residual impacts

6.3 Impact Rating

The potential adverse impacts have evaluated with respect to the rehabilitation/Construction phase and the operation phase. Impacts are classified as High, Substantial, Moderate and Low. As per ESMF guideline on how impact rating might be categorized are mentioned below:

High Impact:

- Significant and irreversible environmental or social damage.
- Adverse effects on critical habitats or vulnerable populations.
- Violation of fundamental human rights or displacement of communities without adequate compensation or resettlement.

Substantial Impact:

- Significant but potentially reversible environmental or social damage.
- Adverse effects on non-critical habitats or moderate impacts on vulnerable populations.
- Limited violation of human rights with mitigation measures in place.

Moderate Impact:

- Moderate adverse environmental or social effects that can be effectively mitigated.
- Impacts on non-sensitive habitats or minor effects on local communities.
- Limited violations of human rights with clear mitigation measures.

Low Impact:

- Negligible or minor adverse environmental or social effects.
- No significant impacts on habitats or communities.
- No violations of human rights.

These impact ratings are used to categorize the subprojects' activities and provide mitigation measures to minimize adverse impacts on people and the environment.

6.4 Potential Adverse Impacts and Mitigation Measures

This section identifies potential negative environmental and social impacts associated with the sub-projects are presented in Table 35, with details of these potential impacts and corresponding mitigation measures. Implementing these mitigation measures is crucial to minimizing or eliminating these negative impacts.

Table 34: Potential Environmental and Social Impacts of the Proposed District Sub-Project Activities and Mitigation measures

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
A. PRE-CONSTRUCTION			
Land Availability • **School Land Ownership & Land Encroachment**	All the selected schools for rehabilitation and construction are within the existing schools' premises without any conflicts or encroachments and no extra land for the sub-project schools will be required. The land must also be free of conflict and encroachments.	Low Moderate	• All of the schools will be constructed within the existing primary school premises which are on government land. Existing school premises will house all rehabilitation and construction activities. • The existing school site's land is free of any land ownership disputes or encroachments. • Land Ownership Verification: In the first stage, during Project screening, it was inquired with the headteachers about the land ownership and wherever record was available its pictures were taken. In the second stage, the land ownership and schools' boundaries were verified with DEOs, TEOs and Taluka Revenue Officers for short listed schools.
• **Potential Disqualification of School in Vulnerable Area Due to Unclear Boundaries and Lack of Boundary Wall**	**Disqualification from project:** Schools located in vulnerable and deprived areas, particularly those focusing on girls' education, might be excluded due to unclear land boundaries and the lack of a proper boundary wall.		• **Prior to Need Assessment:** ○ **Data Collection:** Utilize existing data sources (e.g., government land records, school enrollment data) to prioritize potential schools in vulnerable and deprived areas with a focus on girls' education. **Enhancement:** During data collection, prioritize schools with verified land ownership or a clear history of occupancy by the school. • **During Need Assessment:** ○ **Community Consultation:** ○ **Stakeholder Engagement:** Hold meetings with a diverse group of stakeholders including the Headteachers, teachers, SMC members, local community leaders, and representatives from relevant government departments (e.g., Education Department,

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	Reduced access to education: Children in these vulnerable areas, especially girls, may lose the opportunity to receive quality education due to the school's disqualification. **Increasing in existing inequalities:** The lack of educational opportunities in these areas would further widen the existing gap between vulnerable communities and others.		Revenue). **Enhancement:** Actively involve community members, particularly those with knowledge of land tenure and historical land use, in discussions about school boundaries. ○ **Focus on Land Issues:** Include clear discussion points about land availability, verification of school boundaries, and potential solutions for resolving boundary disputes. ○ **Participatory Methods:** Utilize participatory methods like focus group discussions and mapping exercises to gather information about the existing school boundaries and any potential disputes. ○ **Based on Consultation and Verification:** • **Land Ownership Verification:** Work with the District/Taluka Education Officials, taluka revenue officials and relevant authorities to verify existing land ownership and boundaries for shortlisted schools, particularly those in vulnerable areas. ○ If discrepancies arise, prioritize resolving them through mediation or facilitation processes involving community members and relevant government departments. • **Boundary Marking and Documentation:** For schools with verified ownership but unclear boundaries, conduct a land survey with the involvement of the local community to identify and establish clear school boundaries. Mark these boundaries with permanent markers and update need assessment land related information accordingly. (e.g., concrete posts). • Document the entire process with photos, maps, and signed agreements from stakeholders. Ensure the community has copies of all documentation for future reference.
Disaster Risk Factor	• In District Tando Muhammad Khan, only water in the form of floods and severe rains can impact the subprojects sites in	Moderate	• It was one of the major recommendations during the consultation with the stakeholders that to raise the plinth level of the school to avoid flooding inside the building and to ensure the accessibility in monsoon or after rainfall. Therefore, the recommendation has been adopted in the design and the plinth level of each site has been raised.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	terms of inundation in and near the subproject's sites. Also, the heat wave can cause health risks to workers and students. There are no schools located close to the coastal areas, therefore, the risk of Tsunamis and cyclones are ruled out. • As per the need assessment, out of 21 schools, 21 schools are affected by flood 2022. • During construction phase rain/flood/heatwave event may witness which will mitigate with following the mitigation proposed in this section.		• Also, the schools will be provided with a proper stormwater drainage system which will direct all the storm water into the neighboring drainage. • During construction, it is the responsibility of CC to provide sunshades and shady rest areas in heatwave. • Drinking water with oral dehydration salts (ORS) will be available in all working sites. • Administrative controls like shift rotation will be practiced more frequently during excessive heat and in case of heat wave. To avoid the risk, it is better to avoid working under the sun. • The school blocks are designed in such a way that passive ventilation system reduces the heat inside the halls. Heigh ceilings and large windows will provide an efficient ventilation in the halls. • Also, the use of red bricks will further reduce the temperatures inside the buildings. The installation of solar panels above the roof can further reduce the heating of the roof and restrict sunlight from striking directly over the roof. • Adequate washing areas in lavatories as well as drinking water will be available for the school sites. • SMC and DEOs will also keep liaison with the District Disaster Management Authority (DDMA) officials in case of floods and heat wave.
B. Construction			
Potential Environmental Impacts			
Ecological disturbance	• All proposed school sites do not lie inside the ecologically protected area or	Low	• Landscaping, horticulture and plantation of the trees will be incorporated into the design where possible. • Use of local vegetation as fuel by labor will be prohibited.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	buffer zone of the protected area. No special area for protecting biodiversity and Ramsar sites are found near the sub-projects sites. • Loss of Forests: No areas of primary forest are found within or adjacent to sub-project sites.		• Sites for construction camps and storage areas will be chosen to minimize vegetation removal and land clearing. • No hunting, harassment, or netting of wildlife will be permitted. • No clearing of bushes will be allowed during the nesting/breeding season of birds.
Flora & Fauna	• Trees either natural or planted, are located in some of the proposed school sites. The number and identification of specie of mature trees at the proposed sites is presented in table 4.4 part of baseline data collected under E&S checklist. However, the number of affected trees is proposed around 65. • During construction to facilitate the school design which may affects flora & Fauna's ecosystem mostly birds by	Moderate	• Avoid tree cutting (as part of project design, tree cutting is strictly not allowed) • Tree plantation plan will be prepared which will include the number and type of species to be planted and cost of plantation and maintenance. • Only local species will be selected for plantation in the project • Trees will be protected with fencing for the duration of the construction, ensuring that the fencing is maintained and not removed until final landscaping takes place. • Trees located inside the proposed plot if need to be cut down will be compensated at a ratio of 5 trees planted for 1 tree cut.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	destroying their habitats, disrupting breeding cycles, reducing food sources, and forcing displacement. This can lead to population declines, increased vulnerability to predators, and altered ecosystem dynamics. Conservation efforts are crucial to mitigate these impacts and protect bird populations. • There is no any endangers specie identified during the subprojects assessment.		
Land & Soil	• The subproject activity may results in deterioration of land and soil due to Transportation of heavy vehicles, storage of construction material (oil, paint, lubricant, cement etc.). • The subproject activity will result in deterioration of the	Moderate	• Construction materials will be stored in proper stores on impervious sheets to avoid any soil contamination. • Machinery and vehicles will be operated at designated routes to avoid erosion. • Oil and fuel storage and refilling will be offsite to the extent possible; in case it is done at site, proper arrangements including impermeable surfaces and secondary containment will be provided. • Technical design measures will be incorporated to minimize unnecessary removal of trees and vegetative cover Sites for construction camps will be selected to avoid or minimize vegetation removal/clearing. • Visual Inspection will be carried out for land contamination and dust emissions.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	land due to illegal landfilling/disposal of construction waste (Chemicals, Expired material, Asbestos, e-waste etc.) within the project boundary or nearby community.		• Sites for construction camps will be selected to avoid or minimize vegetation removal/clearing. • Visual Inspection will be carried out for land contamination. • Designated dump site will be developed/proposed. Waste will be disposed only in designated dump sites identified by government authority or proposed by Firm.
Water Quality	• During assessment it is observed that out of 21 schools 10 have availability of drinking water. However, 11 schools' students and teachers bring their water from homes or from nearby surrounding homes. 3 representative sub project location samples for detailed analysis conducted and the results were compared with SEQS. The result found satisfactory with respect to physiochemical parameters however,	Low	• All the school sites will be tested by CC and for which the groundwater is not fit for human consumption will be considered for installation of filtration/ RO plant. Moreover, in these target sites, some sites did not have any dedicated source of water inside the school and water from the hand pump of the immediate surrounding/community of the school site will tested; therefore, construction of its dedicated water source or bore inside the school is also mandatory along with the installation of filtration/RO plant in these sites to meet the basic standard facilities requirements of a modern school in this Project. • Oil and fuel storage and refilling will be offsite to the extent possible; in case it is done at site, proper arrangements including impermeable surfaces and secondary containment will be provided. • Management guidelines proposed in ECP 1: Waste management and ECP 7: Workers' Health and Safety will also be followed. • Ensure availability of potable water for workers. • In the case of potable water only boiled water will be allowed for drinking/human consumption.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	biological parameter were found non-compliant to SEQS. • The surface and ground water quality will deteriorate due to spills from construction equipment, fuel, washing to vehicles and inadequate disposal of waste material. • Risk of prevalence of water borne diseases on site/in the area		
Air Quality	• 3 representative school locations assessed in baseline, and all parameters at these sites were found to fall within the SEQS limits. However, during construction activities deterioration of air quality expected due to generation of dust during, excavation, stocking of soil, piling, vehicular movement, machine exhaust emissions, release of	Moderate	• Water will be sprinkled during windy conditions. • Speed limits will be followed for construction vehicles while plying on dirt tracks in or around subproject sites. • Open burning of solid waste will be strictly banned. • Wind breaks /barriers (either natural or constructed) will be deployed to reduce the possibility of suspended particles in air. • Conduct ambient air quality monitoring, vehicle emissions and generator emissions as per SEQS periodically as per the Environmental Monitoring Plan (EMP). • Enforce the maximum speed limit to 10km/h for vehicles to reduce dust emissions. • The exposure of construction workers to dust needs to be minimized by provision of dust masks and mandating the workers to wear them. • PVC Laminated Polyester Fireproof Mesh Sheet (with small mesh size) which is easily available in the local market should be installed to cover the under construction building structure to limit the dust dispersion from the structure.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	gases, open burning of wastes etc. • Heavy machinery will be involved during the construction except concrete mixing process using diesel engines. • Once the school sites will be constructed, dust and exhaust emissions are not anticipated during the operations of schools.		• Follow management guidelines proposed ECP 3: Air Quality, Noise and Vibration Management and ECP 7: Workers Health and Safety
Noise Generation	• Noise generation and vibration from construction machinery, equipment and vehicles have adverse psychological and physiological effects (increased blood pressure, sleep disturbance, etc.) on workers, students, staff and communities near construction sites, and can also cause significant disturbance to local wildlife. • Around 67% of the proposed school sites	Moderate	• Construction machinery and vehicles will be kept in good working condition and be properly tuned and maintained throughout the duration of construction to avoid excessive noise. • Noisy work will be avoided during school timings as much as possible • Use of noise barriers in locations next to sensitive receptor. • Noise monitoring will be carried out at various locations using noise meters. • Site labor working in high noise area where noise level exceeds 85 dB (A), will wear earplugs and ear muffs. • Noise level of 55 dB at day and 45 dB at night time will be maintained for residential area • Ambient noise will be regularly measured to ensure that the thresholds set in the SEQS are not exceeding, Despite this, the affected communities will also demand to monitor noise in case of any complaint. Contractors' Community liaison Officers (CLOs) will be maintained to ensure that complaints and grievances are addressed as soon as possible.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	are located close to the residential units which will be the receptors of noise and dust.		• Follow management guidelines proposed in ECP 3: Air Quality, Noise and Vibration Management and ECP 7: Workers Health and Safety.
Waste Generation	• Typical solid waste will generate during construction includes wasted concrete, steel and wooden scaffolding, cement bags, excavated soil, wood remains etc. These impact the environment through resource depletion, landfill usage, air and water pollution, soil degradation, habitat destruction, climate change, and noise and visual pollution. • The total quantity of waste generate will vary depending on the strength of labor that the contractor poses to use. Most of the laborers will be locals who will return to their homes at the end of the working day. A maximum of	Moderate	• CC will develop the site-specific waste management plan under CESMP. • segregate common wastes at all construction sites: • Hazardous waste will be temporarily All wastes generated at facilities shall be categorized in two major categories (i.e., Hazardous wastes and Nonhazardous wastes). During construction phase, suitable areas with following color coding shall be kept to collect and stored on-site in the designated locations and handed over to approved waste contractors for recycling purposes and safe disposal. • Combustible waste will not be burnt in the open to reduce the amount. A policy for prohibiting burning the waste will be disseminated at all sites. • Combustible waste will be priorities to reuse at site and if not reusable then recycle through appropriate vender. • The labour (skilled and unskilled) will be provided with relevant training, and they will be encouraged to reduce and reuse waste wherever possible • A dedicated waste contractor will be hired by the CC who will collect and dispose the waste to the nearby landfill site or the dump site. • Site will be properly cordoned off by placing fiber or wooden boards all around. • Proper solid waste areas of adequate capacity will be designated at construction site to cater to daily waste generation. • Care must be taken to prevent wastes giving rise to secondary environmental problems, such as odors or soil and groundwater contamination through rainwater leaching.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	about 25 % of labor comprising mainly skilled labor will reside at construction camps during the peak of the works • No waste collection and disposal services available in the schools, the waste is dumped outside the school premises at site not marked for dumping and burned within the school premises which is not disposed in an environmentally responsible manner. • E-waste will be generated during demolishing and reconstruction of some schools and if E-waste is improperly disposed and end up in landfills, toxic chemicals are released, impacting the earth's air, soil, water and ultimately human health.		• All workers handling wastes shall use proper PPE • Recyclable waste will be sent to waste recycling contractor • Compostable and inert waste will be disposed of in nearby empty land designated for landfilling by local TMA. • Hazardous waste will be disposed of or incinerated by SEPA certified waste contractor hired by CC. • Provide separate bins for different types of waste (recyclables, organic waste, non-recyclables) and clearly label them to facilitate source separation • Any non-functioning IT equipment/e-waste will be segregated and sold to certified vendors for recycling purposes; e-waste will not be dumped alongside the general solid waste.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
Resource Efficiency	• The subproject include activities such as construction of new blocks and rehabilitation of some blocks which requires significant consumption of raw materials, energy and water.	Low	• Careful planning and ordering of materials can help minimize excess that ultimately becomes waste. Utilizing prefabricated components when possible can further reduce construction debris. • Concrete, brick, and asphalt debris can be assessed for potential reuse. Crushing these materials creates valuable base material for pathways, landscaping, or future construction projects within the school grounds. • Salvaged wood from demolition can be repurposed for temporary structures on the construction site, reducing reliance on virgin wood. • Plan construction activities in such a manner that minimizes energy consumption and waste production • Rather construction of new structures rehabilitate the existing structures.
Asbestos/Hazardous Materials Management	• The construction of School will involve utilization, handling, storage and transportation of hazardous substances/materials or waste.	Low	• Lead-based paints will not be used for the sub-projects. • Only properly trained workers, with relevant PPEs, will be allowed to handle any hazardous substance.
Occupational Health and Safety (OHS)	• The subproject pose potential risks and vulnerabilities related to OHS during Project construction. Multiple hazards are inherently present at the construction site which may create unsafe conditions and also the unsafe acts	Moderate	• Contractors will engage one Safety Supervisor at each subproject site (Average 20 Workers) who should preferably be a science/engineering graduate. The duty of Safety Supervisor may be assigned additionally to any of the staff members available at subproject site. The Safety Supervisor will ensure the day-to-day compliance of OSH requirements. He/she will record incidents, follow-up actions, training, awareness sessions, emergency drills and other developments in OSH. • Only properly trained workers, with relevant PPEs, will be allowed to carry out any electrical works. • Necessary precautions will be taken for working at height including safety harness, safety helmet etc.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	done by the workers i-e • Crane and Lifting Operations: the material to be lifted up at top stories like steel bars, bricks, concrete / ready-mix can create the risks of falling loads, crane failure, failure of lift and/ or workers being crushed. • Forklifts and Non-Road Vehicles: Most fatal and serious injuries involving excavators occur when the excavator is moving and strikes a pedestrian, particularly while reversing; trapping a person between the excavator and a fixed structure or vehicle; or when the moving bucket or other attachment strikes a pedestrian or when the bucket inadvertently falls from the excavator etc.		• Periodic OHS training will be provided to the workers • A first aid kit, appropriate as per the site conditions and potential hazards, will be placed at each project site. • Follow LMP including code of conduct for all labor and ECP 7: Workers Health and Safety • All crane & lifting operations, CC will ensure full compliance with standard operating procedures. CC will develop a site-specific pre-lift checklist. • All the warnings, safety signages and safety data sheets will be in local languages. • Workers will be kept away from areas of excavator operation by the provision of suitable barriers. When slewing in a confined area the selection of plant with minimal tail swing is preferred. Clearance of over 0.5m needs to be maintained between any part of the machine, particularly the ballast weight, and the nearest obstruction. • CC will ensure that chemicals and other substances are handled and stored in accordance with the manufacturer recommendations found in the Material Safety Data Sheet (MSDS). • Explosive storage shall be located away from corrosives, flammable, oxidizers, or acids. • Workers will be trained with lifting and materials handling techniques before the construction of the project, including the placement of weight limits above which mechanical assists or two-person lifts are necessary. • Work site layout will be planned to minimize the need for manual transfer of heavy loads. • Tools will be selected and work stations would be designed to reduce force requirements and holding times, which promote improved postures, including, where applicable, user adjustable work stations. • Administrative controls, such as job rotations and rest or stretch breaks will be implemented into the work processes.

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	• Hazardous Substance Handling and Storage: Certain substances are hazardous which will be used in construction. The exposures to these substances for a certain period and quantities can cause health risks. The significance of risk depends on the quantity and exposure period of that substance. • Over-exertion: Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling, are among the most common causes of injuries at construction site. • Slips and falls: Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste		• Good house-keeping practices, such as the sorting and placing loose construction materials in established areas away from foot paths, would be implemented. • Excessive waste debris and liquid spills will be cleaned up regularly. • Electrical cords and ropes will be located in common areas and marked corridors. • Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. • Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap. • Temporary fall protection measures in scaffolds and out edges of elevated work surfaces would be used, such as handrails and toe boards to prevent materials from being dislodged. • Appropriate PPE such as safety glasses with side shields, face shields, hard hats, and safety shoes, would be wore. • Occupational, Health and Safety: SELECT will be complying with the legislation and other applicable requirements (in the province of Sindh) and World Bank ESF, SELECT ESMF & LMP related to labor management. • Health and safety provisions of the Sindh Occupational Safety and Health Act, 2017, provincial laws on working conditions and World Bank ESF will cover all the project workers under SELECT. The project through a systematic approach will continually be improving the OH&S management system and performance through commitment. • The project has established the Health and Safety Committee at the PMIU level which will also include Workers' Representation. • The Committee will have following functions:

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	debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at construction site. • Work at Heights: Falls from elevation associated with working with ladders and scaffolding are among the most common cause of fatal or permanent disabling injury at construction site. • Struck by Objects: Construction activities of the project may pose significant hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities.		➢ To supervise the system of health and safety in the project, proposes use of appropriate PPEs at construction sites, suggests measures during waste management and make recommendations for review. ➢ To discuss any incident including conflict and act of violence at the workplace in which or in consequence of which any person has injured, became ill or died. ➢ To monitor implementation of health and safety provisions under LMP and review its progress on a quarterly basis. ➢ To advise the project on devising support and coordination mechanism in the construction sites at the taluka and district levels in the target districts for observance of OSH standards under the LMP. ➢ To work for promotion and development of health and safety culture in the project. • The project will ensure awareness and training of all project workers on health and safety, develop informational and educational material and its dissemination to workers, display of notices on health and safety, periodic emergency drills, ensuring that contractors and primary suppliers should abide by the LMP and remain in regular contact with public functionaries responsible for worker's safety and protection and other stakeholders for development and promotion of health and safety culture.

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Transportation	• 20 school locations are in rural areas where traffic issues are minimum. However, road networks will be a challenge for material transportation. • Dust Generation: Movement of construction materials on unpaved (kaccha) roads in rural areas can generate significant dust, posing health and environmental concerns for local residents and the school community. • Road Damage: Heavy construction vehicles can contribute to the deterioration of already fragile unpaved roads, further hindering transportation for the community. • Traffic Disruptions and Safety Risks: Increased construction vehicle	Moderate	• Transport Management Plan will have to be undertaken seriously by CC to restrain unnecessary traffic jams, especially in thickly populated areas and narrow streets within cities and towns, that may cause annoyance to the commuters. • Route Planning: Plan transportation routes that minimize travel on unpaved roads and prioritize established transportation corridors. • Material Delivery Scheduling: Schedule deliveries outside peak traffic hours and school operation times to minimize disruption to the community and student safety. • Sprinkling water on haul roads before, during, and after transportation. • Enclosing trucks carrying loose materials (e.g., sand, gravel) with tarpaulin • Speed Limits and Signage: Establish and enforce reasonable speed limits for construction vehicles on unpaved roads and install proper signage to warn other road users. • Community Communication: Communicate transportation plans and potential disruptions to the local community in advance. This allows residents to adjust their schedules and be aware of safety precautions. All type of communication (sign boards, safety warnings etc.) should be in local Languages. • Pedestrian interaction will be minimized with construction vehicles. • Parking vehicles along side the community roads would be prohibited at peak hours. • Proper road signage and traffic aids should be provided at the site. Use all necessary safety precautions including signboards, temporary signals, skilled traffic guides, traffic diversions. • Movement of construction vehicles during school hours and when students are arriving at or leaving the school premises will be avoided. • It will be ensured that locally sourced materials will be used, whenever possible, to minimize transport distances.

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	traffic can disrupt regular traffic flow and create safety hazards for pedestrians, cyclists, and other road users. • Pedestrians or cyclists may be at risk due to heavy vehicle movement. • Construction of schools in urban areas significantly impacts traffic movement. This should be avoided as far as possible by proper planning of construction works. Excavation along the roads, hauling of construction materials and operation of equipment on-site can cause traffic problems. If traffic diversion and/or road closure is required for the proposed works, prior consent from the department will be required and prior information to affected areas and		• It will be ensured to locate worker's camps close to project sites to minimize external traffic. • Construction vehicles shall not be fitted with pressure horns. • Keep the site free from all unnecessary obstructions. • Outreach to nearby communities informing them of road closures and construction schedules. Conduct an awareness program on the nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions, and do's and don'ts and to the communities. • Speed of vehicles will be regulated during construction phase through speed gun/sensor.

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	the public should be disseminated through consultations by consultant. The potential impact is negative but short-term and reversible by mitigation measures. • It is envisaged that few numbers of large construction vehicles like concrete mixer, excavator, front end loader and dump trucks are used for the construction of G+1/G+2 structure and the vehicles will use the community access roads. There is a risk of accidents as well as public nuisance.		
Potential Social impacts			
Community Conflict on Demolished School Structure Materials	• Disagreements between the school administration, local community, and contractor regarding the use or disposal of demolished school structure materials can lead to: Delays	Moderate	• **Collaborative Material Reuse Planning:** Explore options for material reuse with the community, considering: ○ Donating salvageable materials to local schools, community projects, or artisans for repurposing. ○ Organizing a buy-back program for valuable materials. ○ Integrating reusable materials into the new school construction, if feasible and culturally appropriate. • **Grievance Redress Mechanism:** Establish and implementing a clear and accessible GRM for students at the school level and

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	in construction, Damage to the project's reputation Strained relationships between stakeholders		stakeholders to voice concerns regarding material management throughout the process. • **Demolition Phase: * On-Site Management:** Appoint a dedicated Contractor's Community Liaison Officer (CLO) to oversee material management on-site, ensuring adherence to the agreed-upon plan and addressing any emerging concerns promptly. • **Waste Management:** Implement proper waste management practices for materials not reused, following local regulations and best environmental practices. • **Community Engagement:** Hold follow-up meetings to address any lingering concerns and celebrate the successful completion of the project, potentially showcasing how reused materials were incorporated (if applicable). • By implementing these comprehensive mitigation measures, the sub project can significantly reduce the risk of community conflict and promote collaboration. This fosters a more positive project environment, minimizes delays, and strengthens relationships with stakeholders, ultimately contributing to the project's success and fostering community ownership of the new school.
Cultural Heritage	• No any archaeological site are identified during screening of subproject sites however the possible discovery of heritage resources particularly archaeological resources or random findings during the execution of civil works especially excavation for foundation, will	Low	• Chance Find" procedures for protection of any tangible cultural heritage (archeological) discovery during construction phase are developed and provided in Annex E. • The Chance Find procedure will also be included in CC bidding documents.

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	require measures to manage chance finds.		
Labor and Working Conditions	• Construction of school buildings, classrooms, infrastructure in connection with WASH, installing solar panels and other rehabilitation work will be involving hundreds of unskilled and semi-skilled workers who have to work in the open sky during harsh weather conditions and will be exposed to extreme heat and cold. They may be facing discrimination during engagement and allotting work. Health and safety of workers (working at height, working during harsh weather, carrying excessive weight, exposure to cement dust, poor lightning, poor ventilation, unhygienic living, forced labor, child labor,	Moderate	• SELECT Project's Labor Management Procedure document will be the guiding document which is already disclosed at RSU website and will be part of the Bid documents. • **PMIU:** Leads by developing the SELECT-LMP, trains the D&S firm team and monitors compliance at project sites. • **D&S Firm:** Provides technical guidance, trains contractors and workers on LMP & E&S and collaborates with PMIU for inspections and reporting. • **Responsibilities of contractors:** contractors and sub-contractors will be responsible for implementation of LMP in respect of their employees. Every firm/ contractor working with various intervention under SELECT will undertake to abide by the provisions of SELECT-LMP for protection of his/her workers engaged for any service or work in connection with the activities of the project and cooperate with the management in implementation of the LMP. • **The contractors will be responsible to undertake the following:** • Contractors will keep records in accordance with specifications set out in this LMP. The project management will review records against actuals at a minimum monthly and can require immediate remedial actions if warranted. A summary of issues and remedial actions will be included in quarterly reports to the World Bank. • **Workers' Grievances:** Contractors will be required to redress workers' grievances through Project Workers' Grievance Redress Mechanism. The project management in SELECT through a designated officer will monitor and review the record in this regard on monthly basis. • **Social Protection:** Contractors will register themselves / their companies and employees/ workers with Sindh Employees' Social Security Institutions (SESSI) and Employees' Old-Age Benefits Institution (EOBI). They will also pay monthly contribution in respect

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	discrimination in employment and remuneration, less wages, long working hours, gender discrimination, limited welfare measures at the workplace and lack of protection of workers under labor laws and social protection schemes are common potential workers' risks at construction sites. • The construction workers will also be facing cement dust and associated risks with debris during demolition of old school buildings, particularly, their possible exposure to asbestos, residuals of plastic, rusted steel/ iron, solid waste and other substance dangerous for their lungs and general health.		of their employees to these institutions for health insurance and old-age benefits, respectively. • Training and Orientation: contractors working with SELECT will arrange sessions for orientation and training of contracted workers on LMP, OSH standards, emergency preparedness, hygiene, basic labor rights, GRM and to inform their workers about the available forums and mechanisms for social protection, labor welfare and legal remedies. • All labor and working conditions related to potentials risks and impacts Project LMP document, guidelines, and implementation of LMP Code of Conducts for Contractor, Project workers and Managers will be followed and regularly monitored and supervised by Contractor, D&S firm and PMIU SELECT. • Ensure man-hours of each site are recorded and reported as well • Camp management plan will be prepare and submit to the supervision consultants before mobilization of construction workers. • Locate the construction camps within the designed sites or in areas acceptable from environmental, cultural or social standpoint and approved by the supervision consultant. • Consider the location of construction camps away from communities to avoid social conflict in using natural resources such as water or to avoid the possible adverse impacts of the construction camps on the surrounding communities. • Adequate accommodation, transportation, and basic services including water, sanitation, and medical care for the workers working on that project Safe and reliable tap water supply, and safe drinking water. • Hygienic sanitary facilities and sewerage systems. The toilets and domestic wastewater will be collected through common sewerage. Provide bathing places to workers. The minimum number of toilet facilities required is one toilet for every ten persons. • Local authorities responsible for health, municipal services and security shall be duly informed on the set up of camp facilities so as

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	• For construction workers living at and in the surroundings of the construction sites, there will also be a risk of inadequate and unhygienic living conditions/workers camps and lack of access to medical facilities in case of accident. • 8-10 Migrant workers are expected to be engaged specifically at the sub project construction sites and issues of protection of basic labor rights of migrant workers will be a risk as well as a challenge for the project. • Linked to migrant workers, there is also potential limited risks of impacting host communities in terms of socio-cultural conflict and SEAH risks.		to maintain effective surveillance over public health, social and security matters. • Appropriately stocked first-aid equipment will be provided at work sites. • So far as reasonably practicable, the causes of potential hazards to workers will be identified and minimized, including communicable diseases such as COVID19, HIV/AIDs and vector borne diseases. • Stagnation of water will be avoided, and drainage/cleanup of stagnant water will be performed regularly. • Appropriate personal protective equipment (PPE) will be provided to minimize risks, such as but not limited to, appropriate outerwear, boots and gloves, safety helmets etc. • Training for workers on the use of PPE will be provided. • WB Group EHS Guidelines will be implemented. • Procedures for documenting and reporting accidents, diseases, and incidents will be included. • Contractor's Community liaison officer will conduct regular consultation with Community and workers. The SELECT project adheres to a strict policy of **prohibiting the employment of anyone under the age of 18**. This aligns with national and international regulations on child labor and ensures the safety and well-being of young people. **Age Verification Process:** To ensure compliance with this policy, the project will implement a thorough age verification process for all construction workers. This will involve: • **Mandatory Documentation:** All workers will be required to present a valid Computerized National Identity Card (CNIC) or equivalent government-issued identification document during the recruitment process. • **Random Verification:** The project may conduct random age verification checks throughout the construction project duration to ensure continued adherence to this policy.

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	• Migrant workers are expected to stay at each construction site There is potential threat of workers' involvement in Gender Based Violence (GBV), Sexual Harassment (SH) and Sexual Exploitation and Abuse (SEA) at the construction sites and schools where female teachers are also working. • Workers on subproject sites face various health and safety hazards. • Campsites for construction workers are the important locations that have significant impacts such as health and safety hazards on local resources and infrastructure of nearby communities.		• The contractor will appoint a dedicated Community Liaison Officer (CLO) to oversee community and labor issues including labor influx, workers GRM and other community consultation with construction and labor related impacts and mitigation. • **WORKERS' GRIEVANCE REDRESS MECHANISM (GRM)** • Project have established worker's GRM with the domain of overall SELECT GRM. • Worker's grievances may be of many types which may include conflict with supervisors, workplace issues, OSH, issues relating to wages, delay in payment of wages, unauthorized deduction from wages, confrontation with the co-workers, non-compliance of LMP and social conflicts between workers, etc. • To redress the grievances of direct and contracted workers and the workers have to be informed about the existence of Grievance Redress Mechanism (GRM) The Project GRM for SELECT has already been developed where under complaint can be registered through a 'Complaint Form' available online as well as at all project sites. The Complaint Box is also mandatory to be affixed at every sub project site. • Contractor's GRM Focal Person will be available at all project sites to receive the complaint in person and to issue the receipt. • To address grievances of individual and collective nature two types of committees have been proposed in the table below. All grievances lodged by project workers will be referred to the Workers GR Committees for resolution. • **Workers' District GR Committee**: Individual grievances including non-payment, less payment and delayed payment in wages, working hours, holidays, leaves and rest, welfare measures at workplace, difference between workers, discrimination, etc. • **Workers' Project GR Committee**: Collective grievances including issues relating to workers' organizations, workers' participation, issues relating to overall provision of basic rights to workers, child

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	• Potential use of Child Labor and Forced Labor **Female Labor Workers Risk:** • Female unskilled workers may face sexual harassment from supervisors or male workers, leading to psychological distress, reduced productivity. • Female workers traveling to and from the site may face harassment, assault, or other forms of GBV, leading to increased absenteeism and safety concerns. • Lack of separate and secure sanitation and changing facilities can expose female workers to harassment and health risks. • Female workers might face cultural stigma		labor and forced labor, violation of human rights/ non-observance of LMP, non-compliance of OSH provisions, SESSI, EOBI, etc. ➢ Ensure that workers sign CoC after understanding them. It will be Contractor responsibility to implement CoC. SEA/SH and VAC training will be conducted for workers. ➢ Conduct mandatory training sessions for all workers and supervisors on the Code of Conduct & acceptable behavior and the consequences of harassment. ➢ Regularly inform all workers about the GRM processes, their rights, and how to report SEAH incidents through training sessions and posters on-site. ➢ Handling of SEA/SH and VAC complain mechanism mentioned in GRM will be followed. ➢ Victims of SEA/SH will refer to the GBV Service Providers. The list of identified GBV service providers will be with Contractors CLO. ➢ Community will also sensitize about SEA/SH and VAC through Social Mobilization activities in another firm of the project. ➢ Ensure separate, well-maintained, and secure sanitation and changing facilities for female workers. ➢ Conduct regular inspections to ensure these facilities remain clean and safe. ➢ Provide adequate lighting and security around these facilities to enhance safety. ➢ Engage community leaders and conduct awareness programs to reduce stigma and promote gender equality. **The following worker record must be maintained by the contractors:** • **Labor conditions:** Record of workers engaged under the project interventions, including contracts, registry of induction of workers, hours worked, leave record, maternity benefits, remuneration

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	and discrimination from male colleagues or within their communities for working at sites with male workers, affecting their mental health and job performance. •		(including overtime) and deductions, negotiation with workers' organization and compliance of collective bargaining agreements, (if any). • **Safety:** Record of safe man-hours data incidents and corresponding inquiries and follow-ups, first aid cases, high potential near misses, and remedial and preventive activities required and rehabilitation measures. • **Workers:** Number of workers, indication of origin (expatriate, local, non-local nationals), gender, age with evidence that no child labor and forced labor are involved, policy on non-discrimination, GBV, SH and skill level (unskilled, skilled, supervisory, professional, management). • **Training on induction:** Mentioning dates of training, number of trainees, topics, and follow-ups. SELECT Workers' Training and Orientation Plan is placed at LMP. • **Worker's grievances:** All proceedings including occurrence date of grievance, date submitted, actions taken with dates, resolution (if any) and date, and follow-up yet to be taken— grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. • **Reporting:** Contractors will be responsible for submitting reports on the implementation of LMP in respect of their companies and workers engaged at various sites and interventions under SELECT on a weekly, monthly basis to the management. Such a report should be comprehensive, highlighting progress updates on all aspects of LMP. Also be required to submit a certificate every month indicating that the provisions of LMP are observed in letter and spirit.
Community Health & Safety	• The disruption to existing community will be caused due to the construction activities Risks may arise from the	Moderate	• Access to the site will be restricted through a combination of physical and administrative controls. • Hard barricades using wooden sheets or metal sheets with a width of 6 ft. will be erected around the construction site to avoid accessibility. The barricade must also act as a noise barrier.

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	following unsafe conditions and acts: • Inadvertent or intentional trespassing in an excavated area by a community member(s); • Potential contact with hazardous materials, contaminated soils, and other environmental media during unauthorized access or if the material escapes the construction site. • Slips and trips at the construction site during unauthorized access by a community member(s). • Potential contact with live wires causes electrocution. • Potential injury or death from moving machinery or vehicles working inside or traveling on local roads. • In contact with construction material		• The access in the construction site will be checked by a supervisor and through work permits especially working in excavations. • Removing hazardous conditions on construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small, confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials. • The mobility of the community living in the area will be restricted from the project site to prevent them from catching any type of communicable diseases. • Any labor found to catch any type of disease will leave the site immediately and would be given proper medical attention. • Construction labor will also be restricted to roaming around unnecessarily in the neighborhoods except for meals and other necessary needs and except for the locals who belong to that neighborhood. • The incidence of road accidents involving project vehicles during construction will be minimized through a combination of education and awareness-raising, and the adoption of procedures. • The project site will be fenced, and trespassing will not be permitted. • CC will dedicate a community liaison officer to ensure good liaison with local communities and will facilitate their mobility. • Display the project activities clearly for the adjacent communities. • Use safety signage and written instructions for workers and communities to ensure their safety. • Construction material should not be allowed to be stored / placed outside the school site. • Barriers in the form of PVC laminated sheets, which are also proposed for dust emission reduction, will be erected around the under-construction structure or around the boundary wall of school site to cater the privacy of the neighbors. • Construction labor will also be restricted to roaming around in the neighborhood except for meals and other necessary needs.

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	stored outside the proposed school site. • Increased incidence of infectious and vector-borne diseases attributable to construction activities represents a potentially serious health threat to CC labor and residents of local communities, • some community members highlighted privacy issues with the construction labor. • Construction activities may result in increasing the risk of traffic-related accidents and injuries to workers and local communities. Also, the local traffic may be disrupted if the construction material is stored outside the proposed school site.		• It will be ensured that the construction work is avoided during nighttime. • While working close to the houses, it will be ensured that manual work is undertaken and avoid heavy machinery use. Excavators will be carefully sited for excavation and not very close to the nearby houses. • The incidence of road accidents involving project vehicles during construction will be minimized through a combination of education and awareness-raising, and the adoption of procedures. • Traffic management plan will be developed by CC before any activity and will be implemented during construction stage. CC will develop site specific traffic management plan under CESMP. • Traffic management plan will also cater the pedestrian movement as well as bikes. Safety for the pedestrians will be taken seriously. Any pedestrian especially women and children crossing the road during material transport will be guided by flagman and the vehicle should be stopped for pedestrian to cross the road. • Routes will be predefined for construction vehicle movement. Routes will avoid congested areas and local narrow streets. Involvement of local traffic police and wardens will be ensured in case of populated areas / congested areas for better traffic management. • In areas where there are no alternative routes exist, diversions will be provided for local traffic ensuring that there will be no access restrictions to the dwellings. • During heavy vehicle movement, flag men will be posted at key locations and turning points along the roads near the school site close to the community. • Construction material should not be allowed to be stored / placed outside the school site. • Screen and diagnose Sexually Transmitted Infection (STIs) and HIV-AIDS for all workers. It will be a mandatory requirement. • The screening reports will be submitted to DSC and PMIU and checked by SS / E&SSS.

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			• Increased awareness about the disease, through dissemination of information through training sessions.
Disruption of School activities during construction	During construction of new blocks or rehabilitation activities at the subproject sites the disruption of school activities will occur.	Moderate	• To address this, the project team is exploring alternative arrangements to provide temporary classroom space for students, guided by the Guidelines for Alternate Classroom for the SELECT Project. • The objective of these guidelines is to mitigate risks related to health and safety, access, student dropouts, and exclusion of vulnerable and disadvantaged groups during the relocation of students for construction activities. • The process begins with a needs assessment survey, which determines whether students need to be relocated and identifies suitable alternate classroom arrangements. • The preferred options for alternate arrangements include: ○ Keeping students in existing school premises by shifting to another block/classroom, which may involve a phased approach for construction and/or multiple shifts for students. ○ Relocating students to nearby schools within easy access, ensuring the alternate school is within 1km of the existing school, preferably 500 meters. ○ Using temporary community donated spaces or local structures set up by the community for this purpose, ensuring compliance with SELECT E&S requirements and accessibility for disadvantaged and vulnerable groups. • The identification of alternate classroom arrangements is confirmed through consultation with relevant education authorities & discussion with SMCs and Head Teachers. During the need Assessment survey by DSC team, a detailed screening of the identified selected arrangements is conducted to ensure structural stability, community health and safety, ease of access, and stakeholder engagement. Certain locations, such as private

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			houses, buildings with compromised structural stability, tents, and open-air arrangements and traffic busy area are excluded from consideration. • The DSC team identified the tentative alternate classrooms option through Need assessment survey, the list is present in Table 9. The following list of alternative schools comprises those identified during the need assessment. This list is tentative and will undergo further review before the construction of the schools in collaboration with district and taluka education officers.
Vulnerable or disadvantaged groups	Women, minority groups, disabled persons and students, communities from deprived areas which will be affected from the subproject activities.	Low	• Ensure that vulnerable groups have continued access to essential services, transportation options, and safe pedestrian routes during construction. Implement temporary measures such as accessible pathways, ramps, and shuttle services if needed. • Offer support services such as counselling, social assistance, and emergency relief to vulnerable groups affected by construction-related disruptions. Collaborate with local organizations and government agencies to provide targeted assistance to those in need. • Ensure that the new school facilities are designed and built with universal accessibility standards to accommodate the needs of all individuals, including those with disabilities. Consider features such as wheelchair ramps, elevators, tactile paving, and accessible restrooms. • Respect the cultural values, traditions, and preferences of vulnerable groups when planning and implementing a construction project. • Consult with community leaders and elders to ensure that cultural considerations are integrated into the project design and implementation. • Provide clear and timely information to vulnerable groups about the construction project, including its timeline, potential impacts, and available support services.
SEA/SH & VAC Risks	• Although the influx of workers will be	Moderate	• **Conduct GBV, SEA/SH & VAC training** of labour before execution of civil work.

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	minimal as discussed earlier, new workers (outside of their social spheres) may form close social relationships with local communities. This can lead to unacceptable and/or illegal behaviour, ranging from unwanted aggressive advances, SEA/SH against women, girls and children.		• The contractor will be required to have a written contract with their workers/labors materially consistent with the objective of ESS2. • The workers will be required to sign a Code of Conduct (CoC) which is translated into the local language, prepared by SELECT ESMU and approved by the WB. • Encourage contractors to hire local labor to avoid labor influx which increase the chances of GBV, SEA/SH and VAC • Ensure gender inclusive, girl-friendly inclusive and safe WASH facilities in newly constructed schools, PMIU & Allied Institutions for all. • Ensure to maintain distance of the labor camps with the local communities to avoid any of the unethical gender exploitation and sexual assault. • Contractor will provide separate WASH facilities and safe place for rest during break for female labor. • Female labor will not be involved any hazard work which will be harmful for them. • Female labor will work during day hours only and not involve in night work. • They will get off before sunset. • **Accountability and Response Framework and SELECT GRM** • SELECT project's GRM is designed to take up the matters of SEA/SH & VAC with the highest priority and fast track resolution process. • SEA/SH Prevention & Response Action Plan specifically mentions the possible measures which can reduce the chances of GBV, SEA/SH & VAC during Project execution. These measures include awareness raising, capacity building, COC for labor & establishing SOPs for addressing GBV,SEA/SH & VAC complaints and inquiry. • The Project GRM shall be dealt on priority the grievances of GBV, SEA/SH & VAC. Besides this, complaints arising from other

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			disadvantage groups, minorities, differently abled person and socially marginalized communities shall also be dealt as a priority.
C. **Post Construction/Operation**			
Wash Facilities and Waste Management	• Awareness Raising/ training of teachers and students on WASH and waste disposal to disseminate the knowledge on WASH and waste disposal. • Maintenance of toilets, ensure the availability of water, septic tanks to provide better hygiene at school facilities and avoid health risks.	Moderate	• It will be the responsibility of Headmaster to disseminate the awareness on WASH and solid waste management on daily basis. • Establish a comprehensive recycling program within the school, including proper collection, sorting, and storage of recyclable materials. • Educate students and staff on what can be recycled and how to correctly use recycling bins. • Provide education and awareness programs to students, staff, and parents on the importance of waste management, recycling, and responsible consumption habits. • SMC will hire local trainers or an NGO to provide annual training sessions on WASH and waste management. Later, the awareness raising will be done by teachers on a daily basis. • All maintenance waste is collected and disposed of properly and shall not be burned inside the school yard as prevailing practice before this project. • Site to be kept tidy and no waste allowed to accumulate in yard or nearby sites of community. • The monitoring responsibility will also rest upon the head teacher to check daily the cleaning and maintenance of toilets. It is also to make sure that water is adequately available for cleaning purposes. TEOs will also monitoring the maintenance of toilets on monthly basis.
Safety and Security	• Safety of material including RO, Solar Pannels, Furniture, Electric equipment and laptops.	Moderate	**Material Safety:** • Consider using lockable rooms/doors for high-value items like RO systems, solar panels, and electronics. • Maintain a detailed inventory of all items • Conduct regular inventory checks to identify and address any discrepancies promptly.

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
	• Safety of Girls students and ladies' staff. • Safety against fires and emergencies		• Collaborate with the local community to identify trustworthy individuals for these positions, fostering positive community relations. • Hold meetings with community leaders to discuss the importance of material security. • Encourage the community to report any suspicious activity around the school. **Safety of Students and Female Staff:** • Safety personal will be hired by government or SMC to ensure safety and security of school property and provide safe environment for girls' students. • Establish clear policies and procedures that explicitly prohibit GBV, SEA/ SH and VAC. • Ensure the existence of safe and confidential mechanisms for reporting incidents of GBV, SEA/ SH, such as hotlines, email addresses, or in-person reporting options. • Provide survivor with the support services including medical care, counselling, legal assistance, and safe accommodation if needed. • Engage with communities to address underlying social norms and power dynamics that contribute to GBV, SEA/ SH and VAC. • Establish an accountability mechanism to ensure that perpetrators are held responsible for their actions. • These measures will be comprehensively and continuously implemented and adapted to address evolving risks and challenges. **Fire Safety and Emergency Preparedness:** **Fire Prevention:** • Conduct regular maintenance of fire safety equipment and re-filling of expired extinguishers. • Arrange fire safety awareness sessions for students and teachers. **Emergency Evacuation Plan:**

ENVIRONMENTAL AND SOCIAL ASPECT	Describe Impact	Risk/Impact	MITIGATION MEASURES
			• Emergency Evacuation map is presented in this ESMP which need to display in each school for emergency evacuation of students and teaches considering different scenarios like fires, earthquakes, or other emergencies. • Conduct evacuation drills for students and staff • A first aid kit for staff and students and a trained person to administer it must be present. • Establish clear communication channels with local emergency responders (fire department, ambulance) to ensure a prompt response in case of emergencies.
School Management & Maintenance	• Operations of RO filtration plant to minimize the environmental impacts of unsustainable operations of RO plant, discharge of RO reject water and spent RO membranes. • Maintenance of solar system, its cleaning, and batteries maintenance • Maintenance of Septic Tank and storm water drain system. • Use of reject water mix with sewerage water.	Moderate	• SMC will allocate the contractual janitorial service to routinely empty and clean the septic tanks and pits provided for the sewerage disposal. The sludge collected from the pits and tanks will be safely disposed of in the nearby dumping sites avoiding the local drainage and water works. • The reject water will be discharged into the proposed sewerage system i.e., into the septic tank along with the sewerage generated from the toilets, to enhance the dilution, and subsequently into the soakage pit or the sewerage drains of the village/city. • The same sewerage water mixed with the RO reject can also be used in watering the plants / trees. • A contract will be made with an RO plant provider to give warranty and provide maintenance of RO plants of the subproject sites for 5 years. • After 5 years the maintenance budget of the RO plants will be allocated from SELD. • A contract will be done with a Solar system provider to give warranty and provide maintenance of Solar system of the subproject sites for 5 years. • After 5 years the maintenance budget of the Solar system will be allocated from SELD & SMC funds. • Cleaning of solar panels will be assigned to the security guard or peon of the school.

7 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

This section provides the Environmental and Social Management and Monitoring plan (ESMMP) of the proposed project. The primary objectives are to:

- Facilitate the implementation of the identified mitigation measures in the assessment.
- Define the responsibilities of the PMIU, DSC and contractor, and provide a means of effective communication of environmental and social issues between them.
- Identify monitoring parameters to ensure the effectiveness of the mitigation measures.
- Provide a mechanism for taking timely action in the face of unanticipated situations.
- Identify training requirements at various levels.

In addition to the Environmental and Social mitigation plan, specific monitoring plan and management plans have been developed for areas of concern, including the following:

- Community Health and Safety Plan
- Draft-Contractor Environmental and Social Management Plan (attached as annexure F)

Moreover, the Environmental Code of Practices (ECPs) are also prepared to address all potential and general construction-related impacts during the construction of sub-projects. The ECPs are attached as Annexure G which will provide guidelines for best-operating practices and management guidelines to be followed by the contractors for sustainable management of all environmental and social issues. These ECPs shall be annexed to the general conditions of all the contracts, including subcontracts, carried out under the Project.

The list of ECPs prepared for the Project is given below.

- ECP 1: Waste Management
- ECP 2: Water Resources Management
- ECP 3: Air Quality, Noise and Vibration Management
- ECP 4: Road Transport and Road Traffic Management
- ECP 5: Labor Influx Management and Construction Camp Management
- ECP 6: Socio-Cultural and Religious Issues
- ECP 7: Workers Health and Safety
- ECP 8: Covid 19 Health and Safety Plan

7.1 Institutional Framework for the Implementation of ESMP

The institutional responsibilities for implementing the ESM*P*. The School Education and Literacy Department (SELD) will serve as the implementing agency, while the PMIU SELECT, Reform Support Unit- RSU will lead the fiduciary and environmental and social management. The PMIU will be assist Design & Supervision Consultant (DSC) during execution, field surveys, engineering studies, design, and preparation of engineering drawings for the project.

To meet the environmental legal requirements, Environmental Protection Agency (EPA), Sindh is the main stakeholder. Table 36 shows each position and its responsibilities under the proposed implementation framework.

Table 35: SELECT Implementation Organizations

Implementing Agency (IA)	Reform Support Unit (RSU) School Education and Literacy Department (SELD), GOS
Administrative	Project Management Implementation Unit (PMIU)
Design & Supervision Consultant (DSC) Engineering, Environmental, Social and Architectural Consultants	G3 Engineering Consultants (Pvt.) Ltd.
Technical & Financial Support	World Bank (WB)

7.2 ESMP Monitoring & Reporting Mechanism

ESMP monitoring and reporting will be carried out to ensure that the mitigation plans are regularly and effectively implemented. It will be carried out at three levels: the PMIU level, DSC and at Contractor level.

At the PMIU level, the Environment and Social Safeguard and Gender specialists will oversee the compliance of ESMP. At the DSC level, the Environment & Social/Gender specialists and Officers will be responsible for ESMP implementation monitoring and evaluation and will conduct field visits on a regular basis. To ensure the implementation of site-specific mitigation plans included in the ESMP and prepare Monitoring checklists on regular basis. Contractors will carry out monitoring at field level. (see table 37 below)

Table 36: Monitoring Levels and Responsibility

Level	Responsibility	Monitoring Tasks	Requirements	Monitoring Frequency
PMIU Level	ESMU-PMIU	Oversee ESMP Compliance	Compliance of ESMP	Monthly
District Level	DSC	Ensure ESMP implementation monitoring	To ensure the implementation of site-specific mitigation plans included in the ESMP and prepare Monitoring checklists on regular basis	Weekly
Subproject Level	CC E&S Staff	Field level environmental and social aspects	Monitoring checklists provided by Design and Supervision Consultant will be utilize at Subproject sites.	Daily

7.3 Reporting Mechanism

A reporting mechanism will be implemented to ensure that compliance ESMP will be documented. Monthly progress meetings will be held to report and discuss ESMP-related matters. Reporting will be carried out by the PMIU, DSC and the CC as tabulated below (table 38).

Table 37: Reporting Mechanism

Sr.#	Type of Reporting	Frequency	Responsibility	Submitted To
1.	ESMP/CESMP implementation Progress Report	Monthly	CC	DSC
2.	Training reports	Within a week after the event	CC	DSC
3.	Incident and Non-Compliance	Within 24 Hours of incident hapening	CC	DSC & PMIU
4.	SEA/SH VAC complaint	Within 24 Hours	CC	DSC & PMIU
5.	ESMP Progress-Detailed Reports	Monthly	DSC	PIMU
6.	Annual Reviews and lessons learnt Report	Annually	DSC	PMIU
7.	Environmental and Social Compliance Report	Quarterly	PMIU	WB
8.	TPV Reports	Annually	TPV- Consultant	PIMU & WB
9.	Project completion report	End of project completion	PIMU	WB

7.4 Third Party Validation (TPV)

The PMIU will engage Third-Party Validation (TPV) to assess the effectiveness, relevance and efficacy of the E&S process, instruments and implementation arrangements exercise for annual monitoring of Environment and Social compliance progress during the Project implementation and will share their report with the CPM/PD. The TPV will be contracted after six months of commencement of construction activities. Its scope includes but not limited to:

- Review the implementation status of mitigation measures in the ESMF, ESMPs, ECPs and Checklists, and the related documentation.
- Review the environmental and social monitoring regime as specified in the ESMF and district level ESMPs.
- Review reports of internal monitoring carried out at the RSU, district and field levels; and
- Identify non-compliances/gaps, and recommend changes, to improve compliance and monitoring mechanisms, if any. This will include providing feedback to improve integration of ESMF in the overall project implementation.

TPV will report on an annual basis to the CPM/PD SELECT for further submission to WB and other agencies.

7.5 Project Management Implementation Unit (PMIU)

PMIU is established within the SELECT reform support unit (RSU). PMIU is responsible for the overall management, monitoring, and reporting on the application of environmental safeguards. The PMIU provides advice and assistance to the Design & Supervision Consultant- project site engineers in the implementation and monitoring of the ESMP.

The CPM RSU / Project Director (PD) SELECT being a part of the PMIU will be responsible for the successful implementation of the project. CPM RSU/ PD SELECT will ensure that the project complies with WB ESF, ESS Standards and Sindh Environmental Protection Act 2014. He will also direct the Environment, Social Safeguard and Gender Specialist (within PMIU that oversees the environmental and social and gender issues.

7.6 Environment, Social Safeguard & Gender Specialist

The PMIU will assign Environment, Social Safeguard & Gender Specialists to support the coordination and implementation of environmental social safeguards and Gender SEAH/VAC Action Plan.
PMIU ESMU unit Specialist will ensure that environmental & social monitoring and institutional requirements are fully met while meaningful public consultations are carried out satisfactorily.

PMIU ESMU team after review and incorporation of all comments, feedback and approval from CPM RSU/ PD SELECT will submit the ESMP to World Bank Team for review and clearance.

7.7 Design & Supervision Consultant (DSC)

The PMIU will engage the Design and Supervision Consultant (DSC) and will be responsible for monitoring & implementation the ESMP on behalf of the PMIU during the execution of the Civil Works for sub-projects under the SELECT and shall submit periodic progress reports.

Monitoring responsibility will solely be shared by DSC. DSC includes design consultants, management consultants, E&S/ Gender consultants and monitoring consultants. DSC will support ESMU PMIU SELECT for the project ESMP development, implementation, and Monitoring.

- The design consultants will ensure that all the mitigation measures proposed for the design phase are incorporated in the design of the school block and included in the contract documents of CC.
- Monitoring consultants will conduct environmental monitoring and prepare monitoring reports and submit them to ES. They will also ensure that day-to-day construction activities will be carried out in an environmentally sound and sustainable manner.

7.8 Design & Supervision Consultant's Environment Specialist (ES) and Social and Gender Specialist (SGS)

DSC will appoint for each package one Environmental Specialist (ES) and one Social and Gender Specialist (SGS) at project level and at district level one Environmental Officer and one Social Safeguard Officer to monitor the implementation of environmental and social management measures required for the project. They will commence monitoring of project and preparing environmental and social monitoring reports by the DSC, monthly, quarterly to be delivered to PMIU SELECT

The following are the responsibilities of Environment Specialist, Social/Gender Specialist an Environment Officer and Social/Gender Officer:

Environmental Specialist:

- Maintain close coordination with the ES (PMIU/RSU) for the adherence of ESMP guidelines.
- Provide technical support for implementation of ESMPs and other required ESS instruments.

- Lead conducting environmental monitoring to identify potential risks and impacts associated with the school construction design work, in accordance with World Bank ESS requirements.
- Maintain close coordination with ESSO (Firm) the Resident/Site Engineer for implementation and supervision of E&S aspects on-site, on daily basis.
- Ensure the implementation of ESMP guidelines in the field during the sitting, construction, and operation phases of the schools' facilities as per the instructions of ES-PMIU.
- Regularly visit the school's construction sites, to monitor the compliance of ESMP checklist's guidelines, and to determine their effectiveness.
- Report any issue pertaining to ESMP to ES-PMIU and take corrective measures as per the guidelines to address the issue(s).
- Maintain close coordination with the Site Engineer and Resident Engineers (REs) to collect the data of ESMP checklists of all the three phases (Siting, Construction and Operation).
- Follow-up on previous reports and actions for closure.
- Review of C-ESMPs and other site-specific E&S instruments prepared by the project contractors.
- Participate in the E&S related meetings with consultants, construction contractors and various subcontractors as required.
- Conduct and/or facilitate the reporting and investigation of accidents/incidents and maintain oversight regarding the follow-up and close-out of corrective actions.
- Ensure to implement alternate classroom arrangements guidelines to ensure the safety of students and teachers during the construction work, such as temporary classrooms or off-site locations.
- Engage with school teachers, SMCs, and local communities to provide regular updates on the construction work and safety measures, and address any concerns or questions they may have
- Support PMIU/RSU by preparing training modules and programs for the implementation, monitoring and reporting of E&S instruments as per World Bank ESF and local rules and regulations.
- Maintain a record of all the filled monitoring checklists and submit the collected checklist in a progress report format to Environment and Social Safeguard Specialist at PMIU on monthly basis.
- Data entry of Environment and Social Management Plan (ESMP)/site-specific instruments checklists on MIS dashboard.
- Ensure site restoration after completion of civil works in accordance with ESMF/ESMP/ESF guidelines.
- Any other task assigned by the ES for the smooth implementation of ESMP throughout the project duration.

Social and Gender Specialist:

- Maintain close coordination with the SS (PMIU/RSU) for the adherence of ESMP guidelines.
- Provide technical support for implementation of ESMPs and other required ESS instruments.
- Maintain close coordination with the Resident/Site Engineer for implementation and supervision of social aspects on-site, on a daily basis.
- Ensure and implement the social requirements of ESMPs and site-specific E&S instruments.
- Ensure and implement the following social instrument in the field during the siting, construction, and operation phases of the schools' facilities:
    - Labor Management Procedures (LMP)
    - Stakeholder Engagement Plan (SEP)
    - Community Health and Safety Plan
    - Gender Action Framework
    - and Grievance Redressal Mechanism (GRM)

- Regularly visit the school's construction sites, to monitor the compliance of E&S checklist's guidelines, and to determine their effectiveness.
- Report any issues pertaining to implementation of E&S instruments to PMIU and take corrective measures as per the guidelines of SS-PMIU.
- Maintain close coordination with the SSO, Site Engineer and Resident Engineers (REs) to collect the data of E&S instruments and checklists.
- Follow-up on previous reports and actions for closure.
- Review of C-ESMP and other site-specific E&S instruments prepared by the project contractors.
- Participate in the E&S related meetings with consultants, construction contractors and various subcontractors as required.
- Conduct and/or facilitate the reporting and investigation of accidents/incidents and maintain oversight regarding the follow-up and close-out of corrective actions.
- Ensure to implement alternate classroom arrangements guidelines to ensure the safety of students and teachers during the construction work, such as temporary classrooms or off-site locations.
- Engage with school teachers, SMCs, and local communities to provide regular updates on the construction work and safety measures, and address any concerns or questions they may have
- Engage with school teachers, SMCs, and local communities to identify and address environmental and social concerns related to the construction work
- Report any grievances and facilitate resolution as per the requirements of the SELECT Grievance Redressal Mechanism (GRM)
- Support PMIU/RSU by preparing training modules and programs for the implementation, monitoring and reporting of E&S instruments as per World Bank ESF and local rules and regulations.
- Data entry of Environment and Social Management Plan (ESMP)/site-specific instruments baseline checklist.
- Maintain a record of all the filled social monitoring checklists and submit the collected checklist to PMU on monthly basis.
- Data entry of social aspects of Environment and Social Management Plan (ESMP)/site-specific instruments checklists on MIS dashboard.
- Ensure site restoration after completion of civil works in accordance with ESMF/ESMP/ESF guidelines.
- Any other task assigned by the PMU for the smooth implementation of ESMP/ESMF throughout the project duration.

Environmental Officer:

- Ensure compliance with ESMPs for the subproject school construction work.
- Monitor and report on the implementation of Occupational Health & Safety Guidelines, and Community Health & Management.
- Attend project meetings related to the construction work on ESS issues.
- Ensure that contractors and workers are aware of and comply with ESS and ESMP requirements.
- Regularly report on ESS and ESMP implementation to the project team and World Bank.
- Monitoring & implement Standard Operating Procedures (SOPs) and Guidelines related to environmental safeguards, Occupational health and safety.
- Monitor and report on the implementation of the SOPs and Guidelines by contractors and workers, and provide guidance as needed.
- Conduct regular site visits and inspections to ensure compliance with the SOPs and Guidelines and identify any gaps or areas for improvement.
- Provide guidance and training to contractors and workers on the proper handling, storage, and disposal of hazardous materials and waste.

- Develop and implement an OHS program for the school construction project, in accordance with local regulations and World Bank ESS requirements.
- Conduct regular OHS inspections to identify hazards and risks, and provide guidance to contractors and workers on how to mitigate them.
- Develop and implement an emergency response plan for the project, and conduct regular drills and exercises to ensure preparedness.
- Ensure that contractors and workers have access to appropriate Personal Protective Equipment (PPE) and that they use it properly.
- Maintain and regularly update an OHS register, including incident and injury reporting.
- Ensure that contractors and workers are aware of and comply with safety requirements, and provide guidance and training as needed.
- Monitor and report on the implementation of the LMP, including worker grievance mechanisms and procedures for dispute resolution.
- Conduct regular site visits and inspections to ensure compliance with the LMP and provide guidance and training to contractors and workers as needed.
- Maintain and regularly update a labor register, including data on worker demographics, hours worked, wages, and benefits.
- Conduct regular monitoring and evaluation of the environmental and social performance of the school construction project, including the implementation of ESS, ESMPs, OHS, and LMP.

Social Safeguard /Gender Officer:

- Ensure compliance with the ESMPs for all subproject school construction activities.
- Monitor and report on the implementation of Labor Management Procedures (LMP), Grievance Redressal Mechanisms, Occupational Health & Safety (OHS) Guidelines, Community Health & Safety Management Plans, and the Gender /SEAH Action Plan
- Attending project meetings related to construction work, ESS issues, gender, and community engagement.
- Engage with schoolteachers, School Management Committees (SMCs), local communities, and contractors to identify and address environmental and social concerns related to construction.
- Facilitate communication and information exchange between the project team and stakeholders.
- Develop and implement a Sub Project level Community Engagement Plan as needed.
- Ensure contractors and workers are aware of and comply with ESS and ESMP requirements related to labor practices.
- Monitor and report on the implementation of the LMP, including worker grievance mechanisms and procedures for dispute resolution.
- Conduct regular site visits and inspections to ensure compliance with the LMP and provide guidance/training to contractors and workers.
- Maintain and update a labor register with data on worker demographics, hours worked, wages, and benefits.
- Provide guidance and support to contractors and workers on issues related to labor rights and protections.
- Monitor and report on the implementation of the GAP/SEAH Action Plan, focusing on gender mainstreaming, women's empowerment, and social inclusion in construction and SEAH risk activities.
- Conduct regular site visits and inspections to ensure compliance with the GAP/ SEAH and provide guidance/training as needed.
- Engage with stakeholders to identify and address gender-related concerns during construction.

- Develop and implement an OHS program for the project, adhering to local regulations and World Bank ESS requirements.
- Conduct regular OHS inspections to identify hazards and risks and advise contractors and workers on mitigation strategies.
- Develop and implement an emergency response plan for the project; conduct drills and exercises to ensure preparedness.
- Ensure contractors and workers have access to appropriate Personal Protective Equipment (PPE) and utilize it properly.
- Maintain and update an OHS register, including incident and injury reporting.
- Conduct regular monitoring and evaluation of the project's environmental and social performance, encompassing the implementation of ESS, ESMPs, OHS, LMP, and GAP/SEAH Plan.
- Prepare periodic reports on the project's environmental and social performance for the project team and the World Bank, including progress updates, challenges encountered, and recommendations for improvement.
- Maintain accurate and up-to-date records of all monitoring and evaluation activities, including data and analysis.
- Provide training and capacity building programs for contractors, workers, and community members on ESS requirements, grievance redressal mechanisms, labor rights, OHS practices, and gender awareness.

7.9 Construction Contractor (CC)

The Contractor will be responsible for the on-field implementation of the ESMP as well as maintaining responsibility for environmental protection liabilities under Sindh Environmental Protection Act 2014, World Bank ESF, ESS Standards, ESMF of SELECT, Stakeholder Engagement Plan (SEP-SELECT) Labor Management Procedures (LMP) for SELECT, and other applicable national as well as provincial policies and regulations.

The Contractor will also be responsible for training his crews on all aspects and implementation of the ESMP. The bid should include an environmental and social mitigation budget as part of the engineering costs of the respective works. The key positions to be filled within the contractor's staff for implementation of the ESMP include:

1. Environmental Health and Safety (EHS) Officer.
2. Community Liaison Officers (CLO)
3. Environmental and Social Supervisor

The ESMP will be made a part of the contract agreement and CC will ensure that all Project activities follow the ESMP and SEQS/WHO/IFC guidelines.

7.9.1 Contractor's Environmental & Social Management Plan (CESMP)

This ESMP has been prepared before the Contract award, and therefore, certain mitigations, which are dependent upon the methodology chosen by any Contractor to deliver the project, could not be specified in it. For example, haulage routes are dependent upon the exact campsite locations chosen by the Contractor. Therefore, it is required that the Contractor prepare site- specific plans before mobilization and implement the plans described below with the help of mitigation measures. Once approved by the DSC Environment Specialist & PMIU, these documents will become part of the Contract. A draft CESMP is prepared and presented in Annex F.

7.9.2 Labor Management Procedure

The project has labor management procedure (LMP) which will be part of the contract. These procedures have been developed to manage risks under the SELECT funded by the World Bank. The LMP is set out the project's approach consistent with national requirements as well as the objectives of the relevant World Bank's Environmental and Social Standards on Labor and Working Conditions (ESS2). The following are the LMP important annexures which will also be part of CESMP as well.

LMP Annexures:

- Accident Report Form
- Written Particulars of Contractor Workers
- Workers' Code of Conduct
- Company's/ Contractors Commitment to Comply "Workers' Code of Conduct"
- Managers'/ Supervisors Responsibilities Regarding "Workers' Code of Conduct"
- Contractors' Declaration
- Workers' Training and Orientation Plan
- Monthly LMP Compliance Certificate
- Emergency Preparedness Guidelines
- Monitoring & Evaluation of LMP

7.9.3 Camp Management Plan (CMP)

The contractor camp management plan will be part of CESMP, CMP shall provide all details of social facilities, including dormitories, washrooms for labor, cooking areas, dining facilities, prayer areas, septic tanks, drinking water, and other necessary facilities.

7.9.4 Corona Virus Management Plan (COVID-19) and Communicable Diseases Prevention Plan

The contractor shall provide the details of prevention measures, and arrangements planned for the Management of COVID-19 and other Communicable diseases. The Plan shall include the details of the designated quarantine area, disinfection facilities for Vehicles, and inventory arriving on site. The plan shall also include necessary supplies, such as facemasks, soap, hand sanitizers, temperature-monitoring infrared guns, etc. Disposal of COVID-19-related waste plans should also be prepared.

7.9.5 Pollution (air, land, and water) Control Plan

The Contractor shall provide details of the principal pollution control facilities proposed and of contingency plans in the event of failure of these facilities. The contractor must follow ESS3 – Resource Efficiency and Pollution Prevention and Management while formulating the plan before the start of civil work.

The plan shall include the details of the designated and licensed tip, oil treatment facilities and hazardous waste disposal sites that shall be used to dispose of waste. The plan shall also include Environmental effects monitoring.

7.9.6 Waste Management Plan

The Contractor shall include details of the procedures for the collection and disposal of wastes. The Plan shall deal with each waste stream separately. A Waste Management Plan will be prepared and

implemented by the Contractor based on the mitigation plans given in the report. The Plan will include the camp layout, and details of various facilities including supplies, storage, and disposal.

7.9.7 Traffic Management Plan

The basis of the Contractor's Site-Specific Traffic Management Plan (TMP) and further information is to be provided. The Contractor is required to provide further details once camp/worksite locations and material sources are finalized. The Traffic Management Plan must include details of the proposed access routes to the project area as well as haulage and access routes throughout the project area (including access to and from borrow pits).

7.9.8 Plan for Handling of Hazardous Materials

The Contractor shall identify control measures to ensure no environmental or health impacts from the handling of hazardous materials and the collection and safe disposal of hazardous materials (this may be included within the Pollution Control Plan).

7.9.9 Trees Plantation Plan

The project prioritizes environmental sustainability through a comprehensive tree plantation Plan. While sub project site specific details will be outlined in the contractor's Sub project site-wise Tree Plantation Plan within the CESMP, the overall goal is to increase green cover and promote ecological balance. The plan will prioritize planting native, drought-resistant species, with a focus on fruit trees whenever feasible. This approach not only enhances the environment but also offers potential benefits to the local community and students.

7.10 Community Health and Safety (CHS) Plan

The primary objective of the CHS Plan is to identify, mitigate and manage potential health and safety risks associated with construction activities. This ensures the well-being and safety of both the community and workers involved in the project.

Objectives

The objectives of this CHS Plan are to:

- Avoid or limit risks to, and impacts on, the community's health, safety, and security during the construction phase from both routine and non-routine circumstances. This is achieved through implementing targeted prevention programs to reduce risks, along with the implementation of an effective monitoring and evaluation program.
- Ensure that safeguarding of personnel and property is conducted in an appropriate manner that avoids or limits risks to the community's safety and security.
- Maintain a monitoring and evaluation program that is community-based, participatory, transparent and covers all phases of production and decommissioning.

The CHS plan is illustrated in table 39 below.

Table 38: Community Health and Safety Plan

Activity	Impacts/Issues	Proposed Mitigation Measures	Implementation Responsibility	Monitoring Parameter(s)	Frequency	Monitoring Responsibility
A. Pre-Construction Phase						
Site Preparation Subproject sites will be prepared for the commencement of construction	• Potential to damage vegetation beyond the project footprint. • Can stir up dust particles. • Will generate noise due to movement of machinery.	• Minimize unnecessary removal of vegetation and trees. • Water will be sprinkled regularly. • Avoid night operation to minimize effect of noise pollution. • Utilize noise barriers. • Provide appropriate personal protective equipment (PPEs) to minimize risks.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Noise Level & Air Quality monitoring	Daily during Site preparation Once before start of site preparation	DSC
Camp Establishment and Management Camps will be established for laborers.	• Loss of vegetation due to camp site preparation • Open discharge or stagnant of wastewater from construction camps can lead to the breeding of vectors. • Improper disposal of solid waste can lead to vector breeding, and open burning of waste can lead to contamination of air quality that may cause or aggravate respiratory ailments such as asthma, bronchitis, and emphysema. • Potential to spread of communicable diseases among workers and communities. • An influx of migrant workers could cause discomfort or conflicts with the local	• Sites for construction camps will be selected to avoid or minimize vegetation removal/clearing. • Avoid stagnation of water and initiate drainage/cleanup of stagnant water. • Open burning of solid waste will be strictly banned. • Provide bins for domestic waste collection within the camp and make arrangement for proper disposal. • Conduct public awareness campaigns on disease prevention and promote personal. • Consider the location of construction camps away from communities to avoid social conflict. • Conduct GBV, SEA/SH & VAC training of Labor before camp establishment. • Provide appropriate PPEs to minimize risks.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring checklist Drinking Water	Daily Weekly Once before then Quarterly	DSC, PMIU

	community particularly marketplaces. • There will be GBV, SEA/SH & VAC related risks if Labor camp establishment within the community.					
Dismantling of Structures The subproject sites will be demolished and partially demolished for new construction and rehabilitation of schools	• Dismantling activities can create noise pollution, disrupting the peace and quiet of the surrounding neighbourhood. Excessive noise levels can affect the well-being of nearby residents. • Dismantling activities and machinery operations generate vibration may damage the surrounding property of the subproject sites. • Dismantling activities generate dust and airborne particles. • Dismantling activities have safety hazards due to fallen of objectives and cracks in nearby structures. • Dismantling activities may cause traffic congestion due to transportation and dismantled material.	• Conduct pre-construction surveys of nearby properties to document their condition and address any claims of damage promptly. • Priority to use the dismantled material for refilling and level rising of school to minimize resource depletion. • Avoid Night operation. • Use properly maintained and appropriately sized equipment for demolishing activities. • Any damages, Cracks, or minor damages to the structures adjacent to subproject sites due to activities will be repaired/compensated by the CC. • Windbreaks /barriers (either natural or constructed) will be deployed. • Enforce the maximum speed limit to 10km/h for heavy vehicles. • Water will be sprinkled regularly. • Isolate the work area through the installation of hard barriers and install specific warning signboards. • Prevention of unauthorized entry at the subproject sites. • Regularly communicate safety & Security guidelines and ensure their adherence by all personnel involved in the project. • Depute Flagman during heavy machinery	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring Checklist	Daily Weekly	DSC, PMIU

		movement. • Provide appropriate PPEs to minimize risks.				
B. Construction Phase						
Earth Work Excavation, soil compaction, and grading work to create the foundation for sub-project sites	• Excavation, soil refilling and compaction will generate Dust and particulate can degrade air quality in the surrounding community. This can exacerbate respiratory issues for nearby residents, especially children, elderly individuals, and those with pre-existing respiratory conditions. • Excavation may cause damage the surrounding property of the subproject sites. • Earthwork activities have safety hazards such as, landslides due to deep excavation, fallen hazards, electrocution and mud slips etc.	• Conduct pre-construction surveys of nearby properties to document their condition and address any claims of damage promptly. • Avoid Night operation. • Breast walls, Toe walls, and Retaining walls will be installed. • Use properly maintained and appropriately sized equipment for excavation activities. • Any damages, Cracks, or minor damages to the structures adjacent to subproject sites due to the subproject activities will be repaired by the CC. • Windbreaks /barriers (either natural or constructed) will be deployed. • Enforce the maximum speed limit to 10km/h for vehicles. • Water will be sprinkled regularly. • Isolate the work area through the installation of a demarcation tap. • Prevention of unauthorized entry at the subproject sites. • Installation of temporary hard barriers and warning sign boards • Regularly communicate safety & Security guidelines and ensure their adherence by all personnel involved in the project. • Provide appropriate PPEs to minimize risks.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring Checklist	Daily Weekly	DSC, PMIU

Construction of Structure Building the physical structure of the subproject sites may disrupt the daily routines of residents, affecting their quality of life and productivity	• Construction activities will generate Noise and may deteriorate air quality due to machinery and equipment operation. • Construction activities will cause traffic congestion due to material movement. • Construction activities has safety hazards. • Due to construction work community may raise concern about Parda.	• Avoid Night operation. • Windbreaks /barriers (either natural or constructed) will be deployed. • Enforce the maximum speed limit to 10km/h for vehicles. • Water will be sprinkled regularly at unpaved roads. • Isolate the work area through the installation of a demarcation tap. • Prevention of unauthorized entry at the subproject sites. • Installation of temporary hard barriers and warning sign boards • Regularly communicate safety & Security guidelines and ensure their adherence by all personnel involved in the project.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring Checklist	Daily Weekly	DSC, PMIU
Concrete Activity The preparation and use of concrete in the construction of the subproject sites	• Concrete Activity will generate Noise and may cause deterioration of air quality. • Concrete Activity has safety hazards. • Improper discharge form concrete mixer may damage nearby aesthetic and cause airborne issues.	• Avoid Night operation. • Isolate the work area through the installation of temporary hard barriers and warning sign boards. • Prevention of unauthorized entry at the subproject sites. • Proper concrete left over will be developed. • Regularly communicate safety & Security guidelines and ensure their adherence by all personnel involved in the project.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection	Daily	DSC, PMIU
Storage of Construction Material and Construction Waste disposal	• Improper storage can lead to cluttered sites, obstructing pedestrian and vehicular traffic. • Hazardous materials such as paints, solvents, adhesives, and chemicals pose health and safety risks to workers,	• Develop a detailed plan for the storage and disposal of hazardous materials and waste, including identification, handling procedures, storage requirements, and disposal methods. • Cement bags, sand and gravels will be properly covered and stored in a dedicated area.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring Checklist	Daily Weekly	DSC, PMIU

	students, and the community if not stored and disposed of properly. • Waste disposal can degrade air quality in the surrounding community. This can exacerbate respiratory issues for nearby residents, especially children, elderly individuals, and those with pre-existing respiratory conditions.	• Isolate the hazardous material storage area with proper impermeable base and warning sign boards. • Regularly communicate safety & Security guidelines and ensure their adherence by all personnel involved in the handling of hazardous material. • A designated dump site will be developed/proposed. • Waste will be disposed of only in designated dump sites identified by government authority or proposed by the Firm.				
Transportation of Material The transportation of construction materials for subproject sites	• Transportation activity can stimulate the local economy by creating job opportunities for truck drivers, loaders, and other support personnel. • Transporting construction materials can lead to congestion on local roads, disrupting normal traffic flow and potentially causing delays for commuters and residents. • Transportation of Material will cause deterioration of air quality and generate dust and Noise. • Increase traffic can pose safety risks to pedestrians, cyclists, and other road users, especially if proper traffic management measures are not	• Develop transportation plans that minimize the impact on local communities, including route selection, scheduling deliveries during off-peak hours, and using alternative transportation modes where feasible. • Implement measures such as temporary road closures, traffic diversions, and signage to minimize congestion and ensure the safety of road users. • Water will be sprinkled on unpaved local roads. • Avoid traffic hampering at local/major roads. • Depute Flagman wherever required. • Installation of proper warning signboards. • Near diversion point, public consultation for road diversion	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection Monitoring Checklist	Daily Weekly	DSC, PMIU

	implemented. • Can cause damage to local roads and infrastructure					
C. Post Construction/operation Phase						
School Management & Maintenance The school management after the construction of the subproject sites	• overflow of septic tanks and untreated wastewater can emit foul can lead to the spread of waterborne diseases such as cholera, typhoid, and gastroenteritis. • Improper disposal of RO rejection water can lead to contamination of Agri land and groundwater sources, which may be used for drinking water by nearby communities. • Improper disposal of solid waste and open burning of solid waste ma impact nearby residents.	• Develop proper sewerage system of the school. • Ensure regular desludging of septic tank. • Explore options for reusing RO rejection water within the school premises for non-potable purposes such as flushing toilets, or cleaning, instead of discharging it into the environment. • Conduct regular inspections, maintenance, and monitoring of septic tanks and drainage infrastructure to identify and address any issues promptly. • Provision of garbage bins for waste collection within the school. • Locate a disposal area at least 100 meters away from the settlements.	Environmental Health and Safety Officer and Community Liaison Officer of CC	Visual Inspection	Daily	DSC, PMIU

7.11 Environmental and Social Capacity Building Training Plan

An environmental and social Capacity Building Plan will be prepared to address the needs of CC site staff as well as DSC field staff and build their capacity to implement the ESMP effectively.

Environment and social/Gender Specialists of DSC will lead the training of the contractor workers training with the technical input of the PMIU SELECT E&S team in organizing training for CC staff and help them establish a system for the implementation of ESMPs.

In addition to the training arranged and imparted by the DSC E&S team for the complete package project team, CC will also plan short duration training sessions for workers involved in specific jobs. The cost of training and mitigation measures will be deemed included in the contract cost. Further Construction related workers and D&S Staff E&S Capacity building plan is as undertraining Plan is under in the Table 40.

Table 39: Environmental and Social Capacity Building Training Plan

S. No.	Required Trainings	Participation	Duration	Frequency	Responsibility	
					Implementation	Supervision
1.	**Implementation of ESMP**	PMIU DSC CC	2hrs	Start of construction and monthly	DSC	PMIU
2.	**Labor Management Procedures** • Labor Management Procedure • Emergency Response Preparedness • Disaster Risk Reduction, Response and Management • Community Health and Safety plan • COVID 19 • Traffic Management Plan • GBV, SEAH and VAC • Workers Code of Conduct	DSC CC	1hrs	On job assignment, Monthly	CC	DSC PMIU
3.	**OHS** • Safety Talks • Task- Specific Training Course • Environmental Issues • PPEs on Site • Driving Rules and Driver's Training • Risk Assessment • Accident/Incident Reporting • First Aid	DSC, CC	10 min 30 min 1hrs	Daily, Weekly, Monthly	CC	DSC PMIU
4.	**CLIMATE RESPONSE INDICATORS (CRI)** • Roles and Responsibilities in the Implementation of CRIs	PMIU, DSC CC	30 min	Start of construction and monthly	DSC	PMIU
5.	**Stakeholder Engagement**	Contractor Workers	15min	Weekly	CC	DSC,PMIU

S. No.	Required Trainings	Participation	Duration	Frequency	Responsibility	
					Implementation	Supervision
6.	**Resource Conservation and Waste Management**	CM, Workers	10min	Daily	CC	DSC,PMIU
7.	**Grievance Redressal Mechanism** - Channels and procedures - Workers GRM Committees - SEAH related complaints mechanism	CM, Workers	10min	Monthly	CC,DSC	PMIU
8.	**Gender Action Plan** **SEAH Action Plan** • GBV, SH, SEA and VAC related laws • Code of Conducts	CM, Workers, CC	30 min	Monthly	DSC	PMIU

7.12 Emergency Preparedness & Response Plan

The contractor will develop a comprehensive Emergency Preparedness Plan outlining procedures to address various emergencies, including fire, floods, earthquakes, accidents, and death/injury. The plan will encompass the following key elements:

- **Contacting Emergency Responders:** Clear protocols for contacting relevant agencies like the Fire Brigade, ambulance services, or civil defense authorities based on the nature of the emergency.
- **Site Shutdown Procedures:** Defined steps for safe and orderly shutdown of construction activities in the event of an emergency.
- **Natural Event Shutdown Triggers:** Identification of on-site indicators (e.g., rising floodwaters, earthquake tremors) that necessitate immediate shutdown of specific work areas to ensure worker safety.
- **Emergency Evacuation:** A well-defined evacuation procedure for construction staff and any members of the public who might be within the potential impact zone of an emergency.
- **Use of Fire Safety Equipment:** Training for all personnel on the proper use and location of fire safety equipment (e.g., fire extinguishers, fire hoses) to control small fires and facilitate safe evacuation.

7.13 Compliance and Effects Monitoring

PMIU shall carry out monitoring within the sub-project area using the monitoring checklists to be prepared based on this mitigation and monitoring plan to aid the monitoring process, the Contractor will complete the following:

- The construction staff will be trained in the implementation of the ESMP and safety measures.
- Periodic progress reports will be submitted to the Environmental and Social Experts of PMIU.
- Progress Reports will include the various issues related to the HSE, including but not limited to the following.
- HSE Measures adopted (HHSE statistics)
- Fuel and hazardous material consumption.

- Workforce statistics (employment/deployment etc.)
- Compliance monitoring to check whether the actions proposed in the ESMP are being carried out.
- Effects monitoring to record the impacts of mitigation measures.

The effects monitoring shall be the responsibility of DSC. Examples of compliance and effects monitoring parameters are included in Box - 1 below. Both approaches will be conducted using the monitoring parameters by visual observation, photographic documentation, and measurement where necessary. A record of events and surveys will be maintained.

7.14 Environmental Non-compliances and Corrective Measures

The Contractor will be notified of any violations of the ESMP, as well as any corrective actions required. Outlined below are some steps, relating to the increasing severity of environmental & Social problems, which will be implemented. The principle is to keep as many issues within the first few steps as possible.

Step 1. PMIU and Contractor to work out mitigations together and record the facts and the decision implemented.

Step 2. A more serious infringement will be observed and PMIU will notify the Contractor of the issues in writing, with a deadline by which the problem must be rectified. All costs will be borne by the Contractor.

Step 3. The suspension will be enforced until the offending parties, procedure, or equipment is corrected and/or remedial measures put in place if required. No extension of time will be granted for such delays and all costs will be borne by the Contractor.

Step 4. Breach of contract - One of the possible consequences of this is the removal of a Contractor and/or equipment and/or the termination of the contract. Such measures will not replace any legal proceedings that PMIU may institute against the Contractor.

7.15 Communication Reporting and Documentation

The following environmental meetings are proposed:

- Primary meetings between the PMIU E&S and DSC E&S team of PMIU for setting out the format for the regular meetings shall be held before the commencement of the project.
- Following the DSC E&S team will orient Contractor project team about the ESMP implementation, documentation and reporting process, PMIU SELECT E&S team will technically guide the DSC & Contractor E&S team.
- Scheduled Environmental and Social Progress Review Meeting (ESRPM) meetings between the team PMIU SELECT, DSC and the Contractor shall be held at regular intervals.

The Contractor and DSC will be required to produce weekly, monthly, quarterly, and work completion reports of the sub-projects based on social and environmental issues. The distribution of the reports shall be to PMIU and the World Bank.

7.16 Box 1

Compliance Monitoring:

- Frequency of anti-dust water sprays during construction period.
- Installation of signage regarding community health and safety
- Safety at workplaces and working hours during construction.
- Incidence of liquid/solid waste in the vicinity of work camps (type and amount of waste, amount, interference with local residents, fauna, flora and crops);
- Plantation of saplings of new trees against trees cut.
- Survival rate of saplings of new trees
- Arrangements made at construction sites for protection of floral and faunal resources.
- Assurance of installation of signage regarding community health and safety

Environmental Effects Monitoring

- Ambient air quality (Particulate matter) during construction phase.
- Surface water quality during construction phase especially at diversion sites
- Ground water quality at camp sites.
- Ground water table at construction sites.
- Number of patients suffering from malaria, cholera, diarrhea, respiratory ailments during construction phase
- Noise levels (in dBA), monitored at fixed locations and planed schedule during construction.
- Extent and degree of functionality of diversion channels to ensure un-interrupted water supply.

Social Effects Monitoring

- Number of local people recruited on project works.
- Incidence of child labor and disproportionate wages
- Conflict at community level
- Chance finds archaeological site.
- Grievance redressal mechanism is in place.
- Health screening of labor at site
- Contractor's staff sensitized on Gender base violence (GBV)

A photographic record of the project area shall be kept. The contractor and DSC E&S team will take photographs at key locations using a digital camera of the project area in a walkthrough survey the following data shall be recorded for each photograph:

- Shot number.
- All the photographs will be referenced with GPS Coordinates
- Title of photograph
- Date and Time.
- Photographic features.

The photographic record shall be incorporated into the monthly reports.

Complaints Register. The Contractor will maintain a complaint register at the campsite and workplaces to document all complaints received from the local communities. The register will also record the measures taken to mitigate the reported concerns. The final report will be communicated to the E&S team of PMIU. All complaints/issues of the community will be reported in the monthly progress report of the following month along with the status of the last month's complaints and will be reviewed by the E&S team of PMIU.

Moreover, telephone numbers and addresses of all concerned tiers within the GRM would be displayed in Sindhi and Urdu at all sites, and the same would be distributed in community training/meetings.

Change Record Register. A review of this ESMP will be triggered in two scenarios:

- A change to the designs deviates from the parameters that are safeguarded in this ESMP.
- A discovery in the baseline socio-environmental conditions, which is not recognized or covered by this ESMP.

In the event of either scenario, the ESMP shall be updated and reissued accordingly. The Contractor and PMIU to document any change in the project design/operation shall maintain the design change record.

7.17 Environmental and Social Management and Monitoring Cost

The implementation of the ESMP involves input from the Construction Contractor (CC), DSC and PMIU. The CC will be primarily responsible for ensuring the implementation of mitigation measures proposed in the ESMP, which will be part of the contract documents. Hence, the provision of environmental mitigation cost as a separate head in Bill of Quantities (BOQs) will be made mandatory in contract documents.

However, if the CC fails to comply with the implementation of ESMP and reporting properly, the proponent will enforce compliance with the terms of the contract, including adherence to the ESMP. For the smooth execution of ESMP implementation activities, it has been recommended that all the bills/payments related to ESMP implementation be approved/authenticated by the DSC Env & Social. ESMP implementation cost will be deducted from Interim Payment Certificates (IPC) until compliance has been done.

The cost of **Rs. 17,496,600/-** is the allocated budget for the implementation (for a one-year estimation) of the ESMP. The breakup of the cost is given in Table 42.

Table 40: Environmental & Social Management and Monitoring Plan

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
Design Phase							
School Land Ownership • All the selected schools for rehabilitation and construction are within the existing school premises, no extra land for the subproject schools will be required.	Low	Land Record	District Revenue Department	Once before commencement of construction work	DSC	PMIU	PMIU
Disaster Risk Factor • In District Mirpur Khas, only water in the form of floods and severe rains can impact the subprojects sites in terms of inundation in and near the subprojects sites. Also, the heat wave can cause health risks to workers and students. There are no schools located close to the coastal areas, therefore, the risk of Tsunamis and cyclones are ruled out. • Most of the subproject schools has experienced	Moderate	Climate Responsive Indicators (CRI)	Modular Design	Once during design	DSC	PMIU	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
floods that have severely impacted the infrastructure, destroying educational materials and disturbed education activities.							
Construction Phase							
Ecological disturbance • All proposed school sites do not lie inside the ecologically protected area or buffer zone of the protected area. No special area for protecting biodiversity and Ramsar sites are found near the sub-projects sites. • Loss of Forests: No areas of primary forest are found within or adjacent to sub-project sites.	Low	Any sensitive receptor	Subproject	Monthly	CC	DSC	PMIU
Flora & Fauna • During construction to facilitate the school design which may affects flora & Fauna's ecosystem mostly birds by destroying their habitats, disrupting breeding	Moderate	Cutting of Trees (type and height) Number of Nests on trees	Subproject	Daily	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
cycles, reducing food sources, and forcing displacement. This can lead to population declines, increased vulnerability to predators, and altered ecosystem dynamics. Conservation efforts are crucial to mitigate these impacts and protect bird populations.							
Land & Soil • The subproject activity result in deterioration of land and soil due to Transportation of heavy vehicles, storage of construction material, illegal landfilling/disposal of construction waste (Chemicals, Expired material, Asbestos, e-waste etc.)	Moderate	Inspection of Vehicles and machinery Visual observation of illegal landfilling, loose soil, expired material etc.	Subproject	Daily	CC	DSC	PMIU
Water Quality • The surface and ground water quality will deteriorate due to spills from construction equipment,	Low	Drinking Water Parameters mentioned in SEQS	Subproject	Once before start of construction work	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
fuel, washing to vehicles and inadequate disposal of waste material. • Risk of prevalence of water borne diseases on site/in the area				Quarterly			
Air Quality • From construction activities deterioration of air quality expected due to generation of dust during, excavation, stocking of soil, piling, vehicular movement, machine exhaust emissions, release of gases, open burning of wastes etc.	Moderate	Ambient Air quality Gaseous Emission Vehicle emission parameters	Subproject	Quarterly	CC	DSC	PMIU
Noise Generation • Noise generation and vibration from construction machinery, equipment and vehicles have adverse psychological and physiological effects (increased blood pressure, sleep disturbance, etc.) on workers, students, staff and communities near	Moderate	Noise Level for 24 hours Occupational Noise Level	Subproject	Quarterly Regularly	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
construction sites, and can also cause significant disturbance to local wildlife.							
Waste Generation • Typical solid waste generated during construction includes wasted concrete, steel and wooden scaffolding, cement bags, excavated soil, wood remains etc. These impact the environment through resource depletion, landfill usage, air and water pollution, soil degradation, habitat destruction, climate change, and noise and visual pollution.	Moderate	Waste generation record. Waste Management Waste minimization and reuse	Subproject	Daily	CC	DSC	PMIU
Resource Efficiency • The subproject includes activities such as construction of new blocks and rehabilitation of some blocks which requires significant consumption of raw materials, energy and water.	Low	Material Record	Subproject	Daily	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
Asbestos/Hazardous Materials Management • The construction of School will involve utilization, handling, storage and transportation of hazardous substances/materials or waste.	Low	Hazardous substance MSDS and management activities	Subproject	Daily	CC	DSC	PMIU
Occupational Health and Safety (OHS) • The subproject pose potential risks and vulnerabilities related to OHS during Project construction. Multiple hazards are inherently present at the construction site which may create unsafe conditions and also the unsafe acts done by the workers.	Moderate	Trainings Use of PPEs First Aid Box OHS Walk OHS Statistics Incident Record	Subproject	As per training plan Daily Weekly Monthly	CC	DSC	PMIU
Transportation • Most of the school locations are in rural areas where traffic issues are minimum. • Construction of school in populated area significantly impacts traffic movement. This should be avoided as far as possible by proper	Low	Speed Limits Signages Incident Record Compliance with SEQs	Subproject	Daily Bi-annually	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
planning of construction works.							
Land Availability • The land occupied by subproject schools are owned by government	Low	Land Record	Subproject	Once before commencement of Construction	DSC	PMIU	-
Cultural Heritage • No archaeological site are identified during screening of subproject sites however the possible discovery of heritage resources particularly archaeological resources or random findings during the execution of civil works especially excavation for foundation, will require measures to manage chance finds.	Low	Chance Find	Subproject	Daily	CC	DSC	PMIU
Labor and Working Conditions • Workers on subproject sites face various health and safety hazards. • Potential use of Child Labor and Forced Labor • Some negative social impacts could be raised due	Moderate	Training and awareness sessions for workers Visual walk through the subproject site and camp site	Subproject and camp	Daily	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
to labor influx such as HIV/AIDS/COVID-19 or other transmitted infections. Risk of SEA/SH and VAC could also be increased due to the labour influx. The risks can be further increase in case nearby community belong to marginalized group such as Hindu community. **Female Labor Workers Risk** • Female unskilled workers may face sexual harassment from supervisors or male workers, leading to psychological distress, reduced productivity. • Female workers traveling to and from the site may face harassment, assault, or other forms of GBV, leading to increased absenteeism and safety concerns. • Lack of separate and secure sanitation and changing facilities can expose female workers to		Use of PPEs Health Card Health Insurance Policy First Aid Box Training & awareness session of Workers Signing of Code of Conducts Establishing of GRM Mechanism at Site level.					

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
harassment and health risks. • Female workers might face cultural stigma and discrimination from male colleagues or within their communities for working at sites with male workers, affecting their mental health and job performance.							
Community Health & Safety • The disruption to existing community will be caused due to the construction activities Risks may arise from the following unsafe conditions and acts: ✓ Inadvertent or intentional trespassing in an excavated area ✓ Potential contact with hazardous materials ✓ Slips and trips at the construction site. ✓ Potential contact with live wires causing electrocution. ✓ Potential injury or death from moving machinery or vehicles	Moderate	Training and awareness sessions for community and workers Safety Signages Banners Corden off Access Control	Subproject surroundings	Daily	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
✓ Increased incidence of infectious and vector-borne diseases ✓ Privacy issues with the construction labor. ✓ Increasing the risk of traffic-related accidents and injuries to workers and local communities.							
Disruption of School activities during construction • During construction of new blocks or rehabilitation activities at the subproject sites the disruption of school activities will occur.	Moderate	Alternate classroom arrangement Consultation with TEOs for identification of space and shifting of the academic activities at new identified space.	Subproject	Daily	CC/DSC	DSC	PMIU
Vulnerable or disadvantaged groups • Women, minority groups, disabled persons and students, communities from	Low	Consultation with Vulnerable groups and Offer support services	Subproject	Daily	CC	DSC	PMIU

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
deprived areas which will be affected from the subproject activities.							
SEA/SH & VAC Risks • Although the influx of workers will be minimal, new workers (outside of their social spheres) may form close social relationships with local communities. This can lead to unacceptable and/or illegal behaviour, ranging from unwanted aggressive advances, SEA/SH against women, girls and children.	Moderate	Training and awareness sessions for community and workers	Subproject and surroundings	Monthly	CC	DSC	PMIU
Operation Phase							
Wash Facilities and Waste Management • Awareness Raising/ training of teachers and students on WASH and waste disposal to disseminate the knowledge on WASH and waste disposal. • Maintenance of toilets, septic tanks to provide better hygiene at school	Moderate	Training and awareness sessions of teachers and students	Subproject	Quarterly	School Administration /SMC	DEO/TEOs	RSU/SELD

ENVIRONMENTAL AND SOCIAL ASPECT	Risk/Impact	Monitoring			Responsibility		Supervision
		Parameter	Location	Frequency	Implementation	Monitoring	
facilities and avoid health risks							
Safety and Security • Safety of material including RO, Solar Pannels, Furniture, Electric equipment, and laptops. • Safety of Girls students and female staff.	Moderate	Security Guards to be recruit for subproject sites	Subproject	Daily	School Administration /SMC	DSC	PMIU
School Management & Maintenance • Operations of RO filtration plant to minimize the environmental impacts of unsustainable operations of RO plant, discharge of RO reject water and spent RO membranes. • Maintenance of solar system, its cleaning and batteries maintenance • Maintenance of Septic Tank and storm water drain system. • Use of reject water mix with sewerage water.	Moderate	Maintenance technician to be recruit for subproject sites	Subproject	Daily	School Administration /SMC	DEO/TEOs	RSU/SELD

7.18 Estimated Budget for the Implementation of ESMP

The budget for the implementation of the ESMP includes both the direct cost of the mitigation measures and the costs of monitoring the execution of the ESMP such as laboratory costs, monitoring visits, training costs and equipment. Table 42 shows the cost to be included in the BOQ items by CC.

Table 41: ESMP Implementation and monitoring estimated cost for Construction Contractor

Item No.	Item	Rational	Frequency	Average Rate (Rs.)/unit*	Quantity/ year	No of units	Total Quantity	Estimated Amount (Rs.)
A. Baseline Environmental Monitoring Before Start of Civil Works								
1	Drinking Water	Drinking Water Quality Monitoring (Preferably groundwater) – one test from each school site	Once Before Start of Civil Works	15,000	1	21	21	315,000
2	Ambient Air Quality	Ambient Air Monitoring (refer baseline Location with 24 hour monitoring)		35,000	1	3	3	105,000
3	Ambient Noise	Ambient Noise Monitoring (refer baseline locations with 24 hour monitoring)		5,000	1	3	3	15,000
							Sub Total - A	**435,000**
B. Environmental Monitoring Cost During Construction Phase (12 months)								
4	Drinking Water	one from camp area	Once in every four months	15000	3	21	63	945,000
5	Wastewater	Construction camp Wastewater quality		15000	3	21	63	945,000
6	Ambient Air Quality	Ambient Air Monitoring (refer baseline Location with 24 hour monitoring)		35000	3	3	9	315,000
7	Ambient Noise	Ambient Noise Monitoring (refer baseline locations with 24 hour monitoring)		5000	3	3	9	45,000
8	Machinery/Stack emissions and Noise	Generator Exhaust Emissions & Noise		10000	3	21	63	630,000
9		Vehicle Exhaust Emissions & Noise		10000	3	21	63	630,000
							Sub Total - B	**3,510,000**
C. EHS Management								
10	Personal Protective Equipment (PPEs) for Approx. 20/subproject employees (Replacing every six month)		Bi annual	5000	2	21	42	210,000
11	First Aid Box		Lump sum	2000	1	21	21	42,000
12	Fire Fighting Equipment purchase and refilling		Refilling Biannually	8000	2	21	42	336,000

13	Water Sprinkling for dust suppression on unpaved roads and school	Once a day	200	365	21	7665	1,533,000
14	GRM Cost. (Signage , Complaint box , GRM Banners, reporting and GRM Desk)	including general protective measures near the socially sensitive receptors				Lump sum	1,050,000
15	Soft and Hard barrication, Safety Signages, traffic control					Lump sum	1,050,000
16	Waste Management	Solid & Liquid Waste Management at each subproject site including Vender for hazardous Waste Management				Lump sum	1,050,000
						Sub Total - C	**5,271,000**
D. EHS Administrative Cost							
17	Training/Capacity Building (Implementation of ESMP capacity building plan)				21	50,000	1,050,000
18	Environmental & OHS Officer Salaries	Monthly	150,000	12	1	12	1,800,000
19	Community Liaison Officer (for Social Compliance & GRM implementation) Salary	Monthly	150,000	12	1	12	1,800,000
20	Environmental & Social Supervisor Salaries (1 supervisor for each cluster (10 nearby schools) for day-to-day observations)		60,000	12	2	24	1,440,000
21	Reporting (Weekly, Monthly & Quarterly) + Incident Reporting		50,000	12	1	12	600,000
						Sub Total - D	**6,690,000**
						TOTAL OF (A to D)	**15,906,000**
						CONTINGENCY 10%	**1,590,600**
						GRAND TOTAL	**17,496,600**

8 GRIEVANCE REDRESS MECHANISM (GRM)

The Grievance Redress Mechanism (GRM) is an institutional arrangement that allows stakeholders to address grievances related to the Project through a timely, transparent, and predictable process. The Project Grievance Redressal Mechanism (GRM) is consistent with the requirements of the World Bank Environmental and Social Standards (ESSs) to ensure mitigation of community concerns, risk management, and maximization of environmental and social benefits.

A grievance is defined as any formal communication that expresses dissatisfaction about an action or lack of action, about the standard of services/ works, deficiency of service related to the Project management and its implementation mechanism. The SELECT GRM is gender-responsive, culturally appropriate, and readily accessible to the stakeholders at no cost and without retribution.

During sub-projects execution, different issues and constraints may arise. In this situation, if stakeholders have inadequate means to voice and resolve grievances, they may turn to other venues, which may be cumbersome and lengthy, leading to delays in the sub-project.
The GRM will be accessible to diverse members of the affected population and community at large, including women, senior citizens, students, and other vulnerable groups. Culturally appropriate communication mechanisms will be used at all sub-projects sites both to spread awareness regarding the GRM process as well as complaints management.
Standard Operating Procedures (SOPs) and informational material will be prepared for the sub-projects GRM in Urdu, Sindhi and English and made publicly available before contractors mobilize to sites.

GRM will enable Project Affected Persons (PAPs) and all stakeholders, to raise their concern if negative impact arising from the sub-projects' activities. This mechanism serves as a platform to promptly resolve and address community concerns, reduce risks, and strengthen systems and processes, thereby contributing to positive service delivery.
It is to be noted that there will be additional GRMs for Labor (as per ESS2 requirements of the World Bank) and for SEA/SH & VAC (as per /SEA/SH Action Plan).

Objective of GRM

The overall objective of the GRM is to provide a robust system of procedures and processes that provides for transparent and rapid resolution of concerns and complaints identified at the sub-projects levels.

Specific Objectives

(i) To provide effective communication methods and systematic process for complaints registration and to provide a prompt, transparent and fair response and resolution without reprisals for the environmental and socially affected stakeholders of the sub-project area;
(ii) To provide sub-projects staff with practical suggestions/feedback that allows them to be more effective, accountable, transparent, and responsive to beneficiaries.
(iii) To demonstrate responsibility towards the local community for their environmental well- being by preventing and mitigating any adverse environmental effects caused by the sub- project.
(iv) Increasing stakeholder involvement in the sub-projects. To provide free and fair access to diverse members of the local community, including more vulnerable groups such as women and youth, keeping confidentiality and privacy of complainants.

GRM Structure

The GRM is established at three levels starting from the sub-projects sites which are called GR Cell, Grievance Redress Committee (GRC) at district level which is called GRC-District and GRC at the PMIU level which is called main GRC. The process at each level is defined as under:

Site-Level Grievance Redress Cell (GR Cell)

The SELECT project prioritizes open communication and a fair dispute resolution process for Project Affected People (PAPs). A three-tiered Grievance Redress Mechanism (GRM) is established to address concerns and ensure timely resolution of issues.

1. Site-Level Grievance Redress Cell (GR Cell):

- **Function:** A Site-Level GR Cell will be established at each sub project site to receive, register, and attempt to resolve grievances raised by PAPs.
- **Composition:** The GR Cell will be led by a Community Liaison Officer (CLO) appointed by the contractor, acting as the focal person and record keeper. In addition, Grievance Focal Persons (GFPs) nominated by the local community will serve as trusted representatives that PAPs can easily approach. These GFPs should ideally be a balanced mix of men and women.
- **Grievance Recording:** Both written and verbal complaints will be accepted by the GFPs or CLO. The CLO will ensure all grievances are documented in a Grievance Register, which will be updated and shared monthly with the Project GRC at the PMIU level. This facilitates a consolidated record of grievances across all project sites.
- **Resolution Process:** The contractor and the sub-project manager hold primary responsibility for resolving grievances at the site level. They will work collaboratively with the PAPs to find mutually agreeable solutions.
- **Types of Escalated Complaints:** Certain complaints will be directly directed to the PMIU GRC, including those related to:
    - **SEA/SH Complaints:** All concerns regarding Sexual Exploitation, Abuse & Harassment will be directly forwarded to the Central GRC for immediate attention and investigation.
    - **Suspected corruption or unethical practices.** The PMIU GRC can ensure a thorough and impartial investigation into such allegations.
    - **Issues beyond the purview or capacity of the Site-Level GR Cell.** This may include complex legal matters or grievances requiring broader project-level intervention.
- **Escalation Process:** If a grievance remains unresolved at the site level, the sub-project manager will submit a written report to the Project GRC, outlining the details of the complaint and any attempted resolution efforts.
- **GRC Resolution:** The PMIU GRC will then review the case and work towards a fair and swift resolution for the PAP.

Responsibilities of the Site-Level GR Cell:

The GR Cell will undertake the following tasks:

- **Review, consider, and attempt to resolve grievances at the site level.** This includes actively listening to PAP concerns, investigating the issues, and facilitating discussions to reach acceptable solutions.

- **Conduct fact-finding pertaining to grievances.** The GR Cell may gather information, interview relevant parties, and assess evidence to understand the situation comprehensively.

- **Strive to resolve grievances within a reasonable timeframe.** Ideally, most grievances should be resolved at the site level within a week. However, complex issues may require additional time for investigation and resolution.

- **Undertake analysis of grievance data to inform decision-making.** By identifying recurring issues or trends in grievances, the GR Cell can recommend improvements to project practices or communication strategies.

- **Maintain confidentiality of complainants who wish to remain anonymous.** The GR Cell will respect the privacy of PAPs who raise concerns and ensure their identities are protected if requested.

- **Maintain an updated GRM database/Complaints Log.** This log will record all grievances received, resolution efforts undertaken, and final outcomes. This data is crucial for monitoring the effectiveness of the GRM.

Collaboration During Complaint Investigation:

During the complaint investigation process, the GRC will work collaboratively with the Contractor and the sub-project manager. This collaborative approach ensures all parties involved are engaged in finding a solution, and the contractor is held accountable for implementing any identified mitigation measures.

Grievance Focal Persons (GFPs)

The GFPs will be literate people from each community or teachers from the selected schools that will assist and facilitate the community members in reporting grievances resulting from sub-projects activities. The GFPs will be provided training by the PMIU in facilitating grievance redress. The GFP would be responsible for making the community aware of the following components:

- Inform people about the GRM and how it works, and their options depending on the types of complaint.
- Types of grievances not acceptable/eligible to the GRM.
- Intake channels at the GRM, e.g., phone numbers, postal and email addresses, and website and information that should be included in a complaint.
- Inform the Complainant of the investigation results and the action taken, and the option of appeal to PSC if not satisfied with the outcome.
- Two GFPs (a female and a male) will be selected for each sub-project site.

Available Channels for Grievance Submission at the School Level:

To ensure an inclusive and accessible grievance redressal system for all Project Affected People (PAPs), especially those from illiterate and marginalized communities, the Site-Level Grievance Redress Cell (GR Cell) at each school will offer multiple channels for submitting

complaints. These methods will include both in-person and remote options to accommodate various needs and preferences. Key channels will be:

1. **In-Person Submissions**:
   - **GRM Desks**: GRM desks will be established at each school, equipped with complaint forms and a register for documenting grievances. These desks will be managed by the Community Liaison Officer (CLO) and supported by the Grievance Focal Persons (GFPs).
   - **Banners and Notices**: Banners and notices will be prominently displayed in Sindhi, Urdu, and English, clearly explaining the grievance submission process and listing available channels, including in-person, phone, email, and postal methods.
   - **School Management Committees (SMCs)**: Members of the SMCs will actively assist PAPs, particularly women and illiterate individuals, in understanding and utilizing the GRM. They will collaborate with GFPs to ensure that grievances are documented accurately and promptly.
   - **Grievance Focal Persons (GFPs)**: GFPs, comprising one male and one female representative, will be literate community members or teachers trained by the Project. They will be easily accessible to community members, offering guidance on how to submit complaints and ensuring that grievances from women and illiterate PAPs are recorded accurately.
2. **Remote Submissions**:
   - **Unified Access Number (UAN)**: A dedicated phone line will be available for PAPs to call and report their grievances. This channel will be promoted through the banners and notices at the schools.
   - **WhatsApp**: A dedicated WhatsApp number will be available for PAPs to send their grievances via text or voice messages, providing a convenient and widely used platform for communication.
   - **Email**: An official email address for grievance submissions will be provided, allowing PAPs to send their complaints electronically. This option will be particularly useful for those who have access to email facilities.
   - **SMS**: A specific phone number will be designated to receive SMS messages, allowing PAPs to submit their grievances via text message.
   - **Postal Services**: A postal address will be provided for submitting written grievances. This option ensures that PAPs who prefer traditional mail can still participate in the GRM.
   - **Walk-Through**: PAPs can also visit GFPs at GRM Desk at site level, Taluka/District Education Office and the project office in person to submit their grievances directly to the GR Cell.
   - **Through GFPs or SMCs**: PAPs can report their grievances to the GFPs or SMC members, who will then document and submit the complaints on their behalf.
3. **Community Outreach and Orientation**:
   - **Awareness Campaigns**: Regular awareness sessions will be conducted by the GFPs and SMCs to educate the community, especially women and illiterate members, about the GRM. These sessions will cover how to submit complaints, what information to include, and the grievance resolution process. Project's Social Mobilization firm will also inform communities about the Project GRM and it's process.
   - **Support for Illiterate PAPs:** GFPs and SMCs will offer personalized assistance to illiterate community members, helping them articulate their grievances and ensuring these are recorded and submitted properly.

By providing a variety of accessible channels and proactive community support, the Site-Level GR Cell aims to create an inclusive grievance redressal environment, ensuring that all PAPs, regardless of literacy level or gender, can effectively raise and resolve their concerns

PMIU-SELECT Level GRM

Project's central Grievance Redressal Committee (GRC) has been established at the PMIU-SELECT level since the Project effective date. PMIU-SELECT serves as the secretariat and is responsible for providing oversight to the entire GRM process at the strategic level and monitoring of complaints management. It maintains an electronic database that will provide a summary of complaints received and mitigations. It will also be responsible for uploading the actions and results for each grievance from each sub-project location on a periodic basis to the Project website.

The GRC function as an independent body that regulate the grievance redress process and address grievances that were left unresolved at the GRC-District level or were scaled up. The central GRC also has 06 core members, with an option to coopt more members if the need arises. It will comprise of: Environmental Specialist (ES) and Social Specialist (SS) of RSU, Senior Engineers from Education Works Department, Representative of SELD from concerned districts and senior members from civil society in sub-project areas. At least two core members of the central GRC will be women. All efforts will be made to include more than two female members in the central GRC.

If a grievance remains unresolved at the RSU level despite making best efforts till the stipulated time of 21 days, it will either be retained for another 21 days with the prior agreement of the Project Director and the complainant or sent to the Project Steering Committee (PSC) for resolution, depending on the GRC's assessment on which is the best option to facilitate a resolution.

The RSU will issue public notices to inform the public about the Grievance Redress Mechanism (GRM) at the sub-projects area. The contractor will also display prominent signage containing the contact details of GRC in the Sindhi language. The complainant(s) can lodge their grievances through the following complaint channels of the Project GRM are available for the project affected persons and workers to lodge their complaint:

1.	UAN	111-735-328
2.	What's App/ SMS/ Call	0317-8222566
3.	Email	grm.select@gmail.com
4.	Web-Portal	www.rsu-sindh.gov.com
5.	Office Address	47-E/1 48th Street, Block No. 06, PECHS2, Near Nursery, Shahrah-e-Faisal, Karachi.

These UAN and mobile numbers and email IDs will be managed by GRC based at PMIU. The Social Safeguard Specialist is the designated focal person to receive a complaint(s) in writing, through calls, fax and emails. The Social Safeguard Specialist will have resources and facilities to maintain a complaints database which will be digitized and available online and will communicate with the contractor, Site Engineers, and Project Manager.

Given that female community members have restricted mobility outside their villages and homes, the Gender Specialists will be required to visit the local communities to record grievances. The frequency of visits will depend on the nature and magnitude of activity in an area and the frequency of grievances.

The responsibilities of the GRC at PMIU are:

(i) The Social, Gender and Environmental Specialist shall be the focal person for GRC, which is responsible for logging the complaint and date of receipt onto the complaint database and informing the Project Manager and the Contractor;
(ii) The GRC will coordinate with local government to receive project-related complaints made directly to them;
(iii) The GRC shall review, consider and resolve grievances related to environmental and social issues during implementation received at the PMIU level;
(iv) The GRC, is responsible for investigating the complaint to determine its validity and assess whether the source of the problem is due to sub-projects activities and identifying appropriate corrective measures. If corrective measures are necessary, GRC through the Project Manager will instruct the Contractor to take necessary action;
(v) Resolve grievances presented to the GRC within a period of two weeks;
(vi) Inform the Complainant of the investigation results and the action taken;
(vii) Undertake analysis of data on grievances and use this to make informed decisions;
(viii) GRC decisions, if not acceptable to the complainant(s), can be appealed to the PSC;
(ix) Maintain an updated online GRM database/Complaints Log.

Grievance Redress Committee (GRC-District)

A Grievance Redress Committee at the districts level will be notified under the Project for all participating districts. The GRC-District will be chaired by the District Education Officer Primary. It will have 06 core members and will include representation from Education works department, SELD, district government, community representatives, civil society organizations and project team. It will have the option of co-opting more than 06 core members. At least two women will be part of the core members of the GRC at district level.

The GRC's phone number, mobile, address, email address will be disseminated to the people through displays at the respective DEO / TEO offices, and at all the sub-project sites of target district. The construction contractor will also display this information prominently at their site offices. The responsibilities of the GRC at District Level are:

- The GRC will log complaints and date of receipt onto the complaint database and inform the E&S Staff at PMIU level.
- The GRC will instruct contractors and GFPs to refer any complaints that they have received directly to the GRC.
- The GRC, with the contractors and GFPs, will investigate the complaint to determine its validity, and to assess whether the source of the problem is due to sub-project activities, and identify appropriate corrective measures. If corrective measures are necessary, GRC, through the GFPs, will instruct the contractors to take necessary action.
- The GRC will inform the complainant of investigation results and the action taken.
- The GRC will review the Contractors response on the identified mitigation measures, and the updated situation.
- The GRC will undertake additional monitoring, as necessary, to verify as well as review that any valid reason for complaint does not recur.
    - During the complaint investigation, the GRC should work together with the contractors and GFPs. If mitigation measures are identified in the investigation, the contractor will promptly carry out the mitigation. GFPs will ensure that the measures are carried out by the contractor.

- Apart from the electronic database that will be maintained at the PMIU level, a manual register of all complaints and actions taken will be maintained by the Environmental and Social Focal Persons for each District at the Office of the District Reforms Oversight Committee.

Grievance Redress Mechanisms for SEA/SH & VAC:

When a complaint will receive at the GR Cell which will be established at the sub-project site level, Grievance Focal persons (GFPs and) Community Liaison Officer (CLO) hired by the Contractor will record the complaint and inform the GRM Focal Persons at PMIU & the District level. The PMIU GRM Focal Person will inform Gender Specialist at the PMIU. Gender Specialist will assess the nature of complaint. The Social Safeguard Specialist (as GRC Focal Person) and the Gender Specialist at the PMIU will receive the necessary training to handle such sensitive cases. She will take District Level Focal Person on board, and they will immediately inform the Anti Rape Crisis Cell which is headed by the Deputy Commissioner. The role of Anti Rape Crisis Cell is to provide case management support to the victim which includes medico-legal, Police, Psychological, Shelter etc. Besides this, identified GBV Service Providers at the district level will be involved to handle the case properly. The Child Protection Units have been established in all districts of Sindh with a Child Protection Officers as focal persons. They will also be taken on board for any complaint related to the VAC. The complaints will be communicated to the World Bank no later than 48 hours after being received by the GRC at PMIU level from GR Cell (site level).

GVB Service Providers in District Tando Muhammad Khan:

AntiRape Crisis Cell (ARCC)	**Head of ARCC**	**Members of ARCC**	**Child Protection Officers (CPO) under Child Protection Unit (CPU)**	**Women Protection Cell Helpline**
Civil Hospital Tando Muhammad Khan	Deputy Commissioner Tando Muhammad Khan	Medical Superintendent & District SSP		

Workers' Grievance Redress Mechanism (GRM)

Worker's grievances may be of many types which may include conflict with supervisors, workplace issues, OSH, issues relating to wages, delay in payment of wages, unauthorized deduction from wages, confrontation with the co-workers, non-compliance of LMP and social conflicts between workers, etc. ESS2 requires from the borrowers to put in place a Grievance Redress Mechanism (GRM) to redress the grievances of direct and contracted workers and the workers have to be informed about the existence of Grievance Redress Mechanism (GRM) at the time of their entry into employment and also during the course of their employment.

The Project GRM for SELECT has already been developed where under complaint can be registered through a 'Complaint Form' available online as well as the SELECT office. The Complaint Box is also mandatory to be affixed at every sub-project site. The project is going to have an easy

to remember phone number dedicated to complaint section at PMIU. The same number shall also be available on WhatsApp so that grievances could be raised through that platform as well[47].

GRM Focal Person will be available at all sub-project sites to receive the complaint in person and to issue the receipt.

Workers' grievances are specific in nature as along with violation of human rights they result into non-enforcement of labor laws and International Labor Standards (ILS). Therefore, specific arrangements are required for redress of workers' grievances.
In order to address grievances of individual and collective nature two types of committees have been proposed in the below table 43 & 44. All grievances lodged by sub-project workers will be referred to the Workers GR Committees for resolution.

Workers Grievance Redress Mechanism (GRM) Accessibility and Channels:

To ensure that contractor workers have equal access to a fair and effective grievance redressal mechanism, the Workers Grievance Redress Mechanism (GRM) will utilize multiple channels for submitting complaints. These channels are designed to be accessible, accommodating both in-person and remote methods for workers to report their grievances. The following channels will be available to contractor workers:

1. **In-Person Submissions**:
   - **GRM Desks**: GRM desks will be established at the site level, Taluka/District Education Office, and the project office. Workers can visit these desks to submit their grievances directly. The desks will be managed by the Community Liaison Officer (CLO) of the contractor, who will ensure that all grievances are documented in a GRM register.
   - **GRM Register**: The CLO will maintain a GRM register at the site level to record all grievances received from workers. This register will be regularly updated and shared with the project management to ensure transparency and follow-up on grievance resolution.
2. **Remote Submissions**:
   - **Unified Access Number (UAN)**: A dedicated phone line will be available for workers to call and report their grievances. This number will be promoted through banners and notices at the work sites and offices.
   - **WhatsApp**: A dedicated WhatsApp number will be available for workers to send their grievances via text or voice messages, providing a convenient and widely used platform for communication.
   - **Email**: An official email address for grievance submissions will be provided, allowing workers to send their complaints electronically. This option is particularly useful for those who have access to email facilities.
   - **SMS**: A specific phone number will be designated to receive SMS messages, allowing workers to submit their grievances via text message.
   - **Postal Services**: A postal address will be provided for submitting written grievances. This option ensures that workers who prefer traditional mail can still participate in the GRM.
3. **Awareness and Accessibility**:
   - **Banners and Notices**: Information about the GRM channels will be displayed prominently at all work sites in multiple languages (Sindhi, Urdu, and English) to ensure that all workers are aware of the available grievance submission methods.
   - **Community Liaison Officer (CLO)**: The CLO will play a key role in facilitating the grievance process for workers, helping in submitting grievances, and ensuring that all complaints are properly recorded and addressed.

[47] SELECT GRM

- **Regular Training and Orientation**: Regular training sessions will be conducted to inform workers about the GRM, how to submit complaints, and the process for grievance resolution. These sessions will also emphasize confidentiality and protection of complainants' identities.

By providing a variety of accessible channels and proactive support from the Community Liaison Officer and other project staff, the Workers GRM aims to create an inclusive and efficient grievance redressal environment. This ensures that all contractor workers can effectively raise and resolve their concerns, promoting a fair and transparent work environment

Table 42: Scope of GR Committees

GR Committee	Jurisdiction
Workers' District GR Committee	Individual grievances including non-payment, less payment and delayed payment in wages, working hours, holidays, leaves and rest, welfare measures at workplace, difference between workers, discrimination, etc.
Workers' Project GR Committee	Collective grievances including issues relating to workers' organizations, workers' participation, issues relating to overall provision of basic rights to workers, child labor and forced labor, violation of human rights/ non-observance of LMP, non-compliance of OSH provisions, SESSI, EOBI, etc.

Table 43: The composition of Workers' Project GR Committee

Sr. No.	Designation	Position
1	SELECT Project Coordinator	Chairperson
2	Lead Project Engineer	Member
3	Social Safeguard Specialist	Focal Person and Member
4	Environmental Specialist	Member
5	Gender Specialist	Member
6	Deputy Director labor	Member
7	Workers' Representative	Member
8	Coopted Member	Member

Terms of Reference (ToRs) of Workers' Project GR Committee.

- The existing complaint registration/ receiving arrangement under SELECT-GRM is workers' friendly thus may be used for the GRM specific for workers also. Workers can file complaint on phone, submit simple hand written application either in Urdu or Sindhi to the site focal persons, send it through email, website, complaint box or post mail.
- The project will notify Focal Persons at the District and Project levels who will be responsible for processing, administration and resolutions of complaints and to maintaining record of the complaints.
- It is the responsibility GRM Focal Person at every project site to receive the complaints every day from all channels and after registration and issuing receipt (with number and requisite timeline, if required), the complaint relating to workers may be forwarded to the District Focal Person where the complaints relating to individual grievances will be tackled at the district level and complaints regarding collective grievances will be forwarded to the Project GRM Focal Person.
- In case of complaints of individual nature including complaints regarding SE, SH, GBV, SEA and VAW, the District GRM Focal Person will take immediate action for matters relating to

the concerned person/ contractors/ firms/ project and will ensure that the individual grievances are resolved in 7 working days.

- In the complaints relating to SE, SH, GBV, SEA and VAW, the Focal Person will intimate the Gender Specialist and update him/ her about the progress in respect of that particular complaint.
- In case of complaints of collective nature, the Project GRM Focal Person will take immediate action for matters relating to the concerned person/ contractors/ firms/ project and will ensure that the complaints of collective nature are resolved in ten working days.
- The Project GRM Focal Person and District GRM Focal Persons will be responsible to develop and maintain record of all complaints received, redressed and unresolved and will present in the meeting of the respective GRM Committees for review.
- Project Social Safeguard Specialist who is member of the district level GRC and Focal Person of project level GRC will also coordinate the work at both levels. Along with other matters, the Committees will also advise the Focal Persons and the project for further action in case of unresolved complaints.
- District GRM Focal Person (representative from D&S firm) will be responsible for training, orientation, coordination and timely redress of complaints of the project workers in the district.
- Social Safeguard Specialist SELECT will be overall responsible for training, orientation of the relevant staff on GRM, coordination, ensuring timely redress of grievances, and policy issues regarding GRM.
- The Gender Specialist will be responsible for coordinating and facilitating the victims in the complaints relating to SH, SE, GBV & SEA, amongst other responsibilities, as and when such complaints are received. He/ She will also keep and maintain records of all such complaints, do follow-up and present report bi-annually to the SELECT GRC.
- In order to review the progress and oversight the GRM, both GR Committees will meet on monthly basis or as per need; the Committees are also supposed to advise the project on functioning of GRM and improvement in the mechanism on the pattern of Project's GRM.
- Representative of community workers should also be included in the GRM Committees when the complaint under discussion relates to community workers.
- Complaints regarding individual grievances and collective grievances should be displayed on the dashboard of SELECT.
- Workers' Representatives may be oriented towards GRM and role and functioning of the mechanism and the committees. They should remain in contact with GRM Focal Persons so that workers' complaints and issues regarding their grievances are addressed quickly.

Table 44: The Composition of Workers' District GR Committee

Sr. No.	Designation	Position
1	District Education Officer	Chairperson
2	Social Safeguard Specialist	Member
3	Social and Gender Specialist (D&S Firm)	Focal person and Member
4	Concerned Taluka Education Officer	Member
5	Assistant Director Labor	Member
6	Workers' Representative	Member
7	Coopted Member	Member

Terms of Reference (ToRs) of Workers' District GR Committee.

- The Workers' District Grievance Committee will established to address individual grievances raised by workers within the project Districts.
- The committee aims to provide a fair and effective mechanism for resolving grievances related to the following issues: Non-payment, less payment, and delayed payment of wages, working hours, holidays, leaves and rest periods, Welfare measures at the workplace, Differences between workers, Discrimination based on gender, ethnicity, religion, or other factors.
- The Social Safeguard Specialist who is member of the district level GRC and Focal Person of project level GRC will also coordinate the work at both levels. Along with other matters, the Committees will also advise the Focal Persons and the project for further action in case of unresolved complaints.
- District GRM Focal Person (representative from D&S firm) will be responsible for training, orientation, coordination and timely redress of complaints of the project workers in the district.
- Social Safeguard Specialist SELECT will be overall responsible for training, orientation of the relevant staff on GRM, coordination, ensuring timely redress of grievances, and policy issues regarding GRM.
- Coopted member will not be permanent, he/she will be nominated by the Chairperson on need basis from the community, civil society contractors, sub-contractors, technical person, OSH specialist, law expert, etc.
- The Social & Gender Specialist (D&S Firm) will be responsible for coordinating and facilitating the victims in the complaints relating to SH, SE, GBV & SEA, amongst other responsibilities, as and when such complaints are received. He/ She will also keep and maintain record of all such complaints, do follow-up and present report monthly to the SELECT GRC.
- In order to review the progress and oversight of the GRM, both GR Committees will meet on monthly basis; the Committees are also supposed to advise the project on functioning of GRM and improvement in the mechanism on the pattern of Project's GRM.
- The Workers' District Grievance Committee shall provide periodic reports to the Workers' Project Grievance Committee, project management, and other relevant stakeholders, highlighting the number of complaints received, their nature, status, and actions taken for resolution.
- These Terms of Reference outline the roles, responsibilities, and procedures of the Workers' District Grievance Committee. By adhering to these terms, the committee aims to ensure a transparent and effective mechanism for addressing individual grievances and promoting a harmonious work environment within the project.

Note: *It may be noted that GRM is not a substitute of the legal/ judicial and administrative forums available to the workers to redress individual as well as collective grievances. It will also not impede worker's access to these forums.*

ANNEXURES