Program Safeguard Systems Assessment

July 2022

Pakistan: Khyber Pakhtunkhwa Health Systems Strengthening Program (KPHSSP)

PROGRAM SAFEGUARD SYSTEMS ASSESSMENT

1. Pakistan is a lower middle-income country with a per capita gross domestic product (GDP) of $1,562.3 in 2021.[1] The coronavirus disease (COVID-19) adversely impacted the economy in 2020, prompting a revision of the GDP forecast from a pre-COVID-19 growth projection of 2.6% to a contraction of 1.0% in fiscal year (FY) 2020. For FY2021, GDP growth was 5.6% and is forecasted to be 4.0% for FY2022.[2]

2. Khyber Pakhtunkhwa Province (KPK) lies in northwestern Pakistan with an estimated population of 35.5 million by 2017,[3] projected to have grown to 38.5 million in 2021,[4] including the former Federally Administered Tribal Areas which were merged with KPK in 2018 and are denoted as the "merged districts" as opposed to the "settled districts." As in the rest of Pakistan, COVID-19 has disrupted essential health services in KPK including immunizations, maternal and child health services, and noncommunicable disease treatment, particularly in the first half of 2020.[5]

3. In 2018 Pakistan's health sector ranked 154th out of 195 countries in terms of overall system performance.[6] Health care was devolved to the provinces in 2010 under the 18th Amendment of the Constitution making the provinces responsible for health service delivery. The Khyber Pakhtunkhwa Health Sector Strategy 2010–2017,[7] and National Health Vision 2016–2025,[8] inform the Khyber Pakhtunkhwa Health Policy 2018–2025 (KPHP),[9] which contains the Department of Health's (DOH) goal of strengthening the health system and providing quality health care services that are accessible, efficient, and equitable, especially for the poor and vulnerable. The KPHP stresses the execution of a minimum health service delivery package at primary and secondary health facilities, and focus on renovation of existing hospitals as a priority. The total budget of the GOKP for the FY2022 is PRs1,118 billion, while the budget of the DOH is PRs142 billion, which amounts to 12.7% of the total budget and shows the commitment to improving the health sector. Nonetheless, the health sector has been under-invested and health infrastructure is extremely limited. In 2020,[10] the number of sanctioned beds in KP was 0.54 beds per 1,000 population.[11]

4. KPK is facing tremendous challenges in the health sector. The health outcomes of the province—though, in some instances, less bad than the national average—need significant improvement and present an uphill task to achieving the Sustainable Development Goals (SDGs). In KPK, the neonatal mortality rate is 41 per 1,000 live births, the infant mortality rate is 53 per

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1 IMF World Economic Outlook, April 2022
2 Asian Development Bank (ADB). 2022. Asian Development Outlook (ADO) 2022: Mobilizing Taxes for Development. Manila.
3 Preliminary results from the 2017 census.
4 Estimation by applying population growth rates for Pakistan for 2017 to 2020 from World Bank's Open data.
5 Gavi, the Vaccine Alliance (Gavi). 2020. Gavi-COVID-19 -Situation -Report #-14. 28 July. Islamabad.
6 Fullman, N., Yearwood, J., Abay, S. M., Abbafati, C., Abd-Allah, F., Abdela, J., and Chang, H. Y. (2018). *Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016*. The Lancet, 391(10136), 2236-2271.
7 GOKP, DOH. 2010. *Khyber Pakhtunkhwa Health Sector Strategy 2010–2017*. Peshawar.
8 Government of Pakistan. Ministry of National Health Services, Regulations and Coordination. 2016. *National Health Vision 2016–2025*. Islamabad.
9 GOKP, DOH. 2018. Khyber Pakhtunkhwa Health Policy (2018–2025). Peshawar.
10 The number of actual beds may differ from the number of sanctioned beds. Some hospitals have more and others fewer beds. In general, the number of sanctioned beds can be considered as an upper limit to the total number of hospitals beds in the province, noting that the private sector barely offers inpatient services.
11 GOKP, DOH. 2020. *PC-I for Revamping of Non-Teaching DHQ Hospitals in Khyber Pakhtunkhwa. ADP No. 2020-21: 200049*. Peshawar.

1,000 live births, the under-five mortality rate is 64 per 1,000 live births,[12] and the maternal mortality ratio is 175 per 100,000 live births.[13] The health indicators are worse in the merged districts (e.g., maternal mortality ratio at 261 per 100,000 live births in 2014).[14] Because of the lack of access to quality primary and secondary health services, there is significant bypassing of primary health care (PHC) and SHC, with tertiary hospitals carrying the bulk of the load. This is both costly to the government and to patients who have to travel far, and leads to constraining tertiary services for those who really need it.[15]

5. The GOKP, cognizant of the above-mentioned challenges, has made improvement of the quality-of-service-delivery in PHC and SHC, a central tenet of its health strategy (footnote 9). The (Revamping of Non-Teaching District Head Quarter Hospitals Program) RSHC government program aims to transform SHC by (i) upgrading infrastructure of 33 existing SHC facilities, (ii) providing quality equipment, (iii) ensuring posting and availability of medical, technical, and administrative staff, (iv) efficient outsourcing of certain services to the private sector, (v) introducing and enhancing health management information systems including electronic medical records, and (vi) introducing quality assurance regimes.[16] The Minimum Health Services Delivery Package for Secondary Care Khyber Pakhtunkhwa will be implemented.[17]

6. **Alignment with ADB strategic priorities**. The program is aligned with Asian Development Bank's (ADB) Strategy 2030, and its (i) operational priority 1, which commits to supporting developing member countries achieve universal health coverage (UHC) through improved quality and coverage of health care services, (ii) operational priority 2, which concerns improving women's access to infrastructure and services, and notably improving quality and access to women's and girls' health services, (iii) operational priority 3, regarding climate change and disaster resilience, (iv) operational priority 5, with regard to increased rural investment, and (v) operational priority 6, concerning strengthening of governance and institutional capacity.[18] It is also aligned with ADB's country partnership strategy for Pakistan, 2021–2025, which emphasized the crucial role of health in building resilience by strengthening human capital and social protection to enhance productivity and people's well-being.[19] ADB will focus on the quality of health care by combining improvements in infrastructure, governance, and management for better overall outcomes.

7. The RBL program's impact will be accessible, equitable, and quality health care for all people of KPK to advance the community's well-being, productivity, and prosperity (footnote 9). The outcome will be enhanced quality of care of secondary hospital services in KPK. The beneficiaries will be the estimated 35.5 million catchment population as per 2017 census (footnote 3), and specifically PHC referrals, patients in need of emergency care, and women delivering in the hospital. Women will benefit disproportionally from maternal and women health services

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[12] National Institute of Population Studies Pakistan. 2019. Pakistan Demographic and Health Survey (2017–18). Islamabad.
[13] National Institute of Population Studies. 2020. Pakistan Maternal Mortality Survey 2019. Islamabad.
[14] Government of Khyber Pakhtunkhwa (GOKP), DOH, 2020. *Health Reform Blueprint – Discussion document*. Peshawar.
[15] ADB. 2019. Khyber Pakhtunkhwa Health Sector Review – Hospital Care. Manila.
[16] GOKP, DOH. 2022. *Project Concept Form for Revamping of Non-Teaching DHQ Hospitals in KP and Associated Results-Based Lending (RBL) from the Asian Development Bank*. Peshawar.
[17] GOKP, DOH. 2019. *Minimum Health Services Delivery Package for Secondary Care Khyber Pakhtunkhwa.* Peshawar.
[18] ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific.* Manila.
[19] ADB. 2020. *Country Partnership Strategy: Pakistan, 2021–2025—Lifting Growth, Building Resilience, Increasing Competitiveness*. Manila.

provided and jobs generated such as nursing jobs. At the outcome level, two disbursement-linked indicators (DLIs) and one other indicator are used to track the achievement of results. DLI1 measures the improvement of SHC hospital services through the increase of (i) outpatient contacts, and (ii) inpatient admissions. DLI2 records maternal care amelioration (through the number of deliveries with skilled birth attendants).[20] The other indicator tracks the maternal mortality ratio.[21] There are 5 outputs described below, more details can be found in the design and monitoring framework.[22]

8. **Output 1: Clinical protocols, standards, and guidelines are available and implemented at SHC hospitals**. This output concerns the quality of care relating to medical and operational practices. Medical processes will be improved by rolling out the government's program of standardized clinical protocols, and gender-sensitive clinical pathway will be developed and implemented.[23] Hospital-based quality committees—which discuss, analyze and propose recommendations on health operational topics such as hospital hygiene and performed medical procedures—will be established and operational. As a measure of quality of care, the surgical site infection rate for selected interventions will be monitored.[24] DLI3, stipulating annual quality reports for the monitoring, feedback, and review mechanisms for key performance and quality indicators, are a composite indicator which tracks the various indicators under output 1.

9. **Output 2: Hospital infrastructure and medical equipment modernized**. The output supports the government's drive to use international best practices when upgrading the infrastructure, and modernizing the equipment.[25] DLI4 is based on a carefully weighed checklist of ambitious but practical sub-indicators. DLI5 also brings best international practices to the management of equipment by requiring the essential equipment of important departments to be tagged, registered, and functioning, thereby improving the durability of the equipment and sustainability of the program. Pakistan suffers power cuts and regularly applies loadshedding. Hospitals often use diesel-fueled generators as a back-up power supply. Energy efficient renovations and equipment will be explored as well as the use of solar energy.

10. The investment plans for the RSHC do mention that solar energy as back-up will also be explored to ensure continuous supply of electricity. Yet, no specific amount has been reserved for solar panels and/or batteries in the investment plans. An initial amount of $0.62 million for climate change mitigation measures, for instance as a pilot in one hospital, mainly for solar energy panels is indicated. During program implementation further climate change mitigation measures will be explored.

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[20] Skilled birth attendance can help prevent maternal and neonatal deaths, and is part of Sustainable Development Goal (SDG) 3: Ensure healthy lives and promote well-being for all at all ages. Target 3.1 specifies that by 2030, the global maternal mortality ratio should be reduced to less than 70 per 100,000 live births. There are,2 sub-indicators, indicator 3.1.1: Maternal mortality ratio Indicator, and 3.1.2: Proportion of births attended by skilled health personnel.

[21] Maternal mortality ratio, while an indicator of the overall quality of care of the health system, also depends on issues outside of the scope of the program, e.g., nutrition, the security situation, and is noteworthy difficult to estimate. It is therefore not linked to disbursement.

[22] The design and monitoring framework is in Appendix 1 of the report and recommendation of the President.

[23] Gender-sensitive clinical pathways refer to the protocols within the hospitals for treating patients clinically but also humanly. These patient-centered protocols also take into consideration women's rights and privacy. For example, medical staff should not be barging into patient rooms while a patient is consulting their doctor.

[24] To prevent the indicator resulting in a perverse incentive, where medical providers admit only low-risk patients—even if the patients should be treated at their level of care—the three selected tracer diagnoses or procedures represent primarily sterile interventions, where wound contamination can only be caused by the surgeon and/or other health workers involved and/or the instruments or linen used.

[25] Within the investment budget for the RSHC, the investment for civil works represents 42% while the investment for equipment is at 33%.

11. **Output 3: Human resources and health service planning reinforced**. This output will support the DOH's aim to reinforce, modernize, and reform the HR management in the health sector. Digitalization and the operationalization of a human resources management information system is included as a performance indicator. To support DOH's goal of HR reform, one indicator concerns legal provisions for facility-specific contractual hiring of medical staff, while a second indicator is included for internal recruitment of qualified health managers, promoting merit rather than seniority-based posting of hospital managers. DLI6 tracks the on-site availability in SHC program hospitals of qualified and gender-balanced HRH, and is complementary to the World Bank's Spending Effectively for Enhanced Development (SPEED) DLI to have PHC facilities adequately staffed.[26]. DLI7 considers gender aspects under this output, such as training on gender-based violence and on the Protection Against Harassment of Women at Workplace Act 2010, the establishment of inquiry committees, and of counseling desks on reproductive health and mental health.

12. **Output 4: Medicine supply chain management upgraded**. Under this output, an indicator will monitor the refurbishing of hospital pharmacies and their equipping with information and communication technology (ICT) and software. To ensure that the upgrading leads to tangible results for the patients, DLI8 will track the availability of essential medicines, vaccines, and supplies with a 1-month stock buffer. Another indicator will assure that the procurement of medicines and consumables is compliant with the National Competitive Bidding regulations and procedures.

13. **Output 5: Service delivery effectiveness improved**. This output will support the GOKP and DOH in reforming hospital service management and increasing private sector engagement. DLI8, on active contracting of service providers, will track service contracts for clinical services and for non-clinical services. Non-disbursement related indicators will monitor hospital financial autonomy, such as (i) greater autonomy to use own revenues, and (ii) that by 2025 the hospital-generated revenues represent at least 25% of the hospital's total budgets. DLI9, on fiduciary and financial management, concerns (i) the operationalization of the project management and implementation unit (PMIU) through the hiring of dedicated staff, (ii) updating and publishing of project procurement plans on Khyber Pakhtunkhwa Public Procurement Regulatory Authority website, and (iii) timely submission of financial and audit reports.

A. Program Environmental and Social Impacts and Risks

14. **Environment.** The RBL program components include some unsubstantial construction work as well as the provision of hospital equipment. Similarly, in addition to the localized environmental impacts during the project implementation, there is a risk of environmental degradation due to improper collection, storage, transportation, and disposal of hospital waste. This is further discussed in detail in Appendix 1. Accordingly, the project has been classified as *Category B for environmental safeguards* as per ADB Safeguards Policy Statement (SPS) 2009 and may require the preparation of Initial Environmental Examination studies (IEEs) and Environmental Management Plans (EMP). Preparation of IEE may also be required under national environmental regulations. A detailed Environmental Impact Assessment (EIA) study will not be required.

15. **Involuntary Resettlement**. No involuntary resettlement (IR) impact is envisaged, as the program activities and civil works will be implemented within the designated boundary line of the

[26] World Bank. 2021. *Khyber Pakhtunkhwa Spending Effectively for Enhanced Development (SPEED) Program*. Washington, DC.

respective SHCs. Although no IR is envisaged in the program, the program action plan will provide for meaningful consultations to be held with key stakeholders including the SHC staff and neighborhood communities to apprise them of the overall program objectives. The program is rated *Category B* for IR.

16. **Indigenous Peoples**. "Kalash" or "Kalasha" are considered Indigenous peoples in Pakistan as per descriptions of indigenous peoples in ADB's SPS.[27] According to the latest census figures (2017),[28] the population of Kalash is about 3,800. This tiny community inhabits three valleys of Birir, Rambur and Bamburet along the Pak-Afghan border in District Chitral of KPK.[29] Under the RBL program, there is no provision for land acquisition and therefore there is no adverse impacts on Kalash people's land or territory. The program will not negatively affect the dignity, human rights, livelihood systems, and culture of Kalash people. As explained earlier, the RBL program's main activities include: (i) upgrading infrastructure of existing SHC facilities; (ii) providing quality equipment and infrastructure; (iii) ensuring posting and availability of medical, technical; and administrative staff; (iv) efficient outsourcing of certain services to the private sector; (v) introduction and enhancing of health management information systems and electronic medical records; and (vi) introduction of quality health care regimes, and Kalash people will benefit from the program at the same level as other beneficiaries. However, there are no activities specifically designed for the benefit of Kalash people hence the program is categorized C for indigenous peoples safeguards. Although the program is rated *Category C*, the program will include an action plan to ensure that Kalash people can access to the same level of services to be provided by the program.

B. Climate Change Risks

17. During the past few decades Pakistan has witnessed a number of climate change induced hazards and shocks, having considerable variances. These shocks have been witnessed as floods due to torrential rains in the catchment basin, long spells of droughts due to no rains, rising temperature extremes in summers, heatwaves disturbing the daily routine of human population and impacting biophysical environment, severe winters and dust / sandstorms in the down-country plains.[30] However, during recent times, a number of warnings have been issued by Pakistan meteorological department (PMD) to the residents for such threats.

18. PMD broadcast their metrological data for use by others. It is effectively being utilized by Pakistan Maritime Security, Civil Aviation, Pakistan Air Force, Pakistan Navy and a number of other organizations. It is based on PMD's data that Natural Disaster Management Authority (NDMA) and Provincial Disaster Management Authorities (PDMAs) are also preparing their hazard mapping for various climate change induced shock effected zones.

C. Safeguard Policy Principles Triggered

19. Upon review of the relevant Government of Khyber Pakhtunkhwa policies and ADB's SPS (2009), and in light of activities and impacts that may be associated with the proposed RBL program, the assessment finds the Environmental safeguards principles 1 to 7, and 10 to be triggered; Involuntary Resettlement safeguard principles 1 to 12 are relevant; and Indigenous

[27] ADB. 2009. Safeguard Policy Statement. Manila

[28] Bureau of Statistics. 2020. *6th Population and Housing Census. I*slamabad,

[29] Birir, Rambur, and Bamburet are located at a distance of 34, 32 and 36 Kilometers respectively from Chitral city.

[30] http://www.gcisc.org.pk/extremeevent.php/ https://www.newsecuritybeat.org/2019/12/foresight-action-improving-predictive-capabilities-extreme-weather-water-events-pakistan/ https://www.arabnews.pk/node/1798821/pakistan

Peoples safeguard principles 1-3 are relevant. The table summarizes how the RBL program triggers the safeguard policy principles.

Table 1: Safeguard Policy Principles Triggered

Principles	Description
Environment	
Principle 1: Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.	• It is essential to screen every project submitted for financing, ensuring that no Category "A" project is financed. • Screening is required to determine whether an IEE is required under the Khyber Pakhtunkhwa EPA regulations, which will be made part of the feasibilitystudy. • As per REA checklist, it is a Category "B" project, which might require an IEE/EMP to be prepared.
Principle 2: Conduct an environmental assessment for eachproposed project.	Based on the screening tool (REA Checklist), the RBL program falls in category "B", Hence, the subprojects would require preparation of IEE study to be prepared. A detailed Environmental Management Plan may also be prepared in case theF construction works are not substantial.
Principle 3: Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.	• RBL program is an intervention of "No Alternatives". • Furthermore, it falls in Category "B", which might require an IEE/EMP to be prepared.
Principle 4: Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planningand management. Prepare an environmental management plan (EMP). Key considerations for EMP preparation include mitigation of potential adverse impacts to the level of no significant harm to third parties, and the polluter pays principle.	• As required by SPS 2009 and the KP-EPA regulations, an IEE study will be prepared for all Category 'B' projects with the EMP being a part of the IEE study. • An Environmental Checklist will be prepared for this Category "B" project, as per standard practice • It will include a list of environmental mitigation and monitoring measures.
Principle 5: Carry out meaningful consultation with affected people. Ensure women's participation. Involve stakeholders early in the project preparation process. Continue consultations with stakeholders throughout project implementation. Establish a grievance redress mechanism.	• Preliminary reconnaissance survey and limited consultations were made at the select SHCs and detail consultation will be undertaken with all project affected communities and their concerns will be addressed in a befitting manner. • Consultation level will be commensurate to the project magnitude and category. • Grievance redress mechanism will also be incorporated for the implementation phase.
Principle 6: Disclose a draft environmental assessment (ncluding the EMP) in a timely manner.	• Efforts will be made to share the hard copies upon demand, particularly to the beneficiaries. All environmental documents will be posted on RBL program website.
Principle 7: Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.	• Being a Category "B" project, an EMP will be prepared as part of IEE study. A detailed EMP will also be prepared by the contractor • Based on the project category, appropriate activity monitoring will be undertaken for the safeguard impacts. • Monitoring reports willbe produced and posted on the RBL program website. Semi Annual Monitoring Reports (SAEMR's) will also be posted on ADB website.
Principle 8: Do not implement project activities in areas of critical habitat, unless (i) there are no measurable adverse impacts, (ii) there is no reduction in the population of any recognized endangered or critically	• Not triggered for the RBL program • During the screening process, an assessment will be made whether the project or any of its component is located in a protected area.

Principles	Description
endangered species, and (iii) any lesser impacts are mitigated.	• Any project located in a national park, reserved forest or wildlife sanctuary will be excluded. • If so, such projects will not be undertaken by the RBL program.
Principle 9: Apply pollution prevention and control technologies and practices consistent with international good practices.	• Current unsafe practices of handling the hospital waste are a potential health hazard as well as a source of water and soil contamination. • Similarly, open burning of the hospital waste or through the incinerator is also not environmentally friendly and cause air pollution. • All participating SHCs management and the respective staff will be educated about the potential health hazards and a proper hospital waste management system will be set in place for acceptable environmental practices as well as safe disposal of waste generated from the hospitals.
Principle 10: Provide workers with safe and healthy working conditions, and prevent accidents, injuries, and disease.	• Suitable health and safety measures will be integral part of the routine working for all concerned. • Recommendations will be made for the use of appropriate Personal Protective Equipment's (PPE's).
Principle 11: Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveysthat employ qualified and experienced experts during environmental assessment.	• Not triggered • RBL program is unlikely to affect any cultural resources. • Screening procedure will include provisions to exclude any project that will affect any cultural, historical, religious, regional and/or national heritage. A chance find procedure will also be made part of IEE study to guide the contractor on actions to be taken in case of finding a potential artifact.
Involuntary Resettlement	
Principle 1: Screen the subproject early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.	The Program Implementation Unit under the Department of Health will conduct screening of all prospective subproject to identify if any involuntary resettlement impacts are expected at the planned activity site and prepare a resettlement plan if required
Principle 2: Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations.	Meaningful consultations will be held with users of project sites (including informal users), key stakeholders including the SHC staff and neighborhood communities to apprise them of the overall program objectives and to obtain needed information to assess impacts and identify appropriate mitigation measures.
Principle 3: Improve, or at least restore, the livelihoods of all displaced persons with needed assistance	Any livelihoods that are affected, whether permanent or temporary, will be assisted with measures to mitigate income losses and restore livelihoods.
Principle 4: Provide physically and economically displaced persons with needed assistance.	Any livelihoods that are affected, whether permanent or temporary, will be assisted with measures to mitigate income losses and restore livelihoods. Assistance will be provided to any physically displaced persons to enable secure accommodation.
Principle 5: Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.	Displaced poor and other vulnerable groups, including women, will be assisted through measures set out in a resettlement plan to improve their living standards to at least national minimum standards through livelihood restoration assistance and support as needed to have secure accommodation.
Principle 6: Develop procedures in a transparent, consistent, and equitable manner if land acquisition is	Land acquisition is not expected. However, in the event of land is acquired through negotiated settlement, procedures

Principles	Description
through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.	will be put in place to ensure transparent process, access to information about land values and third party monitoring and verification as per para ADB SPS Appendix 2, para. 25.
Principle 7: Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	Any affected informal users of project sites will be included in the resettlement plan for compensation for lost non-land assets as well as assistance to enable them to restore their living standards.
Principle 8: Prepare a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.	Resettlement plans will be prepared to mitigate any economic or physical displacement or restricted access. The resettlement plans will adopt compensation and assistance measures in accordance with the entitlements set out in the entitlement matrix included with this PSSA and specify required budget and implementation arrangements
Principle 9: Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders.	
Principle 10: Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits.	Budget and resources to plan and implement involuntary resettlement will be included and monitored in the project's overall budget.
Principle 11: Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	Any compensation and assistance required will be set out in the resettlement plan and provided to affected persons prior to displacement. Resettlement plan implementation will be subject to external monitoring and verification.
Principle 12: Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring.	No IR impacts expected. However, subprojects will be monitored to ensure that IR impacts have been mitigated as appropriate and/or avoided.
Indigenous Peoples	
Principle 1: Screen early on to determine: (i) whether IP/SEC are present in, or have collective attachment to, the project area; and (ii) whether project impacts on IP are likely.	The RBL program is being implemented in Khyber Pakhtunkhwa Province. It includes a DHQ located at Chitral district, which is nearest to where the Kalash population live in three valleys of Chitral. Therefore, there is a great likelihood that the IPs will also be the recipients of the program activities. However, the program will not have any negative rather additional positive impacts on the Kalasha people.
Principle 2: Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential project impacts, both positive and adverse, on IP. Give full consideration to options the affected IPs prefer in relation to the provision of project benefits and the design of mitigation measures.	The program will ensure that same level of services will be delivered to Kalash people.
Principle 3: Undertake meaningful consultations with affected IPs communities and concerned IP organizations to solicit their participation.	In compliance with the principle, the program will ensure that meaningful consultations with the IPs are held to solicit their participation.
Principle 4: Ascertain the consent of affected IP/SEC to the following project activities: (i) commercial development of the cultural resources and knowledge of IP; (ii) physical displacement from traditional or customary lands; and, (iii) commercial development of natural resources within customary lands under use that	The principle is not applicable to the program.

Principles	Description
would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of IP.	
Principle 5: Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected IP/SEC participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources and their benefits are equitably shared.	The principle is not applicable to the program.
Principle 6: Prepare an IPP that is based on the social impact assessment with the assistance of qualified and experienced experts and that draw on indigenous knowledge and participation by the affected IP communities.	The proposed program is categorized category C for IP, therefore no IPP required.
Principle 7. Disclose a draft IPP, including documentation of the consultation process and the results of the social impact assessment in a timely manner.	No IPP required
Principle 8. Prepare an action plan for legal recognition of customary rights to lands and territories or ancestral domains when the project involves (i) activities that are contingent on establishing legally recognized rights to lands and territories that IPs have traditionally owned or customarily used or occupied, or (ii) involuntary acquisition of such lands.	The principle is not applicable to the program.
Principle 9. Monitor implementation of the IPP using qualified and experienced experts; adopt a participatory monitoring approach, wherever feasible; and assess whether the IPP's objective and desired outcome have been achieved.	No IPP required.

ADB = Asian Development Bank, EIA = environmental impact assessment, EMP = Environmental Management Plan, EPA = Environmental Protection Act, IEE = initial environmental examination IP = indigenous people, IPP = Indigenous People Plan, IR = involuntary resettlement, ISPDP = Integrated Social Protection Development Program, PPE = personal protective equipment, REA = rapid environmental assessment, SEC = small ethnic community, SPS = safeguards policy statement.
Source: Asian Development Bank.

D. Diagnostic Assessment

1. Assessment Methodology and Resources

20. This preliminary assessment is prepared following ADB's staff guidance for piloting RBL for programs (2013) and based on findings of: (i) review of existing national and provincial safeguards related legal provisions and regulatory frameworks; (ii) conversation with the RSHC point of contact in DOH, and (iii) site visit to representative 10 SHCs and meetings with relevant SHCs staff.

2. Environment

21. The RBL will be implemented in Khyber Pakhtunkhwa with the following applicable relevant provincial statutes and policy. A summary of these laws and policy are given in Appendix-1:

- KP Environmental Protection Act 2014

- KP Forest Ordinance 2002
- KP Wildlife & Biodiversity Act, 2015
- KP Climate Change Policy June 2016

22. The RBL program involves physical construction works of engineering nature. Infrastructural development of civil nature would be undertaken throughout the implementation span of this program. This aspect had adequately been analyzed in depth during the process of rapid environmental assessment. As a result, it has been declared a Category “B” project, which might require the preparation of an IEE/EMP.

23. **Policy and legal framework.** In general, Pakistan’s environmental safeguards system is broadly in line and in conformity with most of the ADB SPS 2009 requirements related with environmental safeguards.

24. **Implementation practices.** DOH has already worked with the World Bank and a few other international development partners and funding institutions.

25. **Identified gaps.** At the time of this study, KPK department of health was struggling with the improvement in current hospital waste management practices by introducing an improved hospital waste management plan, with no significant progress and material improvement status at the proposed SHCs. The poor status of hospital waste management practices was also noted during field visits to the selected SHCs, currently proposed in Phase-1 and Phase-2 of RBL program (see annexure-1). The KP health department have expressed their difficulties in technical human resources, lack of experience in implementation of environmental safeguards, and to develop resilience for climate change induced shocks. However, they promised for nomination of an exclusive “focal person” for taking care of these aspects.

26. Due to lack of an acceptable hospital waste management plan and current poor practices at SHCs, RBL program displayed their willingness for capacity building related trainings of respective staff members in the fields of environmental safeguards and climate change induced shock resilience. However, this specific action is yet to be agreed with the KP MOH.

3. Involuntary Resettlement

27. **Policy and legal framework**. In Pakistan. The Land Acquisition Act (LAA) 1894 regulates the land acquisition process and enables the federal and provincial governments to acquire private land for public purposes through the exercise of the right of eminent domain. Land acquisition is a provincial responsibility and each province has its own province specific amendments in the Law and interpretation of the Act. Some provinces also have their own province specific implementation rules. The LAA and its implementation rules require that following an impact identification and valuation exercise, land and crops are compensated in cash at the current market rate to the titled landowners. The LAA mandates that land valuation is to be based on the last 3 to 5 years average registered land-sale rates. However, in several recent cases, the median rate over the past 1 year, or even the current rates, has been applied with an added 15% compulsory acquisition surcharge according to the provision of the law. In addition to the provisions of LAA, related regulations setting out the procedures for land acquisition have been provided in province specific rules. Salient features of the LAA are set out in the Social Safeguards Appendix.

28. **Implementation practices.** DOH has already worked with the World Bank and a few other international development partners and funding institutions but has limited capacity in managing involuntary resettlement risks.

29. **Identified gaps.** There are several differences between Pakistan's Land Acquisition Act of 1894 (LAA) and ADB's Policy on Involuntary Resettlement (IR). The LAA, in contrast to ADB SPS, does not require adequate consultation with affected parties. It simply requires that declaration and notice be given about temporary use of land or acquisition and the purposes for which it is required. The Act also does not require preparation of a plan documenting the process, and consultations undertaken with DHs. Other gaps include requirement to compensate and assist affected persons without legal rights to land, attention to vulnerable groups, indigenous people and severely affected persons, importance given to gender issues, monitoring of resettlement implementation, and disclosure of resettlement plans and monitoring reports. Gap filling measures are set out in the Social Safeguards appendix.

E. Safeguards Program Actions

30. In light of the above findings, and in compliance with the safeguard policy of ADB (SPS 2009), the program has prepared safeguards actions in key areas of environmental compliance and climate change integration in the components of the RBL program as shown in the Safeguards Program Action Plan below:

Table 2: Safeguards Program Action Plan

Issue	Proposed Action	Indicator	Responsibility	Timing
Environmental Safeguards:				
Develop Environmental Safeguards Capacity within DOH and PMIU	A Focal Person is designated /nominated.	Appointment of Focal Person is notified.	PMIU	Prior to commencement of physical activities.
Develop HWMP for all SHCs, operationalize the plan, onboard required human resource, train the staff to champion the HWMP.	The Safeguards Specialist at PMIU will ensure HWMP is prepared, and operationalized.	Environmental friendly collection and disposal of hospital waste.	PMIU	Preparation of HWMP before the completion of construction. Operationalize HWMP immediately after the completion of construction
Prepare IEE/EMP to address construction related environmental impacts	The IEE/EMP will be reviewed by ADB and approved by the client	Compliance with the IEE/EMP recorded	PMIU	Prior to commencement of bidding stage.
Ensure COVID-19 HSE Compliance	The Safeguards Specialist at PMIU will ensure that all project activities under RBL program are conducted while implementing COVID-19 precautionary measures as required by Pakistan's national COVID-19 requirements and the WHO guidelines on COVID-19.	Implementation of COVID-19 precautionary protocols/measures in areas where project activities are being conducted.	PMIU	During project implementation.

Climate Change Integration and adaptation to address the potential risks	SHCs vulnerable to climate change risks must include adaptation measures for: • engineering design of SHCs (e.g., ability of the building structures to withstand and respond to extreme weather events) • selection of equipment and machinery (e.g., ability to operate in the extended temperature ranges to account for extreme temperatures)	Climate adaptive hospital building design Climate change sensitive selection of equipment and machinery	PMIU	Prior to commencement of physical activities. Prior to selection of equipment and machinery.
Social Safeguards:				
Develop Social Safeguards Capacity within DOH and PMIU	A Social Safeguards Focal Person is designated.	Appointment of Focal Person is notified. Provision of training to focal person and PMIU staff.	PMIU	Prior to commencement of physical activities.
Prepare social safeguards screening and due diligence report for each project activity involving physical works.	• The social safeguards screening and due diligence report will be reviewed by ADB and approved by the client. • Screening and due diligence will include assessment that health facilities to be improved are located on land owned by the Government with no legacy issues and identification of involuntary resettlement impacts.	Compliance with the matters set out in the screening and due diligence report and that social safeguards impacts are assessed. Where IR impacts are identified a resettlement plan will be required.	PMIU	Following selection of sites and basic design and prior to commencement of physical activities.
Ensure meaningful consultations undertaken	The Safeguards Specialist at PMIU will ensure that meaningful consultations are undertaken with relevant stakeholders, including host communities and traditional leaders/designated representatives of IP communities prior to and during implementation of physical works.			

ADB = Asian Development Bank, DOH = Department of Health, EMP = Environmental Management Plan, ESMF = Environmental and Social Management Framework, ESSA = Environmental and Social Systems Assessment, GOKP = Government of Khyber Pakhtunkhwa, GOP = Government of Pakistan, HWMP = Hospital Waste Management Plan, IP = indigenous people, IPP = Indigenous Peoples Plan, IR = Involuntary Resettlement, KPK= Khyber Pakhtunkhwa, LAA= Land Acquisition Act, PMIU = project management and implementation unit, RBL= Results-Based Lending, RBL program = Khyber Pakhtunkhwa Health System Strengthening Program, SPS = Safeguard Policy Statement, SHC = Secondary Health Care facilities,
Source: Asian Development Bank.

ENVIRONMENT SAFEGUARDS

A. BACKGROUND

1. Key intervention areas of the proposed RBL program (including the unsubstantial construction, climate change adaptation, hospital waste management, and provision of equipment and machinery) were discussed during the Fact-Finding Mission.

2. In particular, to discuss key gaps and proposed actions for the RBL program, the consultant held multiple conversations with RBL program designated point of contact at the KP health department. During these conversations, the consultant raised the concern of the absence of a reasonably acceptable hospital wastes management practice at the proposed SHCs. To ascertain the referred concern a representative sample of 10 SHCs, proposed under phase-1 and phase-2 were selected for visual data collection and site due diligence. To mitigate these risks, the environmental safeguard action plan has been proposed above, and it will be further strengthened by the preparation of IEE/EMP.

3. In compliance with the safeguard policy of ADB (SPS 2009), the program has prepared safeguards actions in key areas of environmental and social compliance and climate change integration in the components of the RBL program as shown in the Safeguards Program Action Plan below.

B. ANTICIPATED ENVIRONMENTAL IMPACTS

4. It is anticipated that the project will have environmental impacts characteristic of small-scale considering unsubstantial construction and rehabilitation works will be carried out within existing hospitals on land owned by KP MOH. The potential environmental impacts include:

5. **Physical environment.** The main potential impacts during construction or rehabilitation are air quality due to fugitive dust generation in and around construction activities. Impacts during operation are expected from the storage and disposal of medical waste. Fuel and lubricants can contaminate groundwater and surface water if they are not properly stored and disposed. Potential impacts are generation of solid waste, sewage waste, medical waste and occupational and community health risks. Potential noise and vibration impacts during the construction activities of the project are also envisaged.

6. **Biological resources.** Potential impacts related to biological resources include a risk of habitat loss (small mammal breeding place, damage burrows, removal of trees in or along the hospitals etc.

7. **Socioeconomic and cultural/historical environment.** It is anticipated that potential impacts to the socioeconomic environment will be mostly positive and on income and unemployment trends. Potential impacts on archaeological, historical and cultural assets are not anticipated.

8. **Medical waste management.** Medical waste will also be generated from SHCs during the operation phase. Hence the waste would need to be properly handled, stored and disposed of in accordance with various national and International guidelines and best practices. Some of the medical waste storage and disposal options are provided below:

(i) **On-site storage/disposal**. This may include refrigerated storage which can last up to 90 days. Modern disposal systems such as infrared, autoclave and radiation-based systems can be installed for on-site disposal. These units are capable of processing infectious medical waste but have a limited design capacity. On-site incineration can also be considered but it has the main disadvantage related with excessive emissions especially if older or poorly designed systems is used[2].

(ii) **Off-site disposal option.** Off-site disposal increases the logistics challenge to safely transport infectious medical waste away from the hospital for proper disposal. Transport can be controlled by the use of "duty of care" [3]systems for the recording and tracking of material from source to disposal and the correct selection of transport vehicles and routes. Identifying temporary storage sites with adequate security may be challenging in urban areas. It is critical to secure and prevent all access to the waste. This will protect informal waste pickers from potential infection and avoid dispersal by scavenging animals

(iii) **Cement kilns.** The location of cement kilns is often within transport reach of hospitals. A standard cement kiln with a capacity of 3 million tons per year could process up to 100 tons of infectious medical waste per day through co-firing. Other industrial furnaces can similarly be used for the emergency disposal of waste. However, there may be modifications required to the fuel feed-in systems or additional plant to microwave/infrared pre- treat waste. Some cement kilns may have been modified to receive refuse derived fuel. Other kilns may require physical modification to receive medical infectious waste.

9. Hence, a waste management plan will need be prepared / modified by KP MOH for each hospital facility in accordance with the above-mentioned considerations as well as with national and provincial medical waste management regulations. Moreover, training programs at SHCs that specifically deal with hospital and domestic waste management will also be carried out to raise awareness and develop the capacity of KP MOH including SHCs, and district administrations. Lastly, the waste management plan will be regularly monitored to ensure proper implementation and to recommend any improvement and modification in the same.

10. Table 1 provides the anticipated impacts during various project phases and the mitigation measures.

Table 1: Summary of Potential Environmental Impacts

Phase	Potential Environmental Impact	Possible Mitigation Measure
Design/Pre-construction		

Community health, safety and security	• Inadequate design, construction, and maintenance of facilities to assure life and fire safety in health care facilities to which the public has access • Drawing and planning the construction of buildings by adapting to adjoining physical landscape and minimizing possible environmental issues. • Lack of emergency potable water reserves for the community • Air emissions, odors and mists/fumes from improper air handling leading to cross contamination and pathogen transmission • Safe disposal of sewer water from toilets • Drainage congestion and/water logging that may cause spread of vector-borne diseases • Increase water and energy	• Design of upgrading works will refer to the IFC EHS Guidelines for Healthcare Facilities (2007), IFC EHS General Guidelines (2007) and compliance to relevant national regulations • Consider the drainage system in upgrading design. • Prevent all solid and liquid wastes entering waterways by proper stormwater drainage design • Drainage facilities will be integrated with water supply options and sanitary latrine • Review of water supply capacity and incorporate in design • Include provision of alternate power supply from generators

Phase	Potential Environmental Impact	Possible Mitigation Measure
Demolition of derelict building within the existing health facilities	• Potential presence of asbestos and asbestos-containing material (ACM) • Increased dust and noise levels, and generation of demolition wastes posing occupational and community safety risks.	• Before any demolition works, a rapid assessment study will be done by KP MOH (or through a qualified 3rd party expert) to determine the presence of ACMs and to prepare a demolition plan for approval of KP MOH. Demolition plan will cover issues like waste management (both solid medical waste), occupational health and safety, community health and safety, ambient air quality and noise, water quality, and potential traffic congestion. • Removal of hazardous wastes, if any, will comply with the requirements of the government, the IFC-WB EHS General Guidelines 2007, and WHO on waste management. • Workers during demolition will be provided with personal protective equipment.
Construction		
Ambient air quality and noise	• Potential increase in dust and noise levels with intermittent vibration causing nuisance to patients, health care staff, and local residents • Increased vehicular emissions due to delivery of construction materials	• Require contractors to spray water at least twice a day during dry season to exposed soil areas to reduce dust • Provide temporary enclosures and noise barriers to work areas generating dust and noise • Impose speed limits to construction vehicles and require proper maintenance • Prohibit the use of horns, megaphone or whistle at the work sites • Use of prefab construction materials • Consider work scheduling of noise-generating activities and monitoring of dust and noise levels during construction

Phase	Potential Environmental Impact	Possible Mitigation Measure
Occupational health and safety	• Accident risks to patients, visitors and health facility workers • Potential infection of workers from COVID-19	• Workers will be screened for their health condition prior to hiring to ensure that COVID-19 infection (or any communicable diseases) in the workplace is avoided • Provide handwashing stations with enough soap and water at strategic locations within the work sites, or hand sanitizers • Display posters promoting handwashing in the workplace (i.e., use WHO posters) • Include information on how to stay safe from COVID-19 during daily toolbox meeting • Display posters/signs • Brief your employees, contractors, and customers that if COVID-19 starts spreading in your community anyone with even a mild cough or low-grade fever (37.3 C or more) needs to stay at home. • Contractor will be required to put visible and clear signs including billboards on schedule and activities of civil works • Contractors will also need to implement and adhere with all national requirements put in place by the government to stop possible spread of COVID-19.
Water quality	Impairment of water quality from activities of construction workers	• Prohibit direct disposal of solid and liquid wastage into nearby water body • Observe good housekeeping at all times in • work areas

Phase	Potential Environmental Impact	Possible Mitigation Measure
Waste management	• Safety and health risks from improper collection and disposal of construction debris • Poor aesthetic due to accumulation of waste	• Contractor to prepare waste management plan for approval and compliance monitoring by KP MOH
Operation and Maintenance		
Community health, safety and security	• Increased vehicle traffic around health care facilities from patients, employees and visitors leading to congestion and risk of accidents • Increased emergency vehicle traffic and associated noise	• Traffic Management Plan will be prepared to avoid traffic congestions and accidents. • Provide clear and visible traffic signs within the facilities • Provide adequate space for emergency vehicles
Occupational health and safety (OHS)	• Nosocomial (hospital acquired) infections among patients and staff • Needle-sticks, surgical cuts, and other injuries posing transmission risk of blood- borne diseases such as Hepatitis C, HIV-AIDS, etc. • Environmental services (sanitation) workers' exposure to infectious and communicable diseases • Occupational dermatitis and allergic reactions due to workplace exposures (e.g. disinfectants and cleaning agents or latex) • Negative impacts on mental health to health workers due to high levels of stress • High rates of fatigue, gastrointestinal, psychological and cardiovascular conditions, and increased injury rates due to long working hours and shift work • Injuries from repetitive manual work (e.g. improper patient movement or cleaning activities)	• Implement suitable safety standards for all workers and facility visitors • Provision of first aid facility and mandatory use of personal protective equipment and safety gears, where required • Arrangements for safe drinking water and sanitation facilities for health • Provide regular OHS training to health care workers • Provide incentives to staff and create a work-life balance in work schedule • Refer to IFC EHS Guidelines for Healthcare Facilities (2007), IFC EHS General Guidelines (2007), and relevant WHO Guidelines and Protocols • Exposure to hazardous substances such as cytotoxic drugs, anesthetic gases, and substances used for sterilization (e.g. ethylene oxide, formaldehyde, and glutaraldehyde)

Phase	Potential Environmental Impact	Possible Mitigation Measure
	• Exposure to violence, including verbal or physical assaults, from patients and their attendants	
Medical Waste management	• Generation of significant volumes of medical waste • Generation and inadequate management of hazardous medical and laboratory waste that require special handling and treatment • Spreading of waste, bad odor, deterioration of aesthetics • Used batteries, laboratory chemicals, and other waste poorly disposed • Increased volume of water, sanitation and related effluent discharges in the health care facilities, medical colleges, hospitals and research centers • Inadequate wastewater treatment and disinfection prior to discharge, leading to surface or ground water contamination	• Prepare and implement a Medical Waste Management Plan that will cover the waste generated from SHCs. The plan will follow ADB's guidance note on managing medical waste during Covid- 19 Pandemic as well as any other government regulations. The same will include (but not limited to) • Safe storage, transportation and proper disposal of medical waste. • Awareness raising on medical waste management with waste minimization, recovery and recycling • Training program for relevant health care workers, staff and maintenance and housekeeping • Implement safe solid waste management system and implement awareness raising on solid waste management with waste minimization, recovery and recycling. • Discourage and/or ban use of plastic products in health facilities • Safe disposal of hazardous waste at designated disposal sites (off-site incineration facility or land fill site)

Phase	Potential Environmental Impact	Possible Mitigation Measure
Ambient air quality	Exhaust air from infectious disease wards and other health care facilities potentially contaminated with biological agents, pathogens, or other hazardous materials	• Provide adequate and appropriate ventilation • Regular maintenance of HVAC system
Disaster and emergency preparedness	• Extreme weather conditions, fire, explosion, attacks from terrorists, etc. • Leakages and spills from storage tanks for compressed gases and other materials stored in bulk (e.g., fuel)	• Implement disaster and emergency response procedures • Conduct regular training and mock drills on emergency preparedness • Provide appropriate equipment for emergency response • Provide shelter or evacuation center as temporary measure for emergency • Create awareness about natural calamities and extreme climate to doctors, nurse, and other clinic staff • Fire safety management and mock drill; ensure emergency equipment and facilities like fire extinguisher/water hose, first aid boxes, whistle, torch lights, etc. are available.

C. ENVIRONMENT

31. **Relevant Statues in Khyber Pakhtunkhwa**. After the 18th amendment, environment has become a provincial subject; therefore, the KP Environmental Protection Act 2014 will govern the project activities in the KPK. Section 16 of KP Environmental Protection Act requires preparation of Environmental Impact Assessment (EIA) or Initial Environmental Examination (IEE) before commencement of projects likely to cause adverse environmental effects.

32. During the interaction with EPA – KP for the purpose of this program, it was discussed that the scope of the individual subprojects under the RBL program do not warrant an EIA and highly unlikely to warrant an IEE. Unlike some other provinces, KP EP Act currently does not cover activities smaller than those falling under the IEE schedule. Therefore, any need for conducting an IEE for any specific subproject might be pointed out during the course of implementation. At a collective level, RBL program does not require an EIA due to the geographically scattered scope and location within the designated boundary line of SHCs in the RSHC program.

33. KP formulated a Provincial Climate Change Policy in June, 2016. It gives emphasis to streamline Climate Change in different sectors of the economy and development projects in KP for sustainable development and resilience to natural disasters.

34. The KP Forest Ordinance 2002 is relevant as some of the SHCs under the proposed RBL program are located near forest areas. Especially, during construction, the contractors will need to strictly abide by its provisions. It bans any cutting, felling or uprooting any tree or brushwood listed in its Schedule –I. Furthermore, it also disallows to quarry stone from reserved forests. It will be ensured that the project activities do not cause damage to any trees.

35. KP Wildlife & Biodiversity Act, 2015 provides for the protection, preservation, conservation and management of wildlife in Khyber Pakhtunkhwa. This Act is relevant because some of the proposed project interventions are located in areas that are rich in biodiversity and wildlife habitats. Furthermore, this Act also prohibits logging and felling or removing any plant or tree; and clearing or breaking up any land for quarrying of stones or for any other purpose in a National Park. Individual project activities will abide by all the mentioned provisions of this Act.

36. **Description of the Environment.** Khyber Pakhtunkhwa Province is the smallest province of Pakistan with a total area of 101,741 $Km^{2.}$ The province is divided into thirty-four districts and after the 31st amendment of the constitution, all seven of the Federally administered tribal areas (FATA) were merged into the KPK province.

37. **Topography**. KPK is home to gigantic mountains, submontane areas and beautiful plains which are surrounded by the hills. The mountain ranges run in the north of the province. Hindu Kush Mountain range in the north is famous for its unmatchable beauty and the highest peak of the range is Tirich Mir. The river Kabul divides the province from east to west.

38. **Soils.** In the forested areas of the province, the soils are shallow to deep. The soil on the steep slope areas is shallow because of water erosion. In the Malakand region, the soil comprises of sandy loams and is prone to erosion due to less vegetation.

39. **Climate / Weather**. KPK province is divided into two zones based on the climate i.e., Northern zone and Southern Zone. The northern zone has a cooler climate with snowy winters and pleasant summers. The southern zone is hotter than the northern zone. The summers are

hot in the zone and the winters are cold. The climate of DI khan district is dry and hot. Areas of the district are hottest with the maximum temperatures that range between 46 and 50^{0}C. The district experiences harsh summers and even winters are warm. The district has rainfall during the monsoon season and the average rainfall fluctuates between 295mm to 1048 mm. Whereas, Abbottabad experience hot summers, pleasant spring and autumn and cool winters. The temperatures can rise to 38^{0}C in summers whereas in the winter, it can drop up to –5^{0}C. The mean annual temperature for the Abbottabad district is 18.0 °C. The average rainfall in the district is 1262 mm with sever snow in the winters. The district experiences heavy rainfall during the monsoon season which can result into flash floods. In Peshawar, summer starts from April and ends in September. The average maximum temperature during the summer and winter is 34°C and 21°C respectively. The temperature trend of Peshawar shows an increase in both the mean maximum and minimum temperatures. The relative humidity of Peshawar ranges from 15% (dry) to 88% (Very humid) and the wind speed ranges from 0m/s to 6m/s throughout the year. Peshawar's annual average rainfall for the period 1961-2015 is 474.4 mm. The average maximum and minimum temperature in Kohat district of is 24^{O}C and 4^{0}C. However, the temperature trends of Kohat shows an increase in the temperature of the district by 0.7^{0}C in the last century. The relative humidity follows the same trend as Peshawar, and it ranges from dry to very humid weather (24%-88%). Similarly, the wind in Kohat is calm (1m/s) to moderate (6m/s) and rarely ever increase more than 12m/s, The Mohmand district have hot summers and cool winters. The nearest weather station to the agency is Peshawar, so the temperature profile of Peshawar is used for the agency, similar is the case of rainfall. In Nowshera District, the summers are warm, long, and humid and the winters are cold and cloudy. During the summer seasons the average maximum temperatures is 23^{0}C and the minimum temperate is 11^{0}C. The average days the district receives rainfall 145.14 days with an average annual precipitation of 131.34mm. The Mansehra district is at an altitude of 2000 to 4500 meters. The summers are warm, and the winter is cold with rain in the upper parts of the district. The mean monthly temperature is 35^{o}C (maximum) and the average monthly minimum temperature is 21^{o}C. The district receives most of the rain during the monsoon seasons with an average precipitation of 1680 mm.

40. **Surface water of KPK.** The surface water of **KPK is found in the form of rivers, streams, lakes, and glaciers. The major rivers are Indus River, Kunhar river and Kabul River.**

41. **Seismology.** According to the seismological activities, Pakistan has been divided into five seismological zones. These zones are 1,2A,2B, 3 and 4, where 1 is the least affected zone and 4 is the most affected one. Most of the districts of KPK lie in 2B and 3 zones whereas Chitral and Balakot districts lie in the 4th zone.

42. **National Parks.** National parks are protected areas of a country. Pakistan has 35 national parks out of which 7 exist in various districts of KPK. Broghil valley national park established in 2010 is in the Chitral district. The area is mountainous, and the Pakistan's second highest lake Karambar lake is present in the valley. Another national park in the Chitral district is Chitral Gol national park. The national park was established in 1984. It encompasses three valleys and many glaciers which are a source of surface water for the Chitral river.
Lulusar-Dodipatsar national park and Saiful Muluk national park are present in the Mansehra district of the province. The Lulusar-Dodipatsar national park was established in 2003 and it has the famous lulsar and dodipatsar lake along side many peaks. The Saiful Muluk national park was also established in 2003 and it is centered around the beautiful Saiful Muluk lake. The Saiful mukluk lake is name after a prince named Saiful Maluk who fell in love with a fairy in the mountains. Manglot National Park is present in the Nowshera district, it provides a natural sanctuary for the wildlife of Pakistan. The national park encompasses the area of 1,756 acres.

Table 2: Mammals

Common Name	Scientific name
Markhor	Capra falconeri
Ibex	Capra aegagrus chialtanensis
Urial	Ovis vignei punjabiensis
Musk Deer	Moschus Chrysogaster
Goral	Naemorhedus goral
Chinkara	Gazella bennettii
Barking deer	Muntiacus vaginalis
Hog deer	Axis Porcinus
Black Bear	Ursus thibetanus gedrosianus
Brown Bear	Ursus arctos
Snow leapord	Panthera Uncia
Common leapord	Panthera pardus
Wolf	Canis lupus
Fox	Vulpes vulpes
Civet	Paradoxurus hermaphroditus
Monkey	Rhesus Macaque
Langur	Kashmir Semnopithecus ajax

43. **Fauna of KPK.** KPK province is home to many animals including various birds. Below is the list of fauna present in the province.

Table 3: Birds

Common Name	Scientific name
Chukor Partridge	*Alectoris chukar*
Quail	*Coturnix coturnix*
Demoiselle Crane	*Grus virgo*
Sarus Crane	*Grus antigone*
Saker Falcon	*Falco cherrug*
Peregrine Falcon	*Falco Peregrinus*
Himalayan monal	*Lophophorus impejanus*
Cheer Pheasant	*Catreus wallichii*
Khalij Pheasant	*Lophura Leucomelanos*

Table 4: Reptiles

Common name	Scientific name
Marsh Crocodile	*Crocodylus palustris*
Python	*Python molurus molurus*
Monitor Lizard	*Varanus*
Tortoise	*Agrionemys horsfieldii*

44. The following are the flora of KPK:

Table 5: Flora of Khyber Pakhtunkhwa

Common Name	Scientific name
Silver fir	*Abies pindrow Royle*
Kail	*Pinus wallichiana A.B. Jackson*
Deodar	*Cedrus deodara*
Chilgoza Pine	*Pinus gerardiana*

Ber	*Ziziphus mauritiana*
Kikar	*Acacia nilotica*
Oak	*Quercus incana Roxb*
Fir	*Abies pindrow*
Spruce	*Picea smithiana*

45. **Socioeconomic Environment.** The section summarizes the socioeconomic conditions of KPK province and the population that will be affected by the project.

46. **Demographic and Population.** According to the 2017 census, the total population of KP province is 30,508,920. Out of the total population, males are 52% and 48% are females. The annual growth rate for the KPK province is 2.89.

Table 6: Demographic and Population

District	Area (Km^2)	Population	Density (People/$Km^{2)}$
KPK (Total)	74,521	30,508,920	409.40
Bannu	1,227	1,167,071	951.16
Lakki Marwat	3,164	875,744	276.78
Dera Ismail Khan	7,326	1,625,088	221.82
Tank	1,679	390,626	232.65
Abbottabad	1,987	1,333,089	677.73
Batagram	1,301	476,749	366.45
Haripur	1,725	1,001,515	580.59
Mansehra	4,125	1,555,742	377.15
Torghar	454	171,349	377.42
Kohistan	7492	784,711	104.74
Hangu	1,097	518,811	472.94
Kohat	2,545	992,427	389.95
Karak	3,371	705,362	209.24
Mardan	1,632	2,373,399	1454.29
Swabi	1,543	1,625,477	1053.45
Charsadda	996	1,610,960	1617.43
Nowshera	1,748	1,520,995	870.13
Peshawar	1,257	4,267,198	3394.75
Buner	1,865	895,460	480.14
Chitral	14,850	447,625	30.14
Shangla	1,586	759,609	478.95
Swat	5,337	2,308,624	432.57
Lower Dir	1,583	1,436,082	907.19
Upper Dir	3,699	947,401	256.12
Malakand protected area	952	717,806	754.00

47. **Religion.** The major religion of the province is Islam. Sunni group is the majority whereas Shia and Ismailis group are also significantly present. Animist/ Shamanist religion is being practiced in the Kalash valley in southern Chitral. Hindus, Sikhs, and Christians also have small communities in the region

48. **Languages.** Pushto is the provisional language of the province and is spoken as a first language. Urdu, the national language of Pakistan is spoken as second language, whereas English being the official language of the province is used for official purposes. Many other dialects are also used in the province. Hindko is spoken is the Hazara district and in parts of Peshawar, Kohat and Nowshera. Saraiki, which is a Punjabi dialect, is spoken in the DI khan district. In district Chitral, the common language is Khowar. In the Kohistan district, Kohistani is spoken commonly. It is also common in areas of swat and Gojri districts. Many variations of Farsi are spoken by the Afghan refugees. whereas other languages include Kashmiri, Shina, Romani, Burushaski, Wakhi, Balti, Balochi, Brahui, Sindhi.

49. **Literacy rate**. According to the economic survey of Pakistan 2019-2020, KPK is the third literate province of Pakistan. 53% percent of the population (including the merged areas) is literate, out of which 71% are male and 35% are females. The education trend is higher in the urban areas as compared to the rural areas.
The gross enrollment rate (GER) for the age 6-10 in KPK is 85%, whereas the net enrolment rate (NER) is 65%.

50. **Transport.** The transport system of KPK includes public transport, airports, and train stations. There are seven airports in KPK province namely: Bacha khan international airport, Chitral airport, Abbottabad airport, Bannu airport, DI khan airport, Parachinar airport, Saidu Shareef airport. The province has three railway stations. The Peshawar Cantonment Railway station in Peshawar is the central station in KPK. The Nowshera junction Railway station is in the Nowshera city of the district Nowshera, whereas the Havelian railway station is in Havelian in the Abbottabad district.

51. **Cultural and Archeological sites.** KP is home to many cultural and archeological sites. These sites hold immense importance due to their history. The major sites in KPK are listed in the table below along with their districts

Table 7: Cultural and Archeological Sites

Site	District
Zuro Dheri	Mansehra
Tomb of Shaheed Ahmed Mujadid Barelvi	
Tomb of Shah Ismail Shaheed	
Akra (A&B) mound	Bannu
House of Dillip Kumar	Peshawar
Gorkhatree	
Bala Hisar mound	
Tomb and Mosque of Sheikh Imamuddin	
Ranigat	Buner
Rehman Dheri	DI Khan
Northern and Southern Kafir Kot	
Takhat e bai buddhist ruins	Mardan
Fourteen rock edicts of Ashoka inscribed on two rocks in Shahbaz Garhi	
Seri Bahlol city remains	
Tereli Buddhist remains	

D. Climate Change Risks

52. **Climate Change Impacts.** This chapter provides an overview of the climate change condition of the Khyber Pakhtunkhwa province and how it can impact the project.

53. **Climatic regions**. To begin with; Pakistan experiences four climatic seasons all around the year. The monsoon seasons which start in the month of June and stays till September. In this season Pakistan receives 50-60% of the total rainfall of the year. The second season is winter, this starts in December and ends in March. The country receives the 30% rainfall of the year in the month of winter. Lastly, the third and fourth seasons are pre (April-may) and post (October-November) monsoon seasons which accounts for the remaining 12% and 4% of the total rain of the year, respectively. The country is divided into climatic zones/regions according to the seasons it experiences and the physiography of each area or city placed on the nation's map. The eight climatic zones of the country are listed below:

1. Zone I(a): Greater Himalayas (winter dominated)
2. Zone I(b): Sub Mountain region and monsoon dominated
3. Zone II: Western Highlands
4. Zone III: Southern and central Punjab
5. Zone IV: Lower Indus Plains
6. Zone V (a): Baluchistan Plateau (Northern) (Suleiman and Kirthar range)
7. Zone V(b): Baluchistan Plateau (Western)
8. Zone VI: Coastal belt

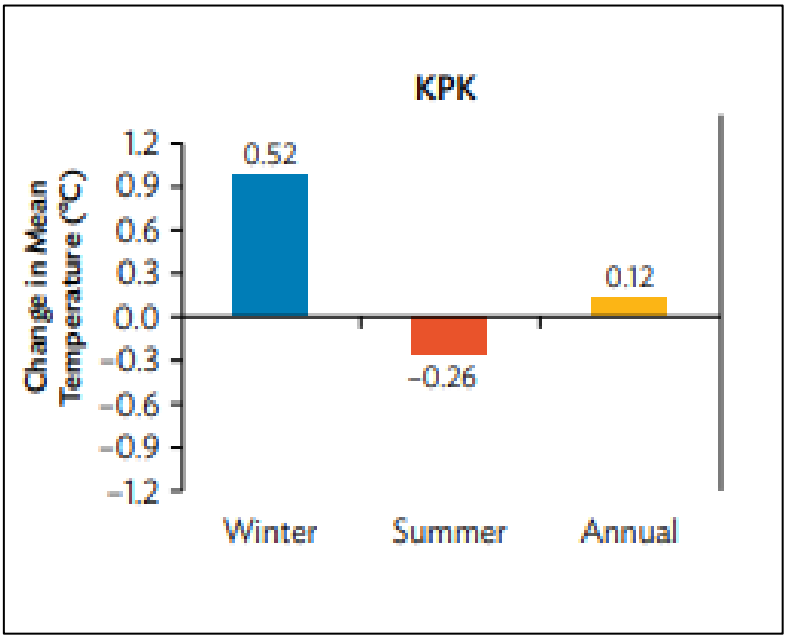
54. The Zone II: western highlands zone, is dominated by The Khyber Pakhtunkhwa province. However, there are some of the districts of KPK such as Chitral and Dir that lie in the zone I(a): great Himalayas. The western highland zone that is known as the Zone II, has humid winters, as the winds from the Mediterranean Sea that carry passing moisture blow in this region.

55. The Zone I comprise of the mountain regions in the north which separates Pakistan from the neighboring countries. The zone has harsh winters because of the presence of snowy mountain ranges as well as many glaciers.[31]

56. **Climate change in Pakistan**. Pakistan is among one of those countries that is most prone to climate change. In the past century (1901-2000), Pakistan observed a warming trend, where the average annual temperature of about 0.57°C was observed. Although, this trend was less than the average trend of 0.75°C increase in the south Asian region. The long-term trend of Pakistan from 1961-2007 is in accordance with the South Asian region, with a rise in the annual temperature by 0.47°C. The year 2004 was observed to be the warmest year until 2007 in the country. The highest increase of climatic change is observed during the winter seasons, as it can be seen that that the winter season is decreasing overall in the Pakistan. The maximum and minimum annual temperatures from 1960-2007 have increased by 0.87°C and 0.48°C, respectively.

[31] Sheikh, M. M., N. Manzoor, M. Adnan, J. Ashraf, and Arshad M. Khan, (2009), Climate Profile and Past Climate Changes in Pakistan, GCISC-RR01, Global Change Impact Studies Centre (GCISC), Islamabad, Pakistan.

57. If we talk about the past temperature trends of the country, this will clearly, show an increase in the mean average temperatures of Pakistan. Alongside, the increase in temperature of the country with long summers, the solar radiations have also increased by 0.5%-0.7%. The northern areas of Pakistan have also experienced an increased water imbalance due to the high spatial and temporal precipitation variations in the region.



58. Since 1960, according to the World Bank, the hot days in Pakistan have increased by 20 days whereas the hot nights have exponentially raised by 23 days. On the contrary, the cold nights have decreased by 9.7 days.[32] According to the Pakistan meteorological department (1960-2007), the KPK region experienced an increase of 0.12^0C in the mean annual temperature.

59. While if we discuss the temperature trends of the climatic zone of KPK, one can see that the mean annual temperature trend of the western Himalayas (zone II) shows a decreasing trend and the greater Himalayas (Zone Ia) show an increasing trend of the mean average temperature.

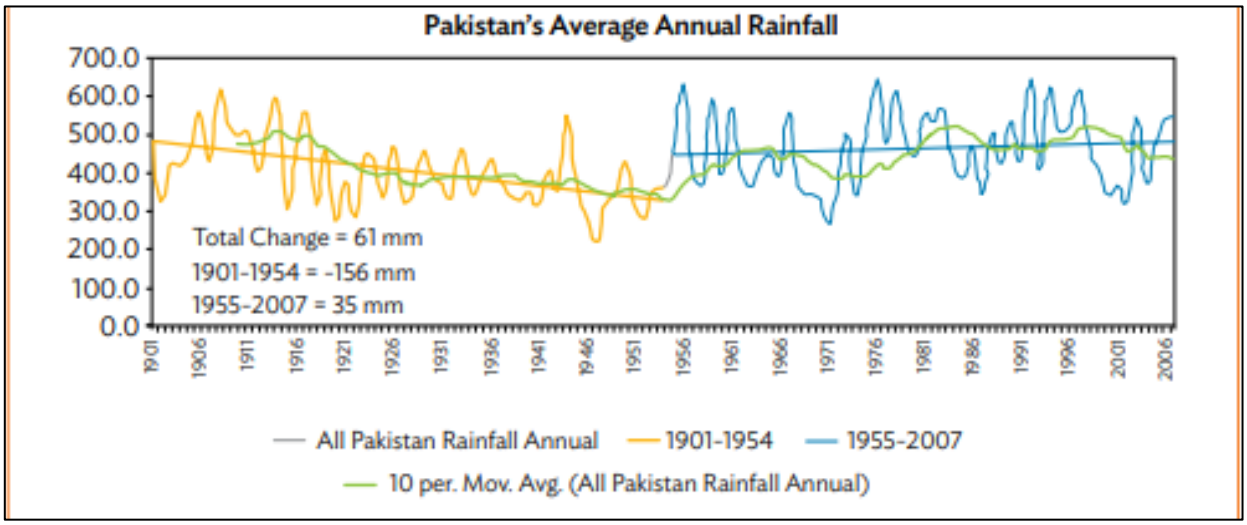
Table 8: Climactic Regions and Mean Temperature Trends

Climatic regions	**Mean Temperature Trends (°C/year)**				
	Annual	Jun-Sep	Dec-Mar	Apr-May	Oct-Nov
I(a): Greater Himalayas	0.04	-0.80	0.32	1.09	-0.06
I(b): Submountain	-0.19	0.57	0.00	0.13	0.12
II: Western Highlands	-0.72	-1.48	-0.65	0.17	-0.47
III: Central and Southern Punjab	0.11	-0.25	0.03	0.83	0.31
IV: Lower Indus plain	-0.08	-0.55	-0.07	0.35	0.15
V(a): Baluchistan Plateau (East)	0.11	0.46	0.63	0.79	0.50
V(b): Baluchistan Plateau (West)	1.17	1.3	0.43	2.17	1.80
VI: Coastal areas	0.00	-0.18	0.05	0.03	0.30

**KPK lies in the shaded climatic regions.*

60. Now coming to the Precipitation in Pakistan, this has also shown a varying trend. The figure below shows the average annual precipitation trend of Pakistan for the year 1901-2007. The precipitation trends are in the ascending order with the average annual precipitation increased by 61 mm, whereas the Monsoon rains and winter rains increased by 22.6 mm and 20.8mm respectively.

[32] Rahman, G., Rahman, A. U., Ullah, S., Dawood, M., Moazzam, M. F. U., & Lee, B. G. (2021). Spatial-temporal characteristics of meteorological drought in Khyber Pakhtunkhwa, Pakistan. Plos one, 16(4), e0249718.



61. The average annual precipitation in the zone II western highlands is decreasing by 0.02%, whereas the monsoon rain is increasing by 0.22%. Region wise, the western Himalayas (zone II) shows a decreasing trend in the average annual precipitation by 0.02% and an increasing trend in the monsoon rain by 0.22%. Similarly, the data for the greater Himalayas shows an increasing percentage of precipitation for the monsoon season. However, the precipitation is decreasing for the winter season.

Table 9: Climatic Regions and Mean Annual Precipitation Changes

Climatic regions	**Mean annual precipitation changes (%)**		
	Annual	Jun-Sep Monsoon	Dec-Mar Winters
I(a): Greater Himalayas	0.49	1.73	-0.04
I(b): Submountain	0.3	0.38	0.53
II: Western Highlands	-0.02	0.22	0.00
III: Central and Southern Punjab	0.63	0.57	0.99
IV: Lower Indus plain	0.22	0.45	-0.27
V(a): Baluchistan Plateau (East)	1.19	1.16	1.14
V(b): Baluchistan Plateau (West)	0.1	-0.2	-0.4
VI: Coastal areas	-0.82	-1.34	0.00

62. **Climate Impacts to the project.** One of the impacts of climate change or global warming to the project is the decline of glaciers in the northern areas. Pakistan is home to more glaciers than anywhere in the world and they are major source of fresh water in the country. There are 543 glaciers in the Chitral valley. Due to the climatic change and rising temperature, these glaciers can cause Glacier Lake Outburst Floods (GLOFs) in the KPK region which would force people to relocate other areas. According to UNDP, more than seven million people are vulnerable to GLOF in KPK and Gilgit-Baltistan and out of these seven million people, 22 percent of the population in KPK is below poverty line[33]. The excessive melting of the glaciers can cause a water supply and

[33] https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb_gfdrr_climate_change_country_profile_for_PAK.pdf

demand imbalance which can lead to water scarce situations especially in the regions in the vicinities of rivers.[34]

63. Secondly, the proposed project is in all the districts of the KPK province and many areas of KPK are prone to floods due to the varying pattern of precipitation and temperatures. Floods in the KPK region are common near the catchment areas of the river swat and Kabul. Hence, these floods can affect the project directly through the damage to the infrastructure. It can also affect the availability of the hospital staff, as the transport systems are severely damaged during flooding season.

64. Then the Disease outbreak is also becoming common due to the elevated temperatures and varying rainfall patterns. Dengue fever, which is declared as an endemic in Pakistan, is rising in the province. In the year 2021, Khyber Pakhtunkhwa reported 10,223 cases of dengue which is 22% of the total number of cases in reported in Pakistan [35]. During any disease outbreaks, hospitals may have to adjust more people than the capacity which can over burden the doctors and hospital staff, thus, rendering the efficiency of the hospitals. The hospital may also face the issue of shortage of medicine and other important hospital equipment which can lead to the deaths of the patients.

65. Another complexity is the Landslides, this is another extreme event which can be powered by climate change. Landslides are common in the hilly districts of KPK such as Chitral, Swat etc. The occurrence of landslide is more common during the rainy seasons. Landslides affect the infrastructure as well as the road structure. It can hinder the communication and the travel of the doctors and the staff of the hospital. [36]

66. Then comes the Drought, this is a disastrous phenomenon which is driven by the climate change. In the last 50 years, Pakistan has experienced one drought in every three years. The dry spells in Khyber Pakhtunkhwa province have increased consistently. The increase in the dry spells affects the water availability to the human settlements. It also negatively affects the agriculture crops. This leads to the starvation. This scenario came true in the province during the dry spell of 2009 which severely affected the crop yield in the province. The province experience moderate to severe droughts in the year 2017-2018. [2] This increases the malnutrition and push more people below the poverty line.

Table 10: Projected Changes in Rainfed Maize Yields Across Pakistan

Crop	Baseline Yield (1961-1990)	Projected Yield	Change %	Period
Rice	1356	1345	-0.81	2020s
Rice	1356	1335	-1.55	2050s
Rice	1356	1318	-2.8	2080s
Maize	3952	3945	-0.18	2020s
Maize	3952	3942	-0.25	2050s
Maize	3952	3978	+0.66	2080s
Maize	1409	1475	+4.68	2080s
Pearl Millet	527	347	-34.16	2020s
Pearl Millet	527	667	+26.57	2050s

Source: World Bank Climate Change Data Portal –Agricultural Model Generated by IIASA.

[34] https://www.pk.undp.org/content/pakistan/en/home/projects/Glof-II.html
[35] https://www.who.int/ru/emergencies/disease-outbreak-news/item/dengue-fever-pakistan
[36] https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb_gfdrr_climate_change_country_profile_for_PAK.pdf

67. Hence drought and high temperatures lead to frequent heat waves in the area. Heatwaves are common in the lower altitudes of the province. Many people die due to heat strokes. To tackle the problems, hospitals may have to remain on high alert and the doctors and staff may have to work overtime. This can reduce the efficiencies of the hospitals. Heatwaves will also increase the burden on the energy provision of the hospital due to high energy demands and can cause a collapse to the entire energy system of the building.

68.

11. The durations of summer are increasing in KPK due to climate change. This increases the demand of drinking water in the province. To meet the excessive demand, the reservoirs which are already in stress are overburdened due to excessive pumping. The reservoirs are also burdened because of the increase evaporation rate and the water tables are decreasing. The quality of ground water is also decreasing due to factors such as the leaching of surface water. The deuteriation of ground water quality is resulting in the outbreak of water borne diseases including typhoid, giardiasis, diarrhea, cryptosporidium infections.[37] Studies show that a one degree increase in the temperatures, increases the electricity demand by 0.5%-0.8%. This energy demand induce stress to the energy generation systems.

69. **Climate change adaptation plans** are as follows:

Table 11: Climate Change Adaptation Plans

Adaptation Activity	Target Climate Risk	Adaptation Justification
Use of flood resistant material	Flooding	The material allows the building to adapt to the flooding conditions more efficiently without any considerable damage to the structure of the building. It also helps to keep the foundation of the building intact during flooding and not cause any cracks in it which can lead to the collapse of the building.
Raised plinths		
Installing barrier	Landslides	A strong barrier around the hospital building can help to reduce the damage caused by a landslide. Hospitals should not be made in areas which are prone to land sliding. Alternate place for the hospitals can significantly reduce the cost of the damages. If a hospital is present in a landslide prone area, a channel around the building can help direct the debris away from the hospital buildings thus to avoid the destruction.
Alternate location of the hospitals		
Chanel around the building		
Investment in the renewable energy technologies (Solar panels)	Varying temperatures	Hotter temperatures will increase the energy demand in summer seasons. Thus, it is necessary to invest in clean energy which will help to reduce the emission of greenhouse gasses. The overall design of any building helps with the varying temperatures.
Orientation and design of the hospitals		
Protective Barriers		
Ventilation		
Tree plantation		
Improved design of ground water tanks and overhead tanks	Water consumption	The water reservoirs can help to mitigate the problem of water shortage. Large volumes of water can be stored in

[37] Daud et al., 2017 Daud, M. K., Nafees, M., Ali, S., Rizwan, M., Bajwa, R. A., Shakoor, M. B., ... & Zhu, S. J. (2017). Drinking water quality status and contamination in Pakistan. *BioMed research international*, *2017*.

Rainwater harvesting tanks		the tanks to ensure that water is readily available to the students throughout the hot weather. Rainwater harvesting can reduce the stress on the surface and ground water resources.
Disease Prevention initiatives	Disease outbreaks	Education and Information about the disease and their preventive measures is a crucial step. It allows the individuals to take care of themselves and their families that can significantly reduce the outbreaks. Fumigation of larvicide and adulticide is an important adaptation measurement. It de-promote the growth of vector organism which can prove to be an essential step in decreasing the disease outbreaks. It is necessary for the hospitals to have a rapid emergency response plan to tackle any emergency. It helps the staff to promptly act during a crisis and helps utilize the staff with haphazardness.
Fumigation sprays for vector organisms		
Emergency response plan		

E. Outcome of Rapid Environmental Assessment

70. Rapid Environmental Assessment was carried out using pre-designed questionnaire. The questionnaire relies on the open-ended basic questions about physical, ecological and socioeconomic environment of the project and also concerns/suggestions by the concerned persons of SHCs. Therefore, a rapid environmental assessment (REA) appears to be reliable tool for quick environmental assessment of individual SHCs. For REA exercise a representative sample of Ten SHCs, currently listed in pahse-1 and phase-2 of the program were selected. The information thus received can be considered as a representative sample for all SHCs, in terms of a rapid assessment. A team of environmental experts, graduates in environmental sciences were selected for data collection through questionnaire and consultation with SHC staff. Prior to data collection, the graduates were properly trained on the process of data collection and consultation.

71. The consultations with staff of SHC were held in June 2022 as a part of Environmental Risk Assessment (ERA). The outcome was mainly around environmental, health and safety issues, insufficient water supply, unsafe drinking water, poor sewerage system, unsafe waste disposal, poor practices of hospital waste collection, segregation, and unsafe and untreated waste disposal. All of these issues will be addressed through a well-designed EMP, during project implementation.

72. An outcome of Rapid Environmental Assessment in terms of physical, ecological and socioeconomic environment are as under

73. **Physical.** Most of the SHCs are located in densely populated area except DHQ Upper Dir. The main source of water is through tube wells. The water from the tube wells is stored in the overhead tank. At DHQ Haripur, the water is chlorinated in the overhead tank before distribution. At DHQ Upper Dir, in addition to the municipal water supply, the river water is also used. The current water tank capacity at most of the hospitals is not enough for the whole hospitals. The water distribution pipe network also need repair work as the broken pipes are a source of water wastage.

74. Each Hospital has its own mechanism for the waste management. A separate sewage system from the washrooms at the DHQ Abbottabad, carry the wastewater to the local Nala through a combination of open/covered drains and pipe sewer system. A similar system is used

at DHQ Haripur. However, the grey and black water is collected in separate septic tanks before being discharged into the local Nala leading to the Indus River. No proper waste water management system is present at DHQ lower Dir. At the DHQ hospital Karak, a catchment area is present outside of the hospital in the fields. Whereas at the district headquarter Hospital Swabi, the wastewater is disposed of to the nearby wastewater stream through drainage. At the Naseer Ullah Babar Hospital KPK, the wastewater is discharged from the site to the manhole and then to the municipal sewer system.

75. Apparently at each hospital some sort of separate bins for segregation of different type of hospital waste were placed in the wards, operation theatres and surrounding areas. The biomedical waste is incinerated at the incinerators where available. The Incineration plant at the DHQ Abbottabad is not in working condition. Currently, the waste is burnt after three days and after burning it is either sold to the junkmen or collected by WASA. At the DHQ Haripur, the incinerator is owned by a public private partnership. It has a capacity of 30 kg, and it is used by the other hospitals in the vicinity. The municipal authorities collect the non-biomedical waste of the hospitals. All other hospitals do not have incineration facility installed in the hospital for the biohazard waste. At DHQ hospital Lower Dir the wastewater is discharged into the nearby rivers without a proper treatment, which effects the natural water.

76. **Ecological.** None of the SHCs is located near any environmentally sensitive or a protected area. The flora and fauna species, as given in environment chapter (Annex-1). There is minimum impact of project activities on flora and fauna of the area. Further, no endangered species is threatened from project. There are no Reserved or Protected Forests or trees near the proposed projects. If for some unforeseen reason, any trees with significance importance or other trees need to be removed, written permission should be obtained from the forest authority. During construction in any stage, if some trees need to be removed from private land or forest, written approval is required. Trees shall be planted to replace the lost trees with ten trees planted to replace every cut tree (10:1) or more as agreed with the authority

77. **Socioeconomic.** The DHQ Abbottabad has 125 medical personals and 145 nursing staff. It also has 763 support staff. There are three hostels for the medical staff and one hostel for the doctors of the hospital. Whereas, for the support staff 8 B-type accommodations are available. At DHQ Haripur, the staff strength is 152 medical staff and 132 nursing staff. A total of 418 support staff is also on duty here. available at the hospital.35 of the medical staff is a resident. The DHQ Kohat comprises of more than 150 medical staff, 122 and 100 nursing and support staff, respectively. The DHQ Nowshera has five resident medical staff and four resident support staff. Whereas the Molvi Jee Hospital Peshawar has one hundred and fifteen medical staff, fifty-seven nursing staff and a support staff of one hundred and twenty people. The Naseer Ullah Babar Hospital has 110 medical staff, 86 nursing personals and 304 support staff. Furthermore, The DHQ Karak has ninety-seven, eighty-five and three hundred and sixty-five medical staff, nursing, and support staff, respectively. The Bannu hospital has 81,61 and 65 medical staff, nursing, and support staff, respectively. The hospital in the Swabi district has 60 nursing staff and up to 50 support staff. The hospital has a capacity of 10 resident medical staff and resident support staff each.

78. Since the SHCs are located in densely populated area, therefore, majority of social service such as education and shopping facilities are available within few kilometers from project sites. People have an opportunity to use public/private transport to reach these facilities. Further, keeping in view the scope of work, the project has a low climate related risk

79. The suggestions/findings of REA were given priority while preparing climate adaptation measures and environmental impacts mitigation measures. The resulting recommendations are, therefore, based on the outcome of Rapid Environmental Assessment and are applicable to all SHC sites. The filled forms and some selected pictures from each site visit are presented below:

SOCIAL SAFEGUARDS

A. The Land Acquisition Act (LAA) 1894

1. The LAA regulates the land acquisition process and enables the federal and provincial governments to acquire private land for public purposes through the exercise of the right of eminent domain. The LAA lays down definite procedures for acquiring private land for projects and payment of compensation. For entering private land or carrying out surveys and investigations, specified formalities have to be observed and notifications to be issued. Damage to any crops during survey and investigations has to be compensated. The displaced persons, if not satisfied, can go to the Court of Law to contest the compensation award of the Land Acquisition Collector (LAC).

2. The Law deals with matters related to the acquisition/ or temporary occupation of private land and other immovable assets that may exist on it when the land is required for public purpose. The right to acquire land for public purposes is established when Section 4 of the LAA is triggered. The LAA specifies a systematic approach for acquisition and compensation of land and other properties for development projects. It stipulates various sections pertaining to notifications, surveys, acquisition, compensation and apportionment of awards, along with disputes resolution, penalties and exemptions. The surveys of land acquisition are to be disclosed to the displaced persons. However, the law only recognizes “legal” owners of property supported by records of ownership such as land record title, registered sale deeds, or agreements. The salient features of the Pakistan Land Acquisition Act 1894 are given in the table below.

Table 1: Salient Features of Pakistan’s LAA 1894

Key Sections of LAA	Salient Features of the LAA 1894
Section 4	The Collector publishes of preliminary notification of land acquisition and power for conducting survey.
Section 5	The Collector formally notifies that a particular land is needed for public purpose and inquires for objections or concerns from persons interested (Section 5a)
Section 6	The Collector formally declares government’s intention to acquire a particular land for public purpose (The date of the publication of this declaration may be considered as the cut-off date).
Section 7	The Land Commissioner directs the Land Acquisition Collector (LAC) to take order the acquisition of the specific land.
Section 8	LAC physically marks out, measures and plans the land to be acquired
Section 9	LAC gives notice to all persons interested that the Government intends to take possession of the land and requests that they approach him for any claims for compensation
Section 10	LAC records statements of interested persons in the area of land to be acquired or any part thereof as co-proprietor, sub-proprietor, mortgage, and tenant or otherwise.
Section 11	LAC makes enquiries into the measurements, value and claims and then to issue the final “award”. The award includes the land’s marked area and the valuation of compensation.
Section 12	LAC gives notice of final award to persons interested in the acquired land.
Section 16	Upon issuance of award under Section 11, the LAC may take possession and the land shall thereupon vest absolutely in the Government, free from all encumbrances.

Section 17	Emergency clause that allows acquisition of land after 15 days from notification under Section 9 prior to compensation of persons interested. (Note that this clause will not be applied in any subproject financed under the MFF).
Section 18	In case of dissatisfaction with the award, persons interested may request the LAC to refer the case onward to the court for a decision. This does not affect the Government taking possession of land.
Section 23	The following factors are to be considered in determining the compensation amount for acquired land: i) market value of the land, ii) loss of standing crops, trees and structures, iii) any damage sustained at the time of possession, iv) injurious affect to other property (moveable or immoveable) or earnings, v) expanses incidental to compelled relocation of the residence or business, and vi) diminution of the profits between the time of publication of Section 6 and the time of taking possession. A 15% premium is added to the amount in view of the compulsory nature of the acquisition for public purposes.
Section 28	Relates to the determination of compensation values and interest premium for land acquisition.
Section 31	Section 31 provides that the LAC can, instead of awarding cash compensation in respect of any land, make any arrangement with a person having an interest in such land, including the grant of other lands in exchange.
Section 48A (LAA-1986)	If within a period of one year from the date of publication of declaration under section 6 in respect of any land, the Collector has not made an award under section 11 in respect to such land, the owner of the land shall, unless he has been to a material extent responsible for the delay be entitled to receive compensation for the damage suffered by him in consequence of the delay.

B. Gap Filling Measures

3. Several gaps exist between Pakistan Legislation and ADB SPS Policy requirements. The following matrix sets out the key gaps and agreed gap filling measures for this project.

Table 2: Measures to address gaps between LAA and SPS

Pakistan LAA 1894	ADB SPS 2009	Measures to Address the Gap on ADB funded subproject
Compensation for land and other assets is based on average values and department unit rates that do not ensure replacement market value of the property acquired. However, LAA requires that a 15% compulsory acquisition surcharge supplement the assessed compensation.	DPs are to be compensated for all their losses at replacement cost, including transaction cost and other related expenses, without deducting for depreciation.	Land valuation is to be based on current replacement (market) value with an additional payment of 15%. The valuation for the acquired housing land and other assets is the full replacement costs keeping in view the fair market values, transaction costs and other applicable payments that may be required.

No provision for resettlement expenses, income/livelihood rehabilitation measures or allowances for displaced poor and vulnerable groups.	Requires support for rehabilitation of income and livelihood, severe losses, and for vulnerable groups.	Provision will be made to pay for resettlement expenses (transportation and transitional allowances), compensate for loss of income, and provide support to vulnerable persons and those severely impacted (considered to be those losing more than 10% of their productive assets).
Lack of formal title or the absence of legally constituted agreements is a bar to compensation/rehabilitation. (Squatters and informal tenants/leaseholders are not entitled to compensation for loss of structures, crops)	Lack of formal title is not a bar to compensation and rehabilitation. All DPs, including non-titled DPs, are eligible for compensation of all non-land assets.	Squatters, informal tenants/ leaseholders are entitled to compensation for loss of all non-land assets like crops, trees, structures, livelihood and for relocation assistance.
Land acquisition and compensation process is conducted independently by the Land Acquisition Collector following a lengthy prescribed legal and administrative procedure. There are emergency provisions in the procedure that can be leveraged for civil works to proceed before compensation is paid.	Involuntary resettlement is conceived, planned and executed as part of the project. Affected people are supported to re-establish their livelihoods and homes with time-bound action in coordination with the civil works. Civil works cannot proceed prior to compensation.	Respective executing agencies will prepare land acquisition and resettlement plans, as part of project preparation based on an inventory of losses, livelihood restoration measures, Pakistan law and principles enumerated in SPS. Where gaps exist in the interpretation of Pakistan law and resettlement practices, requirements of ADB's involuntary resettlement policy will prevail. Civil works may only proceed when the RP approved by ADB is fully implemented with all APs fully compensated and validated by an ADB acceptable independent/external monitoring consultant before the start of construction work in any subproject. • .

No convenient grievance redress mechanism except recourse of appeal to formal administrative jurisdiction or the court of law	Requires the establishment of accessible grievance redress mechanisms to receive and facilitate the resolution of DPs' concerns about displacement and other impacts, including compensation	Executing agencies will establish easily accessible grievance redress mechanism available throughout project implementation that will be widely publicized within respective project area and amongst the DPs.

C. Compensation and Assistance Approach

4. In order to address the potential involuntary resettlement impacts caused by the project, the following Entitlement Matrix (EM) has been prepared for the project. The EM will be incorporated in the resettlement plans where these are required. Entitlements presented below may be modified and improved according to actual conditions, but may not be lowered. Any unanticipated impacts will be developed in accordance with the ADB SPS requirements.

Entitlement Matrix

No	Type of Loss	Eligibility	Entitlement
1	Loss for semi permanent / static structures	Structure owners, titled and non-titled, and in case of community structures the members of the committee	Cash compensation at replacement cost for the structures without deduction of depreciation costs. The salvageable materials will be given back to DPs.
2	Permanent loss of location of vending location	DP static and mobile vendors	Provision of alternative vending space by DOH at hospital grounds. Rental payment for the vending space for the first 6 months will be waived. For static and mobile DP vendors who do not wish to relocate to a provided temporary or permanent space, will receive a self-relocation allowance. This allowance will account for 3 months' official minimum wage rate to help DPs to establish a new business. Notification to vacate will be provided 30 days in advance of civil works.
	Temporary loss of location of vending location		Provision of alternative vending space by DOH at hospital grounds for the period of disruption. Rental payment for the vending space for the first 6 months will be waived. If an alternative vending site cannot be arrange, DPs will receive an allowance for the period of disruption for up to 3 months based on the official minimum wage rate. Notification to vacate will be provided 30 days in advance of civil works.

3	Loss of employment income	Employees/ workers of displaced static and mobile vendors with or without employment contract.	Transitional livelihood restoration allowance equivalent to the period of business disruption. If the displacement is permanent, allowance equivalent to the minimum wage for a period of 3 months.
4	Loss of existing business space	Static and mobile DP vendors	Transport and moving allowance. One-time financial assistance of PKR. 2,500 for transportation of semi-permanent or temporary structures.
5		Vulnerable DPs (below poverty line, female headed household, elderly residing alone)	One-time lump sum vulnerability assistance will be provided at 2 months official minimum wage rate PKR 20,000 (total of PKR. 40,000).
6	Any unanticipated /unidentified losses	Affected DPs	Any unanticipated/ unforeseen or unidentified impacts shall be documented and mitigated by DOH based on the principles of ADB SPS 2009 and a suitable resolution is to be found.

5. Subproject screening and due diligence with respect to involuntary resettlement impacts will need to be undertaken prior to approval of respective subprojects. The information below sets out involuntary screening and due diligence to be undertaken and submitted to ADB prior to subproject approval.

INVOLUNTARY RESETTLEMENT IMPACT SCREENING FORM

Date:_____

Subproject Identification Subproject Name: Subproject Location:				
INVOLUNTARY RESETTLEMENT IMPACTS [ ] Yes [ ] No				
Comments Briefly described the nature of the impacts.				
Expected Involuntary Resettlement Impacts	**Yes**	**No**	**Not Known**	**Remarks**
Involuntary Resettlement Impacts Assessment				
1. Will there be land acquisition?				
2. Has due diligence been undertaken to confirm Government ownership of land to be used for subproject site?				
3. Does the Government hold title to the subproject site land?				
4. Are there any legacy issues in terms of disputed ownership of land or uncompensated displaced land owners or users for the subproject site?				
5. Will there be loss of shelter and residential land due to land acquisition or land clearing?				
6. Will there be loss of agricultural and other productive assets due to land acquisition?				
7. Will there be losses of crops, trees, and fixed assets (structures) due to the subproject?				
8. Will there be loss of businesses or enterprises due to the subproject?				
9. Will there be loss of income sources and means of livelihoods due to the subproject?				
Information on Displaced Persons:				
Estimate of the likely number of persons that will be displaced by the Project? *[ ] No [ ] Yes* If yes, approximately how many? ___				
Are any of them poor, female-heads of households, or vulnerable to poverty risks? *[ ] No [ ] Yes*				
Are any displaced persons from indigenous or ethnic minority groups? *[ ] No [ ] Yes*				

Please attach a subproject due diligence report.

6. Subproject due diligence report outline:
   - Physical description of the subproject site. Include photos and satellite imagery.
   - Description of the due diligence undertaken to confirm Government ownership of the subproject site. Include information about when acquired and copies of relevant documents such as title or land records office documents.

- Provide a separate description of any legacy issues related to the subproject land (e.g. contested ownership, non-provision of purchase payment or compensation, any pending litigation).
- Describe any third party uses of the project site.
- Describe modifications to the site and facilities as a result of the project. How will people and site users be affected by the project works, either temporarily or permanently?
- Will people outside of the subproject site be affected by the project works, such as vendors outside, to accommodate project works?

OUTLINE OF A RESETTLEMENT PLAN

1. This outline is part of the Safeguard Requirements 2. A resettlement plan is required for all projects with involuntary resettlement impacts. Its level of detail and comprehensiveness is commensurate with the significance of potential involuntary resettlement impacts and risks. The substantive aspects of the outline will guide the preparation of the resettlement plans, although not necessarily in the order shown.

A. Executive Summary

2. This section provides a concise statement of project scope, key survey findings, entitlements and recommended actions.

B. Project Description

3. This section provides a general description of the project, discusses project components that result in land acquisition, involuntary resettlement, or both and identify the project area. It also describes the alternatives considered to avoid or minimize resettlement. Include a table with quantified data and provide a rationale for the final decision.

C. Scope of Land Acquisition and Resettlement

4. This section:
(i) discusses the project's potential impacts, and includes maps of the areas or zone of impact of project components or activities;
(ii) describes the scope of land acquisition (provide maps) and explains why it is necessary for the main investment project;
(iii) summarizes the key effects in terms of assets acquired and displaced persons; and
(iv) provides details of any common property resources that will be acquired.

D. Socioeconomic Information and Profile

5. This section outlines the results of the social impact assessment, the census survey, and other studies, with information and/or data disaggregated by gender, vulnerability, and other social groupings, including:
(i) define, identify, and enumerate the people and communities to be affected;
(ii) describe the likely impacts of land and asset acquisition on the people and communities affected taking social, cultural, and economic parameters into account;
(iii) discuss the project's impacts on the poor, indigenous and/or ethnic minorities, and other vulnerable groups; and
(iv) identify gender and resettlement impacts, and the socioeconomic situation, impacts, needs, and priorities of women.

E. Information Disclosure, Consultation, and Participation

6. This section:
(i) identifies project stakeholders, especially primary stakeholders;
(ii) describes the consultation and participation mechanisms to be used during the different stages of the project cycle;
(iii) describes the activities undertaken to disseminate project and resettlement information during project design and preparation for engaging stakeholders;

(iv) summarizes the results of consultations with affected persons (including host communities), and discusses how concerns raised and recommendations made were addressed in the resettlement plan;
(v) confirms disclosure of the draft resettlement plan to affected persons and includes arrangements to disclose any subsequent plans; and
(vi) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for consultation with affected persons during project implementation.

F. Grievance Redress Mechanisms

7. This section describes mechanisms to receive and facilitate the resolution of affected persons' concerns and grievances. It explains how the procedures are accessible to affected persons and gender-sensitive.

G. Legal Framework

8. This section:
(i) describes national and local laws and regulations that apply to the project and identify gaps between local laws and ADB's policy requirements; and discuss how any gaps will be addressed.
(ii) describes the legal and policy commitments from the executing agency for all types of displaced persons;
(iii) outlines the principles and methodologies used for determining valuations and compensation rates at replacement cost for assets, incomes, and livelihoods; and set out the compensation and assistance eligibility criteria and how and when compensation and assistance will be provided.
(iv) describes the land acquisition process and prepare a schedule for meeting key procedural requirements.

H. Entitlements, Assistance and Benefits

9. This section:
(i) defines displaced persons' entitlements and eligibility, and describes all resettlement assistance measures (includes an entitlement matrix);
(ii) specifies all assistance to vulnerable groups, including women, and other special groups; and.
(iii) outlines opportunities for affected persons to derive appropriate development benefits from the project.

I. Relocation of Housing and Settlements

10. This section:
(i) describes options for relocating housing and other structures, including replacement housing, replacement cash compensation, and/or self-selection (ensure that gender concerns and support to vulnerable groups are identified);
(ii) describes alternative relocation sites considered; community consultations conducted; and justification for selected sites, including details about location, environmental assessment of sites, and development needs;
(iii) provides timetables for site preparation and transfer;
(iv) describes the legal arrangements to regularize tenure and transfer titles to resettled persons;
(v) outlines measures to assist displaced persons with their transfer and establishment at new sites;
(vi) describes plans to provide civic infrastructure; and

(vii) explains how integration with host populations will be carried out.

J. Income Restoration and Rehabilitation

11. This section:
(i) identifies livelihood risks and prepare disaggregated tables based on demographic data and livelihood sources;
(ii) describes income restoration programs, including multiple options for restoring all types of livelihoods (examples include project benefit sharing, revenue sharing arrangements, joint stock for equity contributions such as land, discuss sustainability and safety nets);
(iii) outlines measures to provide social safety net through social insurance and/or project special funds;
(iv) describes special measures to support vulnerable groups;
(v) explains gender considerations; and
(vi) describes training programs.

K. Resettlement Budget and Financing Plan

12. This section:
(i) provides an itemized budget for all resettlement activities, including for the resettlement unit, staff training, monitoring and evaluation, and preparation of resettlement plans during loan implementation.
(ii) describes the flow of funds (the annual resettlement budget should show the budget-scheduled expenditure for key items).
(iii) includes a justification for all assumptions made in calculating compensation rates and other cost estimates (taking into account both physical and cost contingencies), plus replacement costs.
(iv) includes information about the source of funding for the resettlement plan budget.

L. Institutional Arrangements

13. This section:
(i) describes institutional arrangement responsibilities and mechanisms for carrying out the measures of the resettlement plan;
(ii) includes institutional capacity building program, including technical assistance, if required;
(iii) describes role of NGOs, if involved, and organizations of affected persons in resettlement planning and management; and
(iv) describes how women's groups will be involved in resettlement planning and management.

M. Implementation Schedule

14. This section includes a detailed, time-bound, implementation schedule for all key resettlement and rehabilitation activities. The implementation schedule should cover all aspects of resettlement activities synchronized with the project schedule of civil works construction, and provide land acquisition process and timeline.

N. Monitoring and Reporting

15. This section describes the mechanisms and benchmarks appropriate to the project for monitoring and evaluating the implementation of the resettlement plan. It specifies arrangements for participation of affected persons in the monitoring process. This section will also describe reporting procedures.