Environmental and Social Management Framework for Rural Development and Climate Resilience Project

Abstract

The recent atmospheric warming in the Himalayan region has created meltwater lakes on the lower sections of many glaciers. Climate change is likely to exacerbate the natural hazards, such as glacial lake outburst floods (GLOFs), forest fires, and landslides, which can cause significant social and economic damage to larger populations. Gilgit Baltistan, a province in the heart of the Himalayas north of Pakistan, is highly susceptible to disasters due to geologically active technotic plates and climatic changes. Major infrastructure adaptation is required to cope and adapt to a rapidly changing environment.

To respond to the challenges, the Government of Gilgit-Baltistan (GB) initiated a Rural Development and Climate Resilience Project (RDCRP). RDCRP aims to engage the local population in a more endogenous sustainable development path through increased participation in the development of sustainably managed services. The project envisions access to water and sanitation infrastructure, energy-efficient seismic-resistant housing, and electricity supply by mainstreaming sustainability, gender, and climate. The project will enable investments through local microfinance institutions for businesses in far-fledged areas to boost economic activity. This paper highlights the finding of the Environmental and Social Management Framework (ESMF) prepared in line with the environmental and social standards (ESS) of project financer Agence Française de Développement (AFD), the national/provincial environmental laws, and the World Bank (WB) ESS.

Methodology: At the time of project initiation, the project sites were not identified; therefore, a framework approach was adopted to foresee the adverse environmental and social impacts on the project area. A sub-project-specific impact assessment approach was adopted. The ESMF specifies the most likely applicable social and environmental policies and requirements and how those requirements will be met through procedures for the screening, assessment, approval, mitigation, monitoring, and reporting of social and environmental risks and impacts associated with the project activities. ESMF aimed to enable the inclusion of environmental and social considerations in the project and accelerate the sustainable development path for the project.

Project Need: The area covers Gilgit-Baltistan spread over 72,971 square km with five districts (**Exhibit 1**). With 1.8 million residents, the province is sparsely populated, with 18 people per square kilometer (2017). Approximately 79% of the population has access to a safely managed[1] and essential[2] water supply. However, less than 50% of households do not have perennial access. Wastewater collection and treatment system hardly exists in less than 2% of the population, with only five villages of piped sewerage and treatment facilities. The area encounters extreme cold in winter and vulnerability to multiple natural disasters. The existing stock of houses lacks thermal comfort, proper ventilation, adequate illumination, and seismic elements in housing structures[1]. There is limited electricity generation at the local level and the high cost of transmission lines; far-flung rural communities face a shortage or almost no electricity supply.

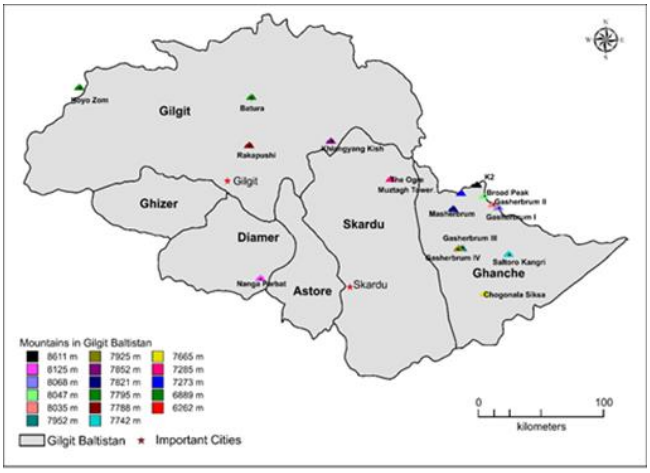

Exhibit 1: Project Area

The Project: RDCRP aims to construct 117 Drinking Water Supply Schemes (DWSS), 30 Sewerage Network and Treatment Schemes (SNTS), and 12 DWWS with SNTS in Gilgit Baltistan Province. In addition, rehabilitation of 29 DWSS and 28 DWSS with SNTS is also proposed to enable the accessibility of water and sanitation in rural and urban areas. To improve the thermal efficiency, the project estimates installing elemental energy-efficient products in 7000 households and seismic retrofitting in 3000 homes and energy-efficient products. It will facilitate the construction of 700 seismically resistant, thermally efficient houses. Eight Micro-Hydel projects are proposed with a total generation capacity of 1200 to 1300 kW to enhance access to reliable electricity. In addition, a loan cum grant mechanism has been projected as cash or in-kind contribution from the beneficiary household to access services. These will be financed through existing microfinance institutions operating in the area. Each project component has planned climate and gender mainstreaming to ensure sustainability.

1 Safely managed: Drinking water from an improved water source which is located on premises, available when needed and free from faecal and priority chemical contamination

2 Basic: Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing

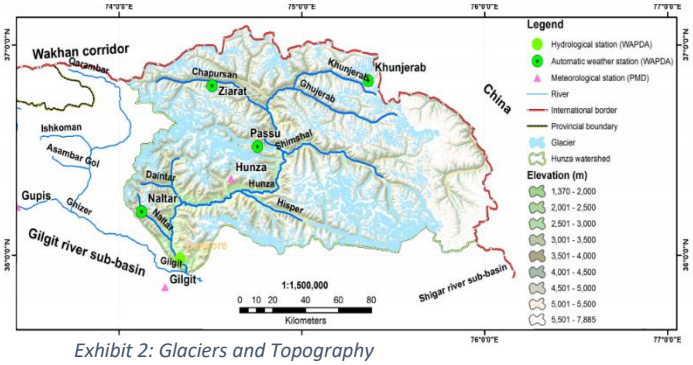

Exhibit 2: Glaciers and Topography

Environmental Sensitivities: Three major mountain ranges, including Baltistan, Brooshal, and Diamer, lie in an area that varies considerably in biodiversity and topography (**Exhibit 2**). Five of 14 Globally significant high-altitude peaks above 8,000 m exist in GB. A vast glacial spread over 15000 square kilometers has 5000 big and small glaciers, including three of the world's longest glaciers outside the polar region (Biafo, Baltoro, and Batura) which are the country's primary water source. There are about 2420 glacial lakes, among which 52 lakes are characterized as potentially dangerous glacial lake outburst flood (GLOF) hazards. The Indus River emerges from the region and supplies water to all provinces that subside in the sea among numerous water streams and wetlands. The water bodies exhibit prevalent contamination due to anthropogenic activity. The region encounters harsh weather with extremely cold/ snowy winters and mild summers influenced by high mountain systems. Air pollution is predominant in winters due to smoke from the stoves, heating of houses using firewood/waste, rock crushing, and open burning of solid waste.

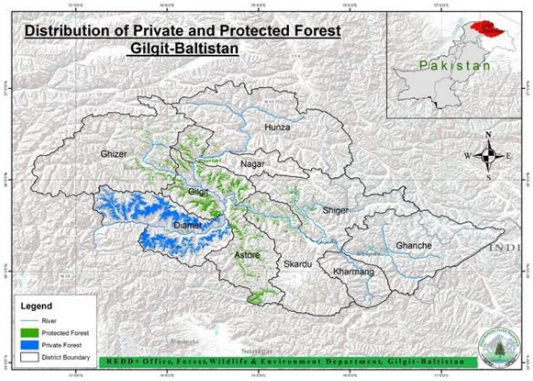

Exhibit 3: Protected Forest

Ecological Sensitivities: GB is approximately 90% mountainous, 4% forested, and 4.2% cultivable land[3]. There are 5 National Parks, two wildlife sanctuaries, six-game reserves, and 48 Community Controlled Hunting Areas to preserve sensitive ecological resources of the region. Designated protected forests covering an area of 445,712 hectares are found in Astore, Skardu, Ghizer, and Gilgit Districts (**Exhibit 3**). The region is rich in biological diversity and home to several globally significant species of mammals, including some endangered species. Several plant species of significant economic, medicinal, and conservation value are found in the area.

Socioeconomic Sensitivities: Multiple religions, ethnic, and cultural divergences lie in the region, making it highly suspectable to social inequality. With a per capita income[4] of PKR. 1319, the region encounters a literacy rate of 74% for 15-24 years[5]. The world's highest concreted road, the Karakoram Highway (KKH) connecting China with Pakistan at Khunjerab Pass (at an elevation of 4,693 meters), runs through GB for the most of its total length. The access road density is 0.07 percent, about one-sixth of the national average. One indigenous tribe of Kalashi people resides in the region. Although around 1.2% area is currently irrigated and harvested, there is a 90 % share of agriculture in total employment (2017-2018). There are two notified archaeological sites and monuments under protection.[6]

Results and Discussion: By looking at the existing environmental, ecological, and socioeconomic sensitivities, the assessment proposed sustainable practices to respond to the challenges. The assessment's key findings recommend deploying carbon-neutral technologies, protecting sensitive habitats, and conducting further environmental checks for micro hydel and wastewater treatment sub-projects. Overall positive economic and social impact of the project is likely to be high due to the creation of employment opportunities and access to electricity and water for marginalized communities. The concise results of the impact assessment are captured in **Exhibit 4**.

Exhibit 4: Impact Assessment

Phase	Environmental Impacts	Ecological Impact	Socioeconomic Impacts
Drinking-Water Supply Sanitation and Treatment			
Construction	Moderate Negative	Low Negative	Low Negative
Operations	Low negative	Negligible	High Positive
Energy Efficient and Seismic Resistant Housing			
Construction	Negligible	Negligible	Negligible
Operations	Negligible	Negligible	High Positive
Micro-hydel Power Supply			
Construction	Moderate negative	Moderate Negative	Low Negative
Operations	Moderate to Low negative	Moderate	High positive

Major infrastructure construction in the project may cause adverse environmental and social impacts due to increased air emission, water pollution, changes in the landscape, slope stability, and noise levels affecting residing human population,

3 IUCN. 2000

4 Gilgit-Baltistan Economic Report March 2011

5 MICS 2016-17

6 Pakistan Environmental Protection Agency "Guidelines for Critical & Sensitive Areas" (PDF) Government of Pakistan. pp. 12, 47, 48. Archived from the original (PDF) on 14 October 2013. Retrieved 6 June 2013.

flora, and fauna. However, these will be limited to construction duration. Similarly, operational activities may increase air emission, changes in the water flow of streams, air quality, and aquatic fauna (if any). A site selection criteria and screening checklist have been outlined to mitigate those impacts, along with extensive environmental and social management and monitoring plans at each stage. Some other mitigation measures include slope stability measures, resource conservation, seismic resistant structures, explosives handling procedures, reduction in air emissions, effluent management, monitoring of environmental pollutants, worker health safety management, use of personal protective equipment, community health and safety management, course of action for physical culture resource, precautionary measures near archaeological sites, capacity building, training of staff and provision of the non-objection certificate (NoC) while working in protected areas.

The assessment also highlighted the need for land acquisition which will be entirely voluntary by the government and residents. In the case of involuntary land acquisition, the preliminary screening indicates minor social risks in rural and urban areas. The **Resettlement Policy Framework** has been devised to avoid intuitive land acquisition. A sub-project screening will be jointly conducted by the implementing agency and the technical design team to fully orient themselves to the potential impacts of the primary and associated infrastructure. The project team will prepare social safeguards to document requirements based on the screening results, i.e., voluntary land donation documentation, abbreviated resettlement action plan, the livelihood restoration plan, process framework, or due diligence reports. To enforce implementation, a monitoring and reporting (M&R) system has been devised to measure the progress of ESMF implementation. An Environmental Coordinator, Climatologist, and Social/ Gender Safeguard Coordinator have been positioned at Project Support Unit for effectively executing environmental and social safeguards. Communities and institutions were engaged to express their concerns on development initiatives early. Most institutional stakeholders favored and supported the project due to the shortage of drinking water and electricity supply in the area.

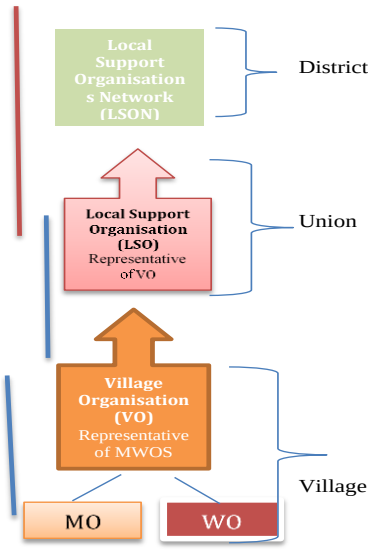

Exhibit 5: Three-tiered Social Mobilization

Stakeholder Consultation: The communities also envisioned positive social impact through improvement in quality of life. All stakeholders unanimously agreed to manage the adverse effects of infrastructure development on the natural environment through substantial mitigation measures. Their primary concerns were to respond to the needs of disaster-prone areas, protected areas and species, and vulnerable communities. In addition, the communities that were previously underserved expressed justice in locating the project sites. The project will address the stakeholder's concerns through environmental and social safeguard plans. A three-tiered social mobilization plan (**Exhibit 5**) will involve communities and institutions during project implementation to ensure continuous stakeholder engagement. The **Grievance Redress Mechanism (GRM)** will address communities' concerns during the project's lifetime through the involvement of village and project-level grievance redress committees in the decision-making process. The complaints of the inhabitants will be registered, responded to, and resolved regularly. The purpose is to facilitate the resolution of disputes without going into litigation. However, the disputant has the right to seek a court of law if the grievance is unsettled through GRM. An extensive budget has been allocated to implement environmental and social safeguards and enforce the proposed mitigation measures.

Conclusion: Based on this project's scale, category, and ESMF findings, the overall environmental impact is manageable with defined mitigation measures. The project is highly beneficial by providing access to basic facilities for vulnerable populations. It will bring a sustainable infrastructure enabling access to essential services to remote communities. However, to ensure accountability, environmental and social safeguards documents/ commitments must exhibit full disclosure according to the World Bank and AFD protocols through electronic and social media information dissemination to the public.

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