

Component 1: Building Climate Resilience of Watersheds in Mountain Eco-Regions

Rationale

The Project will support the implementation of the Strategic Program for Climate Resilience (SPCR) which has been developed by the Government of Nepal in consultation with ADB, IFC and the WB. Within the overall framework of the SPCR, the Project will enable communities in mountainous ecosystems significantly vulnerable to Climate Change impacts to have improved access to and reliability of watershed and water resources.²⁷

Nepal is one of the poorest and most climate vulnerable countries in the world. Moreover, as a mountainous country belonging to the Himalaya region, also known as the *‘third pole’* or the *‘water tower of Asia’*, Nepal faces unique challenges. Temperatures are rising fastest at the highest altitudes, affecting glaciers, snow and ice, and threatening the generally poor and isolated communities that depend upon them. Retreating glaciers and changes in seasonal snow fall and melt will lead to greater uncertainty about water flows and, in the long run, diminished water availability. Traditional knowledge and systems may not be sufficient for mountain people to cope with climate change and associated extreme climate events.

In a country where the impacts to water resources constitutes the principal climate change risk and the majority of the population derives considerable benefit and livelihood from such resources, SPCR support is a critical entry point to improve the resilience of water resources and associated mountain ecosystems.

Impact, Outcome, and Outputs

The overall impact of the SPCR with its five component projects is to build long-term climate resilience in Nepal through an integrated water resource and ecosystem-based approach focusing on community-based management. To support the achievement of overall SPCR impact, the Project will address the key problem of reduces water availability and reduced reliability of water, the key problem faced by communities in vulnerable mountain ecosystems (see Figure 1 for the problem tree analysis). To address this key problem, the Project’s expected outputs are: (i) participatory watershed management planning to improve access to and reliability of water resources demonstrated and mainstreamed into the Government’s programs; (ii) watershed management plans implemented in priority watersheds significantly vulnerable to climate change; (iii) productivity of water enhanced through effective and efficient use of water in farm lands/systems in combination with improved agriculture practices, and (iv) lessons for improving access to and reliability of water resources in vulnerable mountain regions generated and incorporated into country programs. The watershed management plans will aim at (i) reducing erosion to minimize downstream sedimentation, (ii) enhancing soil moisture and groundwater recharge, and (iii) enhancing surface water conservation and storage.²⁸ The Project’s Design and Monitoring Framework (DMF) summarizes the expect outcome, outputs and selected examples of likely

²⁷ Project scope, cost, financing and implementation arrangements will be firmed up through a PPTA, see Project Preparation Grant Request.

²⁸ Examples of interventions to achieve these outcomes are: rehabilitating degraded watershed lands, regenerating forests, implementing conservation farming, protecting water infrastructure from erosion and floods, constructing or improving small-scale water storage facilities and distribution systems, and applying on-farm water conservation.

interventions, see Table 1. The main project risks identified at this stage is the possibility of insufficient Government funds to expand watershed management programs in CC vulnerable watersheds.

Table 1: Preliminary Design and Monitoring Framework

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Long-term climate resilience in Nepal mountain communities improved</p>	<p>Livelihoods improved and CC resilient for communities within CC vulnerable watersheds</p> <p>Reduced outmigration from communities within CC vulnerable watersheds</p>	<p>District-level socio-economic data published by the Government and other institutions</p>	<p>Assumptions</p> <p>Projected CC impacts are estimated with adequate level of accuracy</p> <p>Government continues to give high priority to support communities in mountain ecosystems to build up CC resilience</p>
<p>Outcome Communities in watersheds of river systems that are significantly vulnerable to CC have improved access to and enhanced reliability of water resources</p>	<p>Water resources within watersheds increased and the watersheds' hydrologic services to downstream areas improved (increased dry season flows and reduced sediment load)</p> <p>Productivity of lands and farming systems in the watersheds enhanced</p>	<p>Hydrologic monitoring program to be established under the envisaged investment project</p> <p>Socio-economic monitoring program to be established under the envisaged investment project</p>	<p>Assumptions</p> <p>DSCWM and communities continue to maintain watershed management investments</p> <p>Risks</p> <p>The possibility of insufficient Government resources to expand watershed management programs in CC vulnerable watersheds</p>
<p>Outputs</p> <p>1. Participatory watershed management planning to improve access to and reliability of water resources demonstrated and mainstreamed into the Government's programs</p> <p>2. Watershed management plans implemented in priority watersheds significantly</p>	<p>Adoption by DSCWM and DDCs of the participatory planning approach to be developed through the PPTA and field tested under the envisaged follow-on investment project</p> <p>Reduced rain-fall run-off and soil erosion within the treated watersheds; increased surface water storage and use thereof within the watershed</p>	<p>Hydrologic monitoring program to be established under the envisaged investment project</p>	<p>Assumptions</p> <p>The PPTA and the envisaged follow-on investment project will demonstrate effective and sustainable watershed management practices</p> <p>Effective monitoring program in place to assess the impacts and lessons derived from the envisaged investment project</p> <p>Risks</p> <p>Capacity of the DSCWM</p>

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>vulnerable to climate change</p> <p>3. Productivity of water enhanced through effective and efficient use of water in farm lands/systems</p> <p>4. Lessons for improving access to and reliability of water resources in vulnerable mountain regions generated and incorporated into country programs</p>	<p>Communities adopt effective and enhanced water use practices in combination with improved agricultural practices</p> <p>Lessons fed into the SPCR global learning support program</p>	<p>Socio-economic monitoring program to be established under the envisaged investment project</p>	<p>may need to be increased to scale-up the watershed management interventions in critical watershed following project completion</p>

Activities with Milestones	Inputs
<p>Following activities related to PPTA and processing of envisaged investment project:</p> <ol style="list-style-type: none"> 1.1. Develop/ revise watershed management plans for critical watersheds taking into account CC impacts and using state-of-the art planning methodologies 1.2. Raise awareness and enhance participation of watershed communities and other stakeholders (government and non-government) in watershed management 1.3. Clarify the roles of watershed stakeholders and their rights in relation to watershed management, and improve watershed management governance 1.4. Strengthen institutional arrangements for involvement of watershed communities and other stakeholders (government and non-government) in watershed management; provide capacity building where needed 1.5. Revise/ develop appropriate cost and benefit -sharing arrangements for watershed investments (e.g., payment for ecosystem services) and their maintenance 1.6. Strengthen DSCWM and implementing agencies' capacity to implement the project in particular and watershed management initiatives in general <ol style="list-style-type: none"> 2.1. Control erosion to minimize downstream sedimentation (water quality) 2.2. Enhance soil moisture and groundwater recharge (e.g. through agro-forestry, small water bodies, water tanks) 2.3. Enhanced surface water conservation, storage and utilization of conservation techniques (e.g., on-farm water harvesting, micro-irrigation, promotion of agricultural technologies such as minimum tillage and sloping agricultural land management, and on-farm soil and water management.) 2.4. Build socio-ecological resilience in the mountain ecosystem and enhance livelihoods of watershed communities 	<p>CIF tentative allocation: \$0.9 million for PPTA and \$41 million for investment project</p> <p>Government: \$25,000 during PPTA</p> <p>Beneficiaries: tbd during PPTA</p> <p>Others: tbd during PPTA</p>

Activities with Milestones	Inputs
3.1. Design, implement and monitor watershed specific productivity enhancement interventions 4.1. Monitor the impacts of project interventions, especially in terms of watershed hydrology and hydrological services 4.2. Document project implementation approaches and experiences 4.3. Share the project experiences, impact assessments and lessons learned within Nepal and globally as part of SPCR global learning support program 4.4. Replicate best practices in other watersheds	

Source: February 2011 SPCR mission

A sector approach is envisaged to provide the required flexibility to address (sub)watershed specific interventions which will be determined through a participatory process involving concerned stakeholders. A detailed assessment will be undertaken during the project preparation phase to prioritize watersheds for possible inclusion under the Project.²⁹

The Project’s impact, outcome and outputs will be firmed up through the proposed \$900,000 project preparation Technical Assistance (PPTA) for which a Project Preparation Grant Request is submitted.

Investment and Financing Plans

The Project will finance the interventions needed to achieve the four outcomes described in the above and the technical assistance needed for project management and engineering, and for assisting communities in implementing project-related interventions.

A tentative allocation of \$41 million in SCF funding is proposed. The total cost of the Project will be subject to further discussions between the Government and ADB, the designated partner agency for the Project.

Table 2: Tentative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Strategic Climate Fund (SCF)	41.0	Tbd
Government	Tbd	Tbd
Beneficiaries	Tbd	Tbd
Total	Tbd	100.00

Source: February 2011 SPCR Mission.

²⁹ The number of watersheds that could be covered under the project/component would partly depend on the amount of financial resources allocated to the project and the cost estimates of various interventions.

Indicative Implementation Arrangements

It is envisaged that the Department of Soil Conservation and Watershed Management (DSCWM) of the Ministry of Forest and Soil Conservation (MoFSC) will be the Project's Executing Agency. The Ministries of Irrigation, Agriculture, and Local Development are expected to be the Project's main collaborating agencies.³⁰ Since the Project will follow a decentralized approach, District Development Committees and Village Development Committees are expected to be the main government stakeholders at district, local and watershed level. Other important stakeholders will be NGOs and civil society organizations, community forestry groups and water users groups. Participation of the private sector will be sought, especially in promoting water saving technologies. NGOs are expected to play an important role in project implementation, especially in mobilizing and assisting communities in assuming their implementation role. The proposed PPTA will develop the detailed implementation arrangements and identify required capacity building/ strengthening measures. This will be undertaken in a participatory process with all concerned government and non-government stakeholders.

Knowledge Management and Dissemination of Lessons Learned

This component will generate lessons on improving access to and reliability of water resources in vulnerable mountain regions through documenting project approaches and experience in project implementation and sharing lessons learned within Nepal and globally as part of the global learning program. Since the project will follow a decentralized approach, District Development Committees and Village Development Committees and other stakeholders such as NGOs and civil society organizations, community forestry groups and water users are expected to take important roles in knowledge sharing and dissemination. DSCWM will also ensure that learning workshops are held periodically during project design and implementation that include the broad range of government and non-government stakeholders concerned with water, food, and forest management. DSCWM will develop a results management framework consistent with the overall SPCR results framework, and will capture and consolidate lessons learned from its review of progress towards building climate resilience of watersheds in mountain eco-regions. These results and lessons will be reported to MOE's Climate Change Management Division on a regular basis for wider dissemination under the SPCR knowledge management program.

Due Diligence

The process of due diligence assessments has been ongoing with the start of the preparation of SPCR, especially in terms of government policies and strategies, existing development plans and programs, and overall institutional arrangements. The Project-specific due diligence will be undertaken during the proposed PPTA.

³⁰ The PPTA will confirm the relevant collaborating agencies.

Figure 1: Problem Tree

