

**PROJECT INFORMATION DOCUMENT (PID)  
IDENTIFICATION/CONCEPT STAGE**

Report No.: PIDC60445

<b>Project Name</b>	Strategic Program for Climate Resilience
<b>Region</b>	SOUTH ASIA
<b>Country</b>	Bhutan
<b>Sector(s)</b>	General public administration sector (40%), General water, sanitation and flood protection sector (60%)
<b>Theme(s)</b>	Natural disaster management (40%), Climate change (60%)
<b>Lending Instrument</b>	IPF
<b>Project ID</b>	P159600
<b>Borrower Name</b>	Department of Public Accounts, Ministry of Finance
<b>Implementing Agency</b>	Gross National Happiness Commission
<b>Environment Category</b>	B - Partial Assessment
<b>Date PID Prepared</b>	19-Apr-2016
<b>Estimated Date of Approval</b>	14-Apr-2016
<b>Initiation Note Review Decision</b>	The review did authorize the preparation to continue

## **I. Introduction and Context**

### **Country Context**

Bhutan is a landlocked country located in the eastern Himalayan range. Its population estimated at approximately 768,577, is amongst the lowest in South Asia region. Almost 70% of the country's land area (38,394 square kilometers) is forested. Bhutan's stunning topography spans elevations of about 100 m in the south to 7,500 m in the north. The country has three distinct climatic zones: subtropical, alpine and temperate which encompass numerous micro-climates due to dramatic variations in topography, elevation and altitude. Even though Bhutan is a net sequester of greenhouse gases (GHG), the effects of climate change and variability are becoming increasingly visible.

Bhutan is highly exposed to hydro-meteorological hazards such as floods, flashfloods, landslides, Glacier Lake Outburst Floods (GLOF), windstorms and cyclones. According to the International Disaster Database, the 10 most significant natural disasters in Bhutan have all occurred in the last twenty years in terms of casualties and number of people affected. The 1994 GLOF event at the Luggye Tsho killed 21 people and damaged 91 houses and 1,781 acres of land. The heavy rainfall brought about by Cyclone Aila in 2009 incurred an estimated loss of around US\$ 17 million. The country is also increasingly experiencing prolonged and extreme droughts which in turn increases the risk of loss of biodiversity, crop yield, agricultural productivity, as well as forest fires. Motor roads are a lifeline for Bhutan. Landslides are a major problem for the roads sector, especially during monsoons. With most of the rivers confined in narrow gorges, blockage of rivers by landslides during monsoons also risks formation of artificial dams that poses great danger to

downstream assets such as hydro power. Extreme weather events have significant socio-economic consequences and adversely affect people's livelihoods and well-being, particularly marginal and poorer communities.

With climate change, the frequency and intensity of major hydro-meteorological hazards is expected to increase. IPCC (IPCC AR4) projections for temperature and precipitation derived from 21 GCMs indicate a median increase by 3.3 degree C for the A1B SERS scenario by 2100, and increases in both min and max temperatures for the region. Available observational data and literature also shows an increase in monsoon precipitation over the Himalayan range by the end of the century. Studies show that in the last few decades, the Himalayan and the Tibetan plateau have warmed at a greater rate than in the last century (Gautam et. al, 2013). There is also evidence of glacier retreat in the eastern and western Himalayas and expansion of glacial lakes is predicted to be the highest in Nepal and Bhutan.

Climate variability and change are expected to have major impact on all key socio-economic sectors such as agriculture, hydropower, tourism, transport, infrastructure and water. Agriculture, livestock and forestry account for 16.77% of Bhutan's GDP; electricity and water supply account for 14.15% of GDP and construction accounts for 15.46% of GDP (Statistical Yearbook of Bhutan 2015, NSB, RGOB). The agriculture sector for example, which engages almost 69% of the Bhutanese population (and 56% of the country's labor force) (NLFS, 2013), is heavily impacted by climate variability and change. Erratic and heavy rainfall are already impacting agricultural productivity. Farmers increasingly report instability in crop yields, loss in production, declining crop quality, and decreased water availability for farming and irrigation. Loss of soil fertility from erosion and runoff, delays in sowing of crops due to premature frost, and outbreaks of new pests and diseases (National Environment Commission 2008) are also reported. Extreme weather events contributing to increased incidence of flooding and landslides make assets such as hydropower and road network in the mountains more prone to failure and contribute to disruption in work. Changes in precipitation also has consequences on availability of water for drinking and energy production in the short, medium and long term.

To address these risks, the Royal Government of Bhutan (RGOB) is undertaking a multitude of activities with support from different agencies and sectors in Bhutan. However, what is unclear is how they are embedded in a long term vision, how adaptation in Bhutan can be understood in the context of a low carbon development path, which sectors to prioritize or what the role of the private sector and educational system in supporting climate resilience may be.

### **Sectoral and Institutional Context**

Addressing climate related risks and strengthening resilience has been a long term priority for RGOB. In 1992, the RGOB signed the United Nations Framework Convention on Climate Change (UNFCCC) at the United Nations Conference on Environment and Development in Rio de Janeiro. Subsequently, it ratified the Convention in August 1995 through the National Assembly (NEC, 2013). RGOB is also highly committed to remaining carbon neutral as reiterated at the 15th Conference of Parties (COP) of the UNFCCC in Copenhagen in December 2009. Bhutan has also prepared a National Adaptation Action Plan (NAPA) in 2006 and updated it in 2012 (NAPA II) on its own initiative highlighting its commitment to climate resilience. This was done to revisit the priority activities identified in the NAPA of 2006 since other climate risks and vulnerabilities (windstorms, cyclones) that were not identified had emerged. The recent Intended Nationally

Determined Contribution (INDC) that Bhutan submitted to the UN Climate Change Secretariat was tagged as one of the most ambitious. A National Strategy and Action Plan for Low Carbon Development, 2012 has also been prepared.

While the NAPA focused on identifying “urgent and immediate projects and activities that can help communities adapt to climate change,” (Bhutan NAPA, 2006, page 11), and the INDC puts a broad spectrum of priorities for both mitigation and adaptation for low GHG emission development and broadly describes the mode of implementation, there is a need to take a more long term and strategic view in how Bhutan can position itself now for addressing climate related risks in the present and the future. The Strategic Program for Climate Resilience (SPCR) is expected to develop this programmatic approach and also inform planned documents such as the National Adaptation Plan (NAP).

Moreover, in Bhutan, at present, responsibilities for climate policy, planning, technical and implementation are dispersed and there is a need for capacity strengthening and high level coordination on climate resilience. The National Environmental Commission (NEC) is the main agency with the mandate for developing climate related policies and plans. It is mandated to monitor, coordinate and review climate related plans and activities. It is primarily a policy making agency and the implementation is left with the sectors. With only 5 technical staff with background in environmental and climate related studies, it has significant technical capacity constraints. It has no offices or representation at the sub-national level. The Department of Hydromet Services (DHMS) under the Ministry of Economic Affairs is the main technical agency responsible for climate monitoring and prediction, provision of weather, flood forecasts and climate services. It systematically started collecting climate data since 1996 (mainly manually) and has no capacity for downscaling from global climate models. It faces significant technical and human resource capacity constraints but is currently in the process of modernizing itself to improve forecasting capacity and service delivery through development partner support. Sector implementing agencies such as Agriculture, Engineering Services, Public Health, Local Governments, etc. are responsible for integrating climate resilience into their respective sector plans, projects and activities. However, they do not have in-house capacity for doing sector specific impact analysis or tools to inform resilience in their activities. How climate related impacts are experienced at the local level and how they are communicated and integrated at district and higher levels and planning processes was also noted as a gap during the scoping mission consultations. The GNHC as the central planning agency, plays the important role of coordinating with sector agencies and local governments to lead preparation and monitoring of the country’s 5 year National Development Plans. As the focal agency for the SPCR, it can in coordination with the Ministry of Finance, provide a high level platform for coordination and integration of climate actions in national development processes.

With this perspective, the Gross National Happiness Commission (GNHC) of the RGOB, submitted an Expression of Interest (EOI) for funding to the Pilot Program for Climate Resilience (PPCR) program under the Climate Investment Funds (CIF). Based on a rigorous selection process, Bhutan became one of 10 countries globally to become eligible for PPCR funding. A first step of this process is to undertake consultations and develop a Strategic Program for Climate Resilience (SPCR) that provides a vision, outlines country priorities, develops capacity and processes to facilitate planning for climate resilience, and articulates a program of investments to achieve its goals. The value added of the SPCR process is that it would help define the main pillars constituting a long term programmatic approach for mainstreaming resilience into development planning in Bhutan, develop a roadmap and identify key investment opportunities that could be undertaken not

just in the short term (as was done by the NAPA process), but also in the medium and longer term.

### **Relationship to CAS/CPS/CPF**

The proposed activity is fully aligned with the government's national development priorities. The RGoB recognizes carbon neutral/ green and climate resilient development as one its national key result areas for the current Five Year Plan (FY 2013-18) developmental activities. Climate related performance indicators are also included in the sector development plans in the 11th FYP document. Further, the RGoB is in the process of preparing the Vision 2050 document in which climate resilience is an important focus area. The SPCR process and findings will be used as a foundation for the Vision 2050 document. The proposed program is also fully aligned with the World Bank Country Partnership Strategy for FY15-19 which identifies strengthening disaster management and climate resilience as key priorities resonating the priorities of the RGoB.

## **II. Project Development Objective(s)**

### **Proposed Development Objective(s)**

The main objective of the proposed activity is to strengthen the capacity of the RGoB in its effort to develop a Strategic Program for Climate Resilience (SPCR) for Bhutan, and undertake targeted technical studies to set foundational work which will help enable Bhutan to address climate vulnerability and change. The SPCR will be informed by extensive consultations with stakeholders and by the scope of the background technical studies. The intent is both to develop a national vision for addressing climate resilience and also identify a roadmap and investment priorities to support its implementation and build capacity through the process. Further, given that climate related issues are not just national but also have regional dimensions, the proposed SPCR will also help address how Bhutan can position itself in the region in terms of addressing its long term climate risks.

The proposed SPCR will build on activities already underway and existing information gaps. In a scoping mission in October 2015, stakeholder consultations were organized by the GNHC to undertake a scoping exercise and identify key sector priorities and concerns. A literature review has also been initiated to identify gaps and areas which require additional technical work. The proposed SPCR process builds on these activities to develop a long term strategic vision for climate resilience in Bhutan.

Project beneficiaries here are defined as persons who have access to improved technical capacity and information for decision making. At the country level, the SPCR document will benefit Bhutan's key government agencies responsible for planning and integrating climate resilience into sector plans and programs. These include GNHC, NEC, DHMS and other sector agencies. Indirectly, the document should benefit citizens across the country, particularly climate vulnerable communities through the development of an integrative strategic national process.

### **Key Results**

The achievement of the Project Development Objective shall be measured using the key indicators described below:

- i. Improved capacity o GNHC for strategic decision making through preparation of the SPCR report
- ii. Identification of climate investment options in at least 3 sectors to benefit climate vulnerable communities
- iii. Number of government officials trained in climate resilience and services

### III. Preliminary Description

#### Concept Description

The proposed activity has three main components:-

#### Component 1: Preparation of the SPCR Report: (0.2 million)

The main objective of this component is to prepare an SPCR report that identifies a strategic vision and key priorities for climate resilience in Bhutan. The SPCR report which is a government owned document will identify three main pillars/focus areas prioritizing climate resilience. Funding will be used for (i) consultancies to prepare the SPCR document, (ii) sector specific reviews to assess impact of climate change in key sectors such as hydropower, agriculture, tourism, water resources, urban development, etc. (iii) analysis of policies and institutions and human resource capacity in key sectors, (iv) stakeholder consultations and (v) editing, publication and dissemination.

#### Component 2: Technical Studies to Support Preparation of the SPCR Document: (1.1 million)

The main objective of Component 2 is to support preparation of technical studies that will inform the preparation of the SPCR report and inform the pipeline investments. These include studies focusing on the following areas:

- (i) Capacity needs Assessment and Proposal for Training and Curriculum Development: (100k) – Ministry of Education and National Environment Commission Secretariat (NECS)
- (ii) Assessment of climate information gaps, development of climate maps/climate vulnerable areas and digital library of climate related information (DHMS) and development of sector specific climate services (250k) (In collaboration with WB) - DHMS
- (iii) Study on the potential role for private sector in Climate Change Adaptation to assess how private sector can be better engaged in addressing climate change challenges in Bhutan and what policy measures both by the Royal Government of Bhutan and also the development partners can take - (100k) (in collaboration with IFC and PPIAF)
- (iv) Preparation of Hazard and Exposure maps and Vulnerability Analysis to inform flood mitigation measures and Impact Based Forecasting in hotspot areas (250k): (to be undertaken in collaboration with Department of Engineering Services, DHMS, Department of Geology and Mines) (with WB collaboration)
- (v) Develop a Framework and design for Assessing Water Scarcity in priority water scarce aquifers (100k)
- (vi) Public expenditure review (100k) – GNHC and Ministry of Finance
- (vii) Development of Watershed Management Plans for Priority Basin (proposed) (100k) (alternately study could be done in a different sector—eg. Roads, Transport or Hydropower)
- (viii) Study on Urban Resilience focusing on adaptation and mitigation measures to highlight investment areas and recommendations for addressing urban resilience in Bhutan (100K) (In collaboration with WB)

These studies have been identified based on the consultations undertaken during the scoping mission in Oct-November 2015, the INDC and priorities identified by GNHC based on consultations with relevant agencies.

#### Component 3: Training, Capacity Building, Project Management and Monitoring and Evaluation: (0.2 million)

The main objective of this Component is to support project management which will include workshops and seminars, technical training, and monitoring and evaluation. Funding will be used to support GNHC in the management of this project, to undertake monitoring and evaluation. Funds

will also be used to support training and capacity building relevant to the resilience agenda.

#### IV. Safeguard Policies that Might Apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04		x	
Forests OP/BP 4.36		x	
Pest Management OP 4.09		x	
Physical Cultural Resources OP/BP 4.11		x	
Indigenous Peoples OP/BP 4.10	x		
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

#### V. Financing (in USD Million)

Total Project Cost:	1.5	Total Bank Financing:	0
Financing Gap:	0		
<b>Financing Source</b>			<b>Amount</b>
Climate Investment Funds			1.5

#### VI. Contact point

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