I. Introduction and Context

Country Context

In the nearly six years since Mr. Evo Morales was elected as Bolivia’s first indigenous president, the country has experienced significant socio-political and economic change. Driven by high commodity prices and prudent fiscal and monetary policies, Bolivia’s economy has grown on average 4.5 percent annually for the past seven years, increasing per capita income by 18 percent. The fiscal balance turned positive in 2006 for the first time in decades. Gross public debt dropped from 96 percent of gross domestic product (GDP) in 2003 to 40 percent in 2010. The national poverty rate declined slightly, from 63 percent in 2005 to 59 percent in 2008, the rural extreme poverty dropped 10 per cent over the same time period and income inequality has trended downward.

Despite progress, Bolivia faces major development challenges. With US$1,790 per capita income in 2010, Bolivia has one of the lowest GDP per capita levels in the Latin America and Caribbean (LAC) region. Moderate poverty afflicts more than half of the population and income inequality is still very high. Recent economic growth is vulnerable to shifts in international commodity prices and total investment is low, limiting economic expansion. Productive enterprises in the rural sector—where 36% of the population lives—remain hampered by inadequate infrastructure. Informality is very high, which translates into lower levels of productivity and reduced tax revenue. Public sector governance is weak, limiting policy effectiveness and outcomes. Social indicators, while much improved since the 1990s, are still well below levels in neighboring countries. And while much abated since Morales’ re-election in December 2009, social and political tensions could return to the fore, especially if economic development slows.

Sectoral and Institutional Context

The geographical location of Bolivia, combined with high level of poverty, makes it a particularly vulnerable country to climate change. The gradual increase of average temperature is bringing disruptive changes to the hydrological cycle, increasing the frequency and intensity of extreme weather events, such as flood and droughts. Water scarcity, mainly caused by increased water demand from population and economic growth, is being exacerbated in some areas of the country, by glacier melting, changes in the spatial and temporal distribution of precipitation, increased evapo-transpiration, as well as watershed degradation. The negative impact of these trends on the economy, the welfare of the people and the ecosystems is already being felt and is particularly strong on vulnerable groups, the rural and urban poor, women and children.

In recent years, Bolivia has begun to take steps to build a society resilient to climate change. To achieve the national priorities of “living well” as defined in its 2006-2015 National Development Plan, Bolivia is striving to initiate transformation in its approach to development planning, budgeting and investments so as to include considerations of climate resilience. This is reflected in two key documents that outline Bolivia’s objectives, policies and strategies related to climate change: the National Mechanism for Adaptation to Climate Change approved in 2007 (MNACC, 2007-2016) and the Strategic Program for Climate Resilience (SPCR) approved in October 2011. The MNACC is a multi-sector participatory action plan to build resilience to climate change. Building on the MNACC, the SPCR outlines the Government’s long-term vision to achieve a climate resilient development trajectory and define the underlying investment program proposed to the Pilot Program for Climate Resilience (PPCR) for financing.

Bolivia’s strategy towards climate change adaptation as defined in the SPCR is structured around integrated basin management as its unifying concept, as it correctly identifies changes in the hydrological cycle as the main threat arising from climate change. It aims at strengthening Bolivia’s capacity to define and implement an Integrated River Basin Management (IRBM) approach at the central level and in three prioritized pilot sub-basins. The pilot sub-basins have been chosen to span the three main eco-regions in...
Bolivia (highlands, valleys and lowlands) and cover the three main climate challenges (droughts, floods, and diminishing water supply from disappearing glaciers). One of the pilots is targeted at the main urban conglomeration in Bolivia facing increasing water scarcity (La Paz – El Alto), while the other at predominantly rural areas with agricultural challenges and another important urban conglomeration facing increasing extreme weather events (Mizque and Pirai in the Rio Grande Basin).

The proposed project will support the implementation of Bolivia’s SPCR by financing part of its investment program. In November 2011, Bolivia submitted its SPCR to the Climate Investment Funds (CIF) committee requesting US$110 million for the implementation of its investment program through the World Bank and the IADB. The CIF sub-committee endorsed the SPCR for a total amount of US$86 million composed of a US$50 million grant and a US$36 million concessional loan, of which US$41 million will be channeled through the World Bank to finance the proposed project.

The proposed project will follow a first phase of activities (PPCR-Phase 1) financed by a US$1.5 million grant provided under the PPCR trust fund (Grant No. TF098449) that was declared effective in July 2011 and whose implementation is expected to start in January 2012. Among other things, this grant will finance the preparation of this Project and IADB project and will initiate some of the proposed Project’s activities.

At its creation in 1995 under the Ministry of Sustainable Development (currently Ministry of Development and Planning), the National Climate Change Program (PNCC, by its acronym in Spanish) was endowed with the responsibility of fulfilling the technical commitments of Bolivia towards the United Nations Framework Convention on Climate Change (UNFCCC) and of coordinating and orienting efforts to adapt to and mitigate the effects of climate change in Bolivia. In 2009, following the adoption of the new Constitution, a new Ministry of Environment and Water (MMAyA, by its acronym in Spanish) was created and assigned overall responsibility for climate change adaptation. PNCC was transferred to one of its Vice Ministries and, in the process lost most of its experts and resources. Moreover, its status below a Vice Ministry makes it very difficult to fulfill a mandate of inter-ministerial coordination. Further changes to the institutional framework for the adaptation to climate change are expected if the new Ministry of Mother Earth is created. Considering the present weakness of the PNCC, and the difficulties encountered in starting implementing phase 1 of the PPCR, the US$1.5 million grant mentioned above, it was decided that implementation of the Project will be under the responsibility of an independent Project Implementation Unit (PIU) under the Minister of Environment and Water.

Relationship to CAS
The proposed project will support one of the four strategic areas of the 2012-2015 Country Partnership Strategy for Bolivia (report # 65108-BO, Board approval: December 1st, 2011), namely Climate Change and Disaster Risk Management and one of its outcomes, namely Reduce social, economic and environmental vulnerability to climate change.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

13. The Project Development Objective (PDO) is to strengthen Bolivia's capacity to adapt to climate change effects at the national level and set the foundations to improve the climate resilience of socioeconomic and natural systems’ in two sub-basins off the Rio Grande by implementing a river basin management approach.

Key Results (From PCN)

14. The achievement of the PDO will be measured through the following results/indicators:

   a. Adoption of an Integrated River Basin Management Methodology as a structural element to adaptation to climate change;
   b. Improved access to more integrated, reliable climate and water information at the national level and in two sub-basins;
   c. An Integrated River Basin Management system focused on improving climate resilience is operational in two sub-basins, with a commitment to the participation of women;
   d. Climate resilience-enhancing measures are implemented in targeted production systems, ecosystems and settlements has increased in two pilot sub-basins of the Rio Grande (Mizque and Pirai).

III. Preliminary Description

Concept Description

Project concept.

The proposed project will support the implementation of Bolivia’s strategy towards climate change adaptation, as defined in the SPCR. This strategy proposes the adoption of an integrated, multi-sectoral, participatory, basin-scale approach to climate change adaptation. This approach is justified because: (i) most climate change impacts will be channeled through modifications to the hydrological cycle which is defined at the basin level; (ii) these changes in the hydrological cycle will affect various economic sectors, people wellbeing and the environment, which calls for the adoption of a multi-sectoral, integrated approach and finally (iii) stakeholders participation, by increasing ownership and accountability, is related to more sustainable results, improved management outcomes and reduced conflicts.

The proposed project will support the implementation of Bolivia’s strategy by strengthening institutional capacity to define and implement the new approach to CC adaptation. This would entail two types of actions: (i) actions to strengthen the institutional
Project description.

The proposed Project includes the following components and activities:

Component A: Strengthening national capacity for adaptation to climate change.

This component would include three sub-components:

Sub-component A. 1. Strengthening of the National Climate and Water Information System

This sub-component aims at increasing access to more reliable hydro-meteorological and climate change related data and information by integrating the information system and developing the capacity of the National Service of Meteorology and Hydrology (SENASA) and the National Climate Change Program (PNCC) and possibly other organizations responsible for generating and disseminating hydro-meteorological and climate change related data and information. Proposed activities under this component include:

(i) Digitalization, quality control and information treatment of historical data;
(ii) Generation of a standard sets of hydro-meteorological information for the period 1980-2010 distributed in the eleven priority macro-basins of the country, using information captured by remote sensors and calibrated with local data collected by ground stations;
(iii) Integration of the information generated from the country's main hydro-met observation networks within one single information system managed by SENASA;
(iv) Revamping SENASA's website to improve access to hydro-meteorological data and information, including the information mentioned above;
(v) Definition of climate change scenarios for the full country and for the pilot river basins, by using general models and downscaling and regionalization procedures;
and additional field work in order to refine the results of the models in the priority sub-basins and specific small areas, as well as training of technicians in the analysis and use of the scenarios;
(vi) Development of the current national water balance and projected national water balance using previously estimated climate change scenarios;
(vii) Creation of a GIS platform to contain all relevant climate change adaptation, such as topographic, soil use, geology, and hydro-meteorological data.
(viii) Creation of a user-friendly website to disseminate the final products of the GIS system through free downloading by professionals, academic, stakeholders and the general public without any limitations.

Sub-component A. 2. Integration of climate change resilience and adaptive capacity topics in national planning and investment tools.

This sub-component aims at further including climate change adaptation considerations in the national planning and public investments tools. Proposed activities under this component include:

(i) The development of a methodological guide for integrated, participatory, basin-scale planning for increasing the resilience to climate change, based upon a review of international experiences and the lessons learned from pilot activities in the sub-basins.
(ii) The integration of climate change adaptation in the next economic and social development plan;
(iii) The development of methodologies, indicators and variables for the integration of climate change adaptation in the Integrated Public Investment Planning System (Planificación Integral del Estado);
(iv) The revision of the guidelines of the National Public Investment System for the preparation of pre-investment studies of large and small scale irrigation projects to incorporate climate change dimension.


This sub-component would finance the administration, monitoring and evaluation and auditing of the Project. It would also finance mechanisms for the coordination of the overall SPCR program, such as an integrated M&E system for the projects implemented by
different donors and organization of annual meetings to review the achieved progress in the different activities financed through the PPCR. Finally, it would support the collection, compilation and dissemination of knowledge generated in the program by financing the establishment and operation of a central communication and public relation unit within the Implementing Agency.

Component B: Strengthening resilience to climate change in the Rio Grande basin.

The main objective of this Component is to increase resilience of socioeconomic and natural systems to climate change effects in two pilot sub-basins of the Rio Grande basin: the sub-basin of the Mizque River in the valleys and the sub-basin of the Pirai River in the lower basin. A second objective is to generate concrete experiences in the planning, design and implementation of integrated investments that are resilient to climate change effects, whose results and lessons learned will be the basis for setting or adjusting national standards for public planning (i.e. River Basin Planning) and investments (e.g. large and small scale irrigation projects), for possible replication in other regions.

This component would include the following sub-components and activities:

Sub-component B.1. Strengthening institutions responsible for Integrated, Participatory, Basin-scale, Climate Change Adaptation Planning and Management.

This will include:

(i) Strengthening of the Water Department from Cochabamba region (PROMIC) and SEARPI as the institutions responsible for basin management respectively in the Departments of Cochabamba and Santa Cruz, including the capacity to formulate and implement a monitoring and evaluation framework;
(ii) The establishment or strengthening of institutions facilitating basin stakeholders and decision makers’ participation in basin planning and management, such as the Commonwealth of the Southern Cone in Cochabamba.

Sub-component B.2. Integrated, Participatory, Basin-scale, Climate Change Adaptation Planning.

This would include financing and facilitating the formulation of a participatory, integrated, climate resilient, river basin management plan in each of the selected sub-basins in light of the methodological guide developed in Component A.


This sub-component would finance the strengthening of sub-basins’ water and climate information systems to inform basin planning, management and investments. This would include:

(i) Improvement of hydro-meteorological observation networks through, the rehabilitation/upgrading of existing stations and/or the installation of new ones, including improvement of the data transmission systems as well as training of technicians;
(ii) Creation/strengthening Watershed Data Processing Centers in each sub-basin to treat and analyze hydro-meteorological information;
(iii) Elaboration of scenarios of future water resources availability and water demand at the sub-basin level, including a baseline scenario and climate-change impacted scenarios, as part of the planning activity.
(iv) Establishment of natural hazard risk scenarios (both for drought and flood) running hydrological models with treated hydro-meteorological data. Calculation of flood routing by the rivers and definition of flood risk areas for some hazard scenarios, to be crossed with socio-economic data such as the type of public and private infrastructure in the sub-basins as well as populated (urban and rural) and agricultural areas that would be affected.

Sub-component B.4. Structural and non Structural Subprojects.

The implementation of structural and non structural measures (sub-projects) to enhance socioeconomic and natural systems’ resilience to climate change in the sub-basins, by supporting priority actions of the plans once those are completed or eligible climate adaptation measures identified by targeted beneficiaries before the plans are adopted. The project will finance pre-investment studies; works, goods and services for the implementation of the subprojects, as well as the technical assistance required for its proper operation and maintenance.

Project cost and Financing. Total project cost is estimated at US$50 million, including US$ 41 million from the CIF (of which US$5 million grant and US$36 million concessional loan) and US$9 million from national, local government and beneficiaries’ counterparts funds.
IV. Safeguard Policies that might apply

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