



ECUADOR CASE STUDY

December 2010

ADAPTING TO CLIMATE CHANGE THROUGH EFFECTIVE WATER GOVERNANCE IN ECUADOR

Country	Ecuador [http://www.adaptationlearning.net/country-profiles/ec]
Region	South America
Key Result Area	Disaster Risk Management Water Resources <i>Keywords: Drought, El Nino, Water policy, Hydroelectricity, Irrigation, Floods, Landslides</i>
UNDP Project ID	3520
Project Activity Dates	Start: 2008 End: 2012
Key Stakeholders	National and local level stakeholders.
Primary Partners Involved	Global Environment Facility, UNDP, Government of Ecuador: National Climate Change Committee (CNC), Ministry of the Environment (MoE), National Council of Water Resources (CNRH) - National Water Secretariat from May 2008, National Secretary of Planning and Development (SENPLADES), National Institute of Meteorology and Hydrology (INAMHI), International Centre for Research en the El Niño Phenomenon (CIIFEN), Navy's Oceanographic Institute (INOCAR). Azuay Provincial Council, Los Rios Provincial Council, Manabi Provincial Council, Loja Provincial Council, Commonwealth of the Jubones River Watershed (MCRJ), City of Cuenca Public Municipal Facility for Telecommunications, Water, and Sanitation (ETAPA) Water Management Council, Paute River Watershed - CG Paute Azuay, Cañar, Morona Santiago The Water Resources Forum (FRH), Regional Development Corporations (CDRs), The Consortium for Provincial Councils of Ecuador (CONCOPE) The Association of Municipalities of Ecuador (AME).

ABSTRACT

Ecuador is well known for its beautiful and rugged topography and has an extreme diversity of climates that range from high altitude glaciers to tropical rain forests in the Amazon and dry tropical forest on the Pacific Coast. Some of these areas show a greater sensitivity to climate change, or will undergo rapid changes as a result of climate change. Water is a defining factor in this process. In Ecuador melting glaciers and irregular rainfall have already begun affecting available power, agricultural production and drinking-water supplies. Addressing these problems, the Adapting to Climate Change through Effective Water Governance in Ecuador project aims to increase the adaptive capacities of water resource management in the agriculture and the energy sector through sound water governance arrangements, information management and flexible financial mechanisms to promote local innovation towards sustainable water management. The project's overall goal is to reduce Ecuador's vulnerability to climate change and increase resilience through improved access to timely and accurate climate data. Key lessons learned from the project implementation thus far indicate that appropriately aligning outcomes and outputs is imperative, while also allowing flexibility for modifications as the project evolves. Another key lesson indicates that merging disaster risk management and adaptation plans can support integration of climate change concerns into key provincial and local development plans and the creation of a Management Support Group can be used strategically to form vital partnerships.

BRIEF DESCRIPTION OF ISSUES

Background

Ecuador faces a variety of climate change risks associated with changes in temperature and precipitation, as well as possible alterations to ocean currents. Climate change impacts are difficult to predict and model for the country due to its complex geographical and climatic situation associated with the existence of coastal, highland, and forest regions. Nonetheless, it is possible to identify a range of plausible climate change scenarios at the national and regional levels, which can be used to help Ecuador prepare climate change outcomes, increase the resilience of the water sector, and avoid maladaptation.

Ecuador is highly vulnerable to the anticipated impacts of climate change on water resources. Periodic El Niño events have already demonstrated the likely magnitude of climatic perturbations by severely impacting populations with limited resources and wreaking havoc on infrastructure. The 1997-1998 El Niño alone cost Ecuador an estimated 14.6% of GDP. Certain provinces on the coast and in the Andean region have recently suffered intense droughts that have put them on the verge of desertification. In some cases, aquifers have descended from 15 – 20 meters to 80 – 100 meters.

Problem

According to Ecuador's First National Communication (FNC), the disruption of adequate water supplies is considered the nation's most critical climate change risk, particularly in highland areas. Due to the cross-cutting nature of water resources, increased mean temperatures, recurrent drought, retreating glaciers, and more intense and concentrated rainfall, there will be a wide ranging set of impacts on agriculture, energy, and water supply. These heightened vulnerabilities to climate hazards are likely to exacerbate current water governance problems in Ecuador. Additionally, the consequences of these affects flow through various other aspects of society, undermining poverty reduction and increasing the vulnerability of Ecuador's population.

Under Ecuadorian legislation, water is considered a public resource and its use is authorized by the State through the concession of rights. Due to the lack of a national policy to promote integrated water resource management (IWRM), overlapping institutional roles have evolved during the last two decades. Despite on-going initiatives for developing the water sector, there is little understanding of how climate change will impact water supply and demand. Prior to this project, water management responses have mostly been a reaction to extreme climate events and therefore have been adopted on an ad hoc basis. In order to build a coherent strategy that addresses the long-term use of water in Ecuador, institutional capacities need to be strengthened, and concrete measures created to ensure that climate change issues in the water sector are addressed.

BRIEF DESCRIPTION OF PROJECT

Solution: Adaptation Approach, Components and Description

Working within the water sector, the project will increase adaptive capacity and decrease the vulnerability of local Ecuadorians. Good water management, including timely and accurate climate data, will contribute to the dual parts of this goal. Adaptation measures will work to manage the risks of floods and droughts, and to improve water management for energy generation and irrigation. Prior to this project, water management responses have mostly been a reaction to extreme climate events and therefore have been adopted on an ad hoc basis. In order to build a coherent strategy that addresses the long-term use of water in Ecuador, institutional capacities need to be strengthened, and concrete measures created to ensure that climate change issues in the water sector are addressed.

This project's objectives are complemented by another GEF-SCCF project, implemented by the World Bank, which is devising measures for adaptation to climate change-induced glacier retreat in the Andean Region. Both projects will take advantage of synergies, mainly climate information and scenarios, and the use of similar tools such as the Water Evaluation and Planning (WEAP) model.

The project is addressing current institutional limitations, taking a decentralized and participatory approach. It is strengthening the capacity of key institutions that monitor this precious resource and improving the use of climate information in national and local decision-making. Effective water governance will provide for current and future use and work to preserve some of the world's most spectacular biological and historical sites.

Mainstreaming Components

The project will mainstream climate change adaptation into water management practices in Ecuador through the integration of climate change risks in key national and local development plans, the implementation of adaptation measures, information management, and knowledge sharing. At the national level, the project will improve water governance by incorporating climate risks and vulnerability assessments into water management and decision making processes. At the local level, interventions will take place in specific provinces (Los Rios, Manabi, Loja, and Azuay) that have been identified based on climate change vulnerability assessments and stakeholder consultations. These provinces, which host key watersheds, have shown a political willingness to implement adaptation measures to improve the governance and management of water resources.

LESSONS LEARNED

Results and Learning

Key lessons learned:

1. Involve key stakeholders early in the process to ensure that outcomes and outputs are appropriately aligned: Key stakeholders, both at the central level (MoE, Ministry of Agriculture, CNRH and SENPLADES) and at the provincial and local levels (Provincial Councils, Water Agencies, Municipal governments, NGOs), will be involved in the formulation of practical measures, taking into account the evolving needs of the institutions and the policy context for the water sector. More importantly, the guidelines will target the needs of the on-going planning efforts mentioned earlier to ensure that this integration will be established as a learning exercise. Thus, the ultimate goal of the guidelines is to effectively assist policy makers in setting up a framework for the integration of climate risk in the water sector. Outcomes 2 and 3 were also adjusted.

2. Allow for modifications to the proposal: The original project proposal was modified in order to define more precisely the boundaries of the project and its proposed activities, and to allow for a clear distinction between baseline and project activities. Outcome 1 was originally: to strengthen policy environment and governance structure for effective water management through the integrating of adaptation to climate change in water governance structures. Following input from stakeholders, Outcome 1 was modified: Climate change risk on the water sector integrated into key relevant plans and programmes. This formulation allows for a continued mainstreaming effort in the water governance institutionalization that will undoubtedly change during the anticipated political changes that the country will sustain during the formulation of a new constitution. Three instead of four outcomes have been identified in the revised proposal. Capacity building activities have been limited to one outcome while the other two outcomes focus on demonstration activities and improving water governance frameworks (i.e. legislation, national plans, etc) to integrate climate change risks. The outcomes now provide a description of their respective scope as well as more detailed description of the activities to be implemented.

3. Merge disaster risk management and adaptation plans (when possible): At the local level, provinces and municipalities have development plans, and some of them also include risk management plans. However, these plans do not take into account risks from climate change. Currently, these plans are implemented based on public priorities and potential investment opportunities by public

and private stakeholders. To guarantee the inclusion of climate change risks criteria into provincial and local development plans, the project will develop, with appropriate stakeholder input, an implementation strategy to apply the guidelines. The execution of this strategy will result in the integration of climate change concerns into key provincial and local development plans. This will help to facilitate a systematic adoption of climate change adaptation actions related to water management which, together with baseline development programmes, will contribute towards more efficient water use and reduced water supply vulnerability.

4. Create a Management Support Group that strategically forms vital partnerships: The project has taken advantage of the fact that key national institutions are part of the Management Support Group of this project. These institutions are key participants in the current elaboration of the National Development Plan, including the National Secretariat of Planning (SENPLADES), the MoE, CNRH, and CONCOPE. These partners will promote the consideration of climate change issues into the National Development Plan. This will ensure that climate risks in the water sector do not become an obstacle to the achievement of related development objectives. Concretely, the project will ensure that the National Development Plan incorporates climate change concerns regarding water resources by acknowledging (a) the threat posed by climate change and (b) creating an enabling environment (e.g. through legislative changes) that will promote adaptation.

Sustainability

To ensure sustainability the project design relies on the following elements:

1. A commitment to long-term planning at all levels, from strategies (such as promotion of inter-sectoral decision-making through inter-sectoral fora), to policies (such as projection of water supply for hydropower projects), to specific measures (such as pre-defined action plans for dealing with floods).
2. Building of multi-sectoral teams, to allow climate-change adaptation to be integrated into planning in a wide range of sectors;
3. Explicit consideration of costs and benefits, with endorsement of strategies, policies and measures only if they can be expected to provide overall net benefits to sustainable development;
4. Commitment to continuous monitoring and regular evaluation of interventions over time; and inclusion of awareness-building and fund-raising amongst national and international agencies and donors as a core activity.

Replicability

Climate change adaptation is at an early stage of development both in Ecuador and in the region. This project is therefore explicitly designed to pilot adaptation in Ecuador subject to the broadest possible range of climatic vulnerabilities to different kinds of water governance issues, but which have reasonable capacity in terms of infrastructure and human resources. By developing systemic capacity while demonstrating adaptation measures on the ground, the project will establish the conditions necessary for replication and scale up. The lessons learned from the pilot projects will be especially valuable for replication in other areas of the country.

Further, the design and eventually lessons learnt from the project will contribute to further adaptation learning, and implementation of effective climate change adaptation in other vulnerable countries. The project will make use of the GEF Adaptation Learning Mechanism, to ensure that the lessons learnt from the project contribute to, and benefit from, experience in adapting to climate change across the whole of the GEF portfolio.

Funding

GEF (SCCF): US\$3,000,000

UNDP: US\$20,000

Government of Ecuador (cash): US\$108,100

International NGO (parallel/in kind): US\$1,245,162

Local Government (parallel/in kind): US\$14,097,000

City of Cuenca Public Municipal Facility for Telecommunications, Water, and Sanitation (parallel/in kind): US\$715,170

TOTAL: US\$19,185,432

Time Frame

2008-2012

Profile Updated: April 2010

Previously Updated: September 2008

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UNDP Project Website: <http://sdnhq.undp.org/gef-adaptation/portfolio/projectR.php?id=54>

Adaptation Learning Mechanism: www.adaptationlearning.net

<http://www.adaptationlearning.net/experience/adaptation-climate-change-through-effective-water-governance>

