

Session Workshop
Global Platform for Disaster Risk Reduction

**ADAPTATION TO THE IMPACT OF RAPID
GLACIER RETREAT IN THE TROPICAL
ANDES PROJECT**
(Bolivia, Ecuador y Perú)

CONAM - Banco Mundial - GEF



Lima, June 2007



WHY A REGIONAL ADAPTATION PROJECT IN THE TROPICAL ANDES

First conversations in COP X, Buenos Aires, 2004:
Climate change adaptation is a long-term venture

1. Climatic change is affecting, as an additional burden, the already difficult path to development in the andean region.
2. More than 50% of the population lives in poverty and in extreme poverty.



WHY A REGIONAL ADAPTATION PROJECT IN THE TROPICAL ANDES

3. The availability and accessibility to safe water and sanitation services is below the average of latinamerican countries.
4. There is enough evidence of rapid glacier retreat that is already affecting the availability of water resources.

Glacier runoff and agriculture-Bolivia





WHY A REGIONAL ADAPTATION PROJECT IN THE TROPICAL ANDES

5. The Region is articulated by the Andes mountain chain, and water is one of the main priorities in all of these countries.
6. There are decisions that have been taken in our countries that show that adaptation to climatic change vulnerabilities should be regarded as part of the planning and management of socio economic development process.



WHY A REGIONAL ADAPTATION PROJECT IN THE TROPICAL ANDES

7. National capabilities have been created through international technical cooperation.
8. There is a need and interest in sharing experiences and knowledge that will further enhance this subject at the regional level.
9. The need to acquire robust and consistent data that will allow political decisions beyond environmental considerations.



Illimani glacier; vulnerable zone Bolivia





The Proposal (Bolivia, Ecuador y Perú)

Development Objective

Consolidate regional efforts in the definition of adaptation measures and policy alternatives to mitigate the climatic change driven impacts to the andean population and to implement high priority pilot adaptation activities (solutions).

Special Climate Change Fund-GEF US\$ 6.7 millon in 3 to 4 years.

Estimated total ammount: US\$ 28 millon

Expectations

- Capacity building in the regional governments to generate climatic scenarios (Japanese model).
- Identification of specific adaptation measures (projects); one step further than that of strategy, making safe water available for human and agricultural uses.
- Generate experiences and define differentiated but common proposals.

Expectations

- Promote and install an efficient operative and managerial structure.
- Mobilise national and international resources towards adaptation projects and activities.
- Presence in national and international forums, to increase interest in glaciers dependant water problems in the development of the three countries.



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT **(Bolivia, Ecuador y Perú)**

- **Regional Studies**

- Climatic Scenarios (agreement with the Meteorological Research Institute - Japan)
- State of the art on the knowledge of glaciers retreat (Univ. Mass., IRD, Innsbruck)
- Cofinancing Possibilities and cooperation (IDI-ClimAdapt)
- Institutional workframe of the project.

- **National Studies (water basin approach)**



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT **(Bolivia, Ecuador y Perú)**

Priority areas

ECUADOR

- Water basins associated with the Antisana glaciers

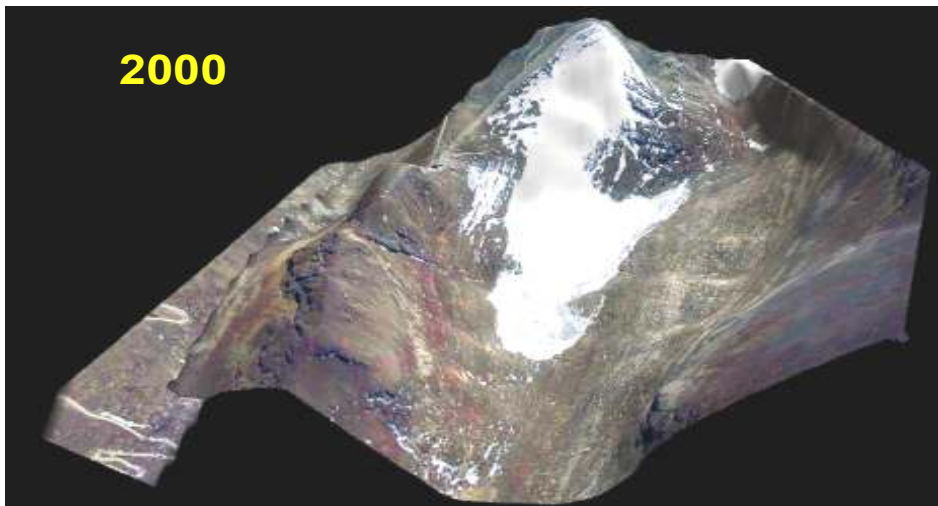
BOLIVIA

- River basins associated to the Cordillera Real mountain range, providing water to the cities of La Paz and El Alto. (Huayna Potosi, Tuni and Condoriri glaciers)

Antisana glacier - Ecuador



Retreat of the Chacaltaya glacier Bolivia





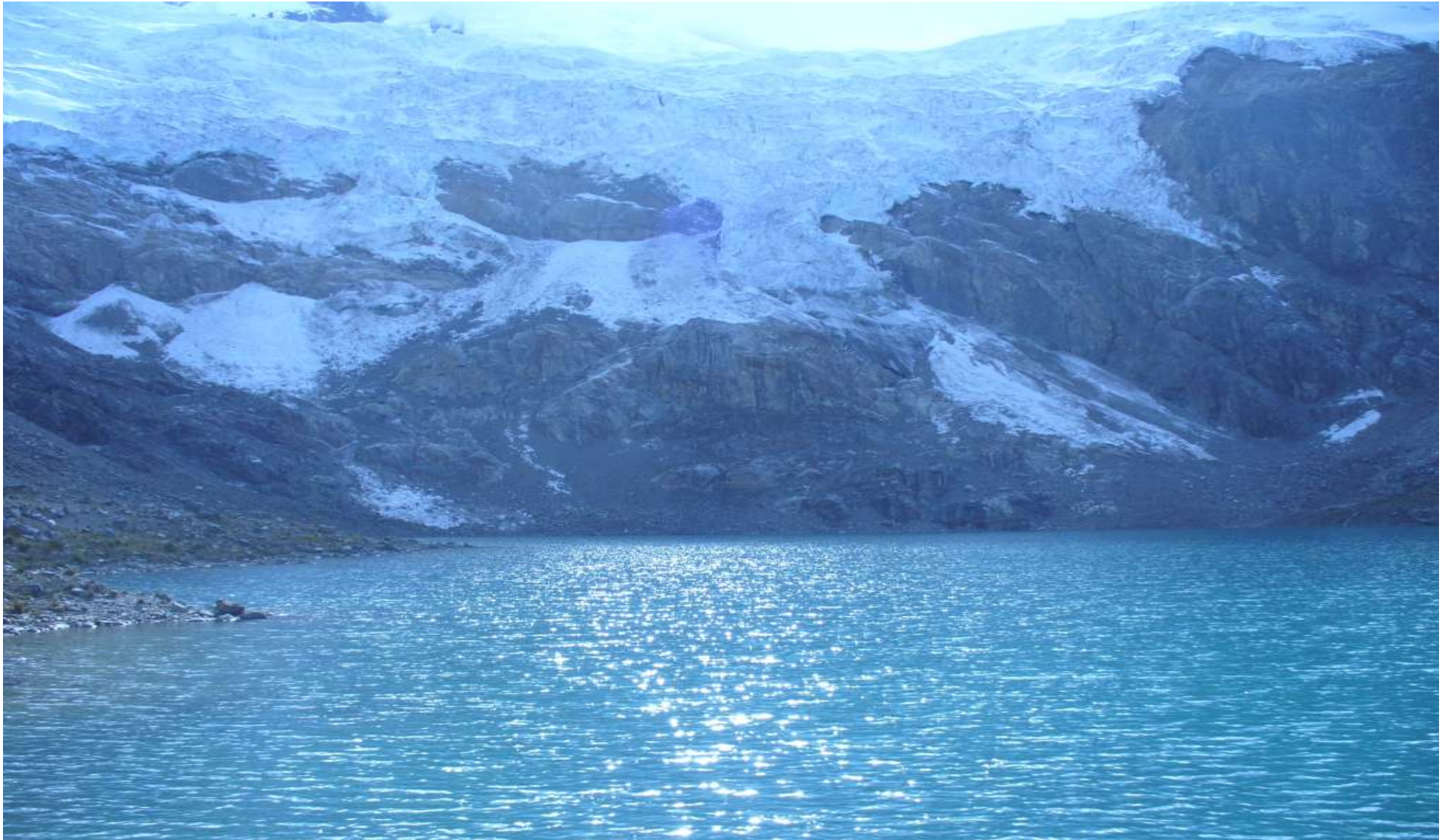
PROYECTO REGIONAL ANDINO DE ADAPTACION (Bolivia, Ecuador y Perú)

Priority areas

PERU

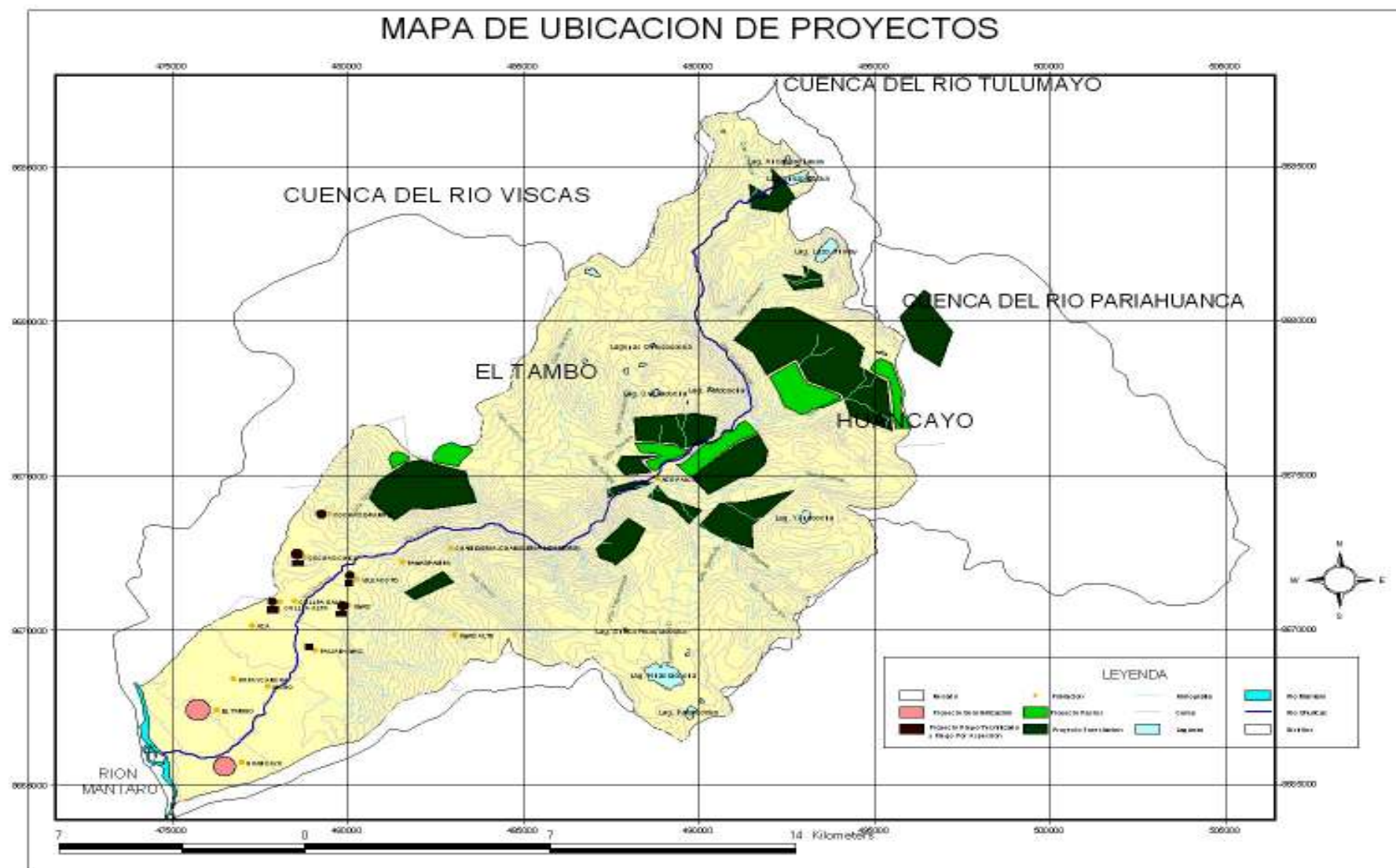
- Mantaro river basin and the sub basin of the Shulcas river. Huaytapallana glacier.
- Vilcanota-Urubamba river basin, sub basin of the Santa Teresa river. Salkantay glacier. Integrated management of the water resources in the sub basin.

Huaytapallana glacier - Perú



Shullcas river basin

Junin - Perú



GLACIAR SALKANTAY



ZONA DE ACUMULACION



ZONA DE ABLACION

Altitud: 4 755 m.s.n.m.



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT **(Bolivia, Ecuador y Perú)**

Main interventions

- **Recuperation of water storage capacity.**
 - Build and operate small ponds to cope with water scarcity induced by glacier retreat.
 - Reforestation
- **Agriculture**
 - Upgrade of the irrigation infrastructure
 - Enhance production to ensure food security
- **Basic rural and urban sanitation**
 - Drinking water, sewage, treatment of residual waters and environmental management of solid wastes.



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT (Bolivia, Ecuador y Perú)

– Energy

- Protect and conserve the hydrological system of the glaciers and associated reservoirs
- Hydraulic consolidation of river basins
- Maintenance of the water catchment infrastructure.

– Transectoral actions

- Social development
- Upgrade of water catchments and enforcement of efficient use of water.
- Strengthening of institutional capabilities.
- Diffusion strategy and users education.



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT (Bolivia, Ecuador y Perú)

– Studies

- Hydrological Potencial of each basin.
- Micro ecological and economic zonification.
- Territorial planning.
- Agricultural crops resistant to climatic stress.
- Recuperation of local ancestral knowledge of beneficiary populations.



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT (Bolivia, Ecuador y Perú)

Actual situation

1. Ongoing contribution for project preparation (WB PDF B US\$ 590,000).
2. MOU signed with Japan's MRI, for the preparation of climatic scenarios.
3. Cooperative agreements signed with Bolivia and Ecuador.
4. National coordinators have started their activities and agreements are being prepared to be signed with the General Secretariat of the Andean Community



ADAPTATION TO THE IMPACT OF RAPID GLACIER RETREAT IN THE TROPICAL ANDES PROJECT (Bolivia, Ecuador y Perú)

Actual situation

5. Cofunding and partnerships have been started as well as the glacier studies.
6. Consultants have started the process of identification and specific project formulation in each of the three country.
7. An additional agreement has been signed (US\$875 000) for the early installation of glacier monitoring stations, and for the training of local personnel on the operation and maintenance of these stations.

**This Project Document can be found
in the following Web Page:**

[http://www.gefweb.org/uploadedFiles/Documents/Council_Documents__\(PDF_DOC\)/GEF_31/Regional%20Andes%20Adaptation%20GEF%20Brief%20Resubmission%20clean.pdf](http://www.gefweb.org/uploadedFiles/Documents/Council_Documents__(PDF_DOC)/GEF_31/Regional%20Andes%20Adaptation%20GEF%20Brief%20Resubmission%20clean.pdf)

**Thank you
for your kind attention !!**



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