



Developing a climatological / hydrological baseline for climate change impact assessment in a remote mountain region - an example from Peru

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Changes in the availability of fresh water caused by climatic changes will become a major issue in the coming years and decades. In this context, regions presently depending on water from retreating mountain glaciers are particularly vulnerable. In many parts of the Andes for example, people already suffer from the impacts of reduced glacier run off. Therefore, the development and implementation of adequate adaptation measures is an urgent need.

To better understand the impact of climate change on water resources in the Andean region, a new research program (PACC - Programa de Adaptación al Cambio Climático en el Perú) between Peru and Switzerland has recently been launched by SDC (Swiss Agency for Development and Cooperation). As a first step, a scientific baseline relative to climatology, hydrology, agriculture and natural disasters will be developed on a regional scale for the Departments of Cusco and Apurimac in close cooperation with partners from Universities and governmental institutions as well as NGOs in Peru. A reliable data baseline is a must for the development of adaptation measures that can effectively cope with the risks induced by climate change. The realization of this task in remote mountain regions, where observational data are generally sparse, however, is challenging. Temporal and spatial gaps must be filled using indirect methods such as re-analyses, remote sensing and interpolation techniques. For future scenarios, the use of climate model output along with statistical and dynamical downscaling is indicated.

This contribution will present and discuss approaches and possible concepts to tackle the challenges in a Peruvian context. In addition, first experiences will be reported particularly on cross-disciplinary issues that naturally emerge from the integrative perspective needed in climate change impact assessments and the development of adaptation strategies.