

Submitted Abstract

ID IMC22-FSAbstr- 682

First Author First Name Last Name	Isabel Hagen
Submitting Author First Name Last Name	Isabel Hagen
Correspondence	isabel.hagen@geo.uzh.ch
Co-Authors >> E-Mails will be not listed	Huggel, Christian; Schnyder, Sanne
Organisations	University of Zurich, Switzerland
Country	Switzerland
Region	Western Europe
Title	Limits Of Adaptation To Climate-Related Risks In The Peruvian Andes: A Case Study Of The Santa Teresa Catchment.
Keywords	Climate-Related Risk, Tropical Andes, Glof, Water Scarcity, Adaptation Limits
Type	List Of Focus Session
Focus Session ID	02

Abstract

The tropical Andes of Peru host 30% of the country's 32.9 million inhabitants. The highly populated mountain region is exposed to several climate-related risks, such as glacial lake outburst floods (GLOFs), landslides, and seasonal water scarcity. Climate change is exacerbating the risks, and efforts are made to predict the magnitude and severity of risks for the 21st century. Comprehensive climate risk management and adaptation measures, such as early warning systems and water storage systems, can alleviate some of the aforementioned risks. However, uneven socio-economic development together with increased magnitude and frequency of risks are increasing the probability of reaching adaptation limits. The limits can be socio-economic, cultural, political, technical, or biophysical. Whilst there is abundance of research on both climate risks and adaptation measures in the Peruvian Andes, investigations of adaptation limits are lacking.

Here, we investigate the limits of adaptation to GLOFs, landslides, and seasonal water scarcity in the Santa Teresa catchment, located in the Cusco region in the Peruvian Andes. We focus on indicators of human needs and define the thresholds, beyond which you cannot live up to the human needs anymore. When, despite risk management and adaptation efforts, any one of these indicators is no longer fulfilled, an adaptation limit has been reached. We develop the indicators and thresholds based on a thorough literature review together with in-depth interviews with local stakeholders. In parallel, we define the socio-economic and political space that favours or disfavors adaptation action in the region, including scanning past events and processes in Santa Teresa where thresholds were approached or even exceeded, and what factors prevented appropriate adaptation action. The aim of this study is to identify and define the limits of adaptation on a regional scale, where and when these could be reached and which aspects of human wellbeing are at risk.