



## User-tailored seasonal forecasts for agriculture – creating socio-economic benefit through climate services in the Andes

Sara de Ventura (1), Stefanie Gubler (1), Grinia Avalos (2), Andrea Rossa (1), Marlene Dapozzo (2), Moritz Flubacher (1), Teresa Garcia (2), Mark Liniger (1), Karim Quevedo (2), Nelly Paredes (2), Cornelia Schwierz (1), Katrin Sedlmeier (1), Noemi Imfeld (1), Hugo Ramos (2), and Christoph Spirig (1)

(1) Federal Office of Meteorology and Climatology MeteoSwiss, Zürich, Switzerland, (2) Servicio Nacional de Meteorología e Hidrología del Perú, SENAMHI

The project Climandes is a twinning project between the Peruvian National Meteorological and Hydrological Service (SENAMHI) and the Swiss Federal Office of Meteorology and Climatology MeteoSwiss aiming to improve climate services for the Andean Region. It was launched in 2012 as a pilot project of the Global Framework for Climate Services (GFCS) ley by WMO.

Until now, Peru - like other Andean countries - has had only a limited access to climate services, and the few products already in place have mostly not been developed in concordance with user needs. This gap in the provision of climate services relates to a variety of shortcomings: a lack of technical capacities, a lack of trained professionals with expertise in developing high-quality climate services and insufficiently assessed user needs and communication strategies. Overcoming these shortcomings allows to tap the full potential benefits of climate services. This implies filling the technical and scientific gaps on the side of the meteorological service to improve climate products and better access to information as well as connecting the climate community with the user community. This requires a multidisciplinary effort reflected in the project by the following lines of action:

- (1) Climate services tailored for agriculture in the Andean region
- (2) Improve training in meteorology and climatology for students
- (3) User-dialogue and socio-economic benefits of climate services

Throughout the project, important milestones in setting up a system for climate services at the Peruvian meteorological service have been reached. On the technical side, MeteoSwiss supported Peru setting up a prototype seasonal forecast system. To facilitate SENAMHIs professionals in elaborating climate products, we developed an open-source tool for the calculation of agrometeorological indices, verification of seasonal forecast and visualizations thereof ("ClimIndVis" R-package). All activities were accompanied by peer-to-peer training and exchange of expertise between the two weather services. Through a variety of training and E-learning courses on topics such as monitoring and seasonal prediction organized in by MeteoSwiss and SENAMHI, professionals and students from Peru and the Andean Region were educated in topics relevant for developing high quality climate services. In order to tackle the constraints of climate service utilization identified in a socio-economic study, we launched a series of field workshops for small-scale farmers in pilot region Puno. Based on farmers requests, we opened new dissemination channels of climate information (text messages and radio broadcasting). The monitoring of the workshops shows first success, such as increased trust in the national meteorological service. Thereby we provide a proof-of-concept for the functioning of a User Interface Platform to bridge the gap from the climate to the user community.

This contribution will give an overview over the project and highlight the achieved results during the project.