Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

MeteoSwiss

Climandes
Servicios Climáticos para el Desarrollo

Senamhi
SERVICIO NACIONAL DE METEOROLOGÍA E HIDROLOGÍA DEL PERÚ

Enrique Castro-Mendívil / PromPerú

Climandes Newsletter No. 3 July 2017

Climate services are key to increasing climate resilience of vulnerable populations. To this end, the two national weather services SENAMHI Peru and MeteoSwiss initiated the Climandes project in 2012 to establish high quality, user-tailored climate services and improve science-based decision making in the Andean region. This initiative offers a pilot example on how such services can benefit climate-sensitive sectors and, hence, society at large.

Launched in January 2015, the second phase of Climandes is now halfway through. We would like to use this specific moment to highlight the main activities completed and results achieved during the past months in the three intertwined modules of the project, and also to draw your attention to the interesting tasks and challenges lying ahead.

More information: www.meteoswiss.ch/climandes or www.senamhi.gob.pe/climandes.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

WMO OMM

GFCS GLOBAL FRAMEWORK FOR CLIMATE SERVICES

PERÚ Ministerio del Ambiente

HOMINEM ET AQUUM COLERE CUPIO

CER-ETH Center of Economic Research at ETH Zurich

METEODAT GMBH
Hydrologie · Meteorologie · Klimatologie · Energie
Technoparkstrasse 1 · CH-8005 Zürich · www.meteodat.ch

University of Zurich[UZH]

UNIVERSITÄT BERN

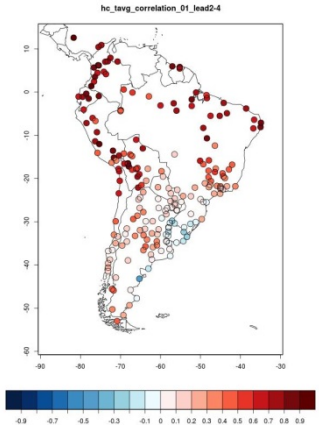
Sauter
Jürg Sauter GmbH+Partner

Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut

Achievements

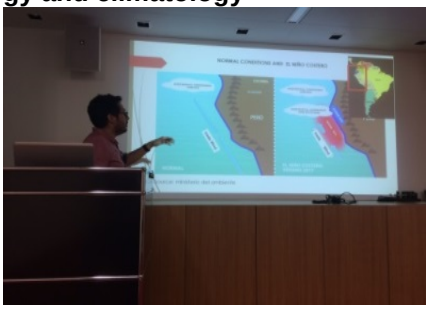
The emphasis in this phase of Climandes is on the development of prototype seasonal forecast products tailored to the needs of smallholder farmers. Thereby, the evaluation of seasonal forecasts is vital to determine their quality. The comparison of past forecasts with the relevant observations demonstrated good predictability for temperature in Peru. Furthermore, capacity development through e-learning and twinning activities has proven to be successful in all three modules, and findings of the a socio-economic vulnerability field study in Puno showed that frost is the main agro-climatic risk for the prevailing crops in the region. Through a broad range of multi-facetted activities, the twinning project Climandes contributes to strengthen SENAMHI's capacity to face challenges like "El Niño Costero", which affected hundreds of thousands of people in Peru recently.

Module 1: User-tailored climate services



Within Climandes, the basis for the **evaluation (verification) of SENAMHI's seasonal forecasts** has been established by producing complete data sets of past forecasts and analyzing the quality of different observations including re-analyses. The first results of the verification show high predictability for temperature, but rather low skill for precipitation. Therefore, **seasonal forecasts based on temperature have the potential to support farmers in making their agricultural practice resilient to climate variability**. In order to tailor such forecast information, a set of indicators relevant for agriculture, like the **number of frost days**, were chosen based on the results of Module 3. On the other hand, forecast products relying on precipitation, such as drought forecasts, are not expected to show clear forecast signals, but can help farmers to gain awareness of the climatic variability. **Two publications** were published in the International Journal of Climatology, entitled "Identifying, attributing, and overcoming common data quality issues of manned station observations" and " The influence of station density on climate data homogenization". Both were mainly drafted during the first phase of Climandes in close collaboration with another project.

Module 2: Training in meteorology and climatology



The innovative **blended course on seasonal forecasts,** led by SENAMHI and MeteoSwiss, combined the use of the e-learning platform Moodle with traditional classroom teaching to train 78 participants from a total of 17 South American, Central American and Caribbean countries. In addition, 46 participants from 9 South American countries were trained in the use and application of **re-analysis datasets** in a blended course offered by the University of Bern and SENAMHI. Further training activities **supported the efforts of the WMO Education and Training Office** through the assistance in the online part of the WMO "Train the trainer" course and the review of the course package on seasonal forecasts by the Institute of Biometeorology (IBIMET) Italy. During a course that started on 10 July in Lima, the concepts of **the use and application of re-analyses datasets** in Latin America are practiced and strengthened. Twinning activities included the visit of three SENAMHI colleagues in Switzerland to transfer knowledge related to seasonal forecasts and to prepare the above mentioned reanalysis course.

Module 3: User-dialogue and socio-economic benefits

In late 2016, SENAMHI and MeteoSwiss conducted an **extensive household survey with 726 smallholder farmers** in the pilot region Puno. Results show that **frost is the main agro-climatic risk** for their crops, followed by drought and hail. The survey reveals that farmers warned early enough about upcoming weather events showed lower vulnerability than their counterparts. It exhibits furthermore that the current understanding of climate information is low, especially in less educated groups, which also turned out to be the most vulnerable and food-insecure group. These findings will be taken into consideration while developing climate services in Module 1. A **Task Force was set up** to improve the delivery and communication of climate services, as well as the capacity-development among smallholder farmers.

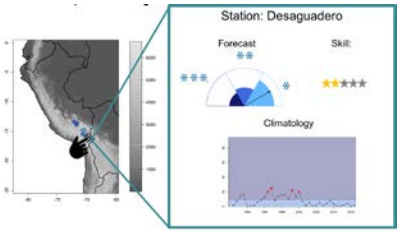
Además

At the **European Geosciences Union (EGU)** in Vienna, a general project overview, the results of the field study and the verification and visualization of user tailored seasonal forecast products were presented. For this and further events, a Climandes Factsheet was elaborated to provide an overview of the activities and the set-up of the project to interested people. At the MeteoSwiss headquarters, a **networking lunch** and an **extended coffee break** offered the opportunity to share the valuable experiences made in Climandes within the MeteoSwiss staff. Dr. Geremia Cometti, an Anthropologist and Sociologist of Development shared his knowledge on the **difference between how climate change is perceived by the traditional Andean population vs. the western scientific discourse** – a topic of great relevance for communication activities within Climandes.

Outlook

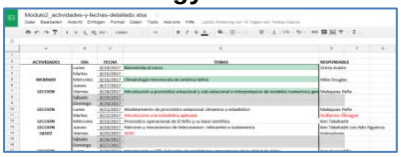
Through Climandes, SENAMHI has acquired significant expertise in key areas for the supply of climate services and is now in the position to take on a leadership role in the upcoming activities: the seasonal forecast course, the data management workshop or the second household survey in Cusco. In the remaining 18 months of Climandes, communication efforts will be intensified in order to disseminate the key findings of the project and contribute to the scientific discourse on climate services, as for example at the International Conference on Research and Development ICRD.

Module 1: User-tailored climate services



The "**Data Management for Climate Services**" workshop, taking place in **April 2018 in Lima, Peru**, is planned and coordinated with important stakeholders such as the Spanish Weather Service AEMET. The announcement and the call for abstracts will be made through a webpage hosted by SENAMHI. An R-package will be developed and installed at SENAMHI to support the production of user-tailored climate information. **The R-package will calculate and display climate variability and seasonal forecasts**. This will be done for different indicators that are relevant for agriculture. **The scientific results elaborated in the second phase of Climandes**, include the production of user-tailored indicators, the verification of seasonal forecasts, and the analysis of droughts in relation to El Niño-Southern Oscillation (ENSO), **are planned to be published in international journals**.

Module 2: Training in meteorology and climatology



The second part of the online course on **seasonal forecasts** will take place in August and will be followed by a course in Lima next November. Peer-to-peer training and an improved collaboration between the climate, hydrological and agrometeorological offices at SENAMHI will be fostered through a **workshop in Peru on climate products tailored for agricultural use**. Moreover, in a joint effort with the WMO-WIGOS office, **a course on the WMO-tool OSCAR for South America** will support the data quality activities within Climandes.

Module 3: User-dialogue and socio-economic benefits

As a result of the successful field work and case study in Puno, in August SENAMHI will conduct a **second household survey with approximately 200 smallholder maize and potato farmers in the region Cusco**. The same methodology as for the field survey in Puno will be applied. This additional vulnerability assessment will give important insights **about agro-climatic risks, management options and use of climate information for this pilot region**, thus helping to tailor the services to the users' needs and requirements. Based on the results from the field work conducted in Puno and Cusco, Climandes will **deliver user-specific climate information to the project beneficiaries in the region**. This will be supported by capacity development activities for the farmers e.g. in the form of field schools in order to overcome the observed cognitive, cultural and institutional constraints.

Además

MeteoSwiss is engaged as a co-convener at the International Conference on Research and Development ICRD from 5 - 8 September 2017 in Bern, Switzerland. The session entitled "Enhancing utilization of Climate Services for strengthening livelihoods in low and middle income countries" will serve to share experiences with experts in the field of climate services related to the themes science and research, implementation and user-dialog, as well as policy and development cooperation. Different communication activities like a climate seminar and a contribution on the MeteoSwiss blog, will further help **disseminating the results of the Module 3 field study**.

Contact

climandes@meteoswiss.ch