

Capacity Building and Twinning for Climate Observing Systems



Schweizerische Eidgenossenschaft
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Federal Office of Meteorology and Climatology MeteoSwiss
Swiss Agency for Development and Cooperation SDC

CATCOS 
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- **Atmospheric Domain**
Aerosols and greenhouse gases
- **Terrestrial Domain**
Glaciers



High-quality climate observations are vital for international climate research as well as for the planning and implementation of adaptation and mitigation measures. In the context of the Global Climate Observing System (GCOS), the project CATCOS (Capacity Building and Twinning for Climate Observing Systems)

aims at improving the capacity to measure Essential Climate Variables (ECVs) in developing and emerging countries where climate and environmental data are limited. CATCOS enables Swiss partner institutions to work closely with international collaborators in Africa, South-East Asia, South America, and Central Asia.

CATCOS includes the implementation of climate and environmental measurements from the atmospheric and terrestrial domains. It further ensures the transfer of newly generated aerosol and



greenhouse gas data, as well as glacier monitoring information to the designated International Data Centers. In a cross-cutting component, CATCOS aims at training people on-site and during workshops to support them to produce, manage and analyze climate and environmental data in a sustainable manner.

The project is coordinated by the Federal Office of Meteorology and Climatology MeteoSwiss, and is funded by the Swiss Agency for Development and Cooperation (SDC). Implementing partners for the atmospheric domain of the project are the Paul Scherrer Institute (PSI) and the Swiss Federal Laboratories for Materials Science

and Technology (Empa). The terrestrial domain is covered by the University of Zurich (UZH) and the University of Fribourg (UFR) whereas all Swiss implementing partners are involved in cross-cutting activities of CATCOS. The project duration is from September 2011 until December 2013.

Atmospheric Domain (Aerosols and Greenhouse Gases)

The implementation of greenhouse gas (CO_2 , CH_4) and trace gas (CO , O_3) observations are realized by Empa in Chile and Vietnam. Measurements of aerosol optical properties are initiated and supported by PSI in Chile, Indonesia, Kenya,

and Vietnam. After quality control, the data are submitted to the respective International Data Centers which are the World Data Center for Greenhouse Gases, WDCGG and the World Data Center for Aerosols, WDCA.



Terrestrial Domain (Glaciers)

In situ glacier mass-balance monitoring in Kyrgyzstan and geodetic surveys in Colombia and Ecuador are supported by the University of Fribourg and the University of Zurich, respectively. Resulting data are submitted to the World Glacier Monitoring Service, WGMS.

Cross-Cutting

At international workshops and during on-site training, international partners are trained in the field of operation and maintenance, data management, as well as quality control of observational data. These activities help to ensure that sys-

tematic observations in the designated countries are geared towards a long term perspective. Through communication efforts and presentations nationally and internationally a high visibility of the project is actively promoted.



„Human activities contribute to climate change by causing changes in Earth’s atmosphere in the amounts of greenhouse gases, aerosols (small particles) [...]“

IPCC, 2007, p.135

„The cryosphere in land stores about 75 % of the world’s freshwater. [...] On a regional scale, many glaciers and ice caps play a crucial role in freshwater availability.“

IPCC, 2007, p.341

„A high priority should be given to additional observations in data-poor regions and regions sensitive to change.“

GCOS Monitoring Principles #7, 2003

Partners:



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