

WMO Climate System Monitoring: Projects in Latin America

Karolin Eichler

It is essential to have long time series of climate data with high quality and, spatial and temporal resolution. These data are required for assessing climate change, calibration of climate proxy records and satellite data and the validation of climate models and projections. In addition climate data is needed for producing useful climate information for applications in the various socio-economic sectors. It requires certain procedures for its collection and documentation (Metadata). Even small changes in measurement techniques and sites have to be documented very carefully because they add non-climate related variability to the observations.

Climate observations have to be converted into climate data records to make use of it for climate change studies. They have to be quality controlled, checked for homogeneity and afterwards the data sets have to be adjusted. The World Meteorological Organization (WMO) promotes international initiatives to assist countries in using scientific methods and tools for data homogenization. This is achieved through workshops where participants have the chance to learn how to apply these techniques on their own data.

Most of the available climate time series cover only the second half of the 20th century. Therefore it is important to rescue data available on paper format to avoid its loss, and then digitalize and make it available in modern electronic media for easy use by the research community. WMO supports the establishment of international and regional collaboration on data rescue, Metadata and the use of a sound information system for their discovery and access.

Operational climate watch relies on the availability and exchange of improved climate monitoring products and climate predictions. In this regard climate data provides essential and necessary ingredients for helping countries to issue climate alerts/watches to raise awareness on extreme climate events. WMO has set up a series of regional workshops on climate monitoring and analysis of climate variability with the purpose of implementing Climate Watch Systems in various regions.

The presentation will show current WMO activities in data rescue, climate observations and monitoring and climate watch activities in support of the Global Framework for Climate Services (GFCS) with focus on Latin America.

The climate services concept successfully combines the work of WMO's Expert Team on Climate Change Detection and Indices (ETCCDI) and WMO's Data Rescue (DARE) activities.

The concept builds on the software developed for the European Climate Assessment & Dataset (ECA&D), a webportal for daily station data and derived indices brought together under regional cooperation. ICA&D combines the climate monitoring and assessment activities developed in ECA&D with DARE activities. ICA&D is already applied in four regions: Europe, Southeast Asia, Latin America and West Africa (<http://eca.knmi.nl/icad.php>)

In addition, the presentation will provide a summary of most recent WMO publications assessing climate change like the WMO statement on the status of the global climate in 2013 which will be published in March 2014 and the Decadal Global Climate Summary for 2001-2010 which has been published in July 2013.