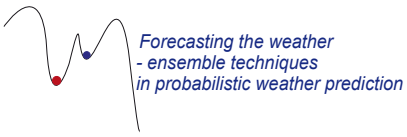
EMS Annual Meeting Abstracts
Vol. 8, EMS2011-386, 2011
11th EMS / 10th ECAM



WMO climate data and monitoring activities

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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.

Climate data 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. The Global Climate Observing System (GCOS) has determined the most important climate variables (Essential Climate Variables) and established the GCOS surface network (GSN) consisting of more than 1000 stations worldwide. These stations were identified as the world's best stations for global climate monitoring for which climate data are shared with international data centres for global climate assessment.

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. WMO promote 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. The WMO Mediterranean Data Rescue initiative (MEDARE) is an example of such a successful collaborative enterprise that brings together NMHSs, universities and research centers to enhance the availability of high quality climate data in the Greater Mediterranean Region. These regional initiatives contribute to enable nations having common climate concerns to develop cooperative Climate Risk Management (CRM) to support climate change adaptation strategies.

To handle large amount of climate data which have to be managed and stored, WMO is supporting the development and implementation of Climate Database Management Systems (CDMSs) since more than 30 years. The WMO Commission for Climatology (CCl) has initiated a process including a survey and expert meetings to assess the current status of CDMSs in all countries. Useful information is being collected through this mechanism that helps further modernize this important aspect.

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 addition the presentation will provide a summary of most recent WMO decisions aiming on improving critical aspects of climate data and monitoring.