

SADC moves towards harmonised Climate Data Management Systems

Southern African Development Community (SADC) Member States are making progress towards harmonisation of their climate data management systems, a move expected to result in the adoption of standard approaches for the collection, storage, and homogenisation of national climate data.

This emerged from a week-long Capacity-Building Workshop for Member States on 'Homogenisation of Climate Data and Workshop to Initiate Harmonisation of Climate Data Management System (CDMS) in the SADC Region' held in Johannesburg, South Africa, from 31st July to 4th August 2023.

Presentations made during the workshop demonstrated that most Member States had functional CDMSs, some of which have been in existence for more than 20 years. The most common software used by Member States is Climsoft, a free open-source software that allows users to store climatic data in a secure and flexible manner and enables easy extraction of useful information from the data that can be used to produce summary reports, maps or diagrams.

The workshop presentations also showed that Member States were at various stages of meeting requirements of World Meteorological Organisation (WMO) guidelines on climate data management. The guidelines provide information and assistance to WMO member states on how to organise and implement climate services in areas of importance to a National Meteorological and Hydrological Service (NMHS). The guidelines are also designed to present processes and technological solutions that address special situations and needs of NMHSs, with limited resources.

Member States were also involved in data rescue, a process of migrating climate data previously captured on paper into electronic format. NMHSs currently collect climate data either by automatic means or routinely enter the information into computers, ready to be used for different applications. However, a good wealth of old data remains in original paper-based format, and data rescue activities are needed to ensure their preservation and digitisation in order to extend backwards available knowledge about climate. Ongoing data rescue activities at Member State level involve scanning historic climate data documents in standard digital computer formats and conversion of analogue micro-fiche forms to digital files. In the same vein, through the European Union funded Intra-ACP Climate Services and Related Application (ClimSA) Programme, the SADC Secretariat will be providing high quality imaging and digitizing equipment to Member States to assist their NMHSs to rescue and digitize weather and climate data set.

The major challenges identified by workshop participants as hindering the development of CDMSs in the Region included lack of funding to acquire servers, OCR scanners and other equipment as well as the lack of trained personnel. There were also concerns about the risk of losing some of the data on paper forms due to rapid deterioration, which has resulted in data gaps in some cases. Climate data homogenization deals with the challenges posed by these data gaps, relocation of a meteorological station and other inherent inhomogeneity of climate data amongst other challenges, that compromises the quality of the climate products derived from it. This further affects the decisions taken using such climate products.

The workshop was attended by experts on climate database management from the National Meteorological and Hydrological Services of Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe.

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