



Policy Brief

Africa's Climate Observing Networks: Challenges, Needs and Recommendations

Effective management of climate variability and change requires that adequate climate information be used in planning and that climate risk be incorporated routinely in development decisions. Africa is known as having inadequate and inefficient observation networks, thus making it difficult to effectively address issues such as poverty reduction and national development, both of which are affected by climate variability and change. The National Meteorological and Hydrological Services (NMHS) of each African country and other climate service providers must greatly strengthen their observational networks and enhance their capacity to deliver a full range of climate services in support of sustainable development. Users of climate information, such as agriculture, health, energy and water resources sectors, as well as those working in natural disaster prevention, need to specify their needs and work closely with service providers so that climate information can be used to significantly improve development decision-making.

Key messages

- Adequate climate observing systems are key to effective climate risk management.
- Observing networks in Africa have been deteriorating and need to be improved.
- Historical data have great value and, where not available, must be rescued and used in climate analyses.
- The African Climate Policy Centre (ACPC), an initiative of the UN Economic Commission for Africa, has a key role to play in facilitating improvements in Africa's climate observing systems.
- The density and coverage of existing climate observations in Africa is typically poor or sparse;
- Network coverage varies widely both within and between countries;
- Climate data management must be modernised;
- There exists substantial useful data in Africa not currently in databases;
- Improved coordination would help ensure that Africa's observation networks, data quality management, and archival systems make sufficient climate data available and share it with a broad range of stakeholders;

Challenges and needs

The need to improve Africa's climate observing networks is clear. However, a number of challenges must be overcome and needs addressed. These include the following:

- Climate data and services are not used effectively in development;
- Implementation of the World Meteorological Organisation's (WMO's) new Global Framework for Climate Services (GFCS) is needed; and
- Much data from national networks that would otherwise be useful in forecasting are inaccessible.

The struggle to improve networks and practices has been ongoing, but without much success to date. With the establishment of ACPC and adoption of the Climate for Development in Africa (ClimDev-Africa) Programme, the continent expects to see greater improvement in addressing its climate observing challenges and needs. It is therefore important that ACPC work with African countries and other partners, including the regional climate centres. These include the African Centre of Meteorological Application for Development, the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre, the Climate Services Centre of the Southern African Development Community, and AGRHYMET, whose name is a contraction of AGRometeorology, HYdrology, METeorology. AGRHYMET services the drought-prone Sahelian countries of West Africa. Close collaboration with such partners will ensure that the infrastructure for climate observing networks, data management, and communications meet required standards. For this to happen the ACPC must:

- Coordinate with countries and carry out advocacy at the highest level to encourage investment in sustainable short- and long-term climate observing networks and data infrastructure;
- Help in defining requirements for climate data for different applications and facilitate means to fill observing system gaps, such as those identified by the Global Climate Observing System (GCOS), sponsored by the WMO;
- Get involved in the generation of climate information and data, as appropriate, and synthesise and disseminate information useful for designing measures to address adaptation to climate variability and change, as well as mitigation;
- Work on behalf of both users and suppliers of climate data, as appropriate;
- Help the ClimDev-Africa Programme implement its objectives;

- Encourage the free sharing of data and information among countries; and
- Assist in any relevant coordination that African countries may desire.

Recommendations

The following are recommendations that could be considered by African governments, regional institutions, African NMHSs and the ACPC, as appropriate, to address challenges and needs related to improving the quality, quantity, and usefulness of climate observations in Africa:

- The deterioration of climate observing networks and stations needs to be reversed. This can be accomplished through renovation of existing stations and through the installation of new stations, including automatic weather stations, where needed. Maintenance of these stations needs to be sustained over time. Data management and archive systems also need to be improved;
- Climate data should be treated as a public good and as much as possible disseminated to the public and to international networks. The amount of data from Africa shared with international networks is limited compared to the available data on the continent;
- Countries, with the support of international organisations, should digitise the considerable amount of data in need of rescue in Africa and incorporate it into national, regional, and global climate databases. An inventory of data that have been, or could be, rescued should be made;
- Governments should follow up to ensure that the promises that have been made concerning the installation of new climate stations are kept;
- Implementing the GFCS in Africa would help considerably to coordinate climate data management and observation networks.

Furthermore, strengthening Regional Climate Centres will improve management of regional data banks;

- New approaches should be devised to fill data gaps, using observations from all available meteorological stations in combination with global products, such as satellite proxies and climate model reanalysis data;
- NHMSs should enter into partnerships with non-governmental institutions, including relevant private sector entities, to improve their observation networks (with the understanding that the NMHSs will remain the custodians of the data);
- The ACPC should coordinate with countries and sub-regional economic communities and advocate on their behalf the need to invest in sustainable short- and long-term climate observing networks and data infrastructure. It should also help to define requirements for climate data for different applications and to facilitate filling the gaps identified by GCOS in its African Regional Action Plans;
- The ACPC should facilitate the generation, synthesising, and dissemination of climate information in support of adaptation and mitigation, for example, by supporting the user community to understand, demand, and more effectively use climate information;
- The ACPC, as a continental body mandated to focus on climate policy, should work with stakeholders to ensure that they address climate issues in their policy and planning, thereby contributing to national sustainable development.

ClimDev-Africa



For more information on ACPC and the entire ClimDev-Africa Programme, visit the ClimDev-Africa website at <http://www.climdev-africa.org>

This document is an output from research carried out by the African Climate Policy Centre (ACPC) in collaboration with selected experts and editors. ACPC is part of the Climate for Development (ClimDev-Africa Programme, a joint initiative of the African Union Commission (AUC); the United Nations Economic Commission for Africa (ECA); and the African Development Bank (AfDB). The programme is supported by several development agencies and governments. However, the views expressed and information contained in the brief are not necessarily those of or endorsed by these partner institutions which can accept no responsibility for such views or information placed on them.

Copyright © 2013, African Climate Policy Centre (ACPC). All rights reserved.