



United Nations
Economic Commission for Africa



Executive Summary

AFRICA CLIMATE RESOURCE
AND INFORMATION SERVICES
(ACRIS) PLATFORM

Contents

EXECUTIVE SUMMARY 2

 Global Framework for Climate Services (GFCS) 2

Methodology..... 4

Surveys and Findings..... 4

 Regional Centre for Mapping of Resources for Development..... 5

 IGAD Climate Prediction and Applications Centre..... 5

 Data..... 5

 ICT Infrastructure 6

 Human Capacity 6

Proposed Solution..... 6

 1. Technological Infrastructure 7

 2. Data..... 7

 3. Human Capacity 7

Recommendation..... 7

 Phase 1 7

 Phase 2 8

 Phase 3..... 8

EXECUTIVE SUMMARY

Managing climate change and ensuring environmental sustainability requires technological intervention. All countries must invest in the development, diffusion, adaptation, and use of a wide range of environmentally sound technologies in order to reduce the emission of greenhouse gases and address the impacts of climate change. This recognition is explicitly expressed in provisions of the UN Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, as well as many other international agreements on sustainable development, environment, and trade. The climate technology needs of many African countries are articulated in various studies, including national audits, such as national climate technology needs assessments (TNAs) - conducted by some countries with the support of the Global Environment Facility (GEF) - and national reports for the Rio+20 Conference.

Climate information services (CIS) is the packaging and dissemination of climate information to specific users. The provision of climate information services involves collating, analysing, packaging-up and distributing climate data on variables such as temperature, rainfall, wind, soil moisture, ocean conditions and extreme weather indicators. CIS is dependent on data, from both observations and numerical modeling. The starting point in the development of credible climate information for the end user is in receiving weather, climate, and other sector-specific data of appropriate spatial and temporal resolution that, when processed and integrated with local knowledge, can prove vital for decision making by the end users.

The African Climate Policy Center (ACPC) of the UN Economic Commission for Africa (ECA) carried out an assignment to establish a partnership and build on the system and services of an existing resource platform and service provider (without necessarily creating a new ICT system). The overall objective of the assignment was for the consultant to support the ACPC with the establishment of the Africa Climate Resource and Information Service (ACRIS) Platform to serve as an open architecture one-stop go-to place for quality and timely climate data, climate information services, open-source climate-related modelling tools and an online advisory services, learning and capacity development resources and help desk for stakeholders, as well as an online convening and community forum for regional climate researchers and development.

Global Framework for Climate Services (GFCS)

The Global Framework for Climate Services (GFCS) states that any climate service implementation should serve the widest audience possible and in particular climate vulnerable developing countries.

The climate services sought by users include the provision of data, data summaries and statistical analyses and predictions as well as tailored information products, scientific

studies and expert advice delivered with ongoing support and user engagement. Services may be provided directly in response to specific requests or in anticipation of the needs of particular groups. Channels for delivery may include face-to-face advice, formal reports, periodic bulletins, news media releases, internet-based mechanisms, outlook forums and direct computer access. Climate services also include internal activities such as archive development, quality management and statistical analyses that benefit both current users and future generations.

Several drawbacks in climate data delivery and integration have been identified and these findings have served as foundations of GFCS. It has been recognized that:

1. Climate services do not efficiently exploit scientific climate knowledge, information and data;
2. Climate services do not meet present and future user needs and in particular in developing or least developed countries that are the most vulnerable;
3. Providers of climate services do not interact sufficiently with users;
4. Existing capacities for climate observations provide a good basis for strengthening climate services but commitment to sustain high-quality observations across the entire climate system is inadequate;
5. Enhancements in observations networks in developing countries are required;
6. Restrictions about the sharing and access to data and information are a major barrier to progress and wide use of climate knowledge;
7. Use of climate knowledge that can inform decision-making is inadequate and is not following the rapid advancement of the understanding of climate system; and
8. Capacities of users is often insufficient to adequately use climate data and information.

The objectives of ACRIS in line with those of the GFCS are:

1. to improve climate services for all countries,
2. build capacities of providers and users,
3. enable governments to have a central role as primary sources of climate services,
4. promote a free and open exchange of climate data and information while respecting existing data policies,
5. facilitate the timely access to relevant scientific information to help society to cope with current climate variability and limit economic and social damages caused by climate-related disasters.

Methodology

The mapping exercise was carried out as follows:

1. Desk review of existing reports, and literature on existing platforms/services, especially with regards to institutional and systemic frameworks (governance, human resources, legal and policy frameworks, protocols of data exchange).
2. survey with focus on institutions offering weather & climate services, geospatial services, and the institutions offering training and technological interventions
3. Institutional visits to collect data and assess institutional capacities in terms of: data, infrastructure, software, legal and institutional framework.
4. Report preparation with recommendations of the solutions provider, system and software specifications, cost estimates of the potential providers and procurement recommendations and guidelines for implementation of the platform.

Surveys and Findings

The institutions identified from the study as key players in the climate information services domain are:

1. African Centre of Meteorological Application for Development (ACMAD)
2. AGRHYMET Regional Centre
3. Council for Scientific and Industrial Research (CSIR)
4. IGAD Climate Prediction and Applications Centre (ICPAC)
5. Regional Centre for Mapping of Resources for Development (RCMRD)
6. SADC – Climate Services Centre (SADC-CSC)

For the study, managed to obtain feedback from the two institutions below:

[Regional Centre for Mapping of Resources for Development](#)

Established in 1975 under the auspices of the United Nations Economic Commission for Africa (UNECA) and the then Organization of African Unity (OAU), RCMRD has 20 African countries as members.

[IGAD Climate Prediction and Applications Centre](#)

IGAD Regional Climate Centre hosted at ICPAC provides regional climate forecasts and other products that support regional and national climate activities, and thereby strengthen the capacity of WMO Members in the Greater Horn of Africa region to deliver better climate services to users. ICPAC is a Regional Climate Centre for WMO operating in 11 countries.

To achieve the objectives, the study gathered information through websites reviews, and face to face visits interviews. in a bid as follows:

1. Information gathering through desk analysis
2. meeting on 19th April 2018 with RCMRD Director of Remote Sensing to clarify the objectives of the assessment and expectations and ensure team assignment to the process;
3. Meeting on 23rd April 2018 with IT Representative for a one on one Interview and confirmation of specifications;
4. Meeting on 24rd April 2018 with RCMRD Marketing representative for a one on one Interview on Governance and data aspects;
5. Continuous exchange of emails between the consultant and climate information service players.

The survey carried out on the institutional capacity and readiness for climate information services noted the following:

[Data](#)

The study noted that there are huge amounts of data available at the institutional level. Furthermore, more data is received on a daily basis. Some of the data domains available that are critical for climate services are rainfall, temperature, satellite derived, hydrological to name a few.

With such huge availability of data, the main challenge is data dispensing to end users and storage facilities. There is presence of data in archive disks that has not been accessed for a couple of years. For climate information services to be effective, this data has to be made available to interested stakeholders.

ICT Infrastructure

The study found that there has been a huge investment in ICT for the institutions in the previous strategic term periods. However, the institutions have not been able to keep up to date with the latest ICT trends. There is need to reduce input to physical equipment but invest to future proof technologies. RCMRD has 10% of its services running on cloud while ICPAC is yet to adopt the technology.

Human Capacity

Human capacity being the core of any climate Information Service provider. The technical expertise determines the level of usage of the ICT infrastructure in place. The study note obtained Information indicating presence of ICT staff that undertake all the available duties. Its paramount to segregate the duties from development to infrastructural support. Having a developer support ICT infrastructure reduces the quality of the output application.

Proposed Solution

To help mitigate the drawbacks in climate data delivery and integration, ACRIS has been developed on the framework below:

Legal and institution: to be implemented at a continental level by support of ACPC through policy development, knowledge and data exchange, infrastructure development, research, training and the provision of services to meet agreed requirements; ensuring access to data and knowledge products, tailoring information to user requirements, ensuring effective routine use of information in planning and management along with developing sustainable capacities. Users to access information from a range of available global, regional and national sources.

1. **Technological Infrastructure:** The overall IT infrastructure is adapted from the WMO Climate Services Information System (CSIS). The ACRIS System Architecture is as below:

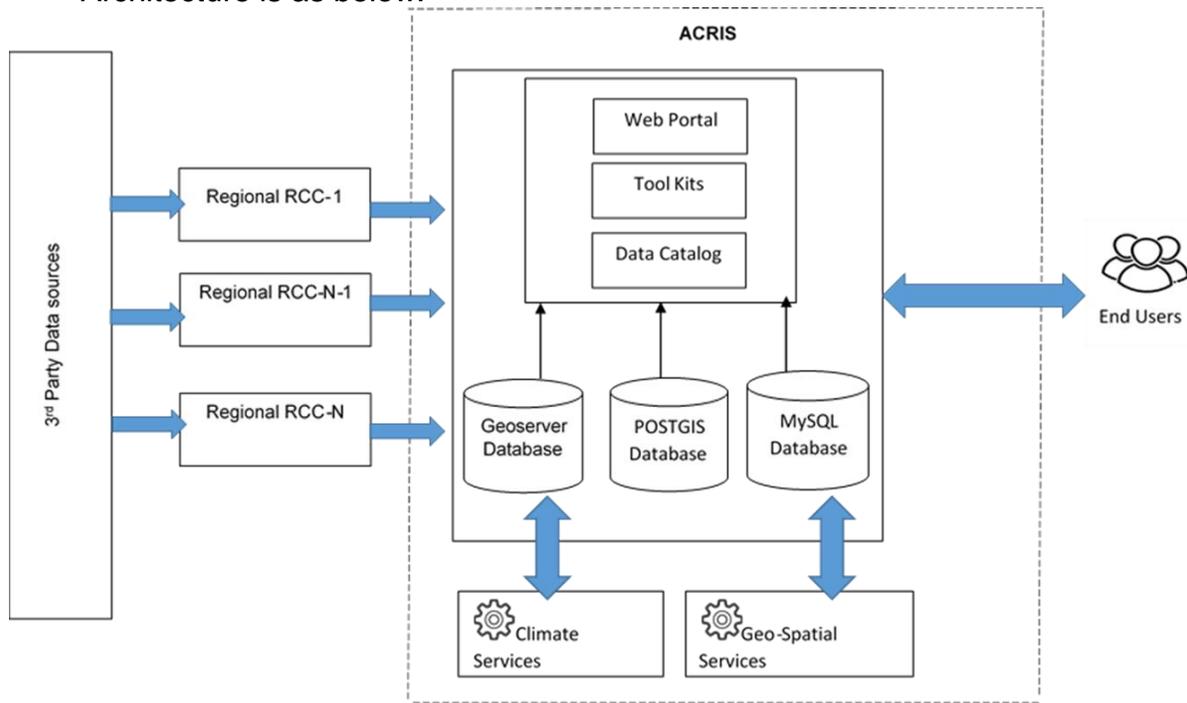


Figure 1 - ACRIS System Architecture

2. **Data:** Data is to be pulled from different participating Regional Climate Centers. This will ensure data gaps are easily identified and assist in managing user expectations. As well as ensuring ACRIS is the highest level of user interaction to the continents climate services.
3. **Human Capacity:** For ACRIS to succeed, the in charge ICT staff have to be trained on climate information services management as well as have a high level expertise to manage the coordination of ACRIS between the RCCs.

Recommendation

ACRIS will take advantage of existing infrastructure and resources to work as a go between the user and any access to climate Resource Information in Africa. The data will be accessed from the existing WMO Regional Climate Centres. This is to create a central landing database for all the regions.

The implementation to take place in phases:

Phase 1: being the ground breaking phase, all legal and policy issues to be handled. The portal development that involves centralization of the resources through links and landing pages.

Phase 2: Tools development and adaptation. Most of the tools already developed by partner institutions to be presented at a central access point on the ACRIS platform with support on the same.

Phase 3: Suite development of ACRIS. This will involve packaging all the items created in phase 1 and 2 to enable ACRIS be a solutions provider for climate services.

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