

The Intergovernmental Authority on Development (IGAD) in Eastern Africa was created in 1996 and has 8 member states: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. IGAD is building regional integration and economic cooperation through key sectors such as agriculture, natural resources, environment, health and social development as well as peace and security.

ICPAC stands for IGAD Climate Prediction and Applications Centre, a Regional Climate Centre of Excellence designated by the World Meteorological Organization. ICPAC is delivering an impressive variety of climate services in terms of long range and seasonal forecasts, climate monitoring, data, tools, training and research. Welcome to the Greater Horn of Africa region!

ICPAC - ClimSA programme Achievements

Addressing Climate change impacts is complex, costly, requires timely and relevant information, and has long-term implications. It is therefore vital that such decisions are based on the best available data and reliable information. ClimSA programme at ICPAC aims at fostering sustainable development in the region by addressing the existing gaps and mainstreaming climate services into policy processes, strategy and programmes at regional, national, and sub-national levels. The project works towards supporting the climate information services value chain in the IGAD region with technical and financial assistance, infrastructure and capacity building.

Co-production and user engagement, climate services provision, capacity building, and mainstreaming of Climate Services into National and Regional Policies and Programmes are some of the project work areas.

Co-production and User Engagement

User engagement is vital in the provision of climate services to the end users as it not only measures but also monitors the effectiveness and value of the products produced through feedback for effective decision making. During the third quarter of 2021, the IGAD Climate Prediction and Applications Centre (ICPAC) and the Uganda National Meteorological Authority (UNMA) held a workshop on stakeholder engagement in agriculture and water under the aegis of the Intra ACP Climate Services & Related Applications (ClimSA) Project. This was following the successful support extended to the Kenya Meteorological Department (KMD), which has since held more than three National Climate Outlook Forums (NCOFs).

Experts from ICPAC supported UNMA and stakeholders in promoting a broader understanding of engagement and how best to apply it in the context of Uganda's agriculture and food security and water & energy user interface platforms. The engagement process starts with the generation, provision and dissemination of weather and climate data from ICPAC/ UNMA and ends with the improved decision-making for different types of users at various levels till the last mile.



A private sector representative from Nile Breweries Limited in Uganda addresses participants on climate issues.



David Luganda, the winner in the stakeholder mapping, Agriculture and Food Security category receives his trophy from the UNMA Ag. Executive Director, David Elweru.

Data Management

Quality control and consistent data act as the basis for generating accurate climate products and services. However, in the IGAD region the deterioration of data in terms of quantity and quality as well as increased inconsistencies have been impacted on the quality of climate products generated in the region. The challenges faced by national climate institutions in providing quality data have been attributed to limited resources to maintain the station network, and limited skills to manage the data effectively and generate targeted climate products. ClimSA, under output three (3), proposed to support regional climate institutions in tackling some of the data challenges. If all activities under output three (3) are fully implemented, it is expected that there will be a regional improvement in the access to climate information through the strengthening of observation and monitoring systems as well as the research modelling and prediction.

In order to effectively provide solutions for the data challenges faced in the IGAD region, the formation of a working group composed of climate data managers from the NMHSs was proposed under ClimSA. A working group named “Regional Data Managers Working Group-RDMWG” has already been established to act as the main guiding body on data-related issues. The first task that the RDMWG embarked on was to draft a data-sharing Memorandum of Understanding (MoU) between ICPAC and NMHS from member states which have been non-existent since the protocol establishing ICPAC was signed. This draft (MOU) was presented to the Permanent Representatives (PRs) with the World Meteorological Organization (WMO) for signature during the Sixty Second Greater Horn of Africa Climate Outlook Forum (GHACOF62) held in August 2022. The RDMWG also drafted the Terms of Reference (TOR) for the group which resolved that the group should hold bi-annual meetings to propose solutions with regard to data management in the IGAD region. The other ongoing activity geared towards improving data access to ICPAC from NMHSs is establishing a Global Telecommunication System (GTS) link with the Kenya Meteorological Department (KMD) Regional GTS. This will ensure that ICPAC receives observation data in near real-time and will go a long way in improving climate services at ICPAC. The KMD Director has already given the directive to establish the GTS link and a task force consisting of three experts from both ICPAC and KMD has already been proposed to oversee the setting up of the link.



Participants during the Regional Data Managers Working Group (RDMWG) meeting which took place in Nairobi Kenya. Representatives from IGAD member states (Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda), and one ICPAC member state (Burundi), ICPAC, and WMO were present during the meeting.

Agriculture and Food Security

With the growth in the world's population and persistent Climate change threatenings, there is an urgent need to increase quality agriculture and food production. Given expected changes in temperatures, precipitation and pests associated with climate change, in the region, there is a need to increase investment in research, development and demonstration of technologies to improve Agriculture and food production for building resilience.

ICPAC as a RCC is committed to delivering timely climate services to various sectors, particularly Agriculture and water resource management as target focus sectors of ClimSA in eastern Africa. The centre installed online specialised information systems consisting of an [Agriculture monitoring system](#) and a [Drought watch system](#) as part of the thematic priority support for agriculture and food security. These systems are effective in providing timely and relevant data which is essential for Early Action.

Numerous capacity-building workshops have been undertaken in collaboration with the European Commission Joint Research Centre (EU-JRC), one of the implementing partners to enhance the use of these decision support tools, as follows:

- Training on crop yield prediction models to improve decision support in the agriculture sector at regional, national, and sub-national levels using the Crop Growth Monitoring System (CGMS) Statistical Tool (CST) software. The tool is designed to support the development and selection of crop yield forecast models to facilitate national and subnational crop yield forecasting. The training was offered to IGAD Member State agriculture and food security focal points and the agrometeorologists on the use of the CST tool from 4th to 6th May 2022.
- Workshop on Agriculture watch conducted from 4 to 5 Feb 2021 & on Crop Growth Monitoring System (CGMS) Statistical Tool (CST) from 3rd to 6th May 2021 by JRC.
- ICPAC through support from JRC conducted a virtual training workshop from 26th to 28th July 2021 to enhance the adoption and use of the agriculture watch system in the region.
- As part of awareness creation activities to promote the use of the agriculture watch system, a side event was organized during GHACOF 58 and the Food Security and Nutrition Working Group (FSNWG) July 2021 meeting.
- The First edition of Agriculture Hotspot Bulletin has been published in June 2022 and is now part of ICPAC operational products for early warning.

The Role of Sub-regional Climate Outlook Forums for Enhancing the Uptake of Climate Early Warning Information and Early Response

The IGAD Climate Prediction and Applications Centre (ICPAC) through Intra-ACP Climate Services and Related Applications Programme (ClimSA) and the Strengthening Coordination and Implementation of IGAD Drought Disaster Resilience and Sustainable Initiative (IDDRSI) conducted a Sub-regional Climate Outlook Forum for the Marsabit-Borana Cluster (IGAD Cluster II on Resilience) for the March-May 2022 season. The objective of the workshop was to enhance the use and uptake of climate early warning information among pastoral communities. The workshop brought together IGAD experts in Climate, Agriculture, Water, and Livestock, and Early warning and response and cross-border coordination with a range of stakeholders from across the cluster in Ethiopia and Kenya, including planners and actors in the agriculture/food security, water, and livestock sectors, and international and regional humanitarian institutions and intermediaries.

ICPAC continues to organise sub-regional Climate Outlook Forums for cross-border areas to improve the delivery and use of climate services among pastoral communities and end users.



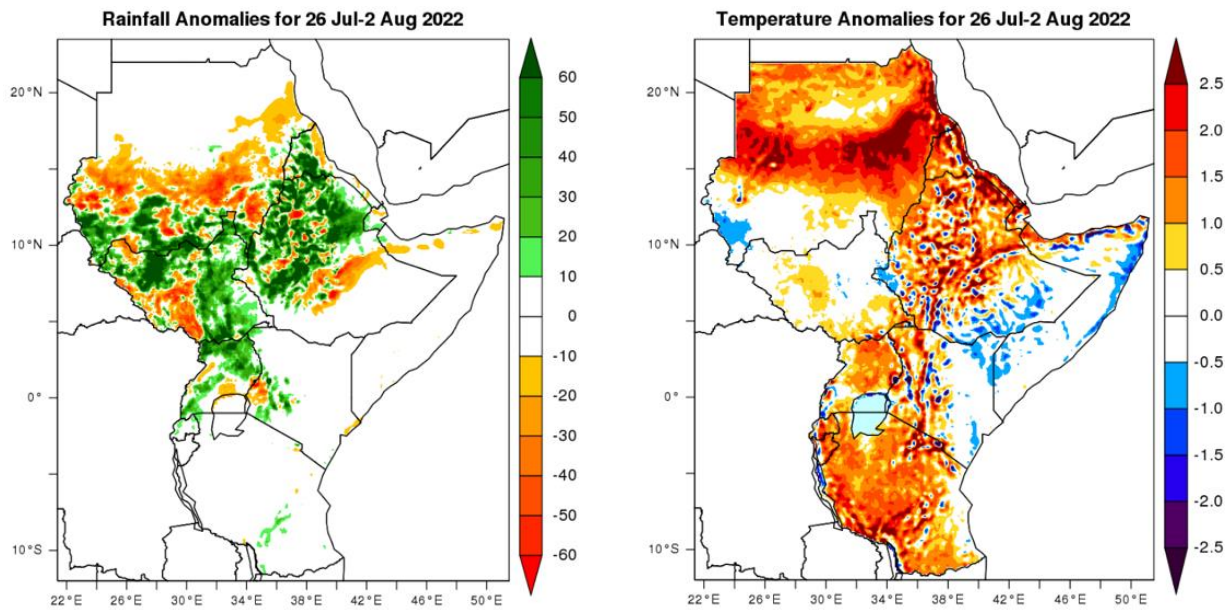
Sectoral experts discussing on implications of seasonal forecast and response measures in cross-border areas.

New and Improved Climate Products

ICPAC is mandated to provide reliable and timely climate information for the Greater Horn of Africa region. Improving early-warning information is crucial towards helping society become more resilient to climate extremes, and as such improved weather and climate forecasts are key to enable improved decision-making and risk reduction management. ICPAC through ClimSA project has developed new/improved and sector tailored climate products and information. The new climate products include weekly rainfall and temperature anomaly maps, standardised precipitation index, and probability forecasts of the start of the rainfall season using GCMs daily forecast data. The provision of the new and improved products and information helped users and stakeholders to enable early planning, early action and mitigate climate shocks over the region.

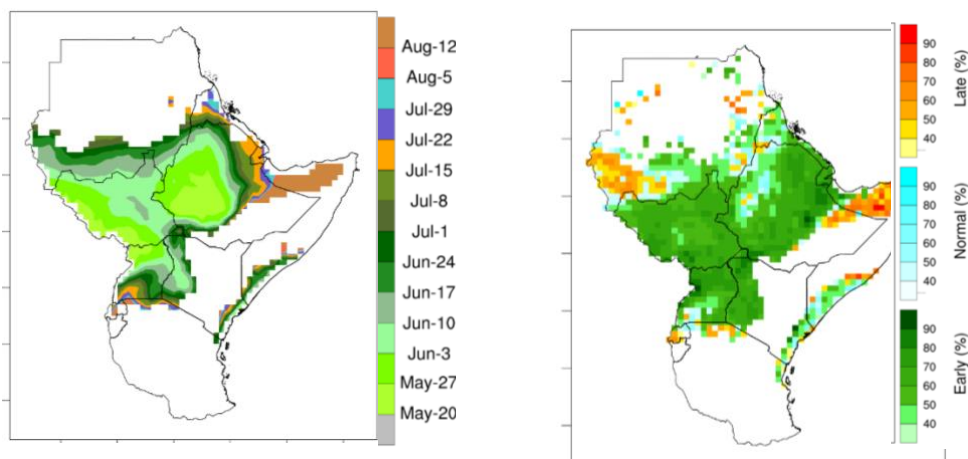
Figure 1

Examples of weekly rainfall and temperature anomaly forecasts for the period from 26 July – 02 August 2022.



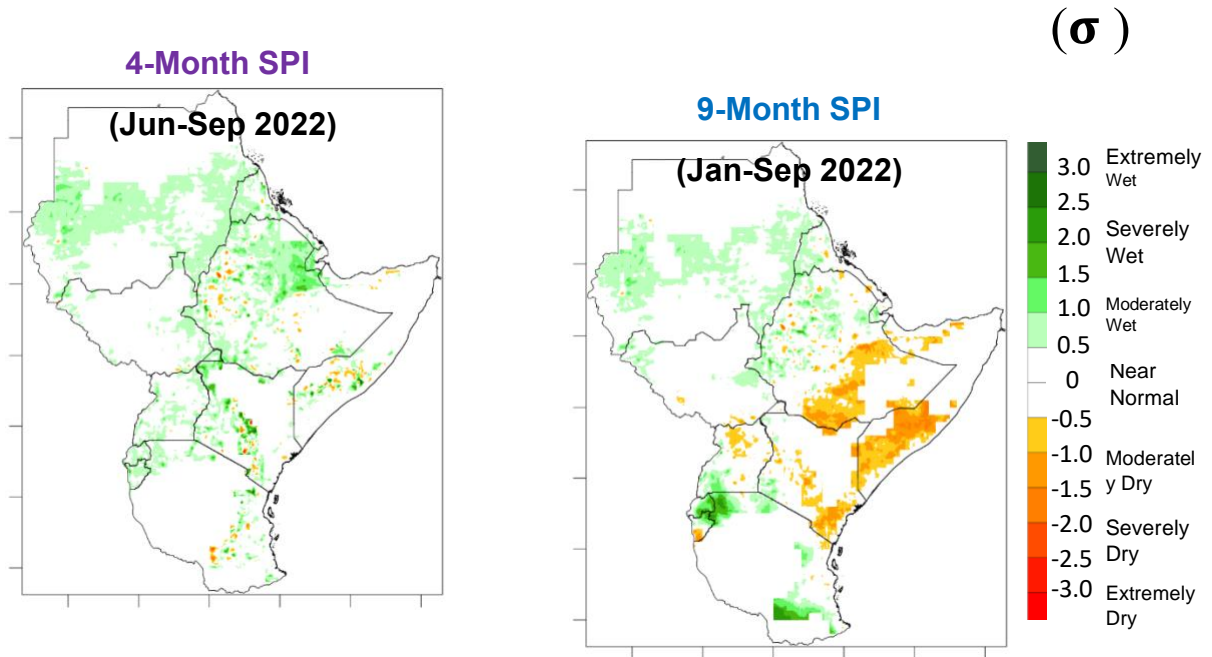
The weekly anomaly products are the deviation for a specific week from the average weekly value estimated from a long-term data set, and provides information on the spatial patterns and magnitude of rainfall and temperature for the particular week. The rainfall anomaly map shows areas of sufficient and depressed rainfall, whereas the temperature anomaly map exhibit areas of warmer-than-average and cooler-than-average temperatures of target week. ICPAC weekly forecasts of precipitation and temperature are based on the Weather Research and Forecasting (WRF) model.

Figure 2 Forecast of the start of the rainfall season.



The average start dates of the rainfall season are indicated on the left and their probability outlook is shown in the right. The forecast was processed using daily rainfall forecasts from 5 Global Climate Models (ECMWF, Météo-France, CMCC-Italy, DWD-Germany, ECC-Canada) obtained from the EU Copernicus Climate Change Services (C3S) Climate Data Store.

Figure 3 Precipitation-based Drought outlook based on Standardized Precipitation Index (SPI).



The intensity and duration of droughts are calculated on seasonal and multi-season time scales. The seasonal SPI reflects short to medium-term moisture status or reservoir levels, whereas the multi-seasonal SPI indicates long-term rainfall deficits/wetness over the specified area.

Sample of articles in the media might be found in the below links.

1. [ICPAC and BBC Media Action offer journalists a chance to boost climate action in East Africa - ICPAC](#)
2. [IGAD Ministerial Meeting on Ongoing Drought - ICPAC](#)
3. [Preparing for disaster and preventing deaths with early warning systems - ICPAC](#)
4. [How Do Climate Services Help People in the East African Region Take Early Action? - ICPAC](#)
5. [Co-production in Climate Services: What, Why, and How? - ICPAC](#)
6. [ICPAC Launches Drought Watch System - ICPAC](#)
7. [Enhancing Media and Meteorological Agency Engagement in Eastern Africa - ICPAC](#)
8. [Community Engagement and Accountability in Weather and Climate Communication - ICPAC](#)
9. [IGAD launches Hazards Watch for East Africa - ICPAC](#)

Source: ICPAC Communication Team