



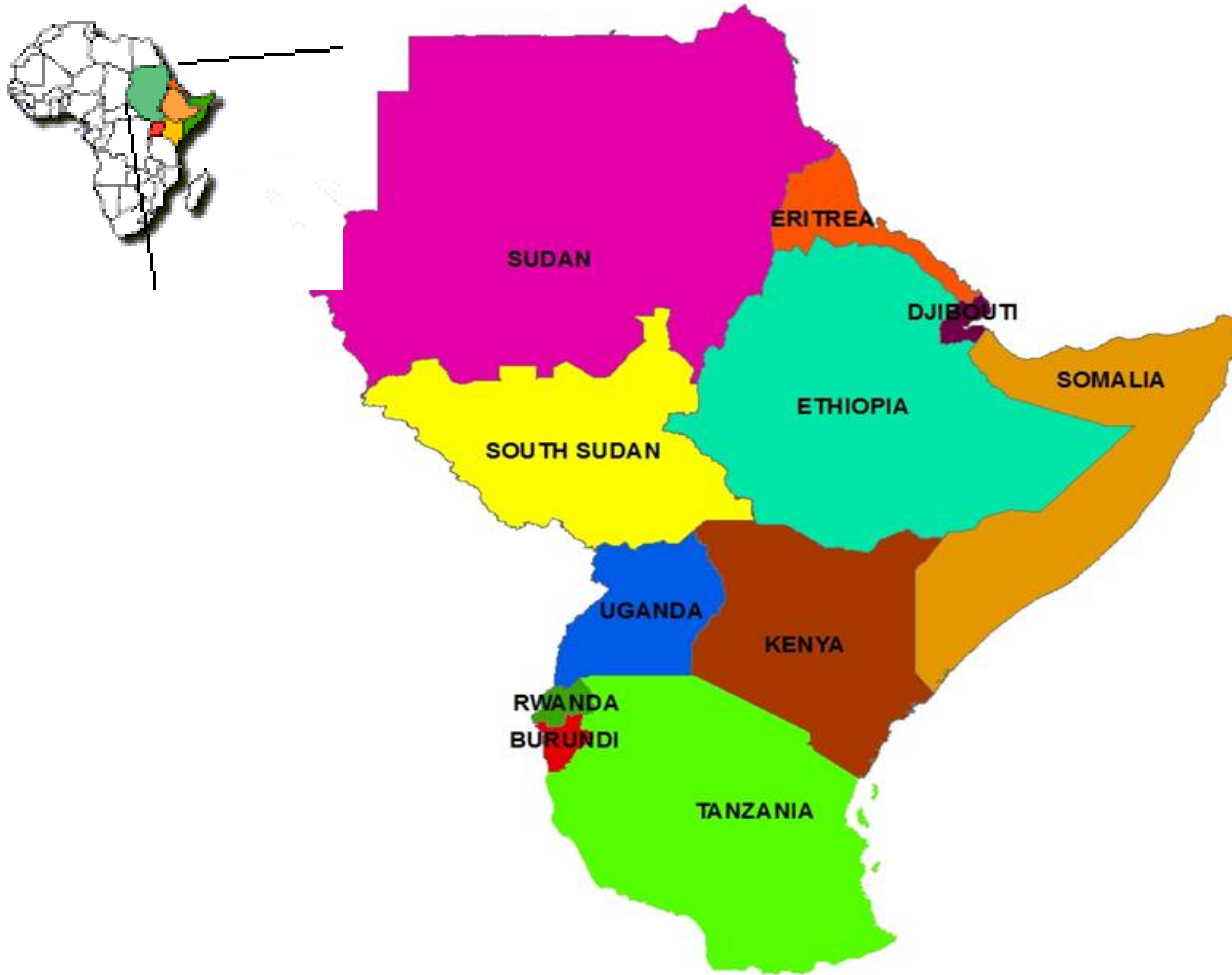
PEACE, PROSPERITY AND
REGIONAL INTEGRATION

GHACOF REVIEW

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WMO RCC FOR EASTERN AFRICA



- The Greater Horn of Africa Climate Outlook Forums (GHACOF) covers 11 eastern African countries namely Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda.

BACKGROUND

- The northern/southern sectors of the GHA region receive rainfall during the respective hemispheric summer months, namely June–September and December–February. Where the equatorial areas of the GHA region has two main rainfall seasons centered on March-May and October-December months.
- El Niño-Southern Oscillation (**ENSO**) and **Indian Ocean Dipole (IOD)** are the major cause of climate variability over the GHA region.
- Climate related hazards accounts for the majority of the disasters that have taken place in the region.
 - with far reaching socio-economic impacts.

THE GHACOF BACKGROUND

- In February 1998 the first Greater Horn of Africa Climate Outlook Forum (GHACOF1) was organized for the March to May (MAM) 1998 rainfall season by the Drought Monitoring Centre (DMC), now called IGAD Climate Prediction and Applications Centre (ICPAC).
- Since then the GHACOF process has been sustained in the region, and it is currently organized by ICPAC on rotational basis within the participating Member Countries three times annually for the main rainfall seasons of March to May (MAM), June to September (JJAS) and October to December (OND). The most recent GHACOF 47 was held from 21 to 22 August 2017 in Zanzibar, United Republic of Tanzania.

COMPONENTS OF THE GHACOF PROCESS

- Pre-COF workshop to improve skills of national climate scientists in climate modeling and prediction and to generate national climate outlooks;
- Meeting to generate the consensus regional climate outlook, usually in probabilistic nature formed by merging inputs from the WMO Global Producing Centres, regional inputs and national climate outlooks using expert interpretation;
- A forum where the consensus regional climate outlook is presented to the users who translate the forecast into sectoral impacts and develop mitigation strategies for their respective sectors;

COMPONENTS OF THE GHACOF PROCESS

- User interface sessions involving face to face engagement of providers and multi-sectoral users;
- Dissemination and press release of the GHACOF statement;
- Downscaling consensus regional climate outlook to national and subnational levels;
- National dissemination forums to disseminate downscaled forecasts to the national and sub-national users.

GHCOF PARTICIPANTS

- **ICPAC member institutions National Meteorological and Hydrological Services (NMHSs):** Institut Géographique du Burundi, Agence National de la Météorologie de Djibouti, Eritrea Meteorological Service, National Meteorological Services Agency of Ethiopia, Kenya Meteorological Department, Rwanda Meteorological Agency, Somalia Meteorological Services, South Sudan Meteorological Services, Sudan Meteorological Authority, Tanzania Meteorological Agency, Uganda National Meteorological Authority;
- **Cooperating international partner organizations:** World Meteorological Organization (WMO), United Nations Development Programme (UNDP), World Bank, African Development Bank (AfDB), United States Agency for International Development (USAID), WMO Global Producing Centers (GPCs), United Nations International Strategy for Disaster Reduction (UNISDR), Met Office of the United Kingdom, Korean Meteorological Agency, the International Research Institute for Climate and Society (IRI), NOAA National Centers for Environmental Prediction (NCEP), and Famine Early Warning Systems Network (FEWS-NET) among others.

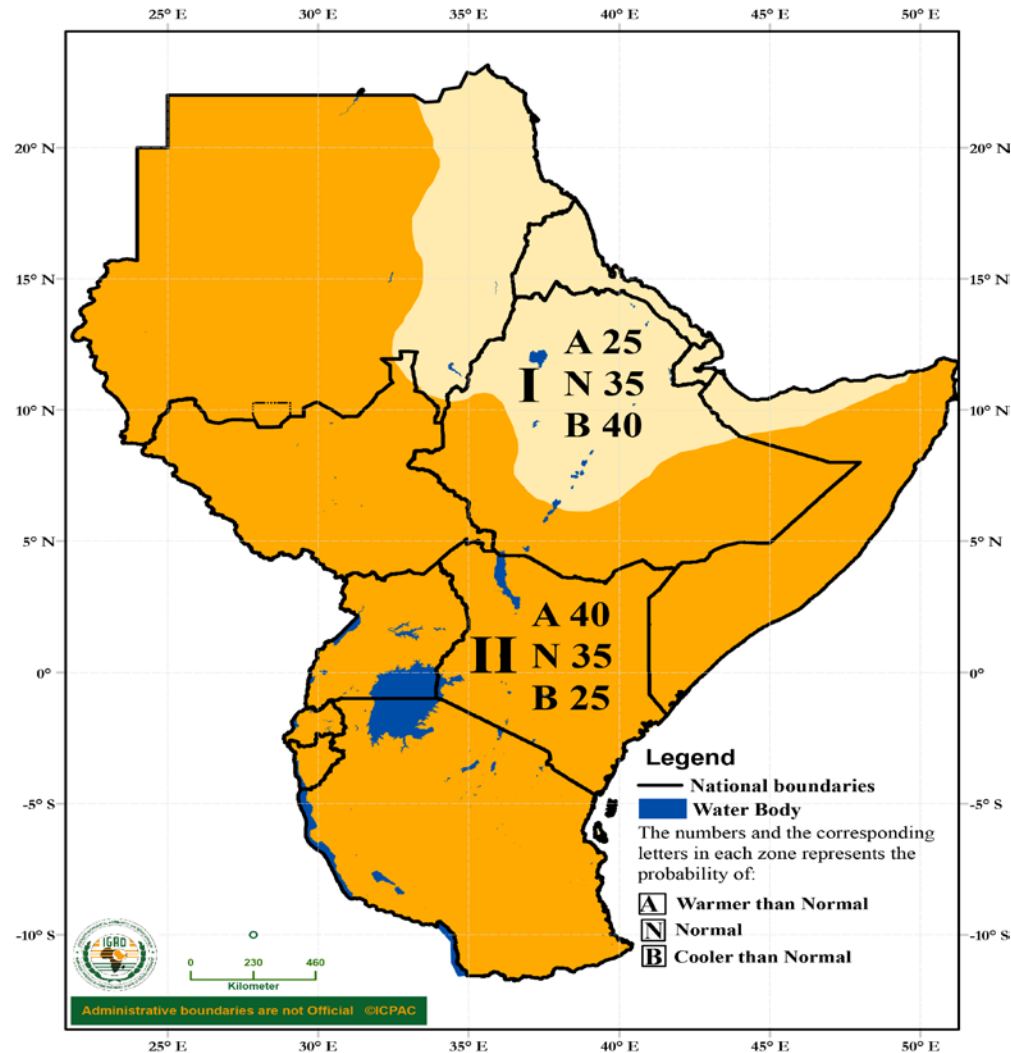
GHACOF FORECAST UPDATES

- Forecast updates are generated and disseminated on 10-day, monthly, and three-month rolling seasonal timescales.
 - General Circulation/Climate Model (GCM) outputs from seven global centers are reprocessed for the GHA region and bias-corrected and regression-based ensemble probabilistic and deterministic forecasts of precipitation and temperature are routinely prepared and disseminated every month with lead times of up to 2 months on monthly and three-month rolling seasonal basis.
- These products are further strengthened with statistically downscaled monthly and seasonal individual GCM and SST based forecasts using CPT and GeoCOF.
 - In addition, six-hourly Climate Forecast System Version 2 (CFSv2) GCM outputs are used for initial and boundary conditions for dynamical downscaling of forecasts using the Weather Research and Forecasting version 3.8 (WRFv3.8) regional climate model.
- In addition, user oriented and agriculture focused forecasts of onset, cessation, dry and wet-spells, and length of growing season and their anomalies relative to 20-year average
 - obtained from WRF-ERA INTERIM driven hindcast are also produced for major GHA seasons. If there is unique climate event, a Climate Watch is usually issued by ICPAC and posted on the web site and further disseminated to stakeholders through e-mail mailing list.

EVALUATION OF THE PAST GHACOF

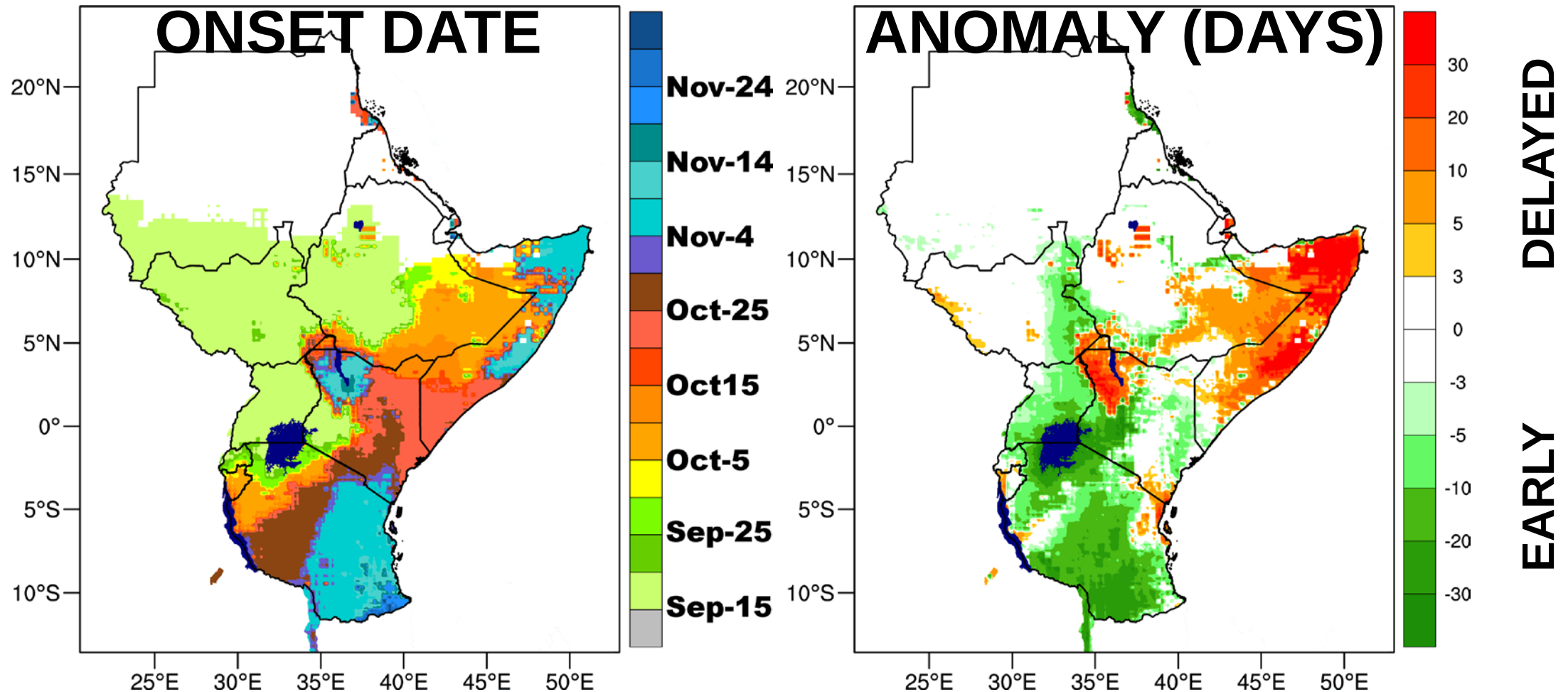
- All GHACOF consensus climate outlooks are verified against observations using hit rate as well as Heidke Hit Skill Score and results provided during GHACOFs and regularly posted on the IGAD RCC web page

CONSENSUS OND 2017 MEAN TEMPERATURE OUTLOOK

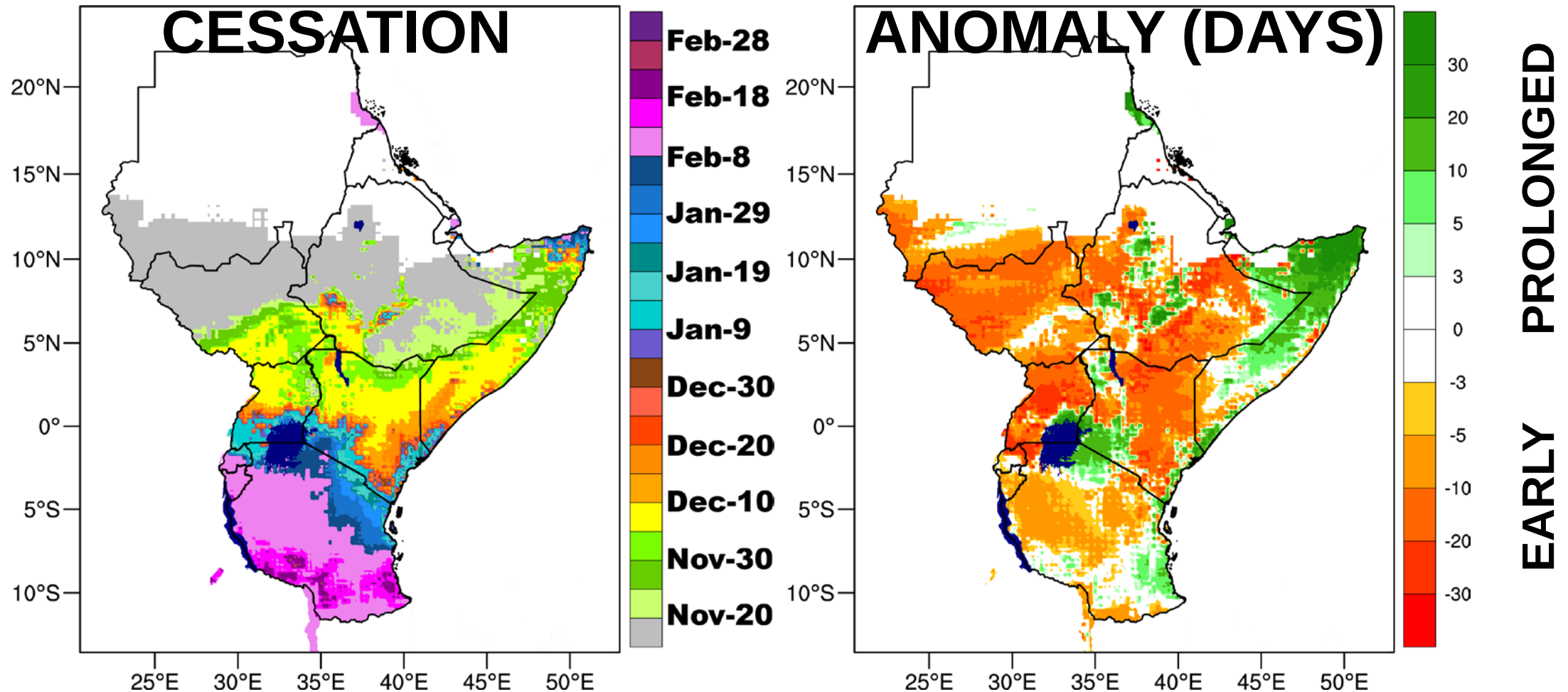


IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

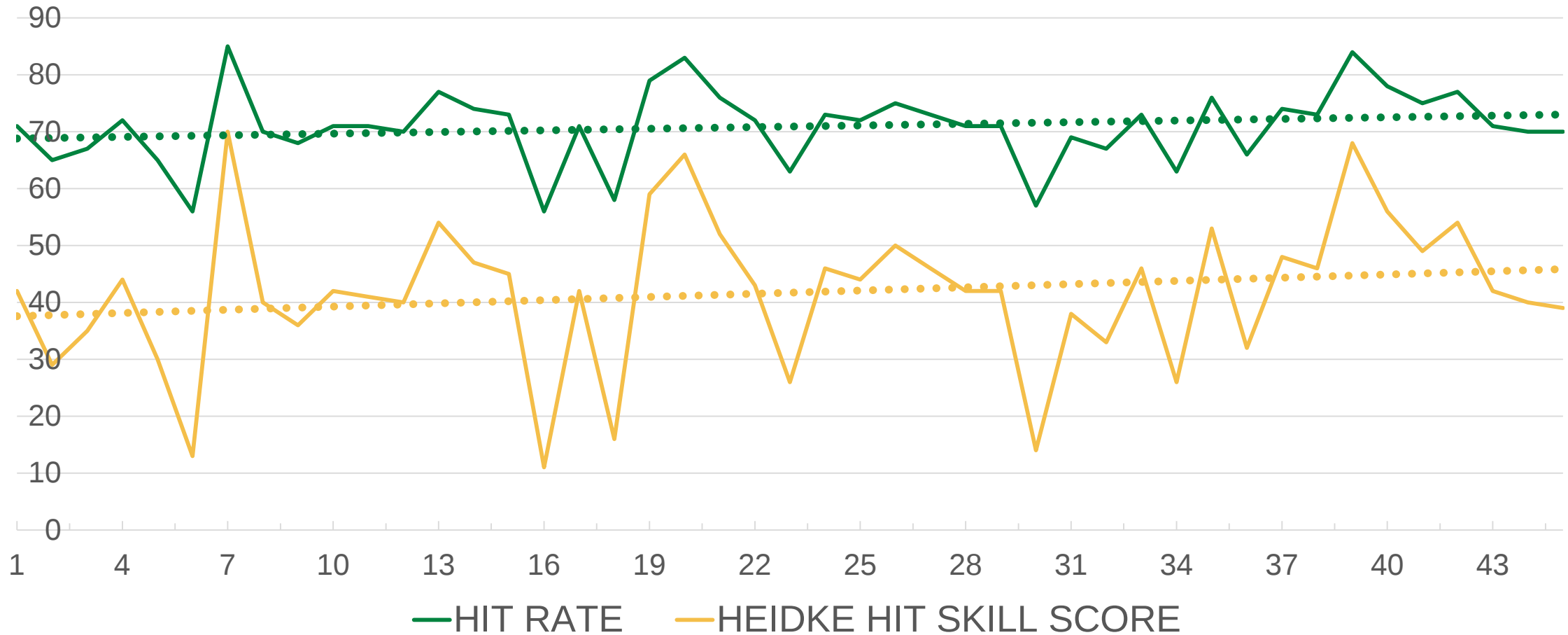
OND 2017 SEASONAL CHARACTERISTICS



OND 2017 SEASONAL CHARACTERISTICS



GHACOF SKILL



GHACOF SUSTAINABILITY

- ICPAC as the Regional Climate Centre for eastern Africa has been and will continue to lead and coordinate the organization of GHACOFs in collaboration with NMHSs and other partners of the region.
- ICPAC strives to incorporate user feedback in subsequent forums.
- Currently, GHACOFs are mainly organized with resources from various projects at ICPAC.

RECOMMENDATIONS

- Online platform where NMHSs could share and discuss their downscaled forecast, followed with video conference to update consensus regional climate outlook need to be in place.
- Users could access GHACOF products through on-line maprooms and geo-portal.
- ICPAC should be part and parcel of the National COFs.
- Need to introduce a high level forum after every GHACOF dedicated to policy makers to communicate brief outcome of GHACOF for adoption by policy makers.
- Co-design and co-produce tailored climate services with users and innovate to enable ICPAC to add value to sector applications.
- Need to implement an objective method for developing consensus regional climate outlook.
- Expansion of GHACOF products to include monitoring information for the recent and current seasons, sub-seasonal information including onset and cessation, rainfall distribution, climate advisories, impact-based outlooks as well as climate change information for adaptation.

THANK YOU VERY MUCH!