



ICPAC
IGAD Climate Prediction
& Applications Centre

STATEMENT

STATEMENT FROM THE FIFTY THIRD GREATER HORN OF AFRICA CLIMATE OUTLOOK FORUM (GHACOF53) FOR OCTOBER TO DECEMBER 2019 RAINFALL SEASON: 26-28 AUGUST 2019; HYATT HOTEL, DAR ES SALAAM, TANZANIA

Summary

October to December (OND) constitutes an important rainfall season over the equatorial sector of the Greater Horn of Africa (GHA). The downscaled regional objective forecast from 7 Global Producing Centres (GPCs) indicates higher chance of wetter conditions in most of the equatorial and southern sectors during October to December 2019. Enhanced chances of drier than average conditions are indicated along the Red Sea areas of Sudan and Eritrea. Raised chances of wetter conditions are indicated over northern Sudan and depressed rainfall in the northern Rift Valley of Ethiopia regions which rarely receive rainfall during the OND season and this may indicate potential for occurrence of unseasonal rainfall. It is noted that while much of the equatorial sector is expected to experience wetter conditions during the OND season, the models predict increased likelihood of drier than average rainfall during September 2019 over south-eastern and north-eastern Ethiopia, eastern Kenya, southern Somalia, western Tanzania and central Sudan. An earlier than normal start of the rains is indicated across the western sector including Tanzania, Burundi, Rwanda, Uganda, and western Kenya. On the other hand, moderately delayed onset is indicated over eastern Kenya, Somalia, and south-eastern Ethiopia. Analysis of predicted dry spells in the first 20 days after onset indicates that such spells will generally be short, with only a few consecutive dry days over much of the equatorial sector; however over eastern Kenya, Somalia, and south-eastern Ethiopia dry spells of more than 10 days are anticipated.

The regional objective climate temperature outlook for OND 2019 season indicates increased likelihood of above average temperature over much of the region. In particular, eastern Tanzania, eastern Kenya, much of Ethiopia, Somalia, Eritrea and Sudan are anticipated to have increased likelihood of warmer than average temperature, while western Tanzania, Burundi, Rwanda, eastern Uganda, south-eastern South Sudan, and southwestern Ethiopia are indicated to experience near average temperatures.

The outlook is relevant for seasonal time scales and relatively large areas. Local and month-to-month variations might occur as the October to December 2019 season

progresses. It is likely that episodic rainfall events leading to flash floods might occur even in areas with increased likelihood of near to below normal rainfall. Also, dry spells may occur in areas with increased likelihood of above to near normal rainfall. WMO in collaboration with Global Climate Centres will continue to provide status of global climate including ENSO updates. ICPAC will also provide regular regional climate updates while the National Meteorological and Hydrological Services (NMHSs) will provide downscaled and detailed national and sub-national updates.

The Climate Outlook Forum

The Fifty Third Greater Horn of Africa Climate Outlook Forum (GHACOF53) was convened from 26-28 August 2019 by the IGAD Climate Prediction and Applications Centre (ICPAC) in collaboration with the Tanzania Meteorological Authority (TMA), WMO and other partners to share and document climate impacts across the region and to formulate responses to the regional climate outlook for the October to December 2019 rainfall season over the GHA. The region comprises of Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda. GHACOF53 was preceded by a workshop (Pre-COF53) led by ICPAC and held from 19 to 24 August 2019 in Nairobi, Kenya, at which regional and national climate and agricultural experts developed the regional climate outlook presented as well as national-level outlooks.

The Forum brought together climate information providers and users from key socio-economic sectors, governmental and non-governmental organisations, decision-makers, climate scientists, and civil society stakeholders among others. It reviewed the implications of the factors expected to influence the evolution of the regional climate during the OND 2019 rainfall season including Sea Surface Temperature (SST) anomalies over the tropical Oceans.

Methodology

The forum examined the prevailing and expected ocean-atmosphere processes as well as the evolving large scale and regional scale circulation systems that have significant implications on GHA climate during October to December 2019. Key among these processes were current and evolving Sea Surface Temperature (SST) anomalies over global oceans, specifically the increased probability for Neutral ENSO and positive Indian Ocean Dipole (IOD) phases through the October to December 2019 period. Implications of these on regional rainfall were integrated during the Pre-COF53 Workshop. The Pre-COF53 workshop also considered the global forecasts from World Meteorological Organization (WMO) Global Producing Centres (GPCs) as inputs to the objective regional climate outlook for the October to December 2019 season. Prospects for season onset timing and early season dry spells were characterised by analysing ensemble integrations of the Weather Research and Forecasting (WRF) model configured for the GHA and run at ICPAC with boundary forcing from the GPC Washington global seasonal system.

Climate Outlook for October to December 2019

The objective rainfall and temperature outlooks for the GHA region are given below in Figure 1 and Figure 2 respectively.

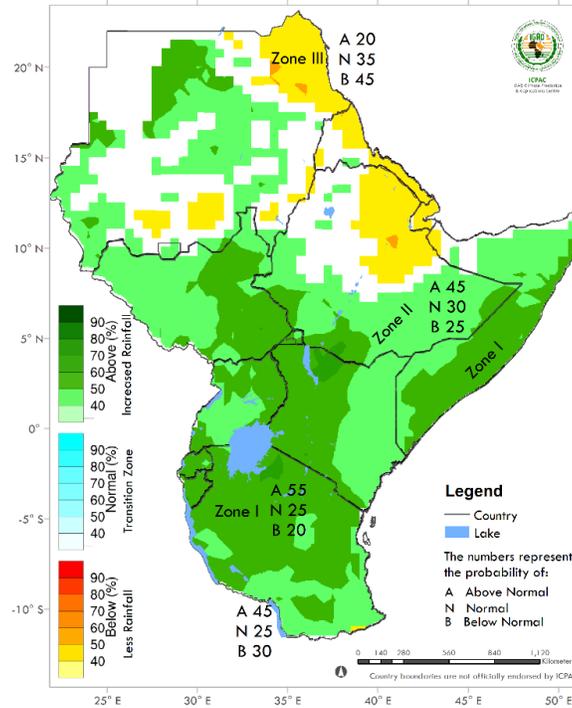


Figure 1: Greater Horn of Africa Objective rainfall Outlook for the October to December 2019 rainfall season

- Zone I:** In this Zone the highest probability is for above normal rainfall (55%). The probabilities for normal and below normal are 25% and 20% respectively.
- Zone II:** In this Zone the highest probability is for above normal (45%). The probabilities of normal and below normal are 30% and 25% respectively.
- Zone III:** In this Zone the highest probability is for below normal (45%). The probabilities of normal and above normal are 35% and 20% respectively.

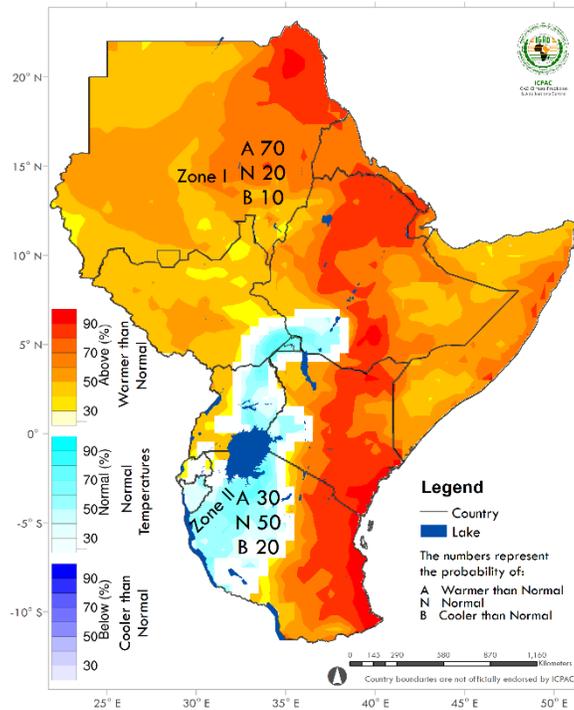


Figure 2: GHA Mean Surface Temperature Outlook for October to December 2019

Zone I: Increased likelihood of above normal (i.e., warmer) mean temperatures. The probabilities shown in Zone 1 (above = 70%; normal = 20%; below = 10%) are valid for the corresponding shading interval (dark orange). Elsewhere, where shading indicates the probability for above normal is higher (red)/lower (light orange or yellow) than 70%, the probabilities of normal and below normal will be proportionately lower/higher than 20/10%.

Zone II: Increased likelihood of near normal mean temperatures.

Note: The numbers for each zone indicate the probabilities of rainfall and mean temperature in each of the three categories, above-, near-, and below-normal. For example, in Zone II, Figure 1, there is a 45% probability of rainfall occurring in the above-normal category; a 30% probability of rainfall occurring in the near-normal category; and a 25% probability of rainfall occurring in the below-normal category. In Zone I, Figure 2, the dark orange shading indicates a 70% probability of mean temperature occurring in the above-normal (i.e., warmer) category; up to 20% probability of mean temperature occurring in the near-normal category; and a 10% probability of mean temperature occurring in the below-normal (i.e., cooler) category. The boundaries between zones should be considered as transition areas. In both Figure 1 and Figure 2 white shading indicates regions where the predicted probabilities for the above-, near- and below-normal categories are approximately equal at 33%. (i.e. no single category is favoured over the other two).

Contributors

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regional climate outlook included representatives of the National Meteorological and Hydrological Services from the GHA countries (Insitut Geographique du Burundi; Meteorologie Nationale de Djibouti; National Meteorological Agency of Ethiopia; Kenya Meteorological Department; Rwanda Meteorological Agency; South Sudan Meteorological Service; Sudan Meteorological Authority; Somalia Meteorological Service, Tanzania Meteorological Authority and Uganda National Meteorological Authority) and climate scientists as well as other experts from national, regional and international institutions and organizations, including ICPAC, UK Met Office, African SWIFT, SHEAR-ForPAC and WMO Global Producing Centres (GPCs).

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