



ICPAC

IGAD Climate Prediction & Applications Centre

## **STATEMENT FROM THE FIFTY SECOND GREATER HORN OF AFRICA CLIMATE OUTLOOK FORUM (GHACOF52): 27-28 MAY 2019, RADISSON BLU HOTEL, ADDIS ABABA, ETHIOPIA**

### **Consensus Climate Outlook for June to September 2019**

June to September constitutes an important rainfall season over the northern sector and the western parts of the equatorial sector of the Greater Horn of Africa (GHA) region. The regional consensus climate outlook for the June to September 2019 rainfall season indicates increased likelihood of drier than normal rainfall over much of Ethiopia, southwestern Eritrea, South Sudan, parts of western Sudan as well as some region on the Sudan/Ethiopia border, northern and far-western Uganda, western Rwanda as well as coastal areas of Kenya and Somalia. There is an increased likelihood of above normal rainfall over Djibouti and surrounding lowlands of Ethiopia and Eritrea, most parts of Sudan, parts of southwestern Ethiopia, western Kenya and the Lake Victoria region of Uganda and Tanzania. The remaining regions of the north and equatorial-west are transition zones where the three categories (above, normal, below) are predicted equally likely, while the June to September period is a dry season for large parts of the south, east and far north of the GHA. The forecast also indicates a delay in the start of the rains by 1-3 weeks over the northern Rift Valley, the western equatorial sector, the coastal regions of Kenya and northern Somalia, and in Sudan. There is also indication of a likelihood of early cessation over eastern Ethiopia, northern Uganda, and the cluster bordering Ethiopia, South Sudan and Kenya. These areas are also likely to experience long dry spells during the season. On the other hand, temperature forecast indicates increased likelihood of warmer than normal surface temperatures over much of the northern, eastern and southeastern GHA as well as a region over northwestern South Sudan, while cooler to near normal temperatures are indicated across central parts of GHA. The highlands of the equatorial sector are expected to experience cool and cloudy conditions during June to September 2019 period.

The World Meteorological Organisation (WMO) and the major global climate centres have noted that Sea Surface Temperatures (SSTs) over the equatorial Pacific Ocean have been close to weak El Niño levels during the past several months. Global models further indicate that the positive SST anomalies currently present in the tropical Pacific are expected to remain warmer than normal through the forecast period. The Indian Ocean Dipole (IOD), which has significant influence on regional climate, especially during the long (MAM) and short (OND) rains, is also expected to strengthen into its positive phase through June-September 2019. The influence of these ocean processes will interact with regional atmospheric circulation patterns, and will also be modulated by topography and large inland water bodies. Updates

on the El Niño/Southern Oscillation (ENSO) condition will be provided regularly by WMO and the major climate centres.

*The outlook is relevant for seasonal timescale and covers relatively large areas. Local and month-to-month variations might occur as the season progresses. While sporadic heavy rainfall is most probable over much of the region, extended dry spells and below normal rainfall may occur in areas with an increased likelihood of near normal to above normal rainfall. ICPAC will provide regional updates on regular basis while the National Meteorological and Hydrological Services (NMHSs) will provide detailed national and sub national climate updates.*

## **The Climate Outlook Forum**

The Fifty-second Greater Horn of Africa Climate Outlook Forum (GHACOF52) was convened from 27<sup>th</sup> to 28<sup>th</sup> May 2019 at Radisson Blue Hotel, Addis Ababa, Ethiopia, by the IGAD Climate Prediction and Applications Centre (ICPAC) and partners to formulate a consensus regional climate outlook for the June to September 2019 rainfall season over the GHA region. The GHA region comprises Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda. The forum reviewed the state of the global climate system including the El Niño / Southern Oscillation (ENSO) conditions in the Pacific ocean, SSTs over Atlantic and Indian Oceans including state of the Indian Ocean Dipole (IOD) with linkage to impacts on the GHA rainfall during June to September 2019 season. Users from sectors such as disaster risk management, agriculture and food security, livestock, health, energy and water resources as well as non-governmental organisations and development partners actively participated in the formulation of mitigation strategies of the potential impacts of the consensus climate forecast in their respective specific sectors.

Valuable forecast inputs were drawn from a wide range of sources including the World Meteorological Organisation's Global Producing Centres (WMO GPCs) and National Meteorological and Hydrological Services. These inputs were combined using deterministic and probabilistic modelling alongside expert analysis and interpretation to obtain the regional rainfall forecast for the period June to September 2019.

## **Methodology**

The forum examined the prevailing and predicted SSTs over the Pacific, Indian and Atlantic Oceans as well as other global, regional and local climate factors that affect the rainfall evolution during the season. In alignment with WMO guidelines on objective forecasting, these factors were assessed using dynamical models as the primary basis and using documented expert interpretation. The regional consensus climate outlook included inputs from National climate Scientists who participated in the Pre-COF 52 Capacity Building Training Workshop that was hosted by ICPAC from 20<sup>th</sup> to 25<sup>th</sup> May 2019. The global dynamical model inputs were obtained from various global climate Centres including WMO GPCs, the North American Multi-Model Ensemble and the EU Copernicus Climate Change Service (C3S). The current capability of seasonal to inter-annual climate forecasting allows prediction of departures from mean conditions on a large-scale basis, with consideration of scales of processes that contribute to regional and sub-regional climatic conditions. The experts established probability distributions to indicate the likelihood of above-, near-, or below-normal rainfall for each zone. Above-normal rainfall is defined as within the wettest third of recorded rainfall amounts in each zone; near-normal is defined as the third of the recorded rainfall amounts centred around the climatological median;

below-normal rainfall is defined as occurring within the driest third of the rainfall amounts. The categories are defined using a 30-year climatological reference period (mainly 1981-2010) and, by definition, each category has occurred equally frequently over this period. Probability distributions for temperature were also established. The rainfall and temperature outlooks for June to September 2019 for various zones within the GHA region are given in Figure 1 and Figure 2, respectively.

### **Rainfall Outlook for June to September 2019**

The rainfall outlook for various zones within the GHA region is given in Figure 1 below.

**Zone I:** Increased likelihood for above normal (i.e., wetter) rainfall

**Zone II:** A transition zone with equal probability for all three categories.

**Zone III:** Increased likelihood of below normal (i.e., drier) rainfall

**Zone IV:** Usually dry during June to September

### **Temperature Outlook for June to September 2019**

The temperature outlook for various zones within the GHA region is given in Figure 2 below.

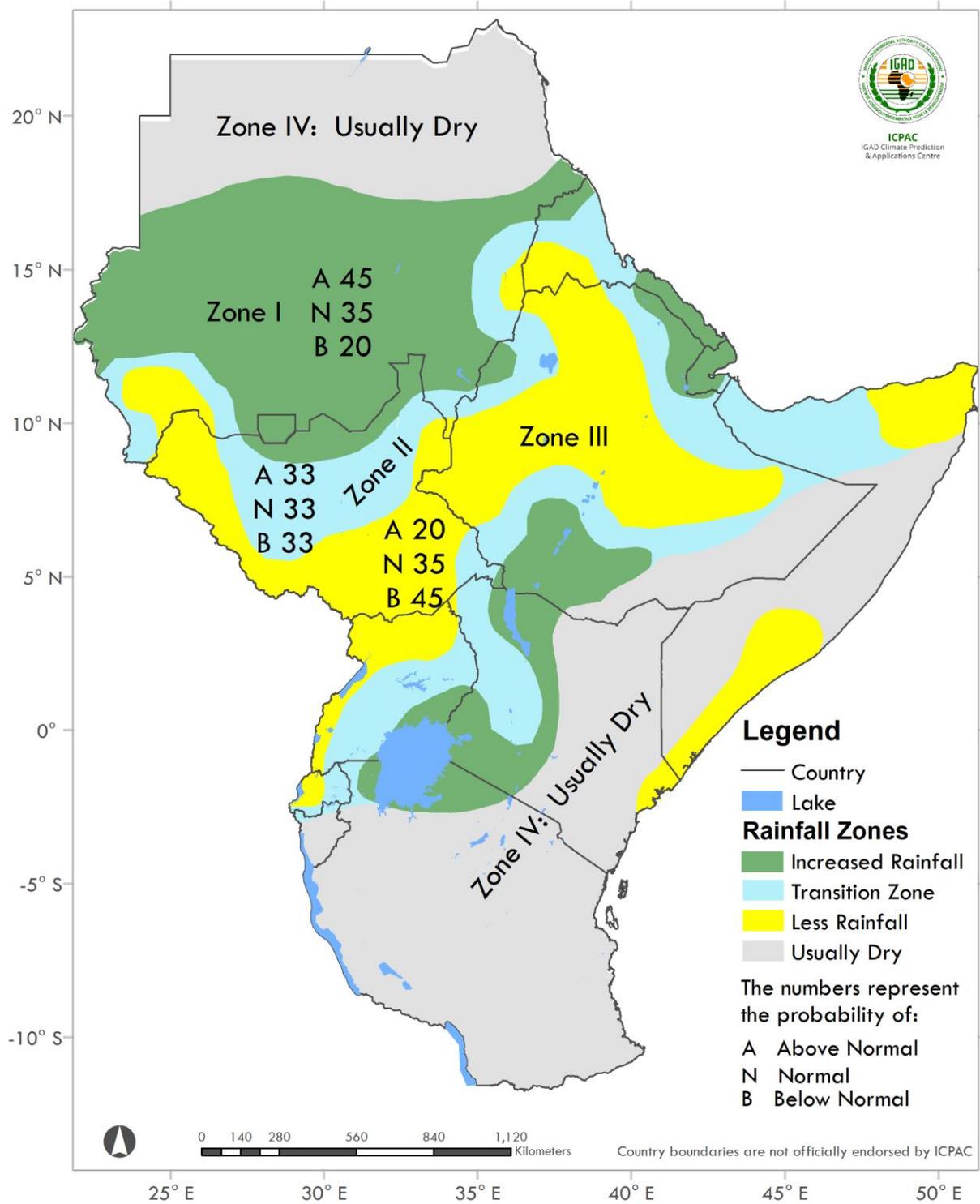
**Zone I:** Increased likelihood for above normal (i.e., warmer) mean temperature

**Zone II:** Increased likelihood for near normal mean temperature

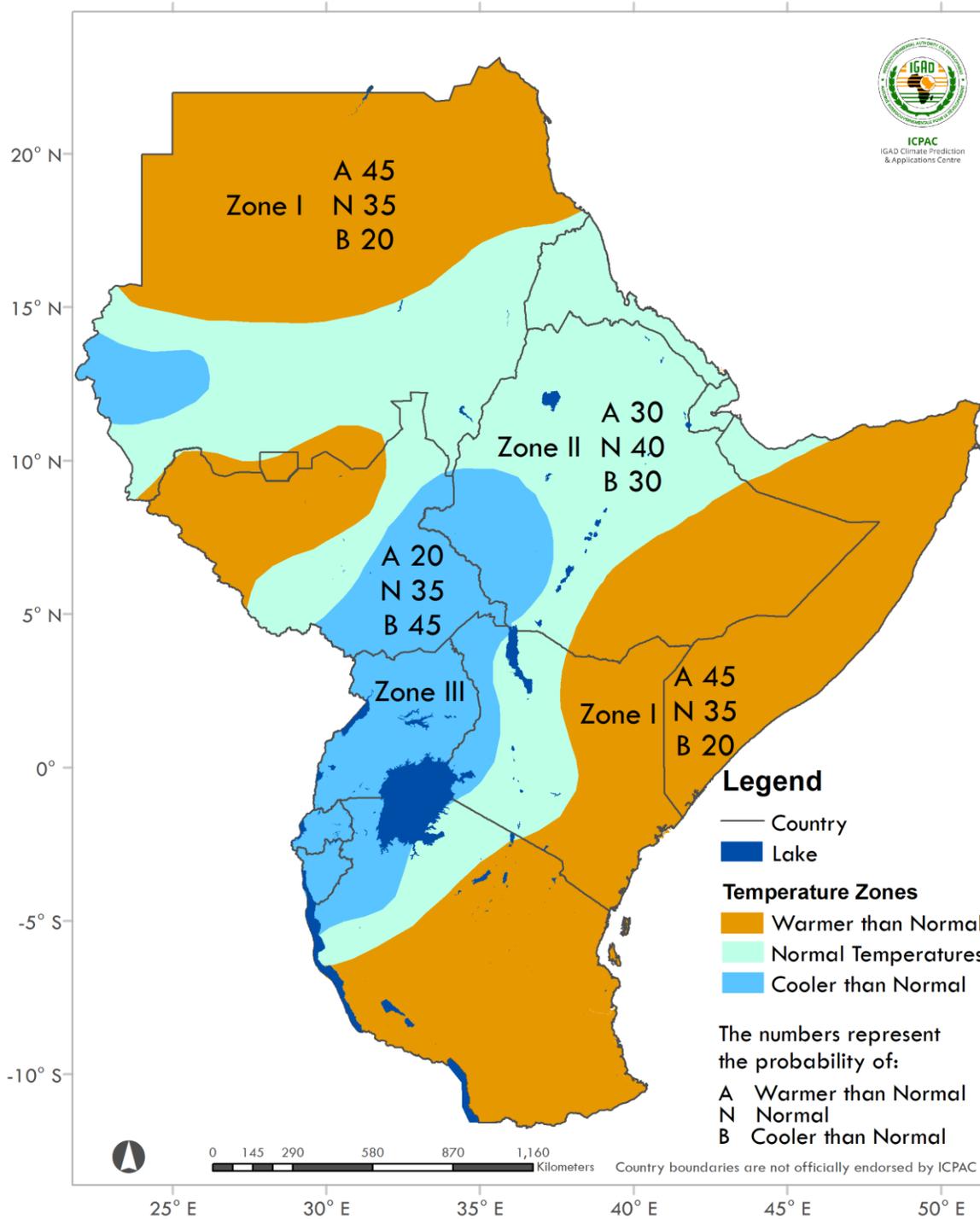
**Zone III:** Increased likelihood for below normal (i.e., cooler) mean temperature

#### *Note:*

**The numbers for each zone indicate the probabilities of rainfall in each of the three categories, above-, near-, and below-normal. The top number indicates the probability of rainfall occurring in the above-normal category; the middle number is for near-normal and the bottom number for below-normal category. For example, in Zone I in Figure 1, there is 45% probability of rainfall occurring in the above-normal category; 35% probability of rainfall occurring in the near-normal category; and 20% probability of rainfall occurring in the below-normal category.**



**Figure 1: Greater Horn of Africa Consensus Rainfall Climate Outlook for the June to September 2019 rainfall season**



*Figure 2: Greater Horn of Africa Consensus Temperature Climate Outlook for the June to September 2019 rainfall season*

### *Contributors*

The Fifty Second Greater Horn of Africa Climate Outlook Forum (GHACOF 52) was organized jointly by the IGAD Climate Prediction and Applications Centre (ICPAC) and National Meteorological and Hydrological Services (NMHSs) of the Greater Horn of Africa (GHA). The forum was mainly supported by the EU funded projects through the African Development Bank and World Bank. Additional support was from the WISER Support to ICPAC Project funded by DFID, the African SWIFT programme/University of Leeds, and SHEAR ForPac project (led by University of Sussex). Contributors to the GHACOF 52 consensus regional climate outlook included representatives of the National Meteorological Services from GHA countries (Insitut Geographique du Burundi; National Meteorological Agency of Djibouti; National Meteorological Agency of Ethiopia; Kenya Meteorological Service; Rwanda Meteorological Agency; South Sudan Meteorological Service; Sudan Meteorological Authority; Somalia Meteorological Authority, Tanzania Meteorological Agency and Uganda National Meteorological Authority) and climate scientists as well as other experts from national, regional and international institutions and organizations: IGAD Climate Prediction and Applications Centre (ICPAC); The Met Office, UK; International Research Institute for Climate and Society, and WMO Global Producing Centres (GPCs).