IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE SECOND DEKAD (11-20) OF MARCH 2019 TOGETHER WITH FORECASTFOR THE FIRST DEKAD (01-10) OF APRIL 2019

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (11-20) of March 2019 and highlights the climate forecast for the first dekad (01-10) of April 2019 and the associated climate impacts over the Greater Horn of Africa (GHA). The observed conditions are compared to the average of the climatological period of 1981-2010 for rainfall and temperature.

For referencing within this bulletin, the Greater Horn of Africa (GHA) is generally subdivided into three sub-sectors: The equatorial sector lying approximately between -5^{o} and 5^{o} latitude, with the northern and southern sectors occupying the rest of the northern and southern parts of the region respectively

2.0 Highlights

During the second dekad of March 2019 rainfall was mainly distributed over western part of the southern sector, and southwest equatorial sector of the GHA. Much of the southern sector, equatorial sector, and southern part of the northern sector recorded below normal rainfall. Much of the rest of the GHA recorded near normal rainfall or remained generally dry.

The negative impacts of these conditions are water scarcity, poor pastor and delay in cropping season which enhance food insecurity in many parts of Arid, semi-arid regions of Kenya, Ethiopia and Somalia, Kordofan region of Sudan, central and northern parts of Uganda and poor crops performance over some parts of Tanzania.

Southern part of the northern sector, several parts of the equatorial sector, and eastern part of the southern sector of the GHA recorded maximum and minimum temperature that was warmer than the long-term mean. Several areas in the northern sector and in western part of the southern sector of the GHA recorded maximum and minimum temperature that was cooler than normal.

Rainfall forecast for the first dekad of April 2019 shows that western, southern and eastern part of the equatorial sector, and northern and central parts of the southern sector of the GHA are expected to receive rainfall. Rainfall is also expected in southwest and south-central parts of the northern sector of the GHA. Much of the rest of northern sector, northern part of equatorial sector, and southern part of the southern sector of the GHA are expected to record little rainfall or remain generally dry.

3.0 Observed rainfall during the second dekad (11-20) of March 2019

Figure 1a, 1b and 1c shows the distribution of total rainfall, percent of the long-term average rainfall, and the standardized precipitation index (SPI), respectively.

Rainfall Distribution and Severity

Rainfall was concentrated over much of the southern sector, southwestern part of the equatorial sector, and south-central part of the northern sector of the GHA especially central and southwestern Ethiopia, Tanzania, Rwanda, Burundi, southern Uganda, and western Kenya during the second dekad of March 2019.

Distribution of Rainfall total for the second dekad (11-20) of March 2019 over Greater Horn of Africa, revealed that: significant rainfall which exceeded 50mm was observed mainly in central Ethiopia, western Kenya, and southern Tanzania. Central and south-western Ethiopia, southern Uganda, much of western Kenya, much of Rwanda, Burundi, and northern Tanzania recorded rainfall of between 5mm and 50mm. (Figure 1a).

When we compared the observed rainfall total in second dekad of March2019 with climatology baseline (1981-2010) in term of percentage of average (% of LTM) and Standardized Precipitation Index (SPI), the southern and northern parts of Tanzania, eastern Rwanda, southwest and eastern Uganda, western Kenya and central Ethiopia recorded above normal rainfall. Western part of South Sudan, southwest Ethiopia, western Uganda, western Rwanda, eastern and western Burundi, central and southeast Kenya, and few areas in northwest, northeast and southwest Tanzania recorded below normal rainfall. Much of the rest of the GHA recorded near normal rainfall or remained generally dry in second dekad of March 2019 (Figure 1b and Figure 1c).

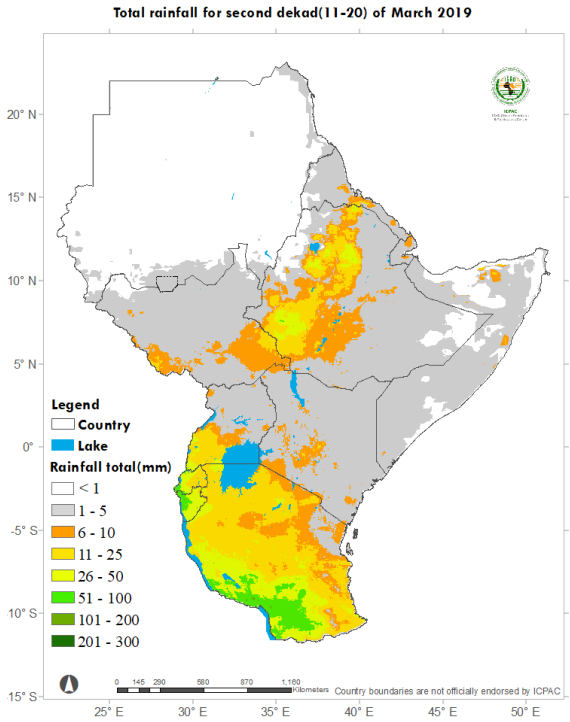

Figure 1a: Total rainfall distribution during the second dekad (11-20) of March 2019. *(Data: ICPAC Blended CHIRP)*

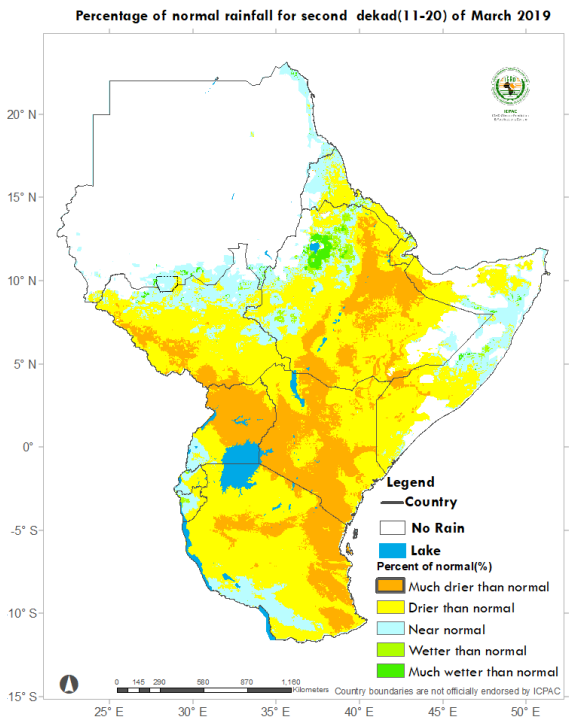

Figure 1b: Percent of long-term average rainfall for the second dekad (11-20) of March 2019*(Data: ICPAC Blended CHIRP)*

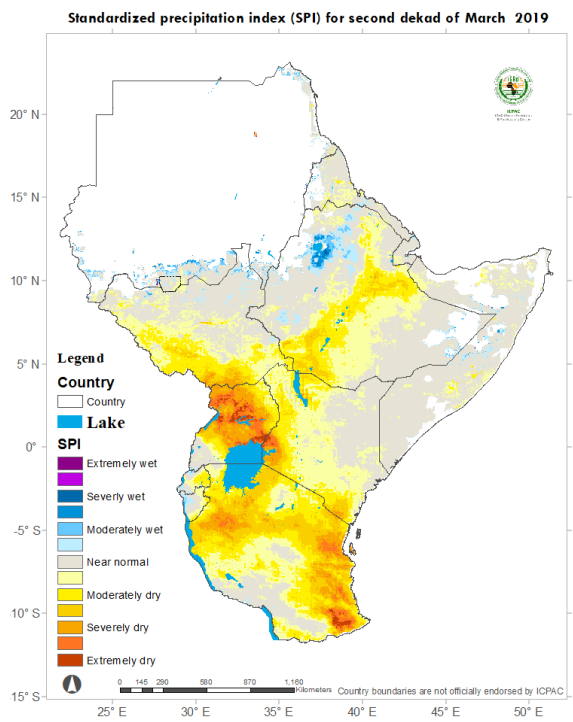

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of March 2019 *(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

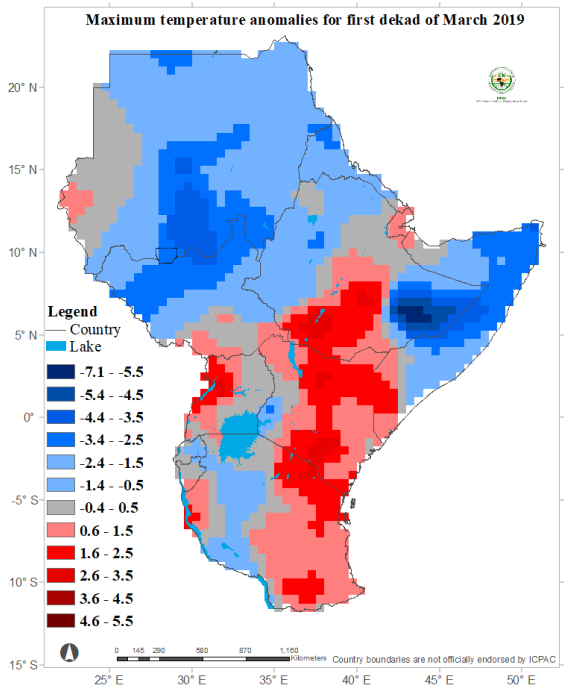

Figure 2: Maximum temperature difference from the average (1981-2010) for the second dekad (11-20) of March 2019*(Data Source: provided by the* NOAA-*NCEP CPC. GTSgirded data)*

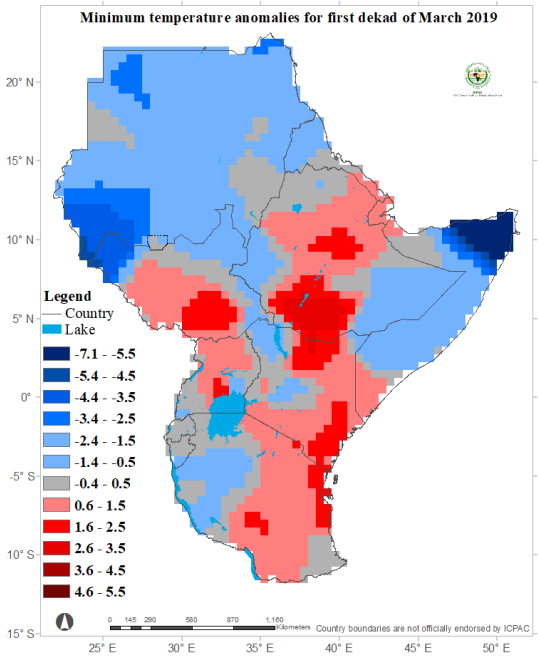

Figure 3: Minimum temperature difference from the average (1981-2010) for the second dekad (11-20)of March 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC. GTSgirded data)*

During the second dekad of March 2019 Much of Djibouti, southern part of South Sudan, central and southern Ethiopia, western Uganda, over much of Kenya, southern Somalia and eastern Tanzania, mainly recorded maximum and minimum temperature that was warmer than the climatological mean.

Much of the rest of the GHA especially in the northern sector of the GHA recorded maximum and minimum temperature that was cooler than the climatological mean.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 13th to 20th March 2019 (Figure 4) indicates that:

Uganda, Kenya, and Tanzania : Indications of deterioration in vegetative conditions as compared to the mean was observed over several parts of Uganda, western, central to southern parts of Kenya, and in northeast Tanzania.

Ethiopia and South Sudan: western part of South Sudan and western Ethiopia showed indications of improvement in vegetative conditions as compared to the long-term average. Southern Ethiopia and eastern margin of central Ethiopia showed deterioration in vegetative condition as compared to the average.

Much of the rest of the GHA, especially in much of Sudan, Eritrea, Djibouti, , northern and eastern Ethiopia, Somalia, north and eastern Kenya, Rwanda, and Burundi showed little or no change in vegetation conditions as compared with the long-term average.

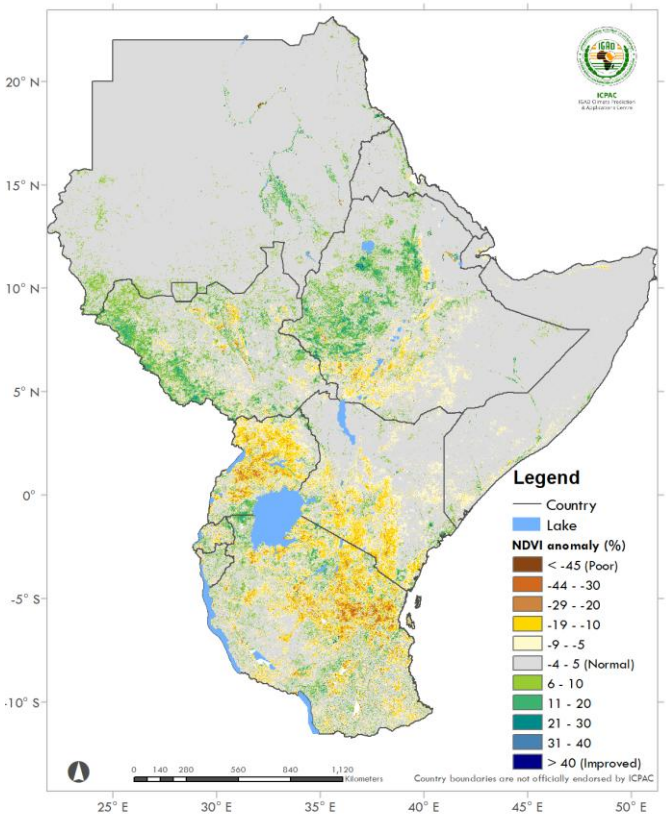

Figure 4: NDVI anomaly for the period between 13th to 20th March 2019 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the first dekad of April 2019 in Figure 5 indicates that rainfall is expected in south west South Sudan, central and southwestern Ethiopia, western Uganda, west, central, south and eastern Kenya, southern part of Somalia, over much of Rwanda and Burundi, and in north and central Tanzania. Much of the rest of the GHA are expected to receive little amounts of rainfall or remain generally dry.

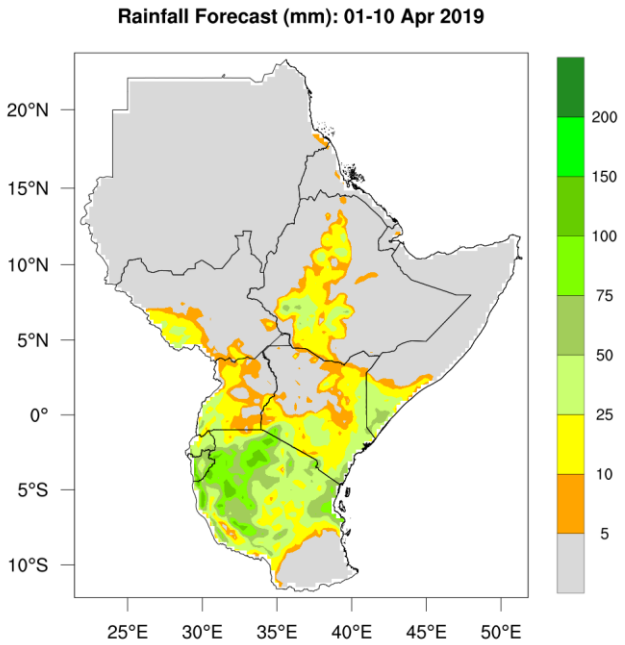

Figure 5: Precipitation forecast for the first dekad (01-10) of April 2019 (Source: WRF-ICPAC**)**

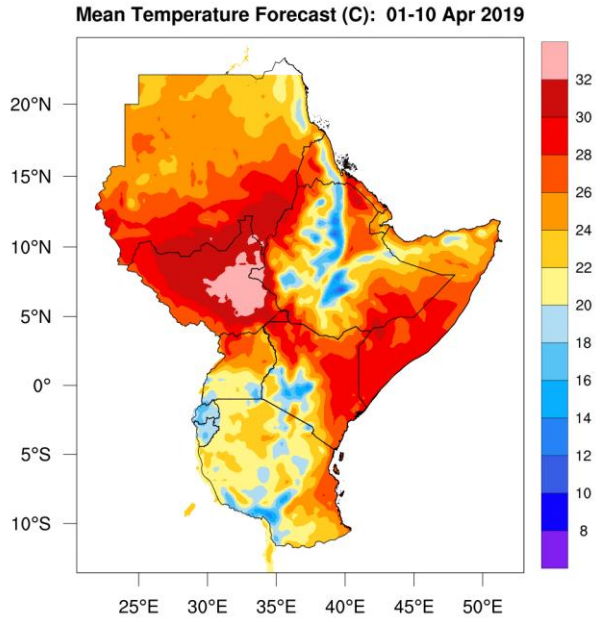

Figure 6: Forecast for average temperature for the first dekad (01-10) of April 2019 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for first dekad of April 2019 (Figure 6) indicates that several parts of Sudan, South Sudan, Djibouti, Somalia, western and southern Eritrea, northern Uganda, northern and eastern Kenya, and eastern Tanzania are forecasted to mean temperature exceeding 26°C, with western South Sudan recording temperature exceeding 32 °C.

6.0 Impacts on socio-economic sectors

The socio-economic impacts associated with the observed rainfall and temperature conditions are highlighted below:

6.0 Impacts of the climate conditions

The negative impacts of these conditions are water scarcity, poor pastor and delay in cropping season which enhance food insecurity in many parts of Arid, semi-arid regions of Kenya, Ethiopia and Somalia, Kordofan region of Sudan, central and northern parts of Uganda and poor crops performance over some parts of Tanzania. The hot and dry condition forecasted in the first dekad of April is likely to extend the impact of the dry conditions currently occurring within parts of the equatorial sector of the GHA.

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