IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-28) OF FEBRUARY 2019 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11-20) OF MARCH 2019

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-28) of February 2019, and highlights the climate forecast for the second dekad (11-20) of March 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 third dekad of February 2019 rainfall was mainly distributed over several parts of the southern sector, western part of the equatorial sector, and in southwest part of the northern sector of the GHA. Most of these areas recorded above normal or near normal rainfall except for areas in Burundi, western Rwanda, and northwest Tanzania which recorded below normal rainfall.

Maximum temperature exceeding the climatological mean was recorded in south central part of the northern sector, and several parts of the equatorial and southern sector of the GHA. Much of the rest of the northern sector, central part of the equatorial sector and western part of the southern sector of the GHA recorded maximum temperatures cooler than or near the climatological mean. Several parts of the GHA recorded minimum temperatures warmer than or near the climatological mean, except for western and south-eastern part of the northern sector which recorded minimum temperature cooler than the climatological mean.

Rainfall forecast for the second dekad of March 2019 shows that rainfall is expected to continue over the southern part of the equatorial sector, and in the southern sector of the GHA. Much of the equatorial sector, as well as areas in the northern sector of the GHA are also forecasted to little or no rainfall.

Several areas of the GHA are forecasted to experience average temperatures exceeding 22^{o}C. Areas in southwest part of the northern sector, northern and eastern part of the equatorial sector and eastern part of the southern sector are forecasted to record average temperature that exceeding 28^{o}C during the second dekad of March 2019.

3.0 Observed rainfall during the third dekad (21-28) of February2019

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, western part of the equatorial sector, and southwestern part of the northern sector of the GHA during the third dekad of February 2019.

Distribution of Rainfall total for the third dekad (21-28) of February 2019 over Greater Horn of Africa, revealed that: significant rainfall which exceeded 50mm was observed in north, west and southern areas of Lake Victoria margins, and over southern part of Tanzania. The southwest part of Ethiopia, southern South Sudan, over much of Uganda, Rwanda, Burundi, Western and southeastern Kenya, and over northern and central Tanzania recorded rainfall of between 5mm and 50mm. (Figure 1a).

When we compared the observed rainfall total in third dekad of February 2019 with climatology baseline (1981-2010) in term of percentage of average (% of LTM) and Standardized Precipitation Index (SPI), the result revealed that Burundi, south west Rwanda, and northwest of Tanzania recorded below normal or near normal rainfall. Much of the rest of southern part of the northern sector, the equatorial sector, and southern sector of the GHA recorded above normal or near normal rainfall (Figure 1b and Figure 1c).

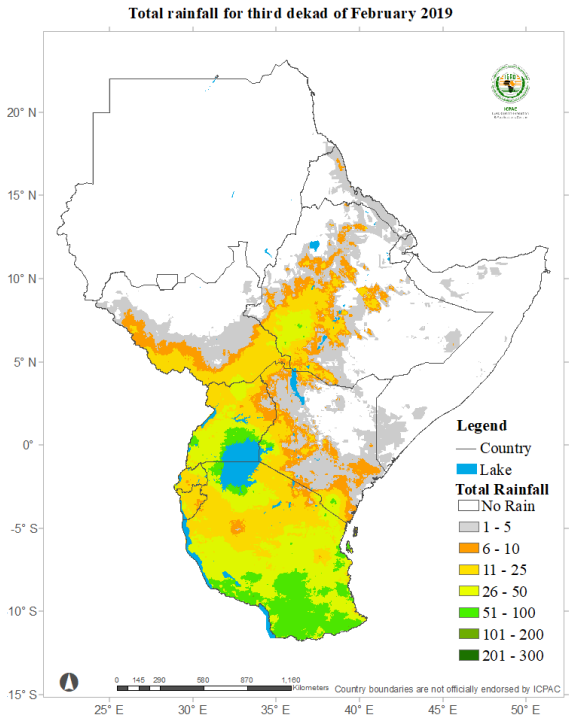

Figure 1a: Total rainfall distribution during the third dekad (21-28) of February 2019. *(Data: ICPAC Blended CHIRP)*

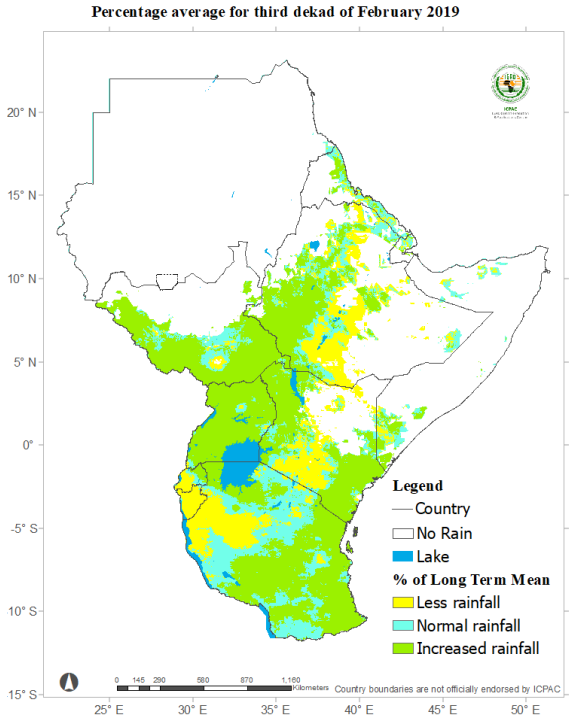

Figure 1b: Percent of long term average rainfall for the third dekad (21-28) of February 2019*(Data: ICPAC Blended CHIRP)*

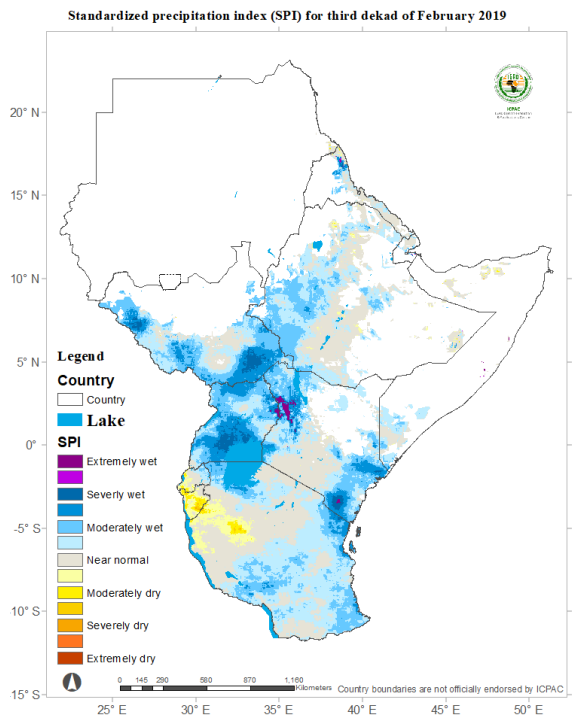

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-28) of February 2019*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

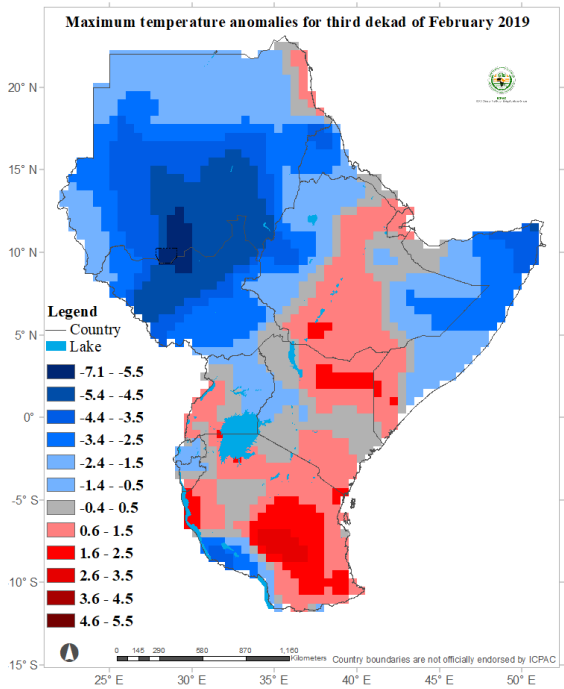

Figure 2: Maximum temperature difference from the average (1981-2010) for the third dekad (21-28) of February 2019(*Data Source: provided by the NOAA-NCEP CPC .GTS girded data*)

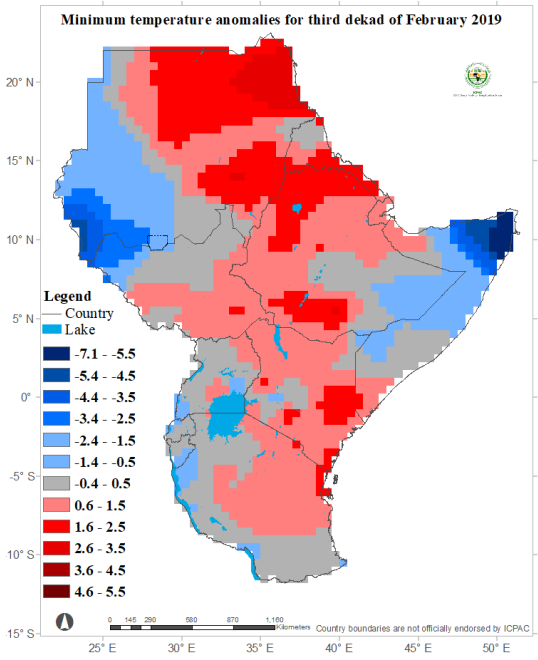

Figure 3:Minimum temperature difference from the average (1981-2010) for the third dekad (21-28) of February 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC .GTS girded data)*

During the third dekad of February 2019 central and southern Ethiopia, northern and southeast Kenya, southwest Somalia, western Uganda and several parts of Tanzania recorded maximum temperature was warmer than the climatological mean. Much of the rest of the northern sector recorded maximum temperature that was cooler than the climatological mean.

Western part of Sudan extending to northwest South Sudan, eastern Ethiopia extending to north and central Somaila, recorded minimum temperature cooler than the long term mean. Much of the rest of the GHA recorded minimum temperature that was cooler than or near the climatological mean during the third dekad of February 2019.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 17th to 24th February 2019 (Figure 4) indicates that:

Uganda, Kenya, and Tanzania: Indications of deterioration in vegetative conditions was observed over several parts of Uganda, western to southern parts of Kenya, and in northeastern part of Tanzania. The northern part and southeastern part of Tanzania showed indication of improvement in vegetative conditions as compared to the average

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

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

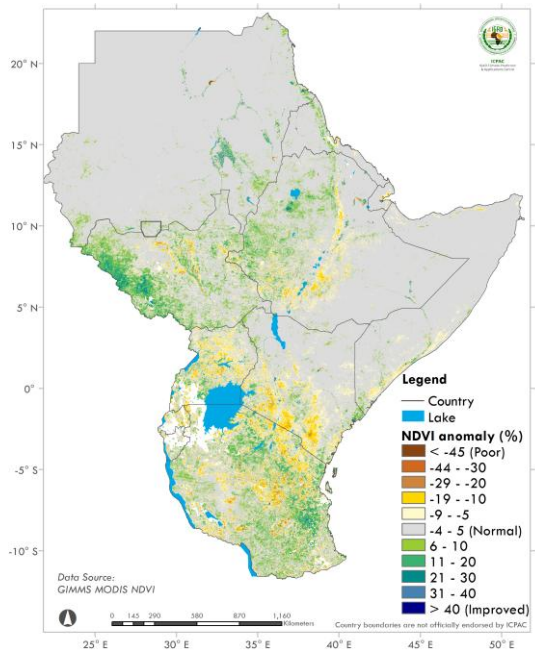

Figure 4: NDVI anomaly for the period between 17th to 24th February 2019 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the second dekad of March 2019 in Figure 5 indicates that rainfall is likely to be concentrated over several parts of Tanzania, Burundi, and western Rwanda. Southern Uganda, western Kenya, and southwest and central parts of Ethiopia are also likely to record some rainfall. Some areas in southeastern and southern Tanzania are expected to record rainfall amounts exceeding 200 mm.

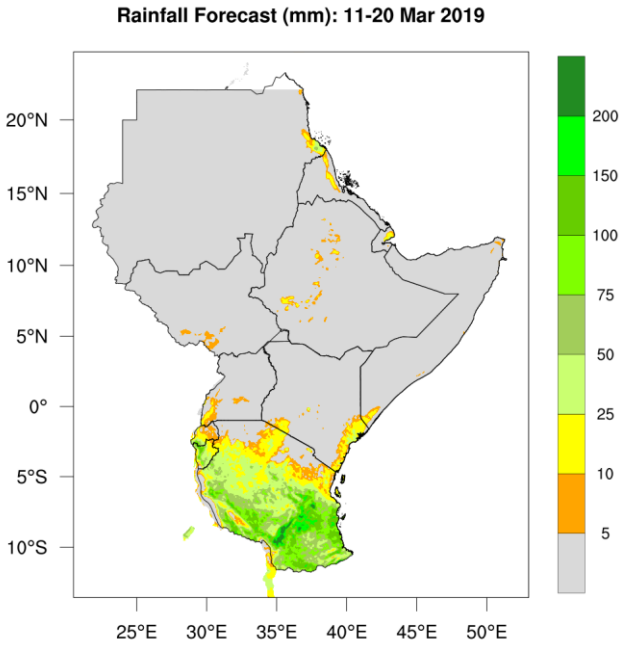

Figure 5: Precipitation forecast for the second dekad (11-20)of March 2019 (Source: WRF-ICPAC**)**

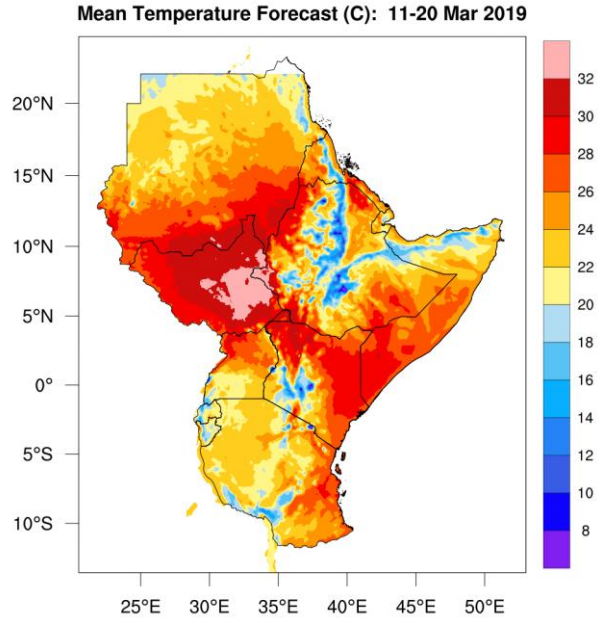

Figure 6: Forecast for average temperature for the second dekad (11-20) of March 2019(Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for second dekad of March 2019 (Figure 6) indicates that several parts of the GHA are forecasted to record average temperature exceeding 22°C. southern part of Sudan, several parts of South Sudan, southern Eritrea, northern and southeastern Ethiopia, central nd southern Somalia, northern Uganda, northern and eastern Kenya, and eastern Tanzania are expected to record average temperature exceeding 26 °C. The highlands of Ethiopia, western and central highlands of Kenya, western Rwanda, and western Burundi are expected to record average temperature less than 20°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 eastern part of the equatorial sector continue to have an extended water stress related impact due to the under performance of the September to December short rains due to continued dry condition during the third dekad of February 2019. From the climate forecast for the second dekad of March 2019, some areas in the southern part of Tanzania are likely to record high rainfall amounts which can lead to possible localised flooding and related impacts. some areas in the equatorial sector will continue to experienced water stress related condition.

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