IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

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

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (11-20) of February 2019, and highlights the climate forecast for the first dekad (01-10) 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 second dekad of February 2019 rainfall was mainly distributed over several parts of the southern sector, and in parts of southwest equatorial sector of the GHA. Much of the southern sector recorded below normal or near normal. Much of the rest of the GHA recorded near normal rainfall or remained generally dry.

Several parts of the equatorial and southern sector of the GHA recorded maximum and minimum temperature that was warmer than the long-term mean. Several areas in the western and south-eastern parts of the northern sector of the GHA recorded maximum and minimum temperatures cooler than the normal. South-central part of the northern sector recorded maximum temperatures warmer than the climatological mean, while central and south-western part of the northern sector recording minimum temperatures that was warmer than the climatological mean

Rainfall forecast for the first dekad of March 2019 shows that rainfall is expected to continue over the several places in the southern sector of the GHA. The western part of the equatorial sector, as well as areas in the south-central part of the northern sector of the GHA are also forecasted to record some rainfall.

Regions covering, northern Sudan, Ethiopia highlands, northwest Somalia, western and central highlands of Kenya, western Rwanda, and western Burundi are forecasted to experience mean temperatures below 20^{o}C. Much of the rest of the GHA are likely to experience average temperatures exceeding 20^{o}C during the first dekad of March 2019.

3.0 Observed rainfall during the second dekad (11-20) 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 and southwestern part of the equatorial sector of the GHA especially Tanzania, Rwanda, Burundi, southern Uganda, and western Kenya during the second dekad of February 2019.

Distribution of Rainfall total for the second dekad (11-20) of February 2019 over Greater Horn of Africa, revealed that: significant rainfall which exceeded 50mm was observed in south-western Ethiopia, and central and southwest Tanzania. Central and south-western Ethiopia, southern Uganda, western Kenya, much of Rwanda, Burundi, and Tanzania recorded rainfall of between 5mm and 50mm. A few places in southwest Uganda, southwest South Sudan, and southwest Ethiopia recorded less than 10mm. (Figure 1a).

When we compared the observed rainfall total in second 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 several parts of Tanzania, Rwanda, Burundi, and central Kenya recorded below normal or near normal rainfall. Much of the rest of the equatorial and southern sector of the GHA recorded near normal rainfall (Figure 1b and Figure 1c).

Much of the rest of the GHA received little or no rain, or remained generally dry in second dekad of February 2019, except for southern Eritrea, Djibouti, and northern and eastern margins of central Ethiopia which recorded above normal rainfall.

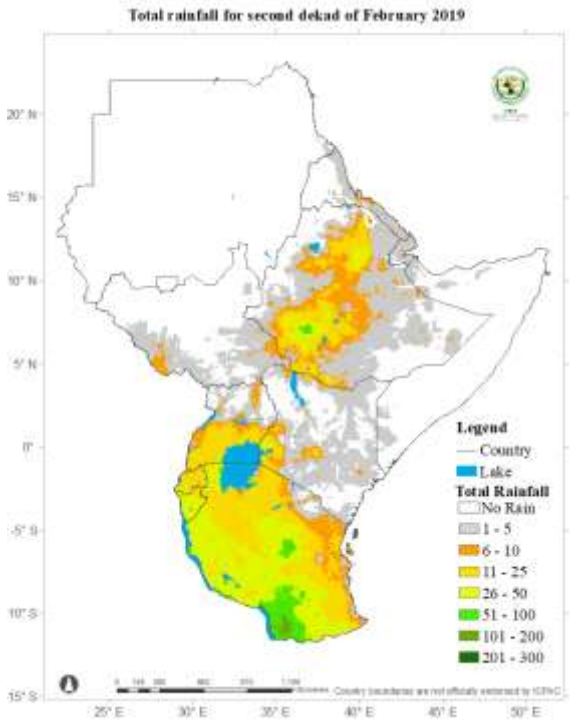

Figure 1a: Total rainfall distribution during the second dekad (11-20) of February 2019. *(Data: ICPAC Blended CHIRP)*

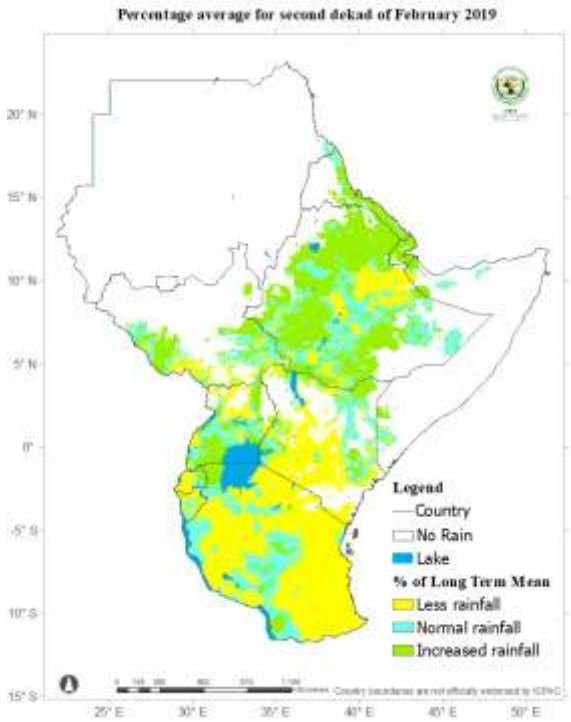

Figure 1b: Percent of long term average rainfall for the second dekad (11-20) of February 2019*(Data: ICPAC Blended CHIRP)*

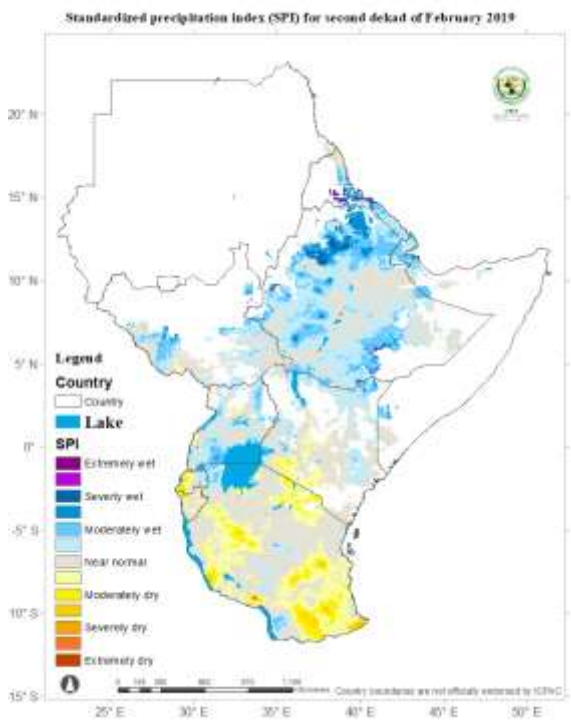

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of February 2019*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

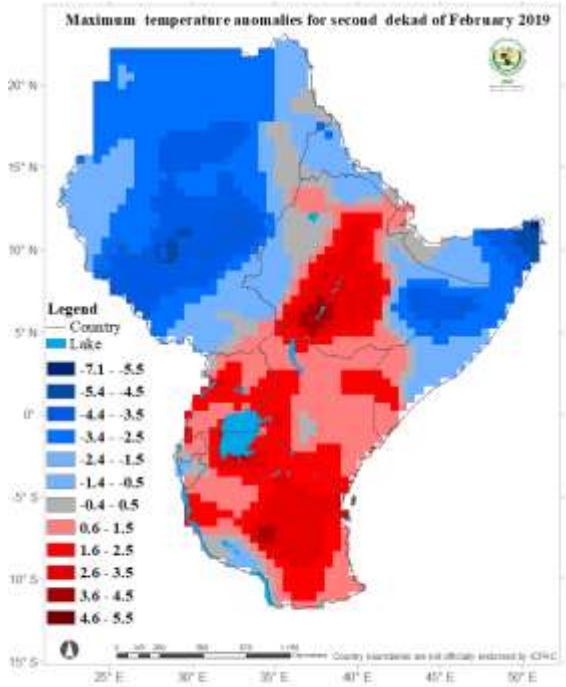

Figure 2: Maximum temperature difference from the average (1981-2010) for the second dekad (11-20) of February 2019(*Data Source: provided by the NOAA-NCEP CPC . GTS girded data*)

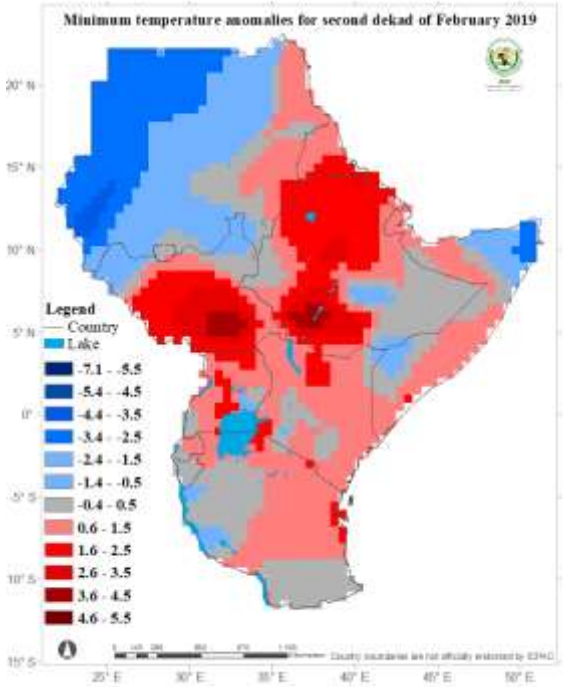

Figure 3:Minimum temperature difference from the average (1981-2010) for the second dekad (11-20) of February 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC . GTS girded data)*

During the second dekad of February 2019 The maximum temperature was cooler than the climatological mean over much of Sudan, South Sudan, western Eritrea, eastern Ethiopia extending to north and central Somalia.

several parts of Sudan, and northeast Somalia recorded minimum temperature that was cooler than the climatological mean.

Much of the rest of the GHA recorded maximum and minimum temperature that was warmer than or near the long-term mean. during the second dekad of February 2019.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 9th to 16th February 2019 (Figure 4) indicates that:

Uganda, Kenya, Burundi, and Somalia: Indications of deterioration in vegetative conditions was observed over several parts of Uganda, central to southern parts of Kenya, western Burundi, and in southeast of Somalia.

Ethiopia, South Sudan, Rwanda, and Tanzania: western South Sudan, western and northwestern Ethiopia, eastern parts of Rwanda, and northern and southern parts of Tanzania showed indications of improvement in vegetative conditions as compared to the long term average. The eastern part of South Sudan, southwest and eastern margin of central Ethiopia, and some places in northern and eastern Tanzania 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.

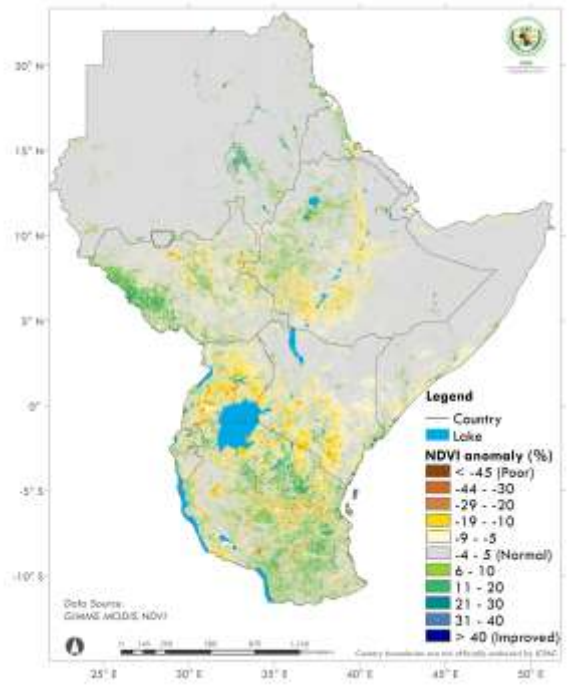

Figure 4: NDVI anomaly for the period between 9th to 16th February 2019 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the first 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.

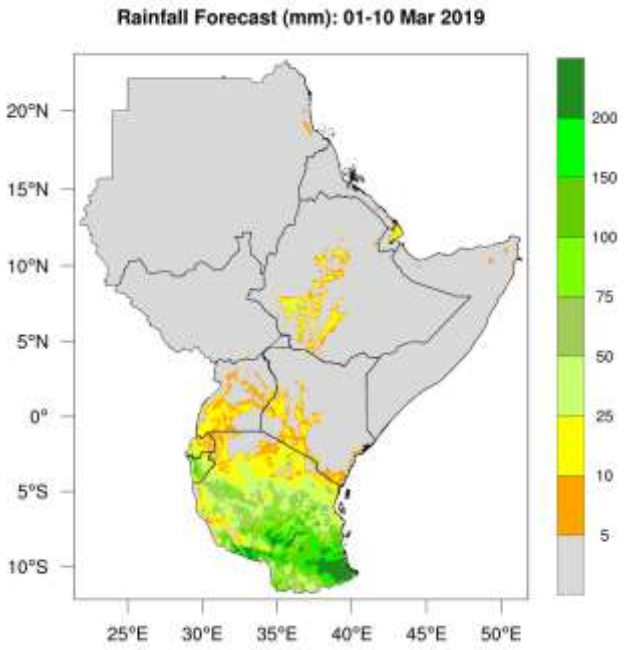

Figure 5: Precipitation forecast for the first dekad (01-10)of March 2019 (Source: WRF-ICPAC**)**

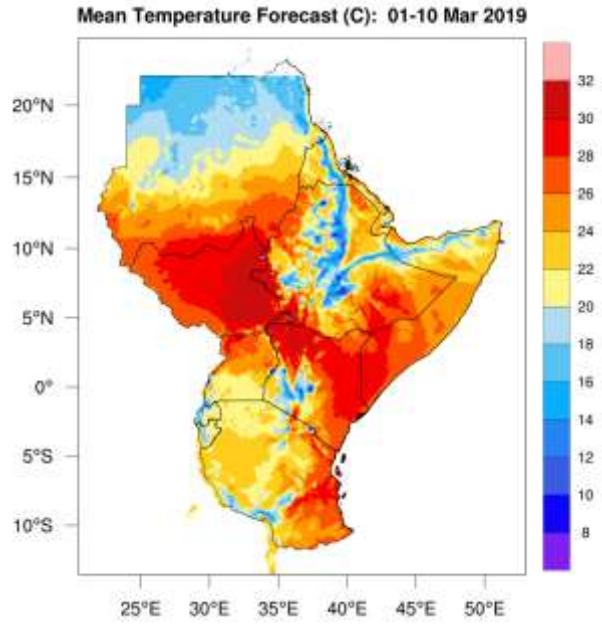

Figure 6: Forecast for average temperature for the first dekad (01-10) of March 2019(Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for first dekad of March 2019 (Figure 6) indicates that cooler mean temperature, not exceeding 20^{o}C is expected in northern part of Sudan, over the highlands of Ethiopia, western and central highlands of Kenya, western Rwanda, and western Burundi. The rest of the GHA is expected to experience mean temperature greater than 20^{o}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 second dekad of February 2019. From the climate forecast for the first 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.

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