10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF FEBRUARY 2019 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-28) OF FEBRUARY 2019

1.0 Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of February 2019, and highlights the climate forecast for the Third dekad (21-28) of February 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 first dekad of February 2019 rainfall was mainly distributed in over several parts of the southern sector, and in parts of southwest equatorial sector of the GHA. Much of the southern sector recorded near normal or higher than normal rainfall and southern and southwestern parts of the equatorial sector of the GHA recorded less than the normal rainfall.

Several parts of the GHA recorded maximum and minimum temperature that was warmer than the long-term mean. However some areas in southwest and southeast of the northern sector, and northeast of the equatorial sector of the GHA recorded minimum and maximum temperature cooler than the long-term mean.

Rainfall forecast for the third dekad of February 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 southern part of the northern sector of the GHA are also forecasted to record some rainfall.

Regions covering, northwest of Sudan, Ethiopia highlands, northwest Somalia, southwest Uganda, western and central highlands of Kenya, Rwanda, and 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.

3.0 Observed rainfall during the first dekad (01-10) 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 especially Tanzania during the first dekad of February 2019.

Distribution of Rainfall total for the first dekad (01-10) of February 2019 over Greater Horn of Africa, revealed that: significant rainfall which exceeded 50mm was observed in western and southern **Tanzania**. Much of Burundi, Rwanda, and north and central Tanzania recorded rainfall of between 10mm 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 first 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 southwestern parts of **Ethiopia**, Southwestern **Uganda**, western parts of **Rwanda** and **Burundi**, parts of western and central **Kenya**, and northeastern **Tanzania** recorded below normal rainfall. Much of western and southern **Tanzania** received above normal rainfall (Figure 1b and Figure 1c).

Much of the rest of the GHA received little or no rain, or remained generally dry in first dekad of February 2019 (Figure 1a).

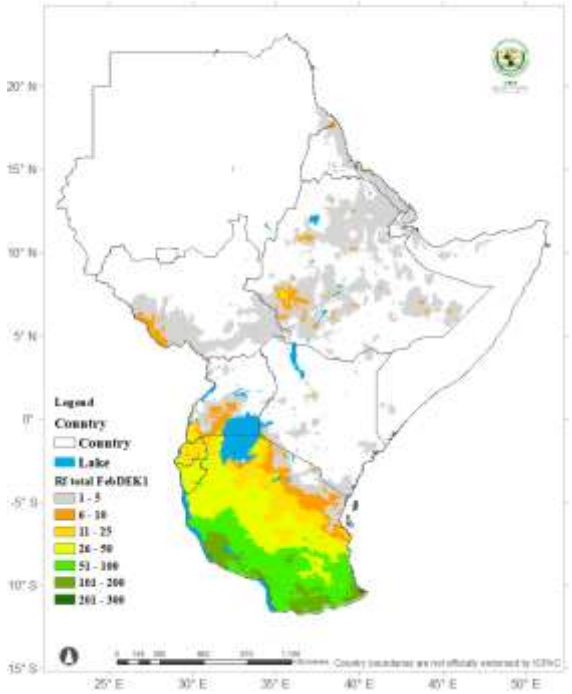

Figure 1a: Total rainfall distribution during the first dekad (01-10) of February 2019. *(Data: ICPAC Blended CHIRP)*

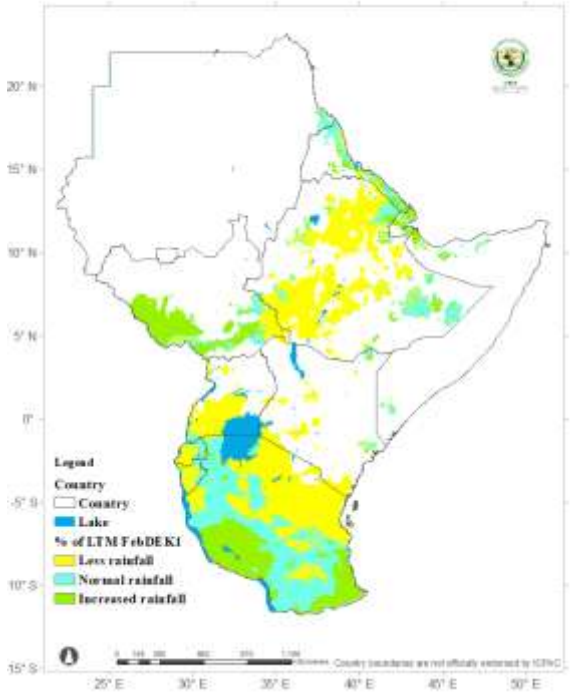

Figure 1b: Percent of long term average rainfall for the first dekad (01-10) of February 2019*(Data: ICPAC Blended CHIRP)*

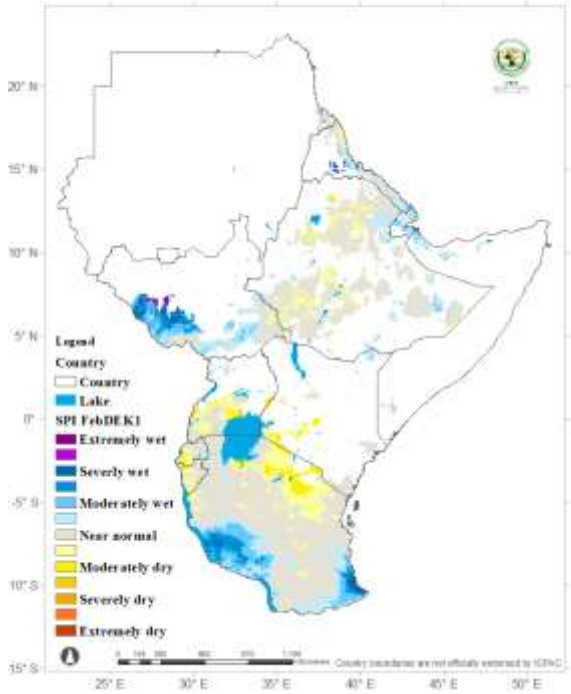

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of February 2019*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

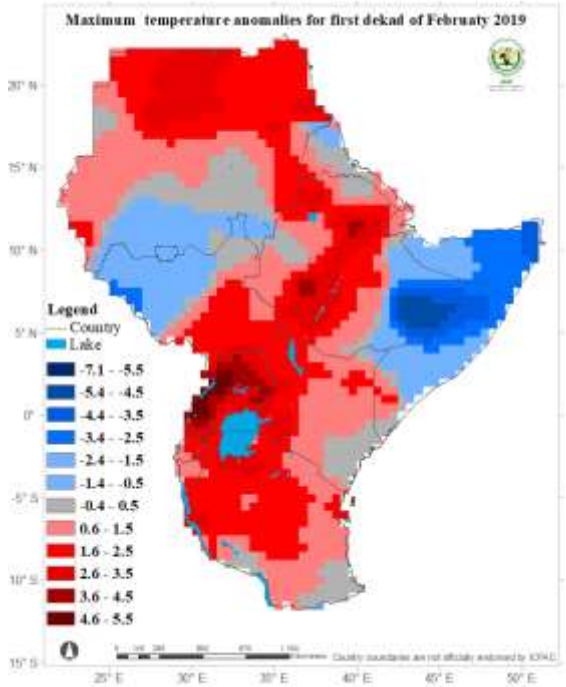

Figure 2: Maximum temperature difference from the average (1981-2010) for the first dekad (01-10) of February 2019(*Data Source: provided by the NOAA-NCEP CPC . GTS girded data*)

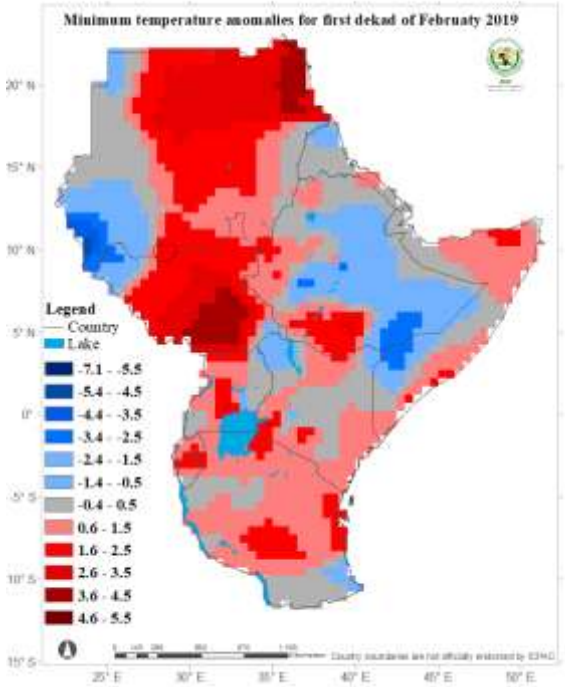

Figure 3:Minimum temperature difference from the average (1981-2010) for the first dekad (01-10) of February 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC . GTS girded data)*

During the first dekad of February 2019 The maximum temperature was cooler than the climatological mean over southern Sudan, northwest South Sudan, eastern Ethiopia and over north and central Somalia.

southwest Sudan, northwest part of South Sudan, and central and eastern Ethiopia extending to southwest 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 the long-term mean. during the first dekad of February 2019.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 1st to 8th February 2019 (Figure 4) indicates that:

Ethiopia, Uganda, Kenya, and Somalia: Indications of deterioration in vegetative conditions was observed over southwest and central Ethiopia, eastern Uganda, much of southern Kenya, and southeastern part of Somalia. Some areas of western Ethiopia, and western and southern Uganda showed improvement in vegetation condition as compared with the long term average.

South Sudan, Rwanda, Burundi, and Tanzania: several parts of these areas showed indications of improved vegetative conditions as compared with the long term average, except for a few areas in north-central South Sudan, southwest Rwanda, and isolated areas in central and northeastern Tanzania, which 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 southeastern South Sudan, northern and eastern Ethiopia, northern and central Somalia, and northern Kenya showed little or no change in vegetation conditions as compared with the long term average.

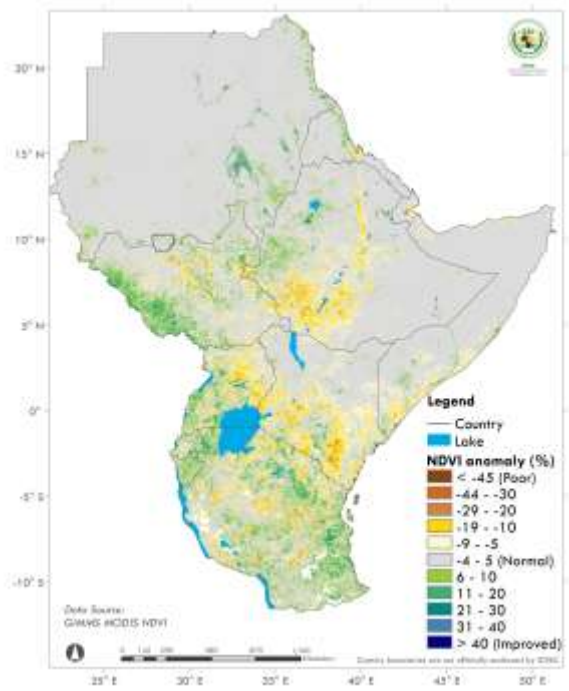

Figure 4: NDVI anomaly for the period between 1st to 08th February 2019 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the third dekad of February 2019 in Figure 5 indicates that rainfall is likely to be concentrated over several parts of Tanzania, Burundi, Rwanda, southern Uganda, western Kenya, southern South Sudan, and southern and central parts of Ethiopia, which are likely to record rainfall exceeding 25mm. Some areas in southwestern and southern Tanzania, and southern Burundi are expected to record rainfall amounts exceeding 150 mm.

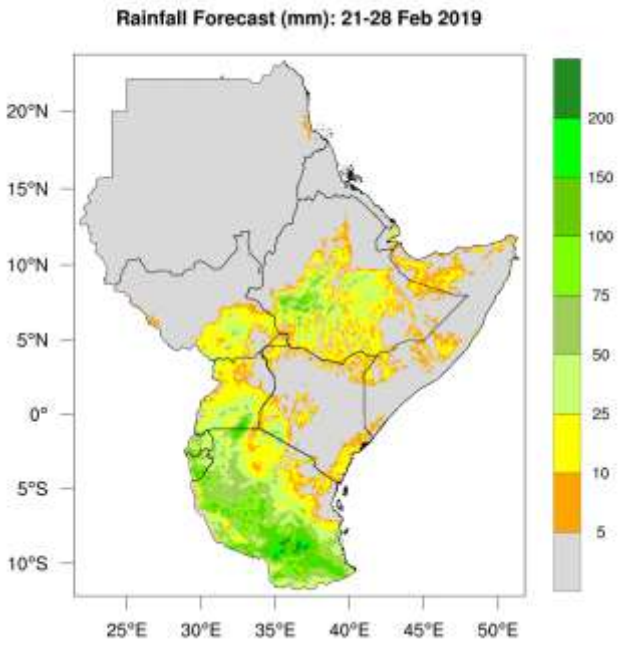

Figure 5: Precipitation forecast for the third dekad (21-28)of February 2019 (Source: WRF-ICPAC**)**

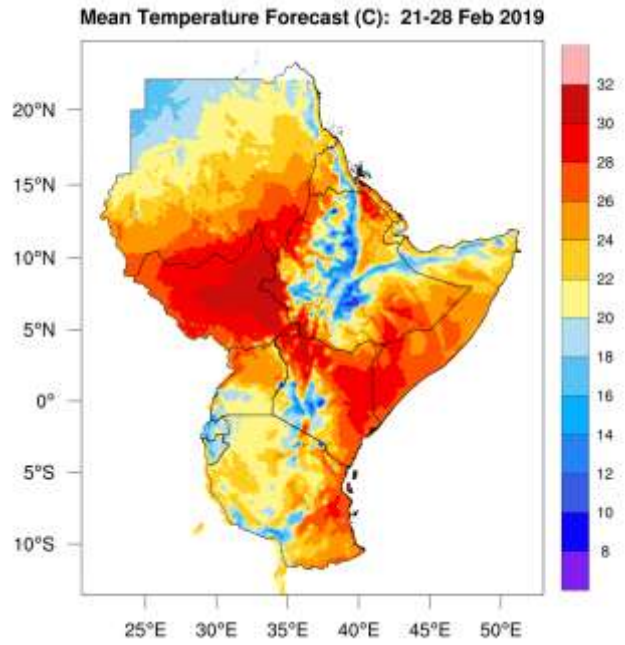

Figure 6: Forecast for average temperature for the third dekad (21-28) of February 2019(Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for third dekad of February 2019 (Figure 6) indicates that cooler mean temperature, not exceeding 20°C is expected in northwest part of Sudan, western and central highlands of Ethiopia, southwestern Uganda, western and central highlands of Kenya, over much of Rwanda, and Burundi. The rest of the GHA is expected to experience mean temperature greater 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 rainfall conditions in the southern sector, and western part of the equatorial sector of the GHA resulted to improvement in water and pasture conditions, during the first dekad of February 2019. The continued dry condition in the eastern part of the equatorial sector continue to extend the water stress related impact due to the under performance of the September to December short rains. From the climate forecast for the third dekad of February 2019, some areas of southern and western Tanzania, southern Burundi, southern Uganda, and western Kenya are likely to record high rainfall amounts which can lead to possible localised flooding and related impacts.

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