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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF MAY 2019 AND FORECAST FOR THE THIRD DEKAD (21-31) OF MAY 2019

1. Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of May 2019 and gives the climate forecast for the third dekad (21-31) of May 2019 with the associated climate impacts over the Greater Horn of Africa (GHA) region. The observed conditions are compared to the average of the climatological period of 1981-2010 for rainfall and mean surface temperature.

For referencing within this bulletin, the Greater Horn of Africa (GHA) region is generally subdivided into three sub-sectors: The equatorial sector lying approximately between 5° S and 5° N, with the northern and southern sectors occupying the rest of the northern and southern parts of the region respectively while average is computed based on the period 1981 - 2010.

2. Highlights

During the first dekad of May 2019, several places in the equatorial sub-sector and south eastern part of the northern sector of the GHA recorded below normal or near normal rainfall. Some places in the eastern part of the equatorial sector, as well as southern and eastern parts of the southern sector of the GHA recorded above normal rainfall.

Impacts such as water scarcity, poor pastures and delay in the cropping season continued to be experienced in eastern part of the equatorial sector and a few areas in the southeastern parts of the northern sector of the GHA. Flooding and related impacts were recorded in some parts of Tanzania during the first dekad of May 2019.

Several parts of the equatorial sector and southern part of the northern sector of the GHA recorded maximum and minimum temperature that was warmer than climatological mean. Much of the southern sector recorded minimum temperature that was

warmer than the climatological mean. Some areas in the northern and south_eastern part of the northern sector recorded maximum and minimum temperature that was warmer than the climatological mean.

Moderate rainfall is forecasted over several regions in western and eastern equatorial sector, and southern part of the northern sector of the GHA. South and eastern part of the northern sector, and central and northeast equatorial sector are forecasted to record heavy to very heavy rainfall. The average temperature is expected to remain generally warm over much of the GHA region during the third dekad of May 2019.

3. Observed rainfall during the first dekad (01-10) of May 2019

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

Rainfall Distribution and Severity

Distribution of rainfall total for the first dekad (01-10) of May 2019 over Greater Horn of Africa, revealed that rainfall amounts less than 10 mm was observed over eastern Ethiopia, north and central Somalia, north and eastern Kenya, and central, western and southwest Tanzania. Western South Sudan, southwest Ethiopia, southern Somalia, central and south of Uganda, western and coastal Kenya, southwest Rwanda, and eastern and southern Tanzania recorded rainfall amounts of exceeding 50mm and less than 200mm. This dekad is usually dry in Sudan, Djibouti, Eritrea, and parts of north and central Somalia and therefore these areas received rainfall amounts not exceeding 5 mm (Figure 1a). Much of the rest of the GHA recorded rainfall of between 5mm and 50mm.

Comparison of the observed rainfall with the baseline climatology (1981-2010) for the first dekad of May reveals that it was drier than normal in several parts of eastern and central Ethiopia, northern Somalia, central Eritrea, southwest Sudan, south east South Sudan, northern and southwest Uganda, north and south-central Kenya, over much of Burundi, and in northern Tanzania. A few parts of western South Sudan, southwest Ethiopia, southeast Somalia, and over much of southern and eastern Tanzania recorded wetter than normal rainfall condition with a few places in southern and eastern Tanzania recording severely to extremely wet rainfall condition rainfall conditions. Most of the rest of the GHA recorded near normal rainfall or remained generally dry (Figure 1b and Figure 1c).

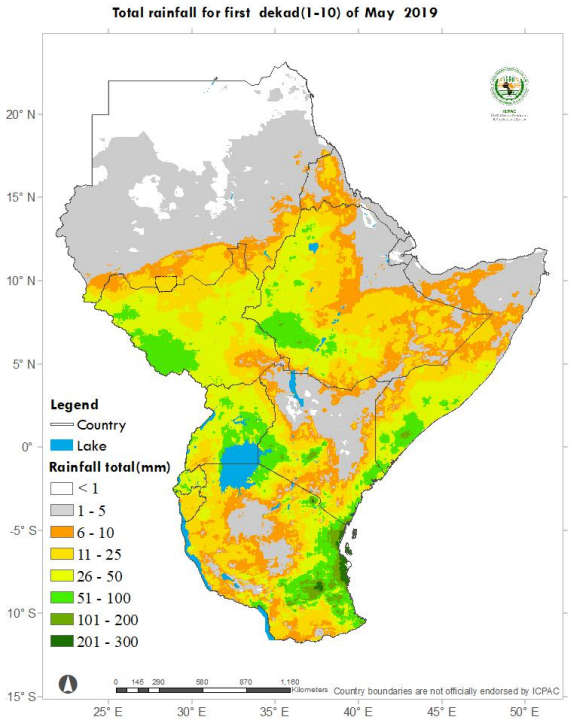

Figure 1a: Total rainfall distribution during the first dekad (01-10) of May 2019. *(Data: ICPAC Blended CHIRP)*

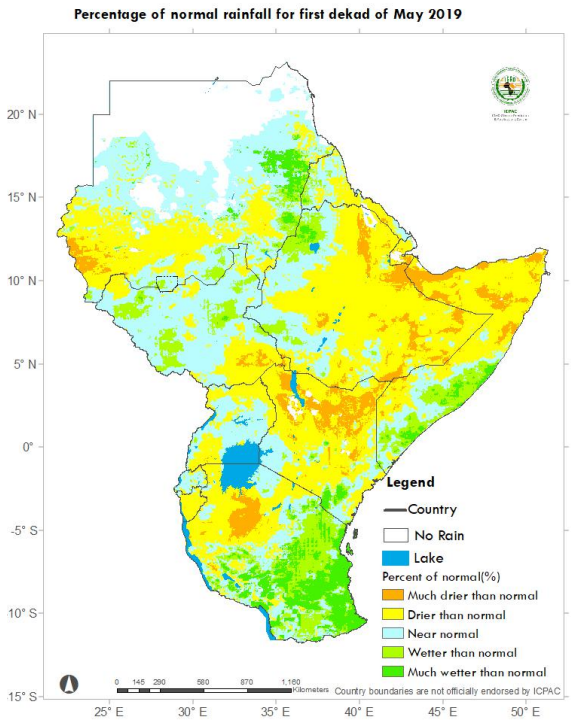

Figure 1b: Percent of long-term average rainfall for the first dekad (01-10) of May 2019*(Data: ICPAC Blended CHIRP)*

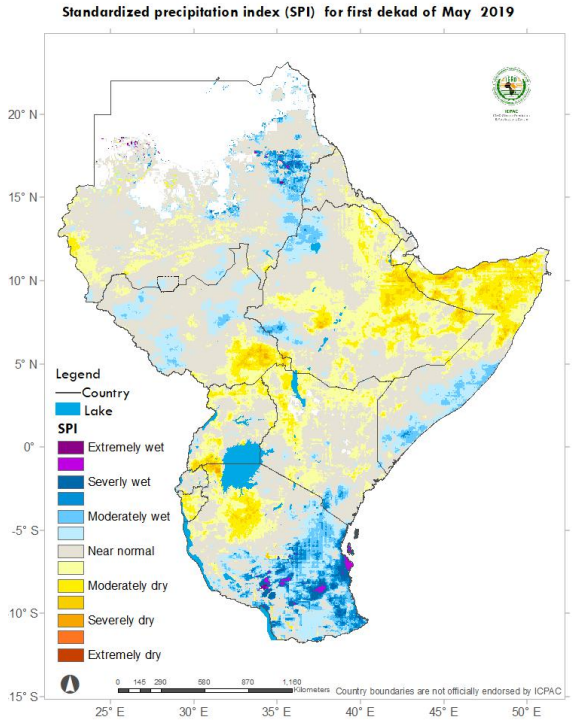

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of May 2019 *(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

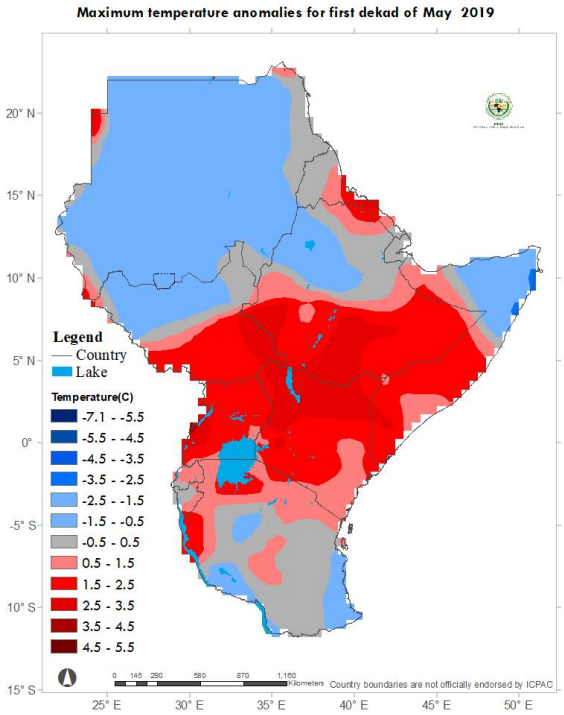

Figure 2: Maximum temperature difference from the average (1981-2010) for the first dekad (01-10) of May 2019*(Data Source: provided by the* NOAA-*NCEP CPC. GTS gridded data)*

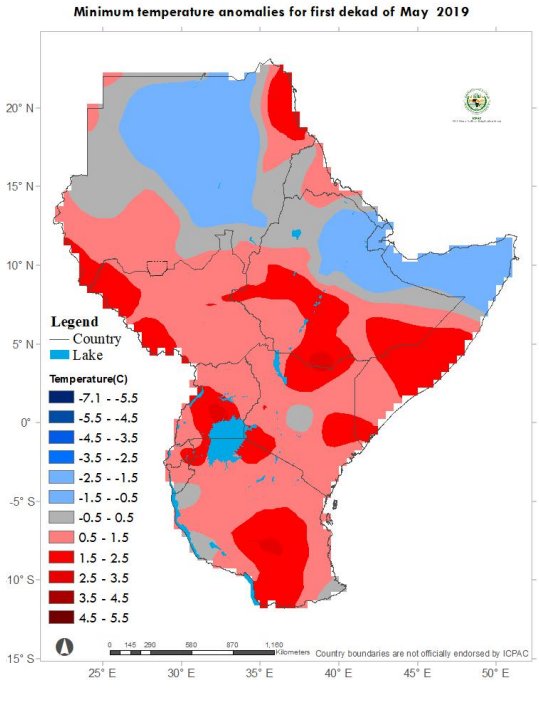

Figure 3: Minimum temperature difference from the average (1981-2010) for the first dekad (01-10) of May 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC. GTS gridded data)*

Normalized Difference Vegetation Index Anomaly

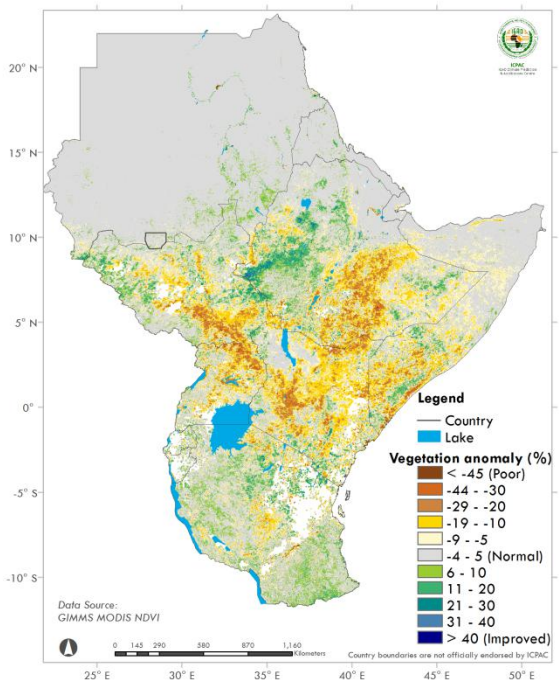

Figure 4: NDVI anomaly for the period between 8th to 15th May 2019 (Data Source: USGS NASA**)**

Maximum and Minimum Temperature

During the first dekad of May 2019, most parts of the equatorial and southern part of the northern sector of the GHA recorded maximum temperature that exceeded the climatological mean. Much of Sudan, northern part of South Sudan, part of northwest Ethiopia, and northeast Somalia recorded maximum temperature cooler than the climatological mean. Most of the GHA recorded minimum temperature that was warmer than the climatological mean except for northern and central parts of Sudan, much of Djibouti, northeast part of Ethiopia and northeastern part of Somalia, which recorded minimum temperature that was cooler than the climatological mean. Much of the rest of the GHA recorded maximum and minimum temperature that was near the climatological mean.

4. Vegetation condition indicators

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 8th to 15th May 2019 (Figure 4) indicates that:

Ethiopia and South Sudan: Central and southern part of South Sudan, and eastern and southern part of Ethiopia showed indications of deterioration in vegetation conditions as compared to the mean for the same period. A few places in western Ethiopia and northwest of South Sudan showed indications of improvement in vegetation conditions as compared to the mean.

Uganda, Kenya, and Somalia: Most of western Uganda, central and eastern parts of Kenya, and southern Somalia showed indication of deterioration in vegetative conditions as compared to the long term average.

Much of the rest of the GHA showed indication of little or no change in vegetative conditions as compared to the climatological average.

5. Climate Forecast

Rainfall Forecast

Forecast for the last dekad (21-31 May) of the March-May rainfall season indicates that dry conditions are expected over central, western and southwest Tanzania, eastern and northern Kenya, north-eastern Somalia, northern Ethiopia, northern Eritrea, and central to northern Sudan. Rainfall above 50 mm is forecasted in northern coast of Kenya extending to the southern coast of Somalia, western Kenya, central Somalia, central Ethiopia, western South Sudan and most parts of eastern and northern Uganda.

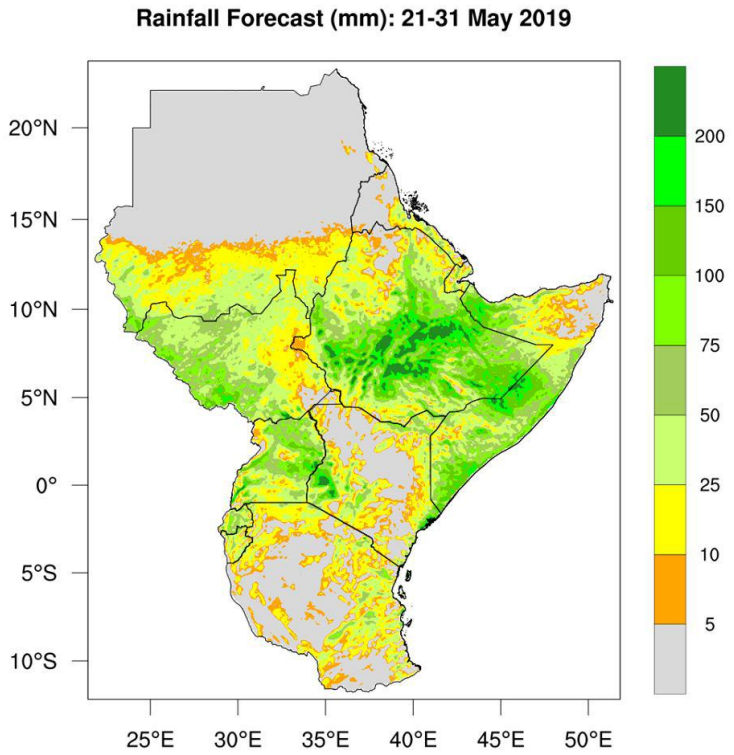

Figure 5: Rainfall forecast for the third dekad (21-31) of May 2019 (Source: WRF-ICPAC**)**

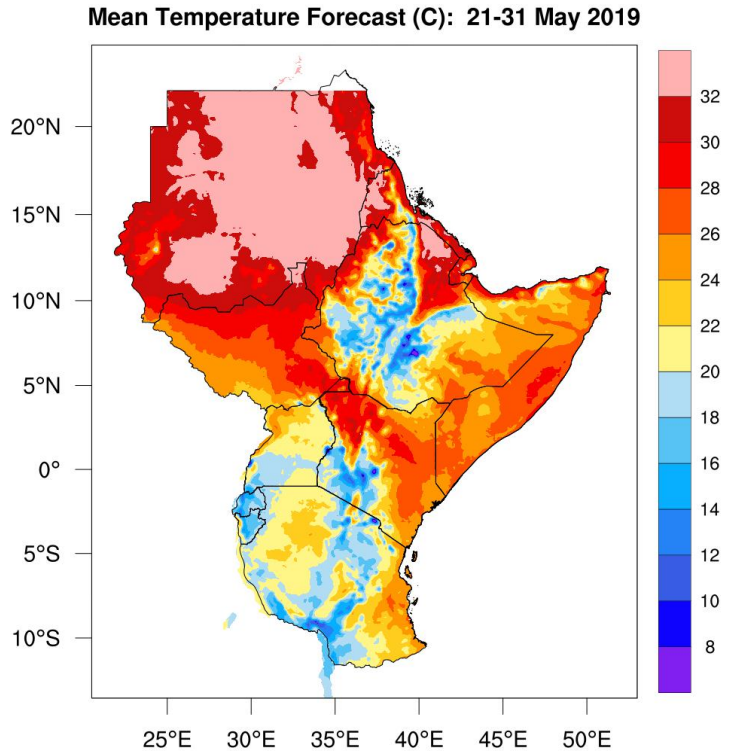

Figure 6: Average temperature forecast for the third dekad (21-31) of May 2019 (Source: WRF-ICPAC)

Temperature Forecast

The mean temperature forecast for third dekad of May 2019 (Figure 6) indicates highest temperatures above 32 ºC in much of Sudan, with adverse thermal comfort conditions possible. Cold conditions, with temperatures less than 20 ºC are forecasted over central Ethiopia, western Kenya, central Tanzania, Rwanda and Burundi. The rest of the region is expected to be warm, in the range of 20-30 ºC.

6. Impacts on socio-economic sectors

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

Impacts of the climate conditions

The rainfall conditions during the first dekad of May 2019 resulted in extended conditions of water scarcity, poor pasture and delay in cropping season which might have impacts on crop and livestock production and exacerbate food insecurity in many parts of the arid, semi-arid regions of Kenya, Ethiopia and Somalia, as well as central and northern parts of Uganda. Flooding and related impact was reported in some places such as central and coastal Kenya, and eastern and southern Tanzania.

The forecast for the third dekad of May is likely to extend the negative impact of the dry conditions currently occurring in some areas in eastern equatorial sector of the GHA and is expected to affect water condition, deterioration in crop performance and pasture conditions. Areas in central and western equatorial sector as well as southern parts of the northern sector are likely to experience improvement in water resources. There is a high chance of recording rainfall exceeding the 99th percentile over northeast and coastal parts of Kenya, southern Somalia, and northeast Tanzania. The probability of flooding within these areas is high and appropriate mitigation measures should be put in place.

Reference terminology

Rainfall categories	
Range	Category
<5 mm	Light
5 - 20mm	Moderate
20 - 50mm	Heavy
>50mm	Very heavy

Rainfall coverage	
Coverage	Range
Most Places	Between 66% and 100%
Several Places	Between 33% and 66%
Few Places	Below 33%

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