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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF APRIL 2019 AND FORECAST FOR THE THIRD DEKAD (21-30) OF APRIL 2019

1. Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of April 2019 and highlights the climate forecast for the third dekad (21-30) 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. Highlights

During the first dekad of April 2019 several places in the equatorial sector and a few places in the southern parts of the northern sector of the GHA recorded below normal rainfall. Much of the rest of the GHA recorded near normal rainfall, except for a few places in central part of the northern sector and in southern and western parts of the southern sector of GHA which recorded above normal rainfall.

Impacts such as water scarcity, poor pastures and delay in the cropping season continued to be experienced in several parts of the equatorial sector and a few areas in the southern parts of the northern sector of the GHA.

Several parts of the equatorial sector, northern and central parts of the southern sector, and also southern part of the northern sector of the GHA recorded maximum and minimum temperature that was warmer than the long-term mean. A few places in the northern, central and south eastern part of the northern sector recorded a maximum temperature that was cooler than the

climatological mean. A minimum temperature that was cooler than the climatological mean was recorded in the western part of the northern sector of the GHA.

Moderate rainfall is forecasted over most regions in equatorial GHA. Temperatures are expected to remain generally warm.

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

Distribution of Rainfall total for the first dekad (01-10) of April 2019 over Greater Horn of Africa, revealed that: rainfall amounts exceeding 25 mm were observed over south-west South Sudan, central and south-west Ethiopia, western and coastal Kenya, and over much of Uganda, Rwanda Burundi, and western and southern Tanzania. Several parts of Sudan, Eritrea, Djibouti, Somalia, north and southeast Ethiopia, eastern South Sudan, and north and eastern Kenya recorded rainfall amounts not exceeding 10 mm. Much of the rest of the rest of the GHA recorded rainfall between 10 mm and 25 mm. (Figure 1a).

Comparing the observed rainfall with the climatology baseline (1981-2010) for the first dekad of April reveals that: rainfall was below normal in most parts of Kenya, south-west South Sudan, in several parts of southern and eastern Ethiopia, northern and southern Somalia, northern and eastern Uganda, southeast Rwanda, eastern and southern Burundi, and in northern parts of Tanzania. Above normal rainfall was recorded in central part of Ethiopia, southwest Rwanda, northwest Burundi, and in western and southeast parts of Tanzania. Much of the rest of the GHA recorded near normal rainfall or remained generally dry (Figure 1b and Figure 1c).

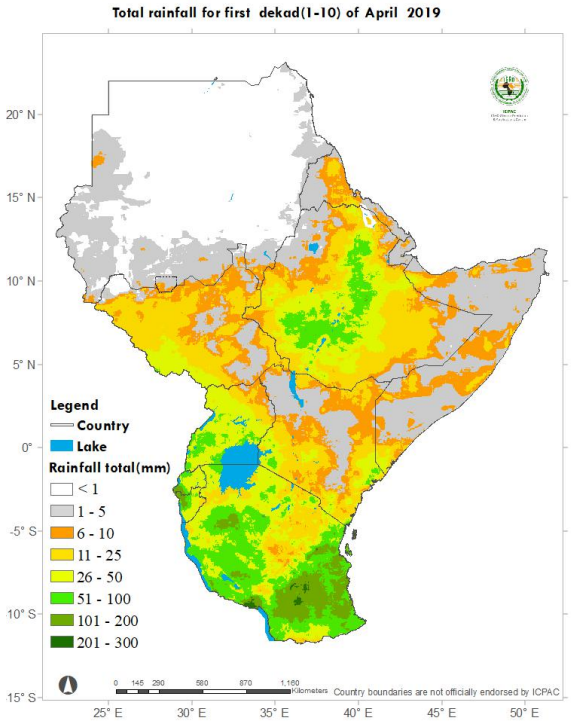

Figure 1a: Total rainfall distribution during the first dekad (01-10) of April 2019. *(Data: ICPAC Blended CHIRP)*

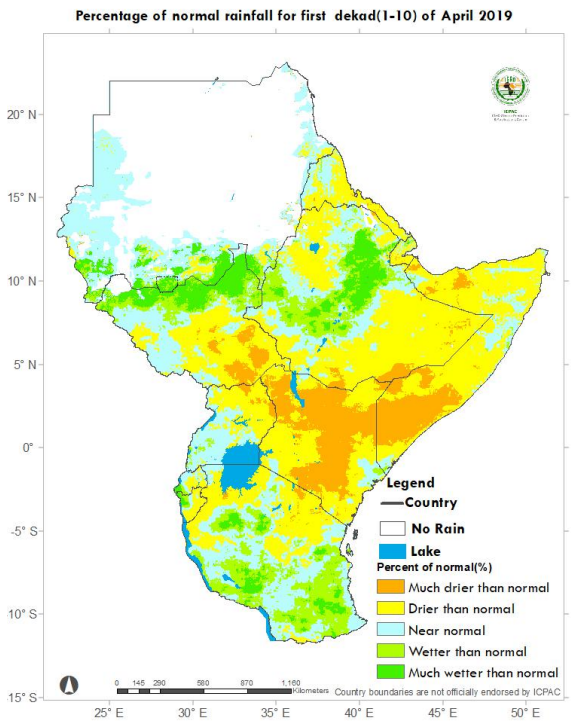

Figure 1b: Percent of long-term average rainfall for the first dekad (01-10) of April 2019*(Data: ICPAC Blended CHIRP)*

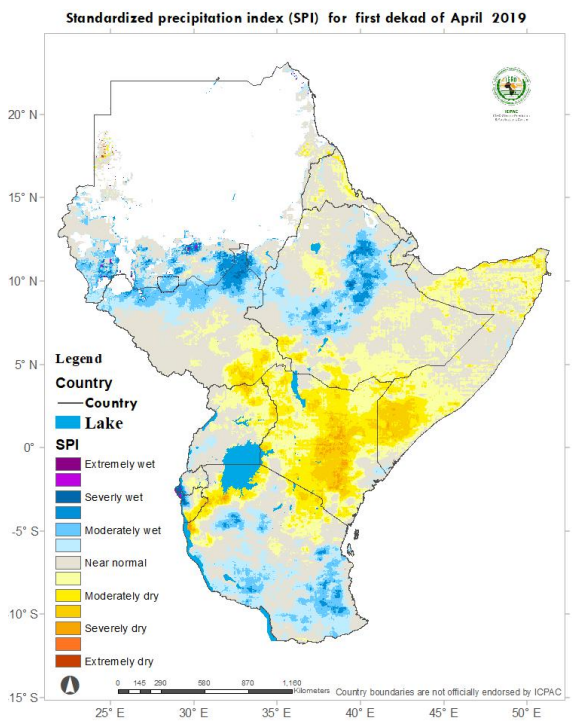

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of April 2019 *(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

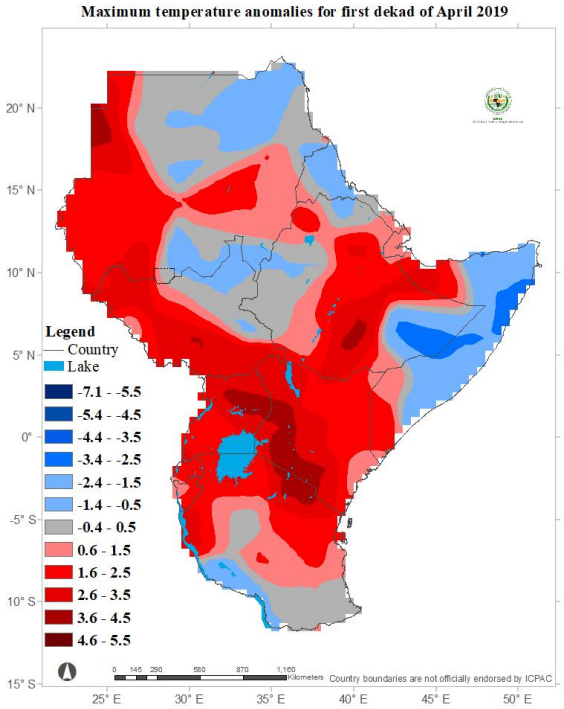

Figure 2: Maximum temperature difference from the average (1981-2010) for the first dekad (01-10) of April 2019*(Data Source: provided by the* NOAA-*NCEP CPC. GTS gridded data)*

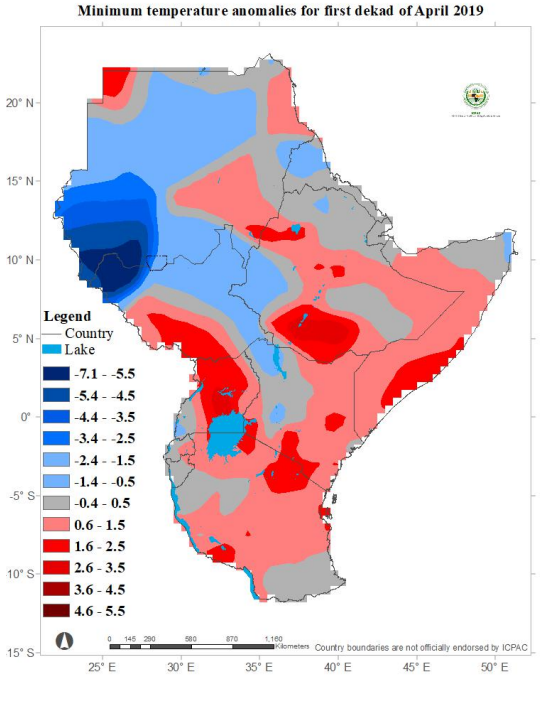

Figure 3: Minimum temperature difference from the average (1981-2010) for the first dekad (01-10)of April 2019 *(Data Source: Data Source: provided by the NOAA-NCEP CPC. GTS gridded data)*

Normalized Difference Vegetation Index Anomaly

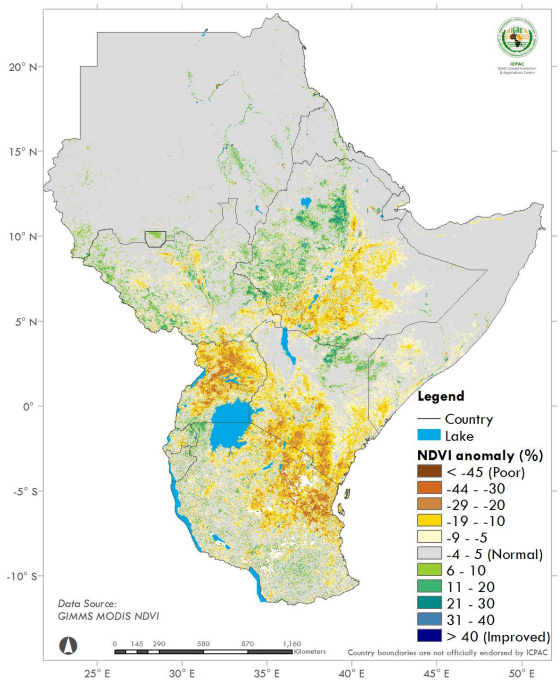

Figure 4: NDVI anomaly for the period between 29th March to 5th April 2019 (Data Source: USGS NASA**)**

Maximum and Minimum Temperature

During the first dekad of April 2019, several parts of the GHA recorded maximum and minimum temperatures that are above or near the climatological mean. However a few areas in south and northeast of Sudan, western Eritrea, and southeast Ethiopia extending to north and central Somalia recorded maximum temperature cooler than the climatological mean. Several parts of western Sudan and extending to north and eastern South Sudan also recorded minimum temperature that was cooler than the climatological mean.

4. Vegetation condition indicators

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 21st to 28th April 2019 (Figure 4) indicates that:

Ethiopia, Uganda, Kenya and Tanzania: eastern and southern Ethiopia, several parts of Uganda, southern and coastal Kenya, and northeast Tanzania showed indications of deterioration in vegetation conditions as compared to the mean. A few places in western Ethiopia and northeast Kenya showed indications of improvement in vegetation conditions as compared to the mean.

5. Climate Forecast

Rainfall Forecast

Moderate rainfall is expected in majority of the equatorial regions of the GHA. These includes Uganda, Rwanda, Burundi, South Sudan, southern Ethiopia, Southern Somalia, western, central and eastern Kenya, coastal, central and northern Tanzania. Regions in northern Somalia and parts of north-eastern and south-eastern Kenya will however remain dry. The presence of cyclone Kenneth is also expected to enhance rainfall over parts of the southern sector, especially in Tanzania.

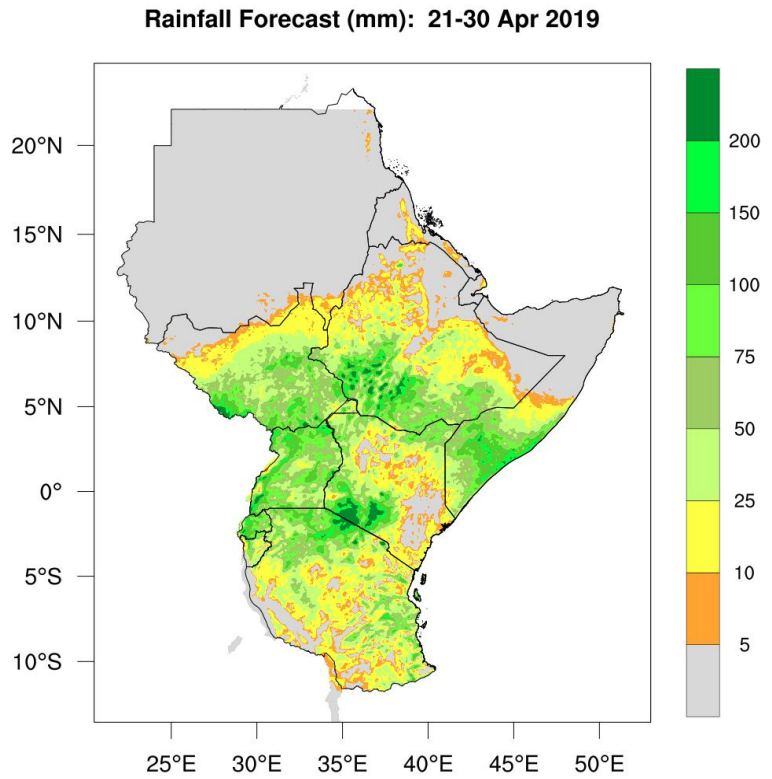

Figure 5: Rainfall forecast for the third dekad (21-30) of April 2019 (Source: WRF-ICPAC**)**

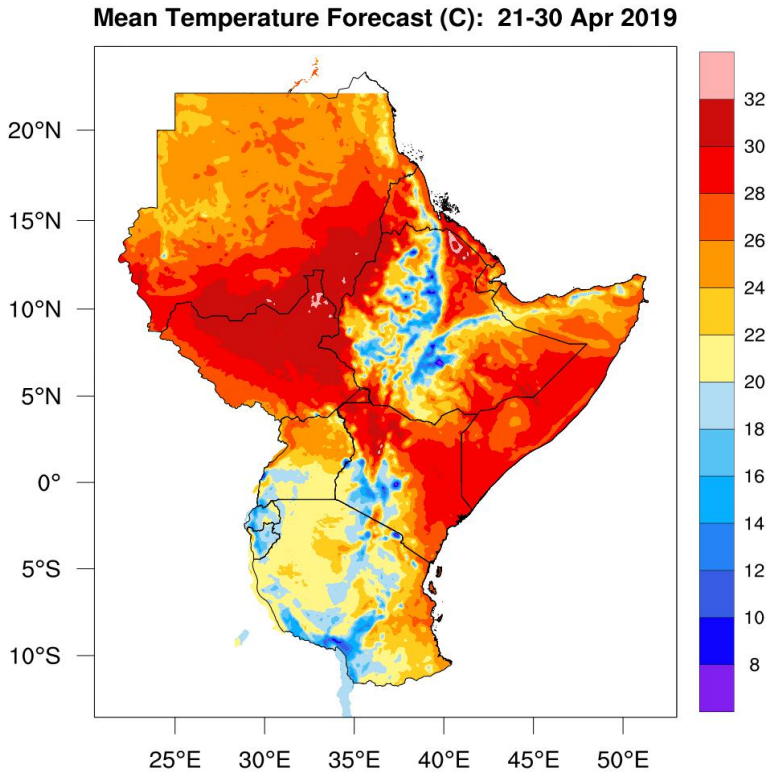

Figure 6: Average temperature forecast for the third dekad (21-30) of April 2019 (Source: WRF-ICPAC)

Temperature Forecast

Hot conditions with temperatures above 30 ºC are expected in northeastern Kenya, northwestern South Sudan and southern Sudan. Majority of the rest of the regions will experience warm conditions of 20 - 26 ºC, with highland regions in Kenya and Ethiopia, much of Rwanda and Burundi and southern and central Tanzania expected to have temperature conditions below 18 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 April 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, and central and northern parts of Uganda.

The forecast for the third dekad of April 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, further delay in planting dates, anddeterioration in crop performance and pasture conditions. Areas in central and western equatorial sector and also southern partsof the norther sector are likely to experienced improvement in water resources.

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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