IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-31) OF MAY 2018 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11-20) OF JUNE 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-31) of May 2018, and highlights the climate forecast for the second dekad (11-20) of June 2018 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 and 2008-2017 for rainfall and temperature, respectively.

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

Rainfall activity was concentrated over the southern part of the northern sector, western, central and eastern equatorial sector, and in northern and eastern parts of the southern sector of the Greater Horn of Africa (GHA). Parts of Eritrea, Djibouti, and Somalia recorded severely to extremely wet rainfall conditions due brought about by tropical storm Sagar.

The southwestern and central parts of northern sector recorded warmer than the average maximum and minimum temperature while a few areas in the central equatorial sector of the GHA recorded cooler than the average maximum temperature. Some places in Sudan, northern Ethiopia, eastern South Sudan and southern Tanzania recorded minimum temperature warmer than the average. Much of the rest of the GHA recorded near average minimum and maximum temperature.

Rainfall forecast for the second dekad of June 2018 shows that rainfall is likely to persist in southwestern and central parts of the northern sector as well as in some places in western and central parts of the equatorial sector of the GHA. Some areas in South Sudan, Ethiopia and Kenya are likely to record high rainfall amounts, which might lead to flooding.

Several parts of the north and eastern equatorial sector, and much of northern sector of the GHA except for western and central Ethiopia are likely to record mean temperature exceeding 20^{o}C during the second dekad of June 2018. Regions covering central and western highlands of Kenya, southern Uganda, Rwanda, Burundi, and western, central, and northern parts of Tanzania are forecasted to experience mean temperatures below 20^{o}C.

3.0 Observed rainfall during the third dekad (21-31) of May 2018

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. SPI indicates the degree of rainfall severity.

Rainfall Distribution and Severity

Rainfall was concentrated in the southern part of the northern sector, equatorial sector, and northwestern and eastern parts of the southern sector of the GHA.

Eritrea and Sudan:

The southern part of Sudan and western part of Eritrea recorded rainfall of between 6mm and 50mm with much of the rest of other areas recording less than 5 mm. Much of these areas recorded above normal rainfall. Northern parts of Sudan recorded little or no rainfall (generally dry conditions).

Djibouti and Somalia: most parts of Djibouti were dry while the coastal regions recorded less than 5 mm. Most parts of Somalia recorded between 6mm and 50mm. Several parts of these areas experienced moderately wet rainfall.

Ethiopia and South Sudan: western part of South Sudan, southern, eastern parts of Ethiopia recorded rainfall of between 5mm and 50mm of rainfall. Southern, central Northeastern of South Sudan, Western parts of Ethiopia more than 50mm. These areas experienced severely wet to moderately wet conditions. Northeastern Ethiopia recorded little or no rainfall.

Uganda and Kenya: southern parts of Uganda, eastern and northeastern parts of Kenya recorded rainfall between 10 and 50mm, the northern parts of Uganda, western and coastal parts of Kenya recorded between 100 and 200mm of rainfall. Much of southern parts of Kenya recorded less than 10mm. Much of these areas experienced severely wet conditions.

Rwanda, Burundi and Tanzania: much of Rwanda, Burundi and eastern and coastal parts of Tanzania recorded between 6 to 50mm of rainfall. Southwestern to central parts of Tanzania are recorded less than 5mm. Several parts of these areas experienced moderately wet rainfall to extremely wet rainfall.

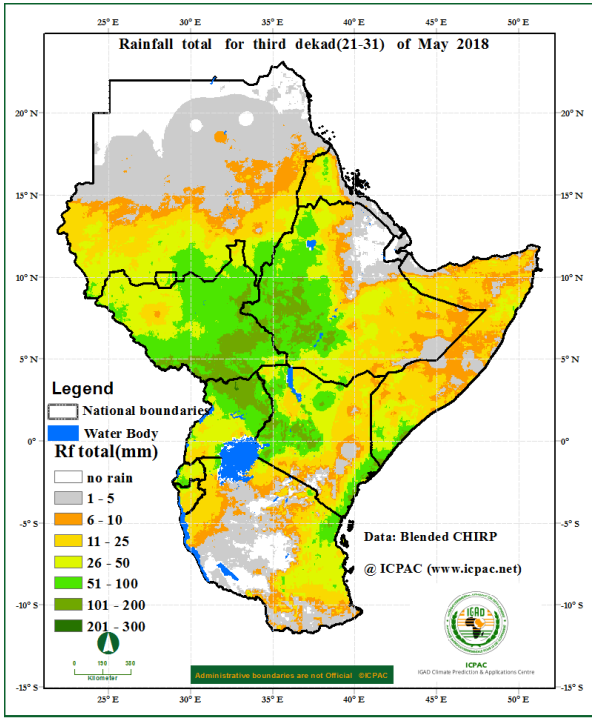

Figure 1a: Total rainfall distribution during the third dekad (21-31) of May 2018. *(Data: ICPAC Blended CHIRP)*

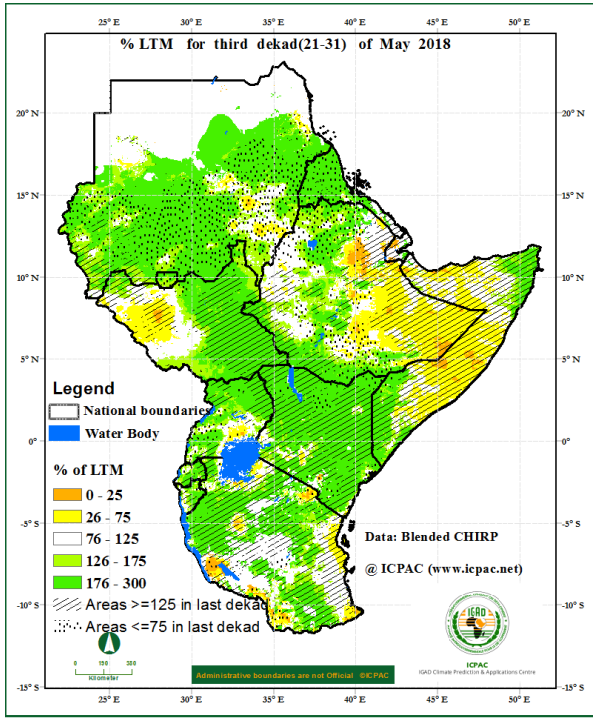

Figure 1b: Percent of long term average rainfall for the third dekad (21-31) of May 2018 *(Data: ICPAC Blended CHIRP)*

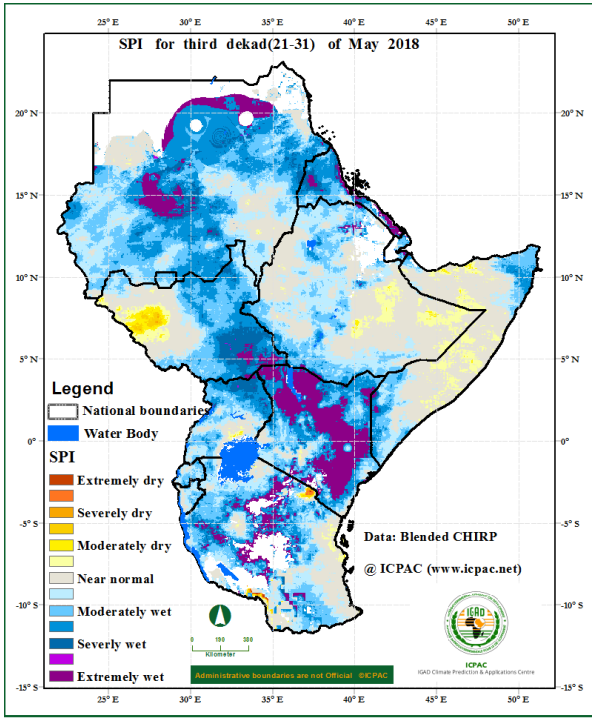

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-31) of May 2018 *(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

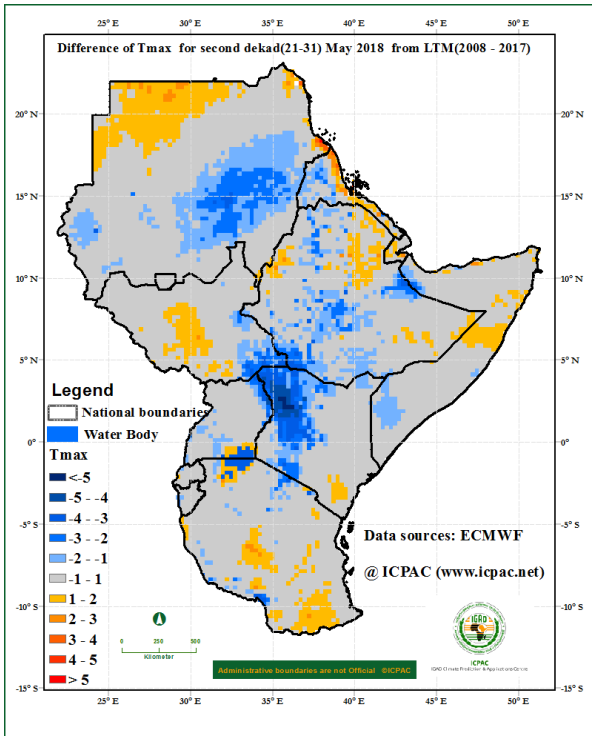

Figure 2: Maximum temperature difference from the average (2008-2017) for the third dekad (21-31) of May 2018*(Data Source: ECMWF)*

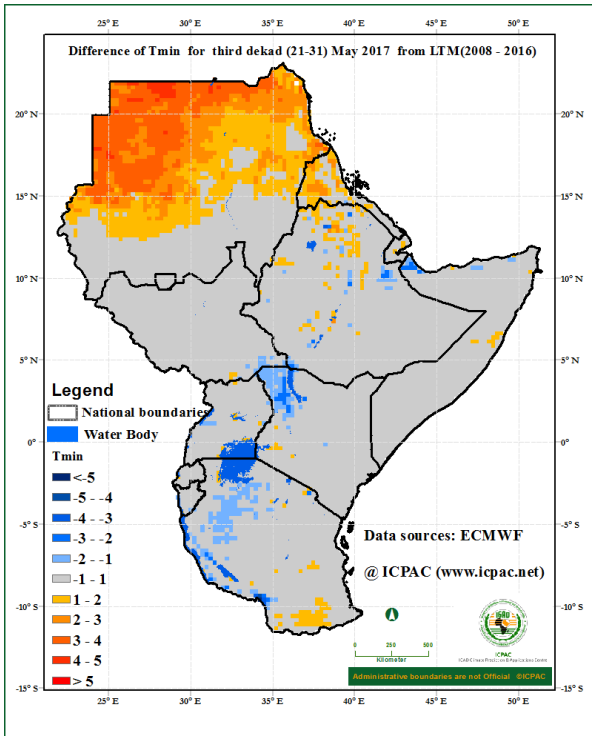

Figure 3:Minimum temperature difference from the average (2008-2017) for the third dekad (21-31) of May 2018*((Data Source: ECMWF)*

The maximum and minimum temperature during the third dekad of May 2018 shows that:-

The northern part of **Sudan**, central **South Sudan** and northeastern part of **Ethiopia** had warmer than average maximum temperatures. **.** Coastal parts of **Eritrea**, central **Somalia**, several parts of **Lake Victoria** basin, and scattered parts of southern **Tanzania** recorded maximum and minimum temperature exceeding the average.

Cooler than the average maximum and minimum temperature recorded in central **Sudan**, southeastern parts of **South Sudan**, northwestern **Kenya**, several parts of southern, central parts of **Ethiopia**, northern **Tanzania**. Much of the rest of the GHA experienced near-average of the maximum and minimum temperatures.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 24th to 30th May, 2018 (Figure 4) indicates that:

South Sudan, Ethiopia, Uganda, Kenya, Somalia and Tanzania: central and eastern South Sudan, southern and southeastern parts of Ethiopia, central and southern Somalia, northeastern Uganda, most parts of Kenya, Burundi and Tanzania had an improvement in vegetation conditions as compared to the long-term average. A few places isolated in South Sudan and central Ethiopia recorded poor vegetative condition.

Much of the rest of the GHA, especially north Sudan, Eritrea, Djibouti, northern Somalia and central Uganda, showed little or no change in vegetation conditions.

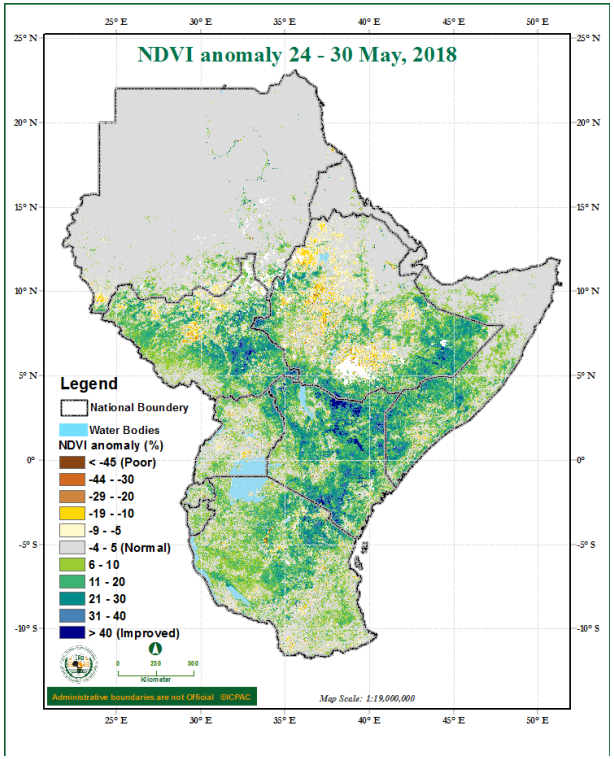

Figure 4: NDVI anomaly for the period between 24th and 30rd May 2018 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the second dekad of June 2018 in Figure 5 indicates that rainfall exceeding 50mm to 150mm is likely to be observed over much of South Sudan, the southern part of Sudan, eastern and northeastern Uganda, western Kenya and southeastern parts of Somalia. Much parts of central northern Ethiopia are likely to record high rainfall amounts exceeding 200mm. The rest of the GHA region including much of

Sudan, Eritrea, Djibouti, north and eastern Ethiopia, north, central and eastern Kenya, central Somalia, and Tanzania are expected to record little amount of rainfall (less than 5 mm) or remain generally dry during the second dekad of June 2018.

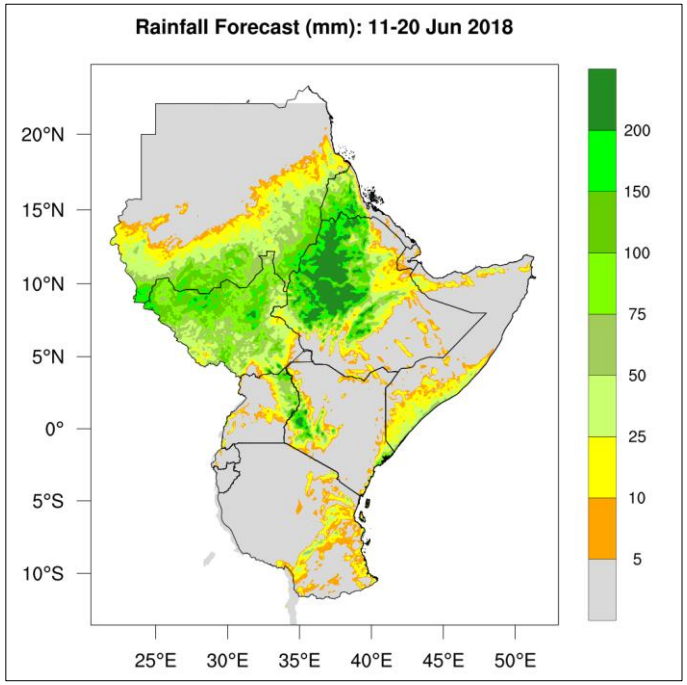

Figure 5: Precipitation forecast for the second dekad (11-20) of June 2018 (Source: WRF ICPAC**)**

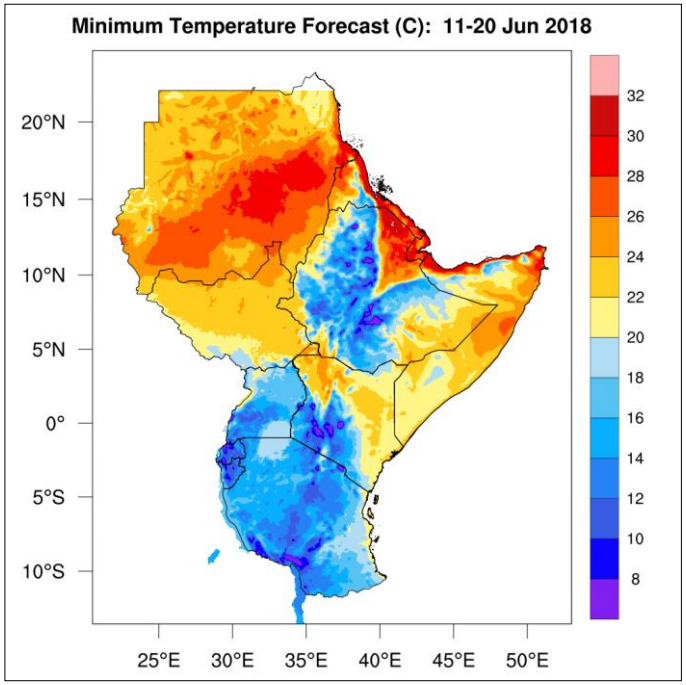

Figure 6: Forecast for average temperature for the second dekad (11-20) of June 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for second dekad of June 2018 (Figure 6) indicates that cooler mean temperature, not exceeding 20°C, are expected in central and western highlands of Ethiopia, much parts of Uganda, western and central, southwestern Kenya, much of Rwanda, Burundi and much of Tanzania. The rest of the GHA is expected to experience mean temperature greater than 20°C. The warmest regions are expected to be in Sudan, Eritrea, Djibouti, and northeastern Ethiopia.

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 much parts of the equatorial sector, the southern part of the northern sector, and parts of the southern sector of the GHA resulted to improvement in water and pasture conditions, leading to good prospects of water, crop and livestock performance. Some areas in the equatorial sector and southern part of the northern sector of the GHA reported flooding that led to the disruption of livelihoods, and incidences of weather and water-related diseases. From the climate forecast for the second dekad of June 2018, some areas of South Sudan, Ethiopia and western Kenya are likely to record high rainfall amounts which may lead to possible localised flooding and related impacts.

NB: *This ten days bulletin contributes towards the update of the June to September 2018 climate outlook (http://www.icpac.net/wp-content/uploads/GHACOF49_statement_english.pdf).*

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