IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

ICPAC

Bulletin for Dekad 15 of 2018
Issue Number: ICPAC/02/951

10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE SECOND DEKAD (11-20) OF MAY 2018 TOGETHER WITH FORECAST FOR THE FIRST DEKAD (01-10) OF JUNE 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (11-20) of May 2018, and highlights the climate forecast for the first dekad (01-10) 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 ad central parts of northern sector recorded warmer than the average maximum and minimum temperature while a few areas in 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 first 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 first 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 second dekad (11-20) 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 north and eastern parts of the southern sector of the GHA.

Rwanda, Burundi and Djibouti: much of these areas recorded between 6mm to 50mm, southwestern Rwanda and western Burundi recorded between 50mm and 100mm. Several parts of these areas experienced moderately wet rainfall with Djibouti experiencing extremely wet rainfall.

South Sudan and Somalia: western and southern part of South Sudan, southern, central and northwestern Somalia recorded rainfall of between 50mm and 100mm, southeastern part of Somalia recorded between 100 and 200mm of rainfall. Much of the rest of these areas recorded less than 50mm. Much of Somalia and eastern and northwestern South Sudan experienced moderately wet to severely wet conditions.

Ethiopia, Uganda, Kenya and Tanzania:

Western and eastern Ethiopia, northwestern and southeastern Uganda, western and central Kenya, and northeastern Tanzania recorded between 50 mm and 200 mm. Much of the rest of these areas recorded between 10mm and 50mm of rainfall except for northern and eastern parts of Kenya, central and southwestern Tanzania which recorded less than 10mm of rainfall. Several parts of these areas experienced moderately wet to severely wet rainfall, except for a few areas in northern and southern Ethiopia and southwestern part of Uganda.

Eritrea and Sudan:

Southern part of Sudan and western part of Eritrea recorded rainfall of between 5mm and 25mm with much of the rest of other areas recording less than 5 mm. Much of these areas recorded near normal rainfall, except for southwest part of Sudan and southern Eritrea.

The rest of GHA recorded little or no rainfall with near normal or generally dry conditions.

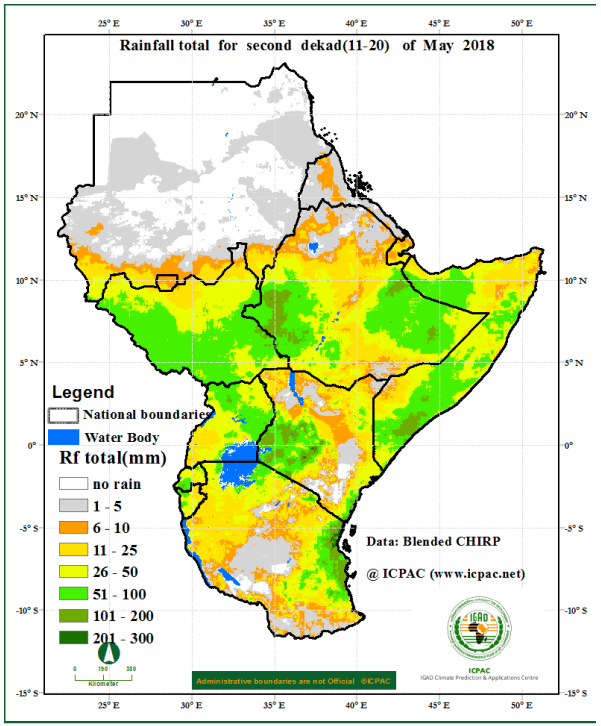

Figure 1a: Total rainfall distribution during the second dekad (11-20) of May 2018. *(Data: ICPAC Blended CHIRP)*

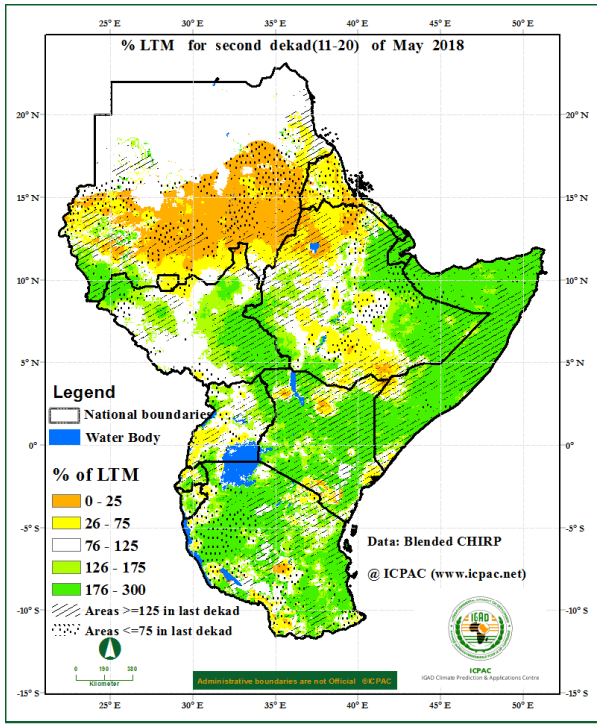

Figure 1b: Percent of long term average rainfall for the second dekad (11-20) of May 2018 *(Data: ICPAC Blended CHIRP)*

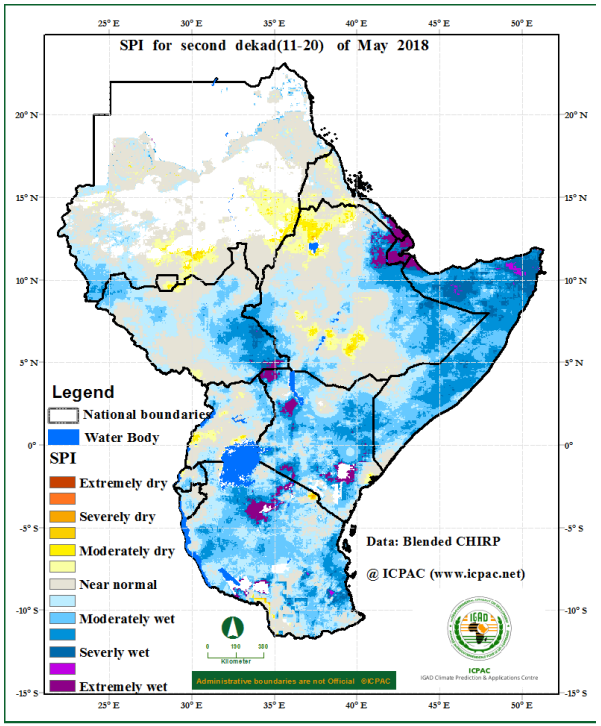

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of May 2018 *(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

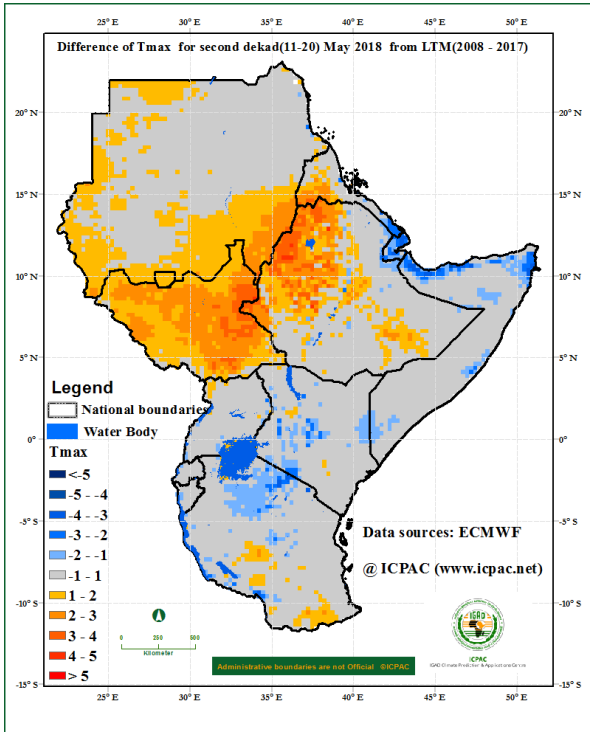

Figure 2: Maximum temperature difference from the average (2008-2017) for the second dekad (11-20) of May 2018*(Data Source: ECMWF)*

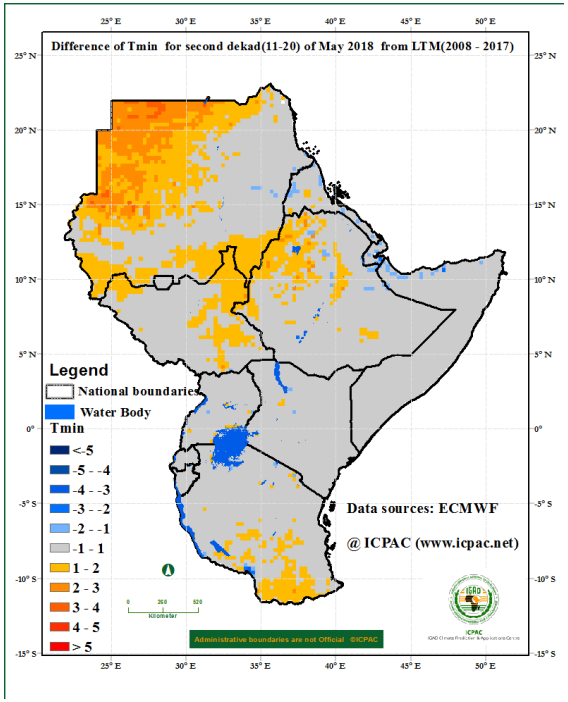

Figure 3:Minimum temperature difference from the average (2008-2017) for the second dekad (11-20) of May 2018*((Data Source: ECMWF)*

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

Ethiopia, South Sudan and Sudan: western and southern part of Sudan, much of South Sudan and northwestern part of Ethiopia recorded maximum temperature exceeding the average. Northwest and southern Sudan, northwest Ethiopia and northern and eastern South Sudan recorded minimum temperature exceeding the average.

Djibouti, Kenya and Tanzania: Several parts of Djibouti, central part of Kenya and northern parts of Tanzania recorded cooler than the average for maximum temperature, southern part of Tanzania recorded warmer than the average for maximum and minimum temperature.

Much of the rest of the GHA experienced near average temperature for maximum and minimum temperature.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 16th to 23rd May, 2018 (Figure 4) indicates that:

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

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

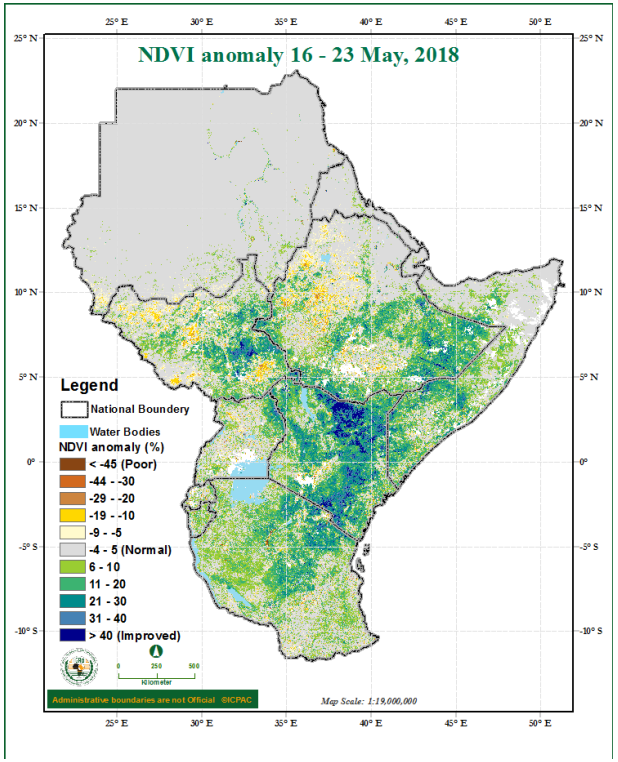

Figure 4: NDVI anomaly for the period between 16th and 23rd May 2018 (Data Source: USGS NASA)

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the first dekad of June 2018 in Figure 5 indicates that rainfall is likely to be concentrated over much of South Sudan, western and central Ethiopia, southern part of Sudan, southwestern and eastern Uganda, western and central Kenya, and southeastern parts of Somalia. Several parts of South Sudan, western parts of Ethiopia, southeastern Uganda, and in western and central Kenya are likely to record high

rainfall amounts. The rest of the GHA region including much of Sudan, Eritrea, Djibouti, north and eastern Ethiopia, north and eastern Kenya, central Somalia, and Tanzania are expected to record little amount of rainfall (less than 10 mm) or remain generally dry during the first dekad of June 2018.

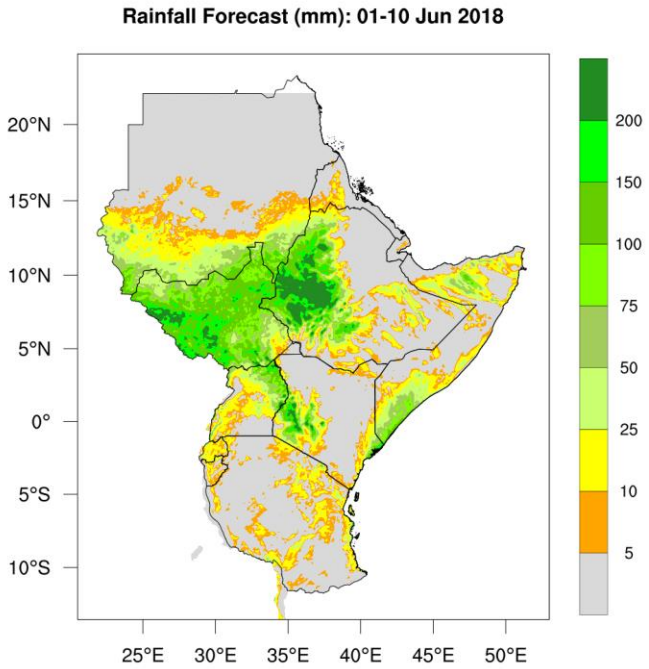

Figure 5: Precipitation forecast for the first dekad (01-10) of June 2018 (Source: WRF ICPAC**)**

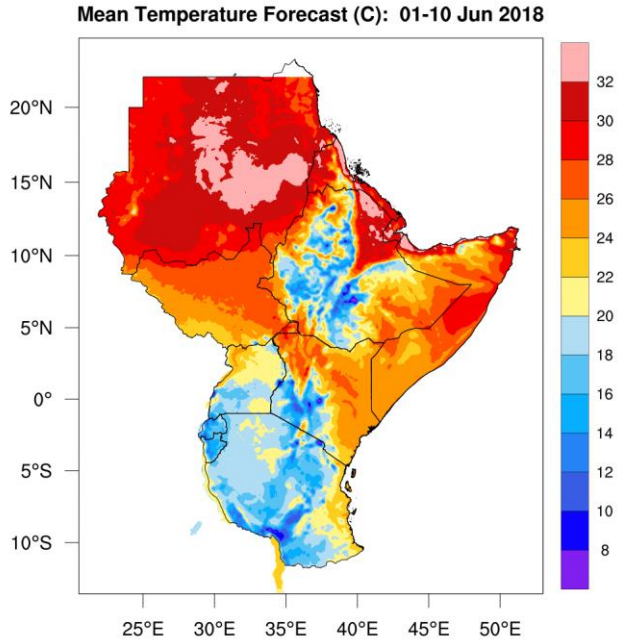

Figure 6: Forecast for average temperature for the first dekad (01-10) of June 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for first dekad of June 2018 (Figure 6) indicates that cooler mean temperature not exceeding 20°C are expected in central and western highlands of Ethiopia, southern Uganda, western and central Kenya much of Rwanda, Burundi and western and central Tanzania. Much of the rest of the GHA are expected to experience mean temperature greater than 20°C. The warmest regions is 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 of the equatorial sector, southern part on the northern sector, and parts of 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 related and water related diseases. Heavy flooding and destruction of livelihoods was reported in Djibouti and northern Somalia due to intense rainfall related to tropical storm Sagar. The storm made landfall in the northern coast of Somalia on 19th May 2018. From the climate forecast for the first 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 March to May 2018 climate outlook (*http://www.icpac.net/wp-content/uploads/GHACOF48_Statement.pdf *).*

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