IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

ICPAC

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE SECOND DEKAD(11-20)OF AUGUST2018TOGETHER WITH FORECASTFOR THE FIRSTDEKAD (01-10) OFSEPTEMBER2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (11-20)of August 2018, and highlights the climate forecast for the first dekad (01-10) of September2018 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

During the second dekad of August 2018 several places in northern sector,as well as western part of the equatorial sector of the GHA recorded rainfall. south western and south-central part of the northern sector and also western and central partsof the equatorial sector experienced below normal rainfall.

Areas in the southwestern part of the northern sector, and western equatorial sector of the GHA recorded warmer than the average maximum temperature. however western part of Sudan, southern Ethiopia, and southern Somalia recorded cooler than the average maximum temperature during the second dekad of August 2018. Northern part of Sudan and western South Sudan recorded warmer than the average minimum temperature, while cooler than the average minimum temperature was recorded in western and central Tanzania.

Rainfall forecast for the first dekad of September 2018 shows that rainfall is expected over several areas of the northern sector of the GHA except for the northern and south-central part. The northwestern and northeastern parts of the equatorial sector are also likely to record some rainfall. A few areas in southern part of Sudan, north and west South Sudan, and northwestern and western Ethiopia, are likely to record high rainfall amounts, which might lead to flooding.

Regions covering, western and central highlands of Ethiopia, central and western highlands of Kenya, southern Uganda, Rwanda, Burundi, and parts of central and southwest Tanzania 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 second dekad (11-20)of August 2018

Figure 1a, 1b and 1c shows thedistribution of total rainfall, percent of the long-term average rainfall, and the standardized precipitation index (SPI), respectively. SPIindicatesthe degree of rainfall severity.

Rainfall Distribution and Severity

Rainfall was concentratedin the western and central part of the northern sector, and northwestern and central part of equatorial sectorof the GHA.

Sudan, South Sudan, and Ethiopia:

Southern and central Sudan, much of South Sudan, and western and central Ethiopiarecorded rainfall of between 10mm and 100mm. Rainfall exceeding 100mm was recorded in southwesternpart of Sudan, northwestern part South Sudan, and northwestern and western Ethiopia. Several parts of South Sudan, southern part of Sudan as well as western and centralparts of Ethiopia experienced below normal rainfall.Much of the rest of these areas recorded near normal or above normal rainfall.

Eritrea and Djibouti: Western Eritrea experienced between 10mm and 100mm of rainfall, 5m to 25mm of rainfall was experienced in central Eritrea and western Djibouti. Much of the rest of these areas recorded less than 5mm of rainfall. Most of these areas experienced above normal or rainfall.

Uganda and Kenya:several parts of Uganda and western Kenya recorded rainfall of between 10mm and 50mm. northern and southeastern Uganda extending to western Kenya experienced between 50mm and 100mm of rainfall. Central and southwestern Uganda, and parts of western and central Kenya experienced below normal rainfall.

Rwanda, Burundi, Somaliaand Tanzania: These areas received little or no rainfall andremained generally dry.

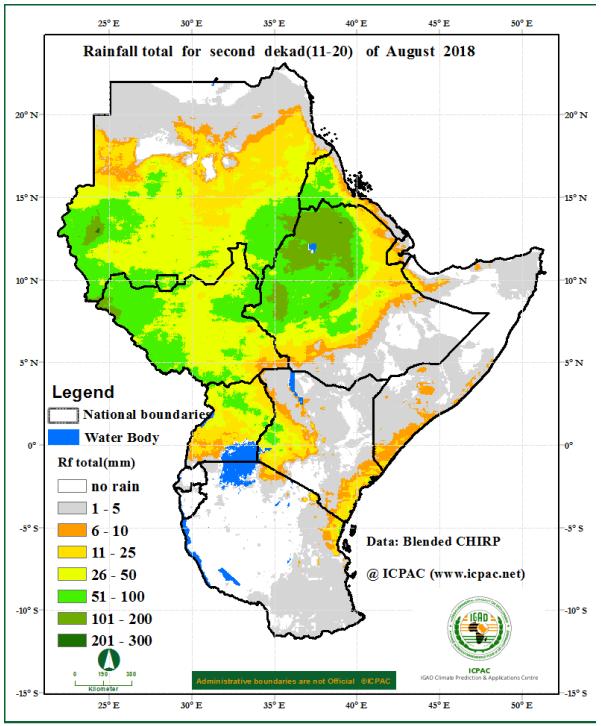

Figure 1a: Total rainfall distribution during the second dekad (11-20) of August 2018. *(Data: ICPAC Blended CHIRP)*

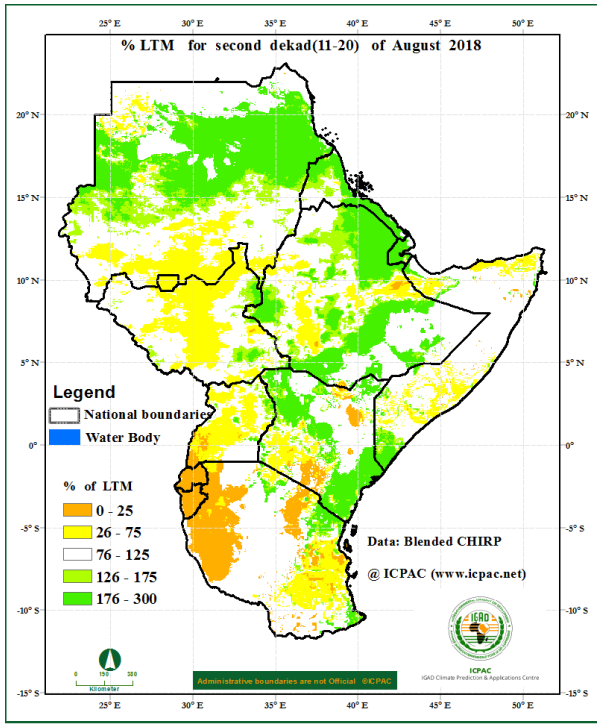

Figure 1b: Percent of long term average rainfall for the second dekad (11-20)of August 2018*(Data: ICPAC Blended CHIRP)*

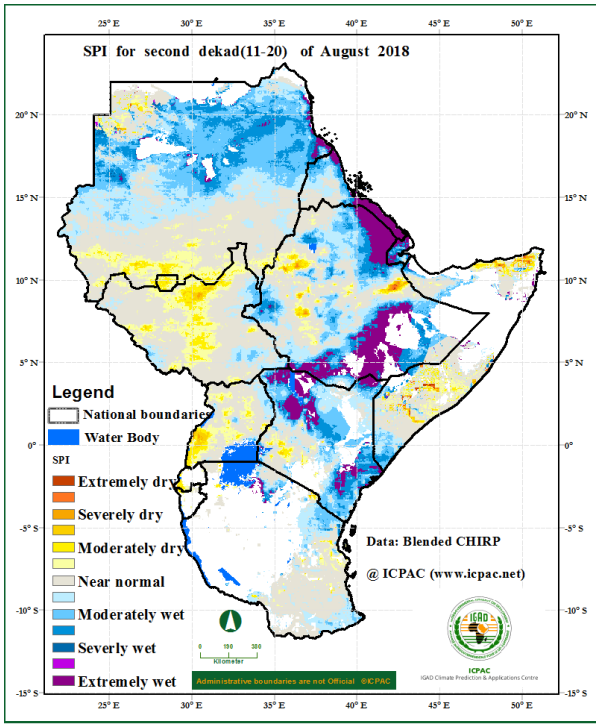

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of August 2018*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

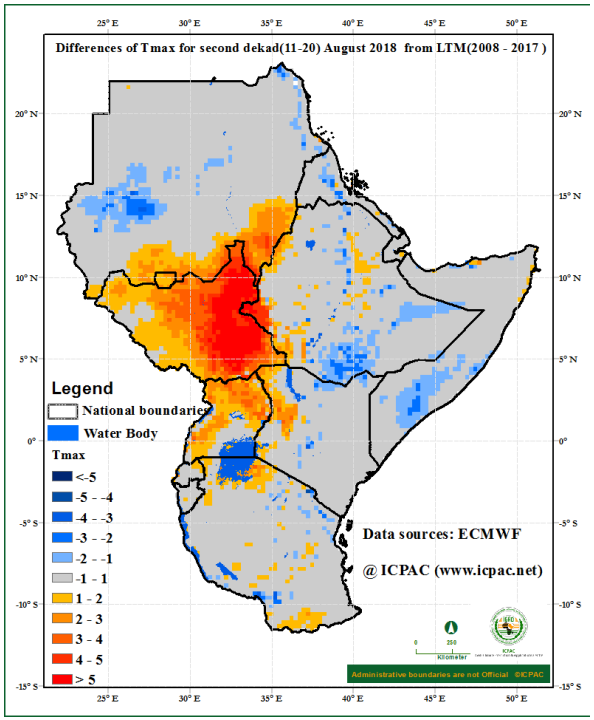

Figure 2: Maximum temperature difference from the average (2008-2017) for the second dekad (11-20) of August 2018*(Data Source: ECMWF)*

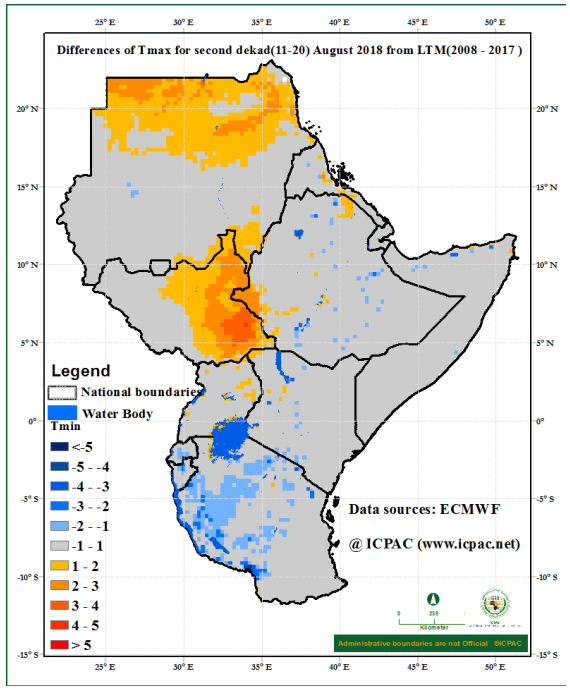

Figure 3:Minimum temperature difference from the average (2008-2017) for the second dekad (11-20) of August 2018 *(Data Source: ECMWF)*

The maximum and minimum temperature during the second dekad of August 2018 shows that: several part of **South Sudan**, southern part of **Sudan**, several parts of **Uganda**, northwestern **Kenya,** and northwestern and southern **Tanzania** experienced maximum temperature warmer than the average condition. Western part of **Sudan,** southern **Ethiopia, and** southern parts of **Somalia** recorded cooler than the average conditions for maximum temperature.

Northern part of **Sudan** and much of eastern **South Sudan** experienced warmer than the average minimum temperature. South central Rwanda, north-central Burundi, and western and central Tanzania experienced cooler than the long-term average minimum temperature.

Much of the rest of the GHA experienced near-average maximum and minimum temperatures.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 4th and 11th August, 2018 (Figure 4) indicates that:

Sudan, South Sudan, Ethiopia, and Somalia: Indications for deteriorated vegetative conditions was observed in southwestern parts of Sudan parts of western and northern Ethiopia and a few areas in north central and southeastern South Sudan. some parts of eastern South Sudan, southern part of Sudan, central and eastern Ethiopia and southern part of Somalia showed improved vegetation condition as compared with the long term average.

Kenya and Tanzania: northern, central and southern part of Kenya, western and eastern Tanzania showed an improved vegetative condition as compared to the long term average.

Uganda: Several parts of western and southern Uganda recorded deterioration in vegetative conditions.

Much of the rest of the GHA, especially northern Sudan, Eritrea, Djibouti, northern and central Somalia, western South Sudan, parts of Rwanda and Burundi, showed little or no change in vegetation conditions as compared with the long term average.

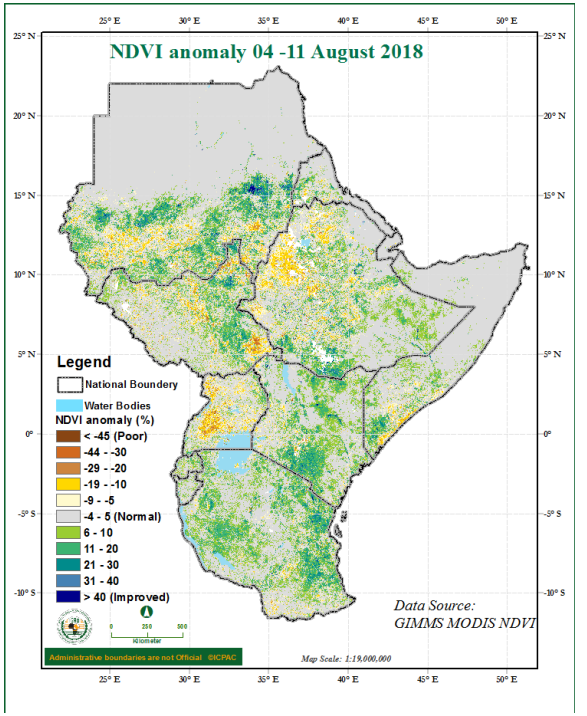

Figure 4: NDVI anomaly for the period between 4th and 11th August 2018 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the first dekad of September 2018 in Figure 5 indicates that rainfall exceeding 25mm is likely to be observed over much of South Sudan, Ethiopia, southern part of Sudan, southwest Eritrea, western, northern western and southeastern Uganda, and western Kenya. Southern part of Sudan, northern and western parts of South Sudan, and northwestern and western Ethiopia, western parts of Kenya are likely to record high rainfall amounts exceeding 200mm.

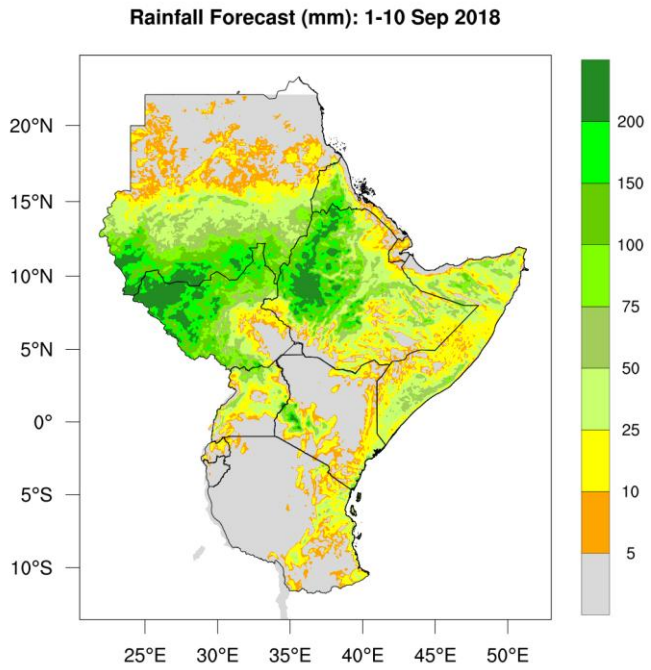

Figure 5: Precipitation forecast for the first dekad (01-10) of September 2018 (Source: WRFICPAC**)**

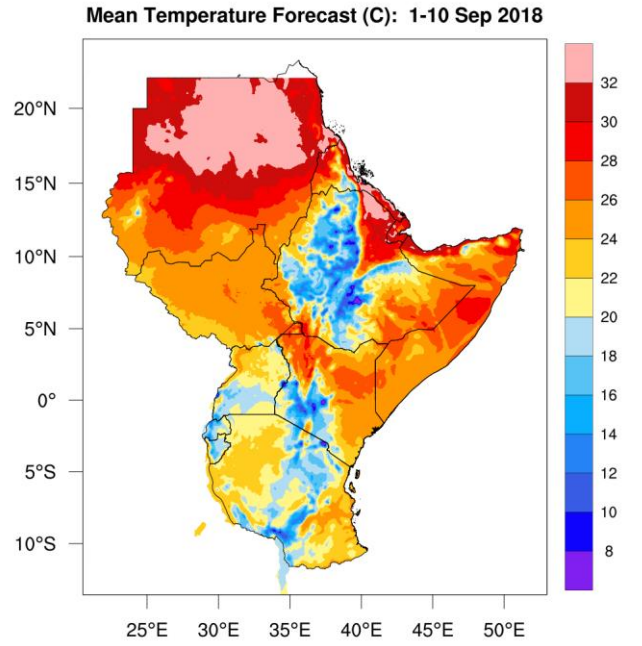

Figure 6: Forecast for average temperature for the first dekad (01-10) of September 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for first dekad of September 2018 (Figure 6) indicates that cooler mean temperature, not exceeding 20^{o}C is expected in central and western highlands of Ethiopia, southern Uganda, western and central Kenya, much of Rwanda, Burundi, and in parts of central, northeastern and southwestern Tanzania. The rest of the GHA is expected to

experience mean temperaturegreater than 20°C. The warmest regions are expected to be in Sudan, parts of 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 the western and central part of the northern 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 Sudan, and South Sudan reported flooding that led to the disruption of livelihoods, and incidences of weather and water-related diseases during the second dekad of August 2018 . From the climate forecast for the first dekad of September 2018, some areas of South Sudan, southern part of Sudan, western and central Ethiopia, and western Kenya are likely to record high rainfall amounts which can lead to possible localised flooding and related impacts.

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

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