IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

ICPAC

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF SEPTEMBER 2018 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-30) OFSEPTEMBER 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of September 2018, and highlights the climate forecast for the third dekad (21-30) of September 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

During the first dekad of September 2018 several places in western part of the equatorial sector, and much of the northern sector except for the northern parts and south-eastern parts of the GHA recorded rainfall. Below normal rainfall was experienced in a few areas in southern part of the northern and western part of the equatorial sector of the GHA. Much of the rest of the northern sector and equatorial sector experienced near normal or above normal rainfall.

Maximum temperature warmer than the mean was experienced mainly in southwestern part of the northern sector, while the northern part of the northern sector of the GHA recorded minimum temperature conditions warmer than the mean. Much of the GHA recorded near the average minimum temperature except for areas in northwestern Sudan central Eritrea and northern Ethiopia during the first dekad of September 2018.

Rainfall forecast for the third dekad of September 2018 shows that rainfall is expected over central and southern parts of the northern sector of the GHA. The western and northeastern parts of the equatorial sector are also likely to record some rainfall. A few areas in 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, southwestern Uganda, western Rwanda, central Burundi, and parts of northeast, 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 first dekad (01-10) of September 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 western and central part of the northern sector, and western and central part of equatorial sector of the GHA.

Sudan, and Kenya: southern part of Sudan, western, central and coastal parts of Kenya recorded rainfall of between 10mm and 100mm. most of these areas experienced near average or above average rainfall conditions except for a few places in western Kenya and southwestern Sudan.

Eritrea and Djibouti: western Eritrea, and much of western Djibouti recorded between 5mm and 50mm of rainfall, southwestern Eritrea recorded between 50mm and 100mm of rainfall. Most of these areas experienced above normal rainfall.

South Sudan, Ethiopia, and Uganda: several parts of South Sudan, much of north, western and central Ethiopia and Uganda recorded rainfall of between 10mm and 100m. rainfall amounts of between 100 and 200mm was recorded in northwestern and western Ethiopia. Some parts of western and southern South Sudan, central and eastern Ethiopia as well as southern Uganda experienced below normal rainfall. Much of the rest of these areas experienced near normal rainfall conditions except for north and southern parts of Ethiopia and northeastern Uganda which experience above normal conditions.

Rwanda, and Burundi: much of these areas recorded between 5mm and 25mm of rainfall, western Rwanda recorded between 26mm and 50mm of rainfall. Most of these areas experienced above normal rainfall.

Somalia and Tanzania: These areas received little or no rainfall and remained generally dry.

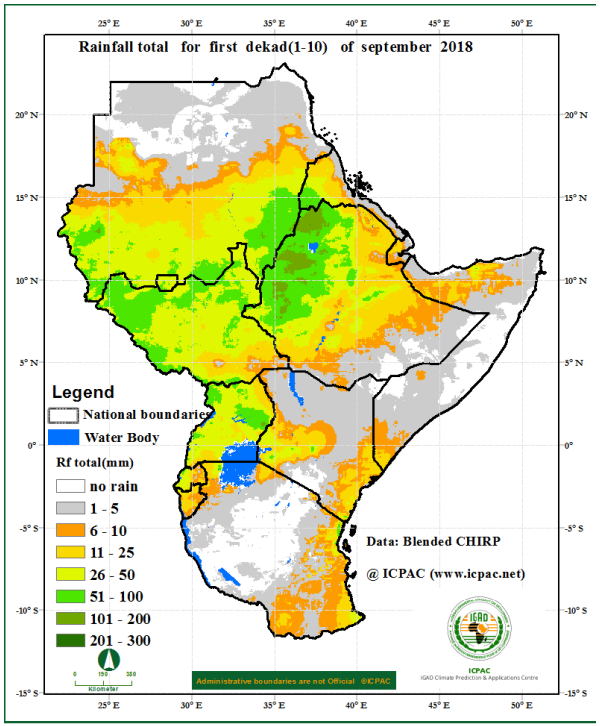

Figure 1a: Total rainfall distribution during the first dekad (01-10) of September 2018. *(Data: ICPAC Blended CHIRP)*

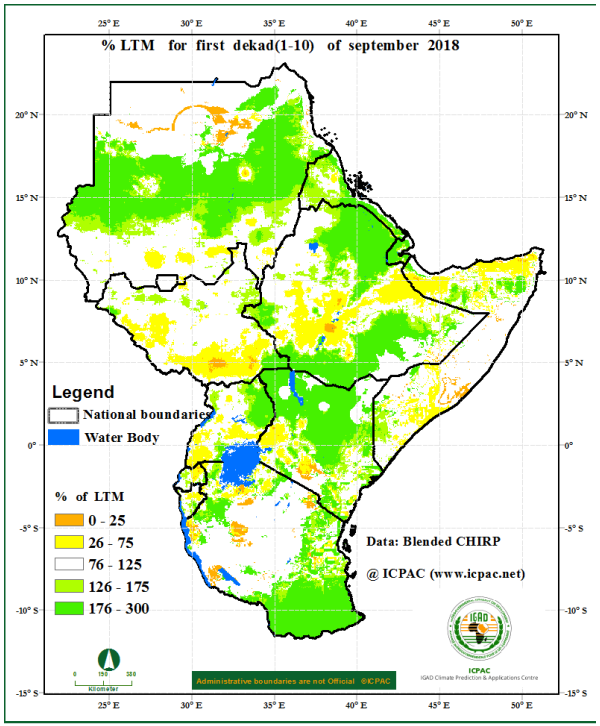

Figure 1b: Percent of long term average rainfall for the first dekad (01-10)of September 2018*(Data: ICPAC Blended CHIRP)*

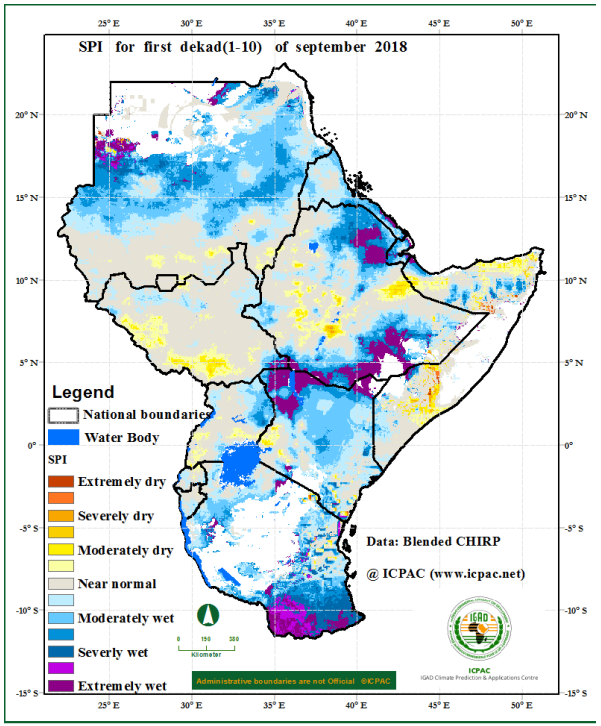

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of September 2018*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

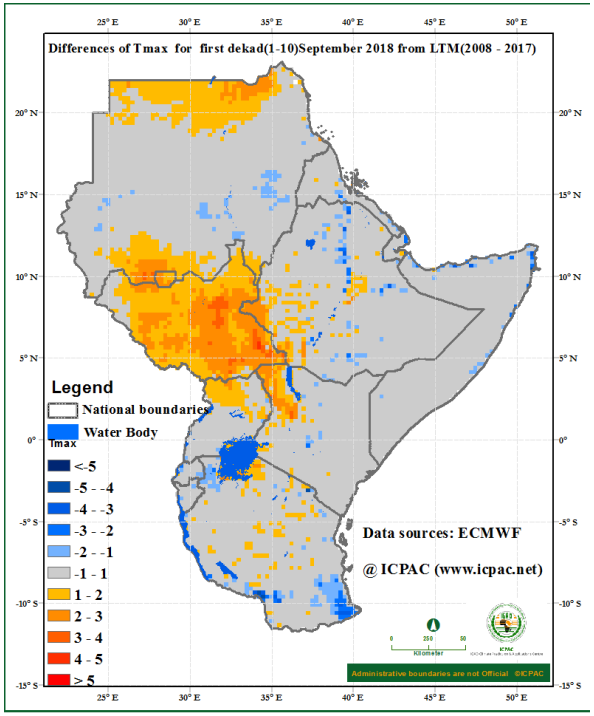

Figure 2: Maximum temperature difference from the average (2008-2017) for the first dekad (01-10) of September 2018*(Data Source: ECMWF)*

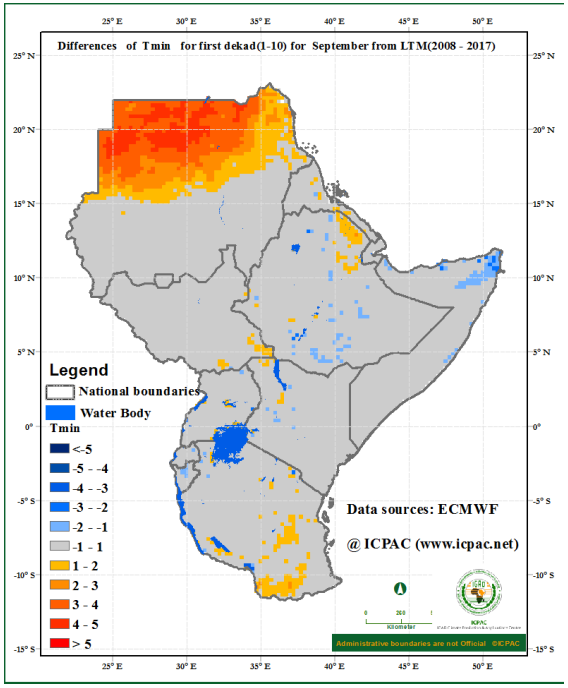

Figure 3:Minimum temperature difference from the average (2008-2017) for the first dekad (01-10) of September 2018 *(Data Source: ECMWF)*

During the first dekad of September 2018: northern and southern part of **Sudan**, much of **South Sudan**, in parts of northwest **Uganda**, and northwest Kenya maximum temperature warmer than the average condition was recorded.

Northern part of **Sudan,** and in a few places in northeastern **Ethiopia,** and southwest **Tanzania** experienced warmer than the 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 28th September and 4th September, 2018 (Figure 4) indicates that:

Sudan, and South Sudan: southern part of Sudan, and eastern part of South Sudan showed improved vegetation condition as compared with the long term average. Indications for deteriorated vegetative conditions was observed in southeastern parts of Sudan

Kenya and Tanzania: several parts of north, central and southern Kenya, and northwestern, north and eastern parts of Tanzania showed an improved vegetative condition as compared to the long term average.

Ethiopia, Somalia and Uganda: central and eastern parts of Ethiopia, southeastern Somalia, showed little improvement in vegetation conditions as compared with the average, however southwestern Uganda showed deteriorative vegetative conditions.

Much of the rest of the GHA, showed little or no change in vegetation conditions as compared with the long term average.

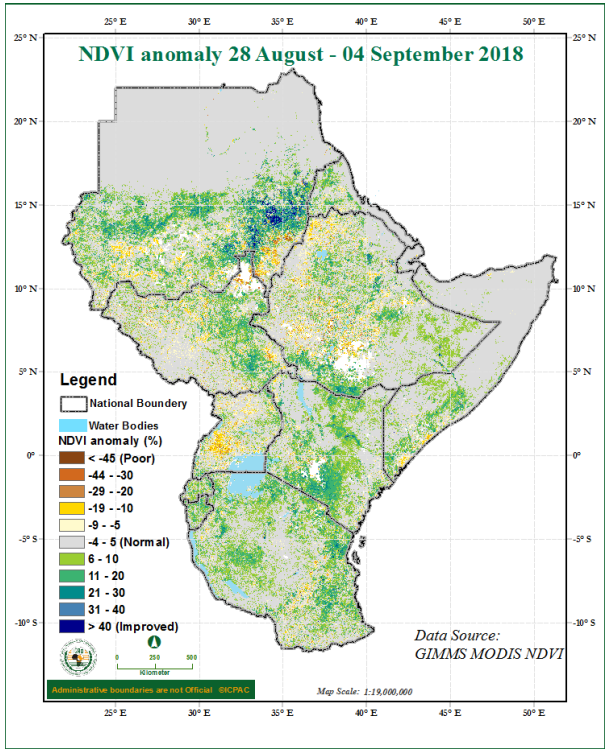

Figure 4: NDVI anomaly for the period between 4th and 11thSeptember 2018 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the third dekad of September 2018 in Figure 5 indicates that rainfall exceeding 10mm is likely to be observed over northern and western South Sudan, southern part of Sudan, Western, central and eastern Ethiopia, over much of Somalia, in southwestern and southern Uganda, north and western Rwanda, and western, central and coastal Kenya. Western and south-central Ethiopia, are likely to record high rainfall amounts exceeding 200mm.

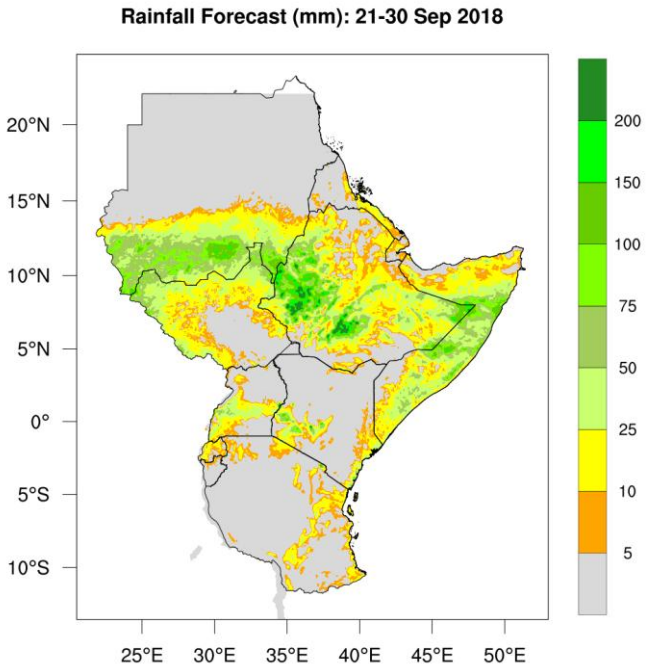

Figure 5: Precipitation forecast for the third dekad (21-30) of September 2018 (Source: WRFICPAC**)**

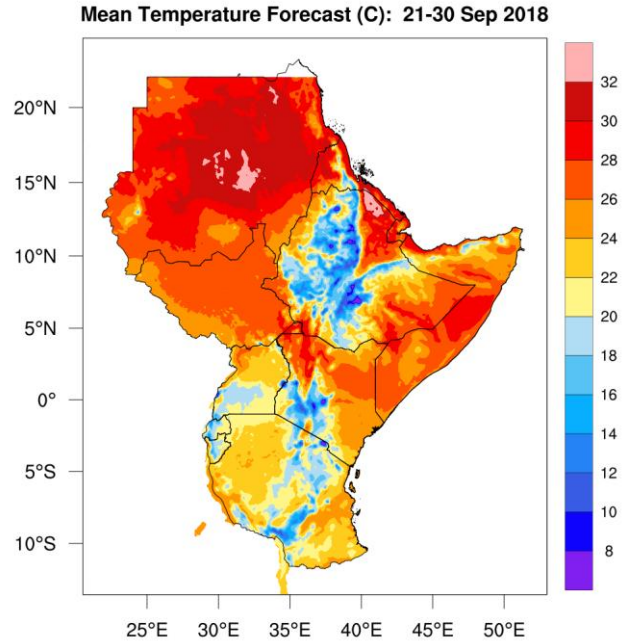

Figure 6: Forecast for average temperature for the third dekad (21-30) of September 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for third dekad of September 2018 (Figure 6) indicates that cooler mean temperature, not exceeding 20°C is expected in central and western highlands of Ethiopia, southwest Uganda, western and central Kenya, western Rwanda, western Burundi, and in parts of northeastern and southwestern 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.

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

Flooding was reported in some parts of Uganda during the first dekad of September 2018. From the climate forecast for the third dekad of September 2018, some areas in western and central Ethiopia are likely to record high rainfall amounts which can lead to possible localised flooding and related impacts. The southern part of the northern sector is likely to experienced continued good conditions for water and vegetative growth.

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

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