IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

ICPAC

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF OCTOBER 2018 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-31) OF OCTOBER 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of October 2018, and highlights the climate forecast for the third dekad (21-31) of October 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 October 2018 the western and south-central parts of the northern sector, as well as well as western and central parts of the equatorial sector of the GHA recorded rainfall. Some areas in east of the northern sector, northeast of the equatorial sector, and western part of the equatorial sector experienced normal to below normal rainfall.

Several parts of the equatorial sector, northern and southeastern part of the northern sector, and northern and eastern part of the equatorial sector recorded warmer than the average maximum temperature. Western and central parts of the northern sector, and southwestern part of Tanzania recorded cooler than the mean maximum temperature. Northern and southeastern part of the northern sector, central parts of equatorial sector, as well as eastern part of the southern sector of GHA recorded minimum temperature warmer than the mean. Western and southeastern part of the northern sector, and southern part of the southern sector recorded minimum temperatures cooler than the mean during the first dekad of October 2018.

Rainfall forecast for the third dekad of October 2018 shows that rainfall is expected over several areas in the southern part of the northern sector, western, central and eastern Equatorial sector as well as eastern parts of th southern sector of the GHA. Southern part of Somalia, western and central parts of Kenya and southern Uganda are likely to record high rainfall amounts, which might lead to flooding.

Several parts of the GHA are likely to record mean temperature exceeding 20^{o}C during the third dekad of October 2018 except for western and central Ethiopia, southwestern Uganda, parts of Rwanda, Burundi and in western and central highlands of Kenya.which are forecasted to experience mean temperatures below 20^{o}C.

3.0 Observed rainfall during the first dekad (01-10) of October 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 northwestern, central and coastal part of equatorial sector of the GHA.

Sudan, South Sudan, Uganda, Rwanda and Burundi:

Several parts of South Sudan, Uganda, Rwanda, Burundi and southern part of Sudan recorded rainfall of between 10mm and 50mm, while south-central Sudan, western South Sudan and northwestern Uganda recording between 50mm and 100mm of rainfall. Most of these areas recorded near normal rainfall conditions except for a few areas in southwest Uganda and southeast of Sudan which recorded below normal rainfall..

Ethiopia and Somalia: Western and southern Ethiopia mainly recorded rainfall of between 10mm and 50mm. Eastern Ethiopia, and central and southern parts of Somalia recorded between 5mm and 25mm of rainfall. Most of these areas recorded near normal or below normal rainfall condition.

Kenya and Tanzania: Western and central Kenya and northwest Tanzania recorded rainfall of between 5mm and 100mm. most of these areas experienced near normal conditions..

Much of the rest of the GHA received little or no rainfall and remained generally dry.

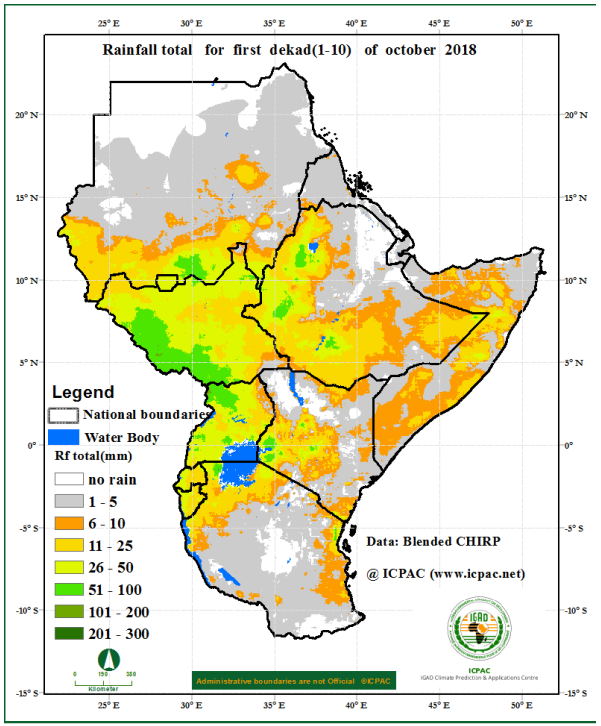

Figure 1a: Total rainfall distribution during the first dekad (01-10) of October 2018. *(Data: ICPAC Blended CHIRP)*

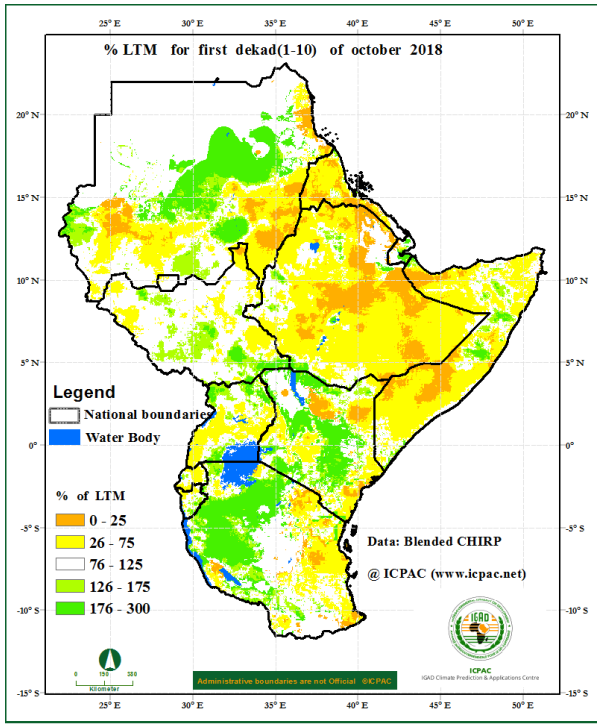

Figure 1b: Percent of long term average rainfall for the first dekad (01-10) of October 2018*(Data: ICPAC Blended CHIRP)*

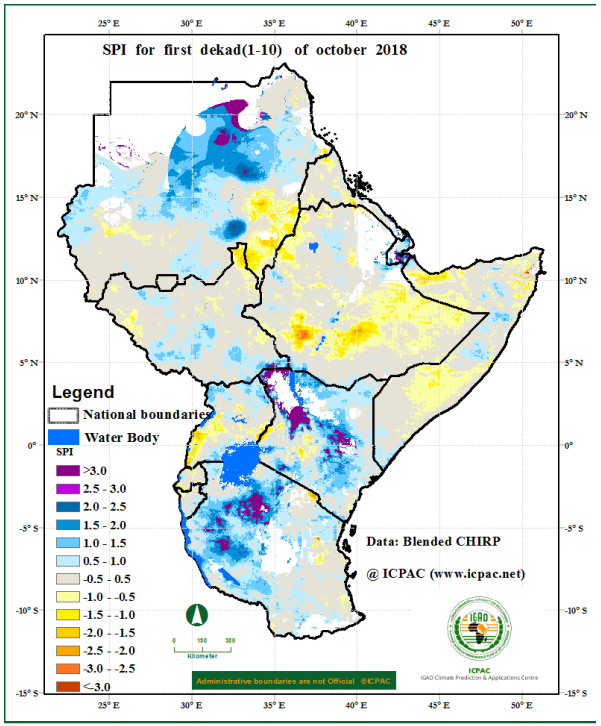

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of October 2018*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

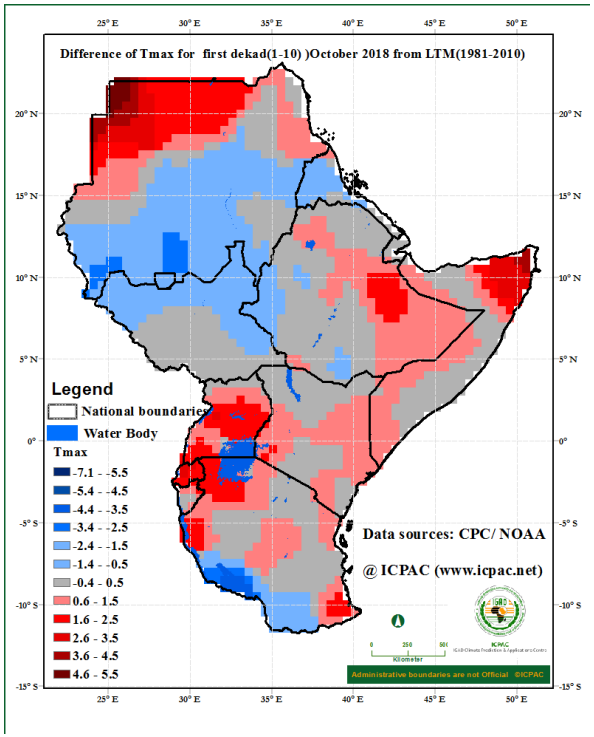

Figure 2: Maximum temperature difference from the average (2008-2017) for the first dekad (01-10) of October 2018*(Data Source: provided by the NOAA/OAR/ESRL PSD)*

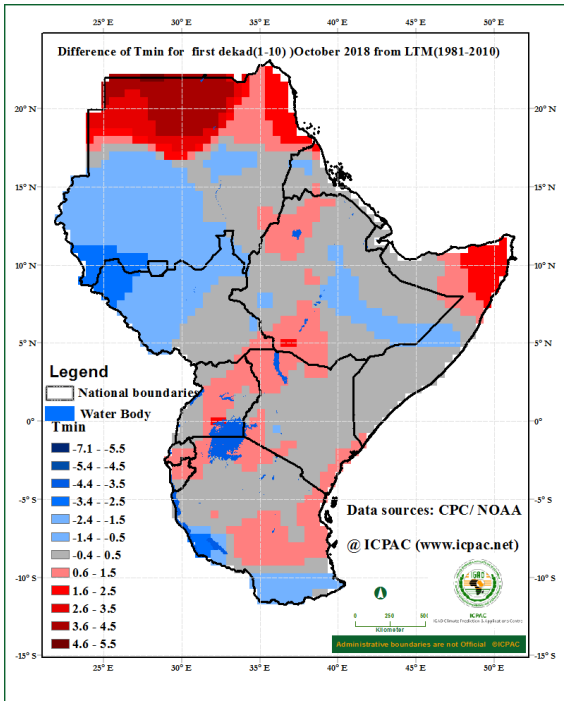

Figure 3:Minimum temperature difference from the average (2008-2017) for the first dekad (01-10) of October 2018 *(Data Source: provided by the NOAA/OAR/ESRL PSD)*

The maximum and minimum temperature during the first dekad of October 2018 shows northern part of **Sudan**, eastern **Ethipia**, northeastern and southern **Somalia**, several parts of **Uganda** and **Rwanda**, western and eastern **Kenya**, as well as north, central and eastern **Tanzania** recoded maximum temperatures warmer than the mean. Southern part of **Sudan** extending to northern **South Sudan**, **western Eritrea**, and southwestern **Tanzania** recorded cooler than the mean conditions for maximum temperature.

Warmer than the mean Minimum temperature was recorded in areas south of Sudan extending to northern part of South Sudan, southeastern Ethiopia, and southwest and southern Tanzania. Northern Sudan, northwest and southwest Ethiopia, northeastern Somali, northwestern, west and coastal Kenya, northeast and central Uganda, much of Rwanda, northern Burundi, and eastern Tanzania experienced warmer than the mean 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 29th September to 4thOctober, 2018 (Figure 4) indicates that:

Sudan, South Sudan, Ethiopia, and Somalia: southern part of Sudan, eastern South Sudan southern Ethiopia and southern part of Somalia showed improved vegetation condition as compared with the long term average. Some areas in southeastern Sudan, southern South Sudan and central Ethiopia showed deterioration in vegetative conditions as compared to the long term average.

Kenya and Tanzania: several parts of north, central and southern Kenya, and western and eastern parts of Tanzania showed an improved vegetative conditions as compared to the long term average. A few places in western Kenya showed deterioration in vegetative conditions.

Uganda: northeast and southern part of Uganda recorded deterioration in vegetative conditions.

Much of the rest of the GHA, especially northern Sudan, Eritrea, Djibouti, northern Somalia, western South Sudan, Rwanda and Burundi, showed little or no change in vegetation conditions.

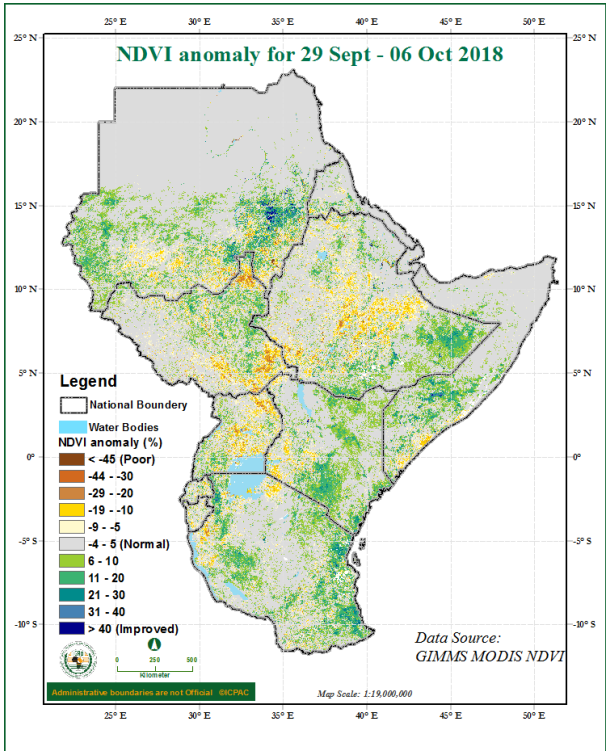

Figure 4: NDVI anomaly for the period between 29th September and 04th October 2018 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the third dekad of October 2018 in Figure 5 indicates that rainfall exceeding 25mm is likely to be observed over South Sudan, southern part of Sudan, western Eritrea, western and southern Ethiopia, several parts of Uganda, western and eastern Kenya, southern Somalia, Rwanda, Burundi, and northwestern and eastern Tanzania. Southern part of Somalia is forecasted to record high rainfall amounts exceeding 200mm.

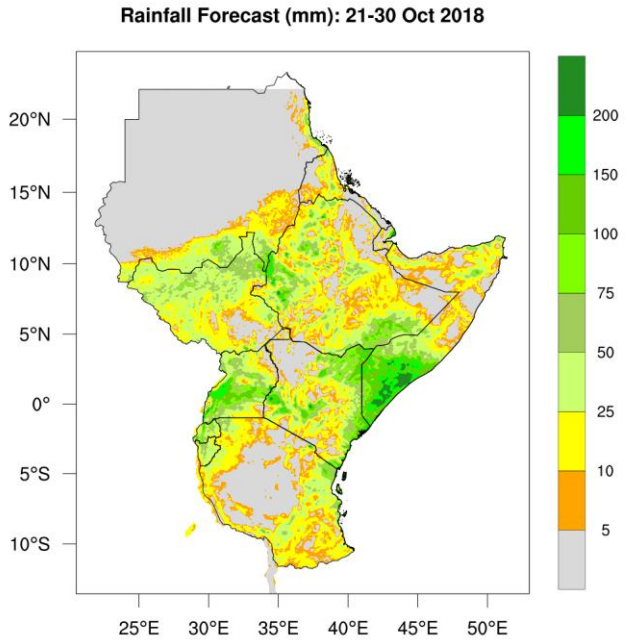

Figure 5: Precipitation forecast for the third dekad (21-31) of October 2018 (Source: WRFICPAC**)**

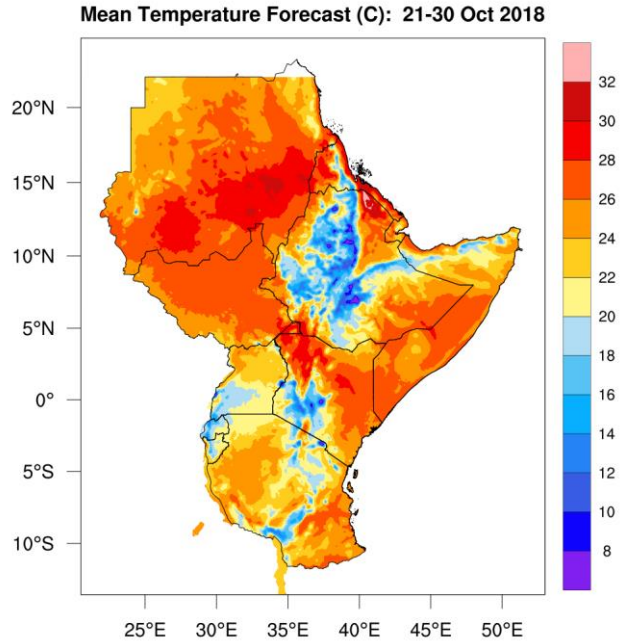

Figure 6: Forecast for average temperature for the third dekad (21-31) of October 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for third dekad of October 2018 (Figure 6) indicates that much of the GHA is lgoing to record warmer temperature exceeding 20^{o}C except for central and western highlands of Ethiopia, southwestern Uganda, western and central Kenya, much of Rwanda, western Burundi, and central and southwestern Tanzania.

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

From the climate forecast for the third dekad of October 2018, some areas of southern Somalia is 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 October to December (OND) 2018 climate outlook (*http://www.icpac.net/wp-content/uploads/GHACOF50_statement_english.pdf*).*

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