IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

ICPAC

Bulletin for Dekad 34 of 2018
Issue Number: ICPAC/02/970

10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-30) OF NOVEMBER 2018 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11-20) OF DECEMBER 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-30) of November 2018, and highlights the climate forecast for the second dekad (11-20) of December 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 for rainfall and temperature.

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 third dekad of November 2018 rainfall was mainly recorded over several parts of the southern sector, and southern and eastern part of the equatorial sector of the GHA. Most of the rainfall recorded translated into near normal or above normal in the southern sector however western, central and eastern parts of the equatorial sector as well as eastern part of the southern sector of the GHA recorded below normal conditions.

Several parts of the GHA recorded maximum and minimum temperature that was warmer than the long-term mean. However Southwestern and southeastern part of the northern sector extending to northeastern part of the equatorial sector of the GHA, and also in northern part of the southern sector recorded maximum temperature cooler than the mean. Western and several parts east of the northern sector of the GHA recorded minimum temperature that was cooler then the mean.

Rainfall forecast for the second dekad of December 2018 shows that rainfall is expected over several parts of the southern sector, over southern part of the equatorial sector as well as northeast and central part of the equatorial sector of the GHA.

Regions covering, much of Sudan, Rwanda, Burundi, western and central highlands of Ethiopia, central and western highlands of Kenya, and southwest part of Uganda, 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 third dekad (21-30) of November 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.

Rainfall Distribution and Severity

Rainfall was concentrated over much of the southern sector and southern and eastern part of the equatorial sector of the GHA during the third dekad of November 2018.

Ethiopia, Uganda, Kenya and Somalia: southwest and southern parts of Ethiopia, northwest and southern Uganda, southern Somalia, and over several parts of Kenya except for much of the northwestern and north-central parts recorded rainfall of between 10mm and 50mm. central parts of Kenya recorded rainfall of between 50mm and 100mm. Below normal rainfall was recorded in southwestern Ethiopia, central and southeastern Somalia, over much of Uganda, and in western, central and eastern parts of Kenya. Much of the rest of these areas recorded near normal rainfall.

Rwanda, Burundi and Tanzania: Easter and southern part of Tanzania recorded rainfall not exceeding 25mm. much of the rest of these areas recorded rainfall of between 25mm and 100mm, some western part of Tanzania recorded rainfall exceeding 100mm. Below normal rainfall was recorded in southwestern Burundi, and in eastern and southeastern Tanzania. Eastern Rwanda, Eastern Burundi and northern and western parts of Tanzania recorded above normal rainfall. Much of the rest of these areas recorded near normal rainfall.

Sudan and Eritrea: western Sudan, and northwestern coast of Eritrea recorded between 5mm and 25mm of rainfall. Western Sudan and northwestern coast of Eritrea recorded above normal rainfall. Much of the rest of these areas recorded near normal rainfall.

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

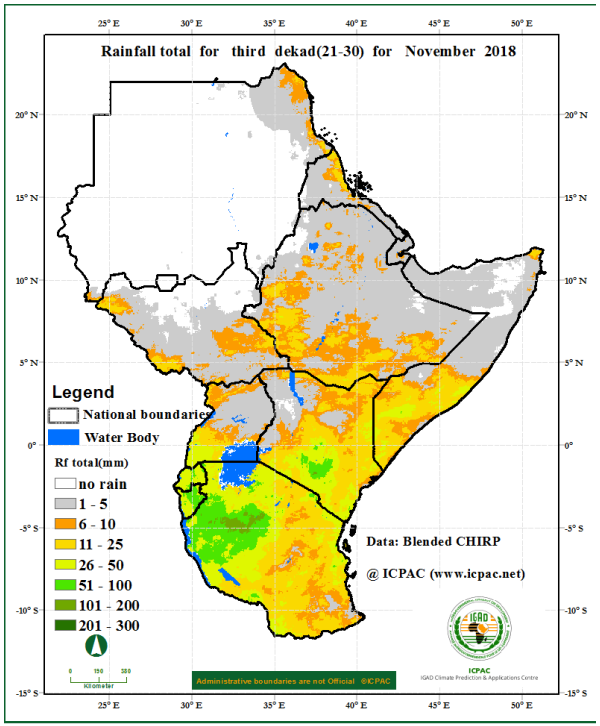

Figure 1a: Total rainfall distribution during the third dekad (21-30) of November 2018. *(Data: ICPAC Blended CHIRP)*

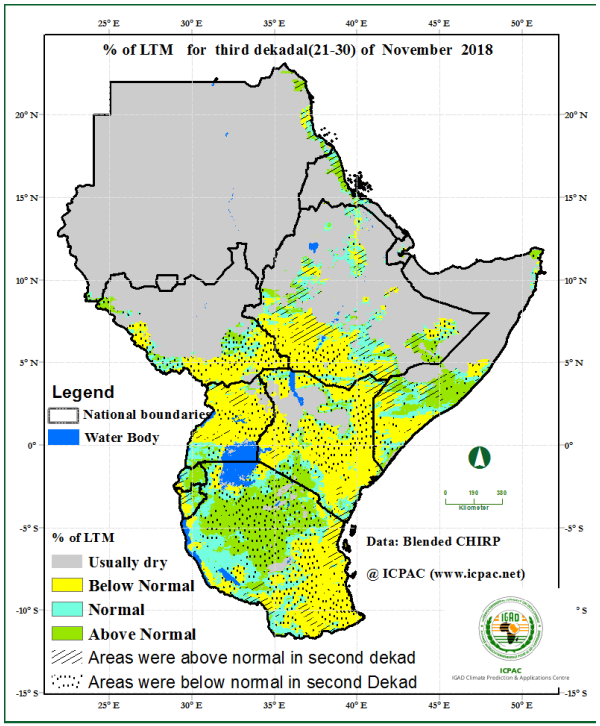

Figure 1b: Percent of long term average rainfall for the third dekad (21-30)of November 2018*(Data: ICPAC Blended CHIRP)*

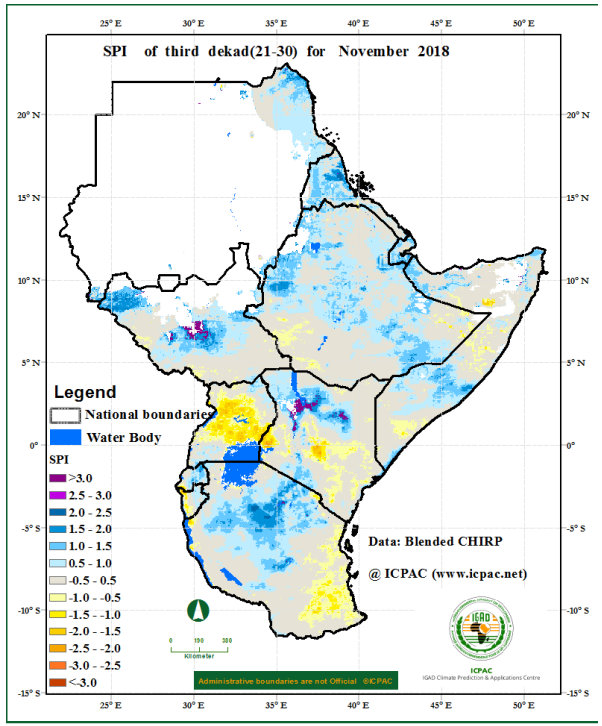

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-30) of November 2018*(Data: ICPAC Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

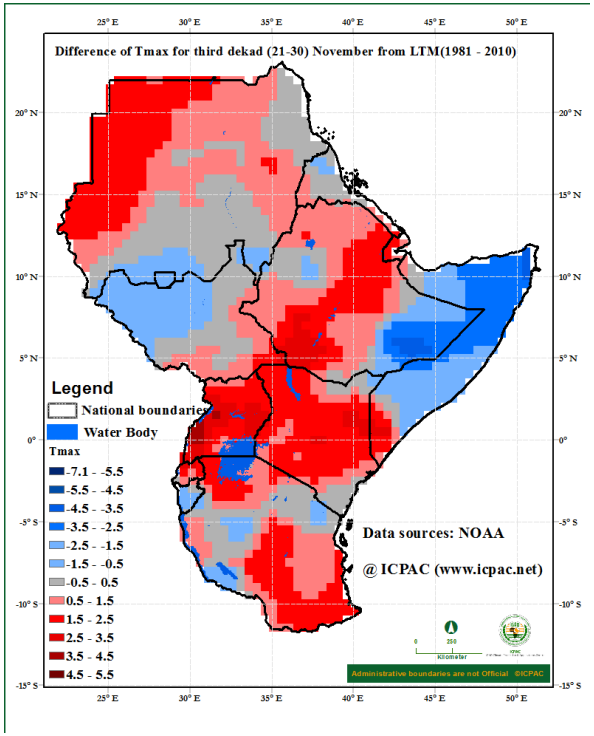

Figure 2: Maximum temperature difference from the average (2008-2017) for the third dekad (21-30) of November 2018(*Data Source: provided by the NOAA/OAR/ESRL PSD*)

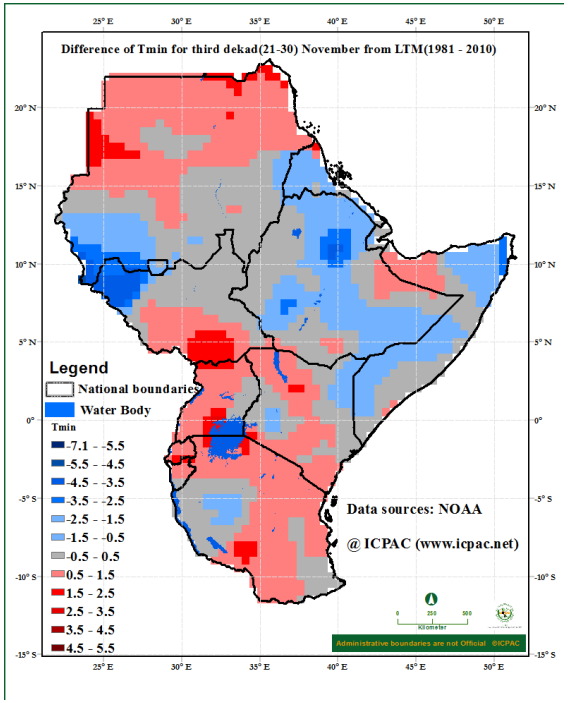

Figure 3:Minimum temperature difference from the average (2008-2017) for the third dekad (21-30) of November 2018 *(Data Source: Data Source: provided by the NOAA/OAR/ESRL PSD)*

The maximum and minimum temperature during the third dekad of November 2018 shows that southwest Sudan extending to northeastern South Sudan, eastern Ethiopia extending to much of north and central Somalia, over much of Burundi, and in northern and western Tanzania maximum temperature cooler than the long-term mean was recorded.

Minimum temperature cooler than the long-term mean was recorded in areas in southwest of Sudan extending to northwest of South Sudan, in western Eritrea, several parts of Ethiopia, in northeastern and southwestern Somalia, western Kenya, and western part of Tanzania.

Much of the rest of the GHA recorded minimum and maximum temperature that was warmer than or near the long-term mean

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 24th November and 1st December, 2018 (Figure 4) indicates that:

South Sudan, Kenya, and Somalia: Indications for deteriorated vegetative conditions was observed over much of South Sudan, Kenya, and central and southeastern parts of Somalia. Some areas of northeastern South Sudan, northeastern and coastal Kenya, and southwest Somalia showed improved vegetation condition as compared with the long term average.

Uganda, Ethiopia, and Tanzania: southern parts of Ethiopia, eastern Uganda, and northern Tanzania showed indications of deteriorated vegetative condition as compared to the long term average. Several parts of north and central Ethiopia, adn western and north eastern Tanzania showed indications of improved vegetative conditions as compared with the long term average.

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

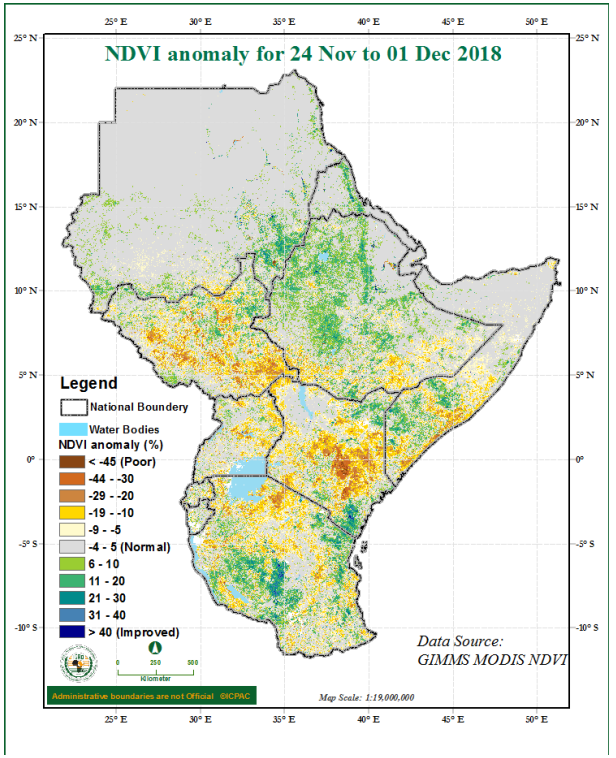

Figure 4: NDVI anomaly for the period between 24th November and 1st December 2018 (Data Source: USGS NASA**)**

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the second dekad of December 2018 in Figure 5 indicates that rainfall exceeding 25mm is likely to be observed over, eastern Sudan, southwestern Ethiopia, southern Somalia, eastern and southern Uganda, western, southern and southeastern Kenya, Rwanda, Burundi, and Tanzania. Some areas in southern Tanzania and southern Burundi are expected to record rainfall amounts exceeding 200mm.

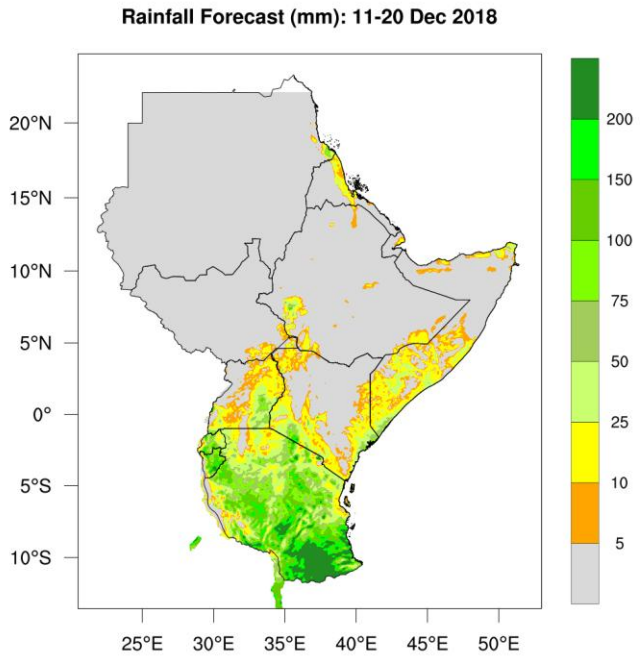

Figure 5: Precipitation forecast for the second dekad (11-20) of December 2018 (Source: WRF-ICPAC**)**

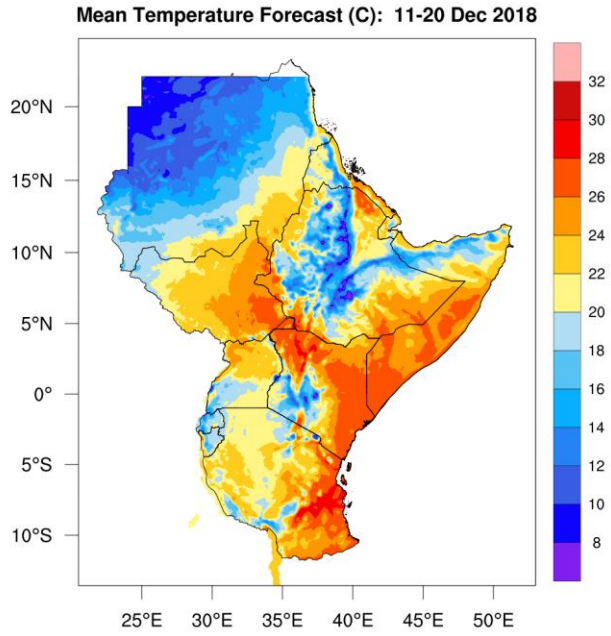

Figure 6: Forecast for average temperature for the second dekad (11-20) of December 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the mean temperature for second dekad of December 2018 (Figure 6) indicates that cooler mean temperature, not exceeding 20^{o}C is expected in much of Sudan, western Eritrea, western and central highlands of Ethiopia, southwestern Uganda, western and central Kenya, over much of Rwanda, and Burundi The rest of the GHA is expected to experience mean temperature greater than 20^{o}C.

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 southern sector, and southern part of the equatorial sector of the GHA resulted to improvement in water and pasture conditions, leading to good prospects of water, crop and livestock performance during the third dekad of November 2018 . From the climate forecast for the second dekad of November 2018, some areas of southern Burundi and southern Tanzania 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 October to December (OND) 2018 climate outlook.*

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