IGAD
CLIMATE
PREDICTION AND
APPLICATIONS
CENTRE

ICPAC

Bulletin for Dekad 10 of 2018
Issue Number: ICPAC/02/946

10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-31) OF MARCH 2018 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11-20) OF APRIL 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-31) of March 2018, and highlights the climate forecast for the second dekad (11-20) of April 2018 and the associated climate impacts over the Greater Horn of Africa (GHA). The observed and forecasted 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 -5º and 5º 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 is concentrated over the equatorial sector and the southern sector, as well as in a few areas in the southern parts of the northern sector of the Greater Horn of Africa (GHA). These include Tanzania, Burundi, Rwanda, Uganda, Kenya, southern Somalia, southern parts of South Sudan, and southwestern Ethiopia. The western and central parts of the equatorial sector and over much of the southern sector of the GHA experienced below average to near average rainfall. Southwestern parts of the northern sector, and northeastern part of the equatorial sector experienced near the average rainfall during the third dekad of March 2018.

Warmer than the average conditions for the maximum temperature was recorded in northern parts of the northern sector of the GHA. Areas in central and southern Ethiopia, northern central and western Kenya, and northeastern Tanzania recorded cooler than the average maximum temperature. The northern parts of the northern sector of the GHA recorded warmer than the average for minimum temperatures. A few areas in central Ethiopia, northern Somalia, northwestern and central Kenya, northern Uganda, and northeastern Tanzania recording conditions cooler than the average for maximum temperature. Much of the rest of the GHA recorded normal minimum and maximum temperature

Rainfall forecast for the second dekad of April 2018 shows that rainfall is likely to be concentrated in several parts of the equatorial sector, the southern sector and the southern part of the northern sector of the GHA. This includes Uganda, Kenya, Burundi, Rwanda, southern and central Somalia and Tanzania, as well as eastern and southern part of the southern sector are likely to record high rainfall amounts. The rest of the GHA is likely to remain generally dry or record less than 5mm of rainfall.

Much of GHA is likely to record temperature exceeding 20°C during the third dekad of March 2018. However, regions over the Ethiopian highlands, central and western highlands of Kenya, southern Uganda, in Rwanda, Burundi, and North-central and southwestern parts of Tanzania are forecasted to record average temperatures below 20°C.

3.0 Observed rainfall situation during the Third dekad (21-31) of March 2018

Figure 1a shows the distribution of total rainfall, Figure 1b shows the percent of the long term average rainfall, and Figure 1c shows the standardized precipitation index (SPI). SPI indicates whether the observed rainfall is below the or above the climatological average and to which degree.

Rainfall Distribution and Severity

The third dekad of March 2018 rainfall was in several parts of the equatorial sector, southern sector and southern parts of the northern sector of the GHA. High rainfall amounts exceeding 50 mm were recorded in southwestern Ethiopia, southwestern and eastern Kenya, Rwanda, Burundi, northwest and southern Tanzania.

South Sudan, Ethiopia, Somalia, and Kenya:

Several parts of South Sudan except for the northern and south-central parts; much of Kenya except for northwestern part; western and southern parts of Ethiopia; and southern and central Somalia recorded between 6 and 50mm. Some areas in western Ethiopia, western South Sudan, eastern and southwestern Kenya, and southern Somalia recorded between 50mm and 100mm of rainfall. Northern part of South Sudan, western and southeastern parts of Ethiopia, parts of central and southern Somalia, and eastern and northeastern parts of Kenya experienced moderately wet to severely wet rainfall condition exceeding the average rainfall for the third dekad of March, much of the rest of these areas recorded below average to near average rainfall performance. Part of southern South Sudan, southwest of Ethiopia, and much of western and southern Kenya experienced reduced rainfall performance as compared with the previous dekad. Some areas in northern South Sudan, southeast of Ethiopia, and central Somalia experienced improvement in rainfall performance as compared with the previous dekad.

Eritrea, Djibouti, Uganda, Rwanda, Burundi and Tanzania:

Several parts of Rwanda, Burundi, northwest and southern Tanzania recorded rainfall of between 50 mm and 100 mm, Much of Uganda except for the northeast part, and in several parts of north, central and east Tanzania recorded rainfall of between 6mm to 50mm. Much of the rest of these areas recorded less than 5mm of rainfall. Most of these areas recorded near normal to below normal rainfall conditions. Central Eritrea, northern Uganda eastern Tanzania experienced moderately dry to severely dry conditions. Much of Uganda, Rwanda and Tanzania showed reduction in rainfall performance as compared with the previous dekad.

Much of the rest of GHA recorded little or no rainfall and experienced generally dry conditions, these areas usually experience near normal or generally dry conditions during this time of the year.

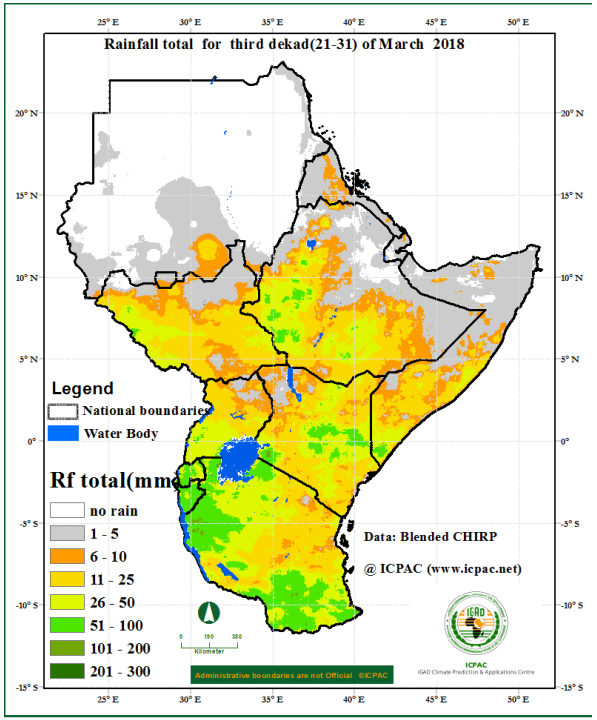

Figure 1a: Rainfall distribution during the third dekad (21-31) of March 2018. *(Data: Blended CHIRP)*

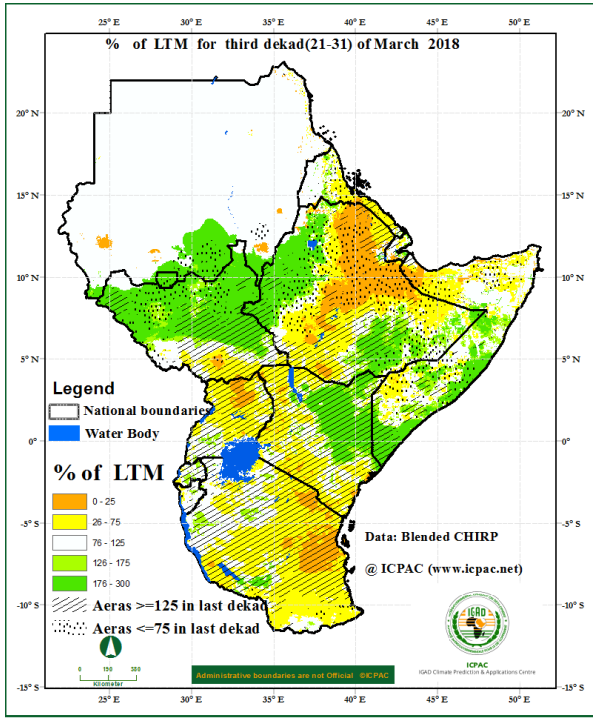

Figure 1b: Percent of long term average rainfall for the third dekad (21-31) of March 2018 *(Data: Blended CHIRP)*

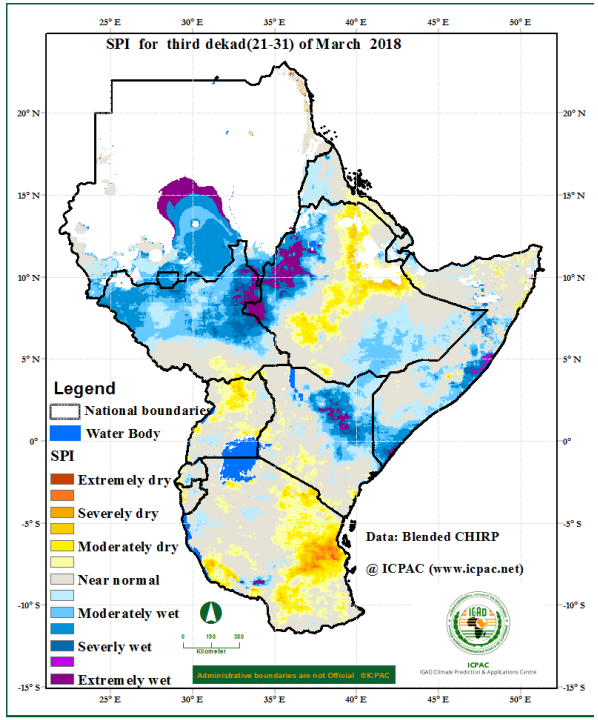

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-31) of March 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

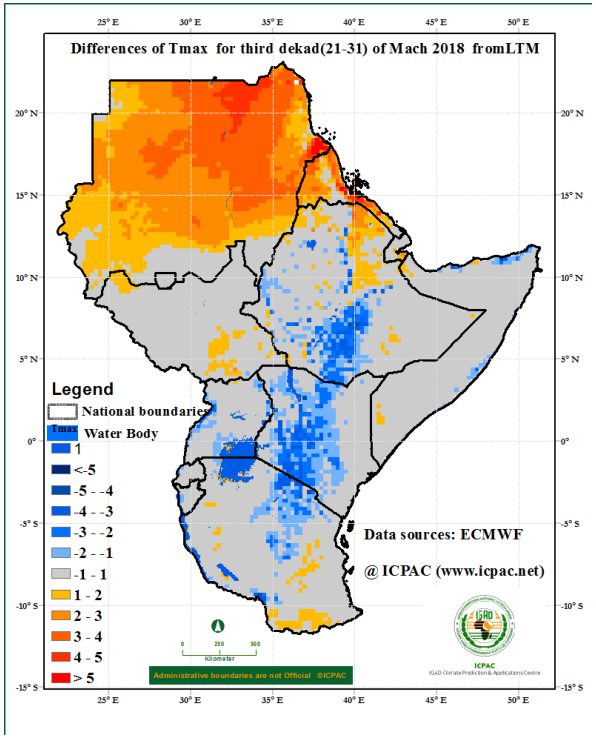

Figure 2: Maximum temperature difference from the average (2008-2017) for the third dekad (21-31) of March 2018*(Data Source: ECMWF)*

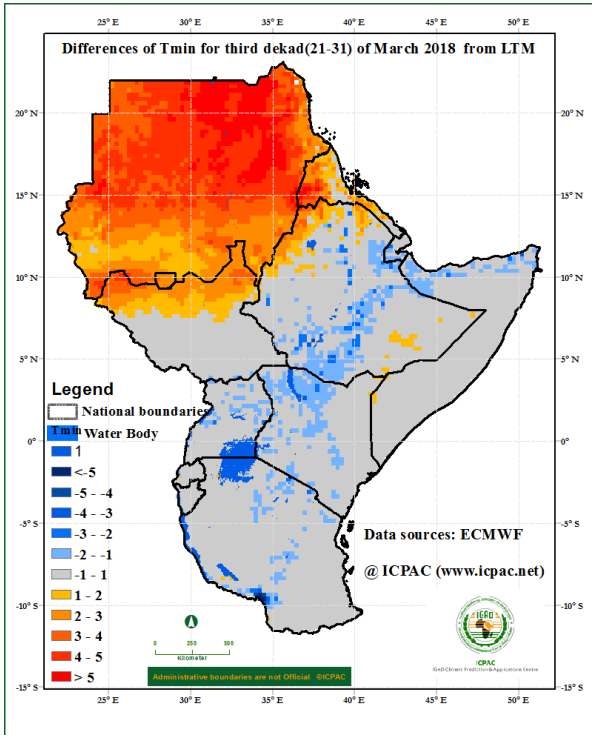

Figure 3:Minimum temperature difference from the average (2008-2017) for the third dekad (21-31) of March 2018*((Data Source: ECMWF)*

The maximum temperature during the third dekad of March 2018 shows that:

Sudan, Eritrea: Much of Sudan, and western, coastal and southern Eritrea were warmer than the average.

Ethiopia, South Sudan, Kenya, Uganda and Tanzania: maximum temperature cooler than the average was recorded in southern and central parts of Ethiopia, western and south-central Uganda, over much of central Kenya, and in northern part of Tanzania. A few places in north of Ethiopia, south-central South Sudan, southwestern Uganda, and western and southern Tanzania reported maximum temperatures cooler than the average.

A similar pattern is also replicated for the minimum temperatures over most places.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 29th March to 4th April 2018 (Figure 4) indicates that:

South Sudan, Ethiopia Uganda, and Kenya: Much of these areas showed improvement in vegetation condition as compared to the long term average. Except for northern part South Sudan, the northern and eastern Ethiopia, and southwestern Uganda which recorded little or no change in vegetation conditions as compared with the long term average.

Rwanda, Burundi and Tanzania: western part of Rwanda, northern and central parts of Tanzania showed improvement in vegetation conditions as compared with the long term average.

Much of the rest of the GHA showed little or no change in vegetation conditions compared to the long-term average for the same period.

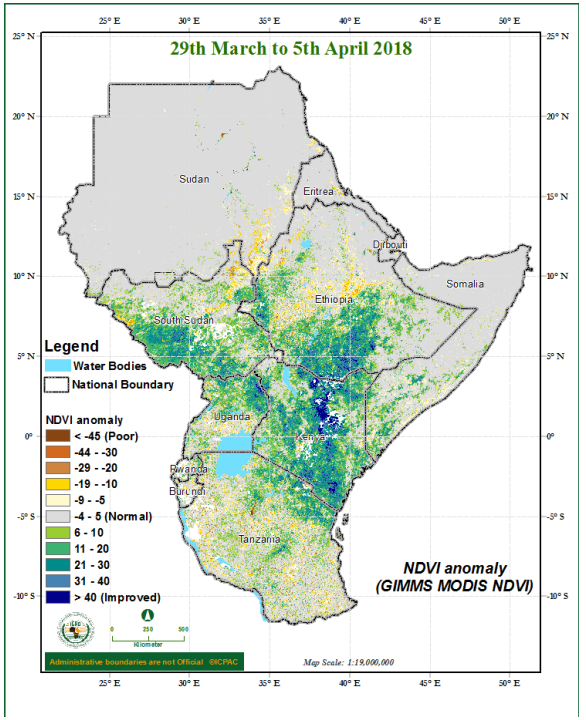

Figure 4: NDVI anomaly for the period between 29th March and 5th April 2018 (Data Source: USGS NASA)

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the second dekad of April 2018 in Figure 5 indicates that rainfall is likely to be concentrated over much of Tanzania, Rwanda, Burundi, Uganda, Kenya, southern and central Somalia, southern south

Sudan, and southern and central Ethiopia. Some areas in western and central Kenya, southern and central Somalia, western and southeastern Uganda, Rwanda, Burundi, and northwestern central and eastern Tanzania are likely to record high rainfall amounts. The rest of the GHA region including Sudan, Eritrea, Djibouti, northern and northeastern Ethiopia, as well as northern Somalia are likely to experience little amount of rainfall (less than 5 mm) or remain generally dry during the second dekad of April 2018.

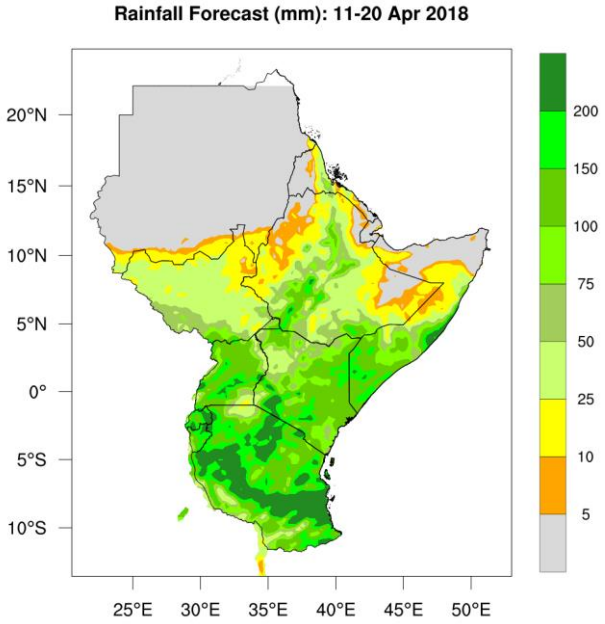

Figure 5: Precipitation forecast for the second dekad (11-20) of April 2018 (Source: WRF ICPAC**)**

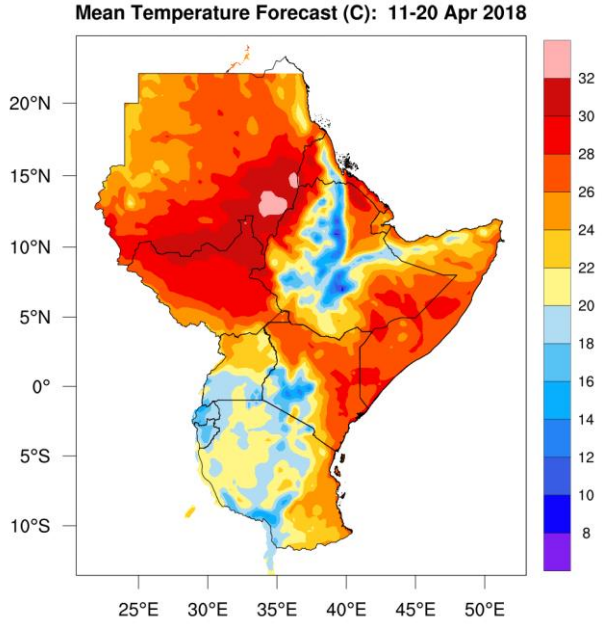

Figure 6: Forecast for average temperature for the second dekad (11-20) of April 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the average temperature for second dekad of April 2018 (Figure 6) indicates much of the GHA will record temperatures exceeding 20°C except for the central highlands of Ethiopia, central and western highlands of Kenya, southern part of Uganda, over much of Rwanda, Burundi, and in southwestern and central part of Tanzania which is likely to record average temperature less than 20°C. The warmest regions is likely to be in southern part of Sudan and northern part of South Sudan, over much of South Sudan, western and southern Eritrea, southeast of Ethiopia, north and eastern Kenya, and southern and central parts of Somalia.

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 climate conditions in much of the equatorial and southern sector of the GHA resulted to improvement in water and pasture conditions, leading to prospects of good water, crop and livestock conditions. Some areas in the equatorial sector reported flooding that led to the disruption of livelihoods, and incidences of weather related diseases and cholera were reported. From the climate forecast for the second dekad of April 2018, several parts of Tanzania Burundi, Rwanda, southern and western Uganda, western, central and eastern Kenya as well as southern and central parts of Somalia are likely to record high rainfall amounts which may lead to possible localised flooding.

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 *).*

For more information contact
ICPAC P.O. Box 10304, 00100 Nairobi, KENYA;
Tel: +254-020-3514426
E-mail: director@icpac.net

Website: www.icpac.net