IGAD
CLIMATE
PREDICTION AND
APPLICATIONS
CENTRE

ICPAC

Bulletin for Dekad 03 of 2018
Issue Number: ICPAC/02/939

10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE SECOND DEKAD (11-20) OF JANUARY 2018 TOGETHER WITH FORECAST FOR THE FIRST DEKAD (01- 10) OF FEBRUARY 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (11-20) of January 2018, and highlights the climate forecast for the first dekad (1-10) of February 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 -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

The observed rainfall activity is concentrated over much of Tanzania, Burundi, Rwanda, southern Uganda, and western parts of Kenya. Large parts of the equatorial sector of the Greater Horn of Africa (GHA) experienced low rainfall conditions. Much of the southern sector of the GHA including Tanzania, Rwanda, and Burundi recorded enhanced rainfall conditions.

South-central and southwestern parts of the northern sector as well as parts of western and south eastern equatorials sector of the GHA recorded warmer than the average conditions for maximum temperatures. Cooler than the average conditions for maximum temperature was recorded over western parts of Sudan, southeastern parts of northern sector of the GHA, as well as in eastern and southern parts of the southern sector of the GHA during the second dekad of January 2018. Much of the rest of the GHA recording near the average conditions for maximum temperature.

The southeastern and western part of the northern sector of the GHA recorded cooler than the average conditions for the minimum temperature. Much of the rest of the GHA recorded near the average for the minimum temperature conditions, except for some areas in eastern Sudan, northeastern South Sudan, and southwestern Ethiopia which experienced warmer conditions than the average for minimum temperature.

Rainfall forecast for the first dekad of February 2018 shows that rainfall is likely to be concentrated in the southwestern and southern parts of the southern sector as well as in the southwestern part of the equatorial sector. The rest of the GHA is likely to remain generally dry or record small amount of rainfall.

Northern, eastern and southeastern parts of the northern sector, southwestern and central parts of the equatorial sector as well as western part of the southern sector are likely to record average temperatures below 20^{o}C. The rest of the GHA is likely to record average temperature exceeding 20^{o}C during the first dekad of February 2018.

3.0 Observed rainfall situation during the second dekad (11-20) of January 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. These metrics are generated from the blending of remotely sensed data (e.g. CHIRP) and observed station data across the region.

Rainfall Distribution and Severity

The second dekad of January 2018 rainfall was concentrated in the southern sector and southwestern parts of the equatorial sector of the GHA. Maximum range of total rainfall of 100 to 200 mm was recorded in southern and central Tanzania, western Burundi and in southwestern Rwanda.

Tanzania:

Much of the country recorded more than 50 mm of rainfall except for the northeastern parts. The southern parts recorded amounts between 100 and 200 mm. The rainfall was near average to above average over much of the country. The northeastern parts were drier compared to the previous dekad.

Burundi:

The country recorded more than 50mm of rainfall. The rainfall was above average over much of the country with moderately wet to severely wet conditions.

Rwanda:

Southwestern parts recorded rainfall exceeding 50 mm, much of the rest of the country recorded between 26 and 50 mm. The rainfall was above average with moderately wet to severely wet conditions.

Uganda, Kenya:

Southern parts of Uganda and western part of Kenya recorded between 6 and 50 mm of rainfall. Much of the rest of the areas recorded less than 5 mm of rainfall. Much of Kenya and northern Uganda experienced below average rainfall conditions except for the Lake Victoria Basin which recorded moderately wet to severely wet condition.

Ethiopia, South Sudan, and Somalia:

In southern part of South Sudan, several parts of Ethiopia, and northwestern and central Somalia rainfall was about and below 5 mm. Southern parts of South Sudan, much of north, central, western and southwestern Ethiopia, and southern part of Somalia recorded below average conditions. Moderately dry condition was recorded in north, central and southwestern Ethiopia, and part of southwestern South Sudan.

Much of the rest of the GHA including **Sudan**, **Eritrea**, and **Djibouti** recorded less than 5 mm of rainfall and experienced near the average rainfall, with near normal. These countries are generally dry during this time of the year.

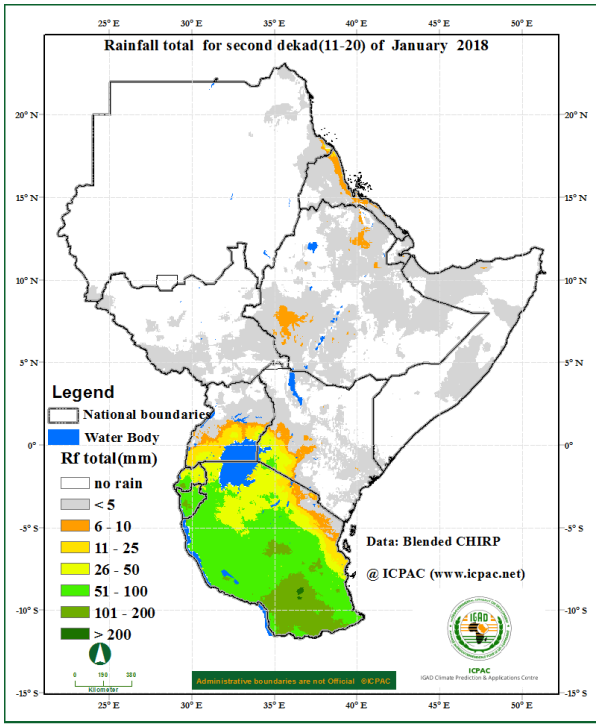

Figure 1a: Rainfall distribution during the second dekad (11-20) of January 2018. *(Data: Blended CHIRP)*

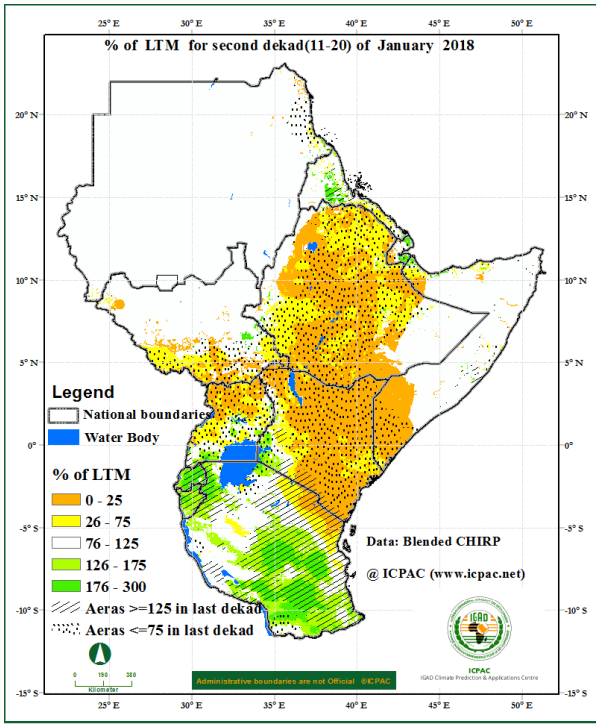

Figure 1b: Percent of long term average rainfall for the second dekad (11-20) of January 2018 *(Data: Blended CHIRP)*

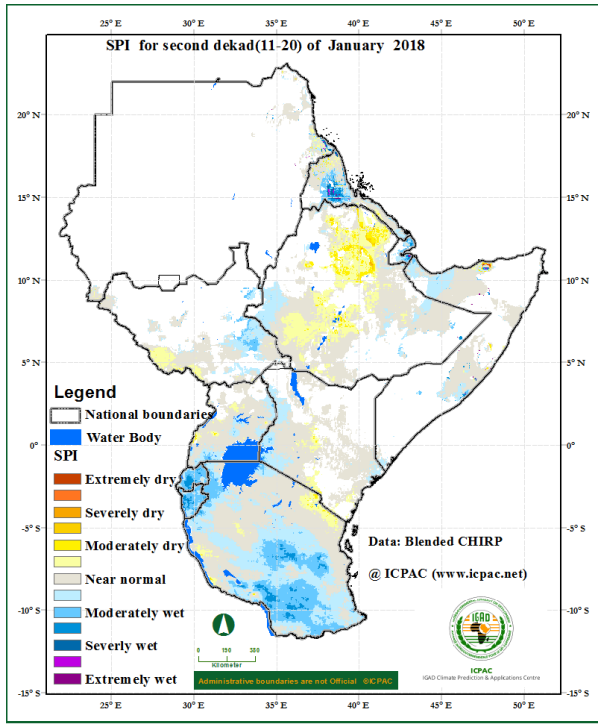

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of January 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

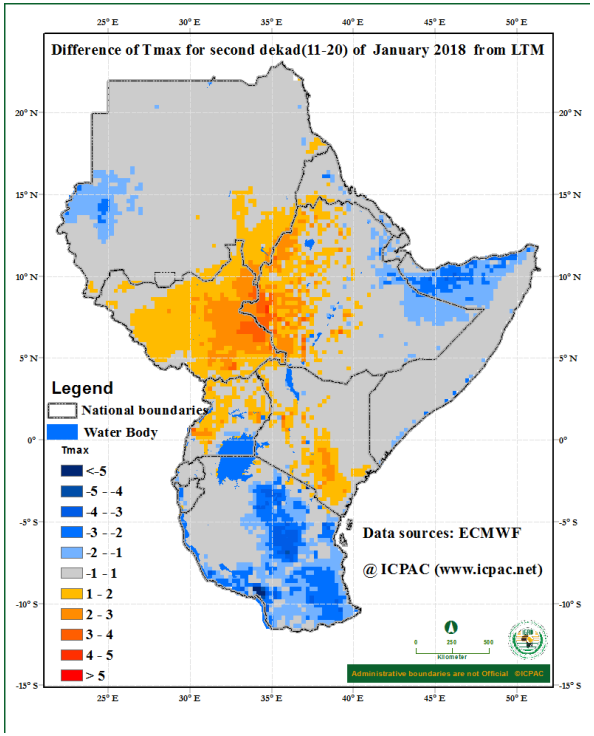

Figure 2: Maximum temperature difference from the average (2008-2017) for the second dekad (11-20) of January 2018*(Data Source: ECMWF)*

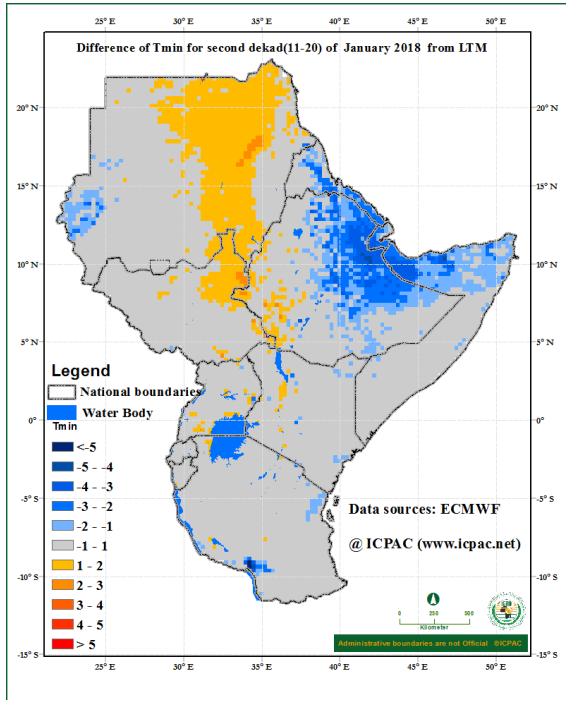

Figure 3:Minimum temperature difference from the average (2008-2017) for the second dekad (11-20) of January 2018*((Data Source: ECMWF)*

The maximum temperature condition during the second dekad of January 2018 shows that:

Tanzania, Somalia, and Sudan: northern parts of Somalia, north, east and south of Tanzania, as well as western part of South Sudan experienced cooler than the average maximum temperature. Southeastern parts of Sudan recorded warmer than the average for maximum temperature.

South Sudan, Ethiopia, Uganda and Kenya: Much of South Sudan, in western parts of Ethiopia, western and eastern part of Uganda, and central and southeastern Kenya experienced warmer than the average maximum temperature. Few areas of northeastern Ethiopia and southwestern Uganda experienced conditions that are cooler than the average for maximum temperature.

The maximum temperature condition during the second dekad of January 2018 shows that:

Sudan and South Sudan: eastern part of Sudan extending to northeastern part of South Sudan experienced warmer than the average for minimum temperature. Southwestern part of Sudan experienced minimum temperature conditions that are cooler than the average for minimum temperature.

Eritrea, Djibouti, Ethiopia and Somalia: cooler than the average conditions for minimum temperature was experienced over much of Eritrea, Djibouti, northern Somalia and northeastern Ethiopia. Southwestern Ethiopia experienced warmer than the average conditions for maximum

temperature. Much of the rest of the GHA experience near average conditions for maximum and minimum temperature during the second dekad of 2018.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 16th to 23rd January 2018 (Figure 4) indicates that:

South Sudan, Ethiopia, and Tanzania: Much of South Sudan, northern, eastern and central and southern Tanzania, and western and eastern Ethiopia experienced improvement in vegetative condition as compared to the long term average. A few areas in western, and south of Ethiopia, and northeastern Tanzania showed deterioration as compared to the long term average vegetative condition.

Uganda, Kenya and Somalia: Much of Uganda, Kenya and southern Somalia showed deteriorated vegetation cover as compared to the long-term average vegetation conditions.

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

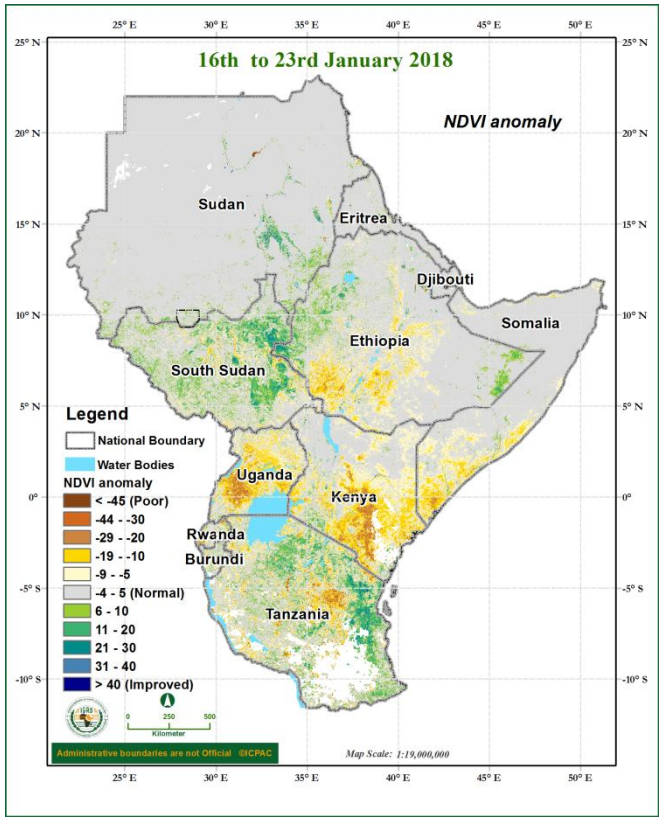

Figure 4: NDVI anomaly for the period between 16th and 23rd January 2018 (Data Source: USGS NASA)

5.0 Climate Forecast

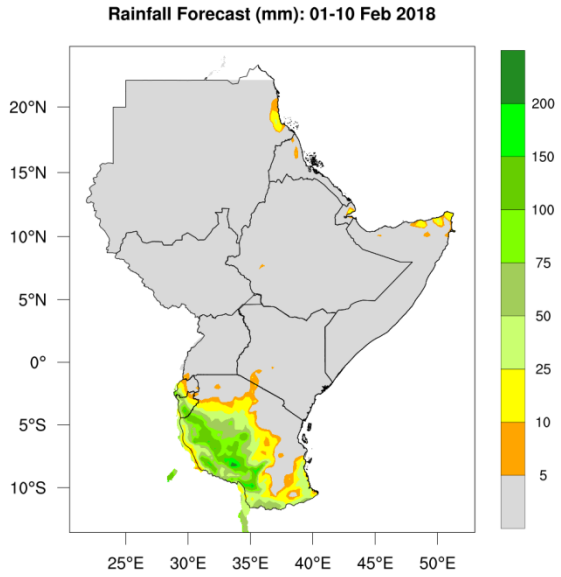

Figure 5: Precipitation forecast for the first dekad (1-10) of February 2018 (Source: WRF-ICPAC**)**

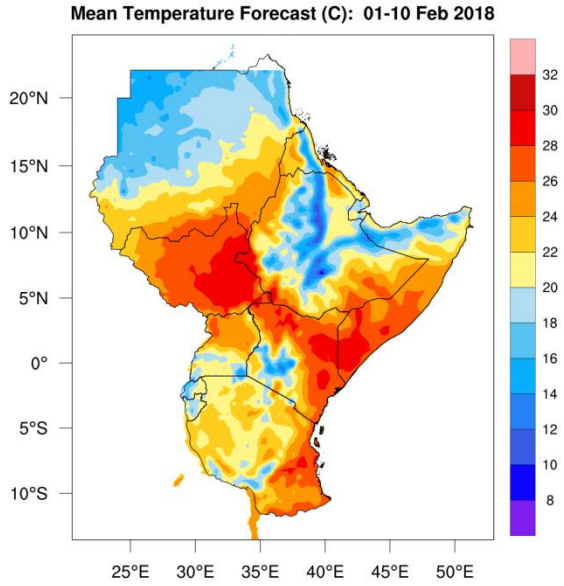

Figure 6: Forecast for average temperature for the first dekad (1-10) of February 2018 (Source: WRF-ICPAC)

Rainfall Forecast

The rainfall forecast for the first dekad of February 2018 in Figure 5 indicates that rainfall is likely to be concentrated over western, central and southern parts of Tanzania, parts of Burundi and in western Rwanda. The rest of the GHA region is likely to experience little amount of rainfall (less than 5 mm) or remain generally dry during the first dekad of February 2018.

Temperature Forecast

The forecast for the average temperature for first dekad of February 2018 (Figure 6) indicates much of northern part of Sudan, central, western and northeastern Ethiopia, much of Djibouti, northern Somalia, western and central parts of Kenya, southern of Uganda, over much of Rwanda, Burundi, and in parts of southwestern Tanzania is likely to record cool average temperature lower than 20°C. The rest of the GHA is likely to record average temperature higher than 20°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 associated with observed climate conditions

The climate conditions in the southern part of the GHA has seen continued good conditions in water, and pasture and this creates prospects of good crop and livestock productivity. The depressed rainfall has led to deterioration in the water and pasture condition especially in the equatorial sector leading to increased water stress and reduced livestock productivity. There are also cases of reported cases of water related diseases. From the climate forecast for the first dekad of February 2018 parts of southern sector of the GHA is likely to record rainfall up to 50 mm which may lead to improved water and pasture resources. Dry conditions are likely to persist over much of the equatorial sector.

NB: *This ten days bulletin contributes towards the update of the January 2018 climate outlook (*http://www.icpac.net/index.php/climate-monitoring/monthly-bulletins.html*).*

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