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

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-31) of January 2018, and highlights the climate forecast for the second dekad (11-20) 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° and 5° 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 as well as in northern parts of the southern sector of the Greater Horn of Africa (GHA) experienced low rainfall conditions. Areas in the southwestern part of the equatorial sector and southern parts of the southern sector of the GHA including southwestern Uganda, Rwanda, Burundi and southern Tanzania recorded enhanced rainfall conditions.

A few places in southwestern and south-central parts of the northern sector, western, central and southeastern 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 much of Uganda, and in parts of Eritrea, northern Somalia, and central and southwestern Tanzania during the third dekad of January 2018. Much of the rest of the GHA recording near the average conditions for maximum temperature.

Some places in the northern sector of the GHA including much of Sudan, northern Somalia, and eastern Ethiopia 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 a few areas in western and Ethiopia, eastern South Sudan, which experienced warmer conditions than the average for minimum temperature.

Rainfall forecast for the second dekad of February 2018 shows that rainfall is likely to be concentrated over much of the southern sector, as well as southern parts of the equatorial sector. The rest of the GHA is likely to remain generally dry or record small amounts of rainfall.

Some areas in eastern Sudan, central Eritrea, over the Ethiopian highlands, central and western parts of Kenya, Rwanda Burundi, and North-central and southwestern parts of Tanzania are likely to record average temperatures below 20°C. Much of the rest of the GHA is likely to record average temperature exceeding 20°C during the second dekad of February 2018.

3.0 Observed rainfall situation during the third dekad (21-31) 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 third 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 Tanzania

Tanzania:

Western and southern parts recorded rainfall totals exceeding 50mm, while the eastern, north and central parts recorded below 50mm. The northeastern and southern parts of the country were wetter as compared to the long, term average. Much of the country was drier as compared to previous dekad.

Burundi and Rwanda:

Much of **Burundi** and southern parts of **Rwanda** recorded rainfall totals of between 50mm and 100mm, while the northern and central parts of Rwanda recorded between 25 and 50mm rainfall totals of between. The rainfall above average over much of **Rwanda** and northern **Burundi**, with the southern part of Burundi experiencing near the average rainfall conditions. Both countries indicated moderately wet to severely wet conditions.

Uganda, Kenya:

Southern parts of Uganda and western part of Kenya mainly recorded between 6mm and 25 mm of rainfall. Much of the rest of the areas recorded less than 5 mm of rainfall. The southwestern and eastern part of Uganda as well as central parts of Kenya experienced rainfall exceeding the average rainfall while the rest of the countries recorded rainfall less than the average amount but in the near normal conditions.

Eritrea, Ethiopia, Djibouti, South Sudan, and Somalia:

Much of these places recorded less than 5mm of rainfall with exception to a few places in northern coast of Eritrea, and north and southwest of Ethiopia which recorded between 6mm to 10mm of rainfall. Southern parts of South Sudan, much of north, central, western and southwestern Ethiopia, Djibouti, and southern and northwestern parts of Somalia recorded below average rainfall. Moderately dry condition was recorded in north and southwestern Ethiopia, and part of southwestern South Sudan. Much of western Eritrea recorded moderately wet to severely wet rainfall condition.

Sudan: Much of Sudan recorded less than 5 mm of rainfall and experienced near normal rainfall conditions, these area receive generally dry conditions during this time of the year.

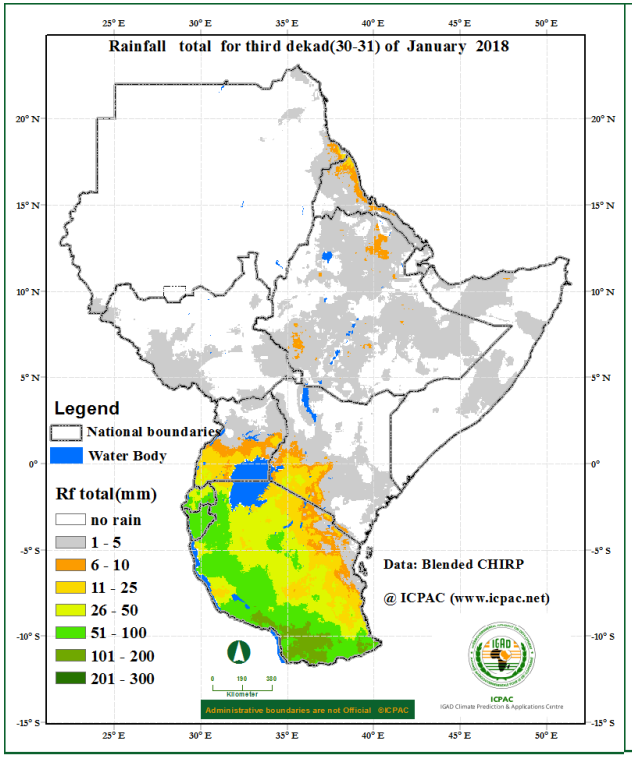

Figure 1a: Rainfall distribution during the third dekad (21-31) of January 2018. *(Data: Blended CHIRP)*

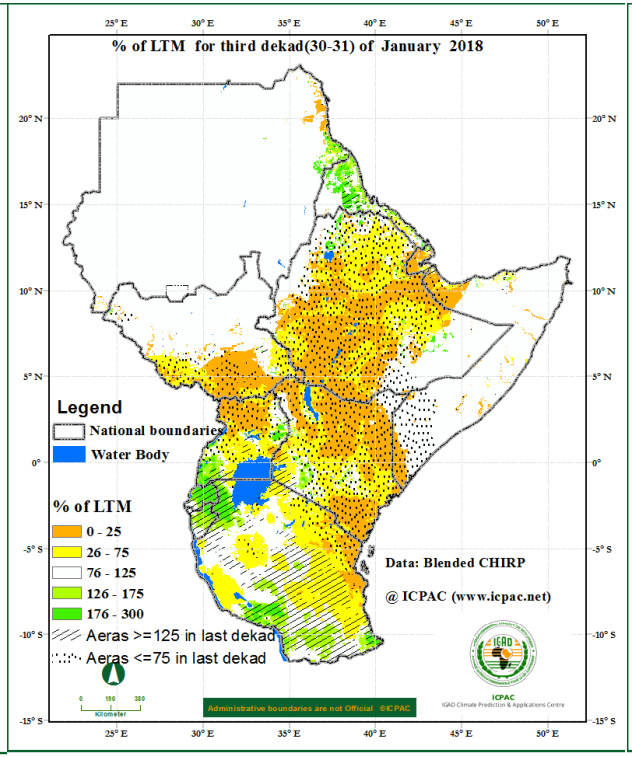

Figure 1b: Percent of long term average rainfall for the third dekad (21-31) of January 2018 *(Data: Blended CHIRP)*

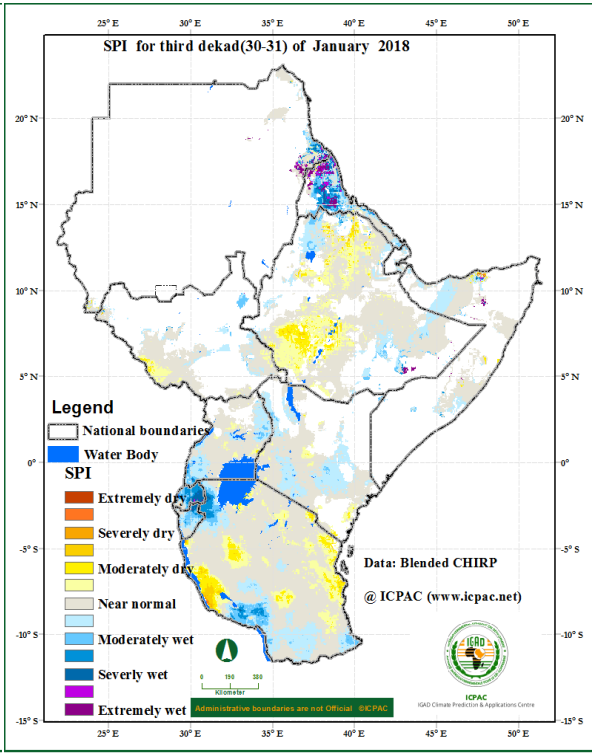

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-31) of January 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

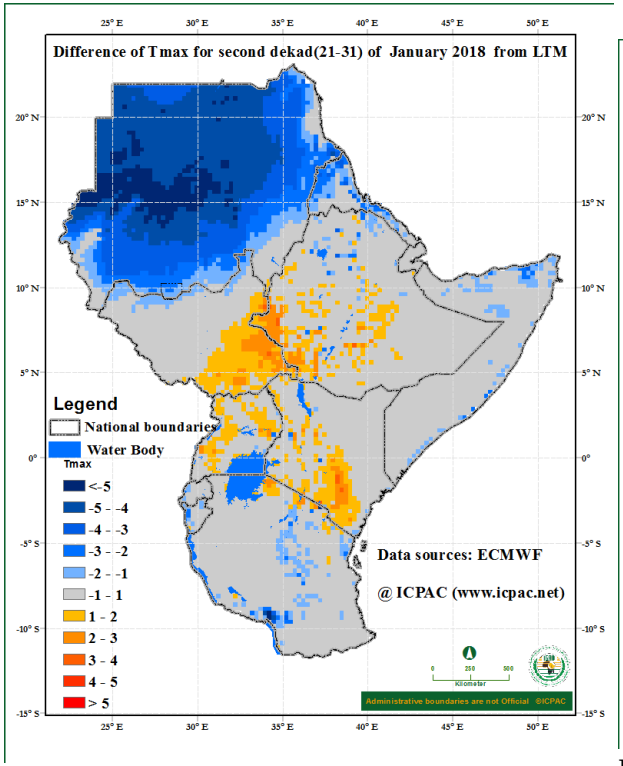

Figure 2: Maximum temperature difference from the average (2008-2017) for the third dekad (21-31) of January 2018*(Data Source: ECMWF)*

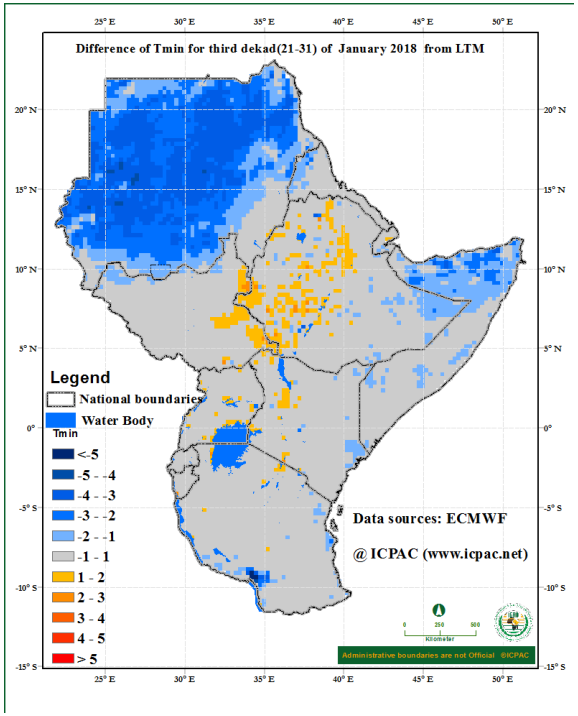

Figure 3:Minimum temperature difference from the average (2008-2017) for the third dekad (21-31) of January 2018*((Data Source: ECMWF)*

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

Sudan, Eritrea, Somalia: Much of Sudan, western and central Eritrea, and parts of north of Somalia experienced cooler than the average for maximum temperature. Much of the rest of these areas recorded near the average maximum temperature.

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

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

Sudan, Eritrea and Somalia: much of Sudan extending western Eritrea, and northern parts of Somalia experienced cooler than the average for minimum temperature. Much of the rest of these areas experienced minimum temperature near the average condition.

South Sudan, Ethipia, and Kenya: eastern parts of South Sudan, western and northern parts of Ethiopia, few areas in west and northwest of Kenya, and in few places in southern Uganda warmer than the average conditions for minimum temperature was experienced. Much of the rest of these areas experienced minimum temperature near the average condition.

Much of the rest of the GHA experience maximum and minimum temperature that are within the average conditions during the third dekad of 2018.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 24th to 31st January 2018 (Figure 4) indicates that:

Ethiopia, Uganda, Kenya and Somalia: Southern and central parts of Ethiopioa, over much of Uganda, central and eastern Kenya and southern parts of Somalia, indicated deterioration in vegetative condition as compared to the long term average. A few areas in western Ethiopia showed improvement in vegetative condition as compared to the long term average vegetative condition.

South Sudan, Rwanda, Burundi and Tanzania: Several parts of eastern South Sudan, over parts of Rwanda, Burundi and, much of central and eastern Tanzania showed improvement in vegetative conditions as compared with the long term average. Deteriorated vegetation cover as compared to the long-term average vegetation conditions, was experienced mainly in northeastern Tanzania.

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

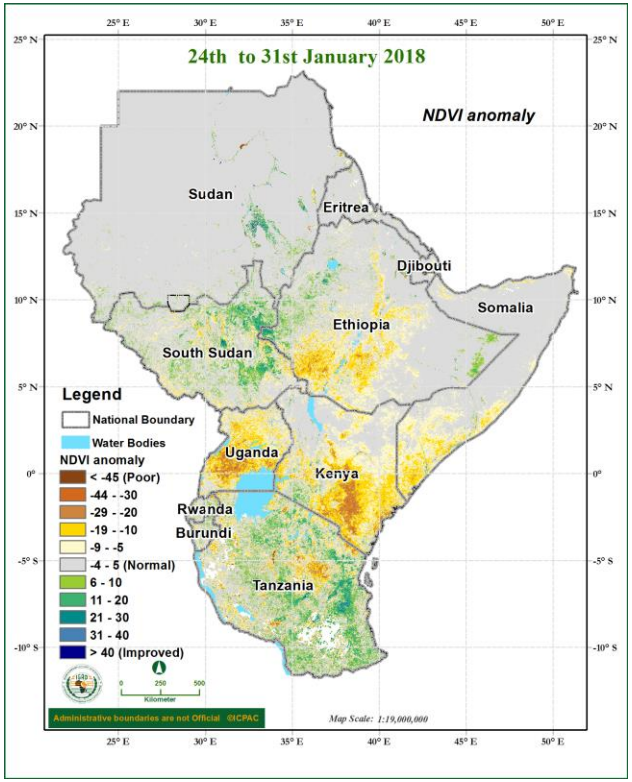

Figure 4: NDVI anomaly for the period between 24th and 23rd January 2018 (Data Source: USGS NASA)

5.0 Climate Forecast

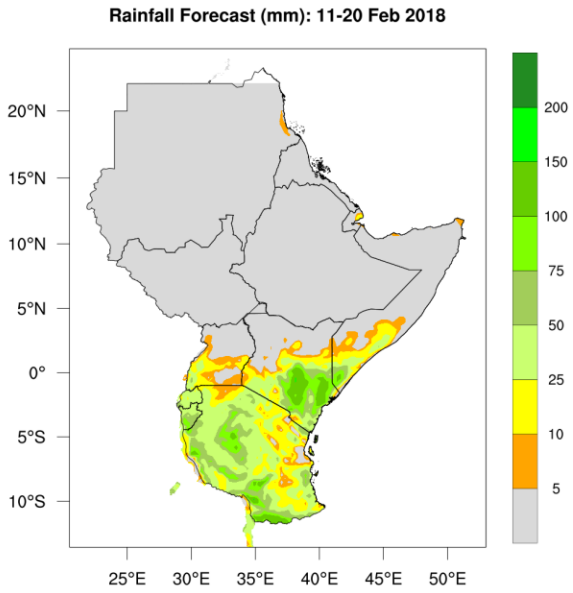

Figure 5: Precipitation forecast for the second dekad (11-20) of February 2018 (Source: WRF-ICPAC**)**

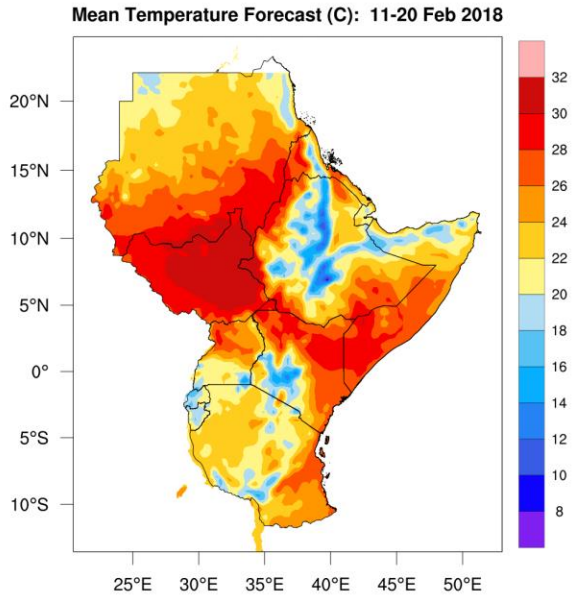

Figure 6: Forecast for average temperature for the second dekad (11-20) of February 2018
(Source: WRF-ICPAC)

Rainfall Forecast

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

Temperature Forecast

The forecast for the average temperature for second dekad of February 2018 (Figure 6) indicates that a few areas in northwestern Sudan, over much of the highlands of **Ethiopia**, central part of Eritrea, northern **Somalia**, western and central parts of **Kenya**, southwesteren and

southeastern parts of **Uganda**, over much of **Rwanda** and **Burundi**, and north-central and southwestern parts of **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 reported cases of water related diseases. From the climate forecast for the second dekad of February 2018 southern part of Burundi, some western and central parts of Tanzania and in eastern part of Kenya is likely to record rainfall up to 50 mm which may lead to improved water and pasture resources and possible localised flooding. Effects of dry conditions are likely to persist over several parts 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