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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-28) OF FEBRUARY 2018 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11-20) OF MARCH 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-28) of February 2018, and highlights the climate forecast for the second dekad (11-20) of March 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 rainfall activity is concentrated over several parts of the southern sector, and western parts of the equatorials sector as well as in southern parts of the northern sector of the Greater Horn of Africa (GHA). These include Tanzania, Burundi, Rwanda, Uganda, western Kenya, southern parts of South Sudan and central and southwestern Ethiopia. Much of the southern sector, equatorial sector and southern part of the southern sector of the GHA experienced above average rainfall conditions except for southeastern parts of the northern sector, eastern parts of the equatorial sector and northeastern parts of the southern sector of the GHA which experienced below the average rainfall conditions during the third dekad of February 2018.

The northern parts of the northern sector, as well as the southwestern equatorial sector and eastern and southern parts of the southern sector of the GHA recorded warmer than the average conditions for maximum temperatures. The western and central parts of Ethiopia and southwestern part of South Sudan recording conditions cooler than the average for maximum temperature during the third dekad of February 2018

Several areas in the northern and eastern part of the northern sector of the GHA as well as areas in central Kenya and central Tanzania recorded warmer than the average conditions for the minimum temperature. Much of the rest of the GHA recorded condition near the average for minimum temperature.

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

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

3.0 Observed rainfall situation during the Third dekad (21-28) of February 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 February 2018 rainfall was concentrated in the southern part of the northern sector, western and central parts of the equatorial sector, and over much of the southern sector of the GHA. The maximum range of total rainfall was exceeded 100 mm and was recorded in very few places in northwestern and southwestern Tanzania.

Uganda, Burundi, and Rwanda:

Much of these areas recorded between 10mm and 50mm of rainfall southwestern Rwanda and western parts of Burundi recorded rainfall of between 50mm and 100mm. Several parts of these areas experienced above average rainfall conditions, with near normal to severely wet rainfall conditions being experienced over much of these places. A few areas in southern Burundi and southwestern Rwanda showed improvements in rainfall performance as compared to the previous dekad.

South Sudan, Ethiopia, Kenya and Tanzania:

Southwestern and southern parts of South Sudan, much of southwestern and central parts of Ethiopia, western and central parts of Kenya and in parts of northern and eastern Tanzania recorded rainfall of between 5mm and 50mm. Southwestern part of Ethiopia and over much of western Tanzania recorded rainfall of between 50mm and 20mm. Much of the rest of these areas recorded rainfall amount less than 5mm. Much of these areas experienced rainfall exceeding the long term average except for eastern Ethiopia, several areas of central and eastern Kenya, and in eastern Tanzania which recorded rainfall that was below the long term average and near normal. A few areas in eastern Ethiopia and northwestern and western Kenya showed improvement in rainfall performance as compared to the previous dekad.

Sudan, Eritrea, Djibouti, and Somalia: Much of the rest of GHA recorded little or no rainfall and experienced generally conditions, these area receive near normal or generally dry conditions during this time of the year.

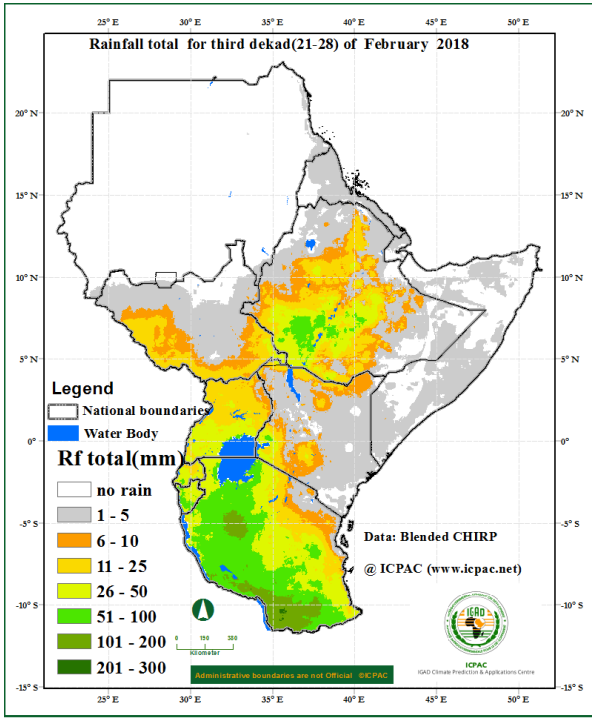

Figure 1a: Rainfall distribution during the third dekad (21-28) of February 2018. *(Data: Blended CHIRP)*

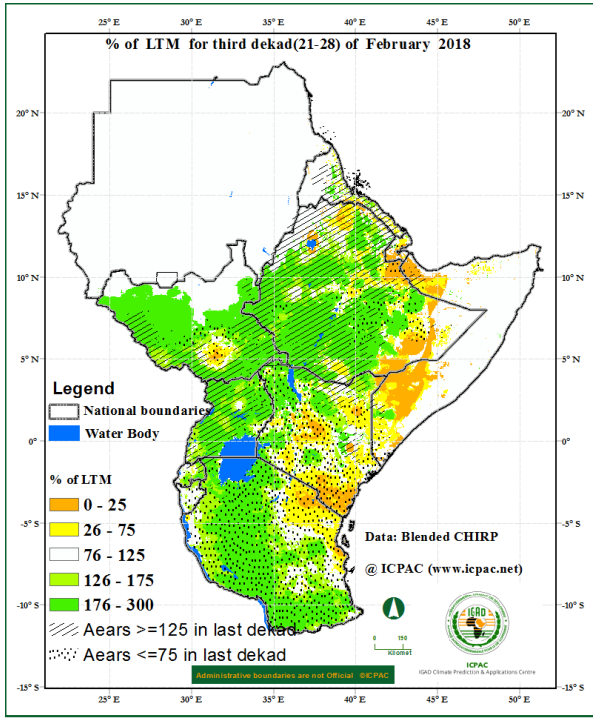

Figure 1b: Percent of long term average rainfall for the third dekad (21-28) of February 2018 *(Data: Blended CHIRP)*

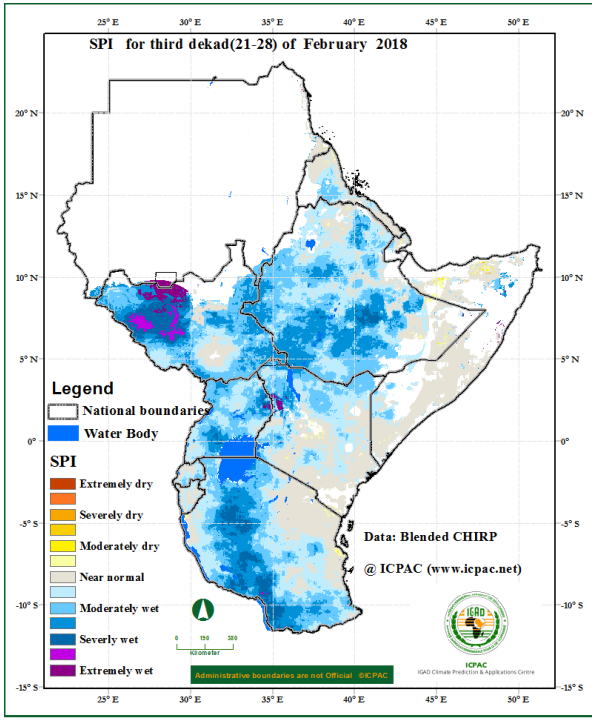

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-28) of February 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

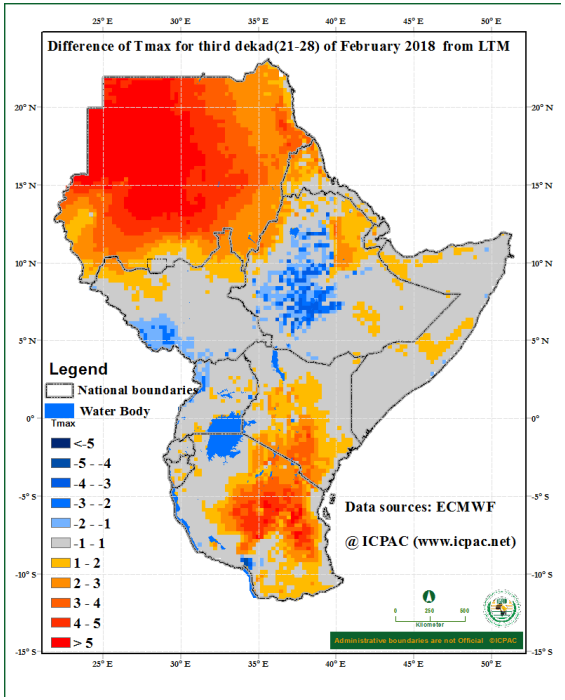

Figure 2: Maximum temperature difference from the average (2008-2017) for the third dekad (21-28) of February 2018*(Data Source: ECMWF)*

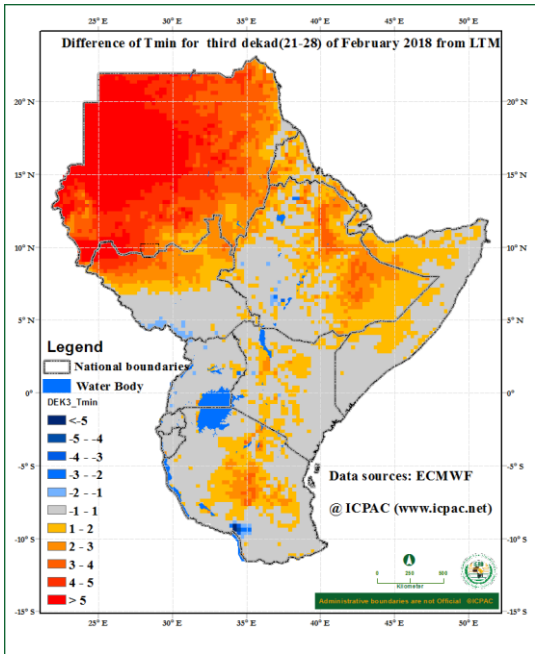

Figure 3:Minimum temperature difference from the average (2008-2017) for the third dekad (21-28) of February 2018*((Data Source: ECMWF)*

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

Sudan, South Sudan, Eritrea, Uganda and Tanzania: Much of these area recorded maximum temperature that is warmer than the average maximum temperature, except for northern part of Sudan, southeastern, and southwest of South Sudan, in northeastern and southwestern Uganda, and southwestern and costal Tanzania which recorded near the average conditions for maximum temperature

Ethiopia, Somalia, Kenya, Rwanda and Burundi: northern part of Ethiopia, northern Somalia, western, western and southern Kenya, eastern Rwanda, and eastern Burundi experienced condition that is warmer than the average maximum temperature. Much of the rest of these areas experienced near average condition for maximum temperature except for a few areas in central and southern Ethiopia, northern Kenya, and southeastern coast of Somalia which recorded conditions cooler than the average for maximum temperature.

The minimum temperature condition during the third dekad of February 2018 shows that:

Sudan, South Sudan: Much of these areas experienced maximum temperature warmer than the average condition for minimum temperature except for areas in southern part of South Sudan which recorded minimum temperature near the average value.

Eritrea, Djibouti, Ethiopia, Somalia, Uganda, Rwanda, Burundi, Kenya, and Tanzania: several part of Eritrea, Djibouti, northern and central Somalia, northwestern, and eastern Ethiopia, northern, eastern and southwestern Uganda, western parts of Kenya, parts of Rwanda, Burundi, and northwestern part of Tanzania recorded warmer than the average condition for minimum temperature.

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

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

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

South Sudan and Ethiopia: Several parts of South Sudan, southwestern and central parts of Ethiopia showed improvement in vegetative condition as compared to the long term average.

Uganda, Kenya, Somalia and Tanzania: Several parts of Uganda, southern, central and coastal parts of Kenya, southeastern coast of Somalia, and northeastern and eastern parts of Tanzania showed deterioration in vegetative 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.

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the second dekad of March 2018 in Figure 5 indicates that rainfall is likely to be concentrated over much of Tanzania, Rwanda, Burundi, Uganda, western and central Kenya, southern part of south Sudan as well as south western and central parts of Ethiopia. Southern, northwestern and central parts of Tanzania, eastern part of Rwanda, eastern Burundi, northern and eastern Uganda, western and central Kenya, and southern parts of South Sudan are likely to record high rainfall amounts. 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 March 2018.

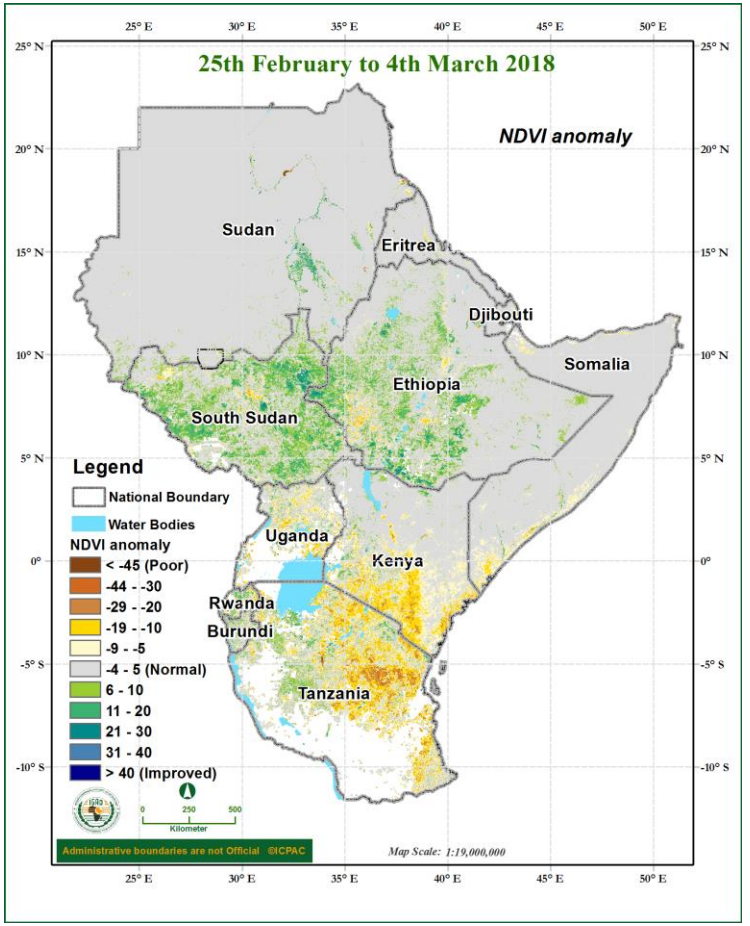

Figure 4: NDVI anomaly for the period between 25th February and 4th March 2018 (Data Source: USGS NASA)

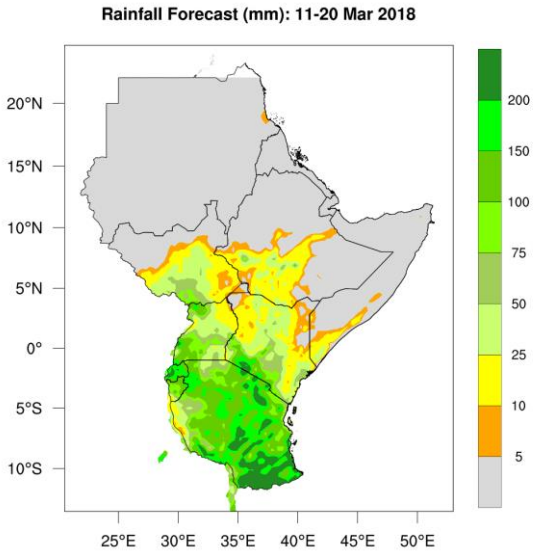

Figure 5: Precipitation forecast for the second dekad (11-20) of March 2018 (Source: WRF-ICPAC**)**

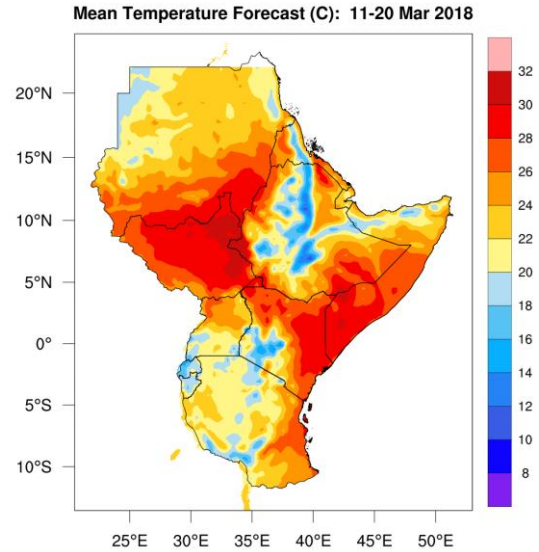

Figure 6: Forecast for average temperature for the second dekad (11-20) of March 2018 (Source: WRF-ICPAC)

Temperature Forecast

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

The climate conditions in the in much of the equatorial and southern sector of the GHA has seen good rainfall performance resulting to improvemen in water and pasture conditions and prospects of good crop and livestock productivity. However eastern equatorial sector of the GHA continue to experience depressed rainfall with consequences of continues poor water and pasture conditions 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 March 2018 parts of western and central Kenya, Rwanda, Burundi and Tanzania are likely to record high rainfall amounts which may lead to possible localised flooding. Effects of dry conditions are likely to persist over eastern part of the equatorial sector.

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

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