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

1.0 Introduction

This bulletin reviews the climatic conditions observed during the second dekad (10-20) of February 2018, and highlights the climate forecast for the first dekad (01-10) 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 central and western Ethiopia, southwestern South Sudan, western Kenya, over much of Uganda, Rwanda and Burundi, and in northwestern and eastern parts of Tanzania. Much of southeast and southwest part of the northern sector, eastern and central parts of the equatorial sector, as well as central part of the southern sector of the Greater Horn of Africa (GHA) experienced low rainfall activities or remained generally dry during the second dekad of February 2018. The rainfall performance was in the below average to near average conditions over much of the southern sector as well as southern and eastern parts of the equatorial sector of the GHA.

Several areas covering the western part of the GHA recorded warmer than the average conditions for maximum temperatures. Places in southeastern part of the northern sector, central and eastern part of the equatorial of the GHA recorded near the average conditions for maximum temperature. Much of the rest of the GHA recording near the average conditions for maximum temperature during the first dekad of February 2018

Much of the western part of the northern sector as well as western equatorials sector and northwestern parts of the southern sector of the GHA recorded warmer than the average conditions for the minimum temperature. Much of the rest of the GHA recorded near the average for the minimum temperature conditions

Rainfall forecast for the first dekad of March 2018 shows that rainfall is likely to be concentrated over southwestern part of the northern sector, western and central parts of the equatorial sector, and over much of the southern sector. 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 northern Sudan, central Eritrea, over the Ethiopian highlands, central and western highlands of Kenya, southern Uganda, 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 Second dekad (10-20) 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 second dekad of February 2018 rainfall was concentrated in the western parts of the equatorial sector, eastern and northwestern part of the southern sector, as well as south central parts of the northern sector of the GHA. The maximum range of total rainfall was between 50 to 100 mm and was recorded in very few places in southwestern and central part of Ethiopia, western and southwestern Uganda, and in northern Rwanda.

Kenya, Burundi, Rwanda and Tanzania:

Much of Rwanda, Burundi, in parts of western Kenya, and northwest, west and east of Tanzania recorded rainfall of between 5mm and 50mm. Much of Kenya, and central parts Tanzania recorded rainfall totals less than 5mm. Southern parts of Rwanda, western and southern parts of Kenya, much of Rwanda and Tanzania recorded rainfall conditions that were below the long term average. Much of Tanzania, eastern and northern Burundi and southwestern Kenya recorded moderately dry to extremely dry rainfall conditions. While northeastern Kenya and northeastern Rwanda recorded moderately wet to severely wet rainfall conditions. Much of the rest of these areas recorded near normal rainfall. Southern parts of Rwanda, much of Burundi, and northwestern and southwestern Tanzania showed reduction in rainfall performance, while northeastern and eastern part of Kenya showed improvements in rainfall performance as compared to the previous dekad

Eritrea, Djibouti, South Sudan, Ethiopia, Uganda:

Western and southwestern Ethiopia, southwestern South Sudan and over much of Uganda recorded rainfall amount of between 5mm and 50mm much of the rest of these areas recorded rainfall amount less than 5mm. A few areas in central South Sudan, Eastern Ethiopia recorded below average rainfall, and much of the rest of these areas recorded above average rainfall conditions. Parts of Eritrea, Djibouti, northwest, central and southern Ethiopia, western and southern South Sudan, and western and northern Uganda experienced moderately wet to extremely wet rainfall conditions. The western, central and southern parts of Ethiopia, southwestern and southern parts of South Sudan, and western and northern parts of Uganda showed improvement in rainfall performance as compared with the previous dekad.

Much of the rest of GHA recorded little or no rainfall and experienced generally conditions, these area receive generally dry conditions during this time of the year.

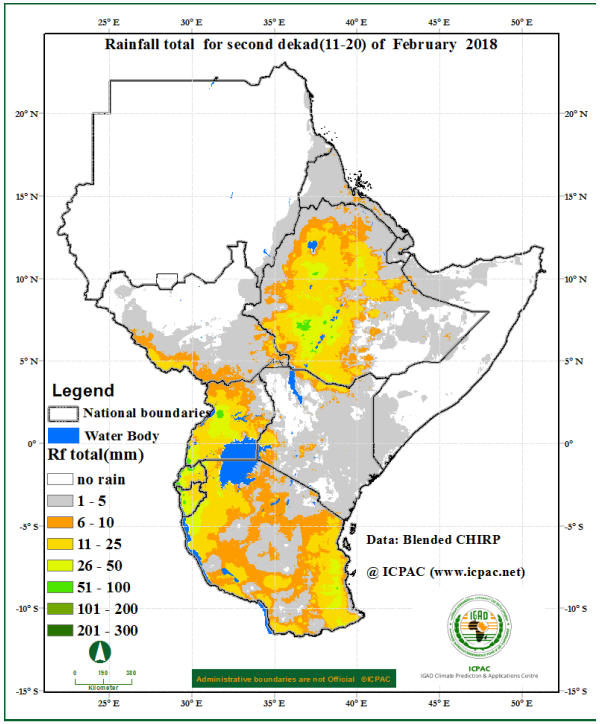

Figure 1a: Rainfall distribution during the second dekad (10-20) of February 2018. *(Data: Blended CHIRP)*

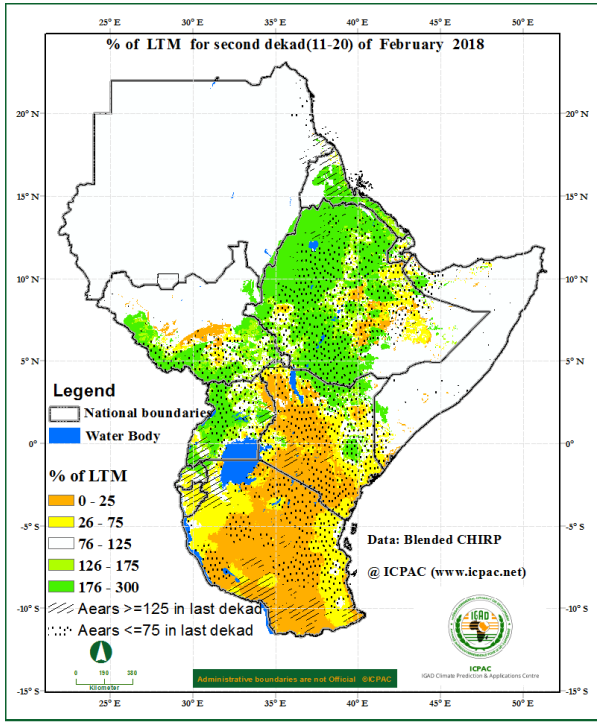

Figure 1b: Percent of long term average rainfall for the second dekad (10-20) of February 2018 *(Data: Blended CHIRP)*

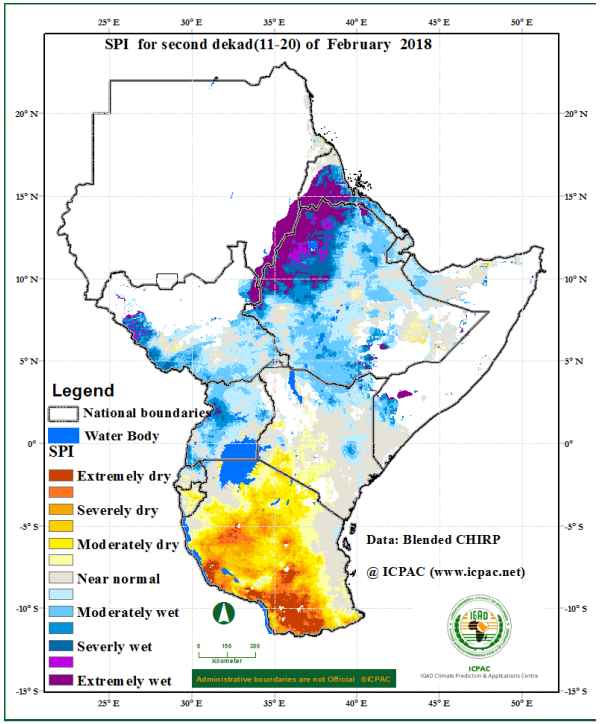

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (10-20) of February 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

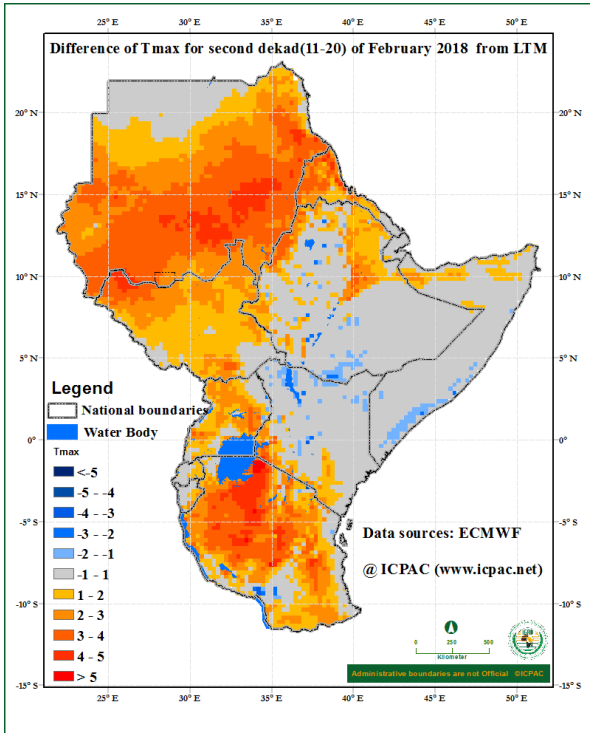

Figure 2: Maximum temperature difference from the average (2008-2017) for the second dekad (10-20) of February 2018*(Data Source: ECMWF)*

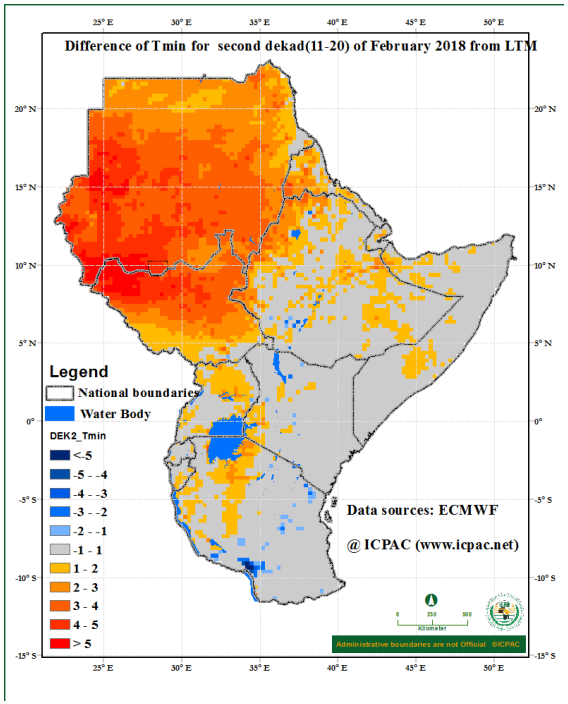

Figure 3:Minimum temperature difference from the average (2008-2017) for the second dekad (10-20) of February 2018*((Data Source: ECMWF)*

The maximum temperature condition during the second 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 second 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 second 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 first 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 first dekad of March 2018.

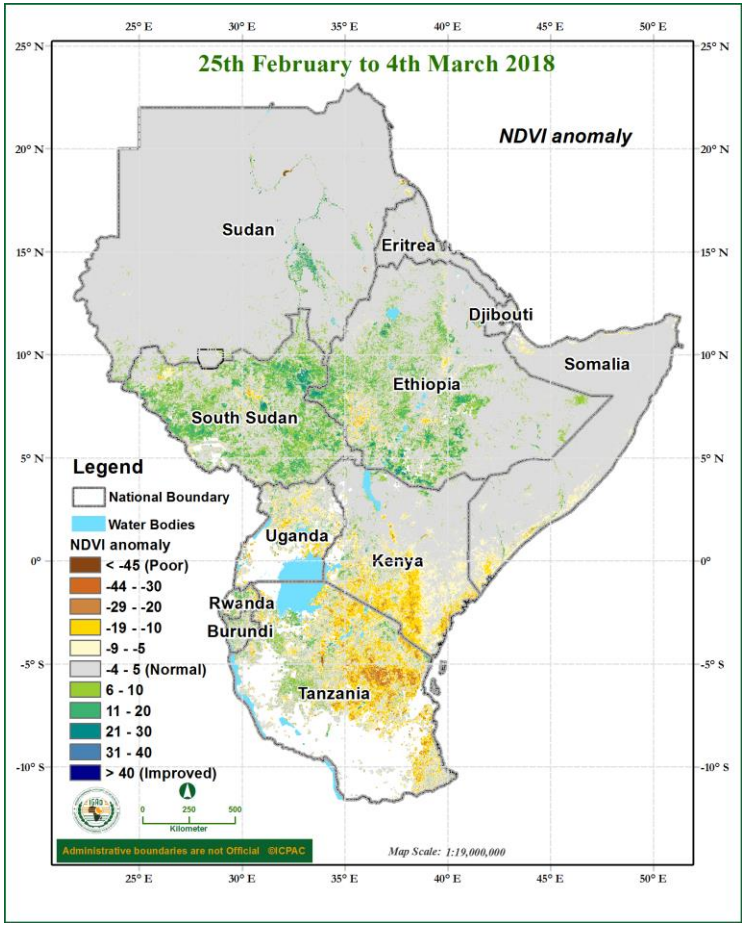

Figure 4: NDVI anomaly for the period between 25th February and 4th March 2018 (Data Source: USGS NASA)

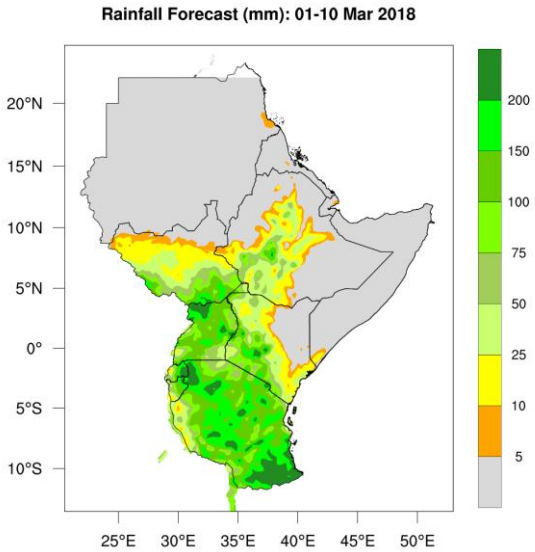

Figure 5: Precipitation forecast for the first dekad (01-10) of March 2018 (Source: WRF-ICPAC**)**

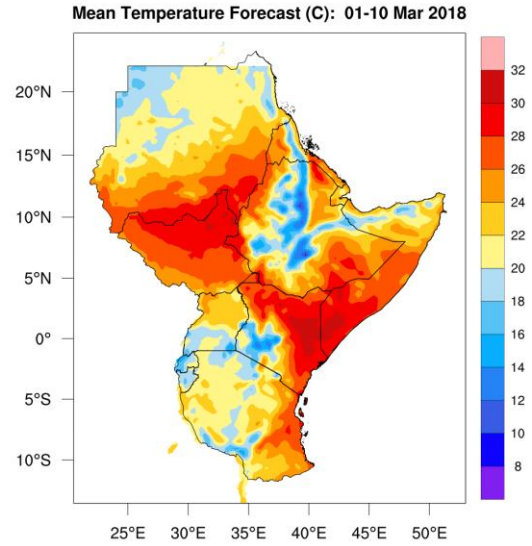

Figure 6: Forecast for average temperature for the first dekad (01-10) of March 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the average temperature for first dekad of March 2018 (Figure 6) indicates much of the GHA will record temperatures exceeding 20°C except for areas in the northern part of Sudan, the central highlands of Ethiopia, northwestern Somalia, central and western highlands of Kenya, southern parts 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 will be around southern part of Sudan, central Eritrea, northeast and southeast of Ethiopia, northern part of South Sudan, north and eastern Kenya, southern part 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 southern part of the GHA has seen dry conditions 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 first dekad of March 2018 parts of Uganda, 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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