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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF MARCH 2018 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-31) OF MARCH 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of March 2018, and highlights the climate forecast for the third dekad (21-31) 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 -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

The rainfall activity is concentrated over southern part of the northern sector, several areas in the equatorial sector, and much of southern sector of the Greater Horn of Africa (GHA). These include Tanzania, Burundi, Rwanda, Uganda, Kenya, southwestern Somalia, southern parts of South Sudan, and central and southwestern Ethiopia. Much of the southern sector, equatorial sector and southern part of the northern sector of the GHA experienced above average rainfall conditions except for western parts of the southern sector of the GHA which experienced near the average rainfall conditions during the first dekad of March 2018.

The northern parts Sudan recorded warmer than the average conditions for maximum temperatures. The southwestern and central parts of Ethiopia, southern part of South Sudan, north-central Tanzania, and over much of central equatorial sector of the GHA recording conditions cooler than the average for maximum temperature.

Much of north and eastern parts of Sudan and a few areas in eastern Ethiopia recorded warmer than the average conditions for the minimum temperature. Western Eritrea, western and central Ethiopia an much of northwestern equatorial sector of the GHA recorded cooler than the average conditions for minimum temperature. Much of the rest of the GHA recorded condition near the average for minimum temperature.

Rainfall forecast for the third dekad of March 2018 shows that rainfall is likely to be concentrated over much of the southern sector, southwestern parts of the northern sector, and in several parts of the equatorial sector of the GHA exclusive of northeastern Uganda, northwestern Kenya and southeastern South Sudan. 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 First dekad (01-10) 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. 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 first dekad of March 2018 rainfall was concentrated in the southwestern part of the northern sector, several parts of the equatorial sector, and over much of the southern sector of the GHA. The maximum range of total rainfall was exceeded 200 mm and was recorded in southern part of Tanzania.

Uganda, Rwanda, Burundi, Kenya and Tanzania:

Much of these areas recorded between 50mm and 200mm of rainfall, northern parts of Uganda, northern and eastern part of Kenya recorded between 11mm and 50mmm of rainfall. Much Uganda, Kenya, Rwanda, northern Burundi, and eastern Tanzania experienced above average rainfall conditions, with moderately wet to extremely wet rainfall conditions being experienced over much of these places. Western and eastern parts of Kenya, and northeastern Tanzania indicated improvement in rainfall performance as compared to the previous dekad.

Eritrea, Djibouti, South Sudan, Ethiopia and Somalia:

Much of western and southern parts of South Sudan, southern and central Ethiopia, and southern part of Somalia recorded rainfall of between 5mm and 50mm, with southwestern part of Ethiopia recording rainfall of between 50mm and 100mm. Much of the rest of these areas recorded rainfall amount less than 5mm. The eastern and southern parts of South Sudan, southern parts of Ethiopia and southern part of Somalia experienced rainfall exceeding the long term average, and moderately wet to extremely wet conditions. Central Eritrea, much of Djibouti, northeastern Ethiopia, and parts of north and central Somalia recorded rainfall that was below the long term average that was within the normal condition. Some places in eastern South Sudan and western Ethiopia showed reduced rainfall performance as compared with the previous dekad, however places in southeastern Ethiopia and southern Somalia showed improvement in rainfall performance as compared to the previous dekad.

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.

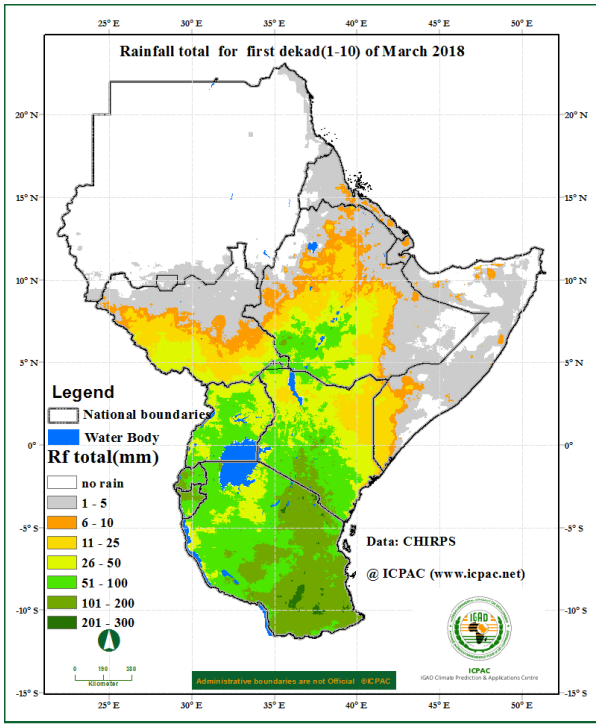

Figure 1a: Rainfall distribution during the first dekad (01-10) of March 2018. *(Data: Blended CHIRP)*

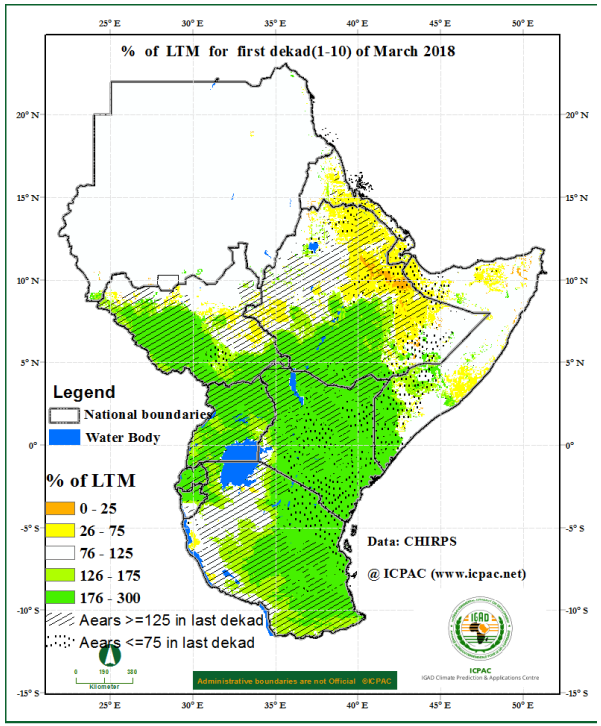

Figure 1b: Percent of long term average rainfall for the first dekad (01-10) of March 2018 *(Data: Blended CHIRP)*

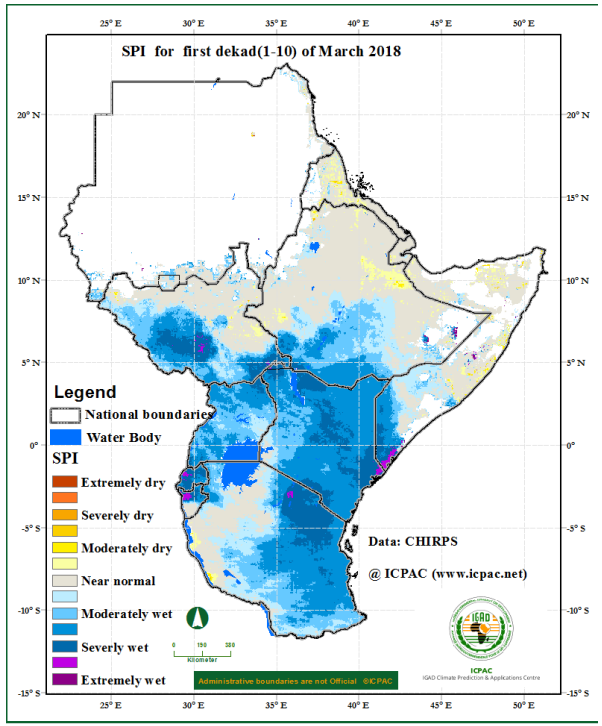

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of March 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

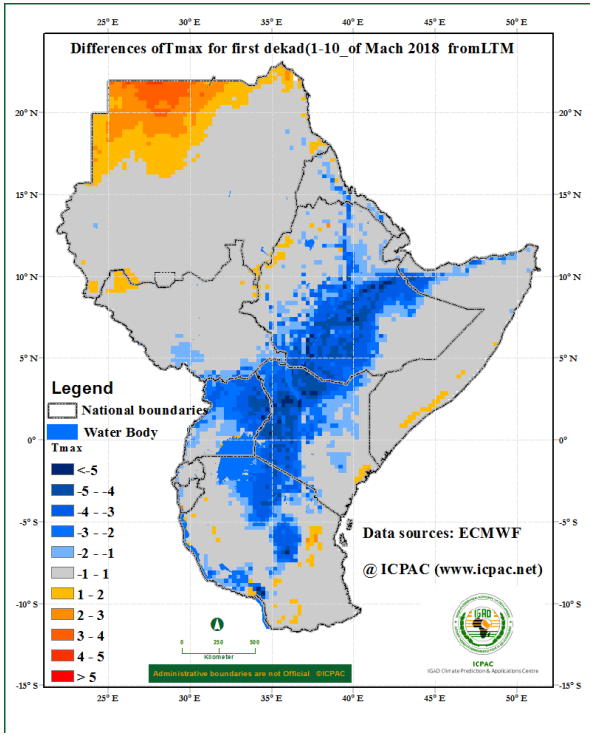

Figure 2: Maximum temperature difference from the average (2008-2017) for the first dekad (01-10) of March 2018*(Data Source: ECMWF)*

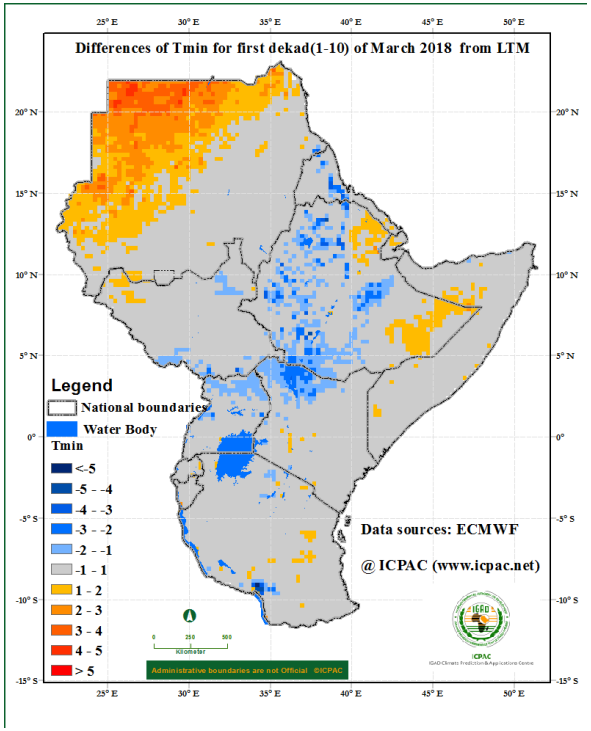

Figure 3:Minimum temperature difference from the average (2008-2017) for the first dekad (01-10) of March 2018*((Data Source: ECMWF)*

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

Sudan:Northern parts of Sudan experienced warmer than the average conditions for maximum temperature.

Eritrea, South Sudan, Ethiopia, Uganda, Somalia and Tanzania: cooler than the average condition for maximum temperature was observed in central Eritrea, southwestern, central and northeastern Ethiopia extending to northern Somalia, northern Uganda, western and northern Kenya, and in northeastern Tanzania. A few areas in southwest coast of Somalia, northern coast of Kenya and in few parts in eastern and southern Tanzania recorded warmer than the average conditions for maximum temperature.

The minimum temperature condition during the first dekad of March 2018 shows that:

Sudan: warmer than the average condition for maximum temperature was observed in the northern and northwestern parts of Sudan.

Eritrea, Ethiopia, Uganda, Kenya, South Sudan: central Eritrea, western and central Ethiopia, a few parts in northeastern and southwestern South Sudan, northern Uganda, and northwestern Kenya experienced temperature cooler than the average condition for minimum temperature. A few places in northeastern and eastern Ethiopia recorded minimum temperature cooler than the average value.

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

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 5th to 12th 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, and Tanzania: northern part of Uganda, northeastern, western and central parts of Kenya, and in a few places in eastern and central Tanzania showed improvement in vegetative conditions as compared with the long term average. Southern parts of Uganda, parts of south-central Kenya, and in a few places in western 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.

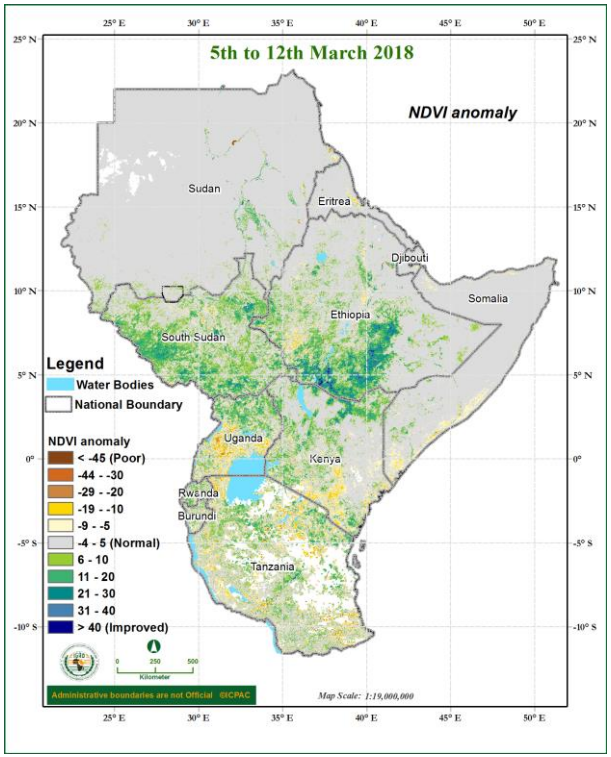

Figure 4: NDVI anomaly for the period between 5th and 12th March 2018 (Data Source: USGS NASA)

5.0 Climate Forecast

Rainfall Forecast

The rainfall forecast for the third dekad of March 2018 in Figure 5 indicates that rainfall is likely to be concentrated over much of Tanzania, Rwanda, Burundi, Uganda, Kenya, south Sudan, southern parts of Ethiopia, as well as southern part of Somalia. Several parts of Tanzania, Rwanda, southwestern Burundi, southwestern Uganda, western, central and eastern parts of Kenya, and southern part of Somalia are likely to record high rainfall amounts. The rest of the GHA region including Sudan, Eritrea, Djibouti, north and central Somaila, much of Ethiopia, southeastern South Sudan, northeastern Uganda, and northwestern Kenya, is likely to experience little amount of rainfall (less than 5 mm) or remain generally dry during the third dekad of March 2018.

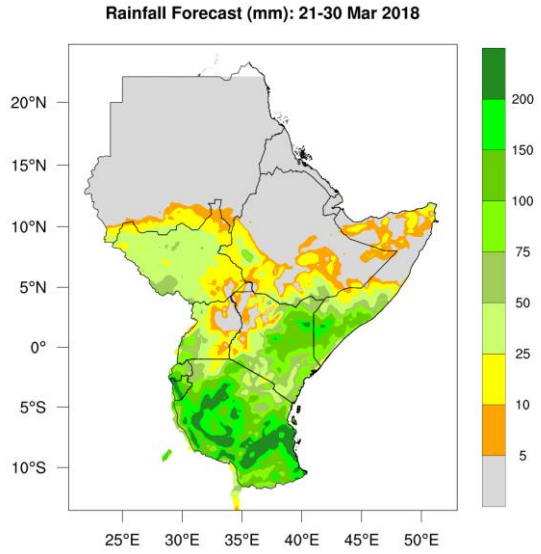

Figure 5: Precipitation forecast for the third dekad (21-31) of March 2018 (Source: WRF-ICPAC**)**

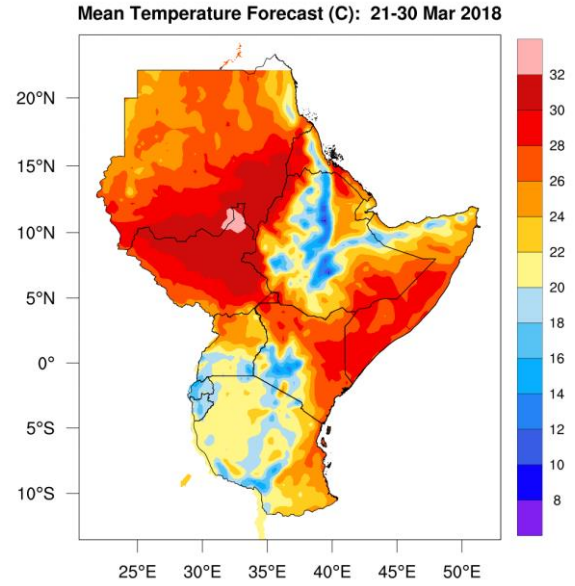

Figure 6: Forecast for average temperature for the third dekad (21-31) of March 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the average temperature for third dekad of March 2018 (Figure 6) indicates much of the GHA will record temperatures exceeding 20°C except for the central highlands of Ethiopia, northern Somalia, 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 around

southern and southeastern Sudan, northern and eastern 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, onset of rainfall and planting season ins some areas in the equatorial sector, several areas also reported flooding that led to the disruption of livelihood. However extreme eastern equatorial sector of the GHA are yet to recover from the consequences low rainfall with some areas continue to experience poor water and pasture conditions, and reported cases of water related diseases. From the climate forecast for the third dekad of March 2018 parts of several parts of Tanzania Burundi, Rwanda, southwestern Uganda, central and eastern Kenya as well as southern 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 2018 climate outlook (*http://www.icpac.net/index.php/climate-monitoring/monthly-bulletins.html*).*

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