IGAD CLIMATE PREDICTION AND APPLICATIONS CENTRE

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10 DAYS CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (01-10) OF FEBRUARY 2018 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-28) OF FEBRUARY 2018

1.0 Introduction

This bulletin reviews the climatic conditions observed during the first dekad (01-10) of February 2018, and highlights the climate forecast for the third dekad (21-28) 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 western and southern parts of Tanzania, Burundi and Rwanda. Large parts of the equatorial sector as well as in northern sector of the Greater Horn of Africa (GHA) experienced low rainfall activities or remained generally dry during the first dekad of February 2018. The rainfall performance was in the below average to near average conditions over much of the equatorial and southern sector of the GHA.

Several areas covering the western part of the GHA recorded warmer than the average conditions for maximum temperatures. A few places in the eastern part of the northern sector of the GHA recorded maximum temperature conditions cooler than the average conditions for maximum temperature. Much of the rest of the GHA recording near the average conditions for maximum temperature during the third dekad of January 2018

Several places in western equatorial and western part of northern 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, except for a few areas in central and southern Eritrea, Djibouti, eastern Ethiopia, and northern Somalia which experienced cooler temperature compared to the average conditions for minimum temperature.

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

Much of the rest of the GHA is likely to record average temperature exceeding 20°C during the third dekad of February 2018. Some areas in northern Sudan, central Eritrea, over the Ethiopian highlands, central highlands of Kenya, 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 (01-10) 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 first dekad of February 2018 rainfall was concentrated in the southern sector and southwestern parts of the equatorial sector of the GHA. The maximum range of total rainfall was between 50 to 100 mm and was recorded in southwestern Rwanda, northwestern Burundi and in southwestern Tanzania

Tanzania, Burundi and Rwanda:

The northeastern and eastern parts of Tanzania recorded rainfall of less than 5mm. Much of western and southern Rwanda, Burundi, and western and southwestern parts of Tanzania recorded rainfall totals exceeding 25mm, while the rest of these areas recording rainfall totals of 6mm to 50mm. Much of these areas recorded below normal rainfall conditions especially in east, west and south of Tanzania as well as in southern Rwanda, with the rest of the places experiencing near normal rainfall conditions. The rainfall condition showed reduction in rainfall performance in eastern parts of Tanzania, and improvements in parts of Rwanda and Burundi as compared with the previous Dekad

Uganda, Kenya, South Sudan, Ethiopia, Eritrea, Djibouti, Somalia:

Southern parts of Uganda, some parts of central, eastern and coastal Kenya, southwestern and southern eastern South Sudan, much of Eritrea, Djibouti and in northwest and south of Somalia, recorded less than 5mm of rainfall except for central Ethiopia which recorded less than 10mm of rainfall. Much of Southern Uganda, west of Kenya, and south-central South Sudan recorded below normal rainfall or generally dry conditions. Much of the rest of these areas recorded near normal or generally dry rainfall conditions. The northern coast and eastern parts of Kenya showed improvement in rainfall performance as compared with the previous month.

Sudan: Much of Sudan recorded no rainfall and experienced generally conditions, these area receive generally dry conditions during this time of the year.

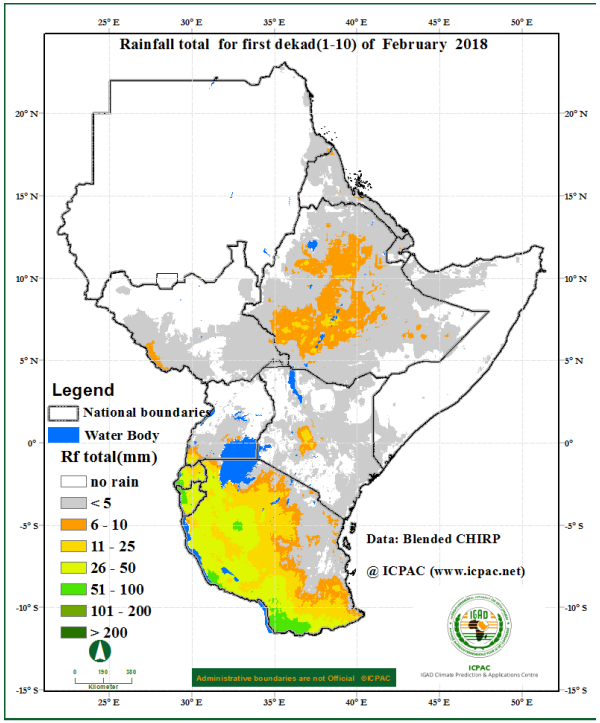

Figure 1a: Rainfall distribution during the third dekad (01-10) of January 2018. *(Data: Blended CHIRP)*

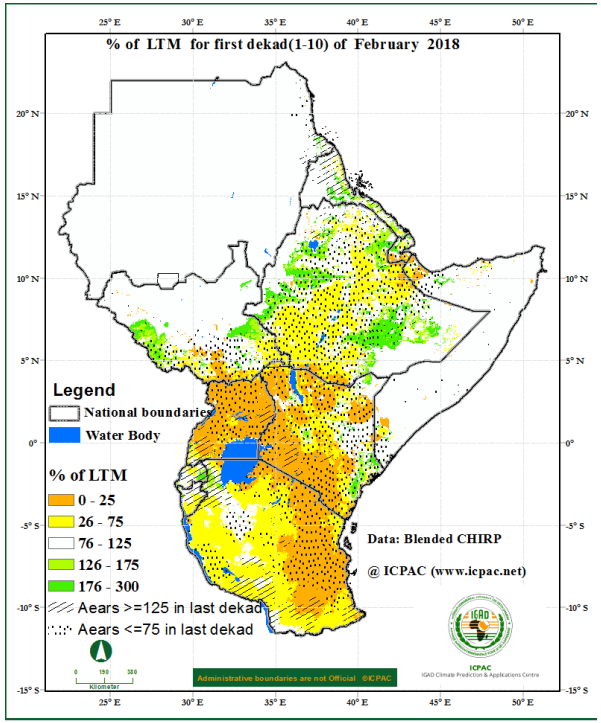

Figure 1b: Percent of long term average rainfall for the third dekad (01-10) of January 2018 *(Data: Blended CHIRP)*

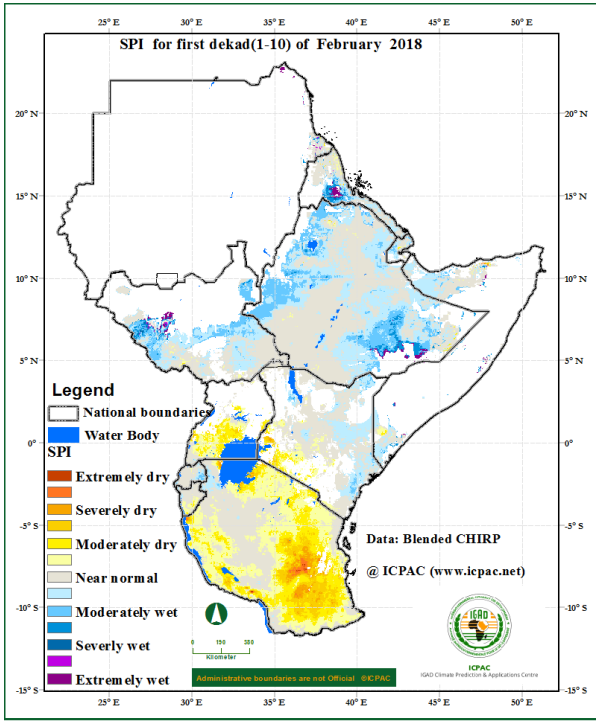

Figure 1c: Standardized Precipitation Index (SPI) for third dekad (01-10) of January 2018 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

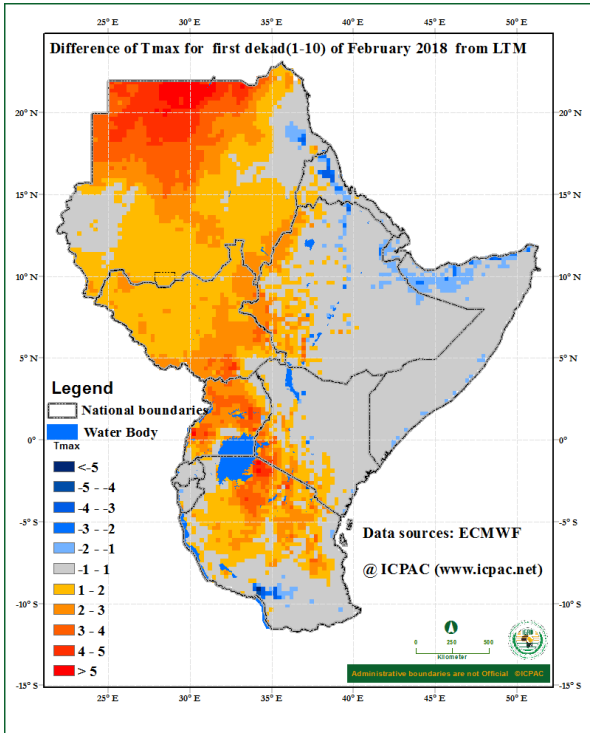

Figure 2: Maximum temperature difference from the average (2008-2017) for the first dekad (01-10) of February 2018*(Data Source: ECMWF)*

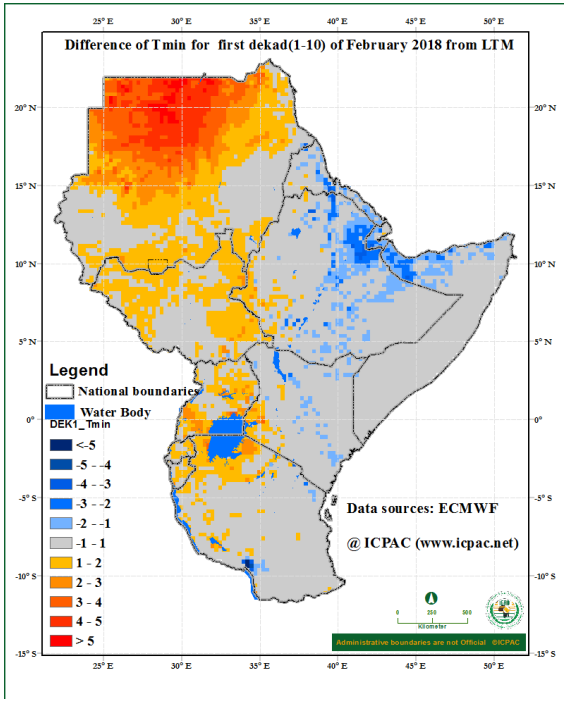

Figure 3:Minimum temperature difference from the average (2008-2017) for the first dekad (01-10) of January 2018*((Data Source: ECMWF)*

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

Sudan, South Sudan, Uganda: Much of these area recorded maximum temperature that is warmer than the average except for eastern and southwestern part of Sudan, southeastern South Sudan, and in eastern and southwestern Uganda which recorded maximum temperature near the average for maximum temperature.

Ethiopia, Kenya and Tanzania: Western part of Ethiopia, western and southwestern Kenya, as well as northern Tanzania experienced maximum temperature condition that is warmer than the average. Much of the rest of these areas experienced near average condition for maximum temperature.

Eritrea, Somalia and Djibouti: the northern part of Somalia, in parts of Djibouti, in northwestern Eritrea maximum temperature cooler than the average was recorded. The rest of these areas recorded near the average for maximum temperature except for Southwestern part of Eritrea which recorded warmer than the average for maximum temperature.

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

Sudan, South Sudan, and Uganda: Much of these areas experienced maximum temperature warmer than the average condition for minimum temperature except for a few areas in southwest and southeast of Sudan, in southern and northeastern part of South Sudan, and in northern and central and south-central parts of Uganda which recorded minimum temperature near the average value.

Rwanda and Burundi: much of these areas recorded minimum temperature that is warmer than the average condition.

Kenya and Tanzania: western parts of Kenya and northwestern Tanzania recorded warmer than the average for minimum temperature. Much of the rest of these areas recorded near average condition for minimum temperature.

Eritrea, Djibouti, Ethiopia and Somalia: parts of central and southern Eritrea, Djibouti, northeast and southern Ethiopia, and northern part of Somalia experienced cooler than the average for minimum temperature. 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 first dekad of February 2018.

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 9th to 16th February 2018 (Figure 4) indicates that:

Ethiopia, Uganda, Kenya and Somalia: Southwestern and central parts of Ethiopia, over much of Uganda, much of southern parts of Kenya, and southeastern Somalia indicated deterioration in vegetative condition as compared to the long term average.

South Sudan, Rwanda, and Tanzania: Several parts of South Sudan, over eastern Rwanda, 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 northern and western parts of Tanzania.

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

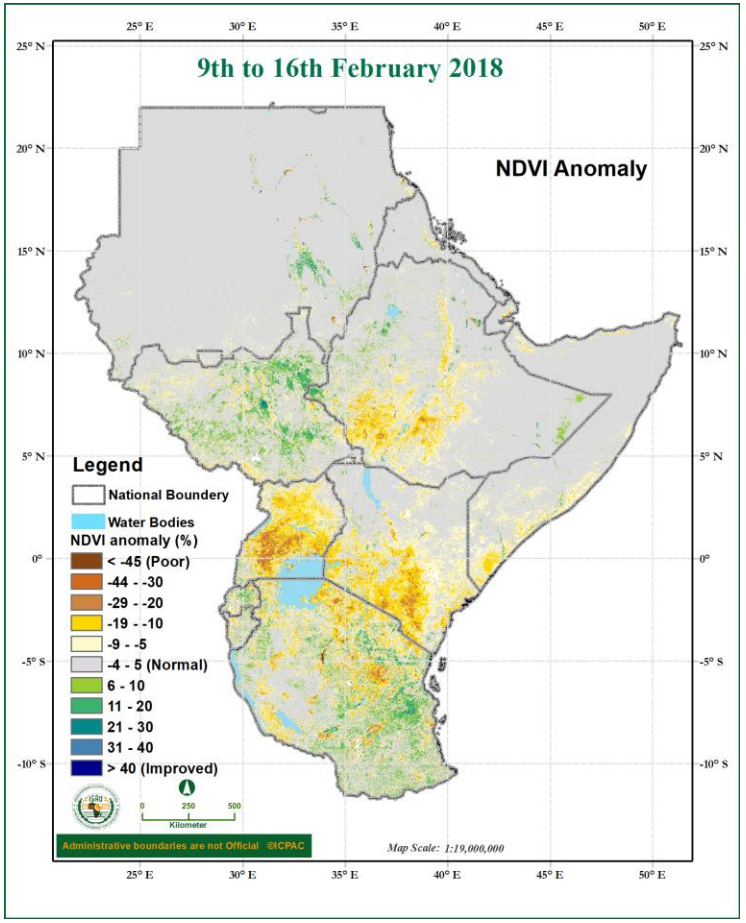

Figure 4: NDVI anomaly for the period between 24th and 23rd January 2018 (Data Source: USGS NASA)

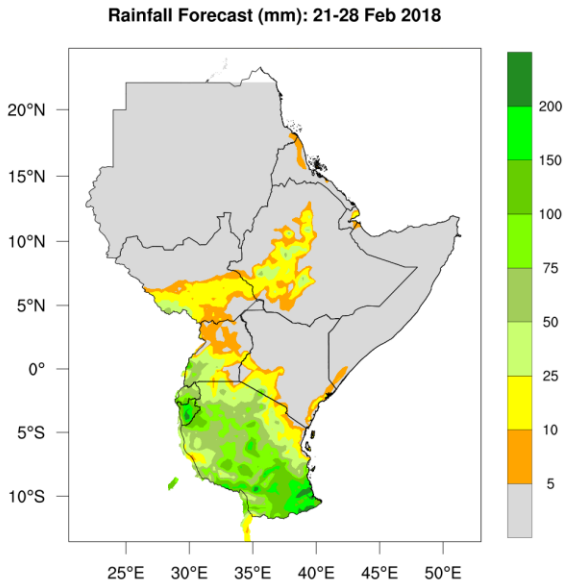

Figure 5: Precipitation forecast for the third dekad (21-28) of February 2018 (Source: WRF-ICPAC**)**

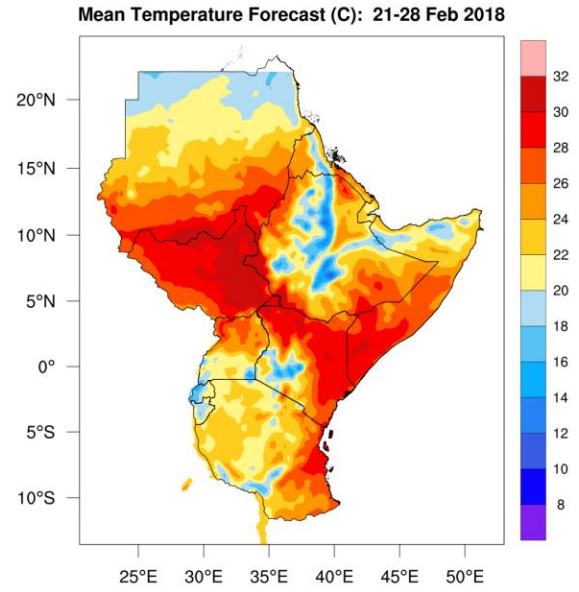

Figure 6: Forecast for average temperature for the third dekad (21-28) of February 2018 (Source: WRF-ICPAC)

Temperature Forecast

The forecast for the average temperature for third dekad of February 2018 (Figure 6) indicates much of the GHA will record temperatures exceeding 20°C except for a few areas in the northern part of Sudan, the central highlands of Ethiopia, northwestern Somalia, central highlands of Kenya, over much of Rwanda, Burundi and 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, over much of South Sudan, northern Uganda, north and eastern Kenya, southern part of Somalia, as well as eastern and southern 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 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 third dekad of February 2018 southern part of Burundi, southern part of Tanzania likely to record high rainfall amounts which may lead to 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 February 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