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10 DAY CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE FIRST DEKAD (1-10) OF JULY 2017 TOGETHER WITH FORECAST FOR THE THIRD DEKAD (21-31) OF JULY 2017

1.0 Introduction

In this bulletin, the climatic conditions observed during the first dekad (01-10) of July 2017 over the Greater Horn of Africa (GHA) are reviewed and the associated impacts highlighted. The climate forecast for the third dekad (21-31) of July 2017 is also presented.

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

During the first dekad (01-10) of July 2017 rainfall activity was mainly experienced over southwestern and central parts of the northern sector, in northwestern, western parts of the equatorial sector of the Greater Horn of Africa (GHA). Much of the northern and eastern parts of the northern sector, eastern and southern parts of the equatorial sector, and much of the southern sector of the GHA recorded little or no rainfall.

The rainfall was near average to above average (1981-2010) in several parts of the GHA except for a few areas in the eastern parts of northern sector, and eastern parts of equatorial and southern sector which exhibited below average rainfall conditions during the first dekad (01-10) of July 2017.

North, western and southern parts of the northern sector, central and eastern parts of the equatorial sector, and central and southern parts of the southern sector of the GHA exhibited maximum temperature warmer than the long-term average (2008-2016) maximum temperature conditions during the first dekad of July 2017. Much of the rest of GHA region recorded near average maximum temperature.

The northern, central and western parts northern sector, southwestern and central parts of the equatorial sector and much of western parts of the southern sector of GHA recorded warmer than the average minimum temperature, while the rest of the GHA recorded near average minimum temperature conditions.

Rainfall forecast for the third dekad (21-31) of July 2017 shows that northern and southwestern parts of the northern sector, northeastern, eastern and southern part of the equatorial sector, as well as much of the southern sector of the GHA is likely to record little or no rainfall. Rainfall is likely to be concentrated in the rest of the GHA especially in the western and central parts of the northern sector, and western parts of the equatorial sector of the GHA.

Much of the northern sector except for western and central Ethiopia, northern and eastern parts of the equatorial sector, and eastern and northwestern parts of the southern sector of the GHA are likely to record warmer average temperature greater than 20°C.

3.0 Observed rainfall situation during the first dekad (01-10) of July 2017

Figure 1a shows the total rainfall distribution, Figure 1b shows the percent of the long-term average rainfall, and Figure 1c shows the standardized precipitation index (SPI) which is an indicator used to show the number of standard deviations that observed cumulative precipitation deviates from the climatological average, over the GHA region during the first dekad of July 2017.

Rainfall Distribution and Severity

During the first dekad (01-10) of July 2017, in areas covering much of south of Sudan, South Sudan, southwestern Eritrea, western and central Ethiopia, Uganda, western and coastal Kenya, southeastern Somalia, as well as northeastern coast of Tanzania total rainfall amount greater than 5mm was recorded (Figure 1a). Rainfall amounts greater than 50mm was recorded around southwestern and southeastern parts of Sudan, western and central Ethiopia, in southwestern Eritrea, north, east and western South Sudan, in northern, and eastern parts of Uganda, as well as in western Kenya. The rest of the GHA recorded less than 5mm of rainfall.

During the same period areas around central to eastern parts of Sudan; northern and central Eritrea; a few areas in southern parts of Ethiopia; northern and southern parts of Somalia; in parts of central and southeastern Kenya, central and eastern Rwanda, in several areas of Burundi; and in eastern Tanzania rainfall that is less than 75% of the long term average (1981-2010) was recorded. Rainfall conditions exceeding 125% of the long term average was experienced in southern 0part of Sudan, western and southeastern South Sudan, in southern Eritrea, northeastern and southern parts of Ethiopia, in central part of Somalia, much of Uganda, western Kenya, and northwestern Tanzania. The rest of the GHA region recorded between 75% and 125% of the long term average rainfall (Figure 1b), during the first dekad of July 2017.

Standardized Precipitation Index (SPI) during the first dekad of July 2017 shows that a few areas in western Sudan, northern Eritrea, southern margins of central Ethiopia, in central and southeastern Kenya, in north western Rwanda and in eastern Tanzania, recorded moderately dry to severely dry rainfall conditions. Moderately wet to extremely wet rainfall condition (Figure 1c) was experienced in southern parts of Sudan, in western and southeastern South Sudan, southwestern and southeastern Eritrea, in several parts of north, south and east of Ethiopia, central Somalia, over much of Uganda, western Kenya, and northwest of Tanzania(Figure 1c). The rest of the GHA experienced near normal conditions

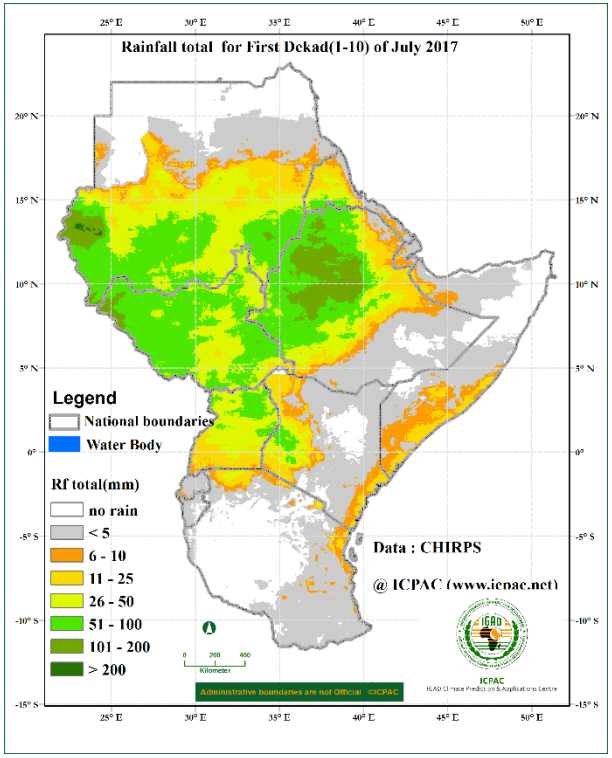

Figure 1a: Rainfall distribution during the first dekad (01-10) of July 2017. *(Data: CHIRPS satellite estimate)*

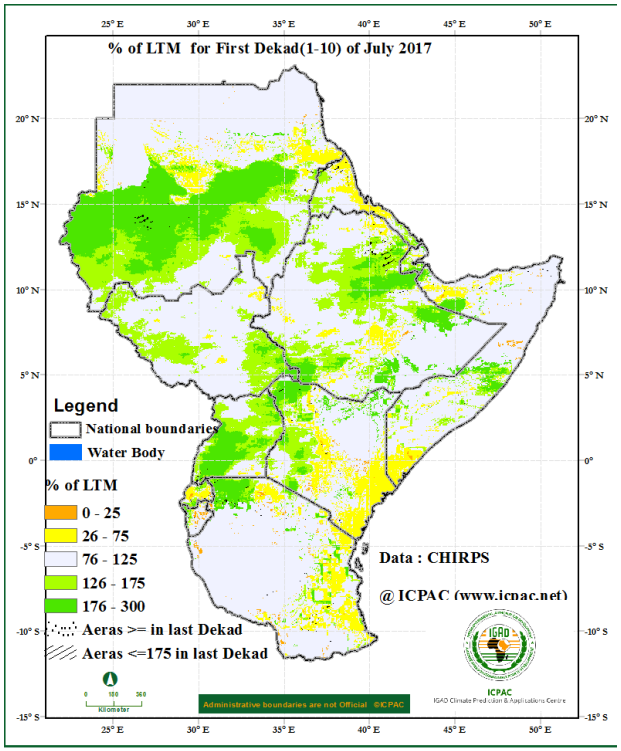

Figure 1b: Percent of long term average rainfall for the first dekad (01-10) of July 2017 *(Data: CHIRPS satellite estimate)*

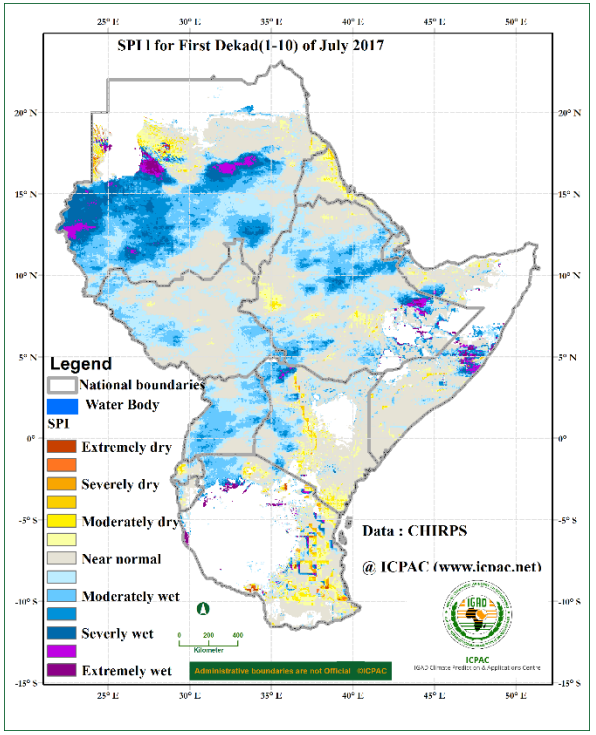

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (01-10) of July 2017 *(Data: CHIRPS satellite estimate)*

Maximum and Minimum Temperature Anomaly

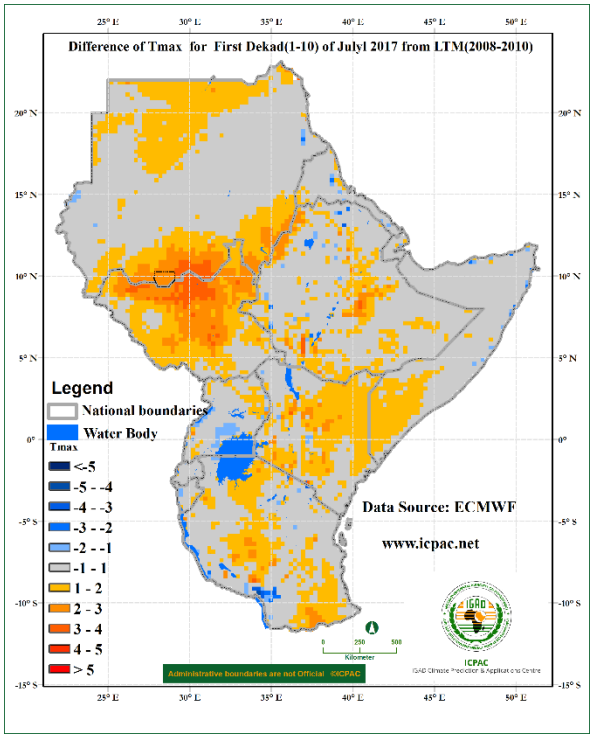

Figure 2: Maximum temperature difference from the average (2008-2016) for the first dekad (01-10) of July 2017*(Data Source: ECMWF)*

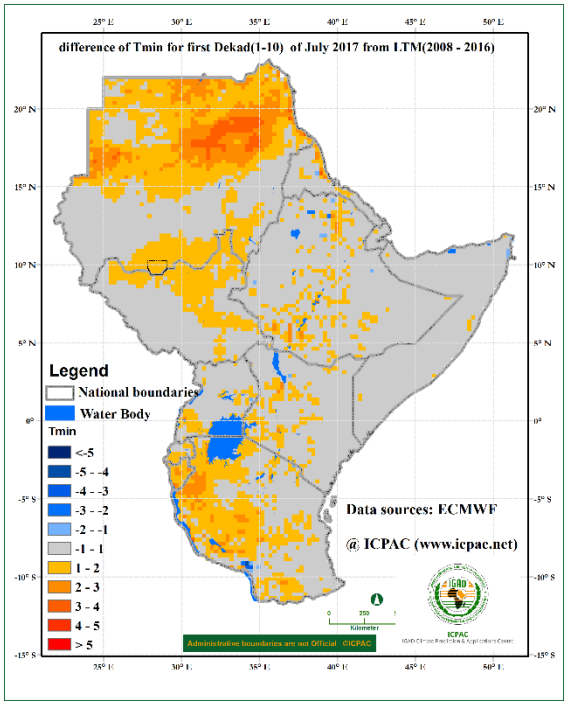

Figure 3:Minimum temperature difference from the average (2008-2016) for the first dekad (01-10) of July 2017*((Data Source: ECMWF)*

Conditions warmer than average conditions for maximum temperature was observed over northeastern and southern parts of Sudan; in much of South Sudan; in isolated parts of eastern and southern Ethiopia; in northeastern and southwestern Uganda; much of western, central, and eastern Kenya, southern Somalia of Somalia; and in northern, central and southern Tanzania during the first dekad of July 2017. The rest of the region recorded near the average maximum temperature (Figure 2).

Much of northern and southern parts of Sudan, northern and eastern South Sudan, several isolated parts of central Ethiopia; in southeastern, and southwestern Uganda; western and central parts of Kenya, southern and eastern Rwanda; over much of Burundi; and in western and central Tanzania, recorded minimum temperature warmer than the average conditions during the first dekad of July 2017. The rest of the GHA region recorded minimum temperature near the average conditions (Figure 3).

4.0 Vegetation condition indicators

Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period between 3rd and 10th July 2017 (Figure 4) indicates that vegetative conditions showed improvement as compared to the long term average vegetative conditions in southern part of Sudan, in several areas of South Sudan, central Ethiopia, northern Uganda, southwestern Somalia, in southern and eastern Tanzania, and in a few areas in central and coastal Kenya. Deterioration in vegetative conditions as compared to the long term average vegetative conditions was observed mainly in central and southern parts of Ethiopia, southern Uganda, western and central Kenya, in southeastern part of Somalia, in several parts of Rwanda, and in northern parts of Tanzania. The rest of the GHA showed little or no change in vegetation conditions compared to the long-term average of the same period.

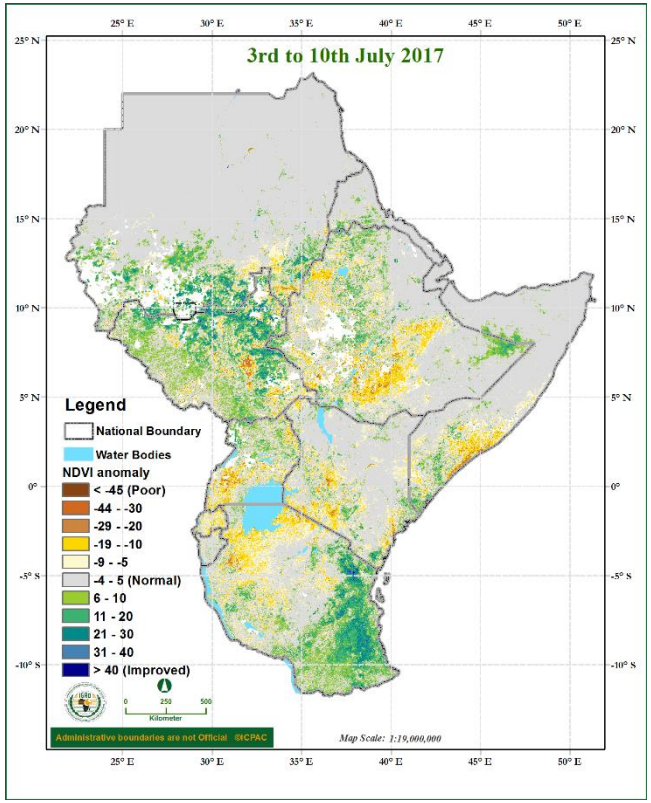

Figure 4: NDVI anomaly for the period between 3rd and 10th July 2017 (Data Source: USGS NASA)

5.0 Climate Forecast

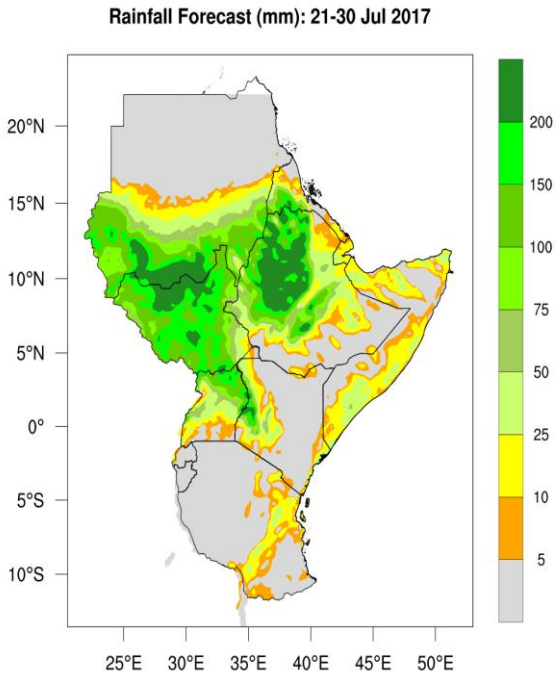

Figure 5: Precipitation forecast for the third dekad (21-31) of July 2017 (Source: WRF-ICPAC)

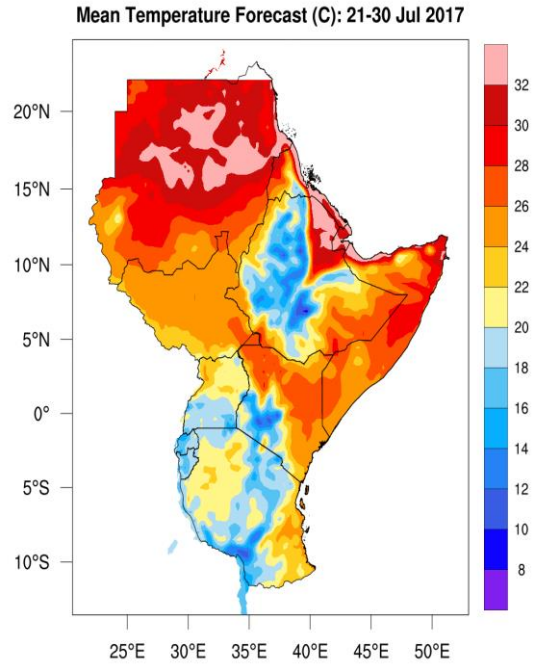

Figure 6: Forecast for average temperature for the third dekad (21-31) of July 2017 (Source: WRF-ICPAC)

Rainfall Forecast

The rainfall forecast for the third dekad (21-31) of July 2017 in Figure 5 indicates that rainfall is likely to be concentrated over much of the southern part of Sudan, South Sudan, southwestern Eritrea, north, west and central Ethiopia, in parts of Djibouti, in much of Uganda except for some areas in the south, in western Kenya, and in northern parts, eastern parts of central and southern Somalia, and also in eastern parts of Tanzania. The rest of the GHA region likely to experience little rainfall or remain generally dry during the third dekad (21-31) of July 2017.

Temperature Forecast

The average temperature forecast for third dekad (21-31) of July 2017 (Figure 6) indicates the likelihood of cool average temperature less than 20°C is likely to be recorded in central and western Ethiopia, southern Uganda western and central parts of Kenya, in much of Rwanda and Burundi, and in western, central and northern Tanzania. The rest of the GHA is likely to record average temperature greater 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

During the first dekad (01-10) of July 2017 the prevailing climate conditions have been associated with flooding in some areas in the northern sector which has led to the destruction of property and disruption of livelihoods. Some areas in the northern sector and western equatorial sector have shown improvement in water and vegetative conditions which have eased water stress, improved pasture availability, and prospects of good crop and livestock productivity have been reported. Some areas continue to report effects of the dry conditions in especially in the equatorial sector, and southeastern parts of the northern sector of the GHA, and these have led to, water stress, poor prospects of crop and livestock productivity, and increase in climate related diseases.

From the climate outlook for the third dekad of July much of the northern western parts of the equatorial sector as well as much of the western and central parts of the northern sector of the GHA are likely to have sufficient rainfall performance, which will lead to improved water and pasture resources, some areas are also likely to experience flooding conditions especially in some areas of Sudan, northwestern Ethiopia and northern South Sudan.

NB: This ten day bulletin contributes towards the update of the July-July-August-September (JJAS) seasonal outlook provided during the 46th Greater Horn of Africa Climate Outlook Forum (GHACOF46) in Khartoum, Sudan (http://www.icpac.net/index.php/climate-monitoring/seasonal-forecasts.html).