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10 DAY CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE SECOND DEKAD (11-20) OF SEPTEMBER 2017 TOGETHER WITH FORECAST FOR THE FIRST DEKAD (01-10) OF OCTOBER 2017

1.0 Introduction

In this bulletin, the climatic conditions observed during the second dekad (11-20) of September 2017 over the Greater Horn of Africa (GHA) are reviewed and the associated impacts highlighted. The climate forecast for the first dekad (01-10) of October 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 second dekad (11-20) of September 2017 rainfall activity concentrated in the southern parts of the northern sector as well as western, central and southwestern parts of the equatorial, and eastern part of the southern sector of the of the Greater Horn of Africa (GHA).

The rainfall was above average to near average over several areas of the GHA except for a few areas in western, central and southeastern part of the northern sector, and the southwestern and northeastern parts of the equatorial sector for the GHA which recorded below the average rainfall during the second dekad of September 2017.

The western parts of the northern sector of the GHA, and few isolated areas of southeastern northern sector, central equatorial sector, and in central and southern sector of the GHA recorded warmer than the average (2008-2016) maximum temperatures, while much of the rest of the GHA recording near the average maximum temperature during the second dekad of September 2017. Warmer than the average (2008-2016) conditions for the minimum temperature were observed mainly in areas in the north and west of the northern sector, as well as in a few areas in central parts of the northern sector and central equatorial sector of the GHA. Much of the rest of the GHA recorded near the average for the minimum temperature conditions during the same period the second dekad of September 2017.

Rainfall forecast for the first dekad (01-10) of October 2017 shows that rainfall is likely to be concentrated in much of the southern part of the northern sector, as well as in western and eastern parts of the equatorial sector of the GHA. The rest of the GHA is likely to record little or no rainfall.

Many areas of the GHA is likely to record warm average temperature exceeding 20°C except for western and central highlands of Ethiopia, western Kenya, southern Uganda, in parts of Rwanda and Burundi and in northeast to southwest parts of Tanzania which are likely to record average temperatures cooler than 20°C, leaving the much of the rest of the GHA to record likely average temperatures greater than 20°C.s

3.0 Observed rainfall situation during the second dekad (11-20) of September 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 second dekad of September 2017.

Rainfall Distribution and Severity

During the second dekad (11-20) of September 2017 the blended (Climate Hazard Infra-Red Precipitation) CHIRP data shows that in areas covering much of northern parts of Sudan, coastal and central Eritrea, eastern Djibouti, northern and southern parts of Ethiopia, extensive part of central Somalia, northern and south-central Kenya, southwestern Burundi, and also western, central and southern parts of Tanzania recorded less than 5mm of total rainfall (Figure 1a). Rainfall amounts greater than 50mm was recorded mainly over much of western Ethiopia, western, southern and eastern South Sudan over much of Uganda except for northeast and southwest parts; and in western and southern coast of Kenya. More than 100mm of rainfall was recorded in parts of western Ethiopia. The rest of the GHA recorded between 5mm and 50mm of rainfall (Figure 1a).

Less than 75% of the long term average rainfall condition was recorded in few areas mainly in southern part of Sudan, northwest and eastern Ethiopia, northern and southern parts of Somalia, northwestern South Sudan, southwestern Uganda, southwestern, Rwanda, central and eastern Burundi; and in western and southern parts of Tanzania. Much of the rest of the GHA region recorded more than 125% of the long term average rainfall (Figure 1b), with a few areas such as the northern parts of Sudan, parts of western and central South Sudan, central Somalia, and parts of western Tanzania which recorded between 75% to 125% of the long term average rainfall during the second dekad of September 2017. A few areas in eastern and western parts of Sudan, northeastern Kenya, and eastern Tanzania have shown improvement in rainfall performance as compared to the previous dekad. A few other areas in southeastern Ethiopia, northern Somalia and southern Tanzania have shown a reduction in rainfall performance as compared with the previous dekad.

Standardized Precipitation Index (SPI) during the second dekad of September 2017 shows that several areas of the GHA experienced near average to extremely wet rainfall conditions. However, a few areas in southern part of Sudan, northwestern Ethiopia, and northern and southern parts of Somalia experienced moderately dry to severely dry rainfall conditions during the second dekad of September 2017 (Figure 1c).

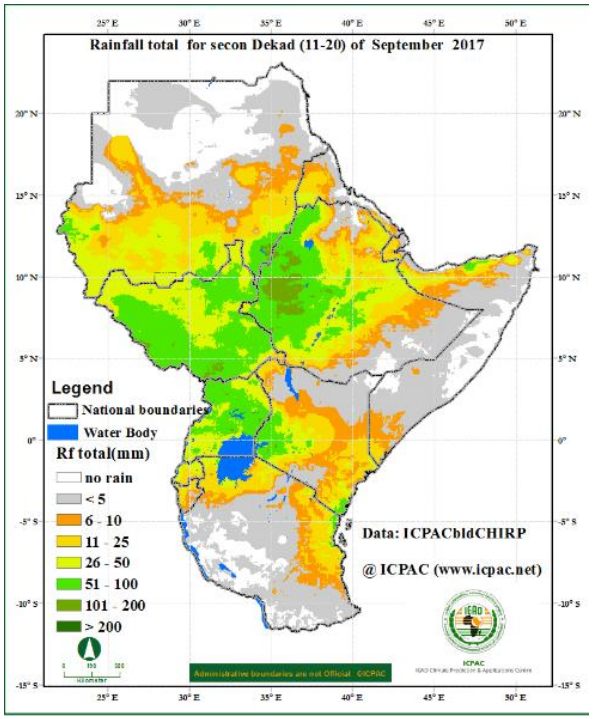

Figure 1a: Rainfall distribution during the second dekad (11-20) of September 2017. *(Data: Blended CHIRP)*

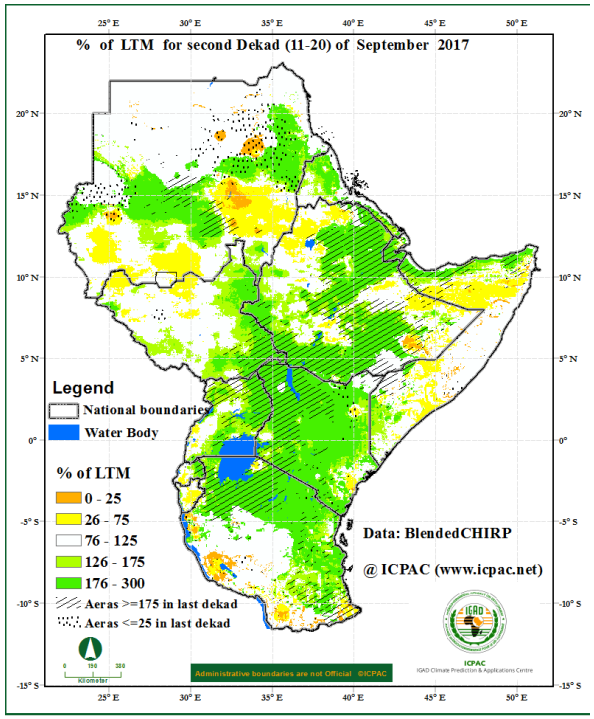

Figure 1b: Percent of long term average rainfall for the second dekad (11-20) of September 2017 *(Data: Blended CHIRP)*

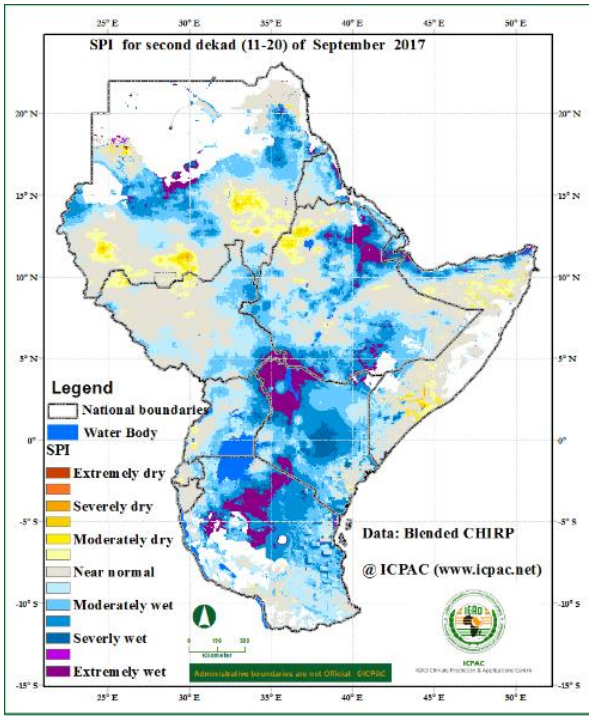

Figure 1c: Standardized Precipitation Index (SPI) for second dekad (11-20) of September 2017 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

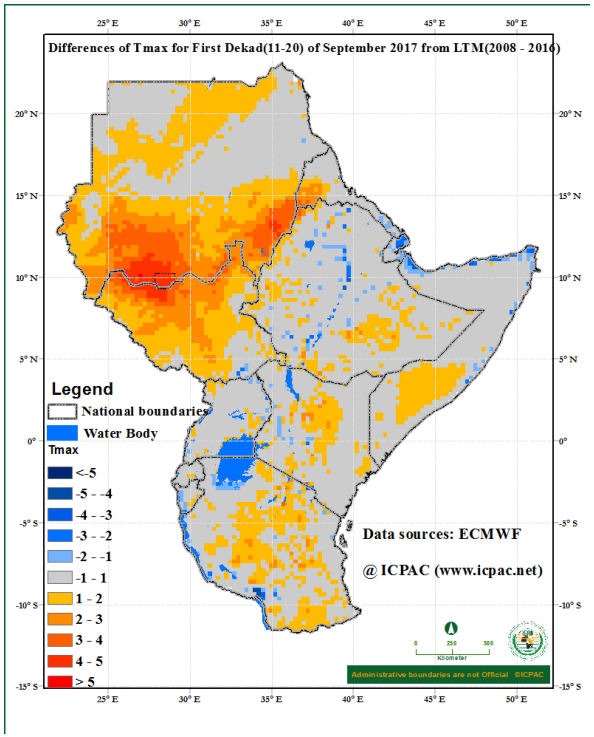

Figure 2: Maximum temperature difference from the average (2008-2016) for the second dekad (11-20) of September 2017*(Data Source: ECMWF)*

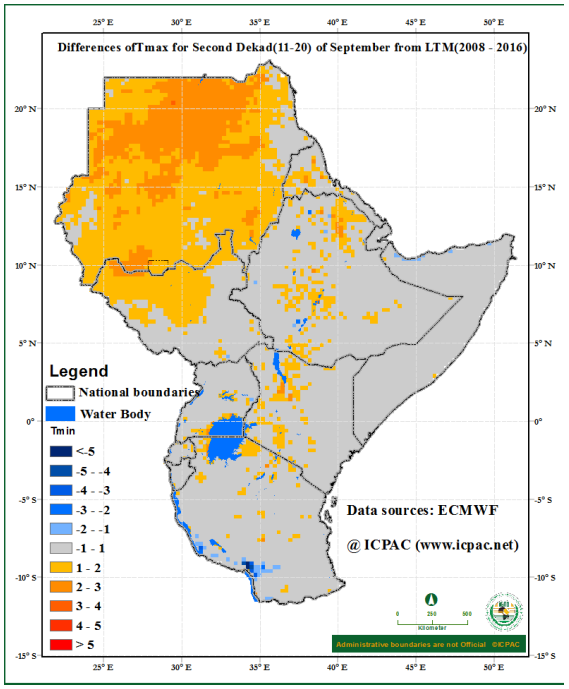

Figure 3:Minimum temperature difference from the average (2008-2016) for the second dekad (11-20) of September 2017*((Data Source: ECMWF)*

Conditions warmer than the average for maximum temperature was mainly observed over southern, north-central and western parts of Sudan; over much of South Sudan except for the southeastern side; in southwest of Eritrea, southern parts of Somalia; and in several areas west, south and southeast of Ethiopia, central Kenya, and in central, eastern and southern parts of Tanzania. A few areas in eastern Djibouti, southern Eritrea and northern coast of Somalia recorded conditions cooler than the average maximum temperature during the second dekad of September 2017. Much of the rest of the region recorded near the average conditions for the maximum temperature (Figure 2)

Much of Sudan; in northern part of South Sudan; in several few areas in west of Eritrea, north, central and southwest of Ethiopia, in northwest, central and western parts of Kenya, and in northern parts of Tanzania conditions warmer than the average for minimum temperature second dekad of September 2017 was recorded. Much of 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 13th and 20th September 2017 (Figure 4) indicates that a few areas experienced deterioration in vegetative conditions as compared to the long term average vegetative conditions especially in areas south of Sudan, southwest of Eritrea, southeastern margin of central Ethiopia, southeastern Somalia, southern Uganda, coastal Kenya eastern Rwanda and northeastern Tanzania. Much of South Sudan, northern Uganda, western Kenya, some parts in southern Sudan, southwestern and northeastern Ethiopia, and in eastern and southern Tanzania improvement in vegetative as compared to the long term average vegetative conditions was experienced. The rest of the GHA showed little or no change in vegetation conditions compared to the long-term average of the same period.

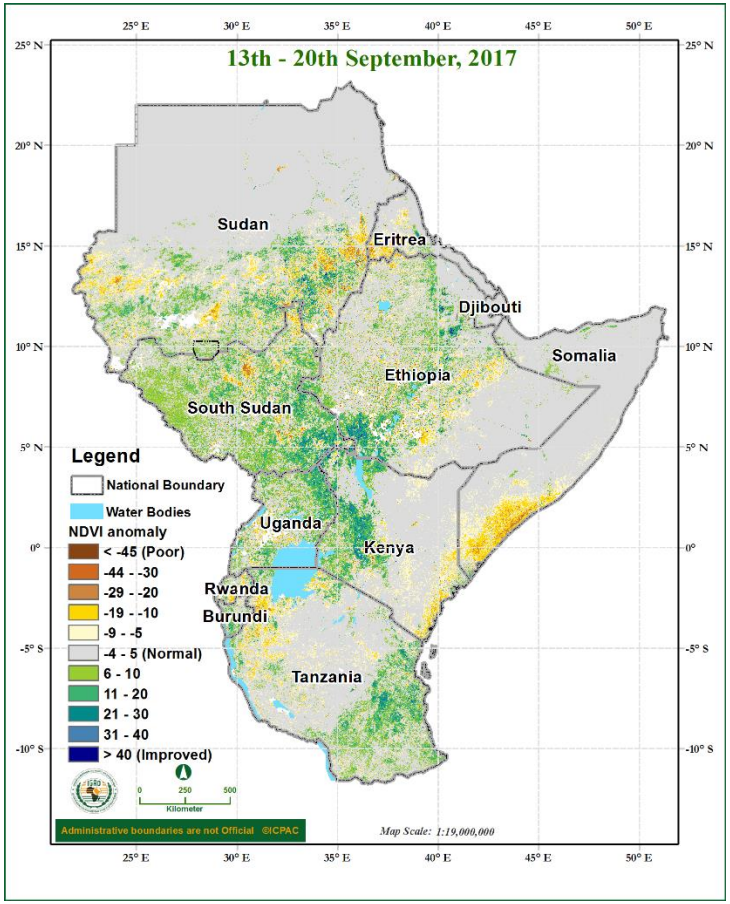

Figure 4: NDVI anomaly for the period between 13th and 20th September 2017 (Data Source: USGS NASA)

5.0 Climate Forecast

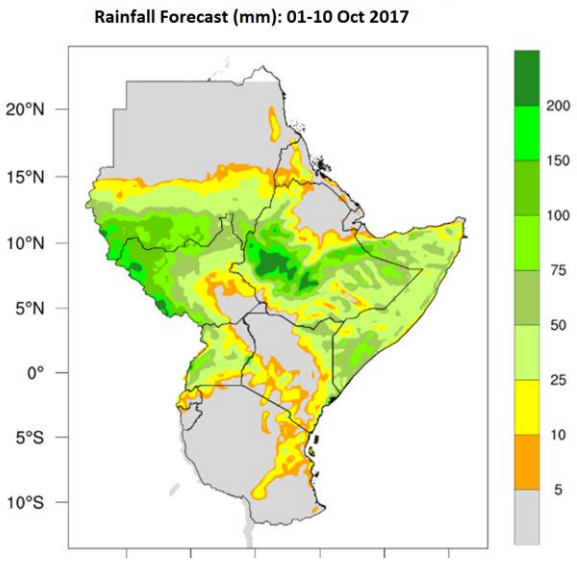

Figure 5: Precipitation forecast for the first dekad (01-10) of October 2017 (Source: WRF-ICPAC**)**

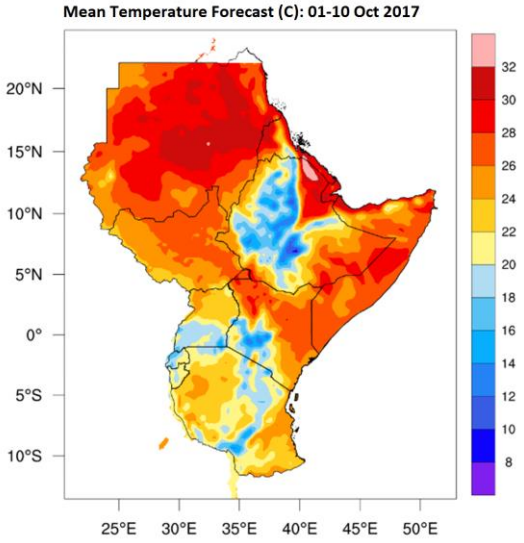

Figure 6: Forecast for average temperature for the first dekad (01-10) of October 2017 (Source: WRF-ICPAC)

Rainfall Forecast

The rainfall forecast for the first dekad (01-10) of October 2017 in Figure 5 indicates that rainfall is likely to be concentrated over much of the southern part of Sudan, and Somalia; over much of South Sudan except for the southeastern part, in much of Ethiopia except for the northeastern part; over much of Uganda except for the northeastern part; and in parts of western and eastern Kenya, northern Burundi and northeastern Tanzania. The rest of the GHA region likely to experience little rainfall or remain generally dry during the first dekad (01-10) of October 2017.

Temperature Forecast

The average temperature forecast for first dekad (01-10) of October 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 western Rwanda and Burundi, and in southwestern, central and northeastern Tanzania. The rest of the GHA is likely to record average temperature higher 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 second dekad (11-20) of September 2017 the prevailing climate conditions in some areas in the northern sector and western equatorial sector of the GHA have shown continued 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. A few areas in Rwanda and Sudan reported instances of flooding that led to disruption of livelihood and these are likely to have an increase in water related diseases. Some areas continue to report effects of the dry conditions especially in the eastern and southwestern parts of the equatorial sector, and southeastern parts of the northern sector of the GHA, and these continued to extend the water stress level, poor prospects of crop, pasture and livestock productivity, and increase in climate related diseases.

From the climate outlook for the first dekad of October 2017 much of the northern western parts of the equatorial sector as well as the southeastern parts of the northern sector of the GHA are likely to have sufficient rainfall performance, which may lead to improved water and pasture resources, some areas are also likely to experience flooding conditions especially in some areas west of South Sudan, southern Somalia and southwestern Ethiopia.

NB: *This ten day bulletin contributes towards the update of the September-December- (SOND) seasonal outlook provided during the 47th Greater Horn of Africa Climate Outlook Forum (GHACOF47) in Zanzibar, Tanzania (http://www.icpac.net/index.php/climate-monitoring/seasonal-forecasts.html).*