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

1.0 Introduction

In this bulletin, the climatic conditions observed during the first dekad (1-10) of October 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 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 first dekad (1-10) of October 2017 rainfall activity concentrated in the southern parts of the northern sector, western part of the equatorial, and northwestern part of the southern sector of the of the Greater Horn of Africa (GHA).

The rainfall was near average to below average over several areas of the GHA. However a few areas in eastern and south-central part of the northern sector, north-central, eastern and southwestern part of the equatorial sector, as well as northwestern and western parts of the southern part of the equatorial sector of the GHA which recorded below the average rainfall during the first dekad of October 2017.

Much of the equatorial sector, the western and southwestern and southern parts of the northern sector of the GHA, and in much of northern part of the southern sector of the GHA warmer than the average (2008-2016) maximum temperatures was recorded, while much of the rest of the GHA recording near the average maximum temperature during the first dekad of October 2017. Warmer than the average (2008-2016) conditions for the minimum temperature were observed mainly in areas in the west of the northern 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 first dekad of October 2017.

Rainfall forecast for the third dekad (21-31) of October 2017 shows that rainfall is likely to be concentrated in much of the equatorial sector and southern part of the northern sector, as well as in western and eastern parts of the southern sector of the GHA. Much of the rest of the GHA covering the northern part of the northern sector as well as western and central parts of the southern sector 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 northeastern and central parts of Tanzania which are likely to record average temperatures cooler than 20°C during the third dekad (21-31) October of 2017.

3.0 Observed rainfall situation during the first dekad (1-10) of October 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 October 2017.

Rainfall Distribution and Severity

During the first dekad (1-10) of October 2017 the blended (Climate Hazard Infra-Red Precipitation) CHIRP data shows that in areas covering much of Sudan, western and southern Eritrea, much of Djibouti, northeastern, central and southern parts of Ethiopia; in several parts of Somalia; in northeastern Uganda; and over much of Kenya except the western and southeastern parts, and in parts of Tanzania except for the western and eastern parts of Tanzania recorded less than 5mm of total rainfall (Figure 1a). A few areas in southwestern Ethiopia and in eastern part of Ethiopia, western part of South Sudan rainfall exceeding 50mm was recorded and this was the largest range of rainfall in the GHA region. The rest of the GHA recorded rainfall ranging between 6mm and 50mm (Figure 1a).

Areas covering part of central Sudan, central Eritrea; in much of Djibouti; in northern, southwestern and eastern part of Ethiopia extending to part of northern Somalia; in parts of eastern South Sudan; in parts of northwestern, western and eastern part Kenya; and in much of north and western part of Tanzania recorded rainfall conditions that exceed 126% of average. Much of the rest of the GHA region recorded less than 75% of the long term average rainfall (Figure 1b) during the first dekad of October 2017. A few areas in the northern part of Sudan, eastern and northern part of South Sudan, northwestern and eastern parts of Kenya, in parts of Rwanda and Burundi and in central and southern parts of Tanzania between 75% and 125% of the average rainfall.

Standardized Precipitation Index (SPI) during the first dekad of October 2017 shows that several areas of the GHA experienced near average to extremely wet rainfall conditions. However, some places in the southern part of Sudan, northern and western parts of South Sudan, much of Uganda, central and western Kenya; and in a few areas western and eastern Ethiopia, northern and southern part of Somalia moderately dry to severely dry rainfall condition was recorded. Moderately wet to extremely wet rainfall conditions was experienced in the central part of Sudan, central and southern Eritrea; in much of Djibouti; in parts of northern and southwestern Ethiopia; in northern parts of Somalia; in northern and eastern part of Kenya, southwestern Uganda; in parts of Rwanda and Burundi; and in much of north, western and central Tanzania during the first dekad of October 2017 (Figure 1c).

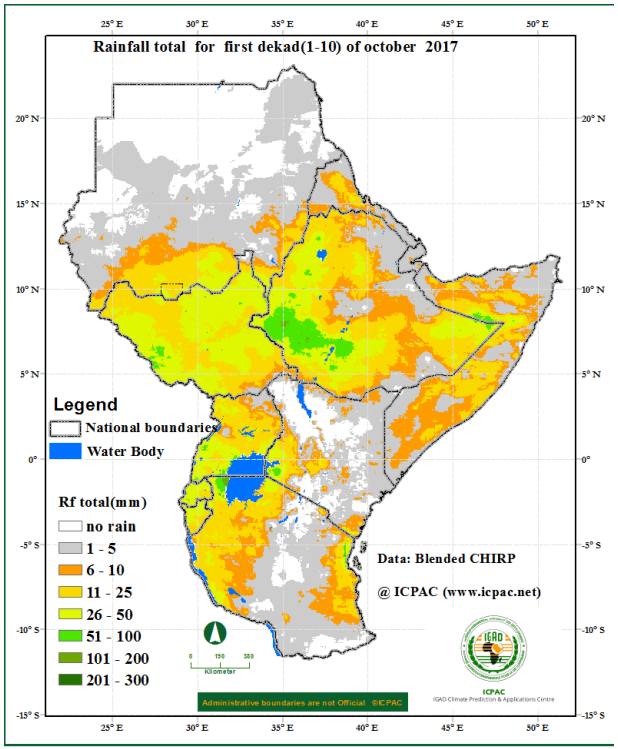

Figure 1a: Rainfall distribution during the first dekad (1-10) of October 2017. *(Data: Blended CHIRP)*

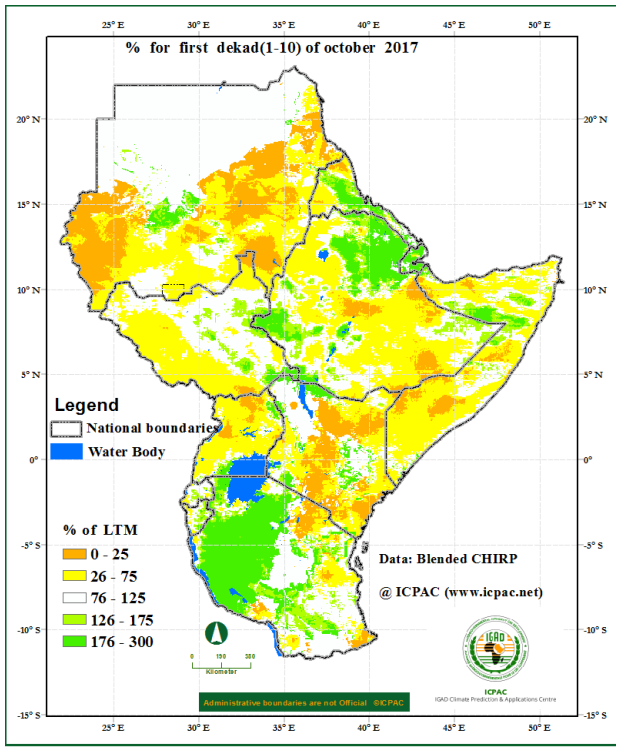

Figure 1b: Percent of long term average rainfall for the first dekad (1-10) of October 2017 *(Data: Blended CHIRP)*

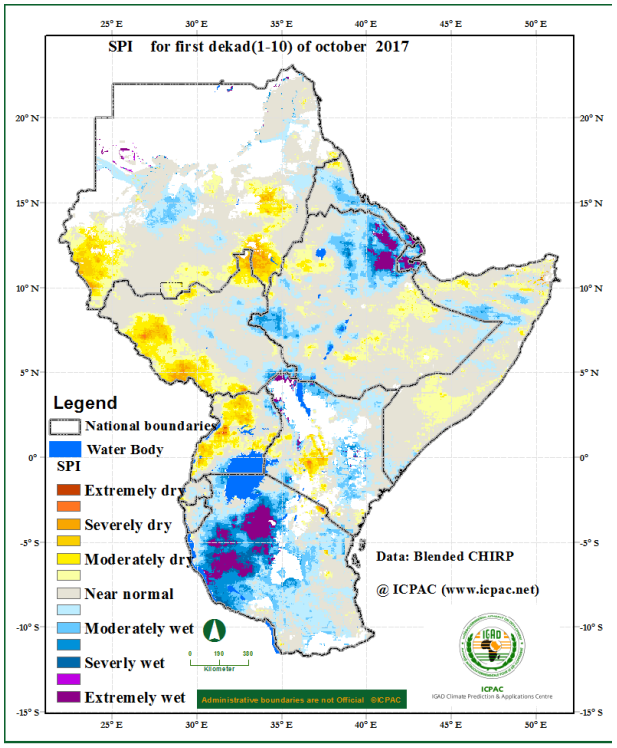

Figure 1c: Standardized Precipitation Index (SPI) for first dekad (1-10) of October 2017 *(Data: Blended CHIRP)*

Maximum and Minimum Temperature Anomaly

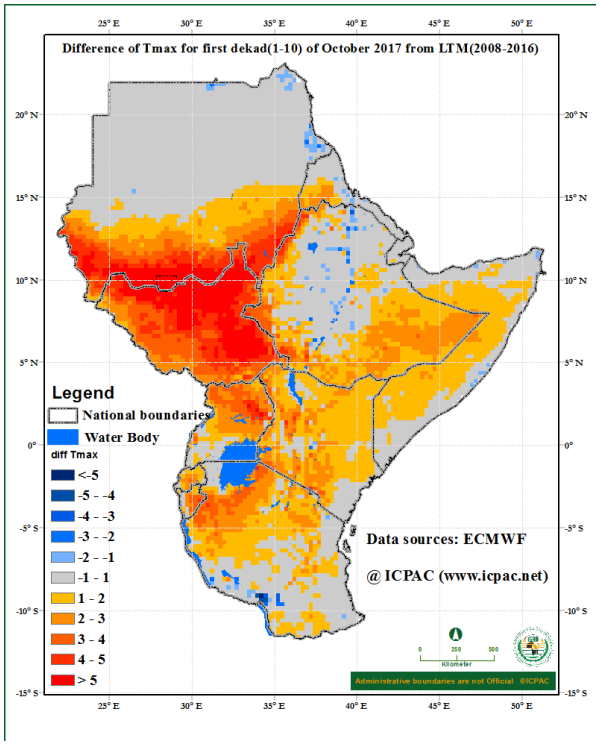

Figure 2: Maximum temperature difference from the average (2008-2016) for the first dekad (1-10) of October 2017*(Data Source: ECMWF)*

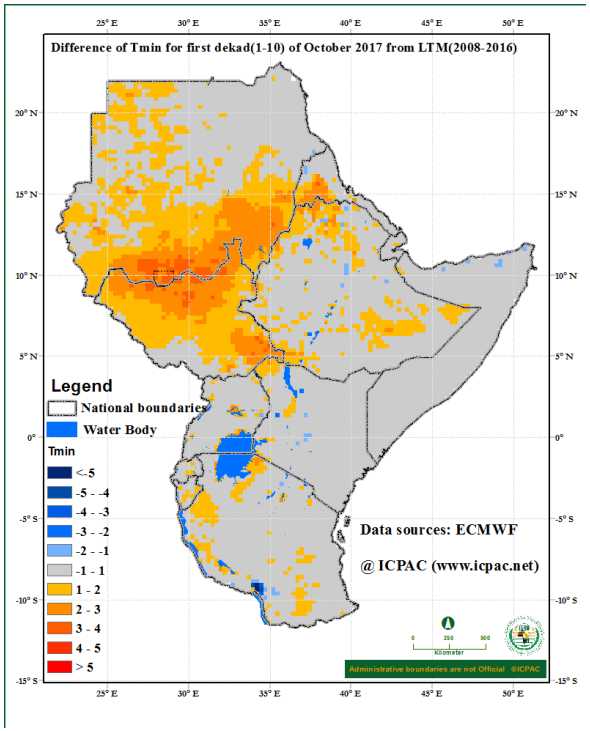

Figure 3:Minimum temperature difference from the average (2008-2016) for the first dekad (1-10) of October 2017*((Data Source: ECMWF)*

Conditions warmer than the average for maximum temperature was mainly observed over southern parts of Sudan; in much of South Sudan, and southwestern Eritrea; in western and southern part of Ethiopia, western parts of Somalia; in much of Uganda, Kenya, Rwanda Burundi, and northern and western parts of Tanzania during the first dekad of October 2017. Much of the rest of the region recorded near the average conditions for the maximum temperature (Figure 2)

Much of western and southern parts of Sudan; in much of South Sudan except for the southwestern part; in a few separate areas in southwest of Eritrea, north, west and east of Ethiopia, in northwest part of Kenya, and in the north, west and southern parts of Tanzania conditions warmer than the average for minimum temperature was recorded for first dekad of October 2017. 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 29st September and 6th October 2017 (Figure 4) indicates that a few areas experienced deterioration in vegetative conditions as compared to the long term average vegetative conditions especially in isolated areas southern of Sudan, eastern South Sudan, southeastern margin of central Ethiopia, in southeastern Somalia, southwestern Kenya, in much of Rwanda, northern Burundi, and northwestern Tanzania. Several areas of southern part of Sudan, northern, southern and western South Sudan, in northeastern, central and southern parts of Ethiopia, northern and eastern Uganda, western and coastal Kenya, central parts of Somalia, and east and south of Tanzania mainly showed improvement in vegetative conditions as compared to the long term average vegetative conditions. The rest of the GHA showed little or no change in vegetation conditions compared to the long-term average of the same period.

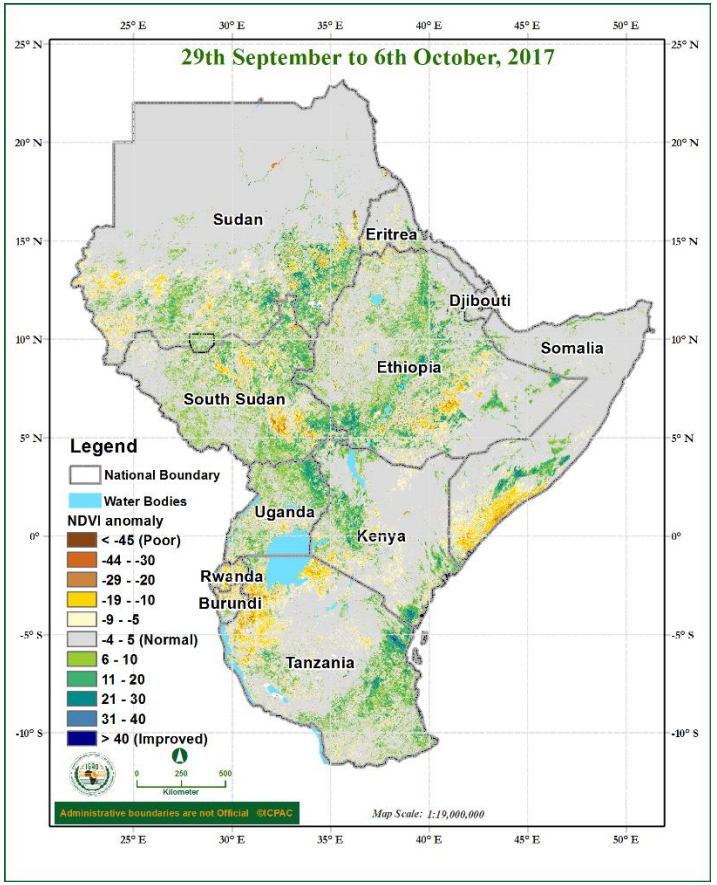

Figure 4: NDVI anomaly for the period between 29st and 6th October 2017 (Data Source: USGS NASA)

5.0 Climate Forecast

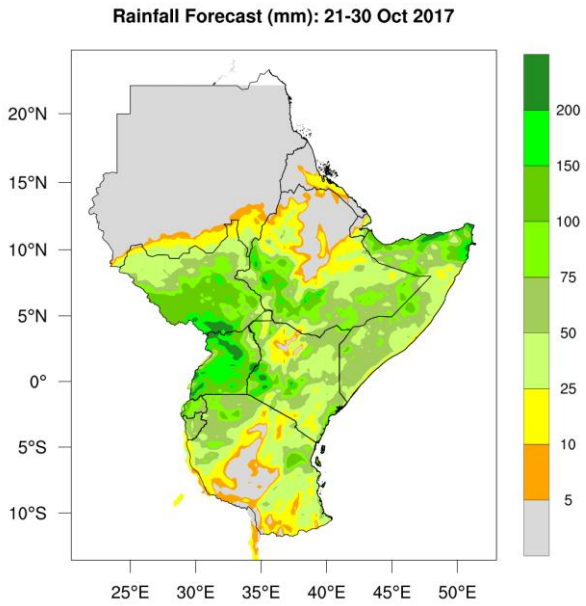

Figure 5: Precipitation forecast for the third dekad (21-31) of October 2017 (Source: WRF-ICPAC**)**

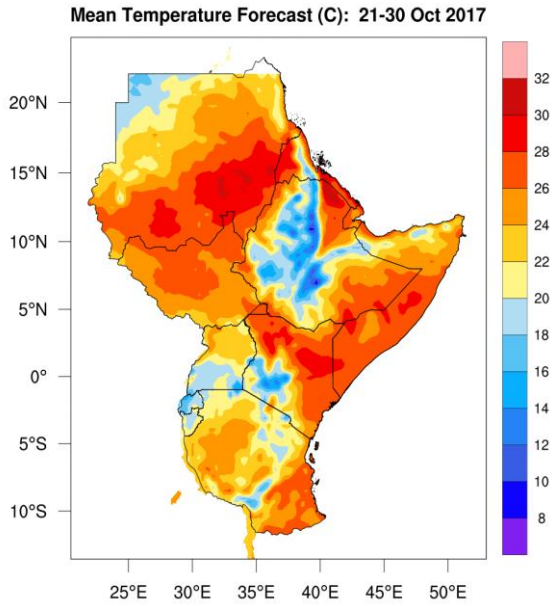

Figure 6: Forecast for average temperature for the third dekad (21-31) of October 2017 (Source: WRF-ICPAC)

Rainfall Forecast

The rainfall forecast for the third dekad (21-31) of October 2017 in Figure 5 indicates that rainfall is likely to be concentrated over much of South Sudan, in parts of Djibouti western and southern Ethiopia, northern, central and southern Somalia; over much of Uganda, Rwanda, and Burundi; and in western, central, coast, and northern parts of Kenya and northern and eastern Tanzania. The rest of the GHA region likely to experience little rainfall or remain generally dry during the third dekad (21-31) of October 2017.

Temperature Forecast

The average temperature forecast for third dekad (21-31) 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 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 first dekad (1-10) of October 2017 the prevailing climate conditions in some areas in the northern sector and western equatorial sector of the GHA have shown good rainfall performance which continue to improve the water and vegetative conditions, resulting into improved pasture availability, and prospects of good crop and livestock productivity. A few areas in Rwanda and Sudan, and Ethiopia reported instances of flooding that led to disruption of livelihood. Some areas continue to report effects of the dry conditions especially in the eastern parts of the equatorial sector, and southeastern parts of the northern sector of the GHA, and these continued to extend the water stress level, and reduced pasture and livestock productivity, and increase in climate related diseases.

From the climate forecast for the third dekad of October 2017 the eastern part of the equatorial sector is likely to continue to be dry, leading to continued water stress conditions. Much of the western parts of the equatorial sector as well as the southwestern and southern parts of the northern sector of the GHA are likely to have sufficient rainfall performance, which may lead to improved water and pasture resources. A few areas in the southern part of the northern sector and western part of the equatorial sector are likely to experience high rainfall which may result into localised flooding especially in some areas in South Sudan, southern Ethiopia, Rwanda, Uganda, and central Somalia.

NB: *This ten day bulletin contributes towards the update of the October-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).*