



## 10 DAY CLIMATOLOGICAL SUMMARY AND IMPACTS FOR THE THIRD DEKAD (21-31) OF DECEMBER 2017 TOGETHER WITH FORECAST FOR THE SECOND DEKAD (11- 20) OF JANUARY 2018

### 1.0 Introduction

This bulletin reviews the climatic conditions observed during the third dekad (21-31) of December 2017, and highlights the climate forecast for the second dekad (11-20) of January 2018 and the associated climate impacts over the Greater Horn of Africa (GHA).

*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

During the third dekad of December 2017 rainfall activity concentrated over much of the western and eastern equatorial sector, in the western and eastern parts of southern parts of the northern sector, and over the northwestern and eastern parts of the southern sector of the of the Greater Horn of Africa (GHA).

Much of the equatorial and southern sector of the GHA normal to depressed rainfall conditions, except for a few areas in Rwanda, western and southwestern Tanzania that experienced enhanced rainfall conditions.

Warmer than the average (2008-2016) maximum temperatures was recorded in western parts of the northern sector, over much of the equatorials sector, as well as in the northern and central parts of the southern sector of the GHA in parts of western and southeastern equatorial sector, as well as in much of the central and northern parts of the southern sector of the GHA during the third dekad of December 2017. Much of the rest of the GHA recording near the average maximum temperature

The western part of the northern sector as well as in few parts of central equatorial sector and central part of the southern sector of the GHA

recorded warmer than the average (2008-2016) conditions for the minimum temperature. Much of the rest of the GHA recorded near the average for the minimum temperature conditions, except for some areas in eastern Ethiopia, central and southern Eritrea, western and southern Djibouti, and in northern parts of Somalia that recorded cooler than the average for minimum temperature.

Rainfall forecast for the second dekad of January 2018 shows that rainfall is likely to be concentrated in the southern sector as well as in the southern parts of the equatorial sector. The rest of the GHA is likely to remain generally dry or record little rainfall.

Northern part of Sudan, western and central highlands of Ethiopia, western and central Kenya, southern Uganda, Rwanda, and in southwestern part of Tanzania are likely to be cool by recording average temperatures cooler than 20°C during the second dekad of December. The rest of the GHA sector is likely to record warm average temperature exceeding 20°C.

---

### 3.0 Observed rainfall situation during the third dekad (21–31) of December 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 third dekad of December 2017. These are generated from the blending of (Climate Hazard Infra-Red Precipitation) CHIRP data and observed data.

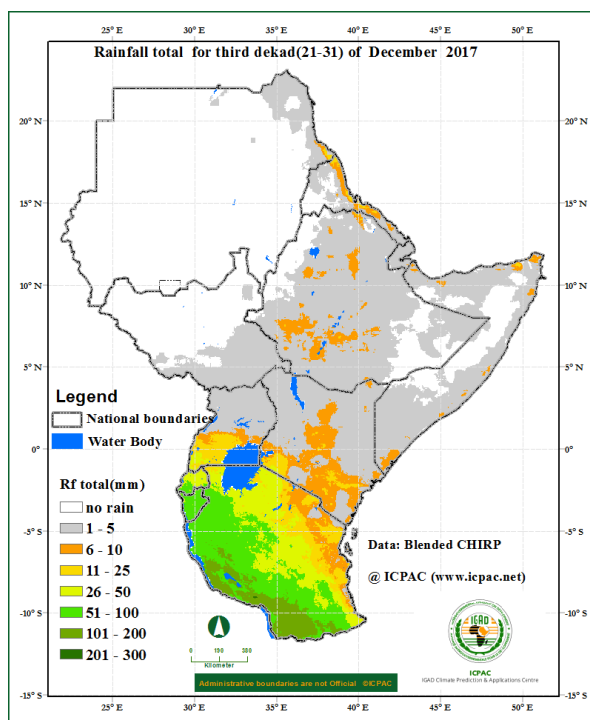
#### Rainfall Distribution and Severity

During the third dekad of December 2017 the total maximum range of rainfall of between 100-200mm was recorded in western and southwestern Tanzania. Southern Rwanda, much of Burundi, western Tanzania recorded rainfall exceeding 50mm. A few areas in south of Uganda, north of Rwanda, in north and eastern Tanzania, south and central Kenya, recorded between 5mm and 50mm of rainfall, much of the rest of the GHA recorded less than 5mm of rainfall (Figure 1a).

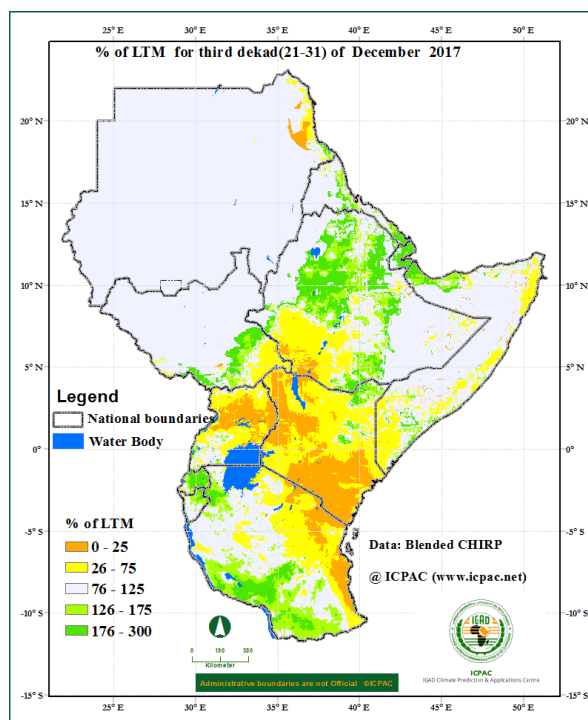
Areas in southeastern South Sudan, southwestern Ethiopia; and in much of Northern and eastern Uganda, Kenya, and northeast and east of Tanzania; and in a few areas in eastern and southwestern Somalia recorded less than 75% of the long term average rainfall for the third dekad of 2018. Areas in central and south of Eritrea; much of Djibouti, northwestern Somalia, northern and central

Ethiopia, in much of Rwanda, and in western and southwestern Tanzania recorded more than 125% of the long term rainfall conditions. Much of the rest of the GHA region recorded between 75% and 125% of the long term average rainfall (Figure 1b)

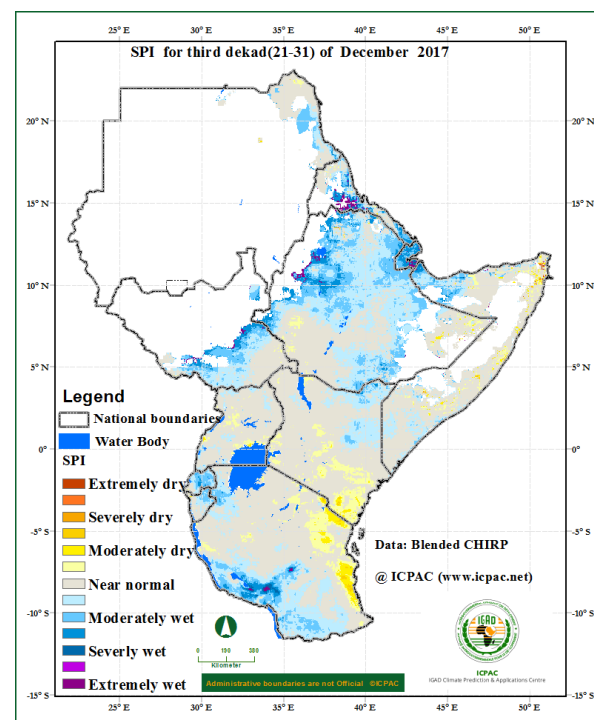
Standardized Precipitation Index (SPI) during the third dekad of December 2017 shows that much of the GHA experienced near normal rainfall conditions. Areas in western Eritrea, northwestern and central parts of South Sudan; in eastern parts of Ethiopia, and in northern and northeastern Kenya experienced moderately wet to severely wet rainfall conditions. Moderately dry to severely dry rainfall conditions was experienced in parts of central Ethiopia, central Uganda, western, central and coastal Kenya, and in northern and southwestern Tanzania (Figure 1c).



**Figure 1a: Rainfall distribution during the third dekad (21-31) of December 2017. (Data: Blended CHIRP)**

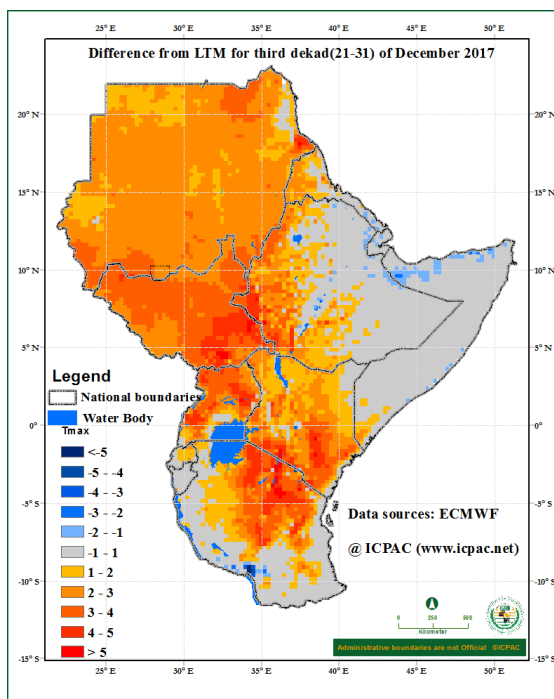


**Figure 1b: Percent of long term average rainfall for the third dekad (21-31) of December 2017 (Data: Blended CHIRP)**

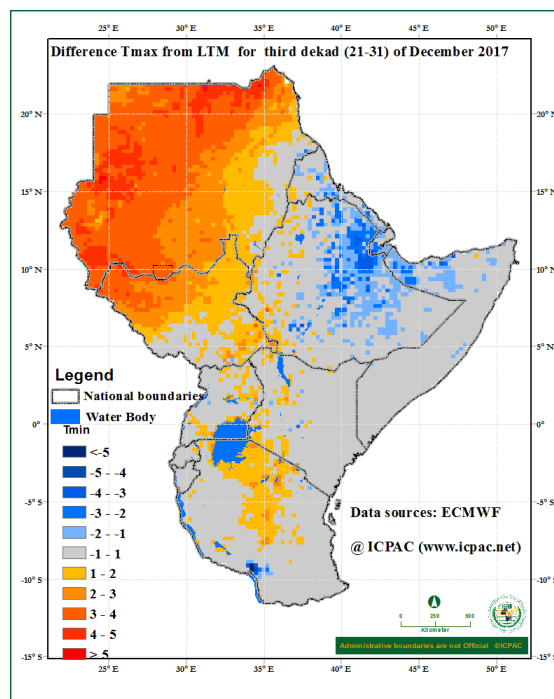


**Figure 1c: Standardized Precipitation Index (SPI) for third dekad (21-31) of December 2017 (Data: Blended CHIRP)**

## Maximum and Minimum Temperature Anomaly



**Figure 2: Maximum temperature difference from the average (2008-2016) for the third dekad (21-31) of December 2017**(Data Source: ECMWF)



**Figure 3: Minimum temperature difference from the average (2008-2016) for the third dekad (21-31) of December 2017**(Data Source: ECMWF)

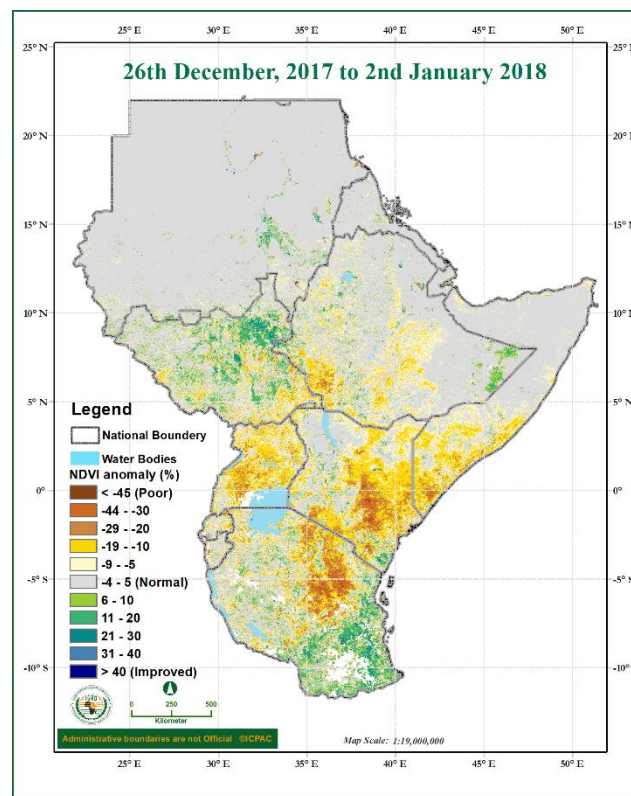
Conditions warmer than the average for maximum temperature was observed over much of Sudan, South Sudan, western Eritrea, western Ethiopia; in parts of northwestern to southeastern Uganda, southeastern Kenya; and in much of north, central and south of Tanzania during the third dekad of December 2017. Areas in southeastern Ethiopia, central Somalia and in western parts of Kenya experienced cooler than the average condition for maximum temperature. The rest of the region recorded near the average conditions for the maximum temperature (Figure 2)

Much of Sudan, northern parts of South Sudan, and in southwestern parts of Eritrea, recorded warmer than the average for minimum temperature third dekad of December 2017. Much of the rest of the GHA region recorded minimum temperature near the average conditions, except for central and southern parts of Eritrea, western and southern Djibouti, eastern parts of Ethiopia, northern Somalia, and in southwestern parts of Tanzania which recorded cooler than the average or minimum temperature (Figure 3).

## 4.0 Vegetation condition indicators

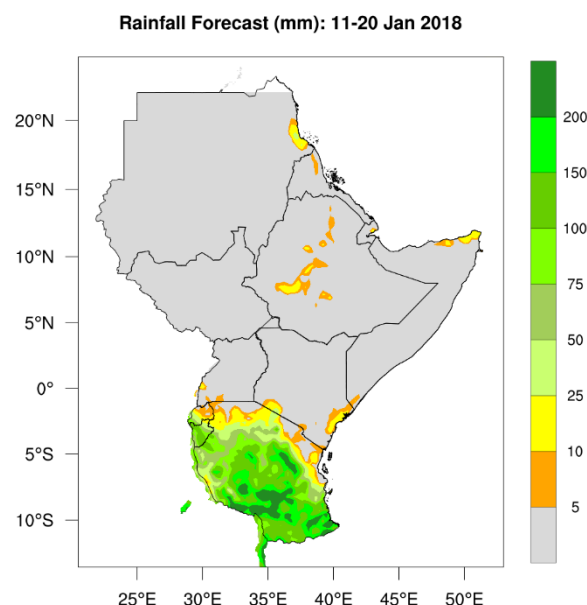
### Normalized Difference Vegetation Index Anomaly

The Normalized Difference Vegetation Index (NDVI) anomaly for the period 26<sup>th</sup> December 2017 to 2<sup>nd</sup> January 2018 (Figure 4) indicates that southwestern and eastern parts of Ethiopia, over southeastern South Sudan, over much of central and southern Somalia, Uganda, eastern and southern Kenya, and northeastern Tanzania experienced deterioration in vegetative conditions as compared to the long term average vegetative conditions. Northeastern and central parts of Sudan, eastern parts of Ethiopia, and south and eastern Tanzania 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.

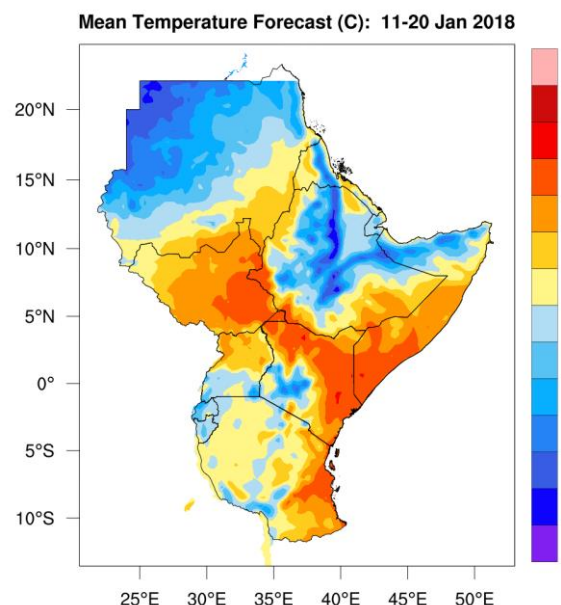


**Figure 4: NDVI anomaly for the period between 26<sup>th</sup> December 2017 and 2<sup>nd</sup> January 2018 (Data Source: USGS NASA)**

## 5.0 Climate Forecast



**Figure 5: Precipitation forecast for the second dekad (11-20) of January 2018** (Source: WRF-ICPAC)



**Figure 6: Forecast for average temperature for the second dekad (11-20) of January 2018** (Source: WRF-ICPAC)

### Rainfall Forecast

The rainfall forecast for the second dekad of January 2018 in Figure 5 indicates that rainfall is likely to be concentrated over much of Tanzania, Burundi, and in some parts of Rwanda. The rest of the GHA region is likely to experience little amount of rainfall or remain generally dry during the second dekad of January 2018.

### Temperature Forecast

The average temperature forecast for second dekad of January 2018 (Figure 6) indicates

much of Sudan, central, western and northeastern Ethiopia, much of Djibouti, northern Somalia, western and central parts of Kenya, southern of Uganda, over much of Rwanda, Burundi, and in parts of central and southwestern Tanzania is likely to record cool average temperature lower than 20°C. 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:

---

## Impacts associated with observed climate conditions

The rainfall performances 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 also cases of water related diseases reported. From the climate forecast for the second dekad of January 2018 much southern sector of the GHA is likely to have sufficient rainfall, resulting to improved water and pasture resources leading to better conditions for crop and livestock productivity. Some areas in central, southwestern and southeastern parts of Tanzania are likely to experience high rainfall amounts which may result into localised flooding.

**NB:** This ten day bulletin contributes towards the update of the January 2017 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](mailto:director@icpac.net) Website: [www.icpac.net](http://www.icpac.net)