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Monthly Climate Bulletin

Climate Review for July 2019 and Forecasts for September 2019

1. INTRODUCTION

This bulletin reviews the July 2019 climate conditions over the Greater Horn of Africa (GHA) region and highlights the September 2019 rainfall and temperature forecasts together with the socio-economic impacts associated with both the observed and the forecasted climate conditions.

For referencing within this bulletin, the GHA is generally divided into three sub-sectors: The equatorial sector lying approximately between 5°N and 5°S latitude, while the northern and southern sectors lie in the north and south of the equatorial region respectively.

2. HIGHLIGHTS

Rainfall was recorded mainly in areas in the northern sector, and western and central parts of the equatorial sector of the GHA. Most of the GHA recorded near normal rainfall, during the month of July 2019 (Figure 2 and 3).

The maximum and minimum temperature was generally warmer than the climatological mean for most places in the GHA. during the month of July 2019.

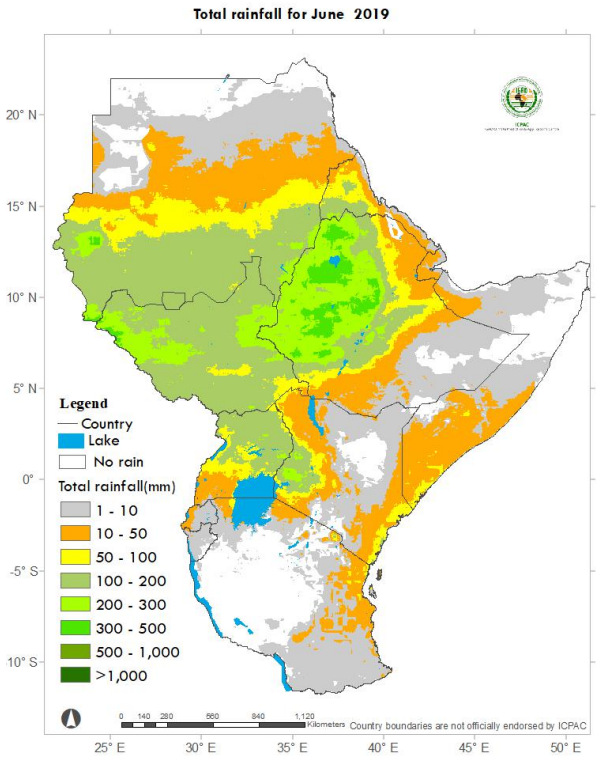

Figure 1: **Rainfall was concentrated in central and southern parts of Sudan, over much of South Sudan, western and central parts of Ethiopia, northern and central Uganda and western parts of Kenya.** *(Data Source: Blended CHIRPS)*

By July 2019, the Oceanic Nino Index (ONI), a primary index used to monitor the El Nino-Southern Oscillation (ENSO) maintained a positive signal (Figure 7) denoting an El Nino condition. The Indian Ocean Dipole (IOD) indicated a positive index (Figure 6). There is a reduced chance of a positive ENSO while the IOD is forecasted to persist in positive phases over much of the third quarter of 2019.

In the month of September 2019, forecast is showing higher chances for depressed rainfall over eastern part of Sudan, northern and southeastern Ethiopia, southern Somalia, eastern Kenya, southern Burundi, and western Rwanda. Most of the southern part of South Sudan, southwest Ethiopia, Uganda, Rwanda, western Kenya, northern Burundi, and eastern and southern Tanzania are forecasted to have an increased chance of enhanced rainfall (Figure 8).

3. CLIMATE PATTERNS IN July 2019

The rainfall amounts (Figure 1) and performance as compared to the climatological mean (1981-2010) using percentage of long term average (Figure 2) and Standardized Precipitation Index (SPI) (Figure 3) for July 2019 are provided in this section. The minimum (Figure 4b) and maximum (Figure 4b) temperature anomalies relative to Long term mean (1981-2010) are also shown.

Rainfall performance

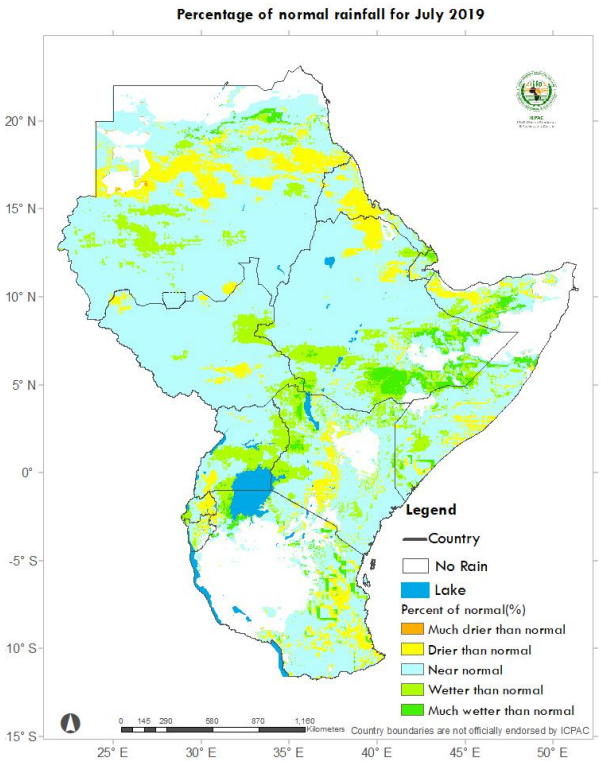

Figure 2:

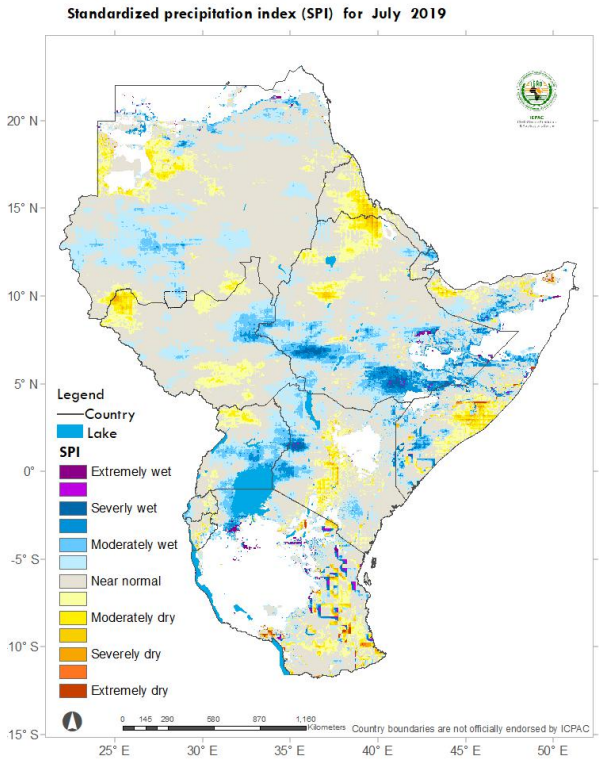

Figure 3:

Most areas in the GHA recorded near average rainfall, some areas in for areas in central Eritrea, northern and southeastern Somalia, southern parts of Sudan, northern and southern parts of South Sudan, central parts of Kenya and eastern Rwanda recorded rainfall that was drier than the climatological mean. *(Data Source: Blended CHIRPS)*

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Temperature Conditions

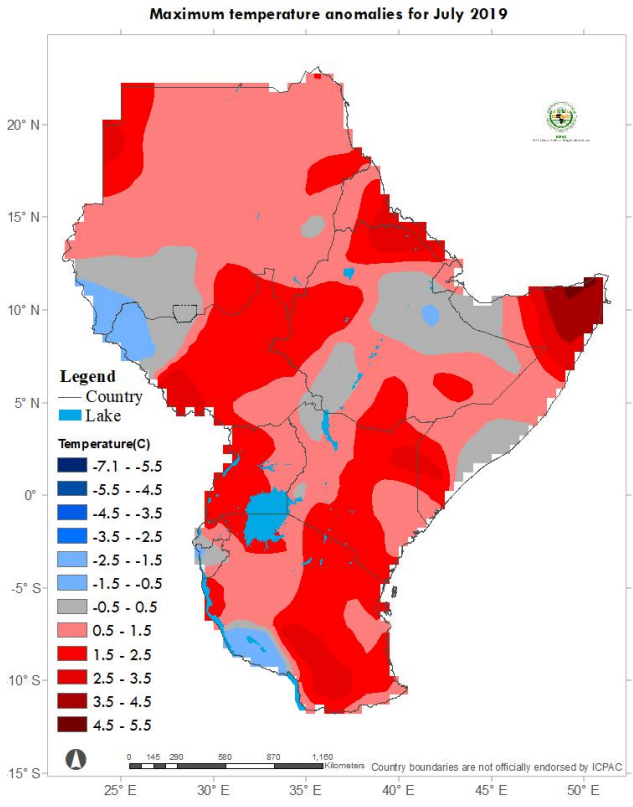

Figure 4a:

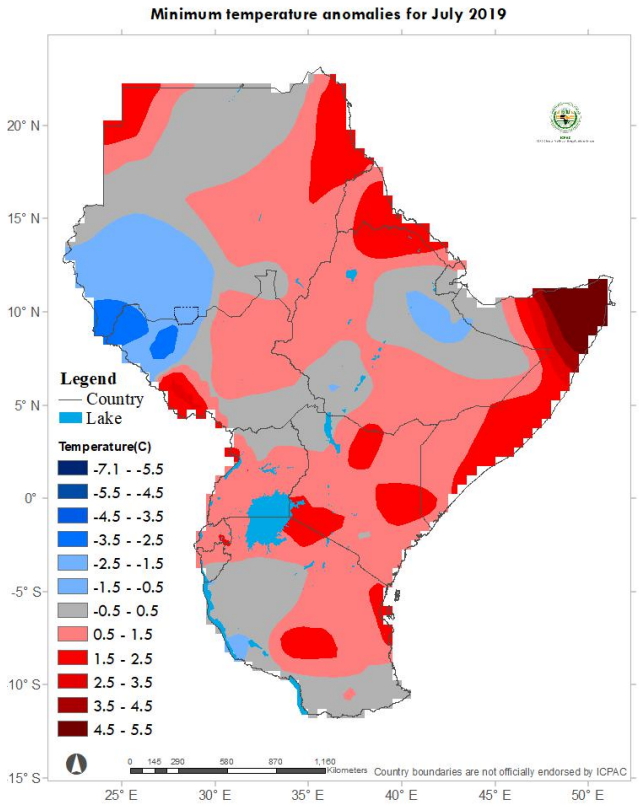

Figure 4b:

Most areas in the GHA recorded maximum and minimum temperature warmer than or near the climatological mean however, a few places in the southwestern Sudan, northwest South Sudan, eastern Ethiopia and southwest Tanzania recorded minimum and maximum temperature that was cooler than the climatological mean (*Data Source: Data Sourced from: NOAA-NCEP CPC . GTS gridded data).*

4. STATUS OF THE CLIMATE SYSTEMS

The Sea Surface Temperature (SST) anomaly during the period of July 2019 showed that equatorial Pacific Ocean was dominated by warmer than average SST (Figure 5), this situation currently presents a positive but weakening, Oceanic Nino Index (ONI) (Figure 6) and an El Niño condition. Models forecasting El Niño Southern Oscillation ENSO event indicate a reduced likelihood of weak El Niño phase through much of the third quarter of 2019. Near average to warmer than average SST conditions dominated the western equatorial Indian Ocean. This pattern has presented a positive Indian Ocean Dipole (IOD) (Figure 7). Models show a likelihood of a persistent positive phase of the IOD within the third quarter of 2019.

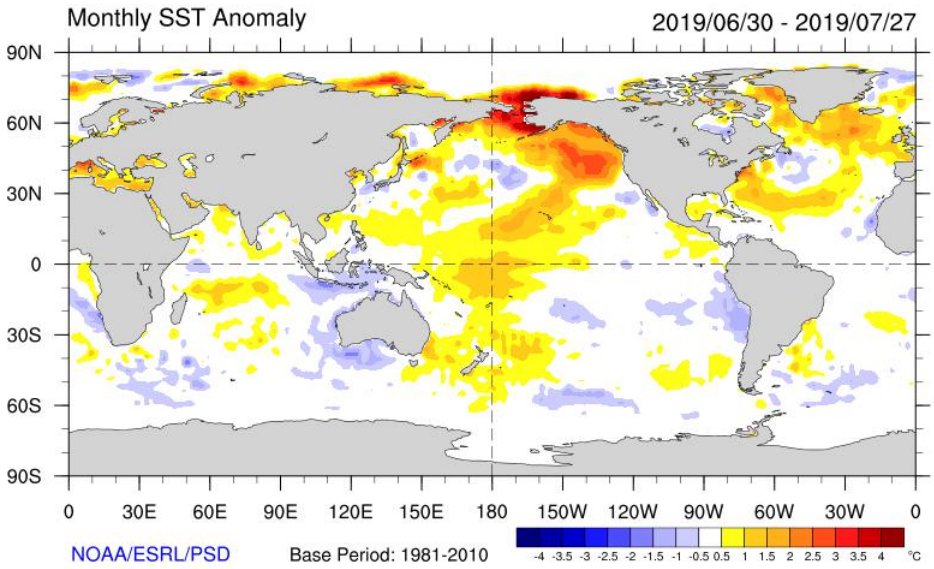

Figure 5: Sea Surface Temperature anomalies for the period of July 2019

(*Source: NOAA NCEP*)

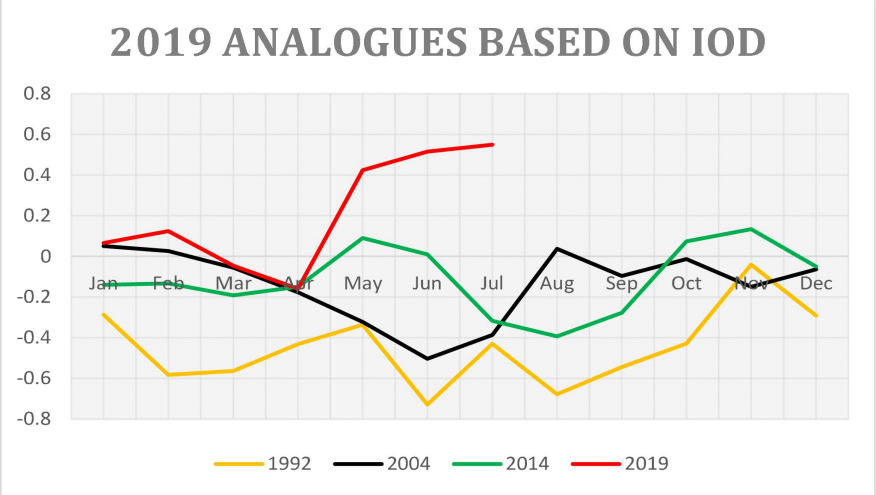

Figure 6: The Indian Ocean Dipole (IOD) during 2019 and analogue years.

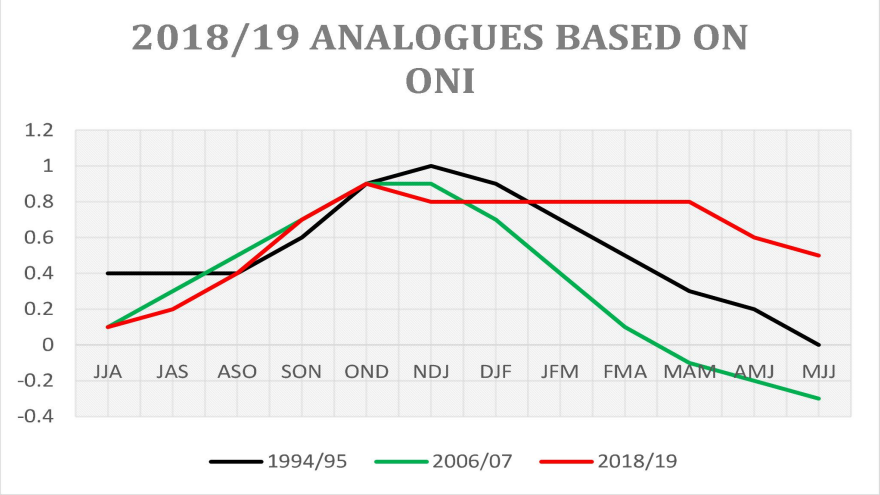

Figure 7: The Oceanic Nino Index (ONI) during 2019 and analogue years.

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5. CLIMATE OUTLOOK FOR September 2019

The latest global climate model ensemble forecast for September 2019 (Figure 8) indicates there is increased likelihood for enhanced rainfall in central & eastern South Sudan, western Ethiopia, Uganda, western Kenya, parts of central Somalia and southern Tanzania, Rwanda and parts of Burundi. Depressed rainfall condition is forecasted in much of Sudan, eastern Kenya and western Somalia and western Tanzania. NB: Most of these regions are normally dry in September 2019.

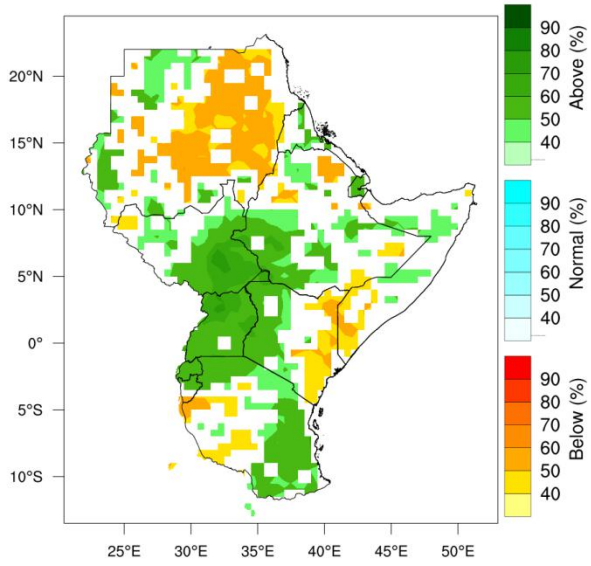

Figure 8: Probability-based rainfall forecast for September 2019.

6. IMPACTS ON SOCIO-ECONOMIC SECTORS

The socio-economic impacts associated with observed climate conditions are provided below.

Impacts of observed and forecasted climate conditions

During the month of July 2019, some places in eastern parts of the equatorial sector continued to experienced dry conditions increase the likelihood of poor crop, water, and pasture performance. Some areas in Sudan reported cases of flooding.

Considering that the month of September is one of the most significant months contributing to the September to December rainfall season in the GHA, the drier than average rainfall forecast over eastern parts of Kenya and Somalia and northwest Tanzania should be closely monitored. ICPAC will continues to provide regional updates on a regular basis, and the National Meteorological and Hydrological Services (NMHSs) will provide detailed national and sub-national updates.

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