No. ICPAC/02/326

July 2019 Bulletin Issue

# Monthly Climate Bulletin

## Climate Review for June 2019 and Forecasts for August 2019

## 1. INTRODUCTION

This bulletin reviews the June 2019 climate conditions over the Greater Horn of Africa (GHA) region and highlights the August 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 parts of the northern sector, western and eastern parts of the equatorial sector and eastern parts of the southern sector of the GHA. A few places in western Ethiopia, northern and eastern Kenya and northwest Tanzania recorded below normal rainfall, while most of the rest of the GHA recorded near or above normal rainfall, during the month of June 2019 (Figure 2 and 3).

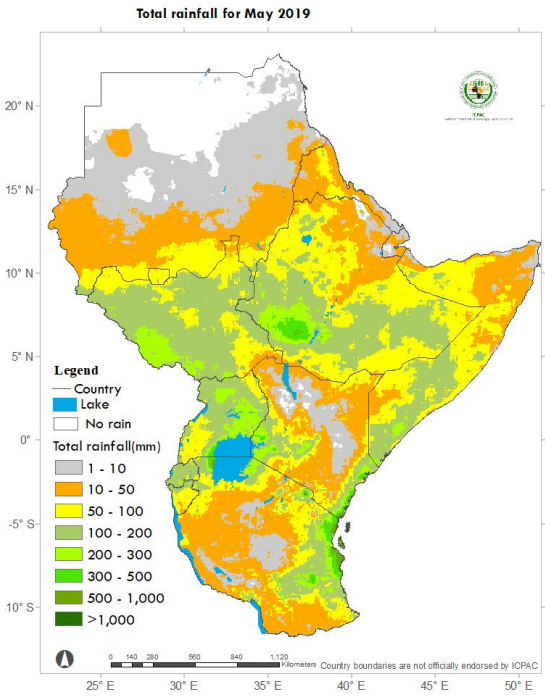


**Figure 1: Rainfall was mainly concentrated in central and southern parts of the northern sector, western and coastal parts of the equatorial sector and eastern parts of the southern sector of the GHA** *(Data Source: Blended CHIRPS)*

The maximum and minimum temperature that was generally warmer than or near the climatological mean for most places in the GHA. However, some places in the western and southeastern parts of the northern sector recorded minimum and maximum temperature that was cooler than the climatological mean, during the month of June 2019.

By June 2019, the Oceanic Nino Index (ONI), a primary index used to monitor the El Nino-Southern Oscillation (ENSO) maintained a positive signal (Figure 7) although with a reducing threshold.The Indian Ocean Dipole (IOD) indicated a positive index (Figure 6). The ONI is forecasted to be neutral over much of the

third quarter of 2019 while the positive phase of IOD is forecasted to persist to the end of the year.

In the month of August 2019, forecast is showing higher chances for depressed rainfall over eastern part of Sudan, most of South Sudan, Eritrea, Djibouti, and northern Somalia. Most parts of southern and western Sudan, western, central and southern Ethiopia as well as western and central parts of the equatorial sector have forecasted to have an increased chance of enhanced rainfall (Figure 8).

## 3. CLIMATE PATTERNS IN JUNE 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 June 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

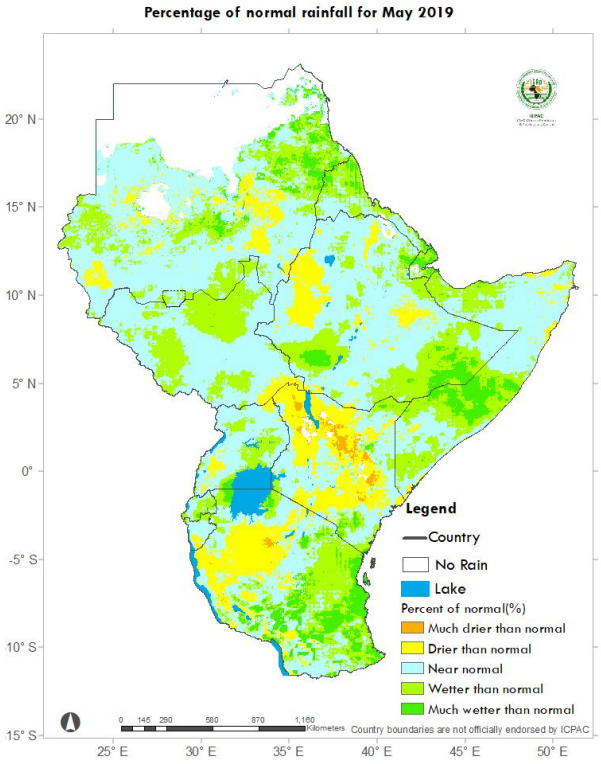


**Figure 2: most areas in the GHA recorded near average or above the average rainfall, except for areas in western Ethiopia, northern and eastern parts of Kenya, Southwest Uganda, and northern Tanzania.** *(Data Source: Blended CHIRPS)*

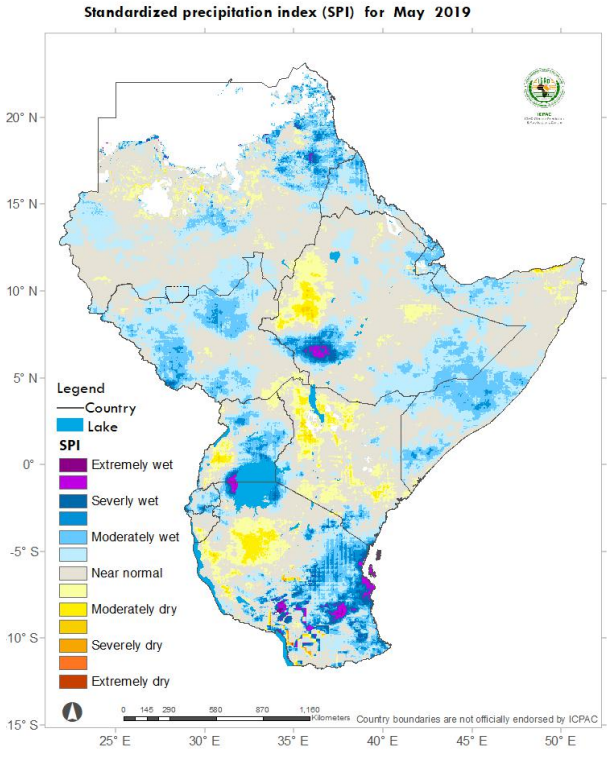


**Figure 3: Most areas recorded near normal rainfall, however western parts of Ethiopia, several parts of Kenya, southwest Uganda, and northwest Tanzania recorded moderately drier rainfall conditions** *(Data Source: Blended CHIRPS)*

## Temperature Conditions

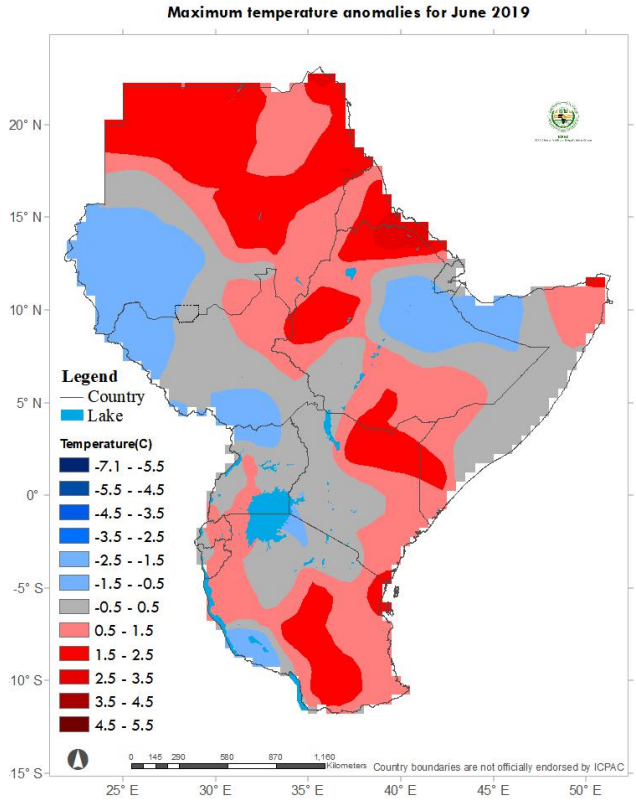


**Figure 4a: Most areas in the GHA recorded maximum temperature warmer than or cooler than the climatological mean except for western and southeastern parts of the northern sector, northwest part of the equatorial sector and western part of the southern sector of the GHA which recorded maximum temperature cooler than the climatological mean (*Data Source: Data Sourced from: NOAA-NCEP CPC .GTS gridded data*)**

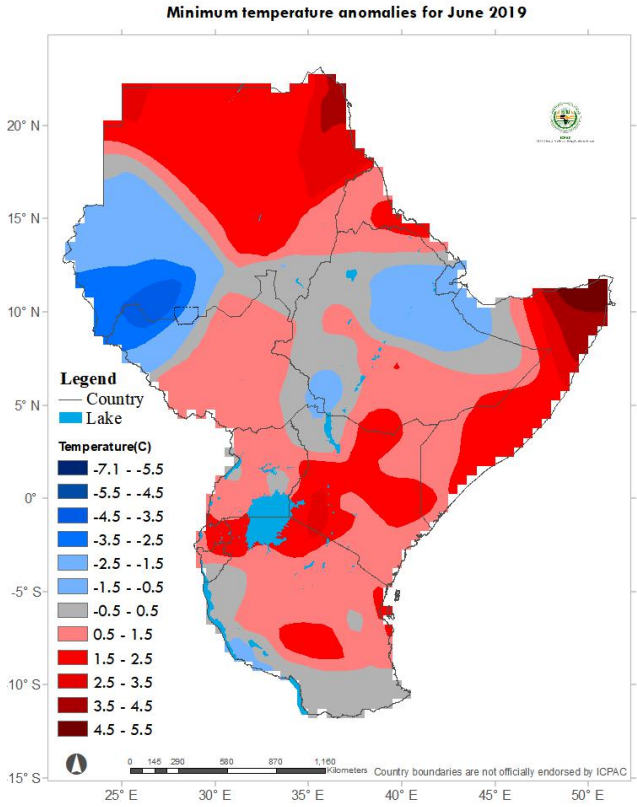


**Figure 4b: Most areas in the GHA recorded minimum temperature that was warmer than the climatological mean, except for western and southeastern parts of the northern sector of the GHA, which recorded minimum temperatures cooler than the climatological mean** *(Data Source: Data Sourced from: NOAA-NCEP CPC .GTS gridded data)*

## 4. STATUS OF THE CLIMATE SYSTEMS

The Sea Surface Temperature (SST) anomaly during the period of June 2019 showed that equatorial Pacific Ocean was dominated by warmer than average SST (Figure 6), this situation currently presents a positive, Oceanic Nino Index (ONI) (Figure 8) and an El Niño condition. Models forecasting El Niño Southern Oscillation ENSO event show a likelihood of a persistent 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 (Figure 6). This pattern has presented a positive signal although the Indian Ocean Dipole (IOD) still persist in the neutral phase (Figure 7). Models show a likelihood of a transition into a positive phase of the IOD within the third quarter of 2019.

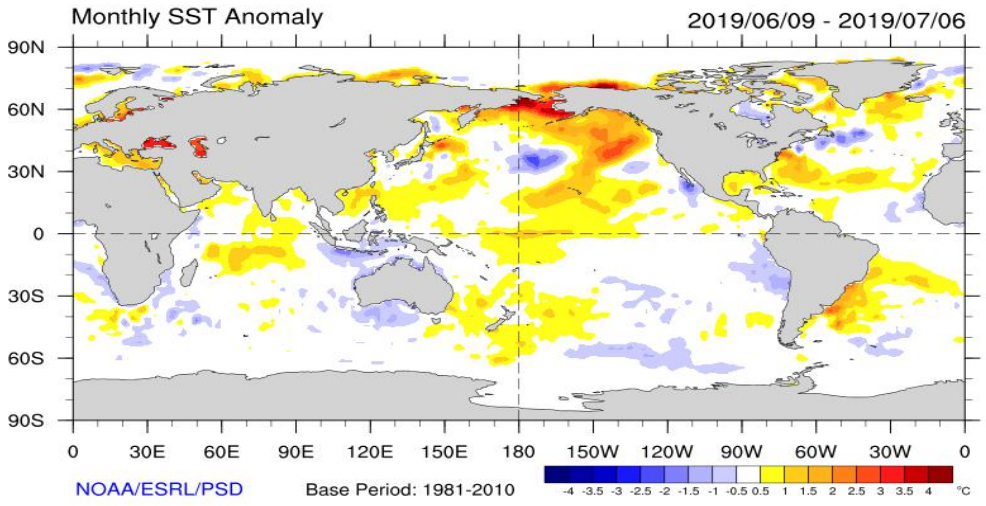


**Figure 5: Sea Surface Temperature anomalies for the period of June 2019**

**(*Source: NOAA NCEP*)**

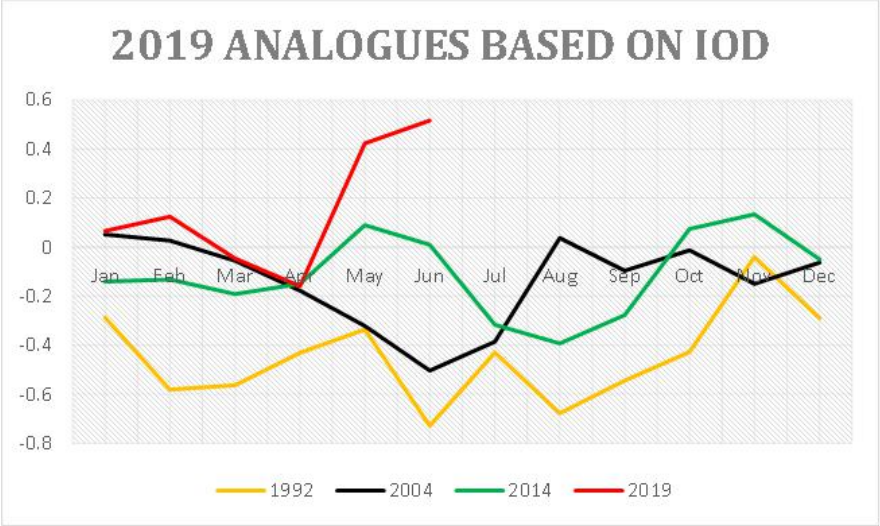


**Figure 6: The Indian Ocean Dipole (IOD) during 2019 and analogue years.**

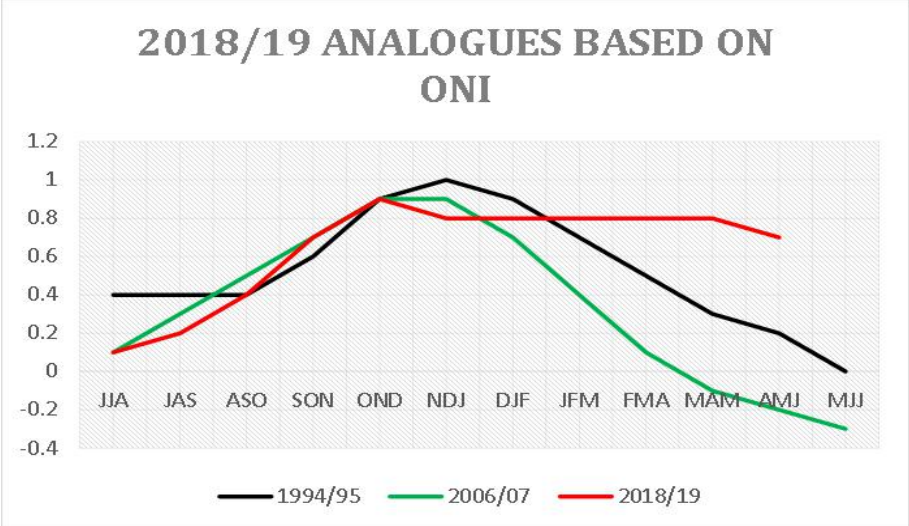


**Figure 7: The Oceanic Nino Index (ONI) during 2019 and analogue years.**

`

## 5. CLIMATE OUTLOOK FOR August 2019

The latest global climate model ensemble forecast for August 2019 (Figure 8) indicates there is increased probabilities for wetter conditions over much of western and southern parts of Sudan, northern Ethiopia (Amhara State), Southwestern Ethiopia, Uganda and western and central Kenya. Drier than average conditions are expected over eastern Sudan. Furthermore, six out of seven global models predicted drier than average rainfall conditions over Eritrea and parts of northern Ethiopia. Warmer than average near surface temperatures are expected in most regions during the month of August 2019.

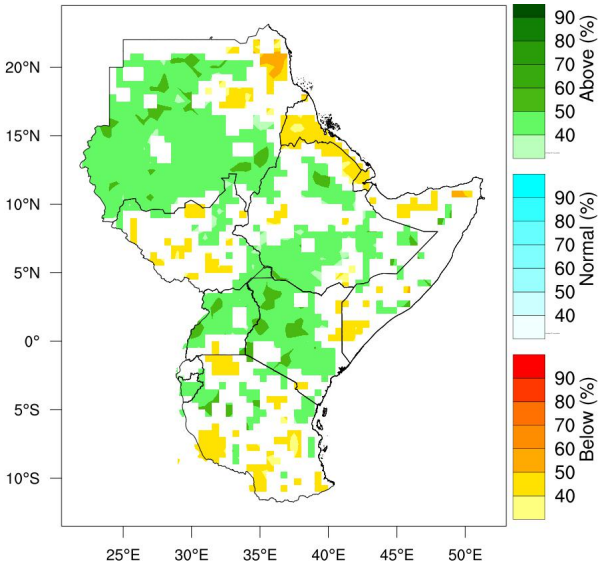


**Figure 8: Probability-based rainfall forecast for August 2019.**

## 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 June 2019, some places in eastern parts of the equatorial sector continued to experienced dry conditions increase the likelihood of poor crop, water, and livestock performance.

Considering that the month of August is one of the most significant months contributing to the June-September season in northern sector of the GHA, the drier than average rainfall forecast over eastern parts of Sudan, and over several parts of South Sudan 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.

**For more information:**
IGAD Climate Prediction and Applications Centre
P.O. Box 10304, 00100, Nairobi, Kenya.
Tel: +254-020-3514426
E-mail: director@icpac.net
**www.icpac.net**

Follow us on:
**Facebook:** "https://www.facebook.com/IGAD-Climate-Prediction-and-Applications-Centre-381499298564618/" |
**Twitter:** "https://twitter.com/icpac_igad?lang=en"
**Youtube:**"https://www.youtube.com/user/icpac1"