

**FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**  
**MINISTRY OF WATER AND ENERGY**  
**ETHIOPIAN METEOROLOGY INSTITUTE**  
**METEOROLOGICAL DATA AND CLIMATOLOGY DIRECTORATE**  
**DATA PROCESSING AND CLIMATOLOGICAL SERVICES TEAM**

**MONTHLY CLIMATE BULLETIN**  
**July 2022**

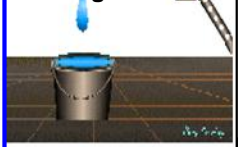
*Some Applications of Climate Information*



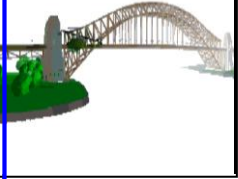
**Disaster Management**



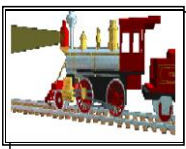
**Water Resources Management**



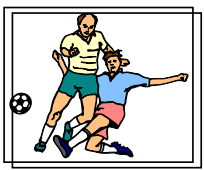
**Construction**



**Environment & Health**



**Transport**

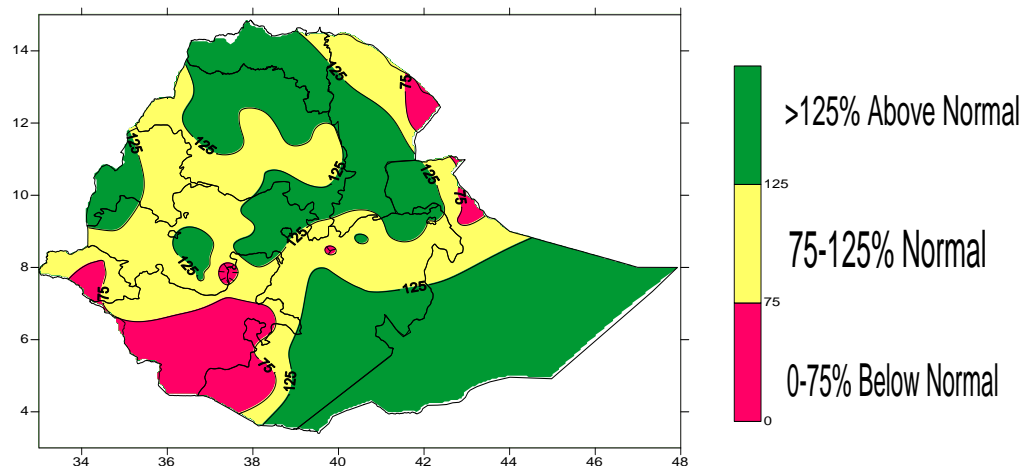


**Recreation & Tourism**

Highlights

During July 2022 sea surface temperatures (SSTs) remained below-average across the central and eastern equatorial Pacific. The latest monthly Niño indices based on OISSTV2.1 were  $-1.2^{\circ}\text{C}$  for the Niño 1+2 region,  $-0.6^{\circ}\text{C}$  for the Niño 3.4 region and  $-0.9^{\circ}\text{C}$  for the Niño 4 region.

In the months of July 2022, above normal rainfall was recorded over southern Ethio-Somali, southern and central Oromiya, western parts of Benishangul-Gumuz, western parts of Afar, Northern parts of Amhara and Tigray. Whereas normal rainfall was recorded over central, eastern and western Oromiya, Gambella, western and central Amhara, eastern parts of Benishangul-Gumuz and eastern parts of Afar. Below normal rainfall was recorded over southern Oromiya and SNNPR, southern Gambella, eastern tips of Ethio-Somali and Afar. Mean temperature departure was indicated that higher values observed higher value over Ethio-somali and some parts of central Ethiopia, eastern Amhara and Tigray in 2021. The mean temperature values were higher in 2022 than 2021 on the rest parts of the country.



Present of Normal Rainfall of July 2022

## **Foreword**

This climate bulletin is prepared and disseminated by the Ethiopian Meteorology Institute(EMI). It is aimed at providing climatological information to different services of the community involved in various socio-economic activities and giving some highlights about major synoptic situations.

The information contained in the bulletin is believed to assist planners, decision-makers and the community at large by providing details of the climatic conditions of the nation in a given period. This bulletin differs from the other real time and near real time bulletins issued by the Institute, which for their input depend only on meteorological stations equipped with single side band radio for data transmission. Though this bulletin is not real time, published with a delay of some months year, the information contained in this bulletin is based on data coming from a much larger number of meteorological stations. Moreover, the information contained in this bulletin is not sector-specific and a wide range of users can benefit from it.

The Institute disseminates monthly, seasonal and annual climatological bulletins in which all-necessary climatological information and significant climatic anomalies are highlighted.

We have a strong belief that various socio-economic activities related to planning disaster mitigation, water resources management, construction, environmental protection, transportation, recreation, tourism and others will be benefited most by the careful and continuous use of this bulletin. Meanwhile, your comments and constructive suggestions are highly appreciated to make the objectives of this bulletin a success.

Director General

NMA

P.O.Box 1090

Tel 0115-51 22 99 / 0116-61 57 79

Fax 0115-51 70 66

E-mail [nmsa@ethionet.et](mailto:nmsa@ethionet.et)

Addis Ababa

## **1. Synoptic Situation**

### **1.1. Surface**

The Mascarene high with a mean central pressure value of 1020hPa was centered at about 45°E, 0°. The St. Helena high with a mean central pressure value of 1020hPa was centered at about 0°,30°S. The Azores high with a mean central pressure value of 1020hPa was centered at about 45°W, 30°N.

The cross equatorial flow, which is associated with the Low Level Jet, had exceeded 12 m/s over western Indian Ocean and 12 m/s over the adjoining areas of eastern Africa, while south easterly flow exceed 20m/s over western Indian Ocean, Arabian Sea and the adjoining areas of the Horn of Africa.

### **1.2. Lower Troposphere (850hPa vector wind)**

Southeasterly slight wind crossing equator with 2-4m/s vector was observed in July 2022 with contour interval of 2m/s changing its direction to southerly after crossing the equator.

### **1.3. Middle Troposphere (500hPa Geopotential Height)**

The 500-hPa circulation during July featured above-average heights over the North Pacific Ocean, central North America, eastern regions of the North Atlantic Ocean, Europe, central Eurasia, and the Sea of Okhotsk and below-average heights over the Bering Strait and Hudson Bay.

The main land-surface temperature signals included above-average temperatures in North

America, Europe, Scandinavia, eastern Russia, and Japan. The main precipitation signals included above-average totals in central Asia, the Middle East, parts of the U.S., and central Africa, and below-average totals across parts of Canada, the Gulf Coast and surrounding regions, Europe, and parts of Russia.

### **1.3 Upper Troposphere (200 hPa vector wind)**

5m/s north westerly wind crossing the equator shifts its direction to north easterly with similar magnitude including the horns of Africa and the adjoin.

### **1.4 Tropical Oceanic and Atmospheric Highlights**

During July 2022, sea surface temperatures (SSTs) remained below-average across the central and eastern equatorial Pacific. The latest monthly Niño indices based on OISSTV2.1 were -1.2°C for the Niño 1+2 region, -0.6°C for the Niño 3.4 region and -0.9°C for the Niño 4 region. The depth of the oceanic thermocline (measured by the depth of the 20°C isotherm) was below-average across the central and eastern equatorial Pacific.

**Reference: Climate Diagnostic Bulletin of  
July 2022**

### 3. Weather

#### 3.1. Temperature

During July 2022, maximum temperature with 30°C and above was recorded over eastern parts of Ethio-Somali, Afar, Central, SNNPR, Gambella, western parts of Benishangul-Gumuz and on western Amhara. Hence, the extreme maximum temperature values were as high as 39.4, 39.6, 39.5, 43.0, 46.5, 42.8, 43.0, 38.6, 38.4, 42.5 and 43.8 °C over Gode, Metehara, Awash Arba, Ayisha, Dubti, Elidar, Gewane, Kebre Dehar, Metema, Mile and Semera (Table1). In contrary, minimum temperature with value less than 10°C was recorded over central Oromiya, eastern and southern Amahara.

In General, monthly average temperature values were highest over all parts of the country except over Northeast of Benishangul-gumuz, central Amahara and eastern boundaries of Afar.

**Table 1. Stations with extreme maximum temperature values of 38.0°C and above during July 2022**

Station	Extreme Maximum Temp. (°C)	Date
Gode	39.4	29
Metehara (NMSA)	39.6	29
Awash Arba	39.5	3
Aysha	43.0	8
Dubti	46.5	2
Elidar	42.8	19
Gode	39.4	29
Metehara (NMSA)	39.6	29
Awash Arba	39.5	3
Aysha	43.0	8
Dubti	46.5	2

**Table 2. Stations with extreme minimum temperature values of less than 8.0 °C during July 2022**

Station	Extreme Minimum Temp. (°C)	Date
Robe	7.6	2
Adelle	7.4	2
Alemketema	7.8	29
Ambamariam	5.0	24
Arise Robe	8.0	2
Bore	8.0	11,13
Bui	6.6	5
Gatira	8.0	23
Jara	8.0	20
Mehalmeda	5.0	29
Robe	7.6	2
Adelle	7.4	2

### 3.2 Rainfall

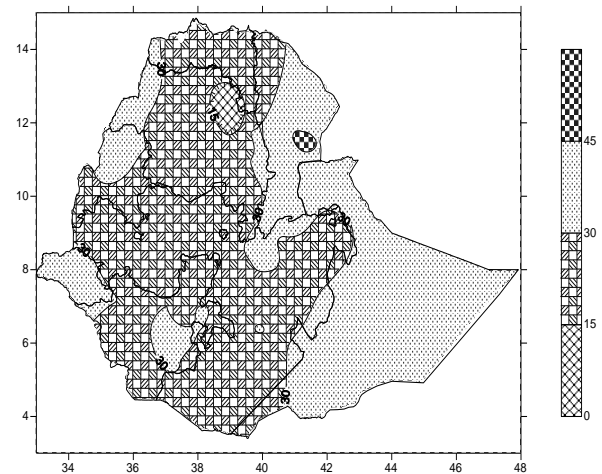
In the month of July, monthly rainfall amount of 450mm and above was recorded over most parts of the country with at Bahir Dar, Nekemt, Arjo, Aykel, Debark, Enewary, Fitch, Ghon, Gundomeskal, Kachise and Nedjo with the amount of 697.8, 510.9, 492.4, 548.6, 489.8, 470.2, 558.4, 509.0, 587.0, 592.5 and 457.4 mm respectively. The rest parts of the country was obtained with less amount of rainfall. However the rain covers almost all parts of the country.

**Table 3. Station(s) with rainfall amount of 70.0 mm and above in 24 hours during July 2022**

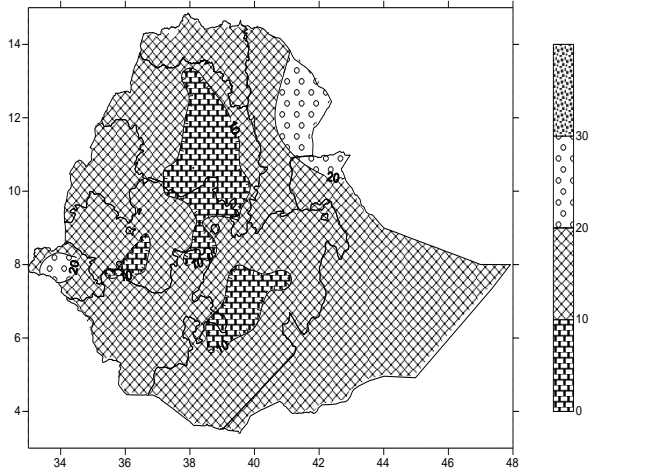
Station	Amount(mm)	Date
Bahir Dar Met	110.0	2
Nekemte	77.9	22
Aao	74.3	26
Alemaya	78.0	1
Aykel	74.0	9
Chefa	72.0	10
Debark	127.0	31
Gambella	73.5	30
Ghion	74.0	9
Nejo	113.0	2

**Table4. Station(s) with monthly total rainfall amount of 400.0mm and above during July 2022**

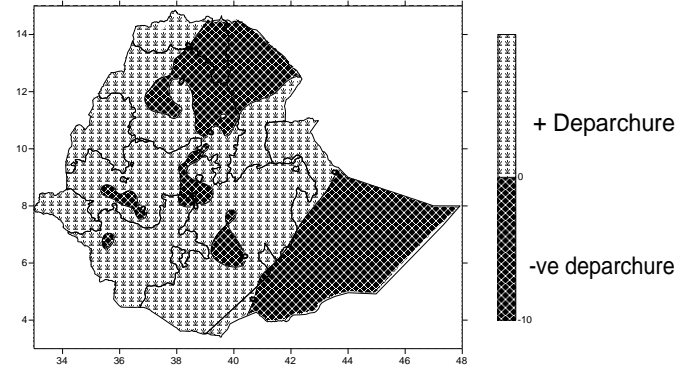
Station	Amount (mm)
Bahir Dar Met	697.8
Gondar A.P.	409.9
Nekemte	510.9
Addis Ababa Obs	432.7
Arejo	492.4
Aykel	548.6
Debre Brehan	401.8
Debre Tabor	441.2
Debark	489.8
Enewari	470.2
Fiche	558.4
Ghion	509.0
Gundomeskel	587.0
Kachise	592.5
Nejo	457.4



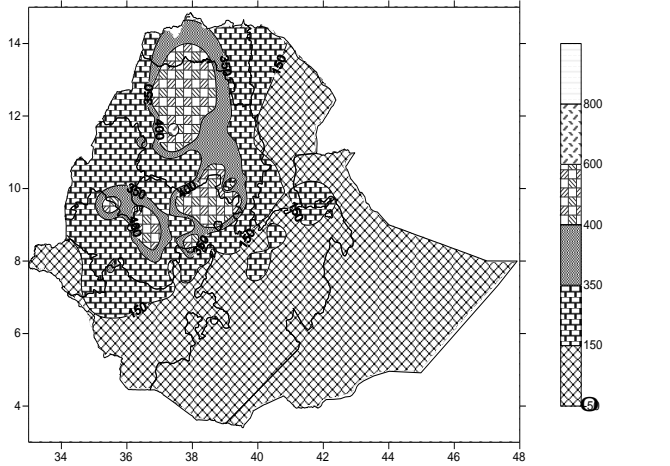
**Figure 2. Maximum temperature in <sup>0</sup>c during July 2022**



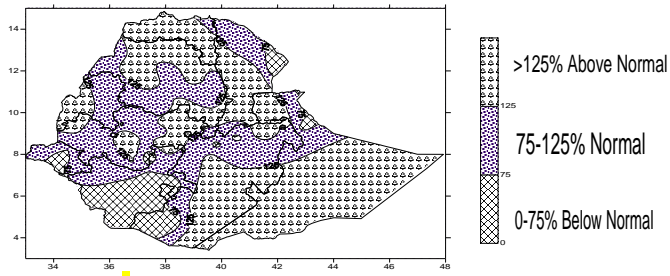
**Figure3. Minimum temperature in <sup>0</sup>c in July 2022**



**Figure 6. Mean Temperature departure of July 2021 vs July 2022 in <sup>0</sup>c.**



**Figure 4. Monthly Total rainfall recorded in mm during July 2022**



**Figure 5. Percent of normal rainfall in mm during July 2022**