

# FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

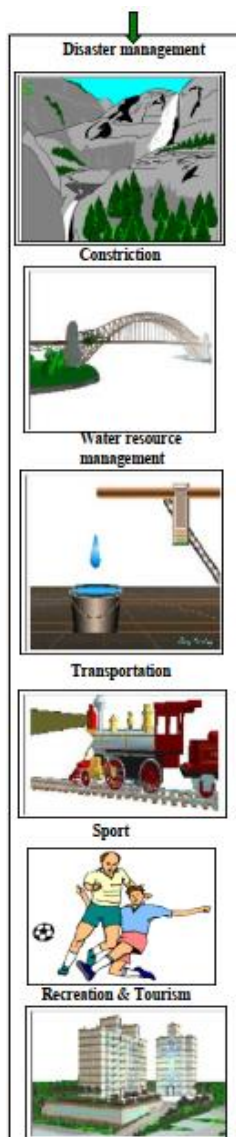
## ETHIOPIAN METEOROLOGICAL INSTITUTE

### METEOROLOGICAL DATA AND CLIMATOLOGY LEAD EXECUTIVE REMOTE SENSING AND CLIMATOLOGICAL DESK

#### MONTHLY CLIMATE BULLETIN

October 2024

#### Some Applications of Climate Information



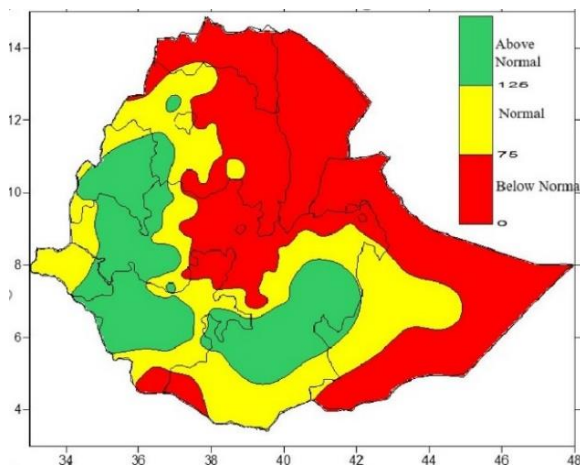
#### HIGHLIGHTS

During October 2024, days remained warm over several portions of Ethiopia, particularly over most of Afar, Somalia Gambela and Benishangul Gumuz, western Amhara, southern and central Oromia, and central western and southern parts of SNNP regions. Specifically, the extreme maximum temperature values were as high as 40, 40.5, 40.6, 41.5, 42.2, and 42.8.0 °C over Gewane, Aysha, Semera, Dubti, Gode, and Elidar respectively.

October is normally one of the months of the dryer season of Bega (ONDJ) for most parts of the country except the southern southeast and southwestern. The total monthly rainfall exceeds 300 mm in pocket areas of western Amhara, eastern Benishangul, western Oromia, and central and eastern SNNP.

In particular, the monthly total rainfall values of October 2024 were as high as 301.2, 334.2, 349.5, 355.4, 364 371.1, and 444 mm over, Bedelle, Arejo, Bullen, Sawula, Chagini, Chira, and Gatira respectively. The daily rainfall of more than 70mm values observed over Gelemso, Fugnuido, Muhamed, Ginnir, Bui, Majji, and Mankus stations was 71.2, 73.6, 74, 75.6, 78.8, 84.3, and 84.6 respectively .

In general, the monthly total rainfall amount of October 2024 was below normal over most of Afar and, eastern, northern, and southern parts of Somalia most of the Amhara region except the western part, and pocket area of SNNP regions. On the other hand, it was above normal in most of Benishangul Gumuz, western Gmbella, western Oromia western, central SNN central, and western Oromia. Western Amhara northern Benishangul Gumuz western and central Gambela western Somalia, southern, western, and eastern SNNP, and central parts of Oromia.



Percent of normal rainfall of October 2024

## **Foreword**

This climate bulletin is prepared and disseminated by the Ethiopia Meteorological Institute (EMI). It is aimed at providing climatological information to different services of the community involved in various socio-economic activities.

The information in this bulletin is believed to assist planners, decision-makers, and the community at large by providing details of the nation's climatic conditions over a given period.

This bulletin differs from the other real-time and near real time bulletins issued by the Agency, 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 at least two months, the information contained in this bulletin is based on data coming from a much larger number of meteorological stations. Moreover, the information in this bulletin is not sector-specific and a wide range of users can benefit from it. The Agency disseminates monthly, seasonal, and annual climatological bulletins in which all necessary climatological information and significant climatic anomalies are highlighted.

We strongly believe that various socio-economic activities related to planning disaster mitigation, water resources management, construction, environmental protection, transportation, recreation, tourism, and others will benefit 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 success.

Director General

EMI

P.O. Box 1090

Tel: 011-661 57 79/011-551 22 99

Fax : 011-6625292/011-551 70 66

E-mail: [nma1@ethionet.gov.et](mailto:nma1@ethionet.gov.et)

Addis Ababa

## 1. Synoptic Situation

### 1.1 Surface

The Mascarene high with a mean central pressure value of above 1020hPa was centered at about 32°S, 65E.

The St. Helena high with a mean central pressure value of above 1020hPa was centered at about 35°S, 10°E.

The Azores high with a mean central pressure value of 1016hPa was centered at about 33°N, 9°W.

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

Strong cross-equatorial and northeasterly flow of below 0-8 m/s was observed over the northern and western Indian Ocean and southeasterly, northeasterly, and easterly, flow was dominant over the Arabian Peninsula

### 1.3 Middle Troposphere (500-hPa Geopotential height).

When analyzing the geopotential height from the Climate Diagnostics Bulletin in October 2024, the fluctuation 500-hPa Geopotential height values over central and eastern Africa was 3 to 15 pm.

### 1.4 Upper Troposphere (200 hPa vector wind).

Equatorial stronger easterly westerly winds 0-15 m/s were dominating in most of the horn of Africa. The subtropical easterly jet had weakened further, while the upper-level westerly flow, associated with the tropical westerly jet weakened further.

## 2. Tropical Oceanic and Atmospheric Highlights

During October 2024, sea surface temperatures (SSTs) remained near average across most of the equatorial Pacific the latest monthly Niño indices were -0.3°C for the Niño 1+2 region,

0.3°C for the Niño 3.4 region, and +0.1°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 equatorial Pacific. The corresponding sub-surface temperatures were 1-4°C below average in the eastern equatorial Pacific

**Reference: NOAA, climate diagnostic bulletin of October 2024**

## 3. Weather

### 3.1 Temperature

During October 2024, days remained warm over several portions of Ethiopia, particularly over most of Afar, Somalia Gambela and Benishangul Gumuz, western Amhara, southern and central Oromia, and central western and southern parts of SNNP regions (Fig. 3.1.2). Specifically, the extreme maximum temperature values were as high as 40, 40.5, 40.6, 41.5, 42.2, and 42.8.0 °C over Gewane, Aysha, Semera, Dubti, Gode, and Elidar respectively (Table 3.1.1).

On the other hand, the extreme minimum temperature values were below 6° OC covering some parts of Amhara, some In general, during October 2024 the monthly average temperature values were partially colder than normal over most parts of Somalia Amhara and some parts of other regions and mostly warmer than normal over most parts of Afar and Gambella and some parts of other regions across the country (Fig. 3.1.3).

**Table 3.1.1 Stations with extreme maximum temperature values of greater than or equal to 40°C during October 2024**

Stations	Extreme maximum temperature (°c)	Date
Gewane	40	23
Aysha	40.5	20
Semera	40.6	23
Dubti	41.5	4
Gode	42.2	1
Elidar	42.8	22

**Table 3.1.2 Stations with extreme minimum temperature values of below or equal to 6°C during October 2024**

Stations	Extreme minimum temperature (oc)	Date
Ambamariam	3	22/16
D/Brehan	3	24
Sholagebaya	3	21
Amdework	4	13
Adigrat	5	14
Bui	5.2	21
Alemketema	5.4	5
Jijiga	5.4	16

### 3.2 Rainfall

Normally, October is one of the months of the dryer season of Bega (ONDJ) for most parts of the country except the southern southeast and southwestern. The total monthly rainfall amount exceeds 300 mm in pocket areas of western Amhara, eastern Benishangul, western Oromia, and central and eastern SNNP.

In particular, the monthly total rainfall values of October 2024 were as high as 301.2, 334.2, 349.5, 355.4, 364 371.1, and 444 mm over, Bedelle, Arejo, Bullen, Sawula, Chagini, Chira, and Gatira respectively (Tables 3.2.2).. The daily

rainfall of more than 70mm values observed over Gelemso, Fugnuido, Muhamed, Ginnir, Bui, Majji, and Manush's stations was 71.2, 73.6, 74, 75.6, 78.8, 84.3, and 84.6 respectively (Tables 3.2.1).

In general, the monthly total rainfall amount of October 2024 was below normal over most of Afar and, eastern, northern, and southern parts of Somalia most of the Amhara region except the western part, and o[pocket area of SNNP regions. On the other hand, it was above normal in most of Benishangul Gumuz, western Gmbella, western Oromia western, central SNN central, and western Oromia. Western Amhara northern Benishangul Gumuz western and central Gambela western Somalia, southern, western, and eastern SNNP, and central parts of Oromia (Fig. 3.2.2).

Most parts of the Oromia Somalia pocket area afar central Tigray, central and southeast Amhara pocket area of Benishangul and Gambells, and Oromia region southern and central SNNP, October 2024 were dryer than October climatological normal rainfall. On the other hand, in most parts of Afar, northern central and western Oromia north and northwestern SNNP most parts of Benishangul and Gambela northern and northwestern Tigray October 2024 was dryer than October climatological normal rainfall (Fig. 3.2.2)

**Table 3.2.1. Stations with more than 70mm of rainfall in 24 hours during October 2024.**

Name	Amount	Date
Gelemso	71.2	31
Fugnuido	73.6	1
Mehalmeda	74	22
Ginir	75.6	1
Bui	78.8	30
Majji	84.3	5
Mankush	84.6	9

**Table 3.2.2. Stations with more than 300mm of monthly total rainfall during October 2024**

Name	Amount
Bedelle	301.2
Arejo	334.2
Bullen	349.5
Sawula	355.4
Chagini	364
Chira	371.1
Gatira	444

**4.1. Stations extrema ever recorded in 24 hours during October 2024.**

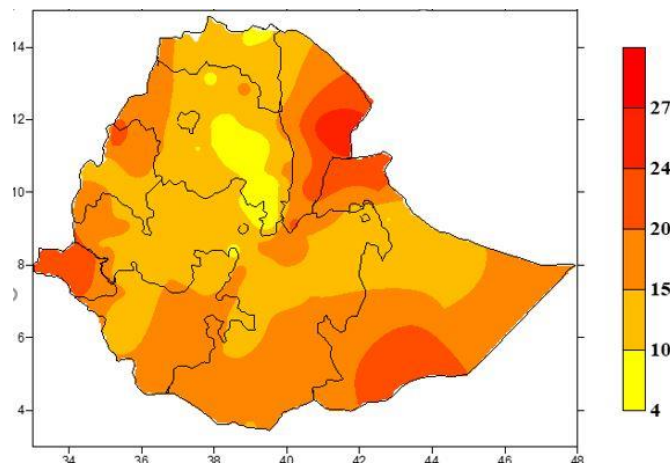
Stations' extremer minimum temperature, maximum temperature, and rainfall were recorded at different stations compared with those recorded in 24 hours during October 2024. In particular, the daily total rainfall values of October 2024 were as high as ever recorded 25.8, 27.4, 30, 31, 34.535, and 37.7 in mm over Enewari, Sholagebaya, Dalifagi, Adigrat, Harer, Sawula, Gundomeskel, Bahir Dar Met, Fugnuido, Mehalmeda, Ginnir, Bui, and Maji respectively (Table.4.1.1.). the daily extreme maximum values of Octobe2024 were as high as ever recorded 25.8, 27.4, 30, 31, 34.5, 35, and 37.7°C over, Bore, Yetnora, Bahir Dar New, Gondar A.P., Adwa, Arba Minch, and Majete respectively (Table 4.1.2). The October 2024 daily extreme minimum values were higher than the October 2024 lowest value, according to the data prepared for this bulletin.

**Table 4.1.1. The extreme rainfall at the stations was recorded 24 hours compared with ever-recorded values during October 2024.**

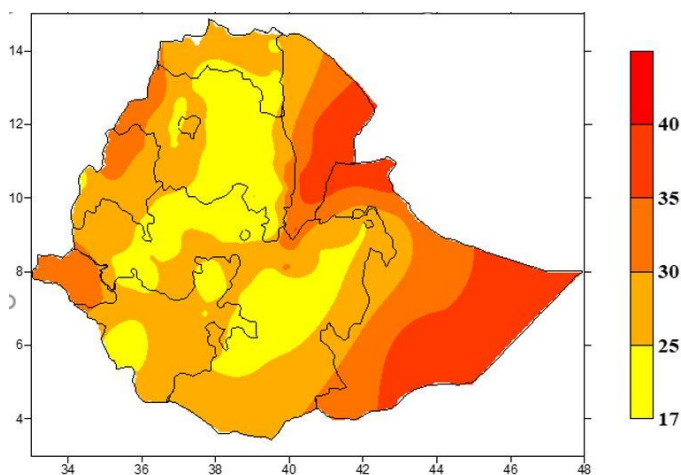
Station Name	Previous Record	New Record	Data
Enewari	35.4	38.5	10
Sholagebaya	32.7	43.3	3
Dalifagi	40.3	45.3	5
Adigrat	41.3	49	29
Harer	50.5	52	7
Sawula	76.3	53	19
Gundomeskel	37.0	53.5	31
Bahir Dar Met	47.2	61.4	30
Fugnuido	63.3	73.6	1
Mehalmeda	58.2	74	27
Ginir	68.0	75.6	1
Bui	65.0	78.8	30
Majji	50.0	84.3	5

**Table 4.1.2. Stations with an extreme maximum temperature ever recorded values during October 2024.**

Name	Previous Record	New Record	Date
Bore	21	25.8	18
Yetnora	26.5	27.4	25
Bahir Dar New	29.6	30	3
Gondar A.P.	30	31	3
Adwa	33	34.5	24
Arba Minch	35	35	3
Majete	33.4	37.7	18



**Fig. 3.1.1. Mean minimum temperature in oc during October 2024.**



**Fig. 3.1.2. Mean maximum temperature in °c during October 2024**

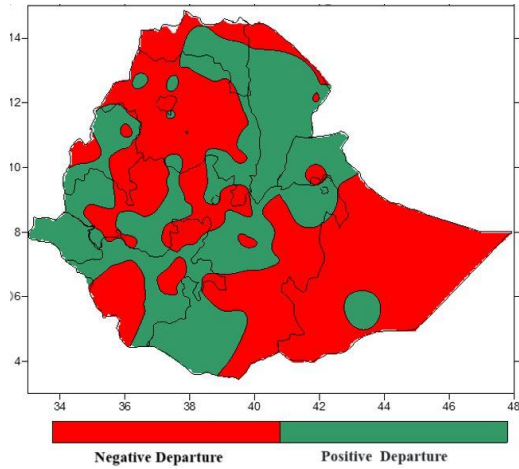


Fig.3.1.3. Departure of monthly average temperature from normal during October 2024.

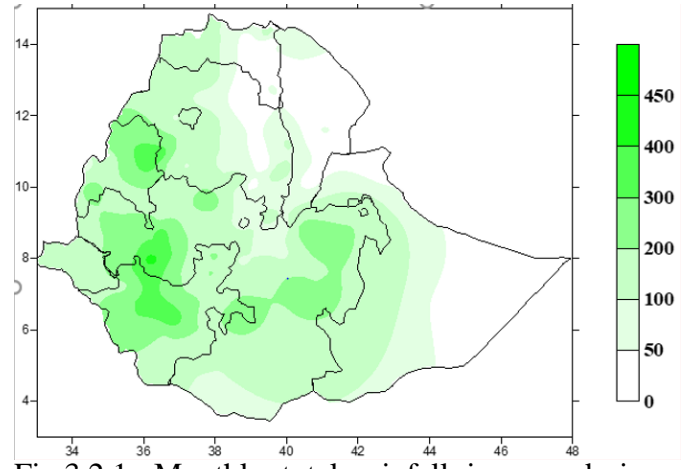


Fig.3.2.1. Monthly total rainfall in mm during October 2024.

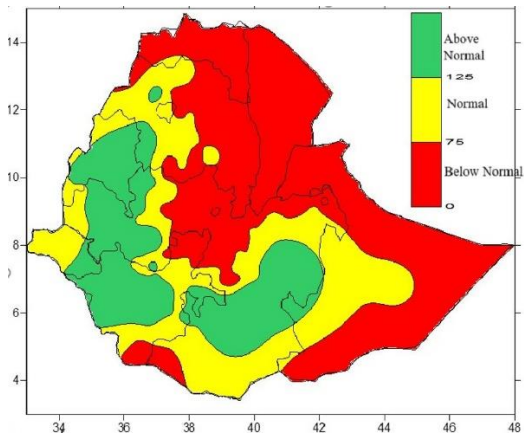


Fig. 3.2.2. Percent of normal rainfall during October 2024

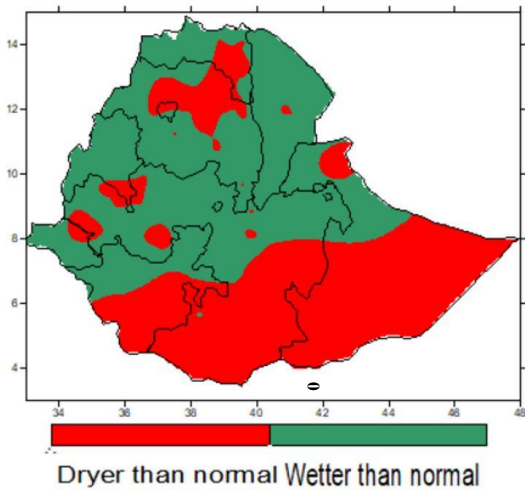


Fig. 3.2.3. Monthly total rainfall of October 2024 minus monthly Total rainfall of October 2023