

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
ETHIOPIAN METEOROLOGICAL INSTITUTE
 METEOROLOGICAL DATA AND CLIMATOLOGY LEAD EXECUTIVE
 REMOTE SENSING AND CLIMATOLOGICAL DESK

MONTHLY CLIMATE BULLETIN

August 2023

*Some Applications of
Climate Information*



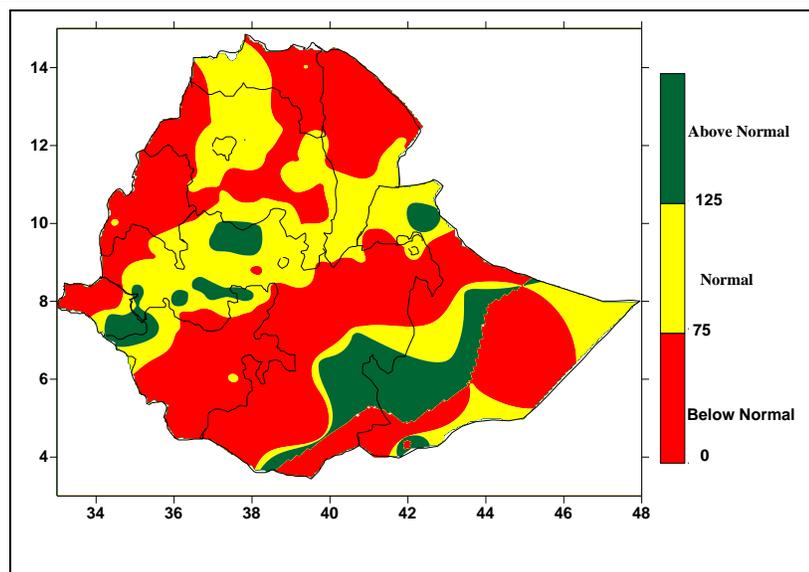
HIGHLIGHTS

During August 2023, days were remained warm over several portions of lowlands of Ethiopia, in particularly over most part of Afar, Somali, Gambela, some part of Tigray, Amhara, Benishangul Gumuz and few areas of NNPR regions (Fig. 3.1.2). Specifically, the extreme maximum temperature values were as high as 40, 40.2, 41.6, 43, 43, 43.5, and 43.6 °C cover Chifra, Gewane, Gode, Dubti, Mille, Aysha and Semera respectively.

During August 2023, the monthly rainfall amount exceeded 500 mm or heavier rainfall was occurring over some parts of western Oromia and Amhara regions.

In particular, the monthly total rainfall values of August 2023 were as high as 556.1, 468.5, 461.3, 460.2, 406.8, 376.2, 362.9, 358.8, 354.6, and 346.5mm over Gatira, Shambu, Kachise, D/Tabor, Arejo, Ambamariam, Dangla, Limugenet, Sirinka and Nekemte respectively. The daily rainfall values over Fugnuido, Bure, Gundomeskel, Assossa, Masha, Sirinka, D/Tabor and Dalifagi stations was 84.6, 84.6, 82, 80, 76.4, 75.2, 71.9 and 70mm respectively. In general, the monthly total rainfall amount of August 2023 was below normal over part of Benishangul Gumuz, SNNPR, most part of Oromia, Afar, Somali, some part of Tigray, Amhara and Gambella regions. On the other hand, it was above normal over some part of Somali, Oromia, few areas of Gambella and SNNPR regions.

Gambella, most part of Somali, some part of Oromia, few areas of Amhara, adjoint areas of Gambella and SNNPR and pocket areas of Afar regions were wetter than climatological normal. On the other hand, Tigray, Benishangul Gumuz, Amhara, Afar, SNNPR, most part of Gambella and Oromia regions were Dryer than climatological normal.



Percent of normal rainfall of August 2023

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 contained in this 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 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 contained 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 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 success.

Director General

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1. Synoptic Situation

1.1 Surface

The Mascarene high with a mean central pressure value of above 1020hPa was centered at about 30°S, 45°E.

The St. Helena high with a mean central pressure value of above 1020hPa was centered at about 25°S, 15°W.

The Azores high with a mean central pressure value of 1020hPa was centered at about 40°N, 18°W.

1.2 Lower Troposphere (850 hPa vector wind)

Strong cross-equatorial and southeasterly flow of below 8m/s was observed over northern and western Indian Ocean.

1.3 Middle Troposphere (500-hPa Geopotential height)

The 500-hPa circulation during August featured a strong ridge over much of Canada and Scandinavia and moderate troughing over both U.S. coasts, western Alaska, and Siberia. The main land-surface temperature signals during August were above-average temperatures across much of North America, Europe, Russia, and parts of Asia.

1.4 Upper Troposphere (200 hPa vector wind)

Equatorial stronger easterly wind 15-30 m/s were dominate in most part of the horn of Africa. The subtropical easterly jet had strengthened further, while the upper-level westerly flow, associated with the tropical westerly jet weakened further.

2. Tropical Oceanic and Atmospheric Highlights

During August 2023, sea surface temperatures (SSTs) remained above-average across the equatorial Pacific. The latest monthly Niño indices were +3.3°C for the Niño 1+2 region, +1.3°C for the Niño 3.4 region and +2.0°C for the Niño 3 region. The depth of the oceanic thermocline (measured by the depth of the 20°C isotherm) was above-average across the central and eastern equatorial Pacific.

Reference: NOAA, climate diagnostic bulletin of August 2023

3. Weather

3.1 Temperature

During August 2023, days were remained warm over several portions of lowlands of Ethiopia, in particularly over most part of Afar, Somali, Gambela, some part of Tigray, Amhara, Benishangul Gumuz and few areas of SNNPR regions (Fig. 3.1.2). Specifically, the extreme maximum temperature values were as high as 40°C, 40.2, 41.6, 43, 43, 43.5, and 43.6 over Chifra, Gewane, Gode, Dubti, Mille, Aysha and Semera respectively (Table 3.1.1).

On the other hand, the extreme minimum temperature values were below 6°C over some highland parts of Amhara and few part of Oromia region.

In particular, Ambamariam, Nefasmewucha, Gundomeskel and Bore had extreme minimum temperature values of below 6°C during the month of August 2023 (Table 3.1.2).

In General, the August 2023 average temperature departure values were mostly positive departure and partially negative departure (Fig. 3.1.3).

Table 3.1.1 Stations with extreme maximum temperature values of greater than or equal to 40°C during August 2023

Stations	Extreme maximum temperature (°c)	Date
CHIFRA	40	27
Gewane	40.2	28
Gode	41.6	21
DUBTI	43	15
MILLE	43	26
AYSHA	43.5	30
Semera	43.6	26

Table 3.1.2 Stations with extreme minimum temperature values of below or equal to 6°C during August 2023

Stations	Extreme minimum temperature (°c)	Date
Ambamariam	0.0	1
Nefasmewucha	4.0	1
Gundomeskel	5.3	30
Bore	5.5	28

3.2 Rainfall

August is one of the months of the rainy season of Kiremt (JJAS) rain-benefiting areas of the country. The mean monthly rainfall amount exceeds 340 mm over much areas of North and northwest part of the country.

During August 2023, the monthly rainfall amount exceeded 500 mm or heavier rainfall was occurring over some parts of western Oromia and Amhara regions.

In particular, the monthly total rainfall values of August 2023 were as high as 556.1, 468.5, 461.3, 460.2, 406.8, 376.2, 362.9, 358.8, 354.6,

and 346.5mm over Gatira, Shambu, Kachise, D/Tabor, Arjo, Ambamariam, Dangla, Limugenet, Sirinka and Nekemte respectively. The daily rainfall values over Fugnuido, Bure, Gundomeskel, Assossa, Masha, Sirinka, D/Tabor and Dalifagi stations was 84.6, 84.6, 82, 80.1, 76.4, 75.2, 71.9 and 70mm respectively (Tables 3.2.1).

In general, the monthly total rainfall amount of August 2023 was below normal over part of Benishangul Gumuz, SNNPR, most part of Oromia, Afar, Somali, some part of Tigray, Amhara and Gambella regions. On the other hand, it was above normal over some part of Somali, Oromia, few areas of Gambella and SNNPR regions (Fig. 3.2.2).

Most part of Somali, some part of Oromia, adjoining areas of Gambella, few areas of Amhara, and SNNPR and pocket areas of Afar regions were wetter than climatological normal. On the other hand, Tigray, Benishangul Gumuz, Amhara, Afar, SNNPR, most part of Gambella and Oromia regions were dryer than climatological normal (Fig. 3.2.2).

Table 3.2.1. Stations with more than 60mm of rainfall in 24 hours during August 2023

Station	Amount	Date
Ambamariam	63.2	10
Nekemte	63.8	7
Harer	66.0	6
Limugenet	69.1	14
Dalifagi	70.0	20
D/Tabor	71.9	1
Sirinka	75.2	1
Masha	76.4	30
Assossa	80.1	15
Gundomeskel	82.0	30
Bure	84.6	23
Fugnuido	84.6	31

Table 3.2.2. Stations with more than 300mm of monthly total rainfall during August 2023

Station	Amount
Gimbi	309.4
Chagini	317.8
Bure	318.6
Shahura	332.3
Bedelle	336.1
Algie	338.4
Nekemte	346.5
Sirinka	354.6
Limugenet	358.8
Dangla	362.9
Ambamariam	376.2
Arjo	406.8
D/Tabor	460.2
Kachise	461.3
Shambu	468.5
Gatira	556.1

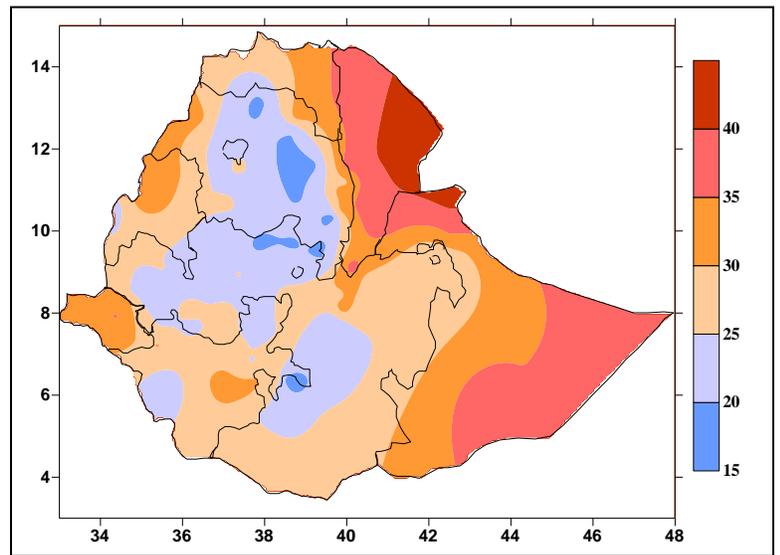


Fig. 3.1.2. Mean maximum temperature in °c during August 2023

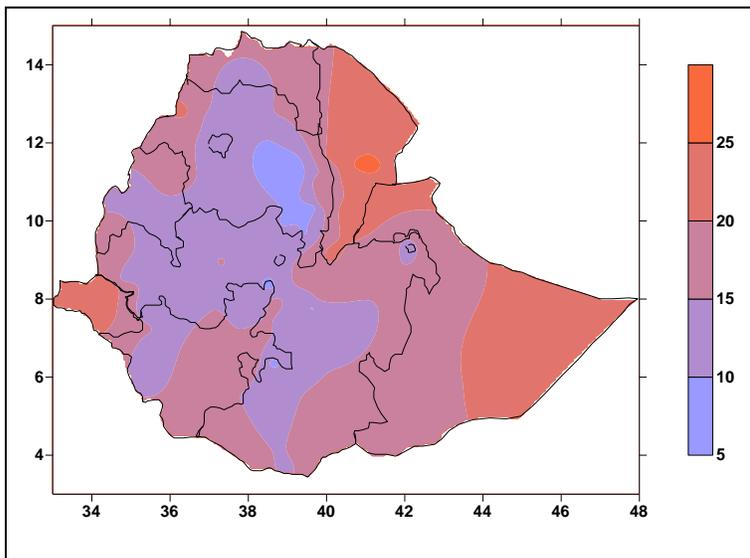


Fig. 3.1.1. Mean minimum temperature in °c during August 2023

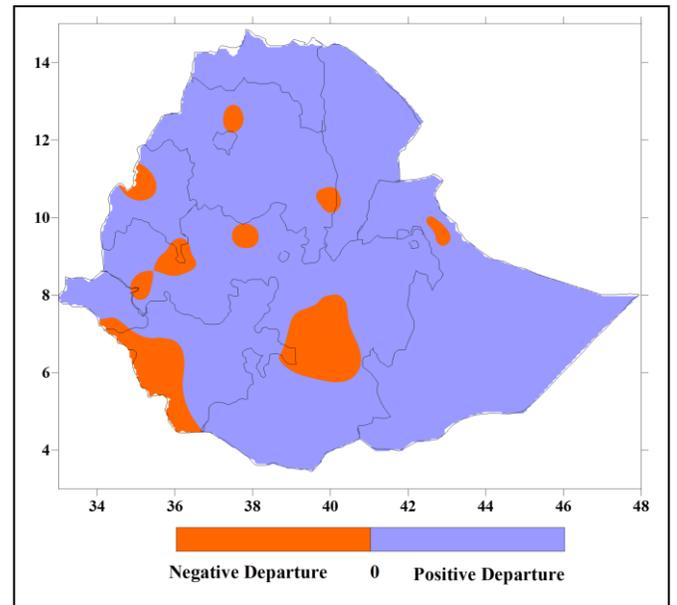


Fig.3.1.3. Departure of August 2023 Average temperature from August 2022 Average temperature

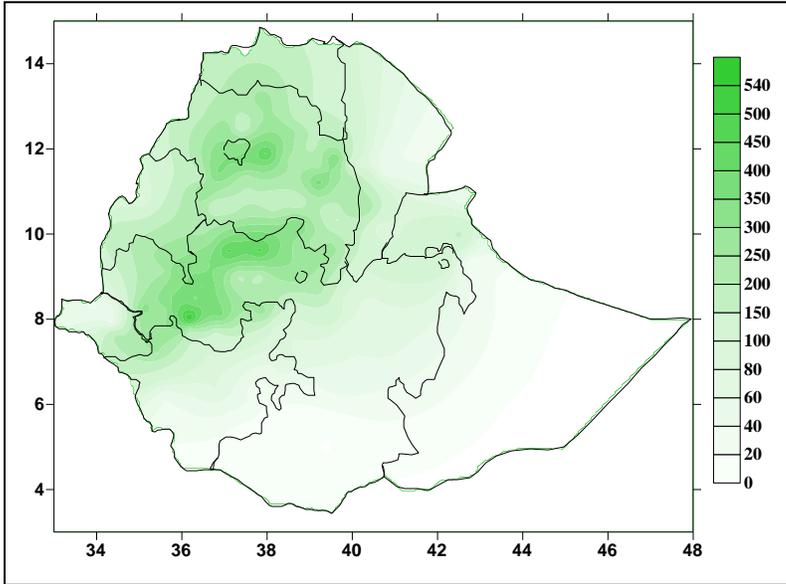


Fig.3.2.1. Monthly total rainfall in mm during August 2023

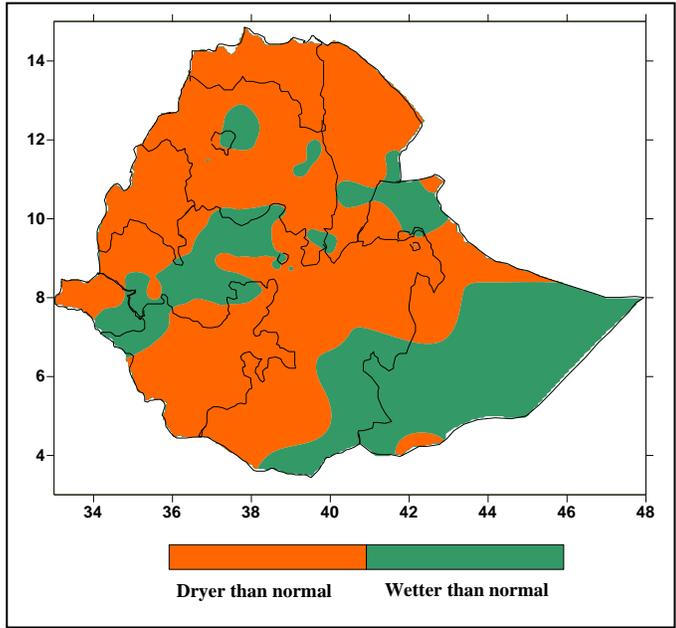


Fig. 3.2.3. Monthly total rainfall of August 2023 minus August normal rainfall

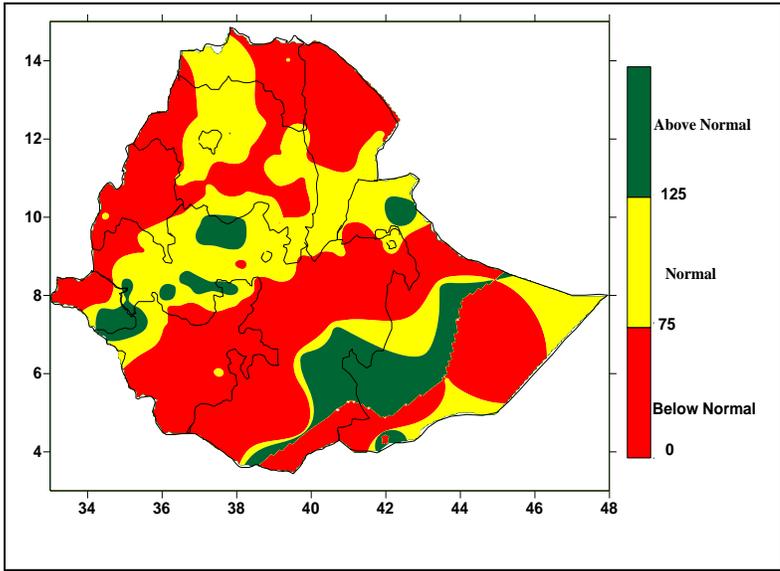


Fig. 3.2.2. Percent of normal rainfall during August 2023