

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

MONTHLY CLIMATE BULLETIN

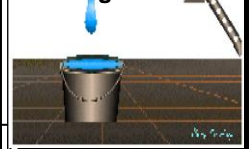
March 2024

*Some Applications of
Climate Information*

Disaster Management



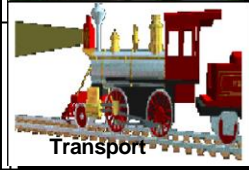
Water Resources Management



Construction



Environment & Health



Transport



Recreation & Tourism

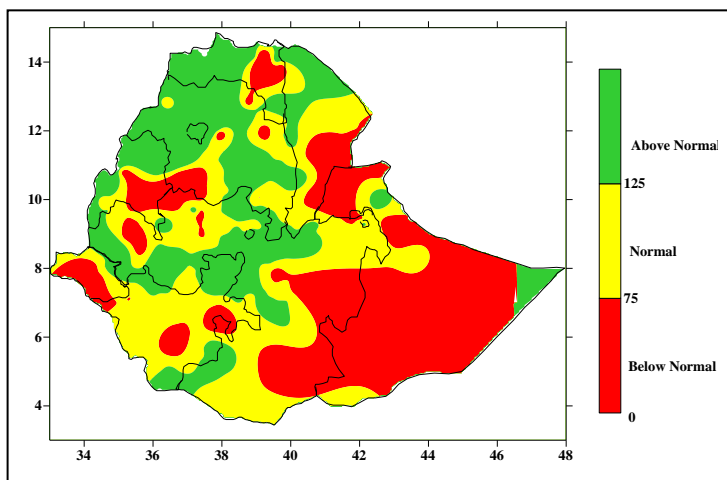
HIGHLIGHTS

During March 2024, days were remained warm over several portions of lowlands of Ethiopia, in particularly over Gambella, Somali, Afar, Benishangul Gumuz and North west Amhara regions. Specifically, the extreme maximum temperature values were as high as 40, 40.4, 41, 41.2, 42, 42.6, 43.2, 43.4, 43.4, 43.8 and 44 °C Algie, Gelemso, Awash Arba, Gewane, Lare, Aleiya, Metema, Gode, Abobo, Gambella and Fugnuido station respectively.

On the other hand, the extreme minimum temperature values were below 5°C cover some highland parts of Amhara, some part of Oromia, Tigray and Adjoining areas of Benishangul Gumuz and Oromia regions. Specifically, the extreme minimum temperature values were 0, 0, 1.8, 4, 4 and 4.1 °C over Debark, Mille, Yitnora, Alemaya, Dangla and Sholagebaya respectively.

During March 2024, the monthly rainfall amount exceeded 100 mm or heavier rainfall was occurring over Central Ethiopia, Southwest Ethiopia, South Ethiopia and most part of Oromia regions.

In particular, the monthly total rainfall values of March 2024 were as high as 160.4, 165.3, 165.9, 194.1, 194.6, 202.8, 203.1, 205.8 and 218 mm over Majete, Arise Robe, Chira, Masha, Hossaina, Gatira, Werabe, Imdiber and Bui stations respectively. The daily rainfall more than 30mm values was observed over Metehara (Nmsa), Masha, Werabe, Bedelle, Ziway, Nura-Era, Dolomena, Gelemso and Abomsa stations was 68.6, 70.6, 70.6, 70.7, 71.5, 72.6, 80, 87 and 96 mm respectively. In general, the monthly total rainfall amount of March 2024 was below normal over part of Somali, Gambella, Afar, some part of Oromia, Benishangul Gumuz, Tigray, Southern Ethiopia and Amhara regions. On the other hand, it was above normal over most part of Amhara, Tigray, some part of Oromia, Afar, Benishangul Gumuz, and Somali regions. The rainfall was normal in some parts of south Ethiopia, Sidama, some part of Oromia, Afar, Amhara and Gambella regions.



Percent of normal rainfall of March 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 and giving some highlights about major synoptic situations..

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 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 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 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 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 36°S, 90°E.

The St. Helena high with a mean central pressure value of above 1018hPa was centered at about 32°S, 0°E.

The Azores high with a mean central pressure value of 1020hPa was centered at about 33°N, 35°W.

1.2 Lower Troposphere (850 hPa vector wind)

North easterly flow of below 2 - 4m/s mean vector wind flow from Indian Ocean was observed.

2. Tropical Oceanic and Atmospheric Highlights

During March 2024, sea surface temperatures (SSTs) continued to decrease but remained well above-average across most of the equatorial Pacific. The latest monthly Niño indices were +0.3°C for the Niño 1+2 region, +1.2°C for the Niño 3.4 region and +1.0°C for the Niño 3 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 1-6°C below-average in the far eastern equatorial Pacific. **Reference: NOAA, climate diagnostic bulletin of March2024**

3. Weather

3.1 Temperature

During March 2024, days were remained warm over several portions of lowlands of Ethiopia, in particularly over Gambella, Somali, Afar, Benishangul Gumuz and North west Amhara

regions (Fig. 3.1.2). Specifically, the extreme maximum temperature values were as high as 40, 40.4, 41, 41.2, 42, 42.6, 43.2, 43.4, 43.4, 43.8 and 44 °C Algie, Gelemso, Awash Arba, Gewane, Lare, Aleiya, Metema, Gode, Abobo, Gambella and Fugnuido station respectively (Table 3.1.1). On the other hand, the extreme minimum temperature values were below 5°C cover some highland parts of Amhara, some part of Oromia, Tigray and Adjoining areas of Benishangul Gumuz and Oromia regions. Specifically, the extreme minimum temperature values were 0, 0, 1.8, 4, 4 and 4.1 °C over Debark, Mille, Yitnora, Alemaya, Dangla and Sholagebaya respectively (Table 3.1.2).

In General, the March 2024 Mean monthly temperature values were partially color than normal in Somali, Amhara, Afar and Benishangul Gumuz region. On the other hand, warmer than normal over most parts of the Gambella, South west Ethiopia, and central Oromia region (Fig. 3.1.3).

Table 3.1.1 Stations with extreme maximum temperature values of greater than or equal to 36°C during March2024

Stations	Extreme maximum temperature (°c)	Date
ALGIE	40	21
Gelemso	40.4	25
AWASH ARBA	41	18
Gewane	41.2	23
LARE	42	29
Aleiya	42.6	19
METEMA	43.2	14
Gode	43.4	12
ABOBO	43.4	29
GAMBELLA	43.8	21
FUGNUIDO	44	12

Table 3.1.2 Stations with extreme minimum temperature values of below or equal to 5°C during March2024

Stations	Extreme minimum temperature (°c)	Date
DEBARK	0	29
MILLE	0	21
YITNORA	1.8	14
ALEMAYA	4	27
DANGLA	4	1
SHOLAGEBAYA	4.1	21

3.2 Rainfall

Normally, March is one of the months of the second rainy season of Belg (FMAM) for most part of the country except north and northwest. The mean monthly rainfall amount exceeds 100 mm over much areas of south, southwest and southeast part of the country.

During March 2024, the monthly rainfall amount exceeded 100 mm or heavier rainfall was occurring over Central Ethiopia, Southwest Ethiopia, South Ethiopia and most part of Oromia regions.

In particular, the monthly total rainfall values of March2024 were as high as 160.4, 165.3, 165.9, 194.1, 194.6, 202.8, 203.1, 205.8 and 218 mm over Majete, Arise Robe, Chira, Masha, Hossaina, Gatira, Werabe, Imdiber and Bui stations respectively. The daily rainfall more than 30mm values was observed over Metehara (Nmsa), Masha, Werabe, Bedelle, Ziway, Nura-Era, Dolomena, Gelemso and Abomsa stations was 68.6, 70.6, 70.6, 70.7, 71.5, 72.6, 80, 87 and 96 mm respectively (Tables 3.2.1).

In general, the monthly total rainfall amount of March 2024 was below normal over part of

Somali, Gambella, Afar, some part of Oromia, Benishangul Gumuz, Tigray, Southern Ethiopia and Amhara regions. On the other hand, it was above normal over most part of Amhara, Tigray, some part of Oromia, Afar, Benishangul Gumuz, and Somali regions. The rainfall was normal in some parts of south Ethiopia, Sidama, some part of Oromia, Afar, Amhara and Gambella regions (Fig. 3.2.2).

Southern Ethiopia, southwest Ethiopia, Central Ethiopia, most part of Amhara, Oromia, Benishangul Gumuz and Gambella regions were wetter than March 2023 rainfall. On the other hand, over Tigray, Afar, most part of Somali and some part of Oromia regions, March 2024 was dryer than March 2023 rainfall. No change on the rest part of the country (Fig. 3.2.3).

Table 3.2.1. Stations with more than 65 mm of rainfall in 24 hours during March2024

Stations	Amount (mm)	Date
Metehara (NMSA)	68.6	68.6
MASHA	70.6	11
WERABE	70.6	8
Bedelle	70.7	18
Ziway	71.5	25
NURA-ERA	72.6	25
DOLOMENA	80	25
Gelemso	87	30
Abomsa	96	25

Table 3.2.2. Stations with more than 160mm of monthly total rainfall during March2024

Station	Amount
MAJETE	160.4
ARISE ROBE	165.3
CHIRA	165.9
MASHA	194.1
HOSSAINA	194.6
Gatira	202.8
WERABE	203.1
Imdiber	205.8
Bui	218

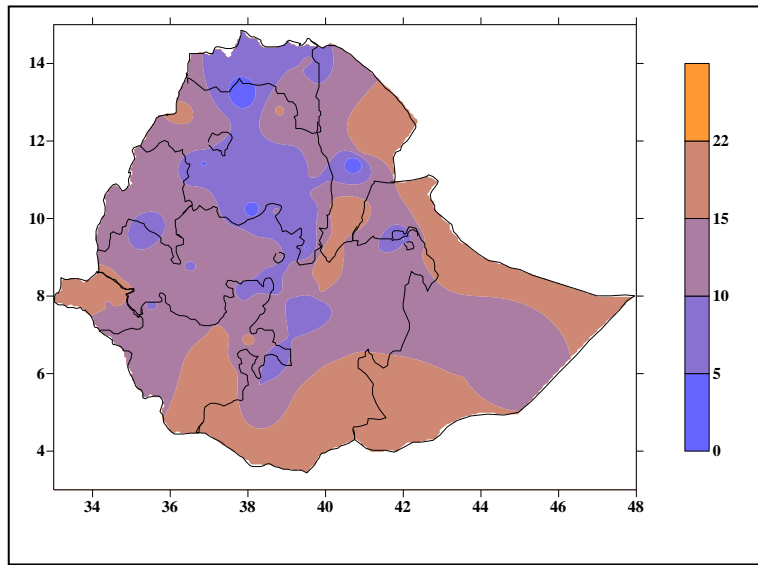


Fig. 3.1.1. Mean minimum temperature in °C during March2024

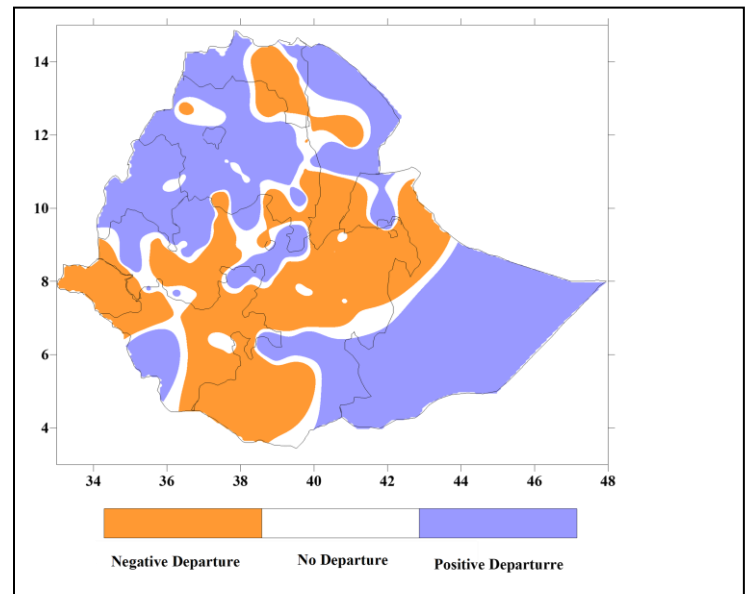


Fig.3.1.3. Departure of monthly average temperature from normal during March2024

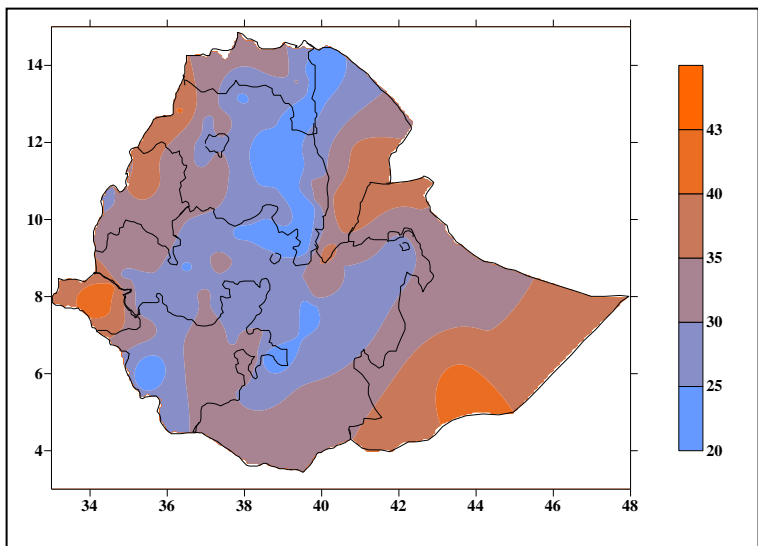


Fig. 3.1.2. Mean maximum temperature in °C during March2024

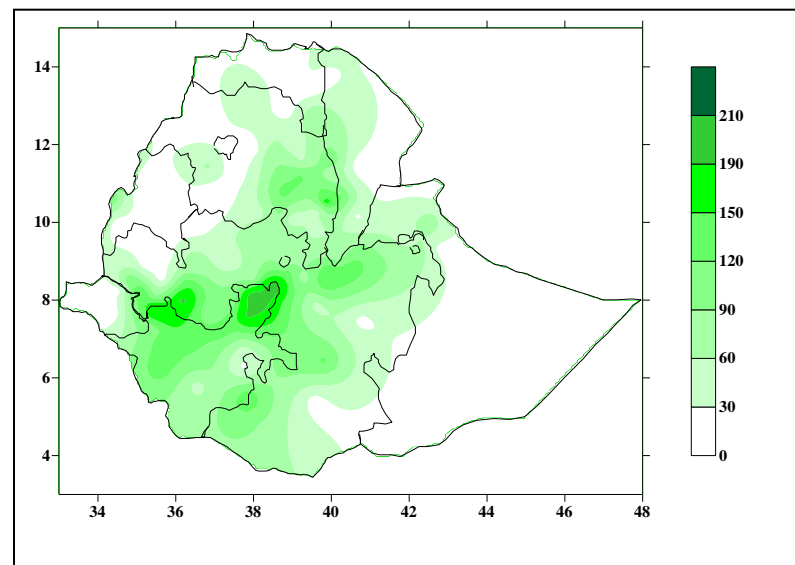


Fig.3.2.1. Monthly total rainfall in mm during March2024

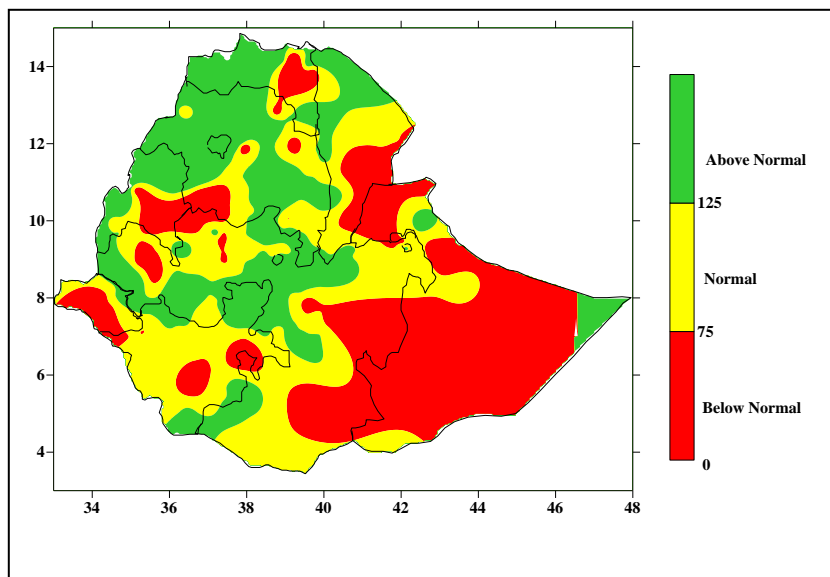


Fig. 3.2.2. Percent of normal rainfall during March2024

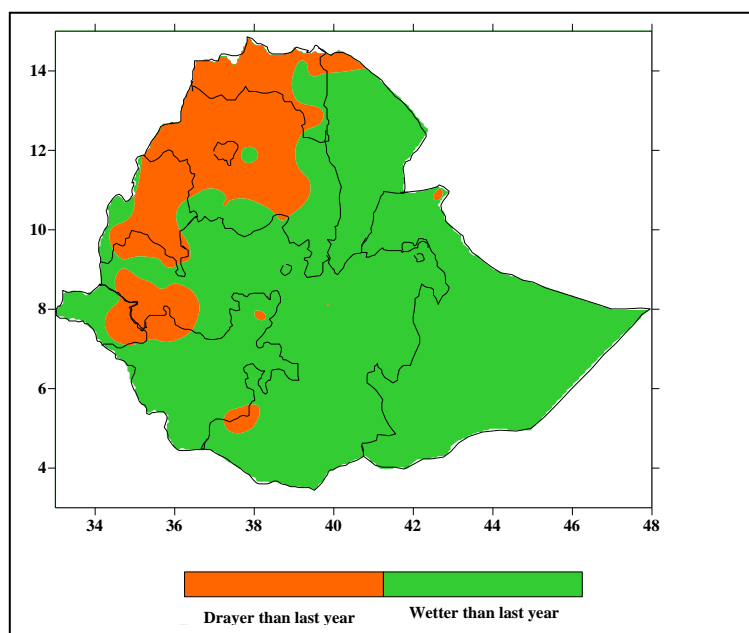


Fig. 3.2.3. Monthly total rainfall of March2024 minus monthly total rainfall of March2023