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FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

# ETHIOPIAN METEOROLOGICAL INSTITUTE

METEOROLOGICLA DATA AND CLIMATOLOGYLEAD LEAD EXECUTIVE

*REMOTE SENSING AND CLIMATOLOGICAL DESK*

# MONTHLY CLIMATE BULLETIN

## January 2024

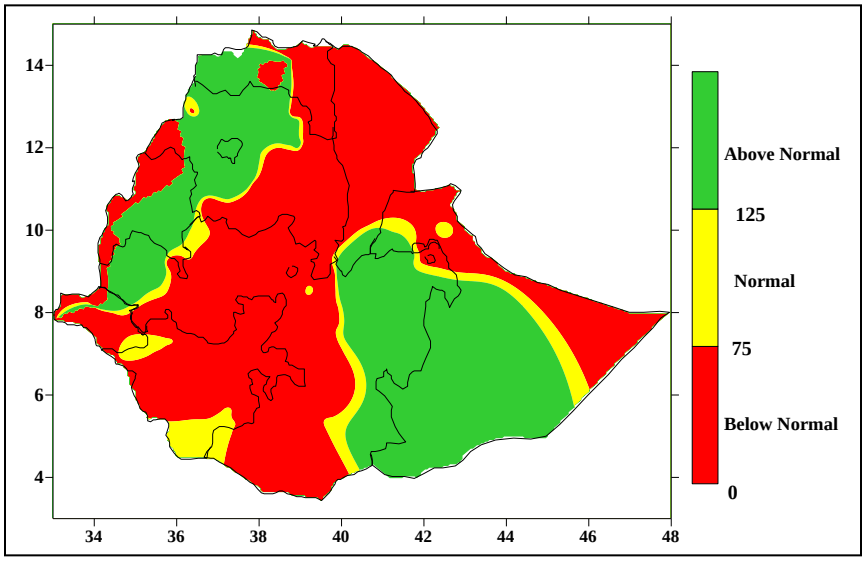
*Some Applications of Climate Information*


## HIGHLIGHTS

During January 2024, days were remained warm over several portions of lowlands of Ethiopia, in particularly over Gambella, Somali, Afar and Benishangul regions. Specifically, the extreme maximum temperature values were as high as 43, 40.5, 40, 39.8, 39, 38.4 and 38.2 $^{O}$C over Gode, Fugnuldo, Gambella, Elidar, Aleiya, Ambo and Metema station respectively. In General, the monthly average temperature values were partially cooler than normal and partially warmer than normal over most parts of the country.

During January 2024, the monthly rainfall amount exceeded 70 mm or heavier rainfall was occurring over Southern, southwest and central Ethiopia, Sidama, some part of Oromia, Amhara, Benishangul Gumuz and Afar regions.
In particular, the monthly total rainfall values of January 2024 were as high as 192.9, 181.7, 136, 121.4, 90.2, 75.1 and 72.2mm over Aman, Majji, Gatira, Tercha, Jimma, Jinka and Sawula stations respectively. The daily rainfall more than 30mm values was observed over Mekaneselam, Bore, Aman, Masha, Tercha, Majji and Amdework stations was 51.4, 50.6, 47.8, 40.4, 36.8, 35.5, 31.4, respectively.
In general, the monthly total rainfall amount of January 2024 was below normal over part of the country and it was above normal over most part of the country.

Southern Ethiopia, Central Ethiopia, most part of Amhara, Oromia and Gambella regions were wetter than January climatological normal rainfall. On the other hand, Somali, Afar, Benishangul Gumuz, Tigray and most part of Oromia regions January 2024 was dryer than January normal rainfall.




**Percent of normal rainfall of January 2024**

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# 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.

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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 40°S, 45°E.

The St. Helena high with a mean central pressure value of above 1020hPa was centered at about 32°S, 8°W.

The Azores high with a mean central pressure value of 1016hPa was centered at about 31°N, 45°W.

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

North easterly flow of below 4 - 8m/s was observed over western Indian Ocean and easterly flow was dominant over the Arabian Peninsula

# 2. Tropical Oceanic and Atmospheric Highlights

During January 2024, sea surface temperatures (SSTs) remained well above-average across the equatorial Pacific. The latest monthly Niño indices were +0.8°C for the Niño 1+2 region, +1.8°C for the Niño 3.4 region and +1.9°C for the Niño 3 region. The depth of the oceanic thermocline (measured by the depth of the 20°C isotherm) was above-average in the eastern equatorial Pacific. The corresponding sub-surface temperatures were 1-5°C above-average in the far eastern equatorial Pacific

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

# 3. Weather

## 3.1 Temperature

During January 2024, days were remained warm over several portions of lowlands of Ethiopia, in particularly over Gambella, Somali, Afar and Benishangul regions (Fig. 3.1.2). Specifically, the extreme maximum temperature values were as high as 43, 40.5, 40, 39.8, 39, 38.4 and 38.2 $^{O}$C over Gode, Fugnuldo, Gambella, Elidar, Aleiya, Ambo and Metema station respectively (Table 3.1.1).

On the other hand, the extreme minimum temperature values were below 5° $^{O}$C cover some highland parts of Amhara, some part of Oromia and central Ethiopia. Specifically, the extreme minimum temperature values were 1.1, 2.5, 3, 3.2, 3.4, 3.5, 3.6, 3.8, 4.2 and 4.6 $^{O}$C over Sholagebeya, Mehalmeda, Dangla, D/brehan, Alemaya, Debark and wegeltena, Bui, Bahirdar met, Ambamariam and D/tabor and Robe. respectively (Table 3.1.2).

In General, the monthly average temperature values were partially color than normal and partially warmer than normal over most parts of the country (Fig. 3.1.3).

Table 3.1.1 Stations with extreme maximum temperature values of greater than or equal to 36$^{0}$c during January 2024

| Stations | Extreme maximum temperature ($^{o}$c) | Date |
|---|---|---|
| Gode | 43 | 20 |
| FUGNUIDO | 40.5 | 25 |
| GAMBELLA | 40 | 30 |
| ELIDAR | 39.8 | 23 |
| Aleiya | 39 | 24 |
| ABOBO | 38.4 | 30 |
| METEMA | 38.2 | 24 |
| AWASH ARBA | 38 | 26 |
| Gewane | 38 | 26 |
| MIERAB ABAYA | 38 | 20 |
| SHERKOLE | 37.3 | 20 |
| DALIFAGI | 37 | 29 |

| | | |
|---|---|---|
| Kibridahar | 37 | 30 |
| Semera | 37 | 18 |
| Metehara (NMSA) | 36.8 | 26 |

Table 3.1.2 Stations with extreme minimum temperature values of below or equal to 5$^{o}$c during January 2024

| Stations | Extreme minimum temperature ($^{o}$c) | Date |
|---|---|---|
| SHOLAGEBAYA | 1.1 | 9 |
| MEHALMEDA | 2.5 | 11 |
| DANGLA | 3 | 12 |
| D/BREHAN | 3.2 | 11 |
| ALEMAYA | 3.4 | 12 |
| DEBARK | 3.5 | 11 |
| WEGELTENA | 3.5 | 12 |
| Bui | 3.6 | 11 |
| Bahir Dar Met | 3.8 | 12 |
| AMBAMARIAM | 4.2 | 1 |
| D/TABOR | 4.2 | 11 |
| Robe | 4.6 | 10 |

## *3.2 Rainfall*

Normally, January is one of the months of the dryer season of Bega (ONDJ) for most part of the country except southern south east and south western. The mean monthly rainfall amount exceeds 60 mm over much areas of South southwest and southeast part of the country.

During January 2024, the monthly rainfall amount exceeded 70 mm or heavier rainfall was occurring over Southern, southwest and central Ethiopia, Sidama, some part of Oromia, Amhara, Benishangul Gumuz and Afar regions. In particular, the monthly total rainfall values of January 2024 were as high as 192.9, 181.7, 136, 121.4, 90.2, 75.1 and 72.2mm over Aman, Majji, Gatira, Tercha, Jimma, Jinka and Sawula stations respectively. The daily rainfall more than 30mm values was observed over Mekaneselam, Bore, Aman, Masha, Tercha, Majji and Amdework stations was 51.4, 50.6, 47.8, 40.4, 36.8, 35.5, 31.4, respectively (Tables 3.2.1).

In general, the monthly total rainfall amount of January 2024 was below normal over part of Afar, southern Amhara, central and southern Oromia, central Ethiopia, southwest Ethiopia, most part of Gambella, eastern Somali, western Benishangul Gumuz and eastern Tigray regions. On the other hand, it was above normal over most of Somali, Southern Oromia, southern Amhara, southern Benishangul Gumuz and southern Tigray regions. Current rainfall normal in Few parts of Southern Ethiopia, Somali, Oromia, Amhara and Gambella regions (Fig. 3.2.2).

Southern Ethiopia, Central Ethiopia, most part of Amhara, Oromia and Gambella regions were wetter than January climatological normal rainfall. On the other hand, Somali, Afar, Benishangul Gumuz, Tigray and most part of Oromia regions January 2024 was dryer than January normal rainfall (Fig. 3.2.2).

Table 3.2.1. Stations with more than 30mm of rainfall in 24 hours during January 2024

| Stations | Amount (mm) | Date |
|---|---|---|
| MEKANSELAM | 51.4 | 31 |
| BORE | 50.6 | 16 |
| AMAN | 47.8 | 6 |
| MASHA | 40.4 | 1 |
| TERCHA | 36.8 | 27 |
| MAJJI | 35.5 | 23 |
| AMDEWORK | 31.4 | 18 |

Table 3.2.2. Stations with more than 70mm of monthly total rainfall during January 2024

| Station | Amount |
|---|---|
| SAWULA | 72.2 |
| Jinka | 75.1 |
| JIMMA | 90.2 |
| TERCHA | 121.4 |
| Gatira | 136 |
| MAJJI | 181.7 |
| AMAN | 192.9 |

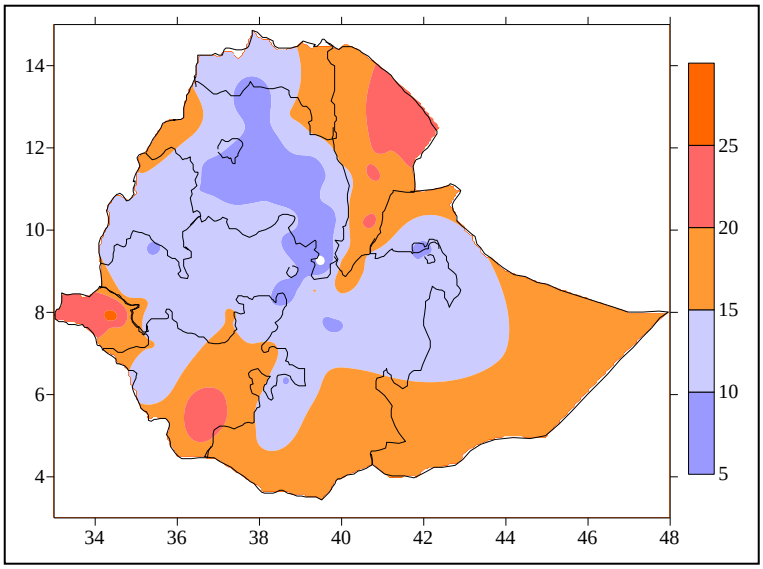


Fig. 3.1.1. Mean minimum temperature in $^{o}$c during January 2024

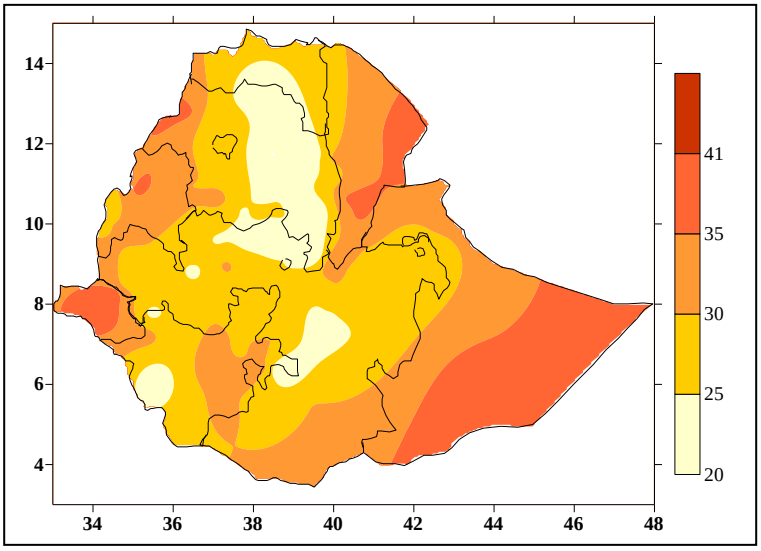


Fig. 3.1.2. Mean maximum temperature in $^{o}$c during January 2024

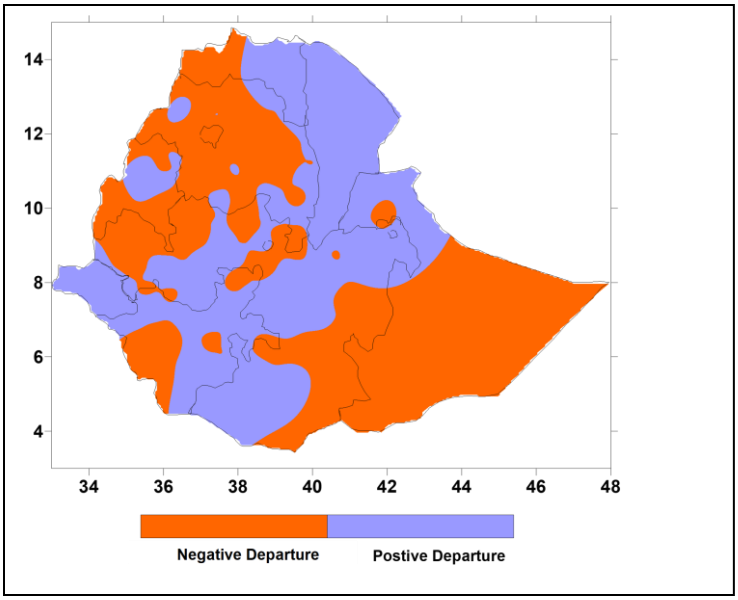


Fig.3.1.3. Departure of monthly average temperature from normal during January 2024

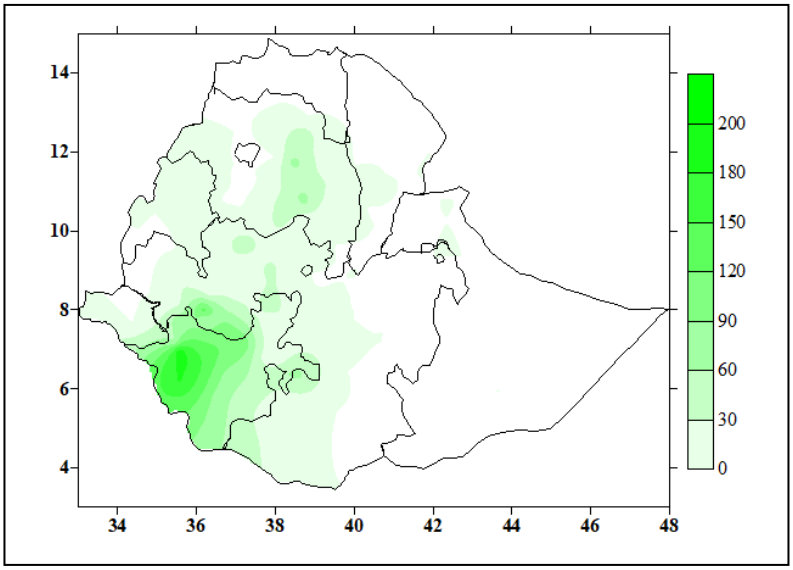


Fig.3.2.1. Monthly total rainfall in mm during January 2024

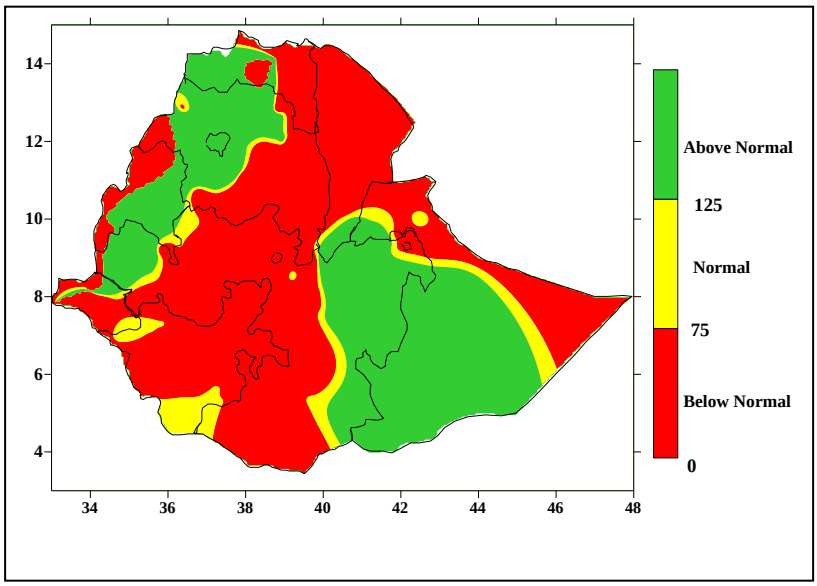


Fig. 3.2.2. Percent of normal rainfall during January 2024

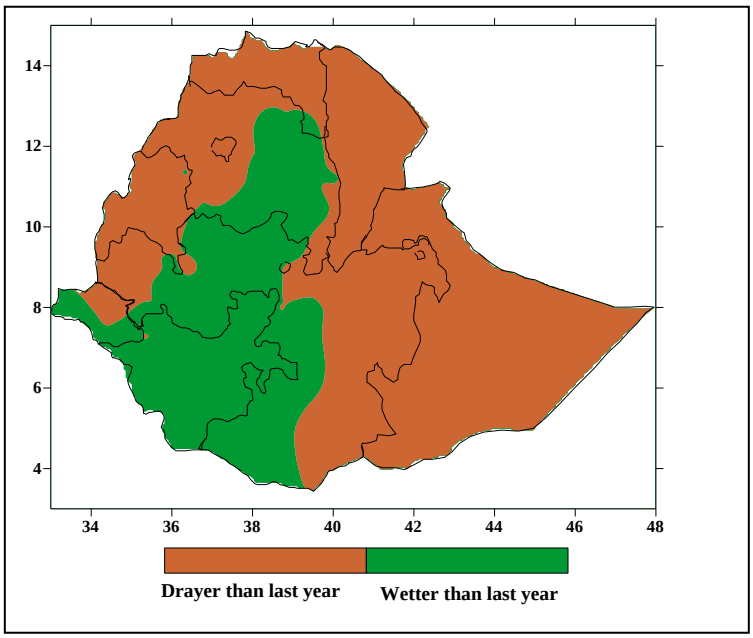


Fig. 3.2.3. Monthly total rainfall of January 2024 minus monthly total rainfall of January 2023