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 ETHIOPIA METEOROLOGY INSTITUTE
 METEOROLOGICAL DATA AND CLIMATOLOGY
REMOTE SENSING AND CLIMATOLOGY DESK
MONTHLY CLIMATE BULLETIN
May 2023

*Some Applications of
 Climate Information*

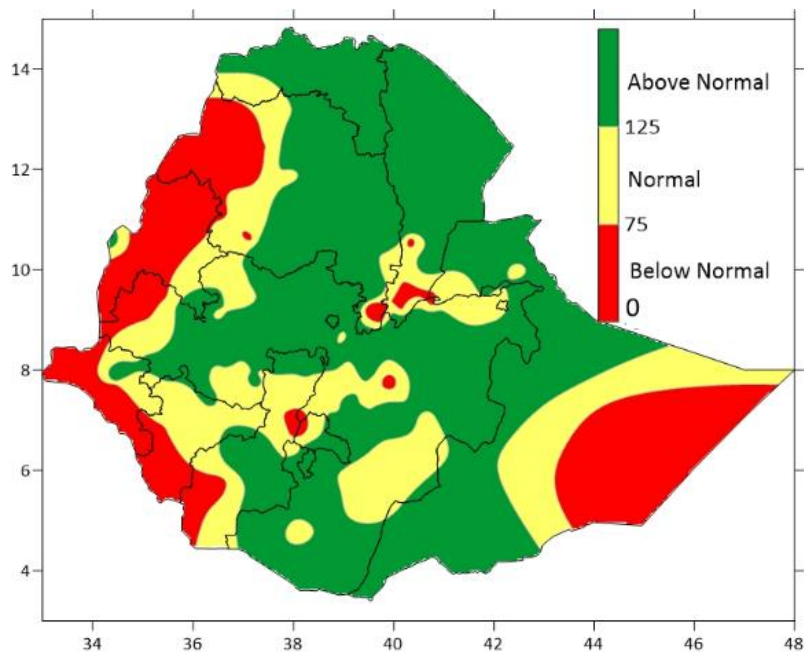


HIGHLIGHTS

During May 2023, days were remained warm over several portions of lowlands of Ethiopia, in particularly Gambela, Afar, Benishangul, western parts of Amhara and Somale. In specific, the extreme maximum temperature values were as high as 42.0, 42.5, 42.0, 41.5 and 41.7 OC over Semera, Metema, Dubti, Ayisha and Gode respectively.

During May 2023, the monthly rainfall amount exceeded 350 mm over some parts of Amhara, western, east and south parts Oromia, with heavier rainfall events occurring over central and western parts of the country. In particular, the monthly total rainfall values of May 2023 were as high as 453.4, 422.2, 365.2 and 364.4 mm over Amibara, Arjo, Dila and Hageremariam respectively. Besides, the daily rainfall values over Hageremariam, Sawula, Gelemso and Wereilu were as high as 100.6, 78.8, 72 and 72 mm recorded.

In general, the monthly total rainfall amount of May 2023 was normal to above normal over all areas of the country except over very few pocket areas of Benishangul gumuz, Amhara, Oromia, SNNPRs and Somale. May 2023 was generally wetter than May 2022 over much of the country except some pocket areas.



Percent of normal rainfall of May 2023

Foreword

This climate bulletin is prepared and disseminated by the Ethiopian 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 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, 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.

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1. Synoptic Situation

1.1 Surface

The Mascarene high with a mean central pressure value of 1020hPa was centered at about 30°S, 112°E.

The St. Helena high with a mean central pressure value of 1020hPa was centered at about 31°S, 1°E.

The Azores high with a mean central pressure value of 1020hPa was centered at about 38°N, 32°W.

1.2 Lower Troposphere (850 hPa vector wind)

Strong cross-equatorial and southeastern flow of above 8m/s was observed over northern and western Indian Ocean, Arabian Sea and the adjoining areas of the Horn of Africa.

1.3 Middle Troposphere (500-hPa Geopotential height)

The geopotential height values were above normal to near normal over Mediterranean and red Sea.

1.4 Upper Troposphere (200 hPa vector wind)

The westerly wind, associated with the subtropical westerly jet, had strengthened further, while the upper level easterly flow, associated with the tropical easterly jet weakened further.

2. Tropical Oceanic and Atmospheric Highlights

During May 2023, sea surface temperatures (SSTs) were above-average across much of the eastern and central equatorial Pacific. The latest monthly Niño indices were +0.5°C for the Niño 3.4 region and +0.8°C for the Niño 1+2 region.

Consistent with these conditions, the depth of the oceanic thermocline (measured by the depth of the 20°C isotherm) was near-average across the central and eastern equatorial Pacific, with corresponding sub-surface temperatures being 0-1°C above average. Also, during May, the low-level easterly trade winds remained near-average across the equatorial Pacific. Mean while, tropical convection was slightly suppressed over the central equatorial Pacific and enhanced over western equatorial Pacific. Collectively, these oceanic and atmospheric anomalies reflect a continuation of ENSO-neutral conditions.

Reference: NOAA, climate diagnostic bulletin of May 2023

3. Weather

3.1 Temperature

During May 2023, days were remained warm over several portions of lowlands of Ethiopia, in particularly Gambela, Afar, Benishangul, western parts of Amhara and Somale (Fig. 3.1.2). In specific, the extreme maximum temperature values were as high as 42.0, 42.5, 42.0, 41.5 and 41.7 °C over Semera, Metema, Dubti, Ayisha and Gode respectively (Table 3.1.1).

On the other hand, the extreme minimum temperature values were below 10°C over some highland parts of Amhara and some parts central Oromia's.

In particular, Hagereslam, Dinsho, Hadero, Metu, Loka Aba and Yirgalem had extreme minimum temperature values of below 5°C during the month of May 2023 (Table 3.1.2).

In General, the monthly average temperature values were slightly above 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 40°C during May 2023

Stations	Extreme maximum temperature (°c)	Date
Gode	41.7	21
Aysha	41.5	29
Dubti	42	28
Gewane	41	29
Lare	40.4	21
Metema	42.5	22
Mille	40	16
Semera	42	10

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

Stations	Extreme minimum temperature (°c)	Date
Debre tabor	4.2	14
Ambamariam	4.4	15
Amdework	4.6	21
Mehalmeda	5.2	16
D/brehan	6.8	23
Robe	7	14
Debark	7.5	13
Enewari	7.5	30
Nefasmewucha	7.5	26
Wegeltena	7.5	22
Bui	7.6	29
Alemketema	7.8	14

3.2 Rainfall

Normally, May is the last month of the smallest rainy season of Belg (FMAM) rain-benefiting areas of the country. The mean monthly rainfall amount exceeds 200 mm over much of the areas of east of the Rift valley, with higher mean values over western Oromia.

During May 2023, the monthly rainfall amount exceeded 350 mm over some parts of Amhara, western, east and south parts Oromia, with heavier rainfall events occurring over central and western parts of the country. In particular, the monthly total rainfall values of May 2023 were as high as 453.4, 422.2, 365.2 and 364.4 mm over Amibara, Arjo, Dila and Hageremariam respectively. Besides, the daily rainfall values over Hageremariam, Sawula, Gelemso and Wereilu were as high as 100.6, 78.8, 72 and 72 mm recorded. (Tables 3.2.1).

In general, the monthly total rainfall amount of May 2023 was normal to above normal over all areas of the country except over very few pocket areas of Benishangul gumuz, Amhara, Oromia, SNNPRs and Somale (Fig. 3.2.2). May 2023 was generally wetter than May 2022 over much of the country except some pocket areas. (Fig. 3.2.3).

Table 3.2.1. Stations with more than 50mm of rainfall in 24 hours during May 2023

Stations	Amount (mm)	Date
Hageremariam	100.6	4
Sawula	78.8	4
Gelemso	72	25
Wereilu	72	28
Arejo	69	30
Bati	65	29
Ambamariam	61.4	2
Bore	59.2	23
Jara	57	20
Chagini	56.8	27
Konso	54.6	18
Chifra	50.2	1
Gore	50	29

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

Stations	Amount (mm)
Gimbi	302.6
Bati	314.8
Deberemarkos	316.1
Gore	328.5
Masha	328.6
Gelemso	338.4
Hageremariam	364.4
Dilla	365.2
Arejo	422.2
Ambamariam	453.4

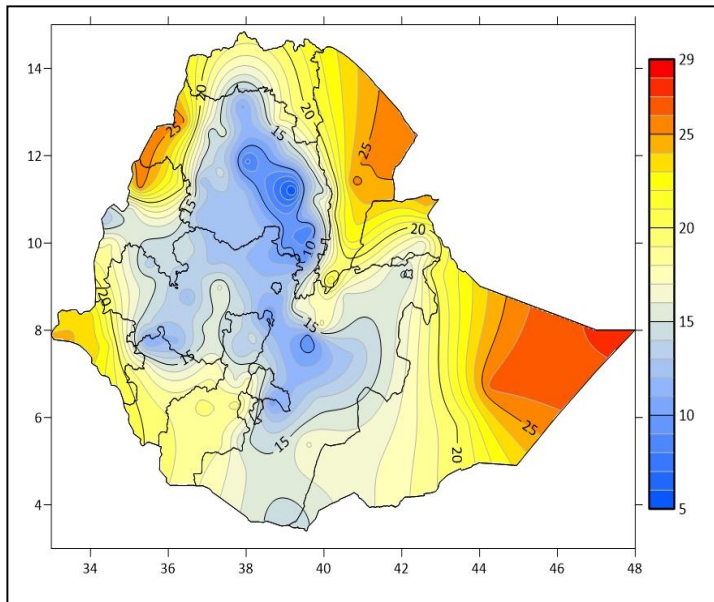


Fig. 3.1.1. Mean minimum temperature in °C during May 2023

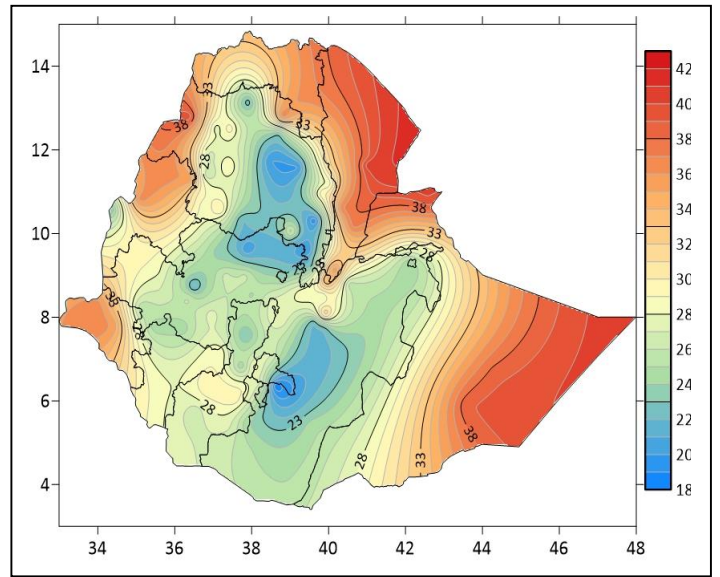


Fig. 3.1.2. Mean maximum temperature in °C during May 2023

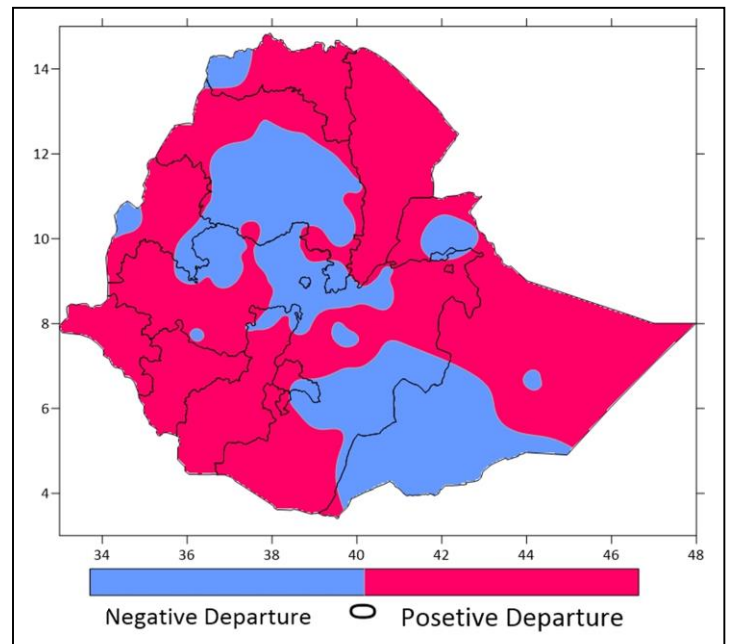


Fig.3.1.3. Departure of monthly average temperature from normal during May 2023

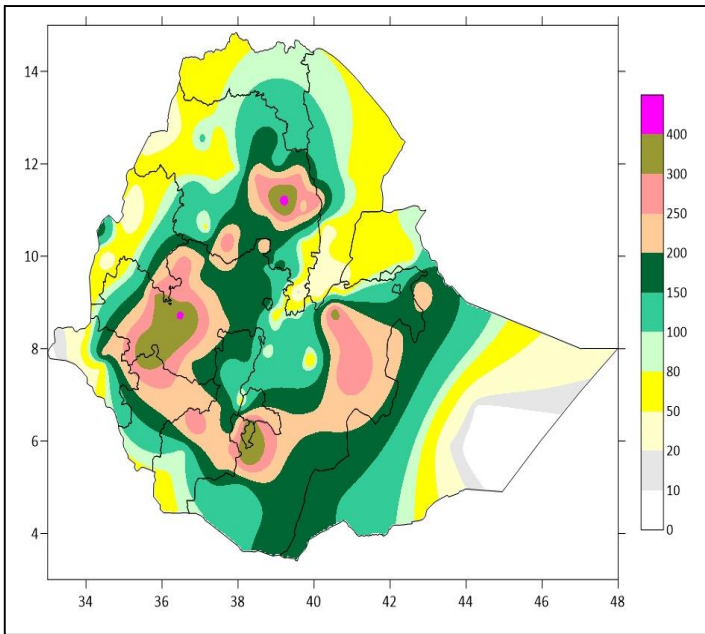


Fig.3.2.1. Monthly total rainfall in mm during May 2023

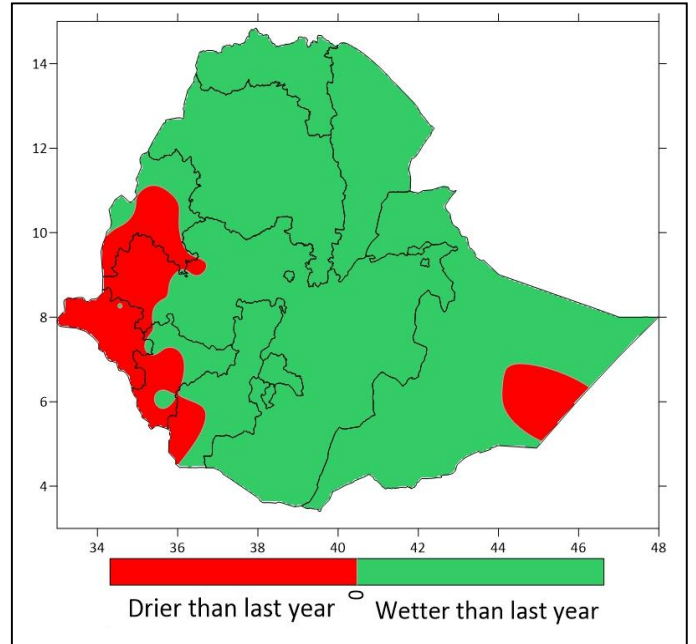


Fig. 3.2.3. Monthly total rainfall of May 2023 minus monthly total rainfall of May 2022

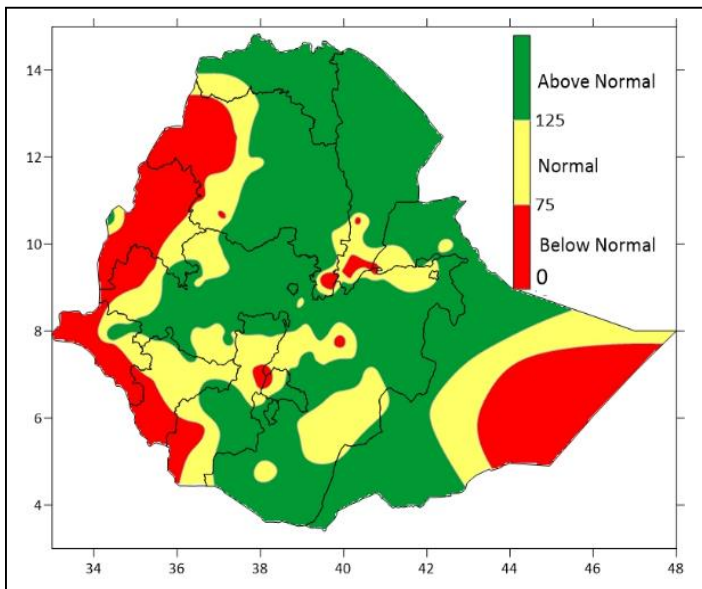


Fig. 3.2.2. Percent of normal rainfall during May 2023