

NATIONAL METEOROLOGICAL AGENCY
 METEOROLOGICAL DATA AND CLIMATOLOGICAL DIRECTORATE
 SEASONAL CLIMATE BULLETIN
 Bela 2019/2020

*Some Applications of
 Climate Information*

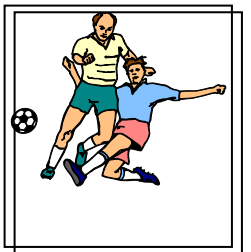
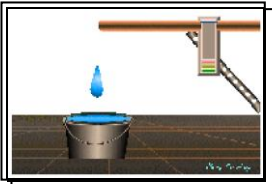
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 Disaster Management



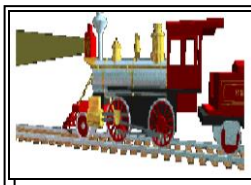
Construction



Environment & Health



Recreation & Tourism

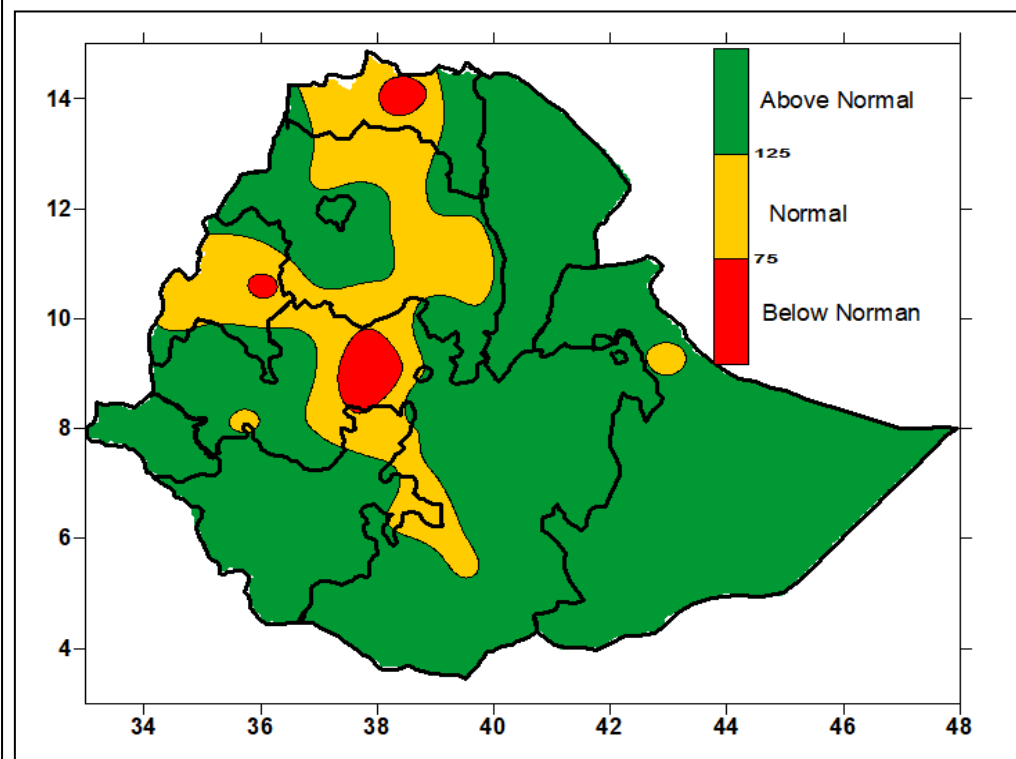


Transport

HIGHLIGHTS

The seasonal total rainfall amount of Bega 2019/2020 was exceeded 400mm over Gambella, on the southern SNNPR as well as parts of some Oromiya with heavier rainfall events occurring over western, southwestern and southern Ethiopia. In particular, the seasonal total rainfall exceeds 500mm over, Masha, Ginir, Jlnka, Arba Minch, Moyale, Sawula Bure and wolita Sodo with amount of 828.9, 768.2, 688.2, 642.2, 607.6, 579.9, 570.4 and 565.2 mm respectively. During Bega 2019/2020, days remained hot over the lowlands of northwestern, western, northeastern and pocket areas of southwestern Ethiopia. On the other hand, the highlands of northeastern, central Ethiopia and central and highlands Amhara had cold nights and early mornings. Hence, the extreme minimum temperature values were as low as 1 °C is -2.8 °C, -1.2 °C, 0.4 °C and 0.5°C over Debrebrihan, Bati, Debre Tabor and Mehal Meda respectively.

In general, the seasonal rainfall amount of Bega 2019/2020 was above normal over most parts of the country except over Benishangul Gumuz, pocket areas of Central Ethiopia, some parts eastern and Northern Amhara, and most part of Tigray has experienced normal rainfall. Bega 2019/2020 was wetter than Bega 2018/2019 over most of the country, except over Northeastern part of the country. (fig. 4.2.5).



Percent of Normal Rainfall of Bega 2019/2020

Foreword

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

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 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 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 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 a success.

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1. Introduction

1.1. General

This climate bulletin contains summary of climatic conditions that prevailed over the country during Bega 2019/2020.

Bega is the period from October to January. It is a harvesting season for various parts of Ethiopia. Bega is normally a dry season characterized by cool nights and early mornings over the highlands of northern, northeastern, central and eastern Ethiopia and hot days over various parts of the country. It is also a short rainy season for places over southern, southeastern and southwestern parts of the country. Depending on the influences from mid-latitude rain-bearing systems, some places over central, northern and northeastern Ethiopia also receive occasional shower. However, except over places of north & South Wollo, north Shoa and the adjoining areas, the long-term mean seasonal rainfall of these areas is less than 200mm, while the mean seasonal rainfall amount exceeds 100 mm over the seasonal rain-benefiting areas of western, southwestern, south and Southeast Ethiopia.

1.2. Summary of Bega 2019/2020

During Bega 2019/2020, the highlands of northeastern, central Ethiopia and central and highlands Amhara had cold nights and early mornings. Hence, the extreme minimum temperature values were as low as 1 °C is -2.8 °C, -1.2 °C, 0.4 °C and 0.5°C over Debrebrihan, Bati, Debre Tabor and Mehal Meda respectively.

The seasonal total rainfall amount of Bega 2019/2020 was exceeded 400mm over Gambella, on the southern SNNPR as well as parts of some Oromiya with heavier rainfall events occurring over western, southwestern and southern Ethiopia. In

particular, the seasonal total rainfall² exceeds 500mm over, Masha, Ginir, Jlnka, Arba Minch, Moyale, Sawula Bure and wolita Sodo with amount of 828.9, 768.2, 688.2, 642.2, 607.6, 579.9, 570.4 and 565.2 mm respectively (Table 4.2.2). While heavy fall of about 98.8 and 95.4 mm over Bure and Bati was reported on the 22th and 21th November 2019/2020 (table 4.2.1 and fig. 4.2.2). In general, the seasonal rainfall amount of Bega 2019/2020 was above normal over most parts of the country except over Benishangul Gumuz, pocket areas of Central Ethiopia, some parts eastern and Northern Amhara, and most part of Tigray has experienced normal rainfall.

2.0 Synoptic Situation

2.1 Surface

The Mascarene high with a mean central pressure value of 1020 hPa was centered at 30°S, 90°E. The central pressure value was normal.

The St. Helena high with a mean central Pressure value of 1020hPa was centered at 28°S, 5°W. The central pressure value was Normal to below normal up to 2hPa.

The Azores high with a mean central pressure value of 1020hPa was centered at 28°N, 25°W.

2.2 Lower Troposphere (850hpa vector wind)

Easterly to northeasterly flow of 4 – 7m/s was dominant over northern Indian Ocean, Arabian Sea and the adjoining areas of the Horn of Africa.

2.3 Middle Troposphere (500-hpa Geopotential Height)

The variation of geopotential height values were 10 to 30gpm over

Mediterranean Sea, Arabian Sea and Horn of Africa and adjoining areas.

2.4 Upper Troposphere (200 hpa vector wind)

The strong westerly flow associated with the Sub Tropical Westerly Jet had re-strengthened and speed of the core exceeded 5m/s along 15° to 35°N latitude.

3. Tropical Oceanic and Atmospheric Highlights

ENSO-neutral conditions continued during October to December 2019 and January 2020, as sea surface temperatures (SSTs) remained above average over all of the across Pacific Ocean. The seasonal average SST index was 0.3°C in the Niño-3.4 region, and -0.1°C in the Niño-4 region during bega 2019/2020. The monthly SST index was - 0.2°C in the Niño-3.4.

EL-nino condition during Bega 2019/2020, as positive sea surface temperature (SST) anomalies strengthened across the central and east-central equatorial Pacific Ocean. The monthly SST index was 3.0°C in the Niño-3.4 region, and 0.2°C in the Niño-4 region

Reference: Climate Diagnostics Bulletin 2019/2020.

4. Weather

4.1 Temperature

During Bega 2019/2020, days remained hot over the lowlands of northwestern, western, northeastern and pocket areas of southwestern Ethiopia (fig. 4.1.1). In particular, extreme maximum temperature values exceeded 40.0°C over Elidar, Semera and Dubity with values of 42.2, 41.8, and 41.2 on the 6th, 7th and 6th October respectively (table 4.1.1).

On the other hand, the highlands of northeastern, central Ethiopia and central and highlands Amhara had cold nights and early mornings. Hence, the extreme minimum temperature values were as low as 1 °C is -2.8 °C, -1.2 °C, 0.4 °C and 0.5°C over Debrebrihan, Bati, Debre Tabor and Mehal Meda respectively (table 4.1.2 and fig 4.1.2.).

Table 4.1.1 Stations with extreme maximum temperature values of greater than 35°C during Bega 2019/2020

Station	Extreme Maximum Temp(°C)	Date	Month
ELIDAR	42.2	6	10
Semera	41.8	7	10
DUBTI	41.2	6	10
Gode	39.6	28	1
METEMA	39.4	15	1
GAMBELLA	39	17	1
SHIRARO	39	16	1
AWASH ARBA	39	27	11
AYSHA	39	1	11
FUGNUIDO	38.5	16	1
Adimehemeday	38.5	26	1
Gewane	38.5	31	10
MANKUSH	38.2	15	1
MILLE	38.2	5	10
Aditsetser	38	12	10

Table 4.1.2 Stations with extreme minimum temperature values less than 6°C during Bega 2019/2020

Station	Extreme minimum Temp(°C)	Date	Month
D/BREHAN	-2.8	18	1
Bati	-1.6	19	1
D/TABOR	0.4	20	1
MEHALMEDA	0.5	18	1
WEGELTENA	0.5	18	1
DEBREZEIT(AF)	1	29	12
BURE	1	30	12
SENKATA	1	23	11
DEBEREMARKOS	1.15	23	11
Nazreth	1.2	1	10
Gebere Guracha	1.3	13	1
DANGLA	1.5	27	1

4.2 Rainfall

Normally Bega is wet season for Bega-rain-benefiting areas of southern, south eastern, and southwestern Ethiopia. The climate of this season is characterized by hot and wet days. The mean seasonal rainfall amount of this season exceeds 200mm over much of the Bega-rain-benefiting areas with larger amount of rainfall occurring over south western and southern Ethiopia.

The seasonal total rainfall amount of Bega 2019/2020 was exceeded 400mm over Gambella, on the southern SNNPR as well as parts of some Oromiya with heavier rainfall events occurring over western, southwestern and southern Ethiopia. In particular, the seasonal total rainfall exceeds 500mm over, Masha, Ginir, Jlnka, Arba Minch, Moyale, Sawula Bure and wolita Sodo with amount of 828.9, 768.2, 688.2, 642.2, 607.6, 579.9, 570.4 and 565.2 mm respectively (Table 4.2.2). While heavy fall of about 98.8 and 95.4 mm over Bure and Bati was reported on the 22th and

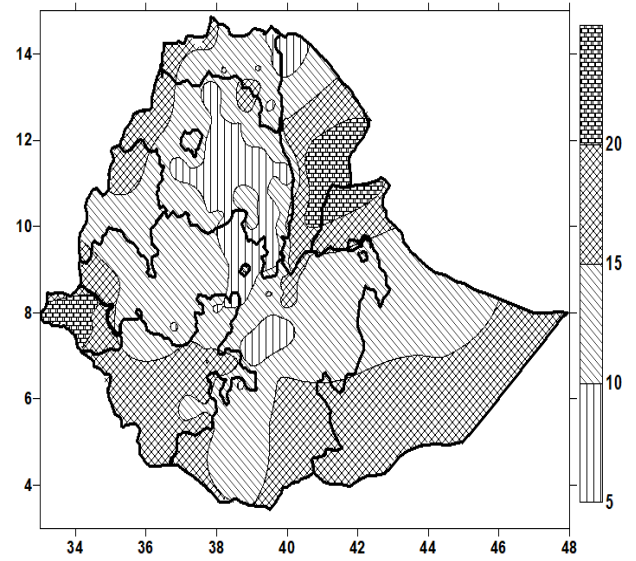
21th November 2019/2020 (table 4.2.1⁴ and fig. 4.2.3). In general, the seasonal rainfall amount of Bega 2019/2020 was above normal over most parts of the country except over Benishangul Gumuz, pocket areas of Central Ethiopia, some parts eastern and Northern Amhara, and most part of Tigray has exprianced normal rainfall. Bega 2019/2020 was wetter than Bega 2018/2019 over most of the country, except over Northeastern part of the country. (fig. 4.2.5).

Table 4.2.1. Station(s) with more than or equal to 50mm of rainfall in 24 hours during Bega 2019/2020

Stations	Amount(mm)	Date	Mont h
BURE	98.8	22	11
Bati	95.4	21	11
MASHA	93	13	11
Wolaita Sodo	80.8	10	10
MOYALE	77.5	4	10
Nazreth	77	1	10
AYSHA	74.7	1	10
CHEFA	70.6	22	11
Gode	70	5	10
HOSSAINA	67	22	11
Nekemte	62	2	11
Abdela	62	10	11
Combolcha	61.7	22	11
Arba Minch	61.3	26	1
LIMUGENET	61.2	23	11
Sendafa	59.2	23	11
SENKATA	58	22	11
Bahir Dar Met	56.6	24	11
SIRINKA	54.8	22	11
MOTTA	52	5	11
DOLOMENA	51.5	19	11
Abobo	50.4	12	10
AYEHU	50.2	22	11

Table 4.2.2. Stations with more than 450 mm of seasonal total Rainfall during Bega 2019/2020

Stations	Amount(mm)
MASHA	828.9
GINIR	768.2
Jinka	688.2
Arba Minch	642.2
MOYALE	607.6
SAWULA	579.9
BURE	570.4
Wolaita Sodo	565.2
DOLOMENA	495.9
BORE	475.6
CHIRA	472.8
HAGEREMARIAM	444.0
Nekemte	439.3
KONSO	431.3
AYEHU	393.5
BURJI	388.6
YABELO	385.1
KIBREMENGIST	381.4
Abdela	379.1
MIERAB ABAYA	364.9
ABOBO	361.7
Bahir Dar Met	360.6



4.2.2 Extreme Minimum Temperature During 2019/2020

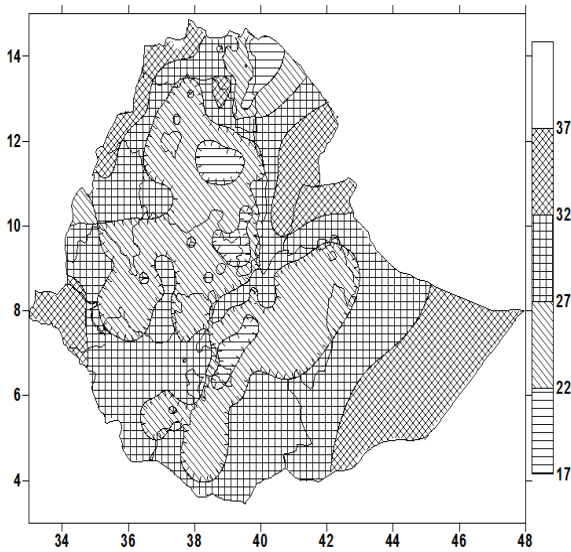


Fig. 4.2.1. Mean Maximum Temperature in ° c during bega 2019/2020

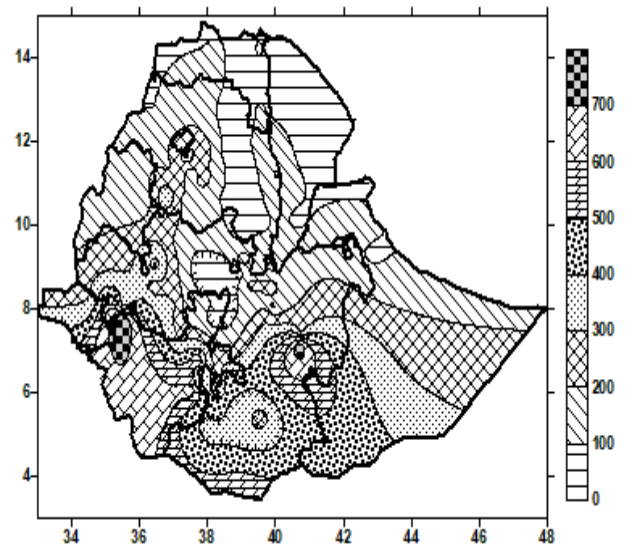


fig. 4.2.3. Seasonal Total Rainfall in mm during bega 2019/2020

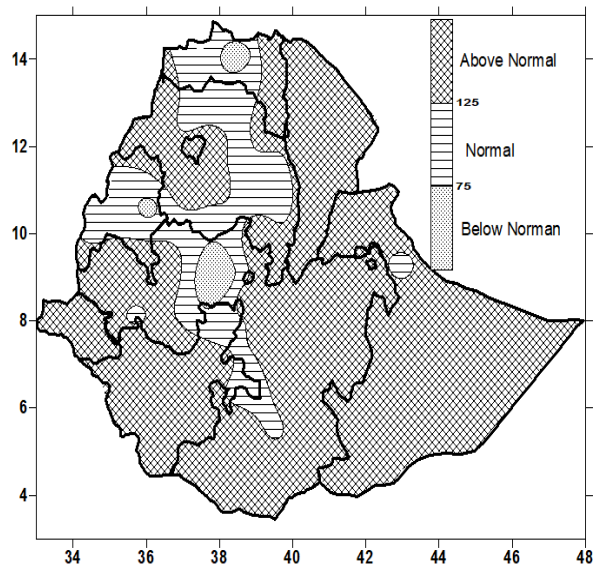


Figure. 4.2.4. Percent of Normal Rainfall Bega 2019/2020

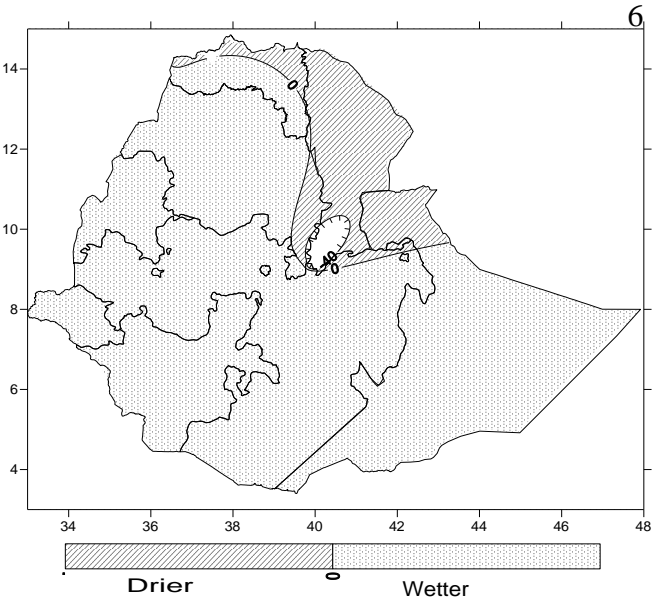


Figure 4.2.5. Seasonal Total Rainfall Amount of 2019/2020 minus Annual Total Rainfall Amount of 2018/2019