

NATIONAL METEOROLOGICAL AGENCY OF ETHIOPIA  
METEOROLOGICAL DATA AND CLIMATOLOGY DIRECTORATE

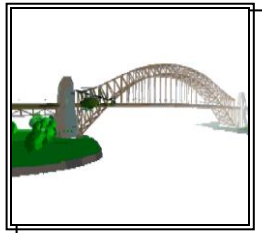
SEASONAL CLIMATE BULLETIN

BELG 2020

Some Applications of  
Climate Information



Disaster Management



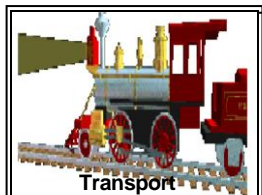
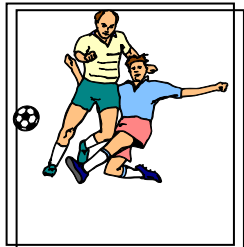
Environment & Health



Construction



Recreation & Tourism



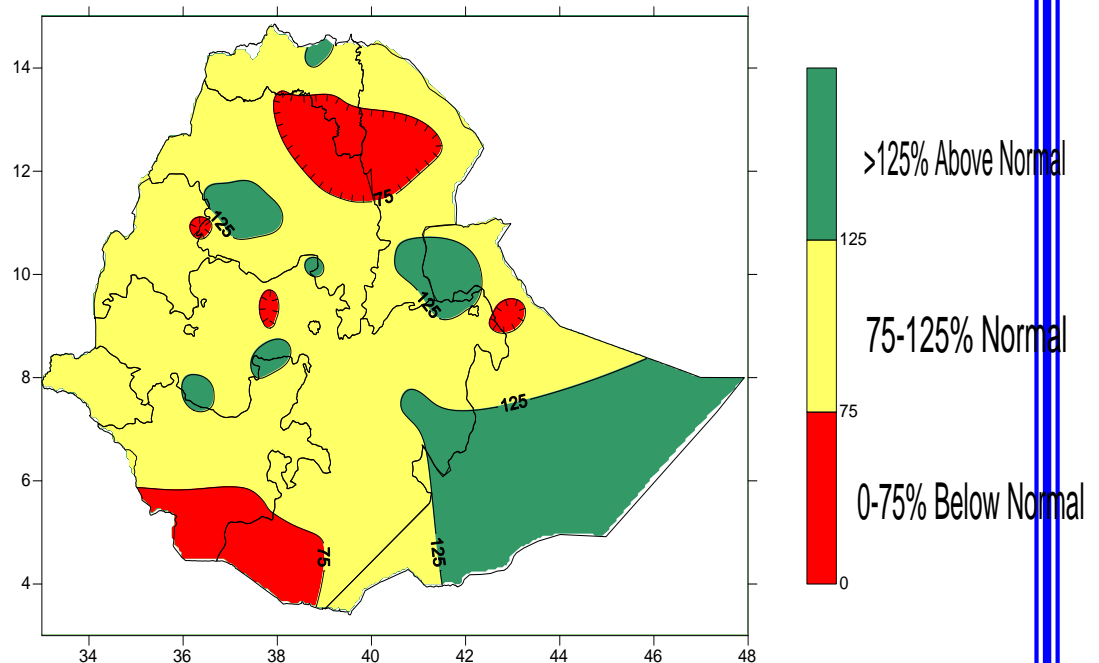
Transport

HIGHLIGHTS

During February to April 2020, sea surface temperatures (SSTs) remained above-average across much of the equatorial Pacific but near-average in May.

The seasonal present of normal rainfall was above normal over most parts of Ethio-Somali, small parts of central and Eastern Oromiya, Southern Afar and Amahra and Northern tips of Tigray. But, almost all parts of the country was under normal condition. While, Southern and central Oromiya, Southern SNNPR, central Afar, Eastern Amahra and Southern Tigray was below normal condition. The total seasonal Belg 2020 rainfall was recorded above 780.0mm at Ginnir (Table 4.2.2), While heaviest rainfall was recorded at Hagera Mariyam with the amount of 144.9 in one day (Table 4.2.1).

Extreme temperature was recorded at Shiraro with 44.2 °c and Debre Brihan with 2.0 °c (Table 4.1.1 and 4.1.2)



Percent of Normal Rainfall of Belg 2020



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## 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 and weather conditions that prevailed over the country during Belg 2020.

According to Meteorology, Belg is the small rainy season from February to May for different parts of the country, including the lowlands of southern and southeastern Ethiopia. The climate of the season was expected to be hot and moist conditions. Generally, the rainfall of this season is very important for Belg growing crops and for the preparation of the land for Meher crops. It is also important for hydroelectric power generation and pastoral activities.

### 1.2. Summary of Belg 2020

During Belg 2020, the seasonal total rainfall amount exceeds 450.0mm over most Southern and South Western parts of the country especially over SNNPR and Oromiya. In general, the seasonal total rainfall of Belg 2020 was excess over much of the Belg rain-benefiting areas.

## 2.0 Synoptic Situation

### 2.1 Surface

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

The St. Helena high with a mean central Pressure value of 1018hPa was centered at 0°, 30°S.

The Azores high with a mean central pressure value of 1020hPa was centered at 1020hPa, 45°E and 35°N but 45°W for march.

### 2.2 Lower Troposphere (850 hPa vector Nwind)

A convergence of Northeasterly and Southeasterly flow having 10 m/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 composite value of geopotential height at indicated level was similar with the value of 910meter around and in Mediterranean Sea, Arabian Sea, Horn of Africa and adjoining areas.

### 2.4 Upper Troposphere (200 hPa vector wind)

Easterly flow with the speed of about 10m/s in between 15°N upto 15°S latitude.

## 3. Tropical Oceanic and Atmospheric Highlights

During Belg 2020, sea surface temperatures (SSTs) remained above-average across much of the equatorial Pacific.

The latest monthly Niño indices were +0.3°C for the Niño 1+2 region, +0.4°C for the Niño 3.4 region and +1.1°C for the Niño 4 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.

The corresponding sub-surface temperatures were 1-3°C above average in the central and eastern equatorial Pacific.

In March, the latest monthly Niño indices were +0.5°C for the Niño 1+2 region, +0.6°C for the Niño 3.4 region and +1.1°C for the Niño 4 region.

The latest monthly Niño indices were +0.4°C for the Niño 1+2 region, +0.6°C for the Niño 3.4 region and +0.8°C for the Niño 4 region.

The depth of the oceanic thermocline (measured by the depth of the 20°C isotherm) was below-average across much of the equatorial Pacific in the month of April.

In May, the latest monthly Niño indices were +0.1°C for the Niño 1+2 region, -0.2°C for the Niño 3.4 region and +0.2°C for the Niño 4 region. The corresponding sub-surface temperatures were 1-4°C below-average across the eastern and east-central equatorial Pacific.

**Reference:** Climate Diagnostics Bulletin 2020 and <https://www.esrl.noaa.gov/psd/cgi-bin/data/composites/printpage.pl>

**4. Weather**

**4.1 Temperature**

During Belg 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 42.0°C over Fugnuido, Abobo, Gambella, Metema, Mankush and Shiraro with values of 42.0-42.5, 42.0-43.4, 42.2, 42.2-43.4, 42.0-42.5 and 42.8-44.2 °C respectively (Table 4.1.1). On the other hand, the highlands of SNNPR, Gambella, Amahra and Western Oromiya was recorded low temperature with the values of less than 3.0 °C especially over D/Brihan and Bati (Table 4.1.2 and Fig 4.2.4.).

Depending on long years temprature and seasonal tempratures, Eastern and Western tips was drier and Southern, Central and Northern parts were wetter for Belg 2020 (Fig. 4.2.3).

**Table 4.1.1 Stations with extreme maximum temperature values of greater than 42.0°C during Belg 2020**

Station	Extreme Maximum Temp(°C)	Date	Month
Fugnuido	42.0	17	February
Abobo	42.0	27,28	February
Fugnuido	42.5	27	February
Gambella	42.4	22	February
Fugnuido	42.5	4	March
Gambella	42.2	6	March
Abobo	42.2	13	March
Metema	42.2	11	March
Abobo	42.4	27	March
Metema	42.2	27	March
Abobo	43.4	4	April
Mankush	42.5	3	April
Metema	43.4	2	April
Shiraro	44.2	1	April
Abobo	43.2	24	May
Fugnuido	42.0	22	May
Mankush	42.0	26	May
Metema	42.8	26	May
Shiraro	42.8	29	May

**Table 4.1.2 Stations with extreme minimum temperature values less than 5°C during Belg 2020**

Station	Extreme minimum Temp(°C)	Date	Month
Bati	4.2	7	February
D/Brehan	2.0	9	February
Dangla	4.5	1	February
Mehalmeda	4.6	9	February
Wegeltena	4.8	7	February
Bati	2.4	15	February
D/Brehan	4.4	20	February
Wegeltena	4.8	16	February
Arise Robe	4.5	25	February
Bati	3.5	29	February
Dangla	4.0	26	Mar
D/Brehan	4.4	25	Apr
Ejaji	3.0	22	Apr

#### 4.2 Rainfall

Normally Belg is wet season for Belg- rain-benefiting areas of southern, south eastern, eastern, central, northeastern and southwestern Ethiopia. The climate of this season is characterized by hot and wet days. The mean seasonal rainfall amount of this season exceeds 450mm over much of the Belg-rain-benefiting areas with larger amount of rainfall occurring over south western and southern Ethiopia.

The seasonal total rainfall amount of Belg 2020<sup>4</sup> was exceeded 450mm over Hawasa, Alemeya, Alge, Arjo, Bedele, Bore, Dilla, Ginnir, Gololcha, Gore, H/Mariyam, Jimma, Koffele, Limugenet, Masha Moyale, Nekemt, Sirinka and Welaita Sodo with 465.5, 465.5, 462.0, 530.7, 505.0, 501.0, 494.4, 784.3, 514.3, 477.8, 685.8, 539.0, 661.0, 492.5, 742.1, 470.5, 495.7, 465.6 and 533.3mm respectively (Table 4.2.2). While heavy rainfall of about 60-144.9mm was recorded over much of the country in one day duration (Table 4.2.1 and Fig. 4.2.1).

In general, the seasonal rainfall amount of Belg 2020 was above normal over Belg rain benefitting areas of the country.

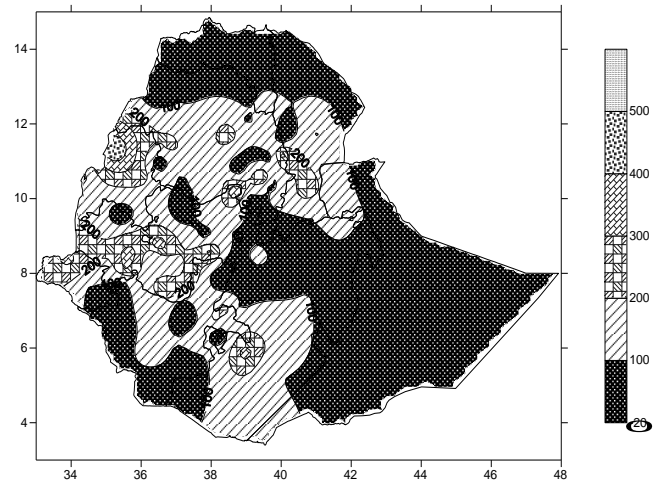
**Table 4.2.1. Station(s) with more than or equal to 60mm of rainfall in 24 hours during Belg 2020**

Stations	Amount(mm)	Date	Month
Lare	67.0	1	Feb
Ginnir	60.0	10	Mar
Bui	63.3	15	Mar
Tercha	60.2	12	Mar
Nura-era	61.7	24	mar
Gore	67.0	9	Apr
A.A Bole	62.0	18	Apr
Dufti	81.2	18	Apr
Ginnir	80.0	19	Apr
Kibridahar	64.0	20	Apr
Majete	115.4	18	Apr
Tercha	60.3	18	Apr

Dire Dewa	84.0	24	Apr
Gode	80.0	23	Apr
Negele	77.8	29	Apr
Abomsa	90.4	29	Apr
Jinka	77.2	25	Apr
Gore	60.4	8	May
Bedelle	84.0	6	May
Dolomena	67.5	1	May
Hageremariam	144.9	8	May
Masha	75.0	6	May
Moyale	83.0	6	May
Bedelle	67.4	30	May
Ginir	68.0	30	May
Lare	69.8	22	May

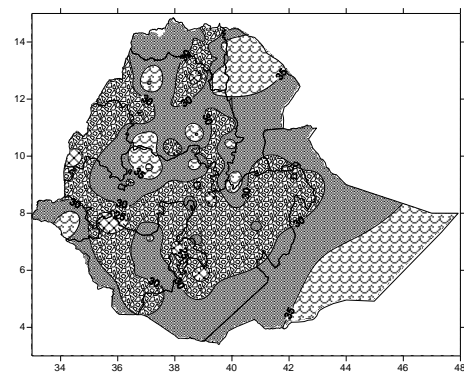
**Table 4.2.2. Station(s) with more than 450.0 mm of seasonal total Rainfall during Belg 2020**

Kofelle	661.0
Limugenet	492.5
Masha	742.1
Moyale	470.5
Nekemte	495.7
Sirinka	465.6
Wolaita Sodo	533.3

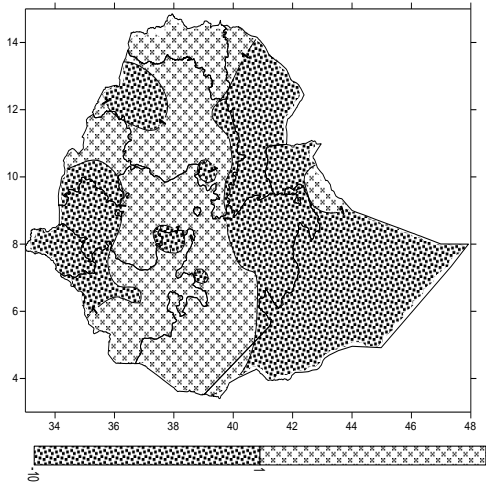


**Fig. 4.2.1. Seasonal Total Rainfall in mm during Belg 2020**

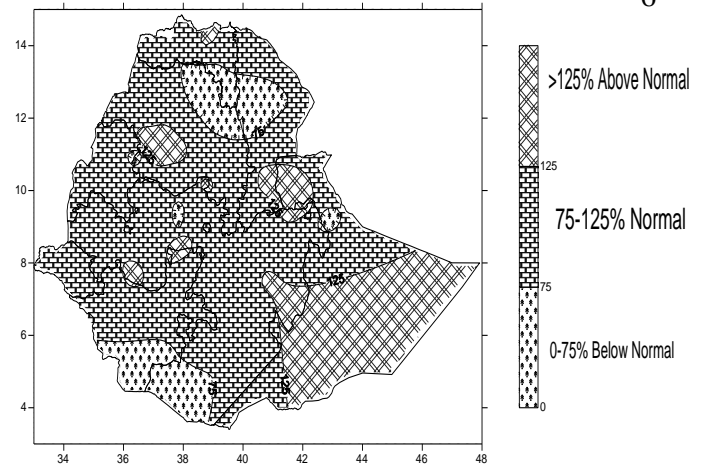
Stations	Amount(mm)
Awassa	465.5
Alemaya	529.8
Algie	462.0
Arejo	530.7
Bedelle	505.0
Bore	501.0
Dilla	494.4
Ginir	784.3
Gololcha	514.3
Gore	477.8
Hageremariam	685.8
Jimma	539.0



**Fig. 4.2.2. Extreme Maximum Temperature in °C during Belg 2020**

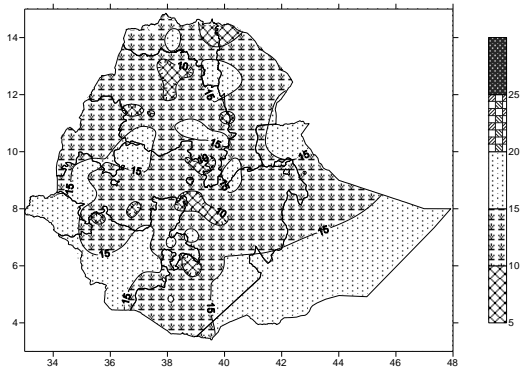


Drier than long year temp. Wetter than long year temp.



**Figure. 4.2.2. Percent of Normal Rainfall of Belg 2020**

**Fig 4.2.3 Seasonal mean temperature recorded vs long year mean temperature in °c for Belg 2020**



**4.2.4 Extreme Minimum Temperature During Belg 2020**