

**NATIONAL METEOROLOGICAL AGENCY OF ETHIOPIA**  
**METEOROLOGICAL DATA AND CLIMATOLOGY DIRECTORATE**

**SEASONAL CLIMATE BULLETIN**

**BELG 2021**

**Some Applications of  
Climate Information**



**Disaster Management**



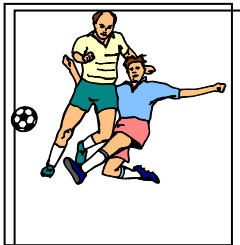
**Environment & Health**



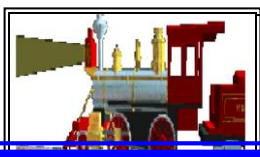
**Environment and  
Health**



**Construction**



**Recreation & Tourism**



**Transport**

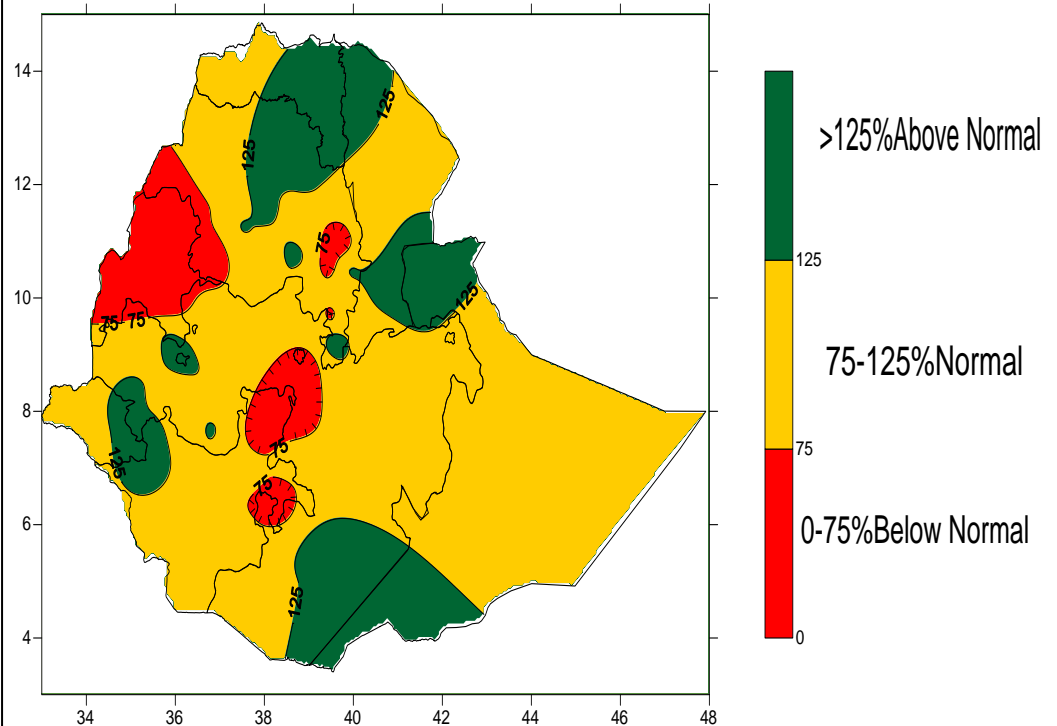
**HIGHLIGHTS**

During February to May 2021, sea surface temperatures (SSTs) remained below-average across the central and eastern equatorial Pacific.

The seasonal present of normal rainfall was above normal over central and eastern Tigray, central Amahara, Northern and southern tips of Ethio-Somali, central Afar whereas Benishangul-Gumuz, western tips of Amhara, central Oromiya and Small areas of northern SNNPR have recorded below normal rainfall. The rest parts of the country was obtained normal rainfall(Fig 1).

While heaviest rainfall was recorded at Masha and Tsitska with the amount of 110.1 and 112.0mm in the month of Feb and May in 24hrs respectively(Table 4.2.1).

Extreme temperature was recorded at Ayisha with 46.0 °c and Debre Brihan with -1.8 °c(Table 4.1.1 and 4.1.2)



**Percent of Normal Rainfall of Feb 2021**

## 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 2021.

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 2021

During Belg 2021, the seasonal total rainfall amount exceeds 350.0mm over western parts of the country and over central Ethiopia especially over Nekemt, Didessa, Arjo, Aman, A.A Bole and Masha.

In general, the seasonal total rainfall of Belg 2021 was less with last year 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  $0^{\circ}$ ,  $35^{\circ}$ S. The St. Helena high with a mean central Pressure value of 1018hPa was centered at  $90^{\circ}$ ,  $35^{\circ}$ S. The Azores high with a mean central pressure value of 1020hPa was centered at 1020hPa,  $45^{\circ}$ W and  $30^{\circ}$ N but  $45^{\circ}$  E and  $0^{\circ}$  for march.

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

A convergence of Northeasterly and Southeasterly flow having 05 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 5800 meter 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  $15^{\circ}$ N up to  $15^{\circ}$ S latitude.

## 3. Tropical Oceanic and Atmospheric Highlights

During February and March 2021, sea surface temperatures (SSTs) remained below-average across the central and eastern equatorial Pacific. The latest monthly Niño indices were  $-0.7^{\circ}$ C for the Niño 1+2 region,  $-0.9^{\circ}$ C for the Niño 3.4 region and  $-1.0^{\circ}$ C for the Niño 4 region.

In March, the latest monthly Niño indices were  $-0.3^{\circ}$ C for the Niño 1+2 region,  $-0.5^{\circ}$ C for the Niño 3.4 region and  $-0.6^{\circ}$ C for the Niño 4 region.

During April and May 2021, sea surface temperatures (SSTs) were near-average in the central equatorial Pacific and below-average across the eastern equatorial Pacific. The latest monthly Niño indices were  $-0.8^{\circ}$ C for the Niño 1+2 region,  $-0.5^{\circ}$ C for the Niño 3.4 region and  $-0.2^{\circ}$ C for the Niño 4 region.

In May the latest monthly Niño indices were -0.7°C for the Niño 1+2 region, -0.3°C for the Niño 3.4 region and -0.1°C for the Niño 4 region.

**References:** Climate Diagnostics Bulletin 2021 and <https://www.esrl.noaa.gov/psd/cgi-bin/data/composites/printpage.pl>

#### 4. Weather

##### 4.1 Temperature

During Belg 2021, days remained hot over the lowlands of Southeastern and western corners of the parts of the country (Table. 4.1.1 and Figure 4.2.2). In particular, extreme maximum temperature values exceeded 44.0°C over Ayisha, Metema, Elidar and Semera with values of 44.0, 44.3, 46.0, 44.8 and 44.6 °C respectively (Table 4.1.1). On the other hand extreme minimum temperatures were recorded over Oromiya, Amahara and Ethio-Somali especially over Alemaya, Bati and D/Brihan with the values of less than 1.6 °C (Table 4.1.2 and Fig 4.2.4).

Depending on long years seasonal temperatures, eastern, northern, central and north-western was drier and southern, south-western and western parts were wetter for Belg 2021 (Fig. 4.2.3).

**Table 4.1.1 Stations with extreme maximum temperature values of greater than 41.5°C during Belg 2021**

Station	Extreme Maximum Temp(°C)	Date	Month
Fugnuido	43.0	13	Feb
Gambella	41.8	13	Feb
Gode	42.0	25	Mar
Metehara (NMSA)	41.6	31	Mar
Abobo	42.0	13	Mar
Aysha	44.0	24,25	Mar
Fugnuido	43.5	5	Mar
Gambella	43.0	1	Mar
Gatira	41.8	10	Mar
Mankush	41.6	13	Mar
Metema	44.3	20	Mar
Sirba Abaya	42.5	25,27	Mar
Gode	41.6	7	Apr
Elidar	42.4	12	Apr
Aysha	46.0	24	May
Dalifagi	43.1	30	May
Dubti	43.0	31	May
Elidar	44.8	18	May
Semera	44.6	15	May

**Table 4.1.2 Stations with extreme minimum**

temperature values less than 5°C during Belg 2021.

Station	Extreme minimum Temp.(°C)	Date	Month
Adelle	3.5	4	Feb
Alemaya	-0.2	2	Feb
Ambamariam	2.4	10	Feb
Arise Robe	2.5	3	Feb
Bati	-1.5	1	Feb
Bui	3.4	4	Feb
Chefa	4.8	3	Feb
D/Brehan	-1.8	2	Feb
Dangla	2.5	7	Feb
Debark	3.5	8	Feb
Jijiga	1.5	4	Feb
Mehalmeda	3.0	24	Feb
Wegeltena	2.5	4	Feb

✓ **Belg extreme minimum temperature was recorded in Febraury 2021**

#### 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 350mm over much of the Belg-rain-benefiting areas of the country.

The seasonal total rainfall amount of Belg 2021 was exceeded 350mm over Nekemt, Arjo, Dadisa, Gimbi, Limugenet, and Masha with 358.9, 433.6, 390.0, 371.6, 327.0, 344.9, 532.0mm respectively (Table 4.2.1). While heavy rainfall of about 50-112.0mm 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 2021 was above normal over Belg rain benefiting areas of the country.

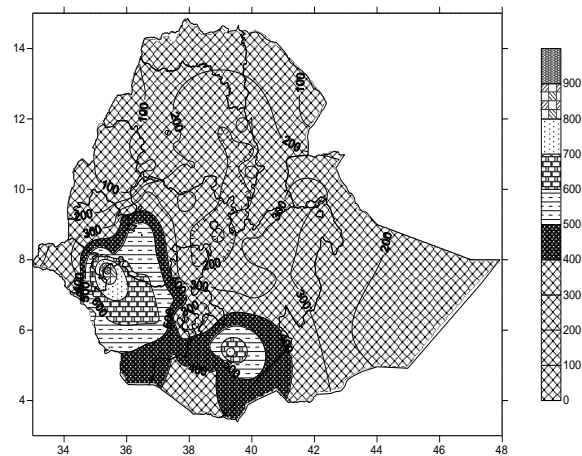
**Table 4.2.1. Station(s) with more than or equal to 50mm of rainfall in 24 hours during Belg 2021**

Stations	Amount(mm)	Date	Mont h
Masha	110.1	21	Feb
Bedelle	51.8	18	Mar
Ginir	66.0	18	Mar
Majji	59.8	18	Mar
Nura-Era	50.0	17	Mar
Arba Minch	58.4	21	Apr
Awassa	53.3	24	Apr
Jimma	55.2	29	Apr
Majji	50.3	25	Apr
Tercha	63.8	25	Apr
Wolaita Sodo	60.3	25	Apr
Dire Dawa	82.9	2	May
Nekemte	71.4	7	May
Aman	67.6	10	May
Awash Arba	90.0	5	May
Dadisa	81.0	7	May
Kachise	68.0	1	May
Masha	69.2	2	May

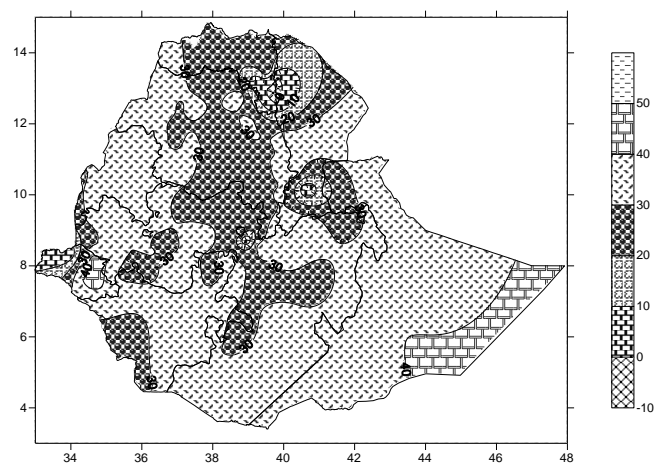
Mekanselam	66.7	2	May
Tsitsika	112.0	2	May
Wolaita Sodo	65.3	17	May

**Table 4.2.2. Station(s) with more than 230.0 mm of seasonal total Rainfall during Belg 2021**

Stations	Amount(mm)
Gondar A.P.	257.8
Gore	274.2
Jimma	297.3
Nekemte	358.9
Algie	288.2
Aman	433.6
Arejo	390.0
Bedelle	282.9
Chewka	245.9
Chira	274.9
D/Tabor	260.3
Dangla	258.2
Dadisa	371.6
Gatira	299.8
Gidaayana	282.9
Gimbi	327.0
Kachise	231.7
Limugenet	344.9
Masha	532.0
Sawula	277.3
Tepi	241.3
Wolaita Sodo	314.0
Gondar A.P.	257.8



**Fig. 4.2.1. Seasonal Total Rainfall in mm during Belg 2021**



**Fig. 4.2.2. Extreme Maximum Temperature in °C during Belg 2021**

### 4.2.4 Extreme Minimum Temperature During Belg 2021

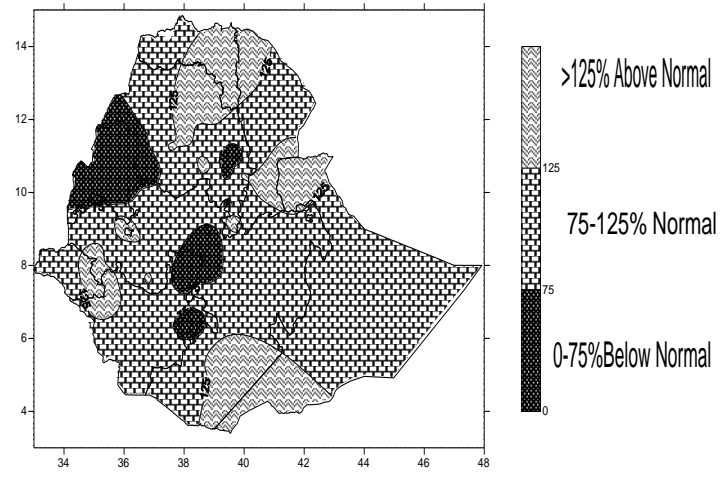
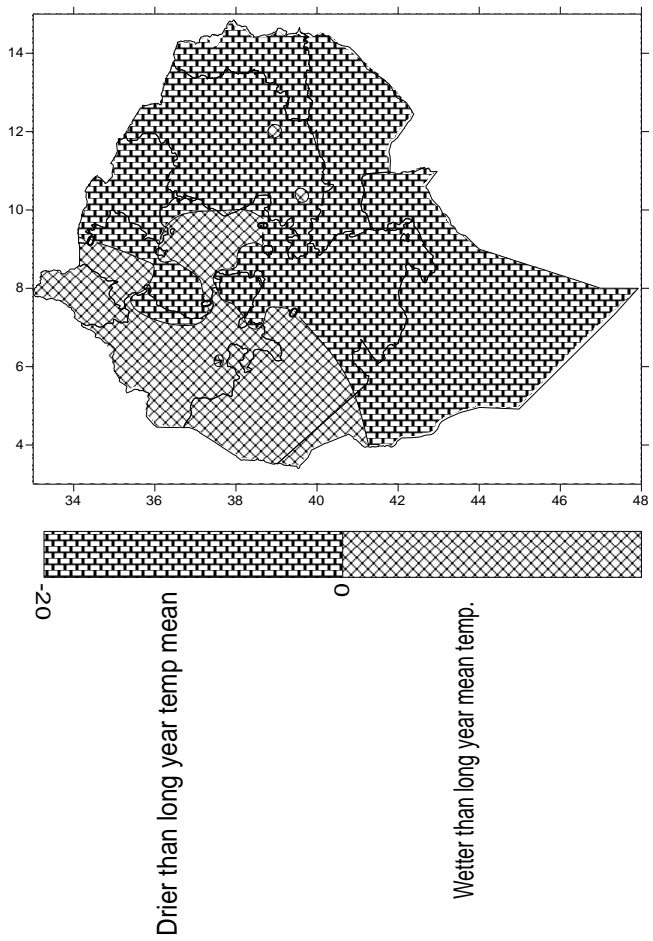


Figure. 4.2.5. Percent of Normal Rainfall of Belg 2021

Fig 4.2.3 Seasonal Mean Temperature Recorded Vs Long Year Mean Temperature in °c for Belg 2021

