

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF WATER AND ENERGY

NATIONAL METEOROLOGICAL AGENCY  
CLIMATOLOGICAL SERVICES TEAM

MONTHLY CLIMATE BULLETIN

January 2017

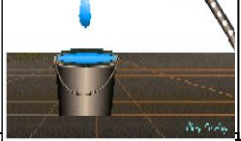
Some Applications of  
Climate Information



Disaster Management



Water Resources  
Management



Construction



Environment & Health



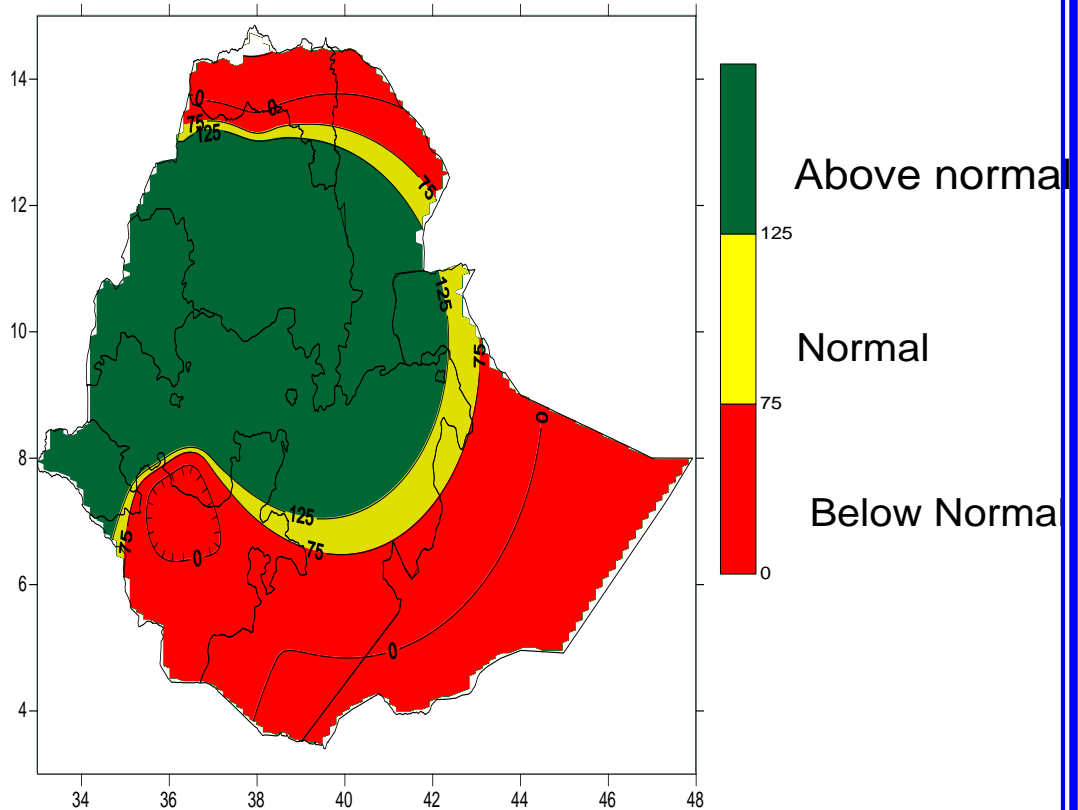
Transport



Recreation & Tourism

During January 2017, the monthly total amount of rainfall recorded was below normal over Tigray, SNNPR, Southern Oromiya and South and eastern parts of the country as all. Normal rainfall amount recorded over Northern parts of SNNPR, central and eastern Oromiya, eastern Afar, eastern parts of Tigray and northern Amahara. Above normal rainfall was recorded over Gambella, western, central, eastern and northern Oromiya, and western and central Amahara. In general, the total amount of rainfall recorded in January 2017 was less than of January 2016.

Sea surface temperatures (SSTs) remained slightly below-average over the central equatorial Pacific during January 2017.



Percent of Normal Rainfall of January 2017



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1090

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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 a year, 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. Synoptic Situation

### 1.1. Surface

The Mascarene high with a mean central pressure value of 1018hpa was centered at about 80°E, 30°S.

The St. Helena high with a mean central pressure value of 1020hpa was centered at about 10°W,35°S.

The Azores high with a mean central pressure value of 1025hpa was centered at about 30°N,10°E.

The cross equatorial flow, which is associated with the Low Level Jet, had exceeded 10 m/s over western Indian Ocean and 6m/s over the adjoining areas of eastern Africa, while south westerly flow exceed 14 m/s over western Indian Ocean, Arabian Sea and the adjoining areas of the Horn of Africa.

### 1.2. Lower Troposphere (850hpa vector wind)

Mean (top) and anomalous (bottom) 850hpa vector wind or January 2017 contour interval for isotachs is 4 m/s (top) and 2 m/s (bottom).

### 1.3. Middle Troposphere (500hpa Geopotential Height)

The geopotential height values were above average over Mediterranean Sea and northern Africa.

### 1.4. Upper Troposphere (200 hpa vector wind)

Weak Westerly wind flow around 14m/s which is associated with the Tropical Westerly Jet which was dominant over most of Indian Ocean and Horn of Africa.

## 2. Tropical Oceanic and Atmospheric Highlights

During January 2017, the sea surface temperatures (SSTs) remained near average across the central east-central equatorial Pacific and eastern equatorial Pacific.

The latest monthly Niño indices were easterly (3.0) and westerly (-2.0) °C for the Niño 3.4 region and easterly (3.5) and westerly (-2.0) °C for the Niño 1+2 and for Niño 4 it was easterly (1.8 and westerly (-1.5) °C. Consistent with these conditions, the depth of the oceanic thermocline (measured by the depth of the 20 °C isotherm) remained slightly below-average over the eastern equatorial Pacific and the corresponding

sub-surface temperatures were 0-1°C below average.

Also during January, the lower-level winds were near-average across the central and eastern equatorial Pacific and enhanced over the western equatorial Pacific. Collectively, these oceanic and atmospheric anomalies reflected a transition from La Niña to ENSO-neutral conditions.

**Reference: Climate Diagnostic Bulletin of  
January 2017**

### 3. Weather

#### 3.1. Temperature

During January 2017 days, remained hot over the lowlands of northwestern, northeastern, eastern, southeastern and some North Western parts of the country (Figure 2). Hence, the extreme maximum temperature values were as high as 40.5, 38.8, 36.8, 35.4, 35.2, 34.8 and 34.5 °C over Metema, Assaita, Elidar, Gewane, Metehara, A/minch and Mirababaya (Refer table 1). On the other hand, the extreme minimum temperature values were below or equal to -5.0, -4.2 and -2.8 °C. over Yirgachafe, Tikurechini and Wegel Tena.

In General, the monthly average temperature values was slightly below normal over most parts of the country.

**Table 1. Stations with extreme maximum temperature values of 34.5°C and above during January 2017**

Station	Extreme Maximum Temp. (°C)	Date
Arba Minch	34.8	21
Assaita	38.8	23
Elidar	36.8	8
Gewane	35.4	14 and 15
Metehara (NMSA)	35.2	27
Metema	40.5	25
Mirab Abaya Ber Ber	34.5	22

**Table 2. Stations with extreme minimum temperature values of less than 2.0°C during January 2017**

Station	Extreme Minimum Temp. (°C)	Date
Adigrat	0.0	7
Bullen	2.0	14
Dessie	0.0	7
Hagere Mariam	-0.9	6
Hagere Selam	0.3	7
Jimma	-2.3	8
Metehara	2.0	8
Tikur Enchine	-4.2	8
Wegel Tena	-2.8	12
Yirgachfe	-5.0	16

### 3.2 Rainfall

Normally, January is one of the dry seasons for which there is no expectation of rain fall for most Parts of the country, except some places which receive some amount of rainfall.

Such as Western Tigray, Western Amahara, Eastern Amahara, Western and Southern Oromiya. Normally, the total rainfall amount of January 2017 at stations was not exceeds 36.1mm. The monthly total rainfall amount exceeded 26.5 and 36.1 mm was recorded over Amahara and SNNPR like: Bullen and Jinka (Table 4).

In general, the monthly total rainfall amount of January 2017 was below normal over much of the country. Moreover, January 2017 was drier than January 2016 over most parts of rainfall benefiting areas.

**Table 3. Station(s) with rainfall amount of 1.0 mm and above in 24 hours during January 2017**

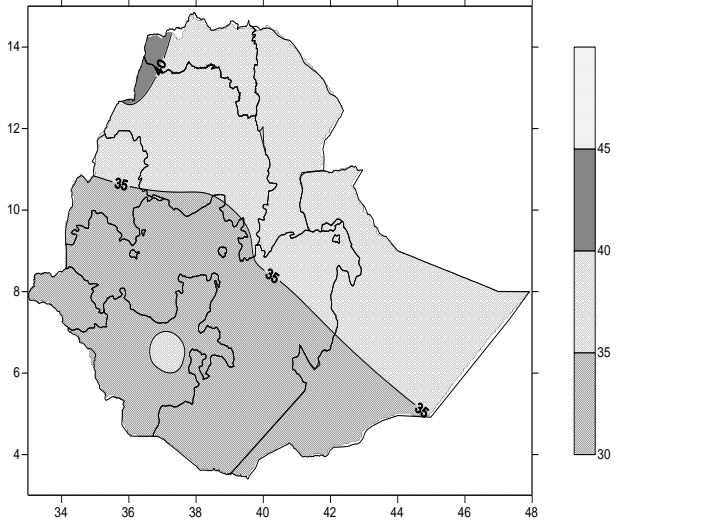
Station	Amount(mm)	Date
Bullen	14.6	31
Dembi	1.4	30
H/ Selam	1.0	31
Jinka	29.8	31
Masha	5.4	23
Sawula	2.5	28
Yabello	1.2	29

**Table 4. Station(s) with monthly total rainfall amount of above 0.5mm during January 2017**

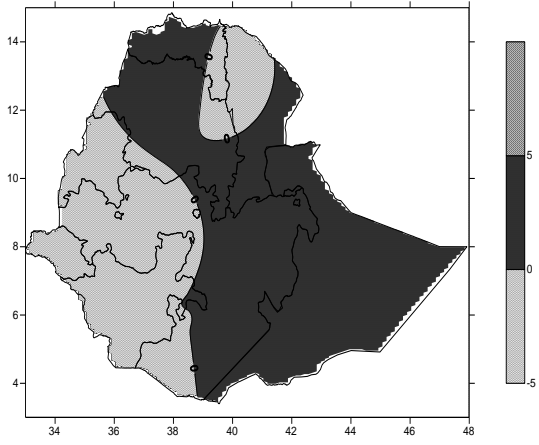
Station	Amount (mm)
Arbaminchi	0.6
Bulen	26.5
Debark	0.6
Dembi	2.3
H/ Selam	1.0
Jinka	36.1
Masha	7.3
Metema	0.6
Sawula	4.3
Yabello	1.2

**Table 5. New record (s) of minimum temperature in January 2017**

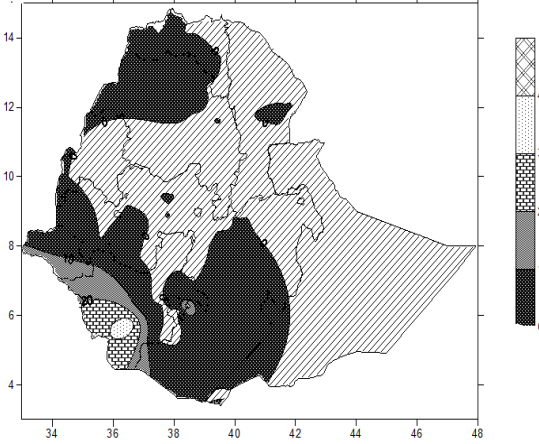
Stations	New Records		Old Record	
	Temp. (°c)	date	Temp. (°c)	Year
H/ Mariyam	-0.9	11	0.1	1987
Tikurechini	-4.2	8	-2.8	1994
Yirgachafe	-5.0	16	1.0	1982



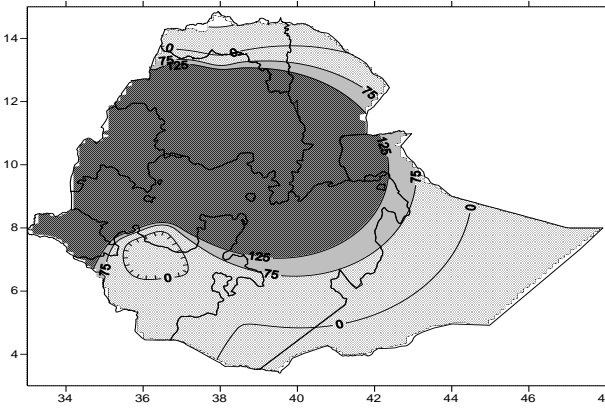
**Figure 2. Extreme maximum temperature in  $^{\circ}\text{C}$  during January 2017**



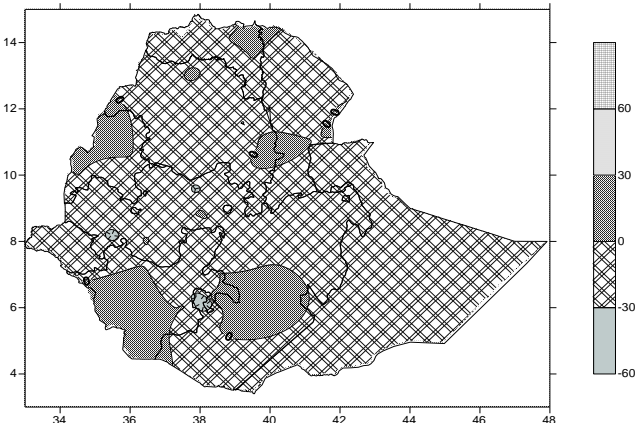
**Figure 3. Extreme minim temperature in  $^{\circ}\text{C}$  in January 2017**



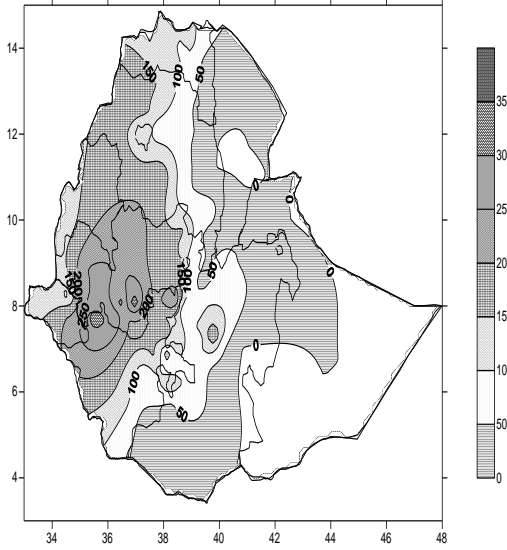
**Figure 4. Monthly total rainfall in mm during January 2017**

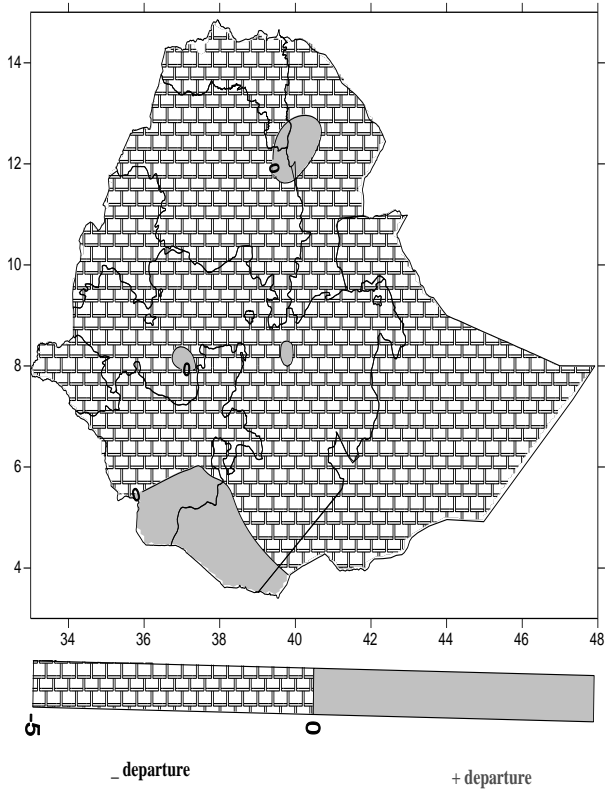


**Figure 5. Percent of normal rainfall in mm during January 2017**



**Figure 6. Monthly total rainfall of January 2017 minus monthly total rainfall of January 2016.**





**Figure 7. Departure of monthly average temperature of January 2017 from normal during January.**