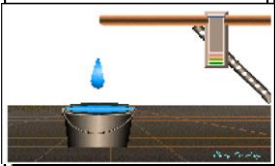


NATIONAL METEOROLOGICAL AGENCY
 METEOROLOGICAL DATA AND CLIMATOLOGY DIRECTORATE
SEASONAL CLIMATE BULLETIN
KIREMT 2017

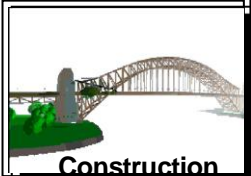
Some Applications of
Climate Information



Disaster Management



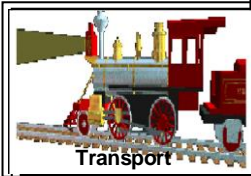
Water Resources Management



Construction



Environment & Health



Transport

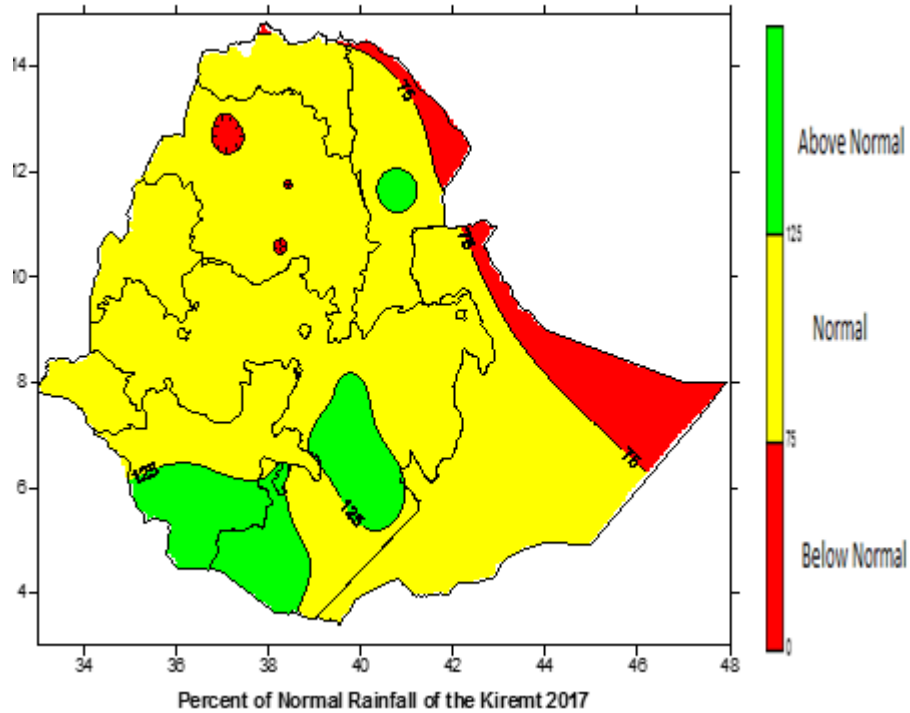


Recreation & Tourism

HIGHLIGHTS

The rainfall activity of the Kiremt 2017 was near normal over most parts of the country. On the other hand east parts of Afar and Somalia were below normal and some parts of SNNPR and southern part of oromia had experienced above normal rainfall during this seasons.

Higher values of extreme maximum temperature values were recorded, mostly during the hot month (June) 2017. In particular, the extreme maximum temperature values had exceeded 45°C over Dubti, Awash Arba, Chifra, Elidar and Mille. On the other hand, nights and early mornings were cold over the highlands of, central Amhara and central oromia during the season (Kiremt). In association with this, minimum temperature values below (4°C) were recorded over Bekoji, Debre Tabor and Wombera.



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 at least two 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 reports on the climatic conditions that had prevailed over the country during Kiremt 2017.

Kiremt is the period from June to September. It is considered as the main rainy season in which about 85% to 95% of the food crops of the country are produced. The amount of rainfall is higher than the other seasons for many parts of the country. It is to be noted that this rainfall season is not experienced over the southern and the southeastern lowlands of the country due to divergence field of the wind that originates from the Indian Ocean. Thus, we have to note that there are variations in the timing of rainfall seasons and rainfall peaks over different parts of the country

1.2. Summary of Kiremt 2017

Extreme maximum temperature values exceeded 35°C over Gewane, Dubti, Elidar, Assaita, Metahara and Metama, while the extreme minimum temperature values were as low as 5.0°C, 2.5°C, 3.2°C and 3.4°C over H/Selam, Wereilu, Kofele and D/Tabor respectively.

The seasonal total rainfall amount exceeded 1000mm over southwestern Amhara, and western Oromyia. Besides, Kiremt 2017 was wetter than Kiremt 2016 in much of Kiremt-rain benefiting areas except some pocket area of Amhara region.

In general, Kiremt 2017 seasonal rainfall was normal in most part the Kiremt-rain-benefiting areas.

2.0 Synoptic Situation

2.1 Surface

The Mascarene high with a mean central pressure value of about 1020 hpa centered between 30°S latitudes and 80°E longitudes. The central pressure values were below normal by up to 1hpa during Kiremt 2017.

The St. Helena high with a mean central pressure values ranging from 1022 hpa to 1024hpa had centers between 20°S latitudes and 30°W longitudes. The central pressure values were nearly normal during the season.

The Azores high with a mean central pressure values ranging from 1022hpa to 1026hpa had centers between 38°N latitudes and 40°W longitudes.

2.2 Lower Troposphere (850hpa vector wind)

The cross equatorial flow gradually attained its strength and the associated speed exceeded SE with the speed 8-12m/s during the season over northern Indian Ocean, SW over Arabian Sea with the speed exceed 12-14m/s and the adjoining areas of Horn of Africa.

2.3 Middle Troposphere (500hpa Geopotential Height)

The geopotential height values were above normal by up to 10m over Arabian Sea and up to 30 over Ethiopia Areas during the season.

2.4 Upper Troposphere (200hpa vector wind)

The westerly flow associated with the subtropical westerly jet had weakened gradually and the speed of the core lowered to values of 15-30m/sec and less during the season, while the upper level easterly flow associated with the Tropical easterly Jet strengthened further during the season.

3. Tropical Oceanic and Atmospheric Highlights

The Sea surface temperature (SST) anomalies continued to decrease across the equatorial Pacific Ocean during the kiremit season 2017. The kiremit seasonal anomaly SST index was -0.6°C in the Niño-3.4 region.

ENSO-neutral conditions continued during kiremit season 2017, as sea surface temperatures (SSTs) in the east-central equatorial Pacific Ocean remained near average. The seasonal SST index was -0.6°C in the Niño-3.4 region.

Reference: Climate Diagnostics Bulletin.

4. Weather

4.1 Temperature

At the beginning of Kiremt 2017, days remained hot over the lowlands of northeastern, northwestern, southeastern, western and eastern Ethiopia (fig 4.1.1). In particular,

extreme maximum temperature values exceeded 40°C over Awash Arba, Chifra, Mille, Elidar, Dubiti.

(Table 4.1.1). On the other hand, the highlands of northern, central and southern Ethiopia had cold nights and early mornings. Hence, the extreme minimum temperature values were as low as 2.0°C, 2.4°C, 3.0°C over Wombera, Debretabor respectively. (Table 4.1.1.)

Table 4.1.1 Stations with extreme maximum temperature values above 35°C during Kiremt 2017

Station	Maximum temperature >35	Month	Date
Abala	38.0	Jul	22
Awash Arba	41.0	Jun	11
Cheffa SF	36.8	Jul	2
Chifra	44.0	Jun	30
Dubity Met	45.5	Jun	8
Elidar	45.4	Jun	6
Mankush	36.0	Jun	13
Metema	38.4	Jun	9
Mille	44.6	Jun	10
Nuraera (SF)	37.6	Jun	11
Quara	38.0	Jun	13
Sawula	39.5	Jun	11
Shewa Robit	38.3	Jun	10
Tsitsika	38.4	Jun	13

Table 4.1.2 Stations with extreme minimum temperature values less than 5°C during Kiremt 2017

Station	Minimum temperature <5.0	Month	Date
Adele	4.0	Aug	9
Adigrat	4.5	Aug	1
Bekoji SF	3.0	Jul	24
Debre Berhan	4.8	Sep	24
Debre Tabor	2.4	Jul	31
Meraro	4.0	Aug	16
Nefas Mewcha	4.0	Jul	8
Wegel Tena	4.4	Sep	25
Wombera	2.0	Aug	14

4.2 Rainfall

Normally, the mean seasonal rainfall amount of Kiremt exceeds 600mm over much of the areas of west of the Rift Valley. In particular, portions of southern Amhara and western Oromyia received over 1000mm during this season.

During Kiremt 2017, the seasonal total rainfall amount exceeded 1000mm over southwestern Amhara, and western Oromyia. In particular, the seasonal total rainfall amount was as high as 1191.3mm ,1186.8 mm ,1186.6mm,1171.3mm and 1077.6mm over Chagni,Bullen,Shambu, Bahirdar and Motta respectively.

In general, Kiremt 2017 seasonal rainfall was normal over much of the Kiremt-rain-benefiting areas (fig 4.). Besides, Kiremt 2017 was wetter than Kiremt 2016 in much of Kiremt-rain benefiting areas except eastern Tigray and northern Afar (fig.5.).

Table 1.1.3 seasonal total Rainfall Amount in excess of 600 mm during the Kiremt 2017

Station	Amount
Sirinka	622.7
Wegel Tena	632.7
Dilla	641.9
Hosana	648.6
Metema	658.6
Nazeret	694.9
Debark	731.8
Wereilu	732.5
Shola Gebeya	744
Woliso Giyon	799.5
Debre Berhan	834.3
Aykel	838.3
Fiche	844.8
Debre Tabor	991.7
Motta	1077.6
Bahir Dar (Airport)	1171.3
Shambu	1186.6
Bullen	1186.8
Chagni	1191.3

Table 1.1.4 Station(s) with more than or equal to 60mm of rainfall in 24 hours during Kiremt 2017

Stations	Maximum	Month	Date
Bahir Dar (Airport)	60.4	July	12
Dangila	60.5	Aug	28
Ziway	61.4	Aug	6
Nebelet	61.8	July	4
Wombera	62.8	June	20
Sawula	64.2	Sep	17
Abomsa	65.5	July	24
Quara	65.7	Sep	18
Nebelet	65.9	Aug	3
Mankush	66.7	Aug	4
Bullen	66.8	Aug	28
Bullen	68.2	Sep	30
Debre Berhan	68.6	July	14
Debark	78.7	July	5
Bullen	80	June	9
Motta	81.4	Aug	28
Wombera	83.7	Sep	2
Mankush	90	Sep	13
Metema	119.6	Sep	4
Debre Tabor	147.1	Sep	4

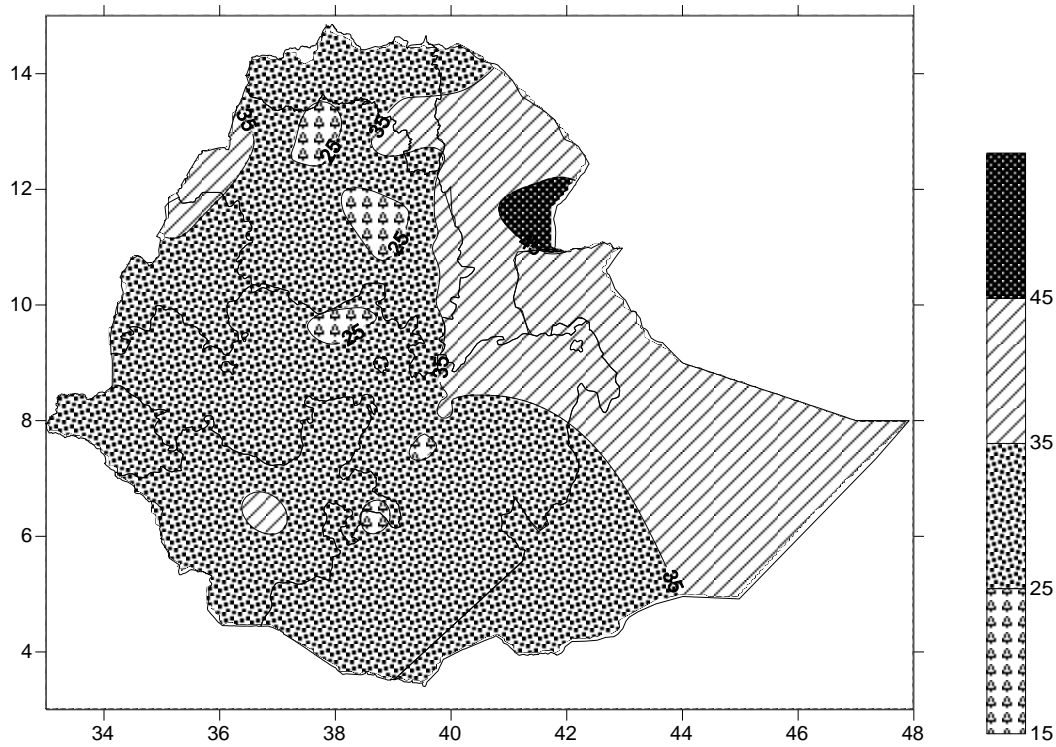


Figure 1:-Extreme maximum temperature in $^{\circ}\text{C}$ during 2017

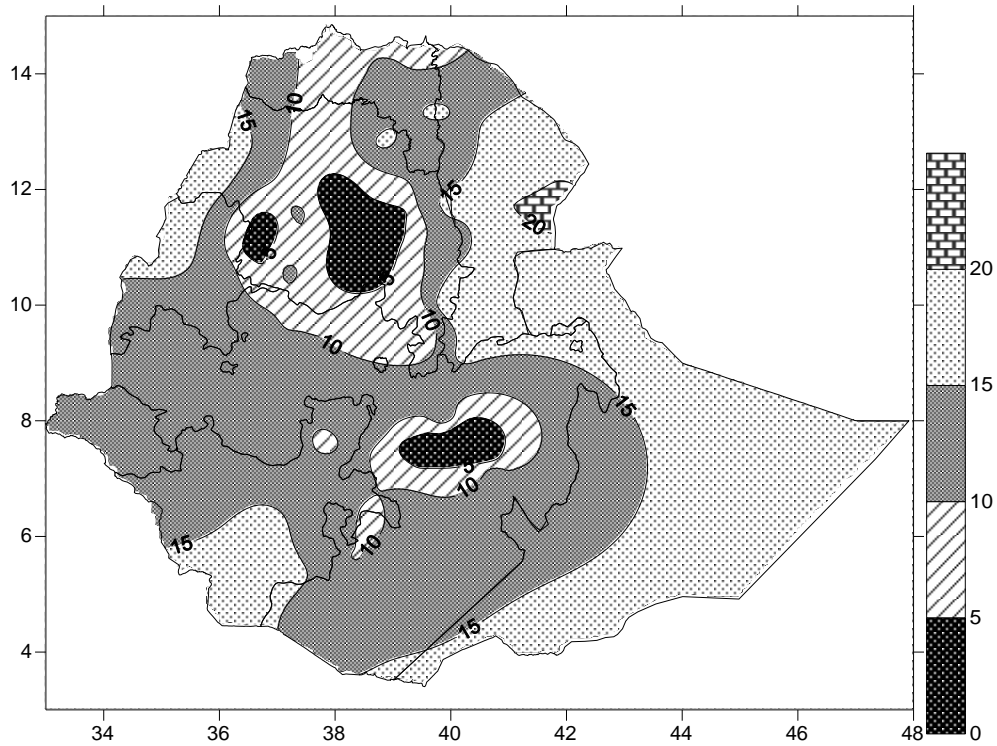


Figure 2:-Extreme minimum temperature in $^{\circ}\text{C}$ during 2017

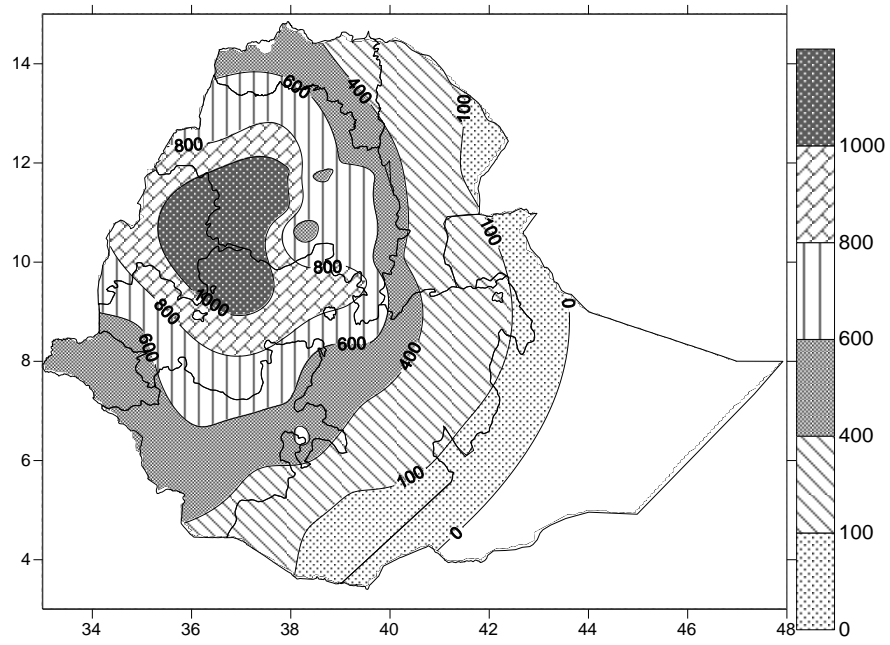
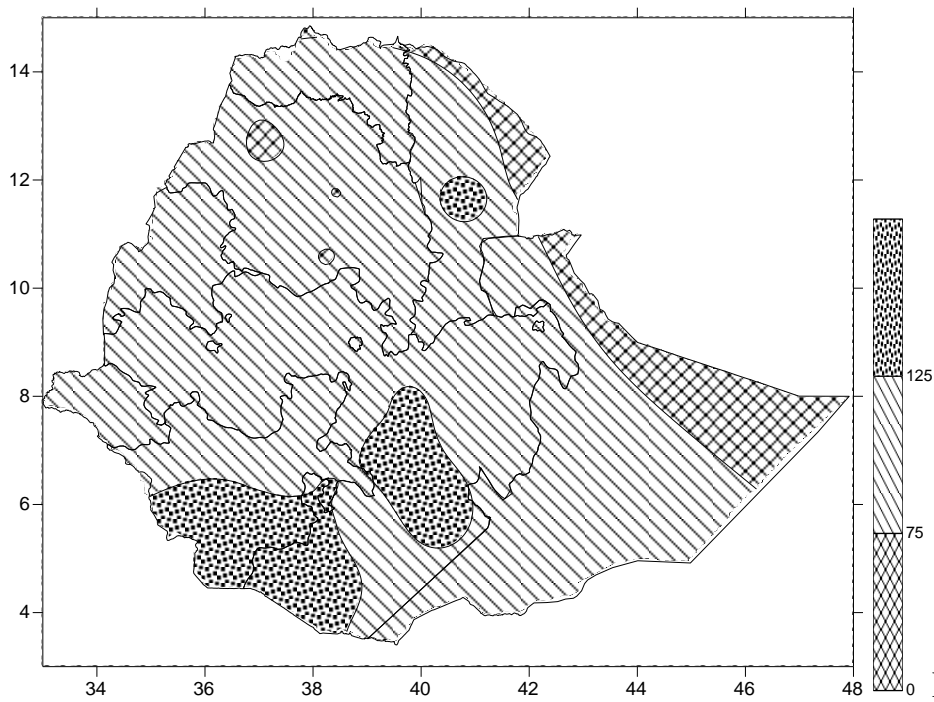


Figure 3:-Seasonal total rainfall in mm during 2017

Above Normal

Normal

Below Normal



normal during kiremt 2017

Figure 4:-Percent of

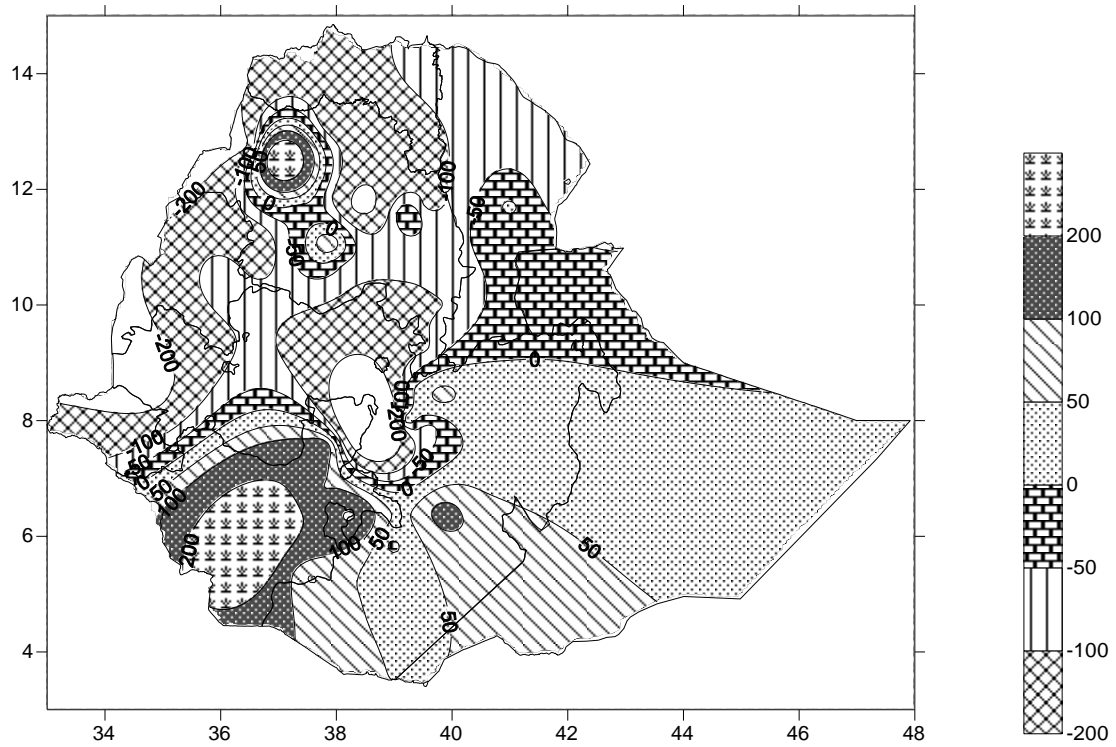


Figure 5:-2017 Seasonal total rainfall difference from 2016

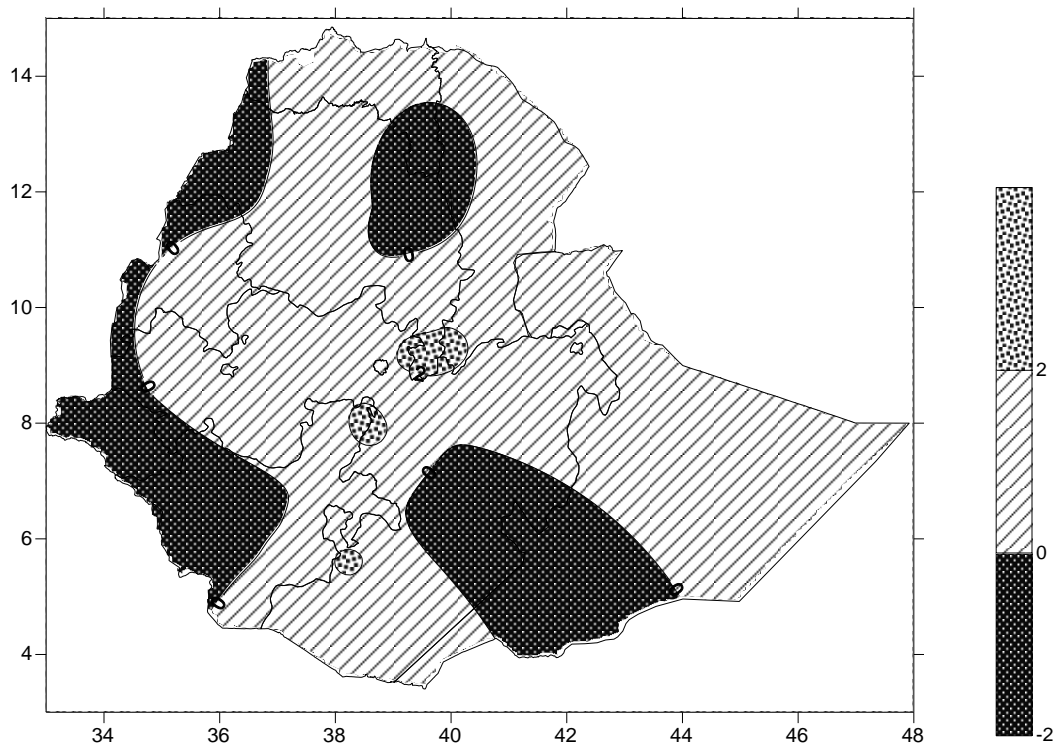


Figure 6:-Departure of average temperature from 2016 during 2017

