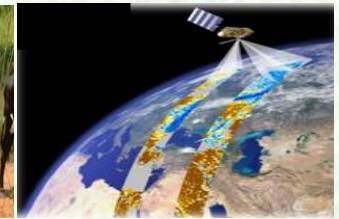


# ETHIOPIA METEOROLOGICAL INSTITUTION

## Agrometeorological Bulletin

### MONTHLY AGROMETEOROLOGICAL BULLETIN

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National Meteorological Agency P.O.BOX 1090, ADDIS ABABA, ETHIOPIA

Website: [http:// www.ethiomet.gov.et](http://www.ethiomet.gov.et) E-mail [nmsa@ethionet.et](mailto:nmsa@ethionet.et) Fax 251-1-517066, Tel. 251-1-512299

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## **FORE WARD**

This Agro met Bulletin is prepared and disseminated by the Ethiopia Meteorology Institute (EMI). The aim is to provide those sectors of the community involved in Agriculture and related disciplines with the current weather situation in relation to known agricultural practices.

The information contained in the bulletin, if judiciously utilized, are believed to assist planners, decision makers and the farmers at large, through an appropriate media, in minimizing risks, increase efficiency, maximize yield. On the other hand, it is vital tool in monitoring crop/ weather conditions during the growing seasons, to be able to make more realistic assessment of the annual crop production before harvest.

The Agency disseminates ten daily, monthly and seasonal weather reports in which all the necessary current information's relevant to agriculture are compiled.

We are of the opinion that careful and continuous use of this bulletin can benefit to raise ones agro climate consciousness for improving agriculture-oriented practices. Meanwhile, your comments and constructive suggestions are highly appreciated to make the objective of this bulletin a success.

Director General

EMI

P.O. Box 1090

Tel: 011661-57-79

FAX 00251-11-6625292

E-mail [nmsa@ethionet.et](mailto:nmsa@ethionet.et)

Addis Ababa

# አህፅሮት

## እ.ኤ.አ ዲሴምበር 2023

ባሳለፍነው የዲሴምበር ወር የመጀመሪያው አስር ቀናት ደረቃማ የእርጥበት ሁኔታ በአብዛኛዎቹ የሀገሪቱ አካባቢዎች ላይ አመዝኖባቸው ተስተውሏል። ይህም ሁኔታ በዚህ ጊዜ የሰብል ስብሰባቸውን በሚያካሄዱ ሰብል በደረሰባቸው አካባቢዎች ለሰብል ስብሰባና ድህረ ሰብል ስብሰባ አመቺ ሁኔታን የፈጠረ እንደነበረ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። በአንፃሩም በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት የሀገሪቱ አካባቢዎች ላይ የእርጥበቱ መጠንና ስርጭት ቀስ በቀስ የመቀነስ አዝማሚያ የታየበት ቢሆንም ከበጋው ወቅት መግቢያ ጀምሮ በተከታታይ የተስተካከለ እርጥበት እያገኙ ስለነበር ብዙም ጉዳት አላስከተለም። በሌላ በኩል አልፎ አልፎ ባሉት ቀናት የእርጥበታማ ሁኔታው በተለይም በጥቂት የደቡብ፣ ደቡብ ምዕራብ እና ምዕራብ የሀገሪቱ አካባቢዎች ላይ የተወሰኑ አካባቢዎች ላይ መካከለኛ መጠን የለው እርጥበት ለጥቂት ቀናት ተስተውሏል። ይህም ሁኔታ ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም የአርብቶ አደርና የከፊል አርብቶ አደር አካባቢዎች ለሚያከናውኑት የግብርና እንቅስቃሴ አዎንታዊ ሚና ነበረው።

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እርግጠኛነት ለጥቂት ቀናት ተስተውሏል። ይህም ሁኔታ ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም በአርብቶ አደርና በከፊል አርብቶ አደር አካባቢዎች ለግጦሽ ሳርና ለመጠጥ ውሃ አቅርቦት አዎንታዊ ሚና ነበረው።

በአጠቃላይ ባሳለፍነው የዲሴምበር ወር ደረቃማ የእርግጠኛነት ሁኔታ በአብዛኛዎቹ የሀገሪቱ አካባቢዎች ላይ አመዝኖባቸው ተስተውሏል። ይህም ሁኔታ በዚህ ጊዜ የሰብል ስብሰባቸውን በሚያካሄዱ ሰብል በደረሰባቸው አካባቢዎች ለሰብል ስብሰባና ድህረ ሰብል ስብሰባ አመቺ ሁኔታን የፈጠረ እንደነበረ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። በአንጻሩም በመጀመሪያው እና በሁለተኛው አስር ቀናት በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑ የሀገሪቱ አካባቢዎች ማለትም በደቡብ፣ ደቡብ ምሥራቅ እና ደቡብ ምዕራብ የሀገሪቱ ክፍሎች ላይ አልፎ አልፎ ከቀላል እስከ ከባድ መጠን ያለው የእርግጠኛ ስርጭት የታየበት ሲሆን፣ በሶስተኛው አስራ አንድ ቀናት የእርግጠኛ መጠንና ስርጭት ቀስ በቀስ የመቀነስ አዝማሚያ ነበረው። ይህም ሁኔታ ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም በደቡብ የሀገሪቱ አካባቢዎች ላይ የተስተዋለው አርጠታማ ሁኔታ በተለይም የበጋን ወቅት እንደ ሁለተኛ የዝናብ ወቅታቸው ለሚጠቀሙ የአርብቶ አደርና የከፊል አርብቶ አደር አካባቢዎች ለሚያከናውኑት የግብርና እንቅስቃሴ አዎንታዊ ሚና ነበረው። በሌላ በኩል በተወሰኑ በመካከላኛው፣ በሰሜን ምዕራቅ እና ሰሜን ምዕራብ የሀገሪቱ አካባቢዎች ላይ የነበረው ወቅቱን ያልጠበቀ የእርግጠኛ ሁኔታ በደረሱ ሰብሎች እና በሰብል ስብሰባ ተግባራት ላይ አሉታዊ ሚና ነበረው።

## **SUMMARY**

### **December 2023**

During the first decade of December 2023, the moisture condition was enhanced over the southern and south-eastern Bega rain benefiting. The observed moisture might have positive implication for fulfilling the water need of various Meher crops and perennial plants. Similarly, since Bega is the second rainy season for the southern and south-eastern parts of the country, the received good moisture during the dekad could play very crucial role to improving the availability of pasture and drinking water and significantly important to regenerate natural and artificial ponds over both the pastoral and agro pastoral community. On the other hand the observed heavy fall over southern and south-western parts of the country had a good opportunity to collect rain water harvesting. On the other hand the observed heavy fall over southern, south-eastern and eastern parts of the country might experience water logging, runoff, soil erosion and landslide due to continuous and heavy fall. Moreover the receiving unseasonal moisture over some areas negatively affected harvest and post-harvest activities of matured crops and the observed enhanced moisture might have positive implication for fulfilling the water need of various Meher crops, perennial plants.

During the second decade of December 2023, Bega season dry moisture condition was experienced across the Meher season producing parts of the country. The dry and sunny condition was taken as good opportunity to perform harvest and post-harvest activities over the place where Meher season crops are fully matured. On the other hand, the moisture condition was enhanced over the southern and south-western Bega rain benefiting areas. The observed moisture might have positive implication for fulfilling the water need of various Meher crops and perennial plants. Similarly, since Bega is the second rainy season for the southern parts of the country, the received moisture during the dekad could play very crucial role to improving the availability of pasture and drinking over both the pastoral and agro pastoral community.

During the third dekad of December 2023, according to the agro meteorological analysis, during the last dekad of December, the Bega season dry, sunny and windy weather condition prevailed across most part of the country. This condition had a positive impact for the Meher crop growing areas toward assisting the on-going post-harvest activities. On the other hand, parts of western, western Oromia, and South western of the country received light to moderate moisture. This situation in turn might favor toward satisfying the daily water

need of perennial crops and the provision of pasture and drinking water in some extent for pastoral and agro-pastoral communities.

Generally, during the last month of December, the Bega season dry, sunny and windy climate condition prevailed across the county and this situation was more pronounced during the first and second dekad of the month. Given the current state of agricultural activities, the dry condition was favourable for the timely dry out of matured crops and to conduct harvest and post-harvest activities. On the other hand, in line with the dry condition some of the northern, central and south-eastern parts of the country recorded minimum temperatures below 5<sup>0</sup>C while some few places remained below zero degree Celsius. This cold and chill condition might have some negative impact on livestock health, irrigated Bega season crops and over various horticulture plants. However during the last dekad of December light to moderate moisture was recorded over western and central Amhara, Central Oromia, Gambella, SNNPR and south-western of the country. This condition favours toward the water satisfaction of not fully matured crops, perennial plants. In addition, it might have positive impact on ensuring the availability of pasture and drinking water over pastoral and agro pastoral areas. However the receiving unseasonal moisture over some areas negatively affected harvest and post-harvest activities of matured crops and the observed enhanced moisture might have positive implication for fulfilling the water need of various Meher crops, perennial plants.

# 1. WEATHER ASSESSMENT

## 1.1. Rainfall amount (21 – 31) December 2023

During third dekad of December 2023 pocket area of Jinka exhibited 50-100mm Rainfall. Pocket area of east hareрге, south Omo, Derashe, Konso and bench Maji exhibited 25-50mm Rainfall. Some areas of west, east Hareрге city zone and Kelem wellega, Agnuak, Sheka, Bench Maji, Basketo, Derashe, Konso, Borena, Sidama, Bale Zone exhibited 5-25mm Rainfall. The rest parts of the country exhibited 0-5mm Rainfall.

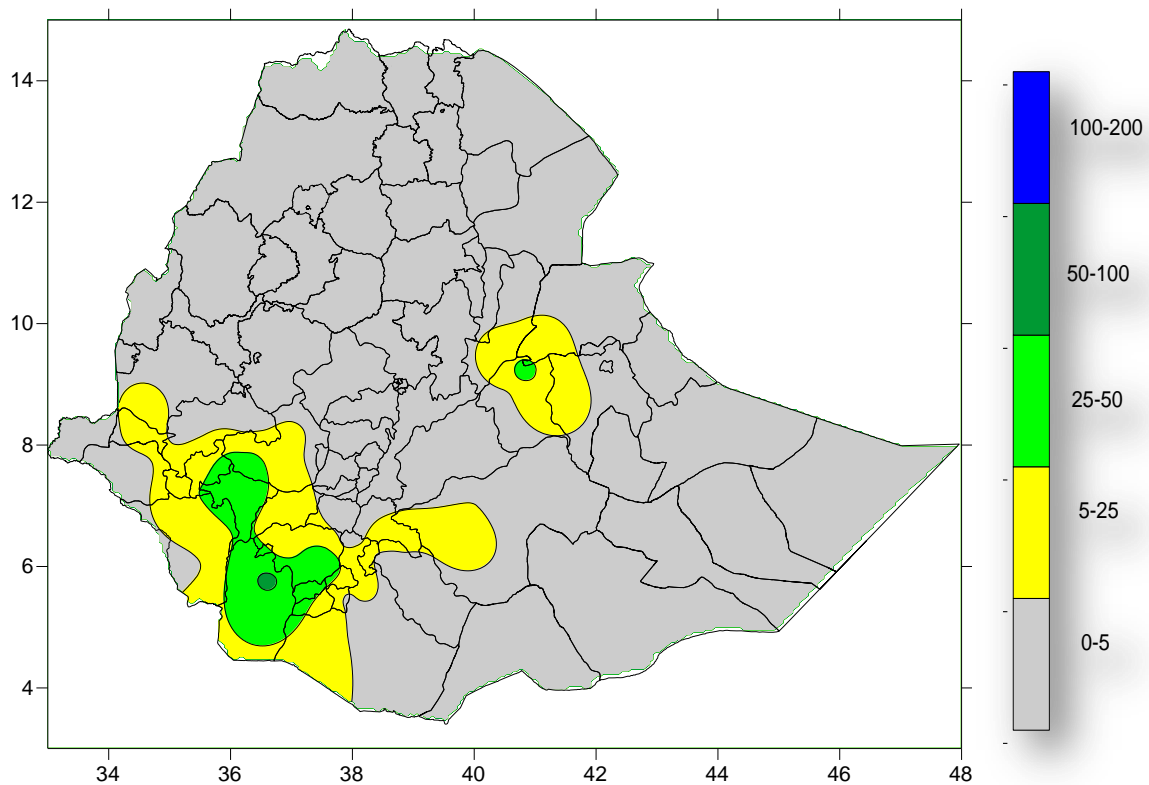


Fig 1. Rainfall distribution in mm (21 – 31) December 2023



## 1.2. Rainfall Anomaly (21 – 31 December 2023)

During December third dekad 2023, West and east hareрге, Afar zone 3, Fike and City zone, east Wellega, Jima zone, south Omo, Kelem wellega, Agnuak, Sheka, Bench Maji, Basketo, Derashe, Konso, Borena, Guji, Sidama and Bale Zone receive Normal to Above Normal. The rest parts of the countries receive Below Normal too Much Below Normal.

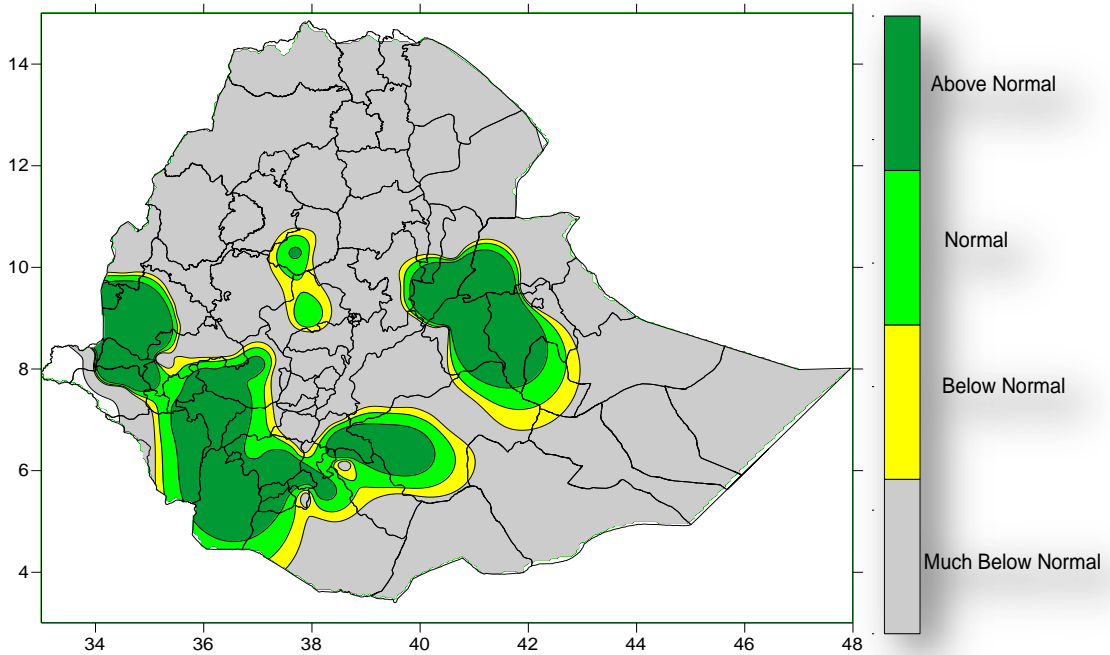


Fig. 2 Percent of normal rainfall distribution (21 – 31 December 2023)

### Explanatory notes for the Legend

- < 50-Much below normal
- 50-75%-Below normal
- 75-125%- Normal
- > 125% - Above normal

### 1.3. Moisture status (21 – 31 December 2023)

During the third dekad of December 2023, Debub Omo, Mirab Omo and Gofa and Most parts of Sheka, Bench, Maji, Agnewak, Borena, Mirab Wollega, some areas of east and west Harerrge xhibited moist to humid moisture conditions. The rest parts of the country experienced moderately dry to very dry moisture condition.

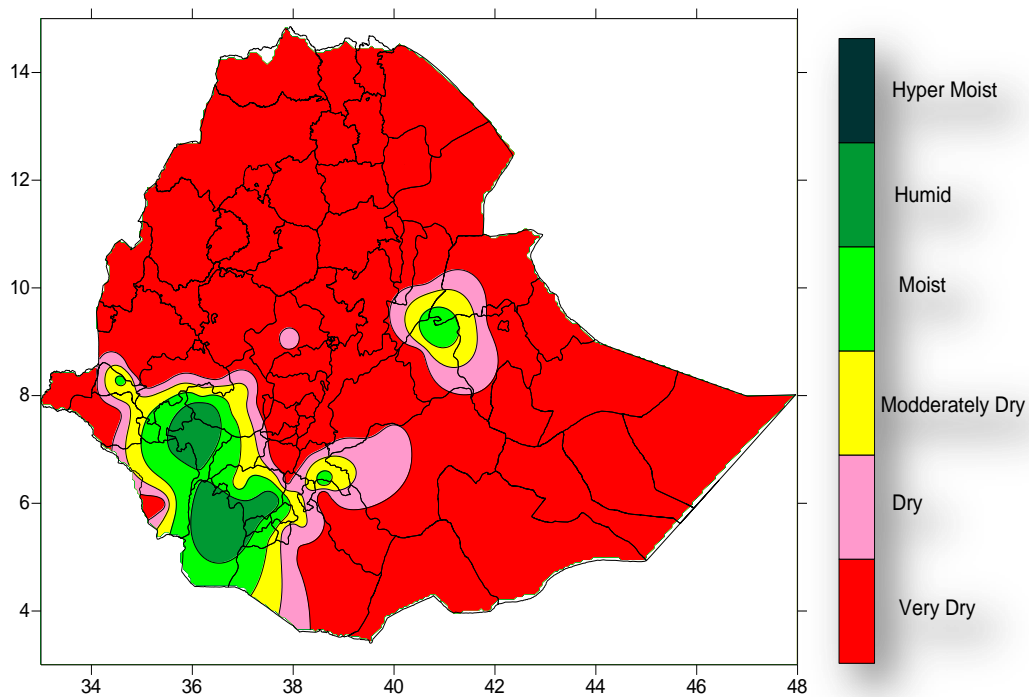


Fig. 3 Moisture Status (21-31 December 2023)

#### 1.4. Rainfall amount on the month of December 2023

During third dekad of December 2023 pocket area of Dehub Omo Exprinced 100-200mm of rainfall. Jima zone, Dehub Omo, Mirab Omo, Sheka, Bench Maji, Basketo, Derashe, Konso, Borena, Zone exprinced 50-100mm of rainfall. Some areas of west, east Harerge city zone and Kelem wellega, Agnuak, Sheka, Bench Maji, Basketo, Derashe, Konso, Borena, Sidama, Bale Zone exhibited 5-25mm Rainfall. The rest parts of the country exhibited 0-5mm Rainfall.

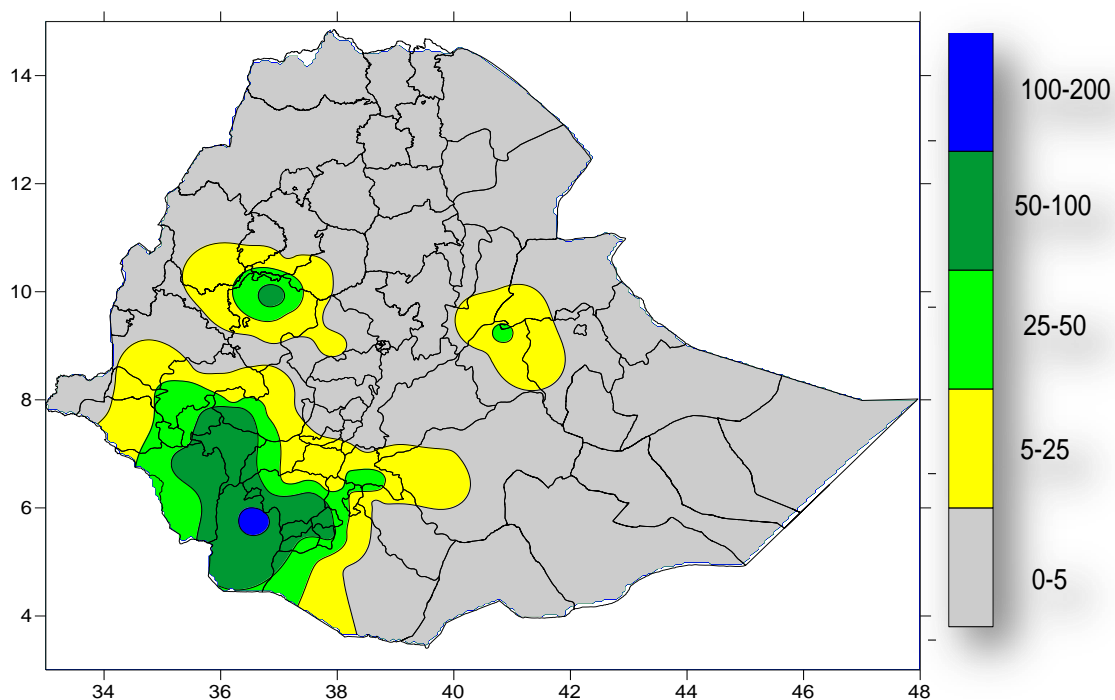
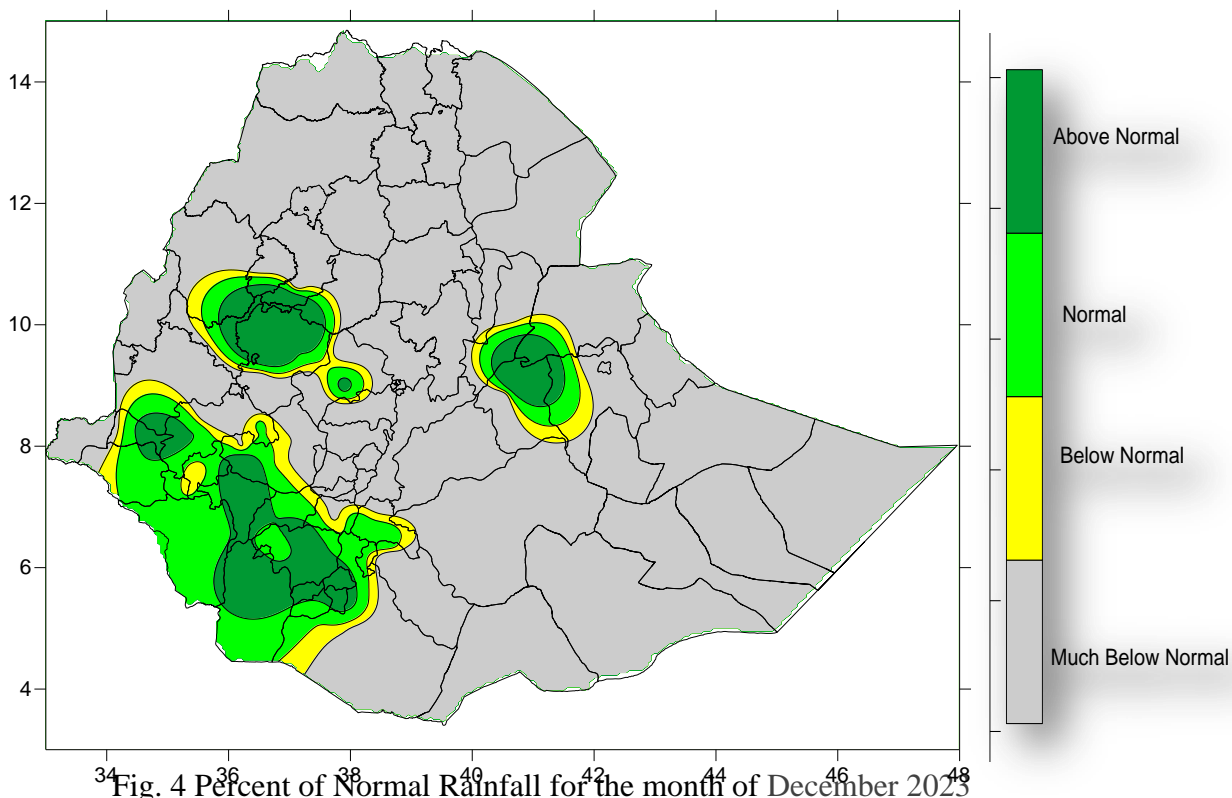


Fig. 3 Rainfall amount in mm for the month of December 2023

### 1.5. Rainfall Anomaly on the month of December 2023

During the month of December 2023, West and east harerge, Afar zone 3, Fike and City zone, east Wellega, Jima, south Omo, Kelem wellega, Agnuak, Sheka, Bench Maji, Basketo, Derashe, Konso, Borena, Guji, Sidama and Bale Zone receive Normal to Above Normal. The rest parts of the countries receive Below Normal too Much Below Normal.



#### Explanatory notes for the Legend

- < 50-Much below normal
- 50-75%-Below normal
- 75-125%- Normal
- > 125% - Above normal

### 1.6. Moisture status on the month of December 2023

As indicated on the month of December 2023 moisture status map below, Debub Omo, Mirab Omo, Gofa, Keffa, Bench Maji and Basketo exhibited Hyper Moist to Moist. The rest parts of the countries exhibited moderately Dry too Very Dry.

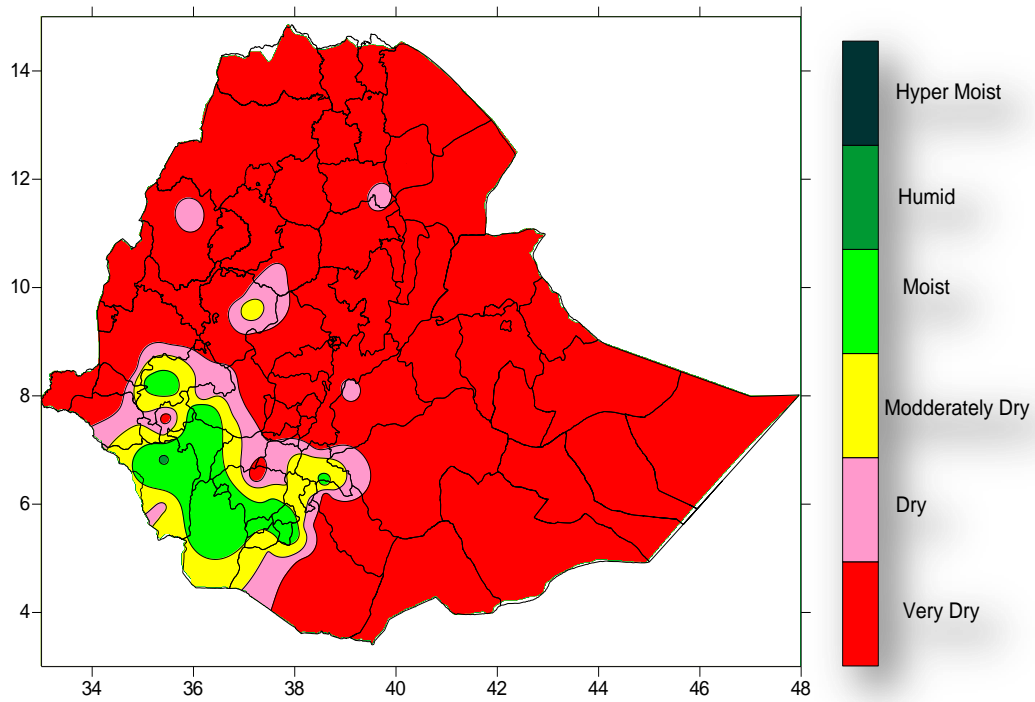
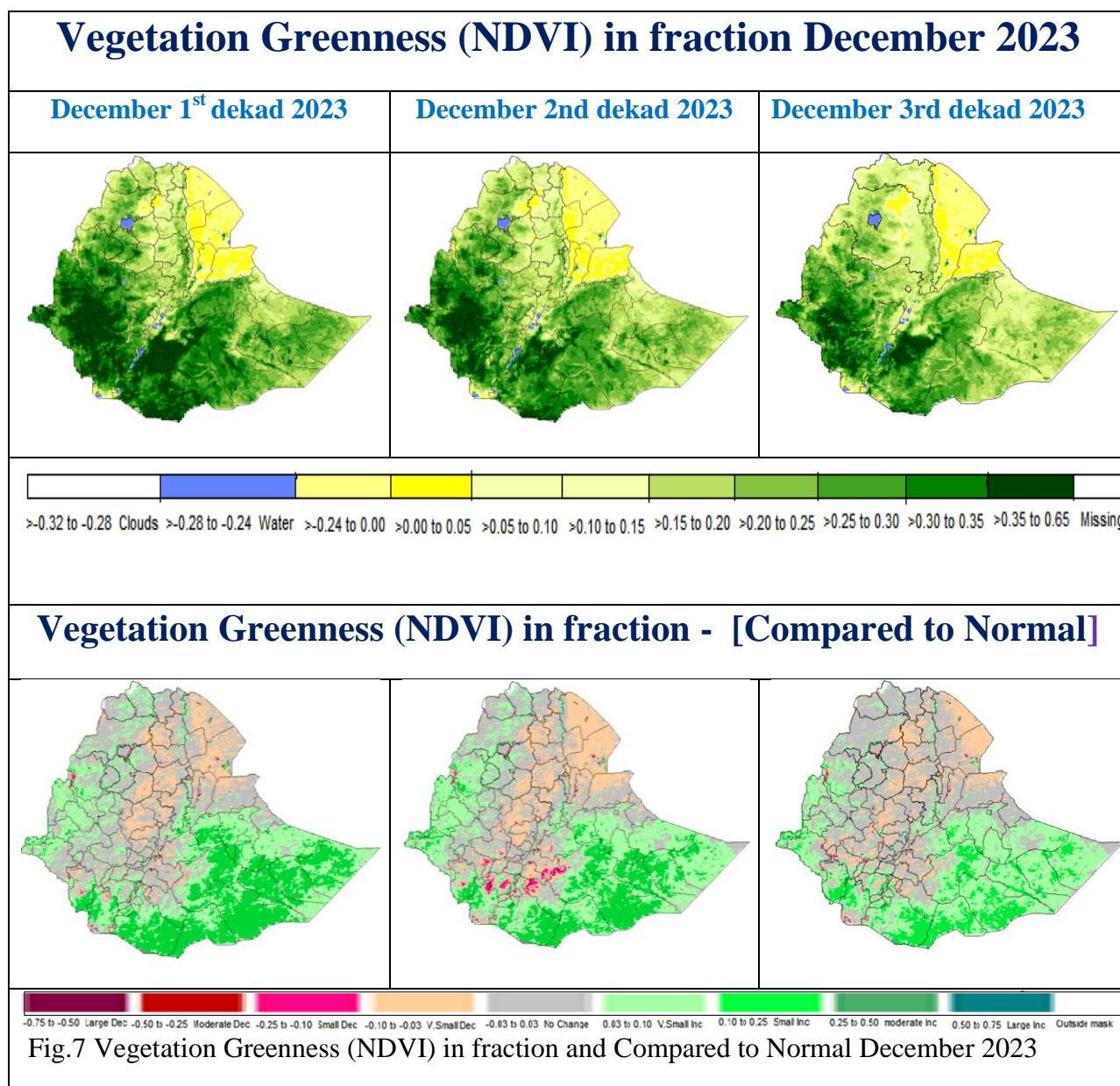


Fig. 5 moisture status for the month of December 2023

## 2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

### 2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE

During second dekad of December 2023, the moisture condition was enhanced over the southern and south-western parts of the country. Due to this the NDVI Fig.7 (the green plant coverage) and RLWRSI increased. The situation might play crucial role toward improving the availability of pasture and drinking water.



## **2.2. Expected Weather Impact on Agriculture during the Coming Month of January 2024**

In normal condition, most Meher growing areas are widely engaged in harvest and post-harvest activities due to the favourable dry, sunny and windy weather situations during the coming month January. It is also the time that most crop fields, which have been covered with various crops for the last few months, are made free of plants and usually after the mid of the month farmers are starting preparation for the next Belg season agricultural practices. In addition, the month can also be appeared with cool and chilly weather condition during night and morning time.

According to the weather forecast for the coming January 2024, the Bega season dry, sunny and wind weather condition couple with cold night and morning is likely to be continued up to the mid of the coming month over the highland areas of the country. The probable dry weather condition up to the mid of the month is likely to favour for completing the on-going post-harvest activities and enable farmers to clear crop fields for the next season agricultural practices. On the other hand, dry, windy and cloud free condition might encourage cool and chilly weather at night and morning time particularly during the early dekads of the month over some high land areas of the country. This condition is likely to be detrimental slight negative effect on the performance of vegetables, fruits and perennial plants. However, after the mid of the month sometimes some parts of north-eastern, eastern, central, western and south-western parts of the country are likely to start getting slight to moderate amount of rainfall due to the approach of certain rain bearing Belg season weather systems. The situation may be favourable for Bega season crops and perennial plants as well as to ensure the availability of pasture and drinking water for the pastoral and agro pastoral community. In addition, the predicted rain after the mid of the month is supposed to play a significant role toward the improvement of soil moisture and hence for land preparation for the Belg season.

### **3. DEFINITION OF TERMS**

**ABOVE NORMAL RAINFALL:** - Rainfall in excess of 125% of the long term mean

**BELOW NORMAL RAINFALL:** - Rainfall below 75 % of the long term mean.

**NORMAL RAINFALL:** - Rainfall amount between 75 % and 125 % of the long term mean.

**BEGA:** - It is characterized with sunny and dry weather situation with occasional falls. It extends from October to January. On the other hand, it is a small rainy season for the southern and south eastern lowlands under normal condition. During the season, morning and night times are colder and daytime is warmer.

**BELG:** - Small Rainy season that extends from February to May and covers southern, central, eastern and north-eastern parts of the country.

**CROP WATER REQUIREMENTS:** - the amount of water needed to meet the water loss through evapotranspiration of a disease free crop, growing under non-restricting soil conditions including soil water and fertility.

**DEKAD:** - First or second ten days or the remaining days of a month.

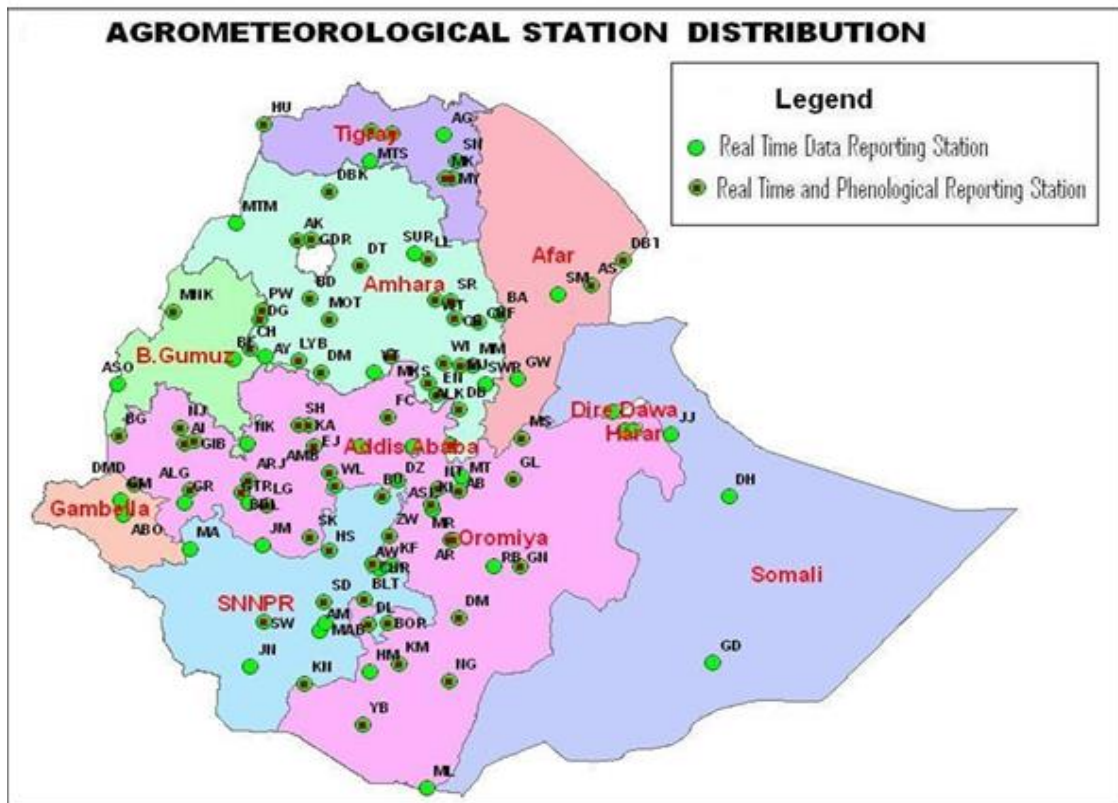
**EXTREME TEMPERATURE:-** The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

**ITCZ:-** Inter-tropical convergence zone (narrow zone where trade winds of the two hemispheres meet.

**KIREMT:** - Main rainy season that extends from June to September for most parts of the country with the exception of the south-eastern lowlands of the country.

**RAINY DAY:** - A day with 1 or more mm of rainfall amount





Station	Code	Station	Code	Station	Code	Station	Code
A. Robe	AR	D. Zeit	DZ	Humera	HU	Nazereth	NT
A.A. Bole	AA	D/Dawa	DD	Jijiga	JJ	Nedjo	NJ
Adigrat	AG	D/Mena	DOM	Jimma	JM	Negelle	NG
Adwa	AD	D/Odo	DO	Jinka	JN	Nekemte	NK
Aira	AI	D/Tabor	DT	K.Dehar	KD	Pawe	PW
Alemaya	AL	Dangla	DG	K/Mingist	KM	Robe	RB
AlemKetema	ALK	Dilla	DL	Kachise	KA	Sawla	SW
Alge	ALG	Dm.Dolo	DMD	Koffele	KF	Sekoru	SK
Ambo	AMB	Dubti	DBT	Konso	KN	Senkata	SN
Arba Minch	AM	Ejaji	EJ	Kulumsa	KL	Shambu	SH
Asaita	AS	Enwary	EN	Lalibela	LL	Shire	SHR
Asela	ASL	Fiche	FC	M.Meda	MM	Shola Gebeya	SG
Assosa	ASO	Filtu	FL	M/Abaya	MAB	Sirinka	SR
Awassa	AW	Gambela	GM	Maichew	MY	Sodo	SD
Aykel	AK	Gelemso	GL	Majete	MJ	WegelTena	WT
B. Dar	BD	Ginir	GN	Masha	MA	Woliso	WL
Bati	BA	Gode	GD	Mekele	MK	Woreilu	WI
Bedelle	BDL	Gonder	GDR	Merraro	MR	Yabello	YB
BUI	BU	Gore	GR	Metehara	MT	Ziway	ZW
Combolcha	CB	H/Mariam	HM	Metema	MTM		
D. Berehan	DB	Harer	HR	Mieso	MS		
D. Habour	DH	Holleta	HL	Moyale	ML		
D. Markos	DM	Hossaina	HS	M/Selam	MSL		