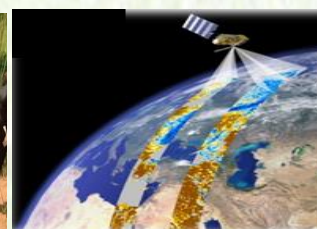


# ETHIOPIA METEOROLOGY INSTITUTE

## Agrometeorological Bulletin

### MONTHLY AGROMETEOROLOGICAL BULLETIN

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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

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Addis Ababa

**አህፅሮት**  
**እ.ኤ.አ ኦክቶበር 2023**

ባሳለፍነው የኦክቶበር 2023 የመጀመሪያው አስር ቀናት የበጋውን ዝናብ በመደበኛነት የሚያገኙትን የደቡብና የደቡብ ምሥራቅ አካባቢዎችን ጨምሮ በደቡብ ምዕራብ፣ በመካከለኛው፣ በምሥራቅና በምዕራብ ኢትዮጵያ ላይ ቀላል መጠን ያለው እርጥበታማ ሁኔታ እንደነበረ ከተለያዩ የሀገሪቱ ክፍሎች የተሰበሰቡ የግብርና ሚኒስቴሮች መረጃዎች ያመለክታሉ። በተጨማሪም አልፎ አልፎ ባሉት ቀናትም በጥቂት ቦታዎች ላይ ከባድ ዝናብ ተመዝግቧል። ይህም የተስተዋለው የእርጥበት ሁኔታ እየተከናወነ በሚገኘው የግብርና እንቅስቃሴ ላይ የተለያዩ ተጽዕኖ እንደነበረው መገንዘብ ይቻላል። የነበረው እርጥበታማ ሁኔታ በተለያዩ ምክንያት ዘግይተው ለተዘሩና እድገታቸውን ላላጠናቀቁ እንዲሁም ተጨማሪ እርጥበት ለሚያስፈልጋቸው የመኸር ጊዜ ሰብሎችም ሆነ ለቋሚ ተክሎች ገንቢ ሚና የነበረው ሲሆን፤ በአንጻሩም በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት የደቡብና የደቡብ ምስራቅ የሀገሪቱ ክፍሎች ላይ የተሻለ የእርጥበት ሁኔታ የተስተዋለባቸው በመሆኑ የተገኘው እርጥበት ጥምር ግብርና ለሚካሄዱባቸው በደቡብና ደቡብ ምስራቅ የአገሪቱ ክፍሎች ላይ ለተዘሩ ሰብሎች የውሃ ፍላጎት እንዲሁም በቆላማው አካባቢ ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽ ሣርና ለመጠጥ ውሃ አቅርቦት ጥሩ አስተዋጽኦ ነበረው።

የሀገሪቱ አካባቢዎች ላይ ባሳለፍነው የኦክቶበር 2023 ሁለተኛው አስር ቀናት በደቡብና ደቡብ ምሥራቅ የሀገሪቱ ክፍሎች ላይ በመጠንም ሆነ በስርጭት ረገድ በተስፋፋ መልኩ የተጠናከረ እርጥበት እንደነበረ ከተለያዩ የሀገሪቱ ክፍሎች የተሰበሰቡ የግብርና ሚኒስቴሮች መረጃዎች ያመለክታሉ። በመሆኑም የተገኘው እርጥበት ጥምር ግብርና ለሚካሄዱባቸው በደጋማው አካባቢ ቀደም ብለው ለተዘሩ ሰብሎች የውሃ ፍላጎት መሟላትም ሆነ በአካባቢው ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽ ሣርና ለመጠጥ ውሃ አቅርቦት ጥሩ አስተዋጽኦ ነበረው። በተጨማሪም በምዕራብ እና በደቡብ ምዕራብ የነበረው እርጥበት በተለያዩ ምክንያት ዘግይተው ለተዘሩ፣ እድገታቸውን ላላጠናቀቁና ተጨማሪ እርጥበት ለሚያስፈልጋቸው የመኸር ጊዜ ሰብሎችም ሆነ ለቋሚ ተክሎች የሚያስፈልጋቸውን ውሃ ከሚሟላት አንጻር የጎላ ጠቀሜታ የነበረው ሲሆን በአንጻሩም በአዳንድ አካባቢዎች የነበረው ከባድ ዝናብ የዝናብ ውሃን ለመሰብሰብና ለማከማቸት መልካም አጋጣሚን የፈጠረ ነበር። በሌላም በኩል በአብዛኛዎቹ የሰሜን አጋማሽ፣ መካከለኛው እና ምስራቅ የአገሪቱ ክፍሎች ላይ የነበረው ደረቅ የአየር ሁኔታ ሰብላ በደረሰባቸው አካባቢዎች ለሰብላ ስብሰባው አመቺ ሁኔታን

የፈጠረ ቢሆንም ዘግይተው ለተዘናና እድገታቸውን ሙሉ ለሙሉ ባላጠናቀቁ ሰብሎች ላይ አሉታዊ ተፅእኖ ነበረው።

ባሳለፍነው የኦክቶበር 2023 የሶስተኛው አስራ አንድ ቀናት በጋ ሁለተኛ የዝናብ ወቅታቸው የሆኑ የሀገሪቱ አካባቢዎች ላይ በመጠንም ሆነ በስርጭት ረገድ በተስፋፋ መልኩ የተጠናከረ እርጥበት ነበራቸው። በመሆኑም የተገኘው እርጥበት በተለይም እየተካሄደ ላለው የግብርና ስራም ሆነ ቀደም ብለው ለተዘናና በተለያዩ እድገት ደረጃ ላይ ለሚገኙ ሰብሎች የውኃ ፍላጎት መሟላትም ሆነ ለአርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽ ሣርና ለመጠጥ ውሃ አቅርቦት መሟላት አዎንታዊ አስተዋጾ ነበረው። እንዲሁም በደቡብ እና በምዕራብ የሀገሪቱ አካባቢዎች ላይ አልፎ አልፎ የነበረው ከባድ ዝናብ ውሃን ለመሰብሰብና ለማከማቸት መልካም አጋጣሚን የፈጠረ ቢሆንም ነገር ግን በአንዳንድ አካባቢዎች ከጎርፍ ክስተትና ከመሬት መንሸራተት ጋር ተያይዞ በንብረትና በሰዎች ህይወት ላይ ጉዳት ያደረሰ ሲሆን በማሳ ላይ በሚገኙ ሰብሎችም ላይ ጉዳት አድረጏል። በተጨማሪም በመካከለኛ እና በሰሜናዊ አንዳንድ የሀገሪቱ ክፍሎች ላይ የነበረው እርጥበት በተወሰነ መልኩ በደረሱ እና በመሰብሰብ ላይ በሚገኙ ሰብሎች ላይ አሉታዊ ተጽእኖ ቢኖረውም በአንጻሩ እድገታቸውን ላላጠናቀቁና ተጨማሪ እርጥበት ለሚያስፈልጋቸው የመኸር ጊዜ ሰብሎችም ሆነ ለቋሚ ተክሎች የጎላ ጠቀሜታ ነበረው ።

ባጠቃላይ ባሳለፍነው የኦክቶበር ወር 2023 በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት የደቡብ፣ደቡብ ምሥራቅ እና ደቡብ ምዕራብ የሀገሪቱ ክፍሎች ላይ በተለይም በሶስተኛው አስራ አንድ ቀናት የነበረው እርጥበት በተሻለ መልኩ አብዛኛውን የሀገሪቱ ክፍሎች ያዳረሰ ነበረ። ይህም የተገኘው እርጥበት በደጋማ አካባቢዎች ለተዘና ሰብሎች ምቹ ሁኔታን የፈጠረ ሲሆን ለአርብቶ አደሩና ከፊል አርብቶ አደር አካባቢዎች ለአረንጓዴ እፅዋት ልምላሜ መሻሻል፣ ሰው ሰራሽም ሆነ የተፈጥሮ ምንጮችን ከማጎልበት አንፃር አዎንታዊ ሚና ነበረው። እንዲሁም በመካከለኛው፣ በሰሜን ምሥራቅና በሰሜን ምዕራብ በአንዳንድ ሥፍራዎች ላይ የነበረው ከባድ መጠን ያለው ዝናብ የሰብል ስብሰባ በሚከሄድባቸው አካባቢዎች ላይ አሉታዊ ጎን የነበረው ቢሆንም በተለያዩ ምክንያት ዘግይተው ለተዘናና የእድገት ጊዜያቸውን ላልጨረሱ የመኸር ሰብሎችና ለቋሚ ተክሎች የውሃ ፍላጎት መሟላት እንዲሁም ውሃ አጠር ለሆኑ አካባቢዎች ውሃ ለመሰብሰብና ለማከማቸት መልካም አጋጣሚ የፈጠረ ነበር።

## **SUMMARY**

### **OCTOBER 2023**

During the first dekad of October 2023, the moisture condition was enhanced over the southern and south-eastern Bega rain benefiting areas including south-western, central, eastern and western parts of the country. 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 rain during the dekad could play very crucial role to perform land preparation and to plant pulse and other short cycle crops. Moreover, the condition had positive impact for improving the availability of pasture and drinking water over both the pastoral and agro pastoral community. On the other hand, dry moisture condition was prevailing over some areas of the north-eastern and eastern portion of the country. This situation was favourable for harvest and post-harvest activities of matured crops. However the recorded agro-meteorological stations indicate heavy fall was reported locally heavy falls from few parts of the country which not affected agricultural activities.

During the second dekad of October 2023 Agricultural meteorological data collected from different parts of the country indicate that, there was intense moisture in the south and southeast parts of the country in terms of quantity and distribution. Thus, the obtained moisture had a good contribution to satisfy the water needs of the crops sown earlier in the highlands where combined agriculture is practiced, as well as to the pastoralists and Agro-pastoralists living in the area for grazing grass and drinking water supply. In addition, the moisture in the west and southwest was important in terms of satisfying the water needs of the crops that were sown late, did not complete their growth and needed additional moisture, as well as the permanent plants. On the other hand, the dry weather in most of the northern, central and eastern parts of the country created favorable conditions for the harvest in the areas where the crops were harvested, but had a negative impact on the crops that were sown late and did not complete their growth.

During the third dekad of October 2023, the analyzed agro meteorological information's indicated that the moisture condition was enhanced over the southern and

south-eastern Bega rain benefiting areas. The received moisture during the dekad could play very crucial role to perform different agricultural activities like fulfilling the water need of various Meher crops and perennial plants. Additionally, the condition had positive impact for 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 some areas which are characterized as moisture excess areas, particularly the southern, western and south western parts of the country might experience water logging, runoff, soil erosion and landslide due to continuous and heavy fall. Moreover the receiving moisture over some areas of central and northern parts 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 month of October 2023, according to the analyzed agro meteorological information, particularly in the third dekad of the month better moisture prevail over southern, south-eastern and south-western parts of the country. The observed enhanced moisture had positive implication for various Meher season crops which were under different phenological phases and also the observed improved moisture might be positive implication for pasture and drinking water and significantly important to regenerate natural and artificial ponds over both the southern and south-eastern pastoral and agro pastoral community where Bega is the second rain season. However the observed heavy fall over some parts of central, north-eastern and north-western parts of the country had been favour the existing Meher crops, which were lately planted and currently found at various growing stages and requiring additional moisture for their further development, the water needs of perennial plants as well as the enhanced moisture had good opportunity to collect rain water harvesting. On the other hand the observed heavy fall over some areas might have caused soil erosion, water logging and land slide as well as the flood affected crops, life and property.

# 1. WEATHER ASSESSMENT

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

During third Dekad of October 2023 the rain fall distribution was on pocket areas of Jimma Zone received  $\geq 200$ mm rain fall. pocket areas of North and South Gonder, West Wellega, Kamashi, Illibabur, Jimma, Keffa, Dawero, Keffa, Alaba, Woliyta, Hadiya, Basketo, , Bench Maji, South Omo, Amaro, Boren, Liben, Afder, Godere, Arsi West and East Hararghe Zones area received 50-100mm rain fall. pocket areas of West Tigray, Waghemera, South and North Wello, East Gojjam, Gambella Zone1&2 pocket areas of Bench Maji, Guji, Arsi, West and East Haraghe, Fik, Gode, Korahe Zones are received 5-25mm rain fall. The rest part of the country was received 0-5mm rain fall.

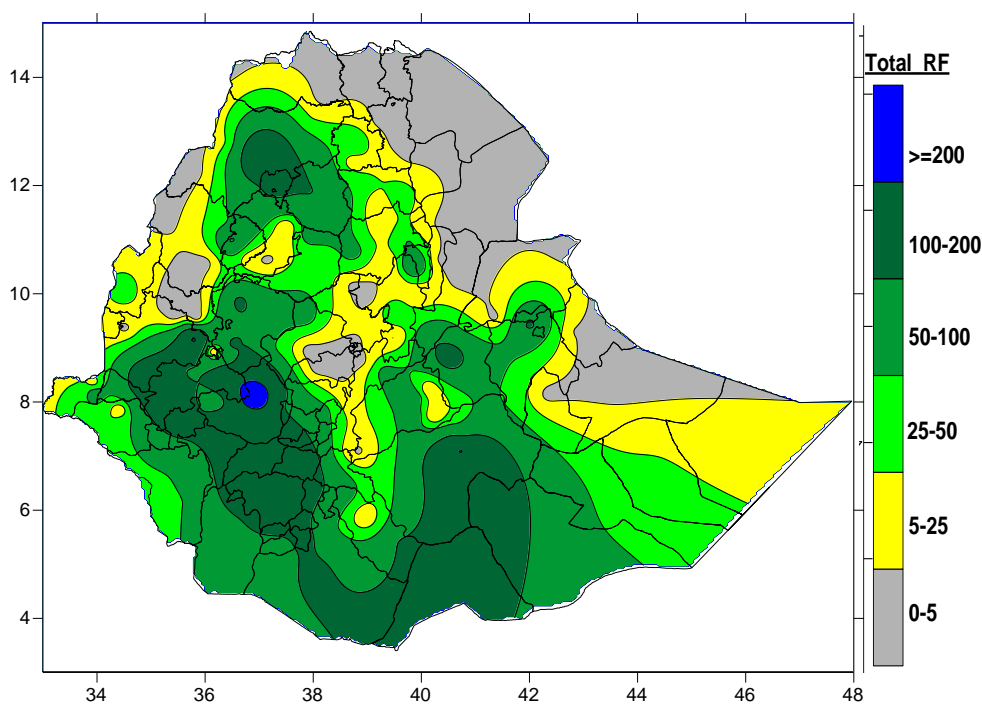


Fig 1. Rainfall distribution in mm (21 – 31) October 2023



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

During the month of October 2023, Southern and western half of the country exhibited Normal to below normal rainfall. The other parts of the country exhibited Normal to Much Below Normal rain fall condition.

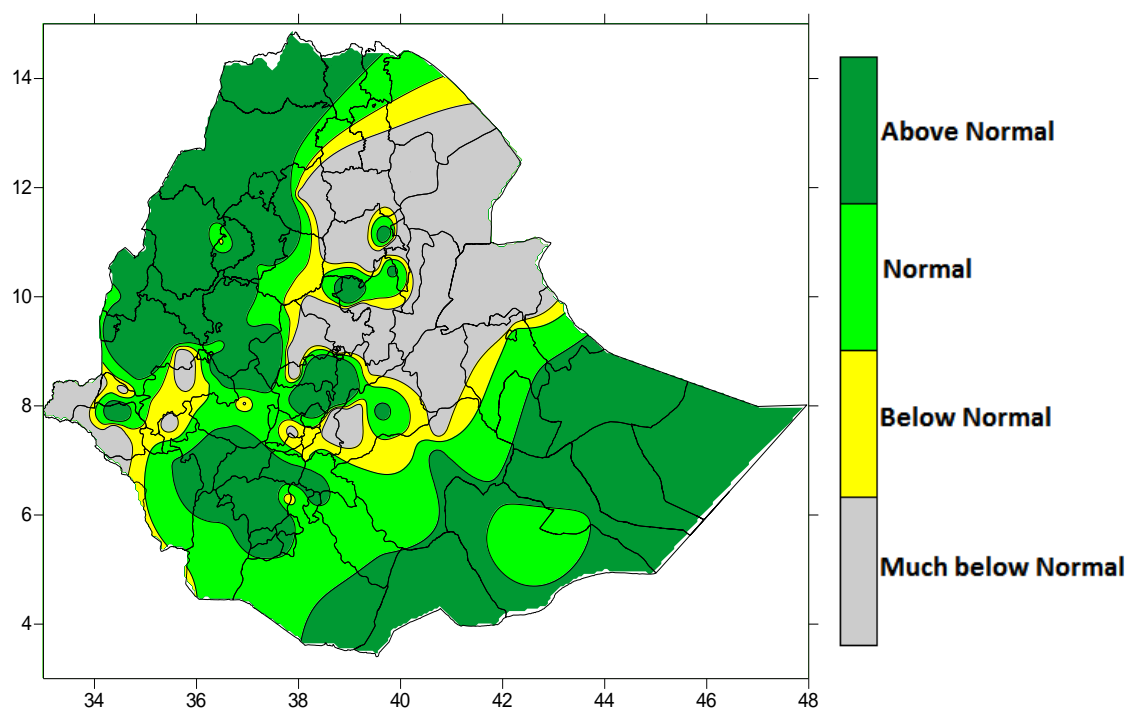


Fig. 2 Percent of normal rainfall distribution (21 – 31 October 2023)

### Explanatory notes for the Legend

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

### 1.1. Moisture status (21 – 31 October 2023)

Central, west, east and south Tigray, north and south Gonder, southern Tigray, north and south Wollo, Oromia especial zone, Bahir Dar, central Tigray, Agew-Awi, west and east Gojam, Assosa, Tongo, Kamashi, west and east Wellega, north, west, south west and north south Shewa, Addis Ababa zone, Afar zone 3, 4 & 5, Tongo, Illubabur, west and east Harergie, Harer, Gurage, Arsi, Harer, Jijiga, Godere, Sheka, Keffa, Jimma, YEM, KT, Alaba, Hadiya, Dawro, Welayita, Sidama, Bench Maji, Basketo, Gamo gofa, Gedeo, Guji , South Omo, Amaro, Guji, Afder, Gode, Deghabur and Korahе exhibited Humid to Moist moisture condition. The rest parts of the countries exhibited moderately dry to very dry.

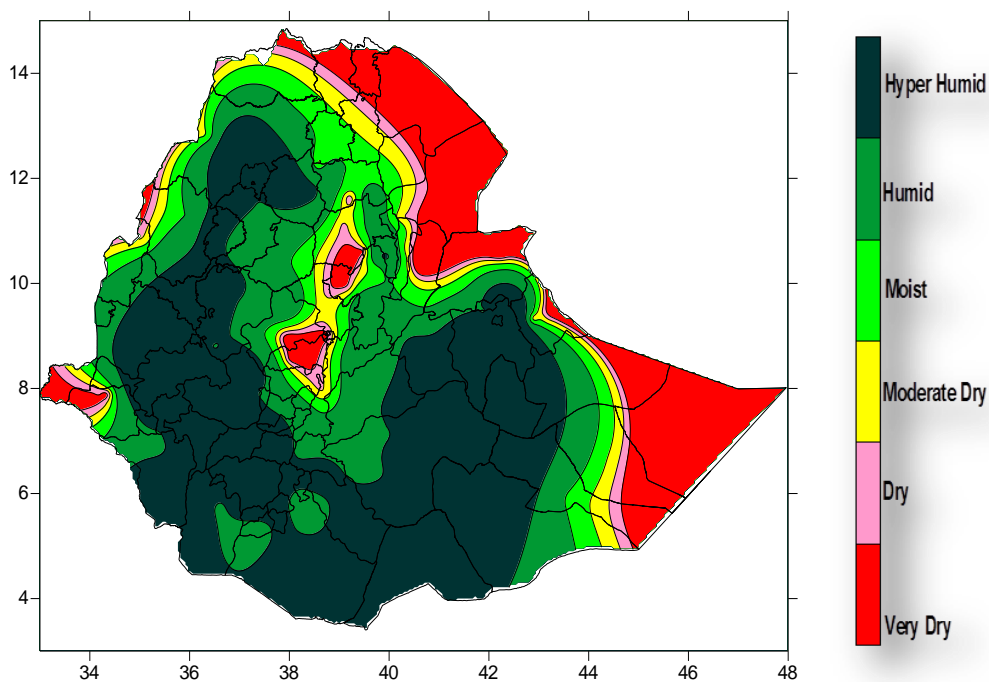


Fig. 3 Moisture Status (21-31 October 2023)

### 1.1. Rainfall amount on the month of October 2023

During the month of October 2023, the rainfall distribution Tip areas of North Gonder and West Welega, pocket areas of Illibabur Jimma, Keffa and Dawero, Basketo, South Omo, Konso, Gedo, half of Bale, Liben and Afder Zones are received  $\geq 200$ mm rain fall. Metkel, Bahir Dar, Assosa, Kamashi, Tango, West and East Wellega, Illibabur, Gambella Zone 1,2&3, Godere, Sheka, Jimma, Keffa, Dawero, Bench Maji, Basketo, South Omo, Dirasho, Gedo, Amaro, Borena, Guji, Liben, Afder Zones are received 100-200mm rain fall. North and South Gonder, East Gojam, East Wellega, West and South West Shewa, Gurage, Alaba, Hadiya, Arsi, West and East Hararghe, Fik, Degahabur, Gode, Koraha, Wardar Zones are 50-100mm rain fall. West, Centera, and South Tigray, Waghamera, South Wello, pocket areas of Zone 3,4&5, pocket areas of Shinile and Jijiga Zones are received 25-50mm rain fall. The rest part of the country was received 0-5mm rain fall

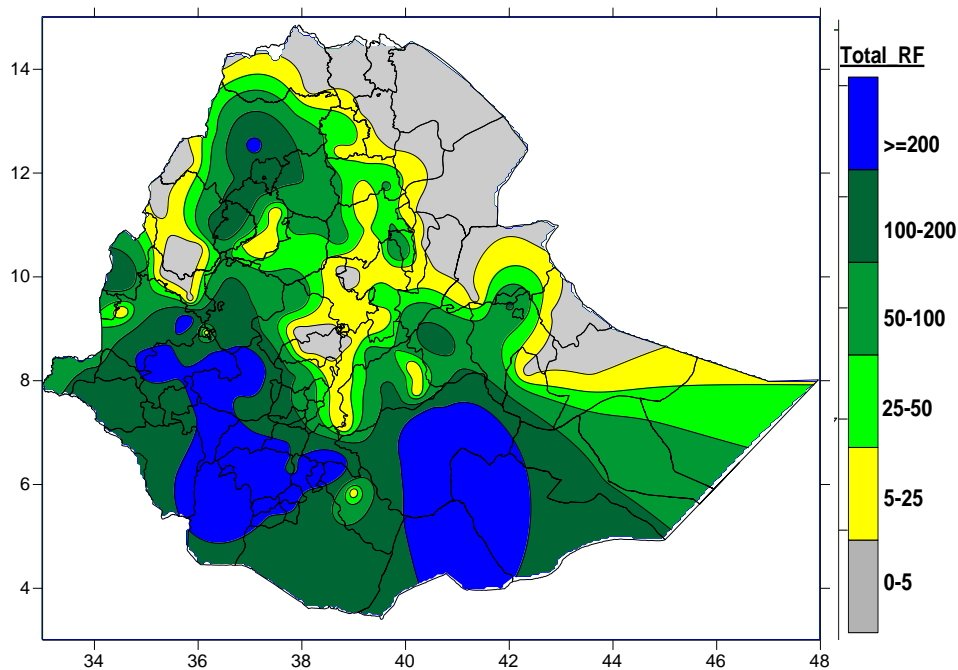


Fig. 4 Rainfall amount in mm for the month of October 2023

### 1.1. Rainfall Anomaly on the month of October 2023

During the month of July, South Gonder, Bahir Dar, west and east Gojam, Agew-Awi, east and west Wellega, Kamashi, Tongo, Gambela zone 1, 2 &3, Godere, Sheka, Illubabur, Jimma, Keffa, Gurage, Selti, Alaba, Hadiya, Welayita, Sidama, north, south west and west Shewa, Addis Ababa zone, Arsi, Bale, Afar zone 2, 3 & 5, west and east Harergie, Harer, Jijiga, Fik, South Omo, Derashe, Konso, Burji, Amaro, Borena, Liben, Afer and Gode have exhibited normal to above normal amount of rainfall. The rest parts of country exhibited below to much below normal rainfall.

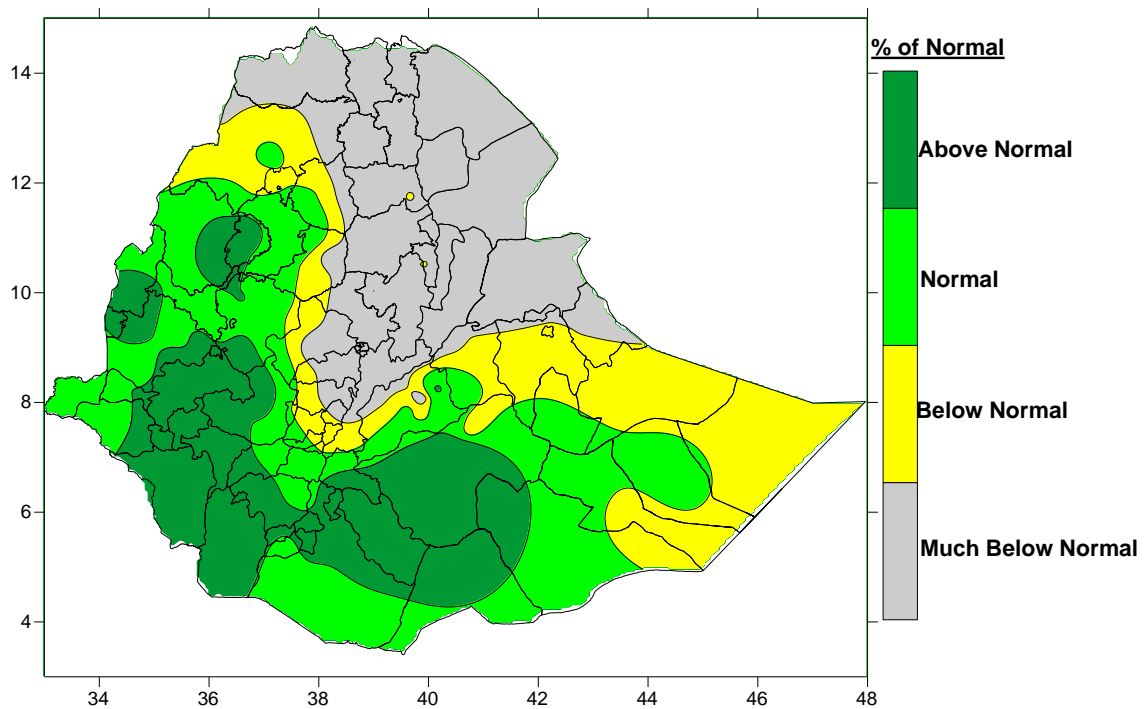


Fig. 5 Percent of Normal Rainfall for the month of October 2023

#### Explanatory notes for the Legend

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

### 1.1. Moisture status on the month of October 2023

In accordance with the moisture status map below, southern and western half of the country exhibited hyper humid to Moist moisture condition. The rest parts of the countries exhibited moderately dry to very dry

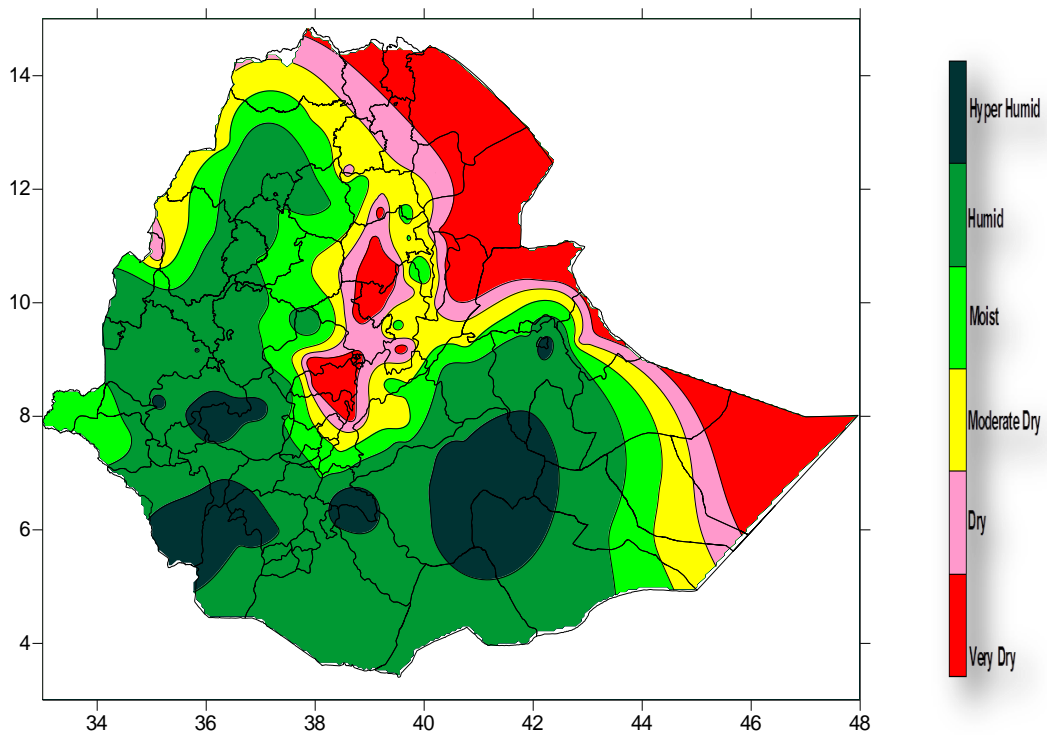


Fig. 6 moisture status for the month of October 2023

## 2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

### 2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE ON THE MONTH OF OCTOBER 2023

During the month of October 2023, Due to dekad by dekad increasing of the enhanced moisture the NDVI Fig.7 (green plant coverage ) and RLWRSI over the region during the month could play very crucial role to perform different agricultural activities and the condition had positive impact for improving the availability of pasture and drinking water over both the pastoral and agro pastoral community.

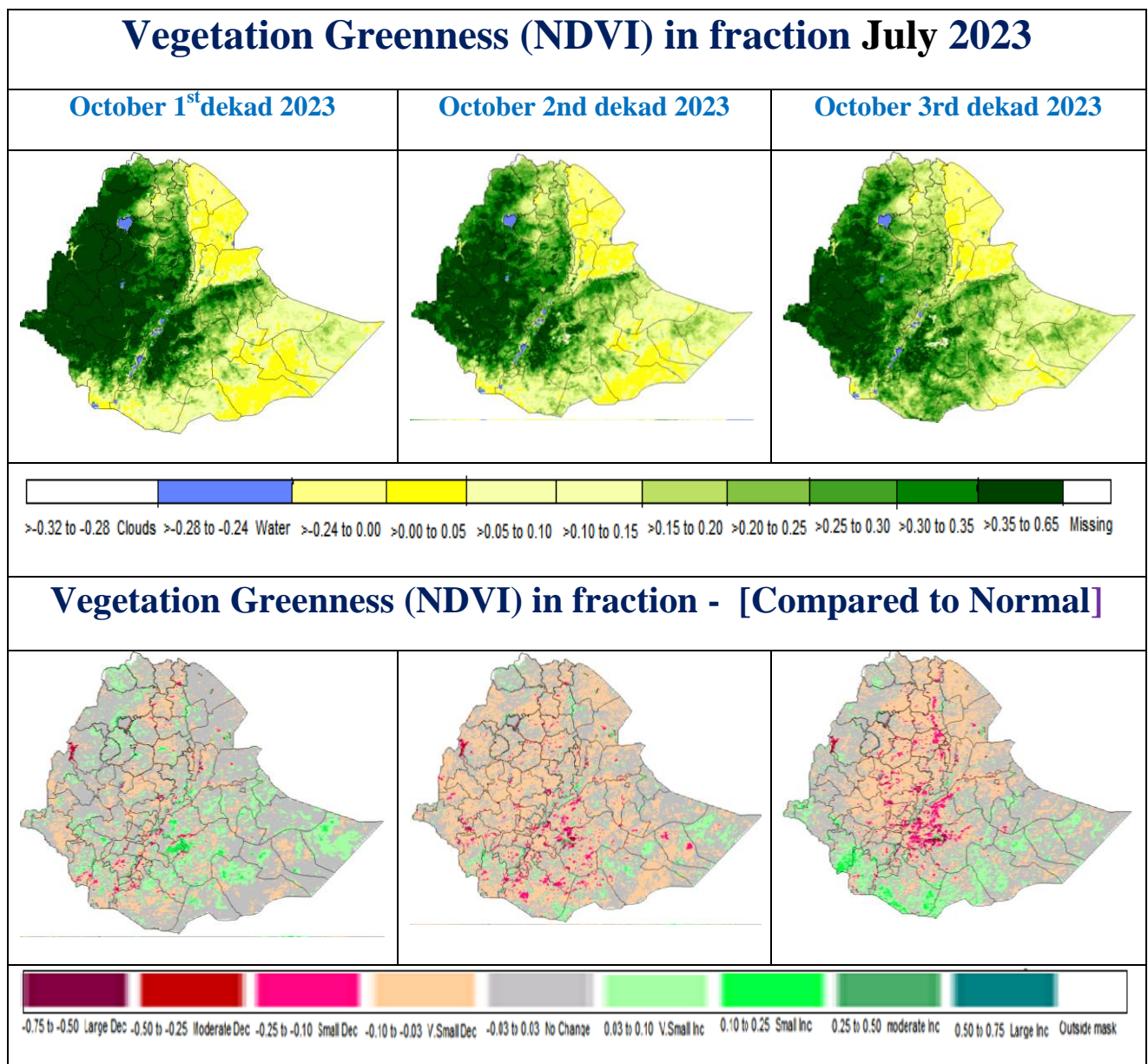


Fig.7 Vegetation Greenness (NDVI) in fraction and Compared to Normal October 2023.

## **2.2. EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING MONTH OF NOVEMBER 2023.**

In normal condition, during the month of November most part of the country is subjected for dry moisture condition and harvest and post-harvest activities of fully matured crops are widely performed in most Meher season growing areas, while some of the south-western, southern and south eastern part of the country receive different amount of rainfall.

According to the weather forecast, in the coming month of November 2023, the moisture condition is likely to have a relative strength over south and south-eastern parts of the country where Bega is second rainy season will create favourable conditions for the waer needs of Bega crops over the highland parts and insure the availability of pasture and drinking water to improve animals feeds and fodder as well as regeneration of natural and artificial ponds. The enhanced moisture will have a good opportunity to collect and store rainwater. Moreover the expected enhanced moisture over south-western parts of the country will have positive contribution to satisfy the daily water need have lately planted Meher crops that need complete growth, perennial plants and to improve the availability of pasture and drinking water particularly over the southern portion of the country. On the other hand the expected unseasonal rain over central, eastern and north-eastern might be negatively affected harvest and post-harvest activities. However, the expected heavy fall over south-western and southern half of the country would have positive contribution crop which found in different growth stage perennial plants, improve the availability of pasture and drinking water over south and south-eastern pastoral and agro pastoral areas and which gives good opportunity to collect rain water harvesting. On the other hand, the observed heavy fall over some areas which are characterized as moisture excess areas might experience water logging, runoff and soil erosion due to heavy fall. Therefore, farmers need to be assisted by agricultural professional for effective management of control excess moisture conditions. In addition to this, the expected occasional unseasonal rain to prevail over central, eastern and north-eastern Meher producing areas of the country over seasonally dry sectors in areas where crops are ready to harvest of the country would have negative impact on harvest and post-harvest activities. Thus, harvest and post-harvest activities should be undertaken on time in order to avoid unnecessary harvest and post-harvest loses. Moreover, the expected unseasonable rainfall would favor the occurrence of crop pests and disease. Therefore, farmers are advised properly and regularly visit their farm fields for monitoring pest and diseases for proper precaution should be undertaken ahead of time to minimize loses.

### **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.

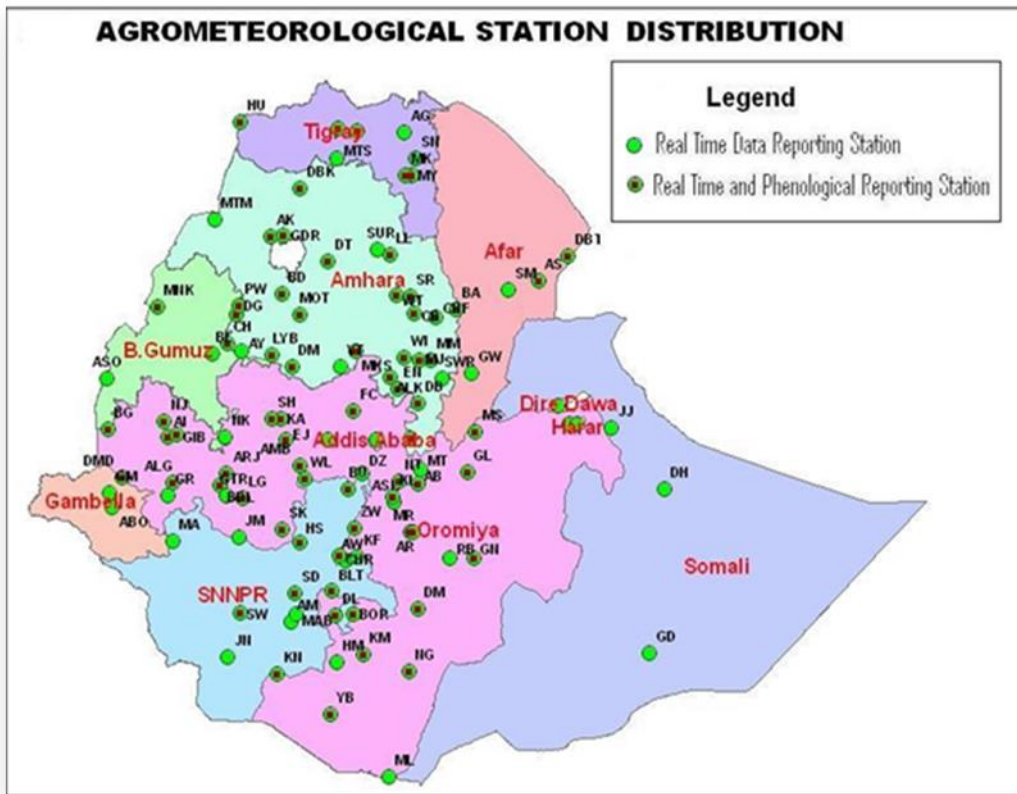
**EXTREME TEMPERATURE:-** The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

**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	SG
Assosa	ASO	Filtu	FL	M/Abaya	MAB	Gebeya	SR
Awassa	AW	Gambela	GM	Maichew	MY	Sirinka	SD
Aykel	AK	Gelemso	GL	Majete	MJ	Sodo	SD
B. Dar	BD	Ginir	GN	Masha	MA	WegelTena	WT
Bati	BA	Gode	GD	Masha	MA	Woliso	WL
Bedelle	BDL	Gonder	GDR	Mekele	MK	Woreilu	WI
BUI	BU	Gore	GR	Merraro	MR	Yabello	YB
Combolcha	CB	H/Mariam	HM	Metehara	MT	Ziway	ZW
D. Berehan	DB	Harer	HR	Metema	MTM		
D. Habour	DH	Holleta	HL	Mieso	MS		
D. Markos	DM	Hossaina	HS	Moyale	ML		
				M/Selam	MSL		