# ETHIOPIA METEOROLOGY INISTITUTE 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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# አሀፅሮት እ.ኤ.አ ኤፕሪል 2023

በሚቀዋለው የኤፕሪል የመጀመሪያው አሥር ቀናት በተለይም የበልግ ዝናብ ተጠቃሚ ሥፍራዎች ላይ ለዝናብ መፈጠር አመቺ የሆኑ የሚቲዎሮሎጂ ገጽታዎች በተለያዩ ቀናት አንጻራዊ ዋንካሬ እንደሚኖራቸው እና በአብዛኛው ቦታዎቻቸው ላይ ከቀላል እስከ መካከለኛ መጠን ያለው እርጥበት እንደሚሚያገኙ የትንበያ መረጃዎች ይጠቁማሉ። ይህም ሁኔታ በትንበያው ላይ ለተጠቀሱት የበልግ አብቃይ እና ተጠቃሚ አካባቢዎች ለሚያከናውኑት የግብርና እንቅስቃሴ ቀደም ብለው ለተዘሩ ለበልግ ሰብሎች፣ ለቋሚ ተክሎች የውኃ ፍላጎት *መ*ሟላት እንዲሁም የረጅም ጊዜ ሰብሎችን ለመዝራት ምቹ ሁኔታ እንደሚኖር የሚጠበቅ በመሆኑ አርሶ አደሮች ተገቢ የሆኑ **ግብአቶችን በማካተት የ**እርሻ ሥራውን በተሟላ መልኩ ማካሄድ አስፈላጊ ነው።: በአንጻሩም የሚጠበቀው እርጥበት ለአርብቶ አደሮችና ለከፊል አርብቶ አደር አካባቢዎች ለከብቶች መኖና ለመጠዋ ውኃ አቅርቦት ከፍተኛ ሚና ይኖረዋል፡፡ ከዚሁም ጋር ተያይዞ አልፎ አልፎ ከሚጠናከሩ ዝናብ ሰጭ የሚቲዎሮሎጂ ገጽታዎች በአንዳንድ ቦታዎች ላይ የሚጠበቀው ከባድ ዝናብ ለወቅቱ የእርሻ ስራ እንቅሥቃሴ አመቺ ሁኔታን የሚፈዋር ቢሆንም በተወሰኑ ውሀ ነብ በሆኑና በወንዝ ዳርቻ ባለ *ማሣዎች ላይ የውሃ መተኛትና የአፈር መታጠብን ሲያስ*ከትል ስለሚችል ለዚሁ ችግር ተጋሳጭ በሆኑ አካባቢዎች ተገቢው ጥንቃቄ መደረግ ይኖርበታል። በሌላ በኩል እርዋበት አጠር የሆኑ አካባቢዎች የሚገኘውን ውኃ የተለያዬ የእርዋበት ማቆ<u>ያ</u> ዘዴዎችን አጠናክሮ በመስራት በመካከል ለሚገዋሙ ደረቅ ሰሞናት አገልግሎት ላይ እንዲውሉ የማድርግ ስራዎች ተጠናከረው እንዲከናወኑ ይመከራል ፡፡

ባሳለፍንዉ የኤፕሪል ሁለተኛ አስር ቀናት ከተለያዩ የሀገሪቱ አካባቢዎች ላይ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች እንደሚያመለክቱት በአብዛኛው የበልግ ዝናብ ተጠቃሚ አካባቢዎች ላይ ከባለፊዉ አስራ ቀናት በተለየ የእርጥበት ሁኔታው የመጨመር አዝማሚያ ታይቶበታል፡፡ ይህም ሁኔታ በተለይም የበልግ ሰብል አብቃይ በሆኑት የሀገሪቱ አካባቢዎች ላይ የተሻለ የአፌር ውስጥ እርጥበት እንዲኖራቸው ያስቻለ ከመሆኑ ጋር ተያይዞ አስቀድመው ለተዘሩ የበልግ ወቅት ሰብሎችም ሆነ በአካባቢዎቹ ለሚበቅሉ ቋሚ ተክሎች እንዲሁም ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት በነ ጎን ንበረው። በተጨማሪም ወደ ምዕራብና ደቡብ መዕራብ በመስፋፊት ላይ የነበረው አርተበት የረጅም ጊዜ ሰብሎችን ለሚዘሩ አካባቢዎች አዎንታዊ አስተዋዕዖ የነበረዉ ሲሆን በተጨማሪም በአንዳንድ ሥፍራዎች ላይ በ24 ሰዓት ውስዋ መጠኑ ከ30 ሚ.ሜ የበለጠ ከባድ ዝናብ የተመዘገበባቸው ሲሆን ከዚሁም ጋር ተያይዞ የተገኘው ከፍተኛ መጠን ያለው እርተበት በተለይም ውኃ አጠር ለሆኑት አካባቢዎች የዝናብ ውኃን ለማሰባሰብና ለማከማቸት መልካም አጋጣሚን የፌጠረ ቢሆንም በአንዳንድ ቦታዎቻቸው ላይ በተለያየ የእድገት ደረጃ ላይ በሚገኙ ሰብሎች ላይ በተወሰን መልኩ አሉታዊ ተፅዕኖ ነበረው፡፡ በሌላ በኩል በሀገራቱ ቆሳማ አካባቢዎች ላይ ማለትም በምዕራብ እና በደቡብ ምዕራብ፣ በሰሜን ምስራት፣ በደቡብ ምሥራት እና በደቡብ የሀገሪቱ ዳርቻዎች ላይ በአብዛኛዎቹ ቀናት ከ35 ዲሴ በላይ ሆኖ የተመዘገበ ሲሆን ይህም የነበረው ይሐያማና ሞቃታማ የአየር ሁኔታ በአካባቢው ከነበረው የእርተበት እዋረት ጋር ተዳምሮ በወቅቱ አጠቃላይ የግብርና ሥራ እንቅስቃሴ እንዲሁም በአርብቶ አደሩ አካባቢ የእንሰሳት መኖና ውኃ አቅርቦት ላይ በመጠኑም ቢሆን አሉታዊ ተፅዕኖ ነበረው።

ባሳለፍነው የኤፕሪል ሶስተኛዉ አስር ቀናት የተተነተኑ የግብርና ሚቲዎሮሎጂ መረጃዎች እንደሚያመለክቱት በአብዛኛዎቹ የበልግ ሰብል አብቃይና የበልግ ዝናብ ተጠቃሚ በሆኑት የሀገሪቱ አካባቢዎች ላይ በአንፃራዊ መልኩ በመጠንም ሆነ በስርጭት ረገድ ከባለፉት አስር ቀናት የተሻለ የእርዋበት ሁኔታ ነበራቸው፡፡ ከዚሁ *ጋ*ር ተያይዞ በአንዳንድ አካባቢዎችም ካባድ ዝናብ እንደነበራቸው ከተለያዩ የሀገሪቱ ክፍሎች የተሰበሰቡ መረጃዎች አመልክተዋል፡፡ ይህም ሁኔታ አስቀድመው ስተዘሩ የበልግ ስብሎች፣ ለቋሚ ተክሎች የውኃ ፍላጎታቸውን ከማሟላት አፃር እንዲሁም ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ ማና የነበረው ሲሆን በተለይም ወደ ምዕራብና ደቡብ *መዕራብ በመስፋ*ፈት ላይ የነበረው እርተበት ከኤፕሪል ጀምሮ ለሚዘሩ የረጅም ጊዜ ሰብሎች ማሳን ለማዘጋጀትም ሆነ ዘር ለመዝራት ጠቀሜታው የጎላ ነበር። በተጨማሪም በአንዳንድ ሥፍራዎች ላይ በ24 ሰዓት ውስጥ መጠኑ ከ30 ሚ.ሜ የበለጠ ከባድ ዝናብ የተመዘገበባቸው ሲሆን ከዚሁም ጋር ተያይዞ የተገኘው ከፍተኛ መጠን ያለው እርጥበት በተለይም ውኃ አጠር ለሆኑት አካባቢዎች የዝናብ ውኃን ለማሰባሰብና ለማከማቸት መልካም ኢጋጣሚን የፈጠረ ቢሆንም በአንዳንድ ቦታዎቻቸው ላይ ከነበረው ከባድ ዝናብ ጋር ተያይዞ የነበረው ቅጽበታዊ ጎርፍ በተለያየ የእድነት ደረጃ ሳይ በሚገኙ ሰብሎች ሳይ አሉታዊ ተፅ**ዕኖ ነበረው፡፡ በሌሳ በኩል በሀገሪ**ቱ ቆሳማ አካባቢዎች ላይ ማለትም በምዕራብ እና በደቡብ ምዕራብ፣ በሰሜን ምስራቅ፣ በደቡብ ምሥራቅ እና በደቡብ የሀገሪቱ ዳርቻዎች ላይ በአብዛኛዎቹ ቀናት ከ35 ዲሴ በላይ በተጨማሪም በተቂት አከባቢዎች ላይ ደግሞ ከ40 ዲሴ በላይ ሆኖ የተመዘገበ ሲሆን ይህም የነበረው ፀሐያማና ሞቃታማ የአየር ሁኔታ ከእፅዋትና ከአካባቢያቸው የሚኖረውን ትንት ስለሚያባብሰው ከነበረው የእርተበት እተረት ጋር ተዳምሮ በወቅቱ አጠቃላይ የግብርና ሥራ እንቅስቃሴ እንዲሁም በአርብቶ አደሩ አካባቢ የእንሰሳት መኖና ውኃ አቅርቦት ላይ በመጠኑም ቢሆን አሉታዊ ተፅዕኖ ነበረዉ፡፡

ባለፈው የአፕሪል ወር የመጀመሪያው አስር ቀናት የእርግበት ሁኔታው በምስራቅ፣ በደቡብ ምስራቅ፣ በመካከለኛው እና በደቡብ ምዕራብ የሀገሪቱ አከባቢዎች ሳይ ተወስኖ የነበረ ቢሆንም በሁለተኛውና በሶስተኛው አስር ቀናቶች ለበልግ ዝናብ መልጠር መንስኤ የሆኑ የአየር ሁኔታ ክስተቶች የተጠናከሩ ስለነበሩ ከሰሜን ምዕራብ በስተቀር በአብዛኛዎቹ የሀገሪቱ አካባቢዎቹ በመጠንም ሆነ በስርጭት ረገድ የተስፋፋና የተጠናከረ እርጥበት ነበራቸው። ይህም ሁኔታ ቀደም ብለው ተዘርተው በተለያየ የእድነት ደረጃ ላይ ለሚገኙ የበልግ ሰብሎች ቀጣይ እድነታቸው ላይ የጎሳ ጠቀሜታ የነበረው ሲሆን በተለይም ከኤፕሪል ጀምሮ ለሚዘሩ የረጅም ጊዜ ሰብሎች ማሳን ለማዘጋጀትም ሆነ ዘር ለመዝራት፣ ለቋሚ ሰብሎች የውሃ ፍላጎት መሟላት በተጨማሪም ለአርብቶ አደሮችና ከፊል አርብቶ አደሮች አመቺ ሁኔታን የፈጠረ ነበር፡፡ በሌላም በኩል በአብዛኛው የሀገሪቱ ሥፍራዎች ላይ በ24 ሰዓት ውስዋ መጠኑ ከ30 ሚ.ሜ የበለጠ ከባድ ዝናብ የተመዘገበባቸው ሲሆን ከዚሁም *ጋ*ር ተያይዞ የተገኘው ከፍተኛ መጠን ያለው እርሞበት ለአዝፅርቱ የውሃ ፍላጎት መሟላት፣ ለግጦሽ ሳርና ለመጠዋ ውሃ አቅርቦት በጎ ጎን የነበረውና በተለይም ውኃ አጠር ለሆኑት አካባቢዎች የዝናብ ውሃን ለማሰባሰብና ለማከማቸት መልካም ኢጋጣሚን የፈጠረ ቢሆንም በብዙ የሀገሪቱ አካባቢዎች የነበረው ከባድ ዝናብና ቅጽበታዊ ጎርፍ በተለያየ የእድነት ደረጃዎች ላይ ባሉ ሰብሎች እንዲሁም በሰው እና በንብረት ላይ በተወሰነ መልኩ አሉታዊ ተፅዕኖ *ነበረው*።

# SUMMARY

## **APRIL 2023**

During first Dekade of April 2023 the analyzed agricultural meteorological data indicate that in most parts of belg growing areas of the country, had received better moisture conditions. They experienced light to heavy humidity condition for several days, particularly in south, south west, and south-east regions of the country. This situation will be crucial for continuous growth of Belg crops that have been sown earlier and in different stages of maturity. They also provided drinking water and grazing grass for Agro-pastoral areas and helped to satisfying the water needs of perennial crops, as well as helping to prepare the land for long-term crops and seed farming activities. On the other hand, some areas of Western, Central, South Western and South Eastern parts of the country received heavy rain fall amount, in line with Abomsa 60.0, Amba-Mariyam 39.0, Bui 63.8, Bore 30.7, Diredawa 30.1, Gelemso 51.5, Gewane 34.5, Konso 31.5, Masha 40.4 and 30.6, Woliso 36.9 mm rain fall was received. Due to these the heavy moisture condition had a negative side but contributed significantly to most of the agricultural activities.

During the second dekad of April 2023 the analyzed agro meteorological information indicated that the moisture condition had shown relative strength across Belg season rain benefiting areas comparing with the previous dekade. In line with this, eastern Tigray and Amahra, Central, southern and western Oromia, Gambela, SNNPR, and in some pocket areas of south Afar and eastern parts of the country experienced rainfall in the range of light to moderate in amount. This situation had positive role for early sown of Belg crops which found in different growing stages as well as satisfy the water need of perianal plants and for availability of pastors and drinking water across the pastoral and agro-pastoral areas. In addition, the received moisture during the dekad under review might have positive impact for land preparation for areas which supposed to plant long cycle crops earlier. In like manner, the observed moisture in the southern low land parts of the country could be crucially important toward the availability of pasture and drinking water for the pastoralist and agro pastoralist community. Moreover, the obtained heavy rainfall could be favorable, for farmers who are in moisture stress areas, to collect and store rainwater where that can be used in time of deficit. On the other hand, daily extreme maximum temperature has shown a relative increase over western, south-western, northeast, southeast, southern margin areas recorded Temperatures above 35°C. This, coupled with the lack of moisture in the sunny and hot weather, had a negative impact on the general agricultural activity as well as the provision of animal feed and drinking water for over most of the rang land.

During the third dekad of April 2023, According to the analyzed agrometeorological information, most of Belg crop growing as well as Belg season rain benefiting areas comparing to the last dekads experienced enhanced moisture situation in amount and distribution. In relation with the enhanced moisture condition heavy rainfall 30mm and above during 24hrs period were reported at several agro-meteorological stations. This situation might have positive impact on moisture requirement of Belg crops found at various phases of growth and water need of perennial plants, the observed condition was positive to conduct land preparation and sowing of long cycle crops that could be performed during April, it could also gave good opportunity to perform rainwater harvesting and storing. Moreover the situation might have positive impact on the ongoing Belg agricultural activities normally moisture deficit areas and water harvesting where that can be used in time of deficit, the observed widespread moisture distribution could also have indispensable contribution on the availability of pasture and drinking water for pastoral areas. However, due to the pronounced widespread and intensified rainfall over some places of the aforementioned areas might result in crop damage, which were attaining at different phenological stages. On the other hand, daily extreme maximum temperature has shown a relative increase over western, southwestern, northeast, southeast, southern margin areas recorded Temperatures above 35°C. This, coupled with the lack of moisture in the sunny and hot weather, had a negative impact on the general agricultural activity as well as the provision of animal feed and drinking water for over most of the rang land.

In general, during the month of April 2023, in the first dekad of the month the moisture condition prevailed only over eastern, south-eastern, central and western parts of the country. During the second and third dekad rain bearing meteorological phenomena was strengthening in amount and distribution over much of Belg rain benefiting area of the country except north western parts. This situation might have positive impact on moisture requirement of different Belg and Meher long cycle crops found at various phases of growth, perennial plants, general agricultural activities, improve pasture and drinking water availability in pastoral and agro pastoral low land areas. Besides, the observed heavy rainfall over much of the country might have positive impact on the ongoing Belg agricultural activities normally moisture deficit areas and water harvesting where that can be used in time

of deficit. Moreover the observed widespread rainfall distribution could also have indispensable contribution on the availability of pasture and drinking water for pastoral areas. On the other hand, the observed extreme heavy fall greater than 30mm in one rainy day may cause flood and water logging on crops field in low lying areas and soil erosion on sloppy areas as well as it could affect the sowing activities by washing away the newly sown Meher seeds in areas where sowing activities are the main practices at this time of the year.

### 1. WEATHER ASSESSMENT

#### 1.1. Rainfall amount (21 – 30) April 2023

During third dekade of April 2023 the rain fall amount was pocket areas of Bale Zone recived > 200mm rain fall, pocket areas of SW Shewa, Gurage, Guji, Derashe, Gedo Bale, Fik, Afder, LibenZones are recived 100-200 mm rain fall. pocket areas of North and south Gonder, North and Sputh Wello, East Gojam, South West, West Shewa, Addis Ababa Zone, half of Illibabur, Jimma, Gurage,Shka, Godere, Keffa, Bench Maji, Dawero, South Omo, Konso, Amaro Borena, Godere, Guji, Sidama, Arsi, Bale, LibenAfder, West and East Hararghe, Fik, Shinile, Gode Zones are Recived50-100mm rain fall. The rest part of the country recived 0-25 mm rain fall

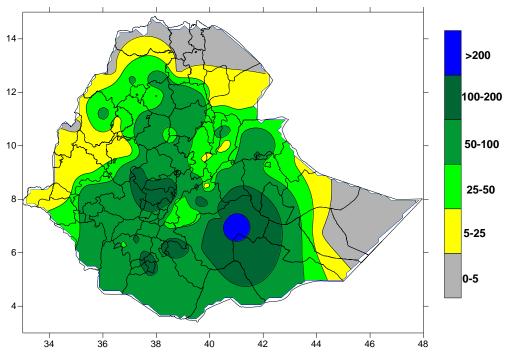


Fig 1. Rainfall distribution in mm (21-31) April 2023

## 1.2. Rainfall Anomaly (21 – 30 April 2023)

During Third dekade of April 2023 the rain fall anomaly was except pocket areas of North Gonder, Gambella zone 1,2&3, from somali Region Degahabur, Korahe and Wardar Zones are exhibited Normal to Above Normal Rain Fall Condition.

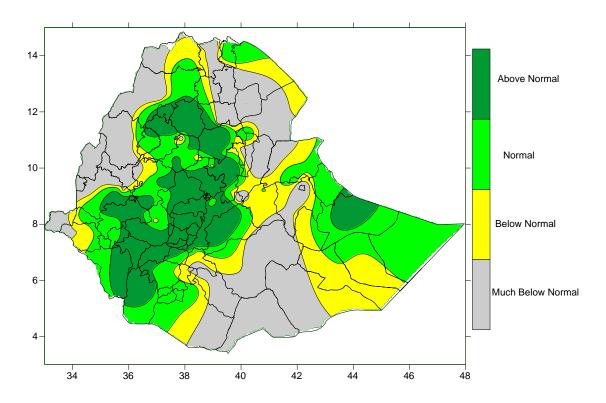


Fig. 2 Percent of normal rainfall distribution (21 - 30) April 2023

### **Explanatory notes for the Legend**

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

# **1.3. Moisture Condition** (21 – **30** April 2023)

As indicated on the moisture status map below during third dekad of April 2023 most parts of Belg growing and rain benefiting areas of the country exhibited Moist to Hyper Moist moisture condition. The rest parts of the countries exhibited moderately Dry too Very Dry.

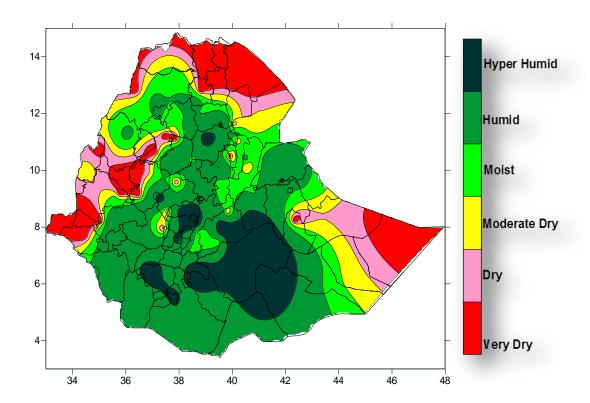


Fig. 3 moisture status for (21 - 30 April, 2023)

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

On Month of April 2023, the rain fall amount was pocket areas of South WELLO, Sheka, Godere, Keffa, half of Bench Maji, Basketo, South Omo, tip area of Gedo, Gurage and Arsi, Bale Zone, Pockrt areas of Afder, West and Eas Hararghe and Fik Zones ara recived >200mm rain fall. Pocket areas of south Gonder, North and SouthWello, Oromia Zone, East Gojjam, East Wellega, West and South WEST Shewa, Alaba, Habdiya, Illibabur, Jimma, Gambella Zone2, Dawero, Amaro, Konso, Borena, Guji,, Gurage, Liben, Bale, Arsi, West and East Hararghe, Fik, Afder, Gode Zoes are recived 100-200mm rain fall. North and South Gonder, pocket areas of Waghemera, Afar Zone 1,3,4&5pocket areas of East Gojjam, East and Wellega, Gambella Zone 2, pocket areas of Shinili, Jijiga, Degahabur, Korahe Zones are received 50-100 mm rain fall. Pocket areas of North Gonder, Waghimera, Baher dar, West Gojjam, Agew Awi, Metkel, East and West Wellega, Gmbela Zone 2&3, pocket areas of Afar Zone 1&4, pocket areas of Shinile, Degahabur and Korahe Zones are received 25-50mm rain fall.

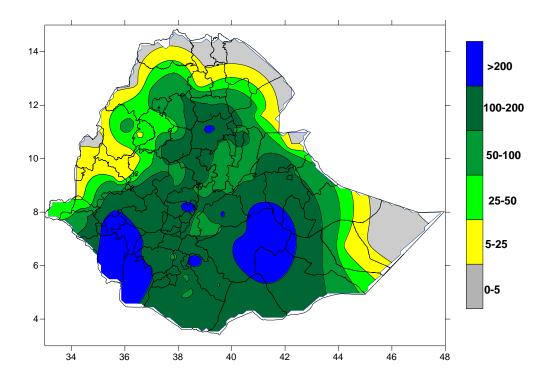


Fig 4.Rainfall amount in mm for the month of April 2023

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

During month of April 2023 the rain fall anomaly was except pocket areas of North Gonder, pocket areas of Assosa, Tango and Kamshe, from somali Region Degahabur, Korahe and Wardar Zones are exhibited Normal to Above Normal Rain Fall Condition.

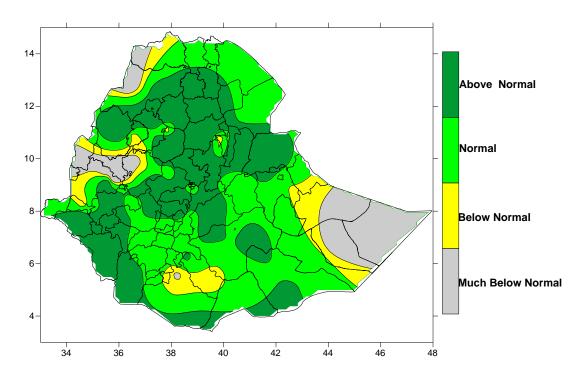


Fig. 5 Percent of Normal Rainfall for the month of April 2023

## **Explanatory notes for the Legend**

< 50-Much below normal 50-75%-Below normal

75-125% - Normal

> 125% - Above normal

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

In accordance with the moisture status map below most of belg rain benefiting and crop producing areas of the country like South and north Wollo, Oromia especial zone, Illubabor, Gambela zone 2, Godere, Jimma, Keffa, Dawero, Welayita, South Omo, Dirashe, Amaro, south west, west and east Wellega, Selite, Addis Ababa zone, Gurage, Alaba, KT, Hadiya, Sidama, Basketo, Gamo gofa, Konso, Burji and Borena exhibited Humid to Moist moisture condition. The rest parts of the countries exhibited moderately dry to very dry.

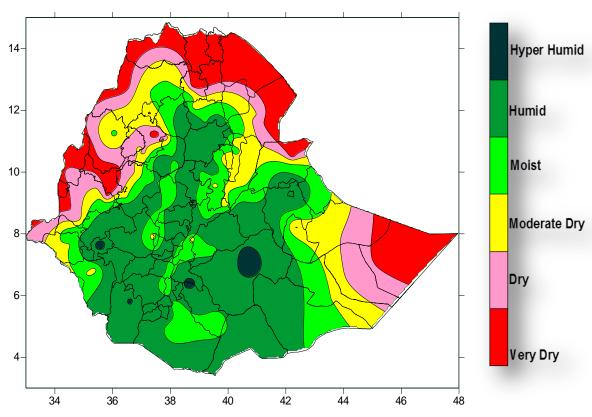
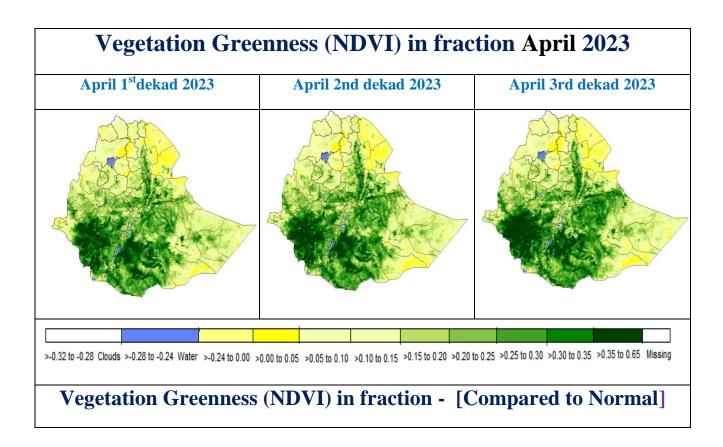


Fig. 6. moisture status for the month of April 2023

# 2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

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

Generally during the month of April, due to the relative strengthening of rain bearing meteorological systems better moisture has been steadily improving day by day, particularly north eastern, central and eastern parts of the country experienced light to medium moisture. Also after the first dekad of the month relative increase in moisture was observed over southern and south-eastern pastoral and agro-pastoral areas including, the south-western, north-eastern and central parts of the country due to increment of moisture the vegetation condition across the country indicated average and above average vegetation condition (Fig.7. NDVI and Fig.8.Rangeland WRSI in %) which condition was satisfy the water need of perennial plants. In addition, the extended moisture over south and south-eastern parts highly favourable the generation of pasture and the availability of drinking water as well as improves the soil moisture content and replenishes the water points. over pastoral and agro pastoral areas.



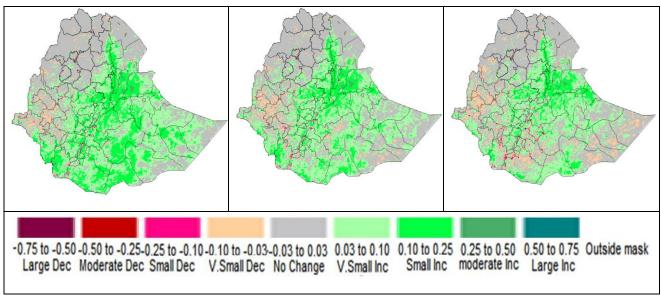


Fig. 7. Vegetation Greenness (NDVI) in fraction and Compared to Normal April 2023.

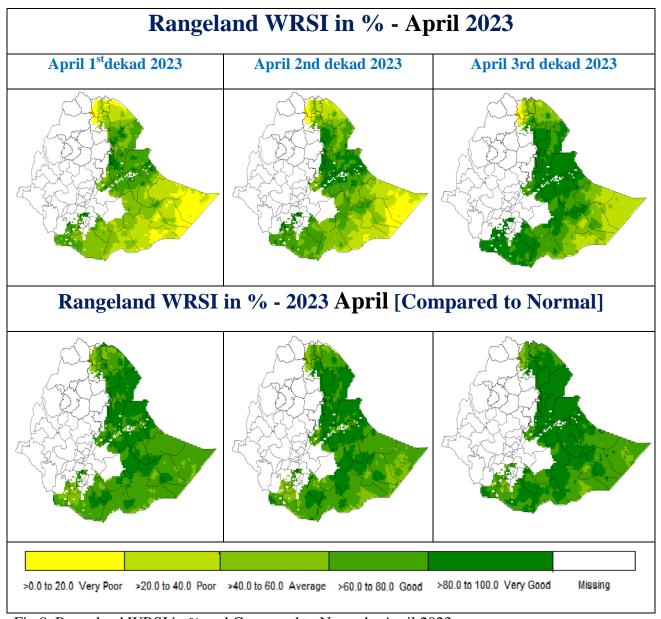


Fig.8. Rangeland WRSI in % and Compared to Normal - April 2023

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

In the coming month of May 2023, the meteorological forecast information indicates that the seasonal rainfall activity is expected to continue most parts of the country. In line with this, in most parts of the country expected slight to heavy rain fall. This situation expect to improve moisture requirement of Belg crops found at different phases of growth, perennial plants, pasture and drinking water availability in pastoral and agro pastoral areas and the anticipated better rainfall distribution towards the western half of the country would favour sowing activities of cereal crops like maize and sorghum and land preparation for the coming Meher season as well. However, the expected heavy fall over some areas of the aforementioned areas would have a negative impact on crop fields' particularly over lowlying areas Thus, proper attention should be undertaken to minimize the risk in areas where there is no proper drainage system and low-lying areas making furrow and channel in order to reduce the effect of excess rain. Moreover, in areas where moist and warm condition with erratic rainfall is anticipated there would be a possibility of pest outbreak since the expected weather condition is favourable for the event. Thus, attention should be given for sensitive areas by continuous monitoring farm fields ahead of time to control the possible risk below economic threshold level.

# 3. <u>DEFNITION OF TERMS</u>

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

**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 cover s 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.

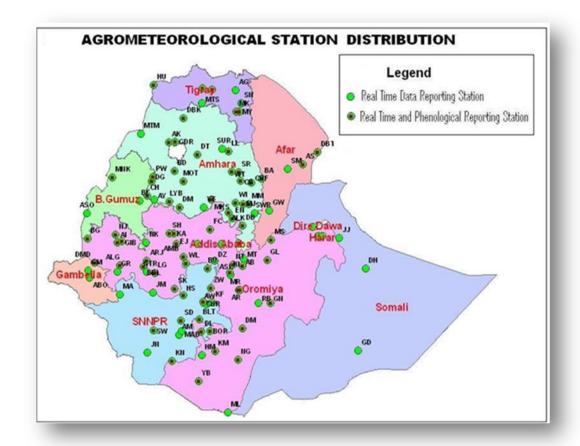
**DEKAD:** - First or second ten days or the remaining days of a month.

**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		