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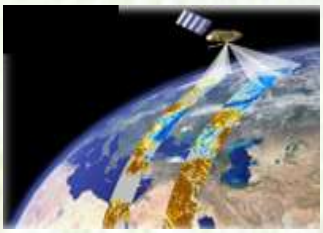

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FORE WARD

This Agro met Bulletin is prepared and disseminated by the National Meteorological Agency (NMA). 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.

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አህፅሮት

እ.ኤ.አ ዲሴምበር 2019

ባሳለፍነው የዲሴምበር የመጀመሪያዉ አስር ቀናት የእርጥበት ሁኔታው በአብዛኛዎቹ አገሪቱ አካባቢዎች ደረቅ ሁኔታ የተስተዋለ ሲሆን የደረሱ ሰብሎችን ለመሰብሰብ ጥሩ አስተዋፅኦ ነበረዉ፡፡ ነገር ግን በመደበኛ ባህሪያቸው ደረቃማ ሆነው በሚሰነብቱት በአንዳንድ የሰሜን ምስራቅ፣ በመካከለኛዉ፣ ደቡብ ደጋማ ስፍራዎች እና ምስራቅ አካባቢዎች ላይ ወቅቱን ያልጠበቀ እርጥበት እንደነበራቸዉ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ፡፡ ይህ ወቅት በተለይም ለሰሜን አጋማሽ የሀገሪቱ አካባቢዎች የመኸር ሰብልን የሚሰበስቡበት እና የድህረ ሰብል ስብሰባ ተግባራትን በስፋት የሚያከናውኑበት ወቅት ሲሆን ባሳለፍናቸው የዲሴምበር የመጀመሪያዉ አስር ቀናት መጨረሻዎቹ ቀናቶች ወቅቱን ያልጠበቀ ዝናብ ነበራቸው። ይህም ሁኔታ በተለይም ለደረሱና በመሰብሰብ ሂደት ውስጥ በነበሩ ሰብሎች ላይ አሉታዊ ጎን የነበረው ሲሆን በደጋማ አካባቢ ለሚገኙ እና ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ አንዳንድ ሰብሎች፤ ለቋሚ ተክሎች እንዲሁም ከሰብል ስብሰባ በኋላ ለሚዘሩ እንደ ጓያ እና ሽንብራ ለመሳሰሉ የጥራጥሬ ሰብሎች የተገኘው እርጥበት ጠቀሜታ ነበረው። በሌላ መልኩም በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት አካባቢዎች የተገኘው ዝናብ የአፈር ውስጥ እርጥበትን ከማሻሻል ጋር ተያይዞ በተለያየ እድገት ደረጃ ላይ ለሚገኙ ለተለያዩ አትክልቶች እና ቋሚ ተክሎች የጎላ ጠቀሜታ ነበረዉ፡፡ እንዲሁም የነበረው ሁኔታ ለአርብቶ አደርና ከፊል የአርብቶ አደር አካባቢዎች የተሻለ የግጦሽ ሳርና የመጠጥ ውሃ አቅርቦት እንዲኖራቸው ያስቻለ ነበር:: በተጨማሪም ከከባቢ የምዝን ዕርጥብ አየር መጨመር ጋር ተያይዞ ቀደም ባሉት ጊዜያት በአንዳንድ የአገሪቱ ደጋማ ስፍራዎች ላይ ይስተዋል የነበረውን የሌሊት እና የማለዳ ቅዝቃዜ እንዲቀንስ አስተዋጽኦ የነበረው ሲሆን ይህም ሁኔታ የውርጭ ክስተት በተለያዩ ሰብሎችና ቋሚ ተክሎች ላይ የሚኖረውን ተጽዕኖ እንዲቀንስ ከማድረግ አንፃር አዎንታዊ ሚና ነበረው።

የዲሴምበር ሁለተኛ አስር ቀናትንም ስንመለከት የእርጥበት ሁኔታው በተለይም በመጀመሪያዎቹ አጋማሽ አስር ቀናት በመደበኛ ባህሪያቸው ደረቃማ የሚሆኑትን አካባቢዎች ጨምሮ በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑትን አንዳንድ የደቡብ የሀገሪቱ ስፍራዎች ላይ እርጥበታማው ሁኔታ በአመዛኙ ተጠናክሮ እንደነበረ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ፡፡ ምንም እንኳን ይህ ወቅት በተለይም የመኸር ሰብል አብቃይ በሆኑት የሀገሪቱ አካባቢዎች ሰብልን የሚሰበስቡበት እና በከፊል የድህረ ሰብል ስብሰባ ተግባራትን የሚያከናውኑበት ወቅት ቢሆንም ወቅቱን ያልጠበቀ ዝናብ እንደነበራቸው መረጃዎች አመልክተዋል። ይህም ሁኔታ በተለይም ለደረሱና በመሰብሰብ ሂደት ውስጥ ለነበሩ ሰብሎች አሉታዊ ጎን ነበረው። ነገር ግን በደጋማ አካባቢ ለሚገኙ እና ሙሉ ለሙሉ እድገታቸውን

ላልጨረሱ አንዳንድ ሰብሎች፣ ለቋሚ አትክልቶችና እንዲሁም ከሰብል ስብሰባ በኋላ ለሚዘሩ እንደ ጓያ እና ሽንብራ ለመሳሰሉ የጥራጥሬ ሰብሎች የተገኘው እርጥበት ጠቀሜታ ነበረው። ከዚህም አልፎ በአሁኑ ወቅት በተለያዩ የሀገሪቱ አካባቢዎች እየጣለ የሚገኘው ዝናብ በተለይም ከጥቂት ወራት በኋላ ለሚጀመረው የበልግ ስራ እንቅስቃሴ የአፈር ውስጥ እርጥበትን ከማጎልበተ አንጻር አዎንታዊ ሚና ነበረው። እንዲሁም የነበረው እርጥበታማ ሁኔታ ለአርብቶ አደርና ከፊል የአርብቶ አደር አካባቢዎች የተሻለ የግጦሽ ሳርና የመጠጥ ውሃ አቅርቦት እንዲኖራቸው ያስቻለ ከመሆኑም በላይ የተፈጥሮና ሰው ሰራሽ የውሃ ምንጮችን እንዲዳብሩ ያሰቻለ ነበረ:: በአንጻሩ ከአስር ቀኑ አጋማሽ በኋላ በአመዛኙ ደረቃማና ፀሐያማ ሁኔታ የተስተዋለ ሲሆን ይህም ሁኔታ በተለይም ለደረሱና በመሰብሰብ ሂደት ውስጥ ለነበሩ ሰብሎች አዎንታዊ ጎን የነበረው ቢሆንም ነገር ግን ከከባቢ የዕርጥብ ምዝን ዓየር (Relative Humidity) መቀነስ ጋር ተያይዞ በአንዳንድ የአገሪቱ ደጋማ ስፍራዎች ላይ የነበረውን የሌሊት እና የማለዳ ቅዝቃዜ እንዲጨምርና በተለያዩ ቋሚ ተክሎችም ሆነ በመስኖ እየለሙ በሚገኙ ሰብሎች ላይ አሉታዊ ሚና እንዲኖረው አድርጓል።

ባሳለፍነው የዲሴምበር የመጨረሻው አስር ቀናት የበጋው ደረቅ እና ቀዝቃዛ የአየር ሁኔታ በአብዛኛዎቹ የሀገሪቱ አካባቢዎች ላይ አመዝኖባቸው እንደነበረ ከተለያየ የሀገሪቱ አካባቢዎች የተሰበሰቡ የየዕለቱ የሙቀት መረጃዎች ያመለክታሉ።። ከዚህም ጋር ተያይዞ በአንዳንድ ደጋማ አካባቢዎች ላይ ከ 5 ዲ.ሴ. በታችበ የሆነ ዝቅተኛ ሙቀት ተመዝግቧል። ምንም እንኳን የመኸር ሰብሎች በአብዛኛው የደረሱና በመሰብሰብ ሂደት ውስጥ በመሆናቸው የተስተዋለው ቅዝቃዘ እምብዛም ጉዳት ሊያስከትል የሚችል ባይሆንም ነገር ግን በአንዳንድ በመስኖ በሚለሙ ሰብሎችም ሆነ በፍራፍሬ ተክሎች እድገት ላይ መጠነኛ አሉታዊ ጎን ነበረው።በሌላ በኩል የደቡብ ኦሮሚያን ጨምሮ በአንዳንድ የደቡብ የሀገሪቱ አካባቢዎች ላይ በመጠኑ አነስተኛ የሆነ የእርጥበት ይዘት እንደነበራቸው ከተለያየ የሀገሪቱ አካባቢዎች የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። ይህም ሁኔታ በተለያየ እድገት ደረጃ ላይ ለሚገኙ የበጋ ሰብሎችም ሆነ ለቋሚ ተክሎች እንዲሁም ለአርብቶ አደርና ከፊል የአርብቶ አደር አካባቢዎች የተሻለ የግጦሽ ሳርና የመጠጥ ውሃ አቅርቦት እንዲኖራቸው ያስቻለ ከመሆኑም በላይ በተለይም ከጥቂት ወራት በኋላ ለሚጀመረው የበልግ ስራ እንቅስቃሴ የአፈር ውስጥ እርጥበትን ከማጎልበተ አንጻር አዎንታዊ ሚና ነበረው።

በአጠቃላይ በዲሴምበር ወር የነበረው የእርጥበት ሁኔታ በአብዛኛው የሀገሪቱ ክፍሎች ላይ እርጥበታማው ሁኔታ የተሻለ ገጽታ እንደነበረው የተነተኑ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክቱ ሲሆን በተለይም በመጀመሪያዎቹና በሁለተኛ አስር ቀናት የነበረው የእርጥበት ሁኔታው በመደበኛ ባህሪያቸው ደረቃማ የሚሆኑትን አካባቢዎች ጨምሮ በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት አንዳንድ የደቡብ የሀገሪቱ ስፍራዎች ላይ ተጠናክሮ ነበረ የሰነበተው። ነገር ግን በወሩ የመጨረሻ አስር ቀናት በአመዛኙ ደረቃማውና ቀዝቃዛማው የአየር ሁኔታ በአብዛኛዎቹ የሀገሪቱ አካባቢዎች አመዝኖ ነበረ። ምንም እንኳን የዲሴምበር ወር በተለይም

የመኸር ሰብል አብቃይ በሆኑት የሀገሪቱ አካባቢዎች ሰብልን የሚሰበስቡበት እና በከፊል የድህረ ሰብል ስብሰባ ተግባራትን የሚያከናውኑበት ወቅት ቢሆንም ወቅቱን ያልጠበቀ ዝናብ እንደነበራቸው መረጃዎች አመልክተዋል። ይህም ሁኔታ በተለይም ለደረሱና በመሰብሰብ ሂደት ውስጥ ለነበሩ ሰብሎች አሉታዊ ጎን ነበረው። ነገር ግን በጋ ሁለተኛ የዝናብ ወቅታቸው ለሆኑትም ሆነ በደጋማ አካባቢ ለሚገኙ እና ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ አንዳንድ ሰብሎች፣ ለቋሚ አትክልቶችና እንዲሁም ከሰብል ስብሰባ በኋላ ለሚዘሩ እንደ ጓያ እና ሽንብራ ለመሳሰሉ የጥራጥሬ ሰብሎች የተገኘው እርጥበት ጠቀሜታ ነበረው። እንዲሁም የነበረው እርጥበታማ ሁኔታ ለአርብቶ አደርና ከፊል የአርብቶ አደር አካባቢዎች የተሻለ የግጦሽ ሳርና የመጠጥ ውሃ አቅርቦት እንዲኖራቸው ያስቻለ ከመሆኑም በላይ የተፈጥሮና ሰው ሰራሽ የውሃ ምንጮችን እንዲዳብሩ ያስቻለ ነበረ:: በአንጻሩ በመጨረሻዎቹ የወሩ አስር ቀናት የተስተዋለው በአመዛኙ ደረቃማና ቀዝቃዛማ ሁኔታ ቢሆንም የደቡብ ኦሮሚያን ጨምሮ በአንዳንድ የደቡብ የሀገሪቱ አካባቢዎች ላይ መጠነኛ እርጥበት ነበራቸው። ምንም እንኳን የመኸር ሰብሎች በአብዛኛው የደረሱና በመሰብሰብ ሂደት ውስጥ በመሆናቸው የተስተዋለው ቅዝቃዘ እምብዛም ጉዳት ሊያስከትል የሚችል ባይሆንም ነገር ግን በአንዳንድ በመስኖ በሚለሙ ሰብሎችም ሆነ በፍራፍሬ ተክሎች እድገት ላይ መጠነኛ አሉታዊ ጎን የነበረው ሲሆን በአንጻሩ የተገኘው መጠነኛ እርጥበት በተለያየ ደረጃ ላይ ለሚገኙ የበጋ ሰብሎችም ሆነ ለቋሚ ተክሎች እንዲሁም ለአርብቶ አደርና ከፊል የአርብቶ አደር አካባቢዎች የተሻለ የግጦሽ ሳርና የመጠጥ ውሃ አቅርቦት እንዲኖራቸው ያስቻለ ከመሆኑም በላይ በተለይም ከጥቂት ወራት በኋላ ለሚጀመረው የበልግ ስራ እንቅስቃሴ የአፈር ውስጥ እርጥበትን ከማነልበተ አንጻር አዎንታዊ ሚና ነበረው።

SUMMARY

December 2019

During the first dekad of December, the wettest condition more prevailed over the southern half of the country and the enhanced cloud was observed across much of the north western parts of the nation. In line with this, Eastern, southern Amhara, Western, southern & central Oromia, Gambela, SNNPR, Somali, Benishangul Gumiz and Eastern experienced light to moderate amount of rainfall. In addition to the above condition some areas also experienced heavy fall including Awash Arba 33.0 mm, Gelemso 38.5 mm, Giner 47.5 mm and Tepi 29.8 mm. In the rest parts of the country the Bega dry, sunny and windy weather condition prevailed. The analyzed moisture index also depicted that good moisture was exhibited in much of the southern half parts of the country including the south and southeast portion for which Bega is the second rainy season. In general, the observed weather during the dekad might have negative impact on the harvest and post-harvest agricultural activities for matured crops. For matured crops the exhibited dry to very dry moisture condition across the north-eastern, eastern and central section of the country could be favourable to conduct crop harvest and post-harvest activities. On the other hand, the observed enhanced moisture over the southern half of the country might have positive implication toward enhancing the soil moisture content particularly at places where Bega is the second rain season. In addition the condition might favour crops which are still requiring additional moisture for their further growth and maturity. The received moisture was also good opportunity to plant some pulse crops which often sowing after harvesting of the major cereal crops. For the pastorals and agro-pastorals areas the observed improved moisture might be positive to conduct various agricultural activities as well as to ensure the availability and provision of pasture and drinking water. On the other hand, the enhanced relative humidity in the ambient air might play significant role toward reducing the occurrence of night and morning time chilly and cool condition

The collected Agro Meteorological information's indicated that during the first half of second dekad of December 2019, the wettest condition was observed over both climatologically dry areas as well as for some of Bega rain benefiting areas in the southern section of the country. Although this is the time of conducting harvest and post-harvest practices for most Meher crop growing areas, field report showed that much part of the country experienced unseasonal rainfall and some places including Meiso 46.2mm, Bahir Dar

37.8mm, Bulen 32.6mm, Mash 30.4mm, and Moyale 53.0mm, also received heavy fall. However, after the passage of mid of the dekad, most places subjected to the Bega season dry and sunny weather condition. The analyzed moisture index also depicted that moist to humid moisture condition was exhibited in much of the southern, south-eastern and some of the eastern parts of the country and it also extended to some of the northwestern and the western section. Given the fact that, this dekad is characterized as the time of harvest and post-harvest activities for most Meher crop growing areas, the observed wettest condition might disrupt the on-going harvest and post-harvest activities. However, the condition might also be favorable for highland crops and perennial plants which have been still requiring additional moisture for their further growth as well as for some pulse crops which often sowing with residual moisture. On the other hand, the observed enhanced moisture might have positive implication for the coming Belg season agricultural activities through improving soil moisture contents. For the pastorals and agro-pastorals areas, the observed improved moisture might be positive to conduct various agricultural activities and ensuring the availability and provision of pasture and drinking water. On the other hand, the relative decreasing of relative humidity in the ambient air might play negative impact toward increasing the incidence of chilly condition which could slightly affect the growth of various crops and horticulture plants.

The collected Agro Meteorological information's from the wide parts of the country indicated that dry and cold Bega weather condition prevailed over most parts of the country during the last dekad of December 2019. In relation to the prevailing dry weather condition, some high land areas experienced low minimum temperature below 5^0C and these areas include Bue 3.0^0C, Bati 4.0^0C, Adigrat 3.5^0C, Dangla 2.5^0C, Debark 4.0^0C, Wogeltena 3.5^0C, D/Brehan 4.0^0C, MehalMeda, 2.8^0C and Addis Ababa 3.5^0C. However, this condition might not have a detrimental effect on Meher season crops since most of them were under harvesting. Nevertheless, the reported low minimum temperature might have negative implication on the development of Bega season irrigated crops as well as on fruit and perennial plants. On the other hand, some of the southern parts of the country including some zones of south Omo, people of Segen, Benchimaji, Gamo Goffa, Welayita, Keffa, Sheka, Hadiya, Wellega and Guji experienced some moisture in the range of moderately dry to moist condition. Such moisture status could favor various Bega season crops and perennial plants as well as for the availability of pasture and drinking water over the pastoral and agro pastoral community. Moreover, the observed moisture might be favourable for the upcoming

Belg season agricultural activities through improving the soil moisture which could facilitate good ground to conduct early land preparation.

In general, the analysed monthly agro meteorological information indicated that most parts of the country had gone through moderately dry to humid moisture condition during the month of December 2019. Particularly, in the first dekad of the month, much parts of the country including those climatologically dry areas as well as Bega season moisture benefited zones experienced better moisture in terms of amount and distribution. In line with this, west Tigray, much of Amhara, Benishangul Gumuze, west, central and south Oromia, Gambella, SNPPR, some of the eastern Ethiopia and the southern high lands received light to moderate amount of rainfall. In addition to that, some few places also experienced heavy rainfall which including Mieso 46.2mm, Bahir Dar 37.8mm, Bulen 32.6mm, and Masha 30.4mm. Given the fact that this month is characterized by harvest and partially post-harvest agricultural activities, weather reports from various parts of the country indicated that some places were still experiencing unseasonal rainfall during the month under review. This condition might disrupt the on-going harvest and post-harvest activities in many parts of the country. However, the condition might also be favourable for crops which normally grown in high land areas and perennial plants which have been still requiring additional moisture for their further growth as well as some pulse crops which often planted with residual moisture. On the other hand, the observed enhanced moisture over the southern portion of the country might have positive implication toward enhancing soil moisture content particularly at Bega season moisture benefiting places. For the pastorals and agro-pastorals areas, the observed improved moisture might be positive to conduct various agricultural activities and ensuring the availability and provision of pasture and drinking water as well as to replenish the existing natural and artificial water-points**.** Moreover, the observed moisture might be favourable for the upcoming Belg season agricultural activities through improving the soil moisture which could facilitate good ground to conduct land preparation as earliest as possible. However, due to the weakening of rain bearing meteorological system, particularly during the second and last dekad of the month the country was to be subjected for the Bega season dry, sunny and windy weather condition. In relation to the prevailing weather condition, some high land areas experienced low minimum temperature below 5^0C. However, this condition might not have a detrimental effect on Meher season crops since most of them were under harvesting. Nevertheless, the reported low minimum temperature might have negative implication on the development of Bega season irrigated crops as well as on fruit and perennial plants.

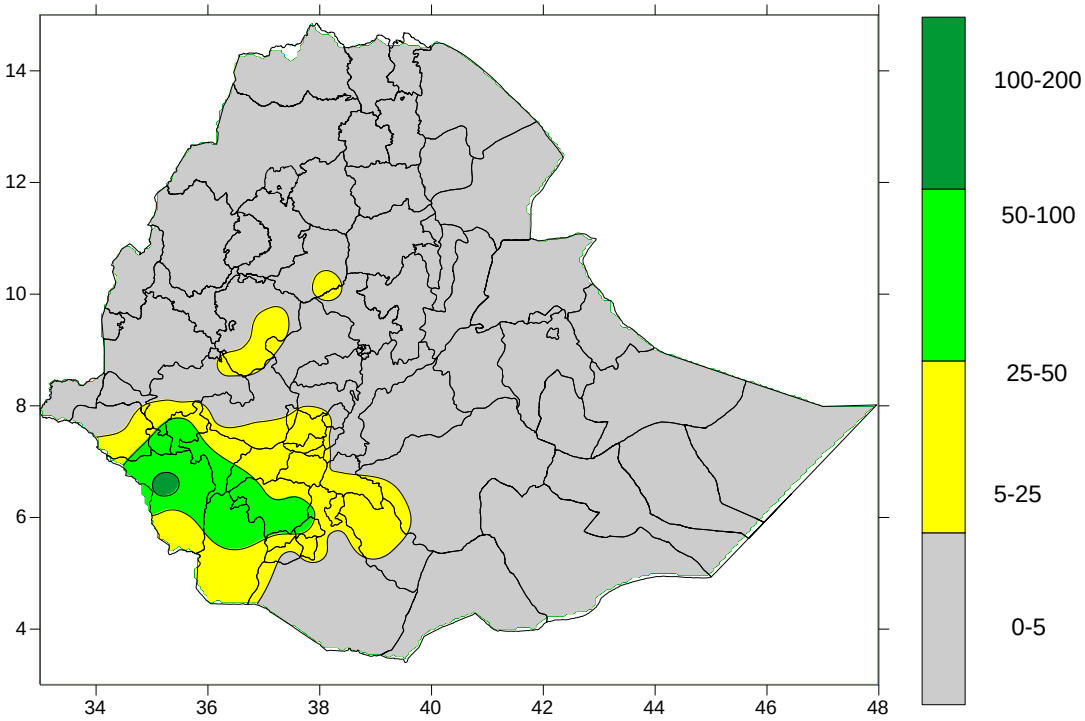


Fig 1. Rainfall distribution in mm (21 – 31) December 2019

1. WEATHER ASSESSMENT

1.1. Rainfall amount (21 – 31) December 2019

During third dekad of December, pocket area of Bench Maji received 50-100mm of rainfall. Parts of Bench Maji, Gambela zone 4, Guji, South Omo and Gamo Gofa zone received 25-50mm of rainfall. Parts of South Omo, Segen people, Sidama, Gedeo, some parts of East Wellega and East Gojam experienced 5-25mm of rainfall. The rest parts of the country experienced little or no rainfall.

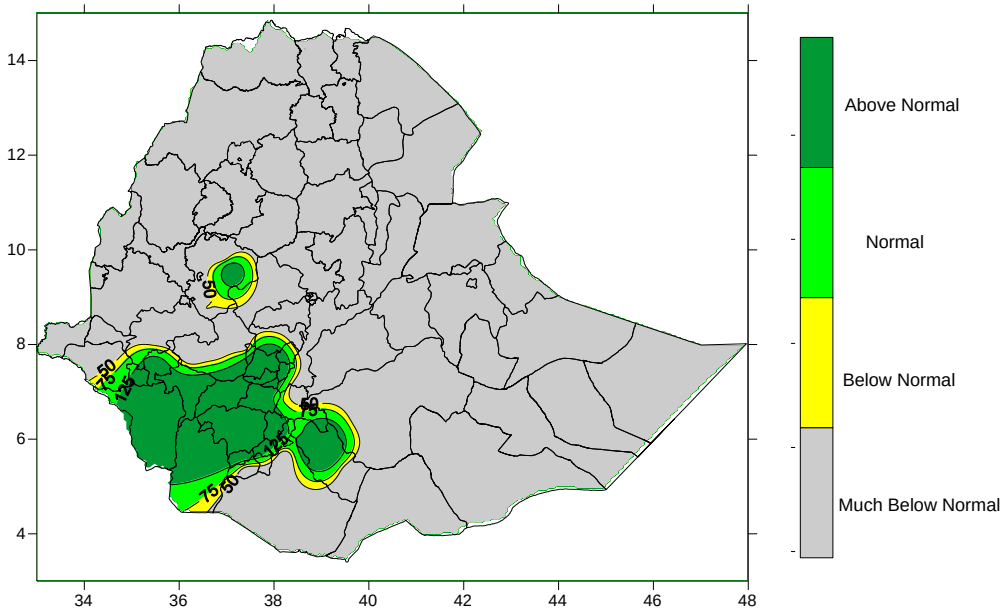


Fig. 2 Percent of normal rainfall distribution (21 – 31 December 2019)

Explanatory notes for the Legend

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

1.2. Rainfall Anomaly (21 – 31 December 2019)

Over Bench Maji, Gambela zone 4, Guji, south Omo, Segen people, Sidama, Gedeo, parts of east Wellega and east Gojam experienced normal to above normal rainfall. The rest parts of the country experienced below normal to much below normal rainfall.

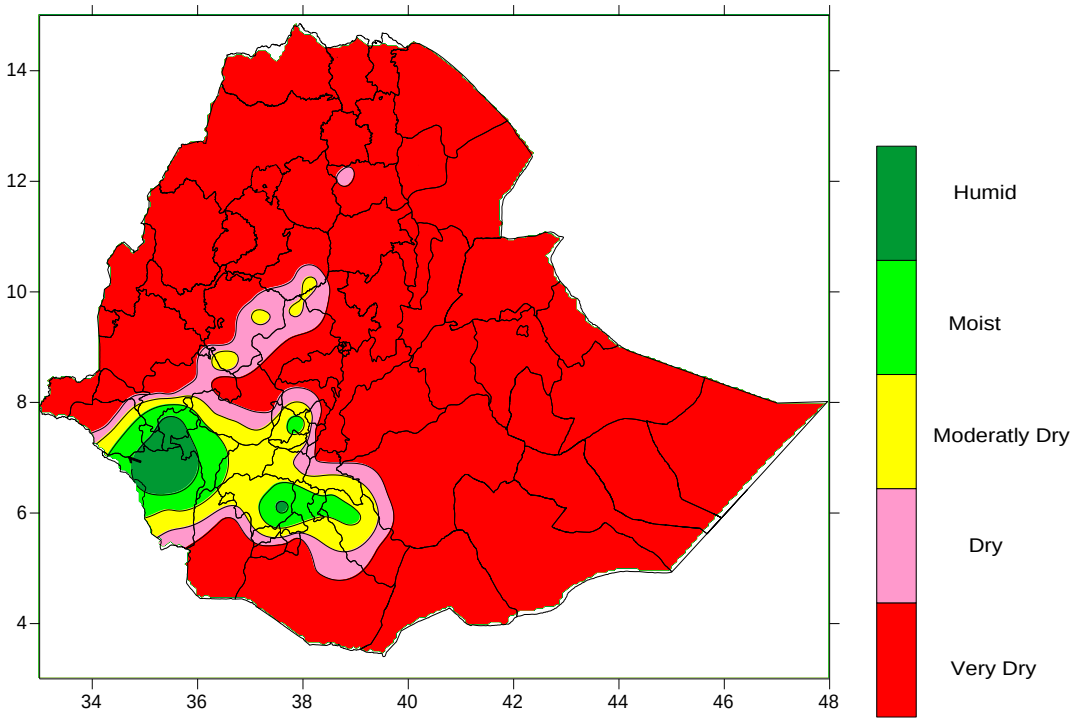


Fig. 3 Moisture Statuses (21-31 December 2019)

1.3. Moisture status (21 – 31 December 2019)

During the last dekad of December, Sheka, Godere, Keffa and Benchimaji exhibited Humid to Moist moisture condition. The rest parts of the countries exhibited moderately dry to very dry.

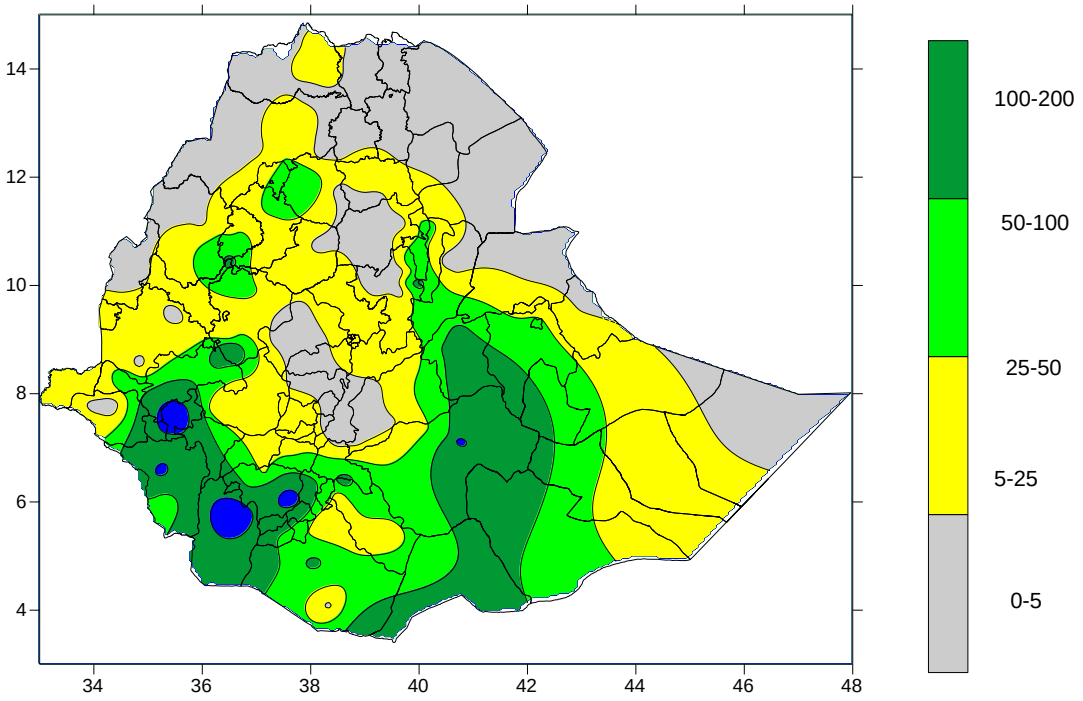


Fig. 4 Rainfall amount in mm for the month of December 2019

1.4. Rainfall amount on the month of December 2019

During December 2019, pocket area of Bench Maji, south Omo, Gamogofa and Ilubabor received >100mm of rainfall. Parts of South Omo, Sheka, Kefa, West Wellega, Parts of Bench Maji, and Gambela zone 4, Guji, Liben, Afder, Bale, West and East Harerge received 50-100mm of rainfall. South Gonder, Agew Awi, parts of Ilubabor, Bale, Segen people, Sidama, Gedeo, north Shewa zone, north Wello and Afar zone 3&5 experienced 25-50mm of rainfall. North-western Tigray, north Gonder, most of western and central parts, Gode, Korahe, Jijiga and Deghabur experienced 25-50mm of rainfall. The rest parts of the country experienced little or no rainfall.

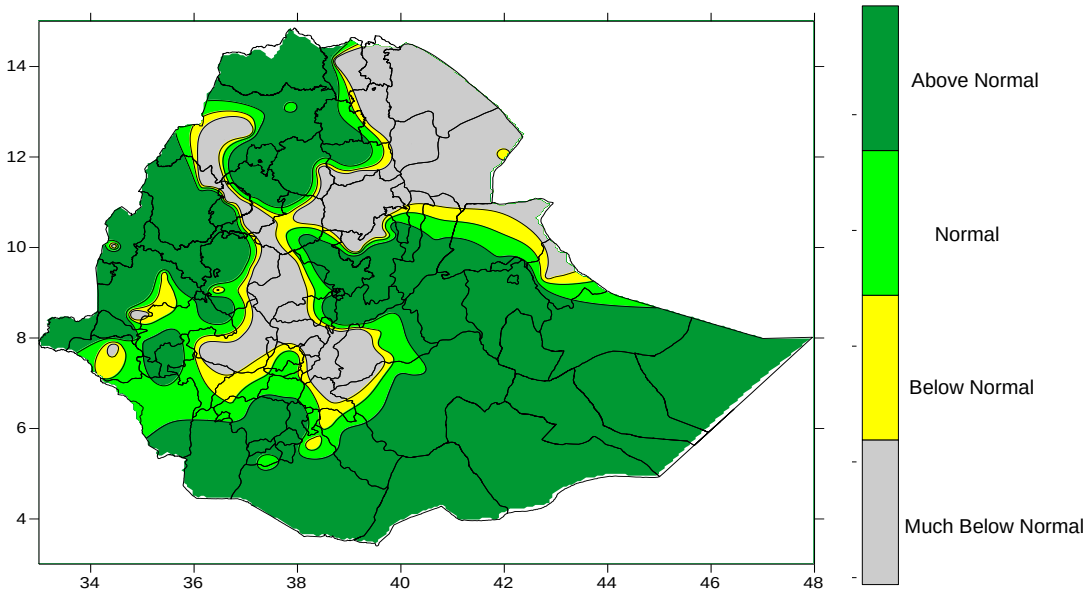


Fig. 5 Percent of Normal Rainfall for the month of December 2019

Explanatory notes for the Legend

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

1.5. Rainfall Anomaly on the month of December 2019

During the month of December Except eastern, southern and central Tigray, South Wello, North Gonder, Afar zone 1,2&4 and most of centra Oromia most parts of the country experienced normal to above normal rainfall.

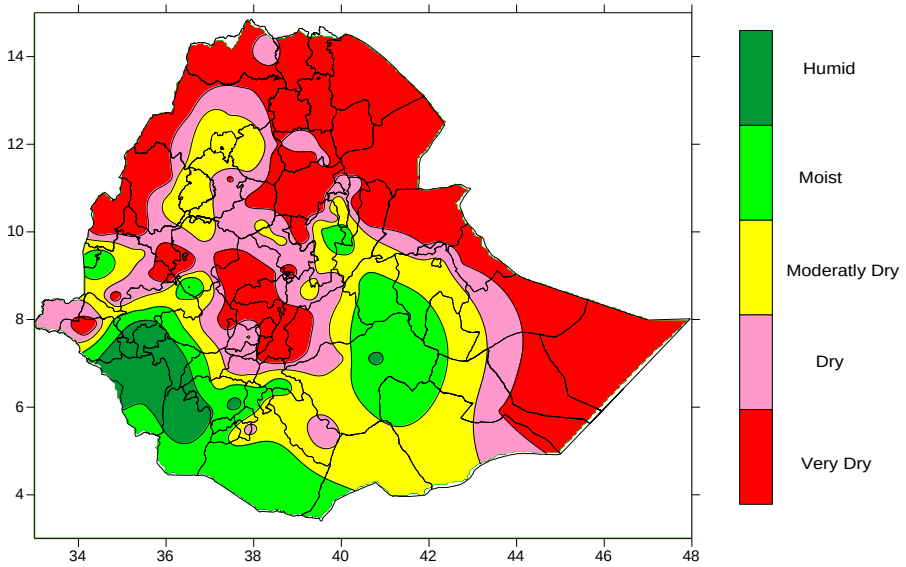


Fig. 6 Moisture Status for the Month of December 2019

1.6. Moisture status on the month of December 2019

In accordance with the moisture map in figure 6, Tongo, Sheka, Godere, Keffa, Benchimaji, Basketo, Gamo Gofa, Borena, Liben, Bale, Afder, Fik, and Harerge exhibited Humid to Moist moisture condition. The rest parts of the countries exhibited moderately dry to very dry.

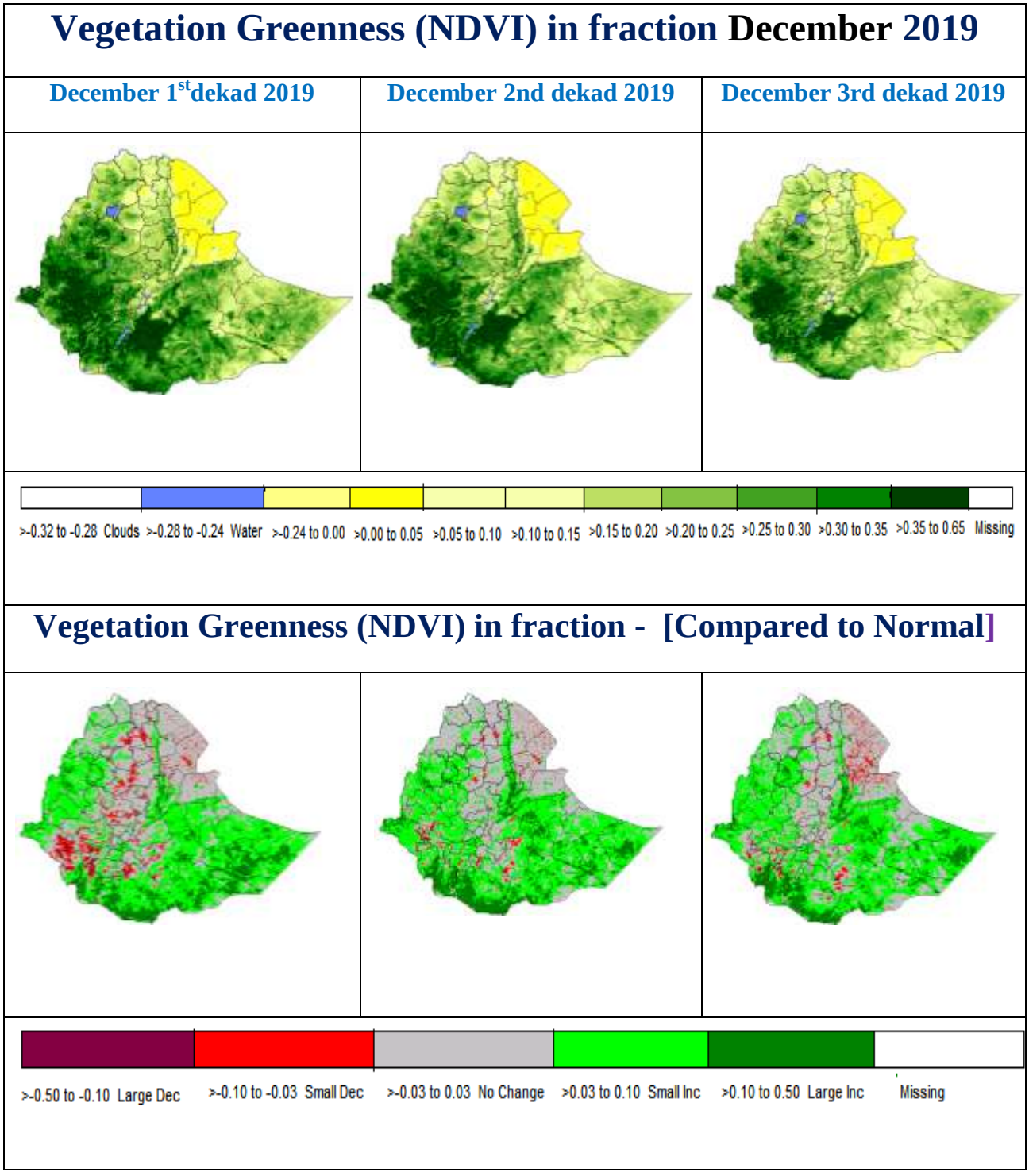


Fig.7. Vegetation Greenness (NDVI) in fraction and Compared to Normal December 2019

2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

2.1. Vegetation Condition And Impact On Agriculture On The Month Of December 2019

During the month of December, large vegetation increment was observed over the southern and southeastern parts of the country. Much of northwestern, central and eastern portion of Ethiopia exhibited small increment in vegetation condition. In contrast, some places in the north east experience slight deterioration of vegetation when it compare with the long mean condition. No change in vegetation condition was observed over the north, northeast and Central parts of the country.

2.2. Expected Weather Impact On Agriculture During The Coming Month Of January 2020

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 2020, 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 . However, after the mid of the month some parts of Jimma, Illubabur, north Shewa, Segen peoples, south Omo, Bench Maji, north and south Wollo zones are likely to start getting little to medium amount of rainfall due to the approach of certain rain bearing Belg season weather systems. The probable dry weather condition up to the mid of the month is likely to favor for completing the ongoing harvest and 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 on the overall performance of vegetables, fruits and perennial plants. Therefore, farmers are advised to be ready to take the necessary measures so as to maintain the plant environment as warm as possible. 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. DEFNITION 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 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.

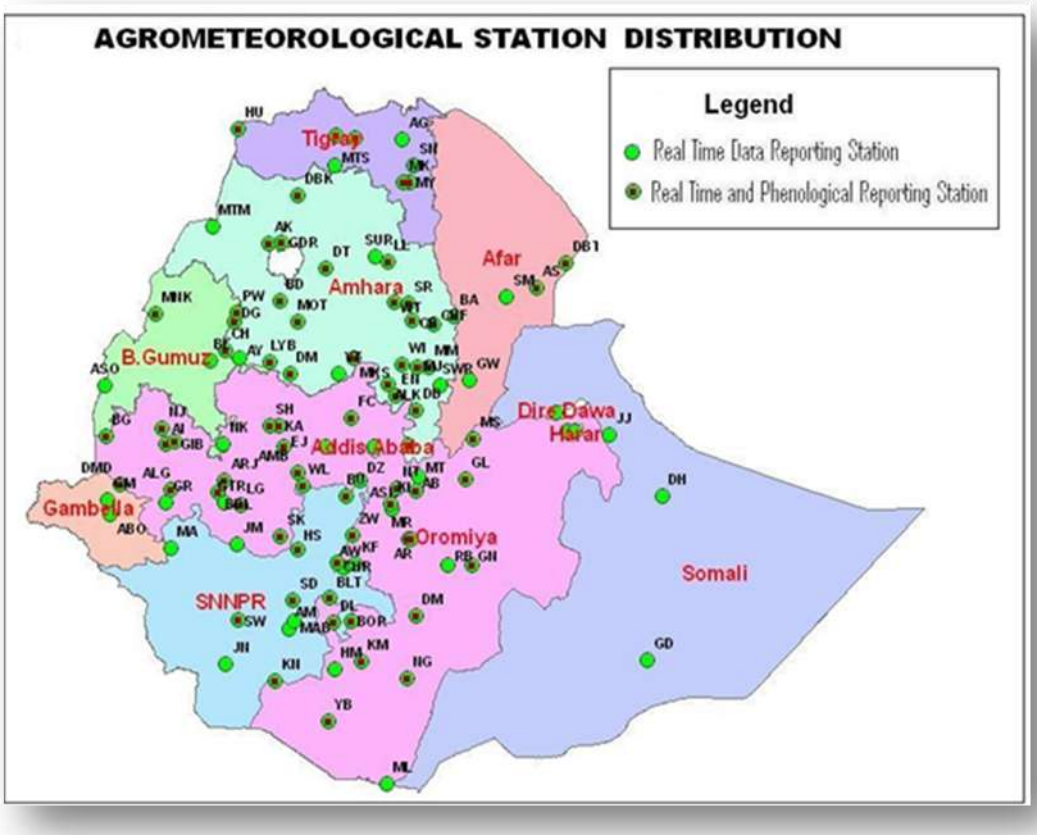
DEKAD: - First or second ten days or the remaining days of a month.

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		