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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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በጋ 2007/08

አህፅሮት

በመደበኛ ሁኔታ የበጋ ወቅት ፀሐያማና ደረቅ ሲሆን አልፎ አልፎ ያልተጠበቀ ዝናብ የሚታይበት ነው። ወቅቱ ከጥቅምት እስከ ጥር ያለውን ጊዜ ሲያጠቃልል የአገሪቱ ደቡብና ደቡብ ምሥራቅ ቆላማ ቦታዎች ወቅታዊ ዝናብ የሚያገኙበት ነው። በአብዛኛው መኸር አብቃይ በሆኑ አከባቢዎች የሰብል ስብሰባና ድህረ ሰብል ስብሰባ የሚካሄድበት ሲሆን በደቡብና በደቡብ ምሥራቅ የአርብቶ አደሩና ከፊል አረብቶ አደሩ አከባቢዎች ለግጦሽና ለመጠጥ ውሀ እንዲሁም ውሱን የሆነ እርሻ እንቅስቃሴ የሚካሄድበት ጊዜ ነው። በተጨማሪም በነዚሁ አከባቢዎች ለከብቶች ለግጦሽ ሳርና ለመጠጥ ውሃ የሚሆን ዝናብ የሚያገኙበትና ውሃን በተለያየ ዘዴ የሚያከማቹበት ወቅት ነው። የበጋ የአየር ፀባይ ለበሽታና ለተባይ መከሰት ተስማሚ የሆኑ ሁኔታዎች ከተከሰቱ ለበሽታና ለተባይ መስፋፋት አመቺ ሁኔታን የሚፈጥር ነው። በበጋ ወቅት የሙቀት መጠን ከአዝርዕት ጤናማ እድገት አኳያ ሊተኮርበት የሚገባ ጉዳይ ሲሆን በሰሜን ምስራቅ፣ በመካከለኛው በምስራቅ እና በደቡብ ከፍተኛ ቦታዎች ላይ የውርጭ መከሰት ሊኖር የሚችል ክስተት ነው።

እ.ኤ.አ በኦክቶበር 2007 የተሻለ የእርጥበት ሁኔታ በአብዛኛው የመኸር አብቃይ በሆኑት የሀገሪቱ ምዕራባዊ አጋማሽና በባሌ ከፍተኛ ቦታዎች እንዲሁም በምስራቅ ኦሮሚያ አከባቢዎች ላይ ታይቷል። ይህም ሁኔታ በተለያየ የእድገት ደረጃ ላይ ላሉ ለመኸር ሰብሎች ጥሩ አስተዋፅዖ እንደነበረው ይታመናል። የተቀሩት የሀገሪቱ ክፍሎች ከደረቅ እስከ በጣም ደረቅ የእርጥበት ሁኔታ ታይቶባቸዋል። በመሆኑም በእነዚህ አከባቢ ላይ በመድርስ ላይ ባሉ የመኸር ሰብሎች ላይ አሉታዊ ተፅዕኖ ሊያሳድር ይችላል። ይሁን እንጂ ቀደም ባለው ወር በነበረው ጥሩ የእርጥበት ሁኔታ ደረቁ ሁኔታ ሊያረግበው እንደሚችል ይታመናል። ከበድ ያለ ዝናብን በተመለከተ ከዘጋቢ ጣቢያዎቻችን መካከል በ13 ጣቢያ ላይ (ከ33-66) ሚ.ሜ መካከል የሚገኝ ዝናብ በአንድ የዝናብ ቀናት ብቻ ተዘግቧል። ይህም ሁኔታ ለመታጨድ በደረሱ ሰብሎች ላይ አሉታዊ ተፅዕኖ ሊኖረው እንደሚችል ይታመናል። የአየር ሙቀትን በተመለከተ በአንዳንድ በመካከለኛው (ደብረ ብርሃን ፣መሀል ሜዳ፣ ፍቼ ፣ደብረዘይት) በሰሜን ምስራቅና በምስራቅ (ወገልጤና አለማያ) ከፍተኛ ቦታዎች ላይ ከ5^{O}C በታች እስከ 1^{o}C የደረሰ ዝቅተኛ የሙቀት መጠን ተስተውሏል። በተጨማሪም የNDVI (United State

Geological Survey) ማለትም የዕፅዋት ሽፋን የሚጠቁመው መረጃ እንደሚያሳየው የተሻለ የአዝርዕት ሽፋን በደቡብና በደቡብ ምስራቅ ቆላማ ሥፍራዎች ላይ ታይቶባቸው ነበር።

እ.ኤ.አ በኖቬምበር 2007 ታይቶ የነበረው ጥሩ የእርጥበት ሁኔታ (moist moisture status) በአንዳንድ የምዕራብ ኦሮምያ፣ ጋምቤላ፣ ምስራቅ ቤንሻንጉል ጉሙዝ፣ ደቡብ ኦሮሚያ፣ የደቡብ ምዕራብ አማራ ዳርቻ እና በደቡብ ኦሮምያ ላይ ተስተውሏል። የተቀሩት የሀገሪቱ ክፍሎች ከደረቅ እስከ በጣም ደረቅ(dry to very dry moisture status) የእርጥበት እጥረት ታይቶባቸዋል። ይህም የእርጥበት ሁኔታ ለመኸር ሰብል እንዲሁም ደቡብ ኦሮሚያ አከባቢ ለሚገኙ አርብቶ አደሩና ከፊል አርብቶ አደር ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት የጎላ ጠቀሜታ ነበረው። በሌላ በኩል ከደረቅ እስከ በጣም ደረቅ ያለው የእርጥበት ሁኔታ የነበረበት አከባቢ በተለያየ የዕድገት ደረጃ ላሉ ሰብሎች ለውሀ ፍላጎት እንዲሁም ጥምር ግብርና ለሚካሄድባቸው በአፋርና ሶማሌ ቆላማ ሥፍራዎች ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት አሉታዊ ተፅዕኖ እንደሚያሳድር ይታመናል። ከባድ ዝናብን በተመለከተ በዚህ ወር ከጥቂት የደቡብ ምዕራብና የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል የሀገሪቱ ክፍሎች በአብዛኛው ቀንሶ ነበር የተስተዋለው። ይህም ሁኔታ በተለያየ የዕድገት ደረጃ ላሉ የመኸር አዝርዕት የውሀ ፍላጎት ጠቀሜታ ሲኖረው በተጨማሪም ለቋሚ ሰብሎችና በደቡብ አከባቢ ጥምር ግብርና ለሚካሄዱ አርብቶ አደር ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት የጎላ አስተዋፅዕ እንደሚኖረው ይታመናል። ዝቅተኛ የአየር ሙቀት በተመለከተ ካለፈው ወር ሲነፃፀር በዚህ ወር ከ5^{O}C በታች በብዙ ጣቢያዎች ላይ ሲመዘገብ ከ0^{0}C በታች እስከ -3.0^{O}C ድረስ በአንዳንድ ጣቢያዎች ላይ ወርዶ ነበር የተስተዋለው። ለመጥቀስ ያህል መሀል ሜዳ፣ ወገልጤና እንዲሁም አለማያ -0.2፣-2.0 እና -3-0 እንደየቅደም ተከተላቸው ተመዝግቦባቸዋል። ይህም ሁኔታ ምንም እንኳን ከመረጃ ክፍላችን በሰብል ላይ ያደረሰው ጉዳት ባይኖርም ለሰብል ጤናማ ዕድገት አሉታዊ ተፅዕኖ እንደሚያሳድር ይታመናል። በተጨማሪም የNDVI (United states Geological Survey) ማለትም የዕፅዋትን ሽፋን የሚጠቁመው መረጃ እንደሚያሳየው ካለፈው ወር ጋር ሲነፃፀር የተሻለ የአዝርዕት ሽፋን በደቡብና በደቡብ ምስራቅ ቆላማ ሥፍራዎች ላይ ተስተውሏል። ይህም ሁኔታ ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት የጎላ አስተዋዕያ እንደሚኖረው እሙን ነው።

እ.ኤ.አ በዲሴምበር 2007 የበጋው ደረቅና ነፋሻማ የአየር ሁኔታ እንዲሁም የተከሰተው የእርጥበት እጥረት (very dry moisture status) ለሰብል ስብሰባና ድህረሰብል

ስብሰባ አዎንታዊ ጎን ነበረው። በአንፃሩ ደግሞ የነበረው የእርጥበት እጥረት ለመጪው በልግ ወቅት ቀደም ብለው የማሳ ዝግጅት ለሚያደርጉ አከባቢዎች እንዲሁም ለቋሚ ሰብሎች የውሀ ፍላጎት በተጨማሪም ጥምር ግብርና ለሚካሂድባቸው ቆላማ ሥፍራዎች ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት አሉታዊ ተፅዕኖ ሊያሳድር እንደሚችል ይታመናል። ዝቅተኛ የአየር ሙቀትን በተመለከተ በብዙ ቦታዎች ላይ ከ0^0C በታች እስከ -6.6^{0}C ድረስ የወረደበት ሁኔታ ነበር። ለመጠቆም ያህል ወገልጤና፣ ጅማ፣ አለማያ፣ ኮፈሌ፣ መሀልሜዳ እና ደብረብርሃን -1.4፣ -1.5፣ -1.8፣ -1.9፣ -2.3 እና
-6.0^{0}C በዲግሪ ሴልሽስ ተመዝግቦባቸዋል። ይህም የዝቅተኛ የሙቀት ሁኔታ ወቅቱ የሰብል ስብሰባና ድህረ ሰብል ስብሰባ የሚካሂድበት ወቅት ስለነበር በሰብል ላይ በአብዛኛው ጉዳት የደረሰበት ሁኔታ አልነበረም። የNDVI የዕፅዋት ሽፋን የሚጠቁመው መረጃ እንደሚያሳየው ከደረቁ የበጋው የአየር ጋር በተያያዘ የአዝርዕት ሽፋን ቀንሶ ነበር የታየው።

እ.ኤ.አ በጄንዋሪ 2008 ዝናብ ሰጭ የሆኑት የሚቲዎሮሎጂ የአየር ሁኔታ ክስተቶች በመጠናከራቸው በተለይ በሶስተኛው የወሩ አስር ቀናት በአንዳንድ የሰሜን ምስራቅ የመካከለኛው እንዲሁም የምስራቅ የሀገሪቱ ክፍሎች ላይ ወቅቱን ያልጠበቀ ዝናብ ለመኖሩ ምክንያት ነበር ይህም የዝናብ ሁኔታ በመጪው በልግ ለሚካሂደው የእርሻ እንቅስቃሴ ማለትም ለማሳ ዝግጅትና ለዘር ጊዜ በጎ ጎን እንደሚኖረው ይታመናል። ይሁን እንጂ የሰብል ስብሰባ ድህረ ሰብል ስብሰባ ላላጠናቀቁ አካባቢዎች አሉታዊ ተፅዕኖ ሊያሳድር እንደሚችል ይገመታል። በተጨማሪም በደቡብ ምዕራብ በስምጥ ሸለቆ አከባቢ የነበረው ዝናብ በአካባቢው ለሚገኙ ጥምር ግብርና ለሚካሂድባቸው አከባቢ ለግጦሽ ሳርና ለመጠጥ ውሀ አቅርቦት ጥሩ አስተዋፅየ እንደሚኖረው ይታመናል። የዕፅዋት ሽፋን የሚጠቁመው መረጃ እንደሚያሳየው በአንዳንድ በሰሜን፣ በሰሜን ምስራቅ በደቡብ ምዕራብና በደቡብ ብሔር ብሔረሰቦች ህዝቦች ክልል ላይ የተሻለ የእርጥበት ሁኔታ ያሳያል ይህም ሁኔታ ለመጪው በልግ የእርሻ ሥራ እንቅስቃሴ ጥሩ አስተዋፅየ እንደሚኖረው ይታመናል። በሌላ በኩል ደግሞ የበጋው ደረቅና ፀሐያማ ሁኔታ እንዲሁም በደጋማ ሥፍራዎች አከባቢ የነበረው የሌሊትና የማለዳው ቅዝቃዜ ለሰብል ስብሰባውና ድህረ ሰብል ስብሰባው እንቅስቃሴ ጥሩ ጎን እንደሚኖረው ይታመናል።

ጠቅለል ባለ መልኩ ሲታይ ከላይ ከተጠቀሰው የግብርና ሚቲዎሮሎጂ ትንተና ለመረዳት እንደተቻለው በአጠቃላይ የአዝርዕቱ ሁኔታ በአብዛኛው መኸር አብቃይ በሆኑ አከባቢዎች በጥሩ ሁኔታ ላይ ሲሆን የሚገኘውም ምርት የተሻለ ጥሩ እንደሚሆን መረጃዎች

ይጠቁማሉ። እንዲሁም (Leap) software በመጠቀም (WRSI) የዕፅዋት የውሀ ፍላጎት በ100ኛ ሲሰላ እንዲሁም (water deceit) የዕፅዋት የውሀ እጥረት በስንዴ በማሽላ ጤፍ እንዲሁም በበቆሎ መኸር ሰብሎች በተሰራው ትንተና (analysis) ካላይ የተጠቀሱትን ሰብሎች አብቃይ ለሆኑ አካባቢዎች ያለፈው የመኸር ወቅት ጥሩ የእርጥበት ሁኔታ እንደነበር ይጠቁማል። በሌላ በኩል ደግሞ ወቅቱን ያልጠበቁ ዝናብ በበጋው ወቅት ብዙም ያልተከሰተ ስለነበር ደረቁና ፀሐያማ የአየር ሁኔታ ለሰብል ስብሰባውና ድህረ ሰብል ስብሰበባው ጥሩ ጎን ነበረው። ካለፈው ዓመት ጋር ሲነፃፀር የሰብል ብክንት እንደሌለ ያሳያል። በጥቁሉ የበጋው ወቅት ለመኸር አብቃይ አካባቢዎች ጥሩ ምርት ለማምረት አመቺ ሁኔታን ፈጥሮ ነበር።

BEGA 2007/8

SUMMARY

Normally the season Bega is characterized with sunny and dry weather condition with occasional falls it extends from October to January. On the other hand, it is a small rainy season for southern and southeastern lowlands. Harvest and post harvest activities are the major practices over most parts of meher growing areas. It is a cropping time for southern and southeastern lowlands of agro pastoral areas. Besides it is time to perform water-harvesting activities for pastoral and agro pastoral areas of southern and southeastern lowlands. The weather situation could favor the out break of pest if there is favorable environment, susceptible host and the pest itself. The dry and windy Bega weather situation is favorable for the occurrence and spread of fire. There is a possibility of frost hazard during the season, mainly over northeastern, central, eastern and southern highlands.

During the month of October 2007, Better moisture condition has been observed over most parts western half of the country and eastern Oromia and Bale highlands. This situation favor meher crops which were at different phenological stages. The rest parts of the country exhibited dry to very dry moisture status. This situation might have a negative impact on the meher crops that are not yet attained full maturity: but the accumulated soil moisture can offset this in the previous months. Regarding heavy fall about 13 stations from the reporting station recorded heavy fall within the range of (33- 66) mm of rainfall in one rainy days. During the month of October. This situation could have a negative impact for crops, which are ready to harvest.
With regard to temperature Some areas of central (Debre Birhan, Mehal Meda, Wegel Tena, Alemaya, Fitche and Debre Zeit,) highlands exhibited extreme minimum temperature less than 5o C lowering up to 1.0 ^{0} C during the month. The NDVI shows Better vegetation cover observed during the month of October due to the observed better rainfall in the previous dekad.
More coverage of vegetation over southern and southeastern lowlands as compared with that of Afar.

During the month of November 2007, moist moisture status has been observed over some areas of western Oromia, Gambela, eastern Benshangul-Gumuz, southern SNNPR, south western tip of Amhara and southern Oromia. The rest parts of the country exbited dry to very dry moisture condition. This situation might favor crops at different phenological stages. Besides the observed dry to very dry moisture condition would have a negative impact for meher crops that are not yet attained full maturity and the availability of pasture and drinking water for pastoral and agro pastoral areas for lowland of Afar and Somali. Regarding heavy fall recorded only some areas of south western parts of the country recorded heavy fall above 30 mm in one rainy days. This situation has a positive impact for crops at different phenological stage particularly over SNNPR and southern Oromia in terms of water requirement. Moreover, it could have significant contribution for perennial crops and for pasture and drinking water over pastoral and agro pastoral areas of southern Oromia.With regard to Temperature Some areas of (Kofelle, Debre Birhan, Mehal Meda, WegelTena, and Alemya,) highlands exhibited extreme minimum temperature less than 5 ^{0} C during the month Besides, Mehal Meda Wegel Tena, and Alemya exhibited extreme minimum temperature below 0^{0} C lowering up to ,-0.2, -2.0 and -3.0 respectively during the month .This situation could have a negative impact for normal growth and development of plants. The vegetation condition gradually showed decline in response the

cessation of the seasonal rainfall over most parts of the country. However, there is an increase of vegetation cover as compared with the previous month over parts of south and south-eastern lowlands. This situation is favorable for availability of pasture and drinking water for pastoral and agro pastoral areas

During the month of December 2007 Very dry condition dominated over most parts of the country. This situation was positive contribution for harvest and post harvest activities, while it was negative for crops at different Phenological stages and perennial crops interms of water requirement and the availiabity of pasture and drinking water for pastoral and agro pastoral areas. With regard to air temperature, Wegel Tena, Jimma, Alemya, Koffele, Mehal Meda, and Debre Brhan Exhibited -1.4, -1.5, -1.8, -1.9, -2.0, and -6.6 extreme minimum temperature below 0O C. The vegetation condition showed decline considerably in relation to the dry weather condition. Decrease in vegetation cover over the southern and southeastern lowlands is clearly indicated.

During the month of January 2008, the intensification of rain bearing system during the third dekad of the month, result in untimely rainfall over northeastern, central and eastern parts of the country. This situation would have a positive contribution for the land preparation and sowing activities for the coming Belg season. However, it could have a negative impact for areas s which were not yet completed their harvest and post harvest activities. Moreover, the exhibited rainfall distribution over southwestern and the rift valley would have a positive impact for pasture and the availability of drinking water. The NDVI shows that Better vegetation cover observed over some areas of northern northeastern, south western SNNPR, western Oromia and Gambsella. This situation has significant contribution for Belg season agricultural activities like land preparation and sowing activities.Besides, the Bega's dry and sunny weather condition over most parts of the country. And the observed extreme minimum temperature below 5^0 C over highlands of the country would have a negative impact for harvest and post harvest activities.

In general during Bega 2007, the seasonal strong wind and frost situation during the month of December has not imposed significant negative impact on crops because of their full maturity, though affecting negatively some late sown highland crops. (West Shoa Zone teff and Nug were affected by frost in October . and November in Adaberga Woreda, North Shoa Zone.(Field Report)Pests and diseases also not deviate from normal condition in many areas. However, Desert locust infestations did have some negative impact over southeastern Agro-Pastoral areas. Thus taking into account the minimal impact of untimely rain on harvest and post harvest activities exhibited during this Bega season, it is expected that the weather condition during the Bega season was very favorable for harvest and post harvest activities with much less value of post harvest losses as compared with that of last year. Thus the Bega season was as a whole favorable for very good crop production over Meher growing areas. Computation of WRSI and Moisture deficit for Maize, Wheat, Sorghum and Teff over the Meher growing areas clearly indicates that moisture availability was very good for the Season's crop production.

Figure 1. Moisture status for the month of October 2007

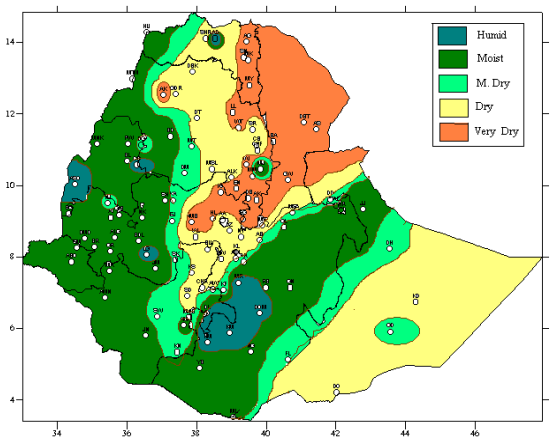


Figure 2. Moisture status for the month of November 2007

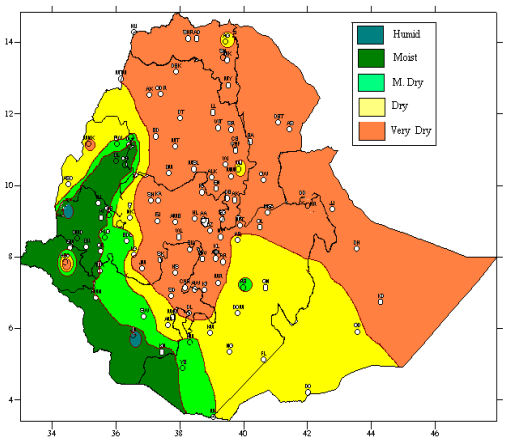


Figure 3. Moisture status for the month of December 2007

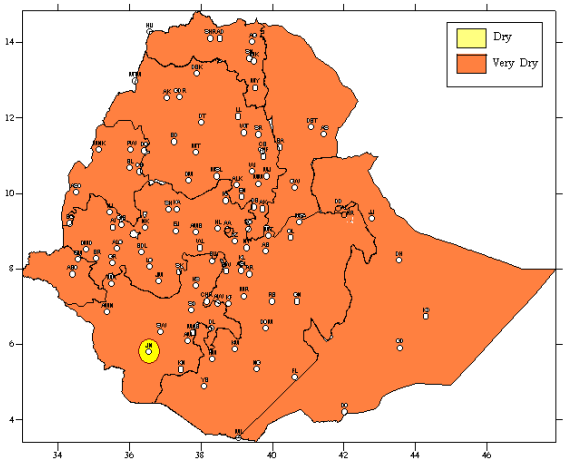
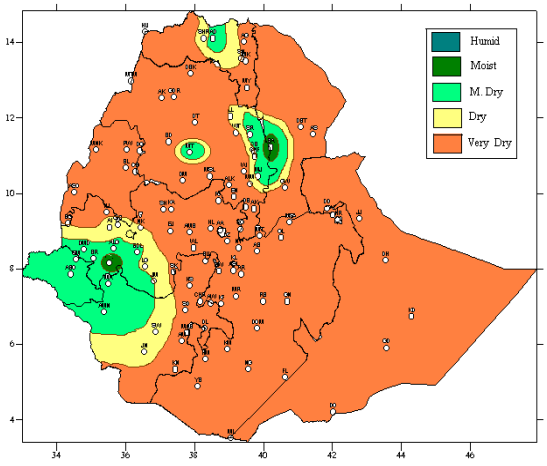


Figure 4. Moisture status for the month of January 2008



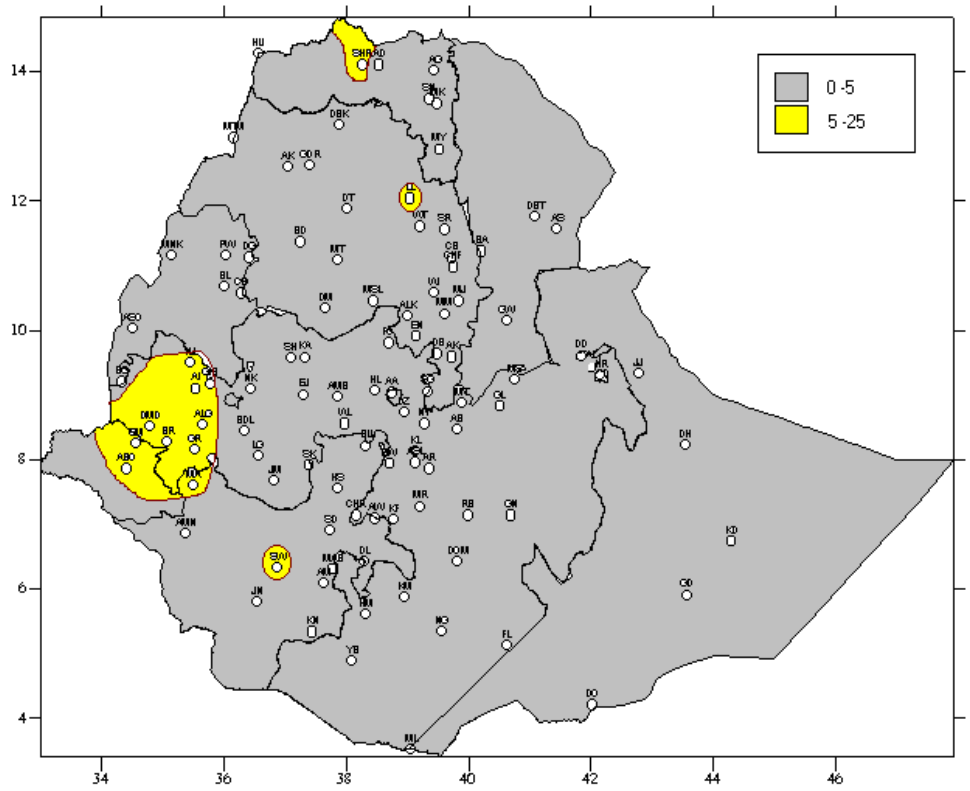


Fig. 6. Rainfall distribution in mm (21-31 January 2008)

1. WEATHER ASSESSMENT

1.1 21-31 January 2008

1.1.1 Rainfall Amount (Fig 6)

Parts of western Oromia, northeastern Gambela, tip of northern Tigray and pocket areas of central SNNPR and eastern Amhara experienced 5-25 mm rainfall. The rest parts of the county exhibited little or no rainfall

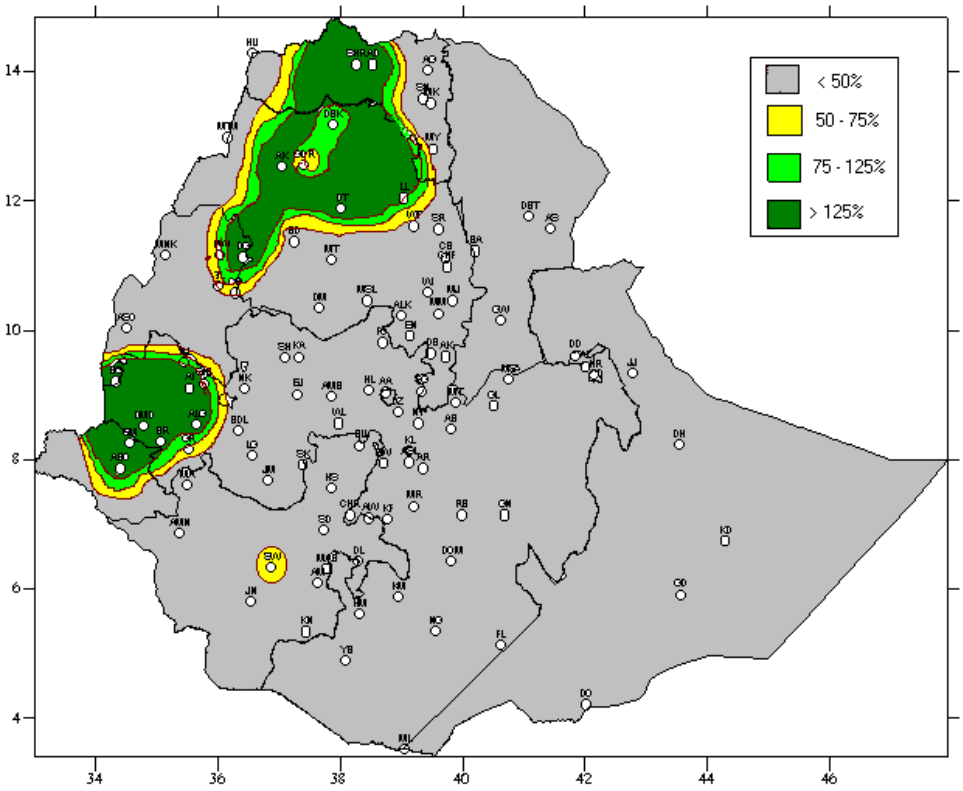


Fig. 7 Percent of normal (21-31 January 2008)

Explanatory notes for the Legend:
< 50-Much below normal
50-75%-Below normal
75-125%- Normal
> 125% - Above normal

1.1.2 Rainfall Anomaly (Fig 7)

Much of Amhara, Parts of western Oromia, central Tigray and northern Gambela and tip of northeaster Benshangul-Gumuz received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall

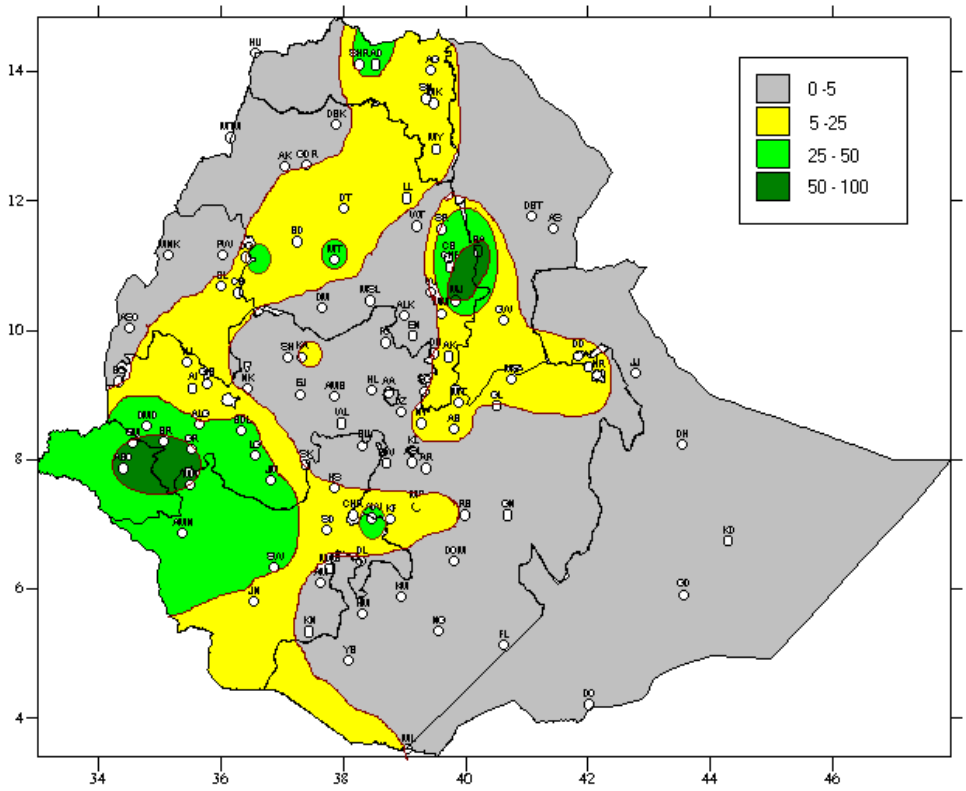


Fig. 8 Rainfall Distribution in mm for the month of January 2008

1.2 January 2008

1.2.1 Rainfall Amount (Fig. 8)

Pocket areas of Gambela and eastern Amhara received 50-100 mm rainfall. Most of Gambela, parts of southwestern and western SNNPR, tip of northern Tigray and pocket areas of eastern, central and western Amhara experienced 25-50 mm rainfall. Eastern half of Tigray, margins of western and eastern and part of eastern Amhara, parts of western Afar, western, eastern and southern Oromia, southeastern Benshangul-Gumuz and southern and eastern SNNPR exhibited 5-25mm rainfall. The rest parts of the country received little or no rainfall.

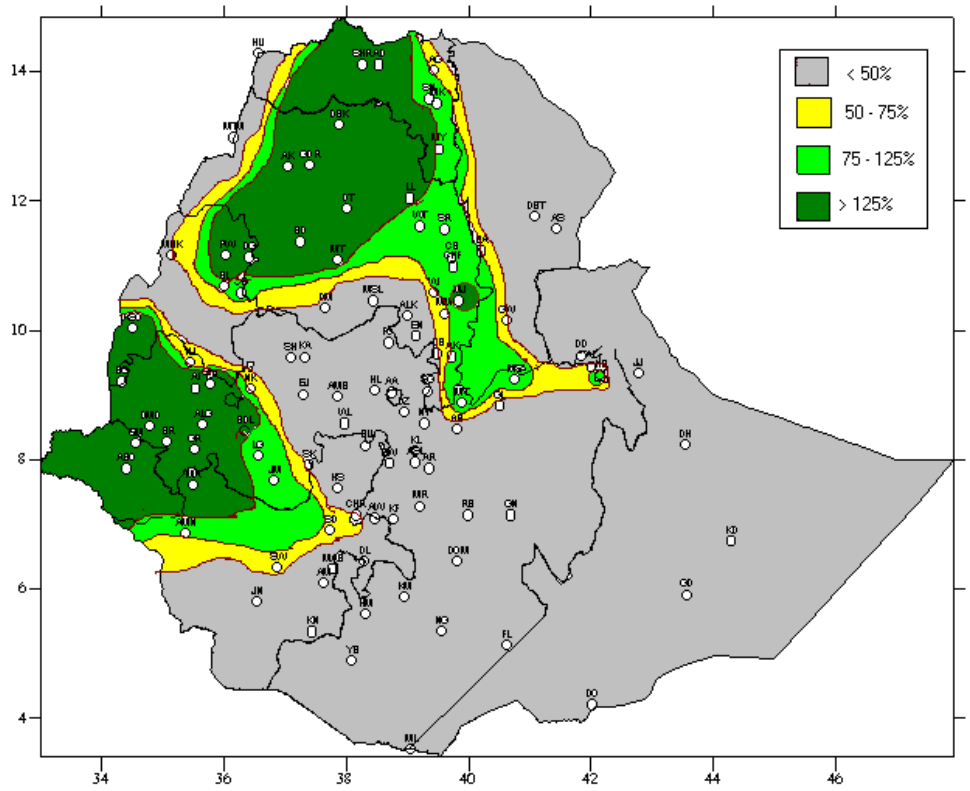


Fig. 9 Percent of Normal Rainfall for the month of January 2008

Explanatory notes for the Legend:

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

1.2.2 Rainfall Anomaly (Fig. 9)

Gambela, most of Amhara, Tigray and western Oromia and parts of northeastern Benshangul-Gumuz, southwestern Afar and west northern SNNPR received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall

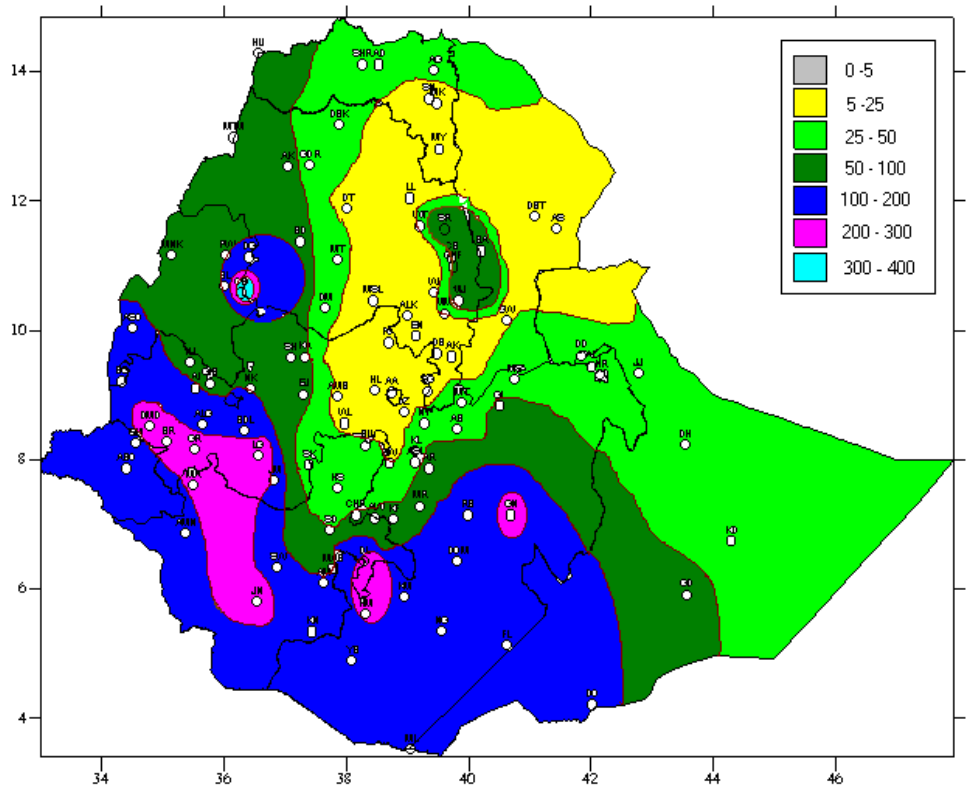


Fig. 10 Rainfall Distribution in mm for BEGA 2007/8

1.3 BEGA 2007/8

1.3.1 Rainfall Amount (Fig. 10)

Pocket area of eastern Benshangul-Gumuz received 300-400mm rainfall. Parts of western Oromia and northern SNNPR and pocket areas of southern and eastern Oromia and eastern Benshangul-Gumuz experienced 200-300 mm rainfall. Gambela, most of SNNPR, most of southern and part of western Oromia, parts of southern Somali and pocket area of eastern Benshangul-Gumuz received 100-200mm rainfall. Most of Benshangul-Gumuz, parts of western, central and eastern Oromia, southwestern, western and eastern Amhara, western Afar, southeastern Somali and western Tigray exhibited 50-100mm rainfall. Most of Tigray and Somali, margin of western Amhara and parts of central and eastern Oromia, northern SNNPR, southern and northern Afar received 25-50mm rainfall. The rest parts of the counter experienced 5-25 mm rainfall

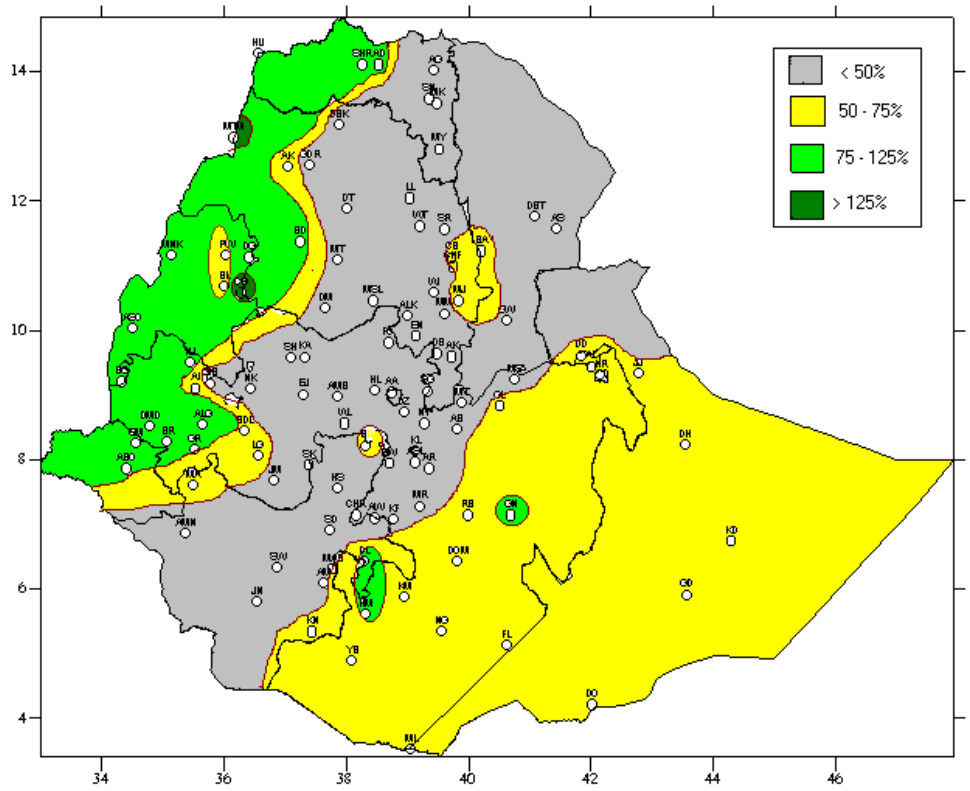


Fig. 11 Percent of Normal Rainfall for Bega 2007/8

Explanatory notes for the Legend:
< 50 -Much below normal
50-75%-Below normal
75-125%- Normal
> 125% - Above normal

1.3.2 Rainfall Anomaly (Fig. 11)

Most of Benshangul-Gumuz, western half of Gambela and Tigray, parts of southwestern and western Amhara and part of western and pocket areas of southern and eastern Oromia received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall

1.4 TEMPERATURE ANOMALY

With regard to air temperature, many station exhibited extreme minimum temperature below 5^0C during the season. To mention some station below 0^0C Jimma, Koffele, Wegel Tena, Mehal Meda, Alemya and Debre Brhan Exhibited extreme minimum temperature below 0^0C and lowering up to -1.4, -1.5, -1.8, -1.9, -2.0, and -6.6^{0}C respectively during the season.

WEATHER OUTLOOK

2.1 For the first dekad of February 2008

For the coming ten days, dry and mostly sunny weather condition will dominate over various portions of the nation. Nevertheless, relative moisture intrusion is expected towards the country resulted in increment of cloud coverage over southwestern, northeastern, eastern and central parts of Ethiopia.

In general, western Oromia, Gambela and SNNPR will get close to normal rainfall. Besides, eastern Tigray and Amhara, and central Oromia are likely to get light rain shower at few places. On the other hand, southeastern, northeastern, western and northwestern Ethiopia lowlands will be under dry and sunny weather condition. In line with this, the daily maximum temperature will rise over the aforementioned areas.

2.2 For the month of February 2008

For the coming month, the existing La Nina condition that is the central Tropical Pacific Ocean sea surface Temperature cooling below average and strong low pressure systems located over south western Indian Ocean will have a negative impact on rainfall distribution and amount. Hence, the coming month rainfall spatial and temporal; distribution will be erratic.

Generally, Gambela, western Oromia and SNNPR will receive nearly normal rainfall. Eastern Tigray and Amhara, Benshangul-Gumuz, central and eastern Oromia as well as BorenaZone, will get below normal rainfall. On the otherhand, western Amhara and tigray, Somali and Afar will be under partly cloudy condition with a chance of light rain over high grounds. The rest of the country will experience dry weather condition.

2.3 For the Belg season, 2008

For the op coming Belg 2008, the central equatorial Pacific Ocean sea surface temperature is expected below average, that is La-Nina condition. Besides the current condition of south west Indian Ocean and east Indian Ocean show warning condition. More over all dynamical and statistical models indicates the coming seasonal rains will be under the influence of mature La-Nina condition.

Hence, let set of the seasonal rain is expected over major Belg benefiting areas of the country normal cessation is expected.

In addition, to high seasonal rain variability of Belg rains the major Belg growing areas of the country will encounter deification rains. And also the seasonal rain will be more erratic in terms of temporal distribution. Nevertheless, southwestern and western region of the nation are expected to get nearly normal rains; in particular the rain will be better in the month of May. The maximum temperature is expected to exceeding the normal value over the low land.

3. AGROMETEOROLOGICAL CONDTIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING BEGA 2007/8

Pursuant to the crop pehnological report (NMA crop phenological Report) of the Bega season 2007-08 though crop damage due to adverse condition like heavy falls, and pest outbreak in some pocket areas. The overall crop condition was in a good shape in most parts of meher growing areas. Moreover, as MOARD (Agricultural Bulletin) has pointed out, Quela Quela were seen in southern part the country and Oromia zone of Amhara regional state. Moreover, In October2007 Quela Quela which estimated about 9.5 millions were seen in low lands of North Shoa and Kamise zones of Amhara regional state however, due to the effective control measures taken by MOARD no significant damage has been recorded during the month of October. However according to NDVI (united states Geological survey) a scarce in vegetation cover observed during the month of November and December on the lowlands of south and southeastern parts of the country.thus this situation result in negative impact for the availability of pasture and drinking water for pastoral and agro pastoral areas. With regard to air temperature, many station exhibited extreme minimum temperature below 5^0C during the season. To mention some station below 0^0C Jimma, Koffele, Wegel Tena, Mehal Meda, Alemya and Debre Brhan Exhibited -1.4, -1.5, -1.8, -1.9, -2.0, and -6.6 extreme minimum temperature below 0^0C. Thus this condition could have a negative impact on the normal growth and development of plants.

Generally from the above agroclimtic analysis we can confirmed that the overall crop condition over most parts of meher growing areas was in a good shape thereby the expected performance of yield would be better as compared to last year. On the other hand the deficient moisture condition during the month of November and December in most parts of pastoral and agropastoral areas of south and southeastern Ethiopia resulted in poor performance.

3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING BELG SEASON

Eastern half of the country which includes the Belg crop growing areas and the south-eastern pastoral areas are expected to experience moderate to high probability of moisture stress. Thus, proper moisture conservation, rain water harvesting and cultivation of moisture stress resistance crops can help in coping with expected occurrences of dry spells in the season. Decision regarding Planting time should be appropriately managed, besides, wherever possibly irrigation possibilities are recommended to be applied.

Southern parts of the country especially Belg growing areas of SNNPR and wet semi-arid areas of agro-pastoral areas of southern Oromia are expected to experience moderate to high moisture stress in the season. Thus, proper management of the available moisture and water harvesting activities should be undertaken for the coming season to cope with possibilities of dry spell occurrences.

On the other hand the expected near normal rainfall over Western parts of the country would have an advantage for planting of long cycle crops in the month of March to May. Therefore, proper input should be utilized to take advantage of the relatively better condition for long Cycle crops.

Crop pests which can arise due to the erratic rainfall over the eastern parts of the country (especially the midlands and the lowlands) should be monitored (such as stoke borer to Maize and sorghum). Besides due to the expected late onset of the season's Belg rain, care should be taken in decisions regarding planting time, choice of crop types regarding their response to moisture stress and opportunistic pests and also decisions regarding crop cycles based on local conditions.

The desert locust swarm movement indicates few more swarms may form and move south and southwest in Ethiopia. Thus Areas at a high risk of Desert Locust Swarm infestations would be Southern and southwestern lowlands of the country. Although the situation may appear to be improving, there remains a high risk that some swarms may still be present and could move to western Ethiopia. Therefore, close monitoring and control operations should be undertaken over the southern and south-western Ethiopia, where locust infestations were reported, so that they can not bring damage to crops over the Meher growing areas of the western parts of the country, however, intensified and heavy falls can cease the development of the swarm.

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 southeastern 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 northeastern 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.

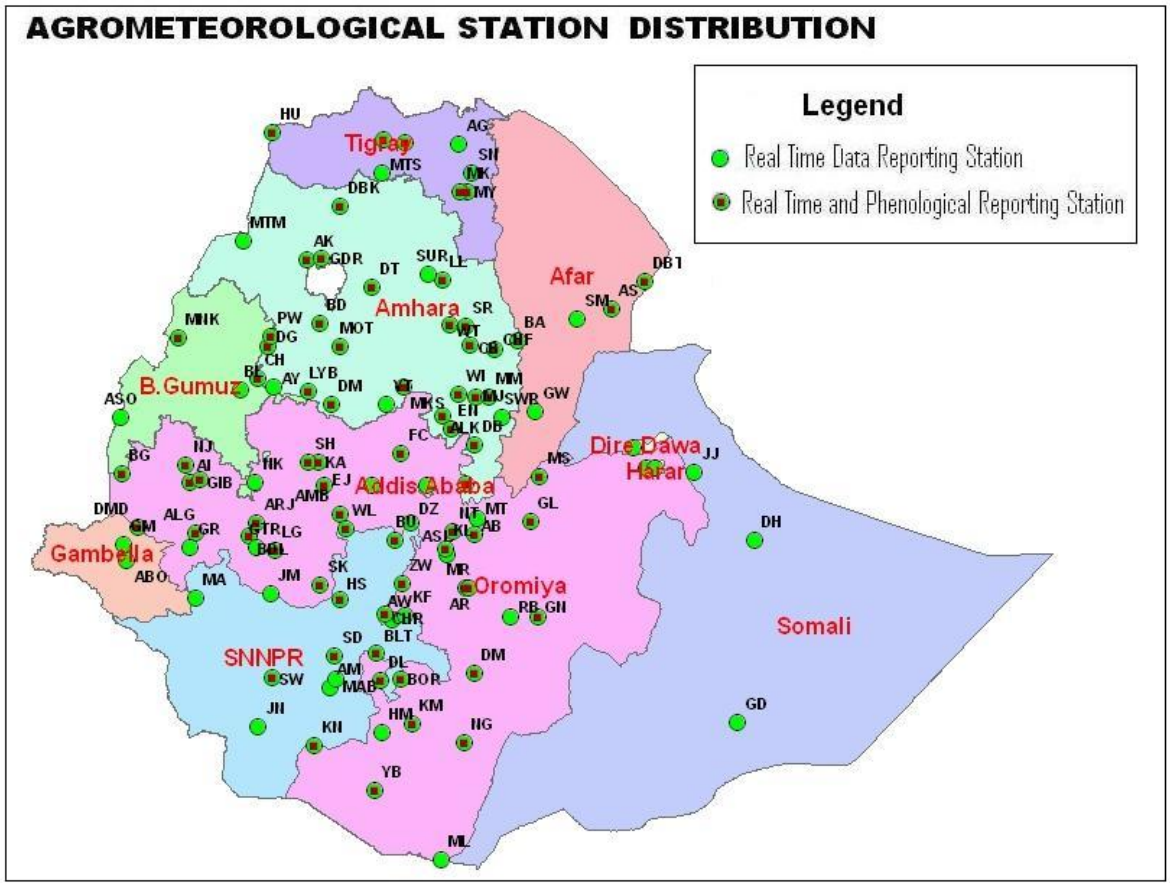
DEKAD: - First or second ten days or the remaining days of a month.

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

ITCZ: - Intertropical 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 southeastern lowlands of the country.

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



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