NATIONAL METEOROLOGICAL AGENCY AGROMETEOROLOGICAL BULLETIN

SEASONAL AGROMETEOROLOGICAL BULLETIN
BEGA, 2013/14
VOLUME 25. No.3
DATE OF ISSUE: - Feb 15, 2014

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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 በጋ 2013/14

የበጋ ወቅት ፀሐያማና ደረቅ ሲሆን አልፎ አልፎ ያልተጠበቀ ዝናብ የሚታይበት ነው። ወቅቱ ከእ.ኤ.አ ኦክቶበር እስከ ጃንዋሪ ያለውን ጊዜ ሲያጠቃልል የአገሪቱ ደቡብና ደቡብ ምሥራቅ ቆላማ ቦታዎች ወቅታዊ ዝናብ የሚያገኙበት ነው። በአብዛኛው መኸር አብቃይ በሆኑ አከባቢዎች የሰብል ስብሰባና ድህረ ሰብል ስብሰባ የሚካሄድበት ጊዜ ሲሆን በደቡብና በደቡብ ምሥራቅ አርብቶ 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 ለሰብል በሽታና ለተባይ መከሰት ተስማሚ የሆኑ የሚቲዎሮሎጂ ሁኔታዎች ከተከሰቱ ለበሽታና ለተባይ መስፋፋት አመቺ ሁኔታን የሚፈጠርበት ወቅት ነው። በበጋ ወቅት የሙቀት መጠን ከአዝርዕት ጤናማ እድገት አኳያ ሊተኮርበት የሚገባ ጉዳይ ሲሆን በሰሜን ምስራቅ፣ በመካከለኛው፣ በምስራቅ እና በደቡብ ከፍተኛ ቦታዎች ላይ ውርጭ የሚከሰትበት ወቅት ነው።

እ.ኤ.አ በኦክቶበር ወር 2013 በትግራይ፣ በአማራ፣ በቤንሻንጉል-ጉሙዝ፣ በጋምቤላ፣ በደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፣ በኦሮሚያ፣ በአፋር፣ በድሬዳዋ፣ በሐረሪ ፣በደቡብ ምዕራብ የአገሪቱ አካባቢዎች እና በሶማሌ ከቀላል እስከ ከባድ መጠን ያለው ዝናብ የነበራቸው ሲሆን። ይህም ሁኔታ በተለያዩ የእድገት ደረጃ ላይ ለሚገኙ የመኸር ሰብሎች፣ ለቋሚ ተክሎች፣ በቅርቡ ተዘርተው በተለያየ የእድገት ደረጃ ላይ ለሚገኙ የጥራጥሬ ሰብሎች እንዲሁም ከላይ በተጠቀሱ አካባቢዎች ለሚኖሩ አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽ ሳርና ለመጠጥ ውሃ ፍላጎት መሟላት አመቺ ሁኔታን የፈጠረ ነበር። በተጨማሪም ሁለተኛ የዝናብ ወቅታቸው ለሆኑት የደቡብ እና ደቡብ ምስራቅ የአገሪቱ አካባቢዎች ለሚኖሩ አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽና ለመጠጥ ውሃ አቅርቦት መሻሻል አመቺ ሁኔታን የፈጠረ ነበር። ሆኖም ግን በአንዳንድ የሃገሪቱ አካባቢዎች ላይ የጣለው ከባድ ዝናብ በደረሱ ሰብሎች ስብሰባና ድህር ሰብል ስብሰባ ስራ ላይ አሉታዊ ተፅዕኖ ነበረው። በሌላ በኩል በወሩ የመጨረሻዎች ቀናት እየተጠናከረ ከመጣው የበጋ ወቅት የአየር ሁኔታ ጋር ተያይዞ የሌሊትና የማለዳው ቅዝቃዜ 5° ሴንቲግሬስ በታች ሆኖ ተስተውሏል። ይህም ሁኔታ ገና ፍሬ በመሙላትና ባልደረሱ ሰብሎች በጤናማ እድገታቸው ላይ አሉታዊ ተፅዕኖ እንደነበረው ይገመታል።

እ.ኤ.አ በኖቬምበር ወር 2013 በትግራይ፣ በአብዛኛው አማራና ኦሮሚያ፣ በጋምቤላ፣ በቤኒሻንጉል ጉሙዝ፣ በደ.ብ.ብ.ሕዝቦች ክልል፣ በድሬዳዋ፣ በሀረሪ ፣ በደቡብ አፋርና ሶማሊ ከቀላል እስከ ከባድ መጠን ያለው ዝናብ አግኝተዋል፡፡ ይኸም ሁኔታ በመኸር ሰብል ስብሰባና ድህረ ሰብል አሰባሰብ ሥራ ላይ አሉታዊ ተጽዕኖ የነበረው ቢሆንም በአርብቶ አደሩና ከፊል አርብቶ አደሩ አካባቢ የውሃና የግጦሽ ሣር አቅርቦትን በጎ ጎን ነበረው፡፡

እ.ኤ.አ በዲሴምበር 2013 በምሥራቅ ትግራይ፣ በአማራ፣ በምዕራብና በመካከለኛው ኦሮሚያ እንዲሁም በደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል በጥቅት ሥፍዎች ላይ አስተኛ ዝናብ ተመዝግቧል። ይኸም ሁኔታ በመኸር ሰብል ስብሰባና ድህረ ሰብል አሰባሰብ ሥራ ላይ አሉታዊ ተጽዕኖ የነበረው ቢሆንም በአርብቶ አደሩና ከፊል አርብቶ አደሩ አካባቢ የውሃና የግጦሽ ሣር አቅርቦትን በጎ ጎን ነበረው፡፡ በሌላበኩል በአንዳንድ ለውርጭ ተጋላጭ በሆኑ ደጋማ የሀገሪቱ ሥፍራዎች በወሩ ውስጥ የቀኑ ዝቅተኛ የአየር ሙቀት መጠን ከዜሮዲግሪ ሴልሽየስ በታች ከተመዘገበባቸው ጣቢዎች መካከል በደብረ ብርሃን -5.5፣ በሀሮማያ -0.5፣ በአዲግራት -2.0 እና በወገልጤና -2.8 በዲግሪ ሴልሽየስ የጠቀስ ሲሆን ይህም ሁኔታ _በአዝርዕትም ሆነ በእርሰሳት ምርታማነትና ጤናማ እድገት ላይ አሉታዊ ተፅዕኖ እንደ ነበረው እሙን ነዉ።

እ.ኤ.አ በጃንዋሪ 2014 በአብዛኛው የሀገሪቱ ክልሎች የነበረው ደረቅ ፀሐያማ የበጋ ወቅት የአየር ሁኔታ ለሰብል ስብሰባና ድረሰብል ስብሰባ አመቺ ሁኔታ እንደፈጠረ እሙን ነው። በሌላ በኩል ለዝናብ መፈጠር አመቺ የሚቲዎሮሎጂ ክስተቶች በመፈጠራቸው ምክንያት በደቡብ ክልል፣ በምዕራብ፣ በመካከለኛውና በደቡብ ኦሮሚያ ደጋማ ሥፍራዎች እንዲሁም በምስራቅ የሀገሪቱ ክፍሎች በጥቂት ሥፍራዎቻቸው ላይ ከቀላል እስከ መካከለኛ መጠን ያለው ዝናብ ተመዝግበዋል። ይህም ሁኔታ የነበረውን የማለዳና የሌሊቱን ቅዝቃዜ በማርገቡ ረገድ ጠቀሚታ ሲኖረው በሌላ በኩል የመኸሩ የሰብል ስብሰባና ድረሰብል ስብሰባ ስራ አሉታዊ ተፅዕኖ ነበረው። በሌላ በኩል የተገኘው ዝናብ ለቋሚ ተክሎች የውሃ ፍላጎት መሟላትና የበልግ እርሻ ሥራ እንቅስቃሴን ቀደም ብሎው ለሚጀምሩ ለማሳ ዝግጅትና ለዘር ስራ እንቅስቃሴ እንዲሁም ለአርብቶ አደሩና ከፊል አርብቶ አደሩ አካባቢዎች ለግጦሽ ሣርና ለመጠጥ ውሃ አቅርቦት መሻሻል የጎላ ጠቀሜታ እንደነበረው ይታመናል።

በአጠቃላይ ባሳለፈነው የበጋ ወቅት በተለይም በኦክቶበርና ኖቬምበር ወር የተገኘው እርጥበት እድገታቸውን ላልጨረሱ የመኸር ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም ለአርብቶ አደሩና ከፊል አርብቶ አደሩ ለግጦሽ ሳርና ለመጠጥ ውሃ አቅርቦት በጎ ጎን ነበረው። ሆኖም ግን ወቅቱን ያልጠበቀ ዝናብ በአንዳንድ ኪስ ቦታዎች ላይ በሰብል ስብሰባው ላይ መጠነኛ አሉታዊ ተጽዕኖ ነበረው፣ እንዲሁም በደቡብና በደቡብ ምስራቅ የነበረው እርጥበት በአርብቶ አደሩና ከፊል አርብቶ አደሩ ለግጦሽና ለመጠጥ ውሃ አቅርቦት እንዲሁም በጥቂቱም ቢሆን ለሚካሄደው የእርሻ እንቅስቃሴ አወንታዊ ተፅዕኖ ነበረው። (Leap) software በመጠቀም (Rangeland WRSI) በአርብቶ አደሩና ከፊል አርብቶ አደሩ አካባቢ የሚኖረውን የግጦሽ ና የመጠጥ ውሃ አቅርቦትን የተሰላው ውጤት እንደሚያሳየው እፅዋት የውሃ ፍላጎት ጥሩ የእርጥበት ሁኔታ እንደ ነበር ይጠቁማል። በተጨማሪም በጥር ወር የነበረው እርጥበት የበልግ የእርሻ እንቅስቃሴ ቀድመው ለሚጀምሩ አካባቢዎች በጎ ጎን ነበረው። በጥቅሉ የበጋው ወቅት ደረቅ፣ ፀሐያማና ነፋሻማ የአየር ሁኔታ በመኸር አብቃይ አካባቢዎች ላይ የሰብል ስብሰባና ድህረ ሰብል ስብሰባ አመቺ እንደነበረው እሙን ነው። በሌላ በኩል በሰሜን ምሥራቅ፣ በመካከለኛው፣ በምሥራቅና በደቡብ ከፍተኛ ሥፍራዎች ላይ የሌሊትና የማለዳው ቅዝቃዜ ከ5 ዲግሪ ሴልሽየስ በታች በመውረዱ ምክንያት በተለያየ የዕድገት ደረጃዎች ላይ ለነበሩ የጥራጥሬ ሰብሎች፣ በቋሚ ተክሎችና በእንሰሳት ምርታማነትና ጤናማ እድገት ላይ አሉታዊ ተፅዕኖ ነበረው።

BEGA 2013/2014

SUMMARY

Normally Bega is the season characterized by cold, sunny and dry weather condition with sometimes, unseasonal rainfall for northern half of the country, and extends from October to January. On the other hand, it is a second rainy season for southern and southeastern lowlands of the country. This dry and sunny condition favors harvest and post harvest activities in the areas where major agricultural activities are practised during Meher season. It is also 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 and eastern lowlands of the country. This weather situation could favor the outbreak of pest and disease of crops if there are favorable conditions, susceptible host and the pest itself. The dry and windy Bega weather condition is also favorable for the occurrence and spread of wild fire. There is also a possibility for frost hazard, mainly over northeastern, central, eastern and southern highlands of the country during the season.

During the month of October 2013, Tigray, Amhara, Benshangul-Gumuz, Gambela, SNNPR, Oromia, Afar, Dire Dawa, Harria, southwester portion of the country and Somalia received little to heavy rains. This situation was conducive for the availability of water for Meher crops that were not yet fully matured, perennial plants, late sown pulses and availability of pasture and drinking water over pastoral and agro-postural areas. Heavy rainfall over some aforementioned areas might have caused a negative impact on Meher harvest activities.

Moreover, dry, sunny and windy Bega weather condition prevailed over Meher growing areas of the country might favored harvest activities. On the other hand, Bega's dry weather condition might cause early morning and night cooling over highlands of the country, which might have caused the occurrence of frost that might have affected the normal growth of Meher crops that are not yet fully matured, perennial plants and animals.

During the month of Nov 2013, Amhara, Tigray, Benishangul- gumuze, Gambella, SNNPR, Oromia, Dire Dawa, Harari, Somali and western parts of the country received light to heavy rainfall. The situation might have caused shattering of seed of ripe crops, harvest and post harvest activities and damage crops at different phases of growth particularly in areas where heavy falls experienced. Contrary to this, the moisture obtained might have been fulfilled water requirement of crops not yet

physiologically matured, perennial plants, pasture and drinking water availability in pastoral and agro pastoral areas. On the other hand dry, sunny and windy Bega weather condition associated with night and early morning cooling effect caused minimum temperature fallen below 5 ^{o}C which might have negative impact on normal growth of crops not fully attend maturity as well as physiological activities animal and their products

During the month of December 2013, the month under review of Dec, 2013, due to entrance of strong cool air from northern hemisphere crossing Arab lands into the country result in more strengthen of cooling effect particularly over the high lands of the country at the beginning of the month. Contrary to this, during the second and third dekade of the month, Even though, Bega weather condition was dominated over most parts of the country, due to increase of moist air entrance and cloudy condition over, western and central Oromia, western SNNPR Gambella, central Amhara and eastern Tigray experienced little rainfall over few places. The situation favored harvest and post harvest agricultural activities while, little rainfall received over few places was might have useful perennial plants and pasture and drinking water availability over pastoral and agro pastoral areas. On the other hand, the minimum temperature fallen below 5 ^{o}C for consecutive days might have negative impact on normal growth of perennial plants and physiological activities and products of livestock.

During the month of January 2014, the moisture condition shows Moist over southwestern, central & eastern parts of the country this condition was conducive for Belg rain benefiting areas for land preparation and availability of pasture and drinking water. However, the situation might have slight negative impact on harvest and post-harvest activities. With regard to extreme maximum temperature some stations such as Gambela, Humera, Metema. Mankush, Gode, Pawe, Sirbu Abaya and Sheraro reported maximum temperature of 39.5, 39.0, 38.5, 38.4, 38.0, 37.0, 36.9 and 36.7 ^{0} C respectively. On the other hand, some areas of central, eastern, northeastern and northern highlands recorded extreme minimum temperature below 5 ^{o} C for more than 5 consecutive days, some stations like Alemaya, Debre Brhan, Cheffa, Adele. Jijiga, Jimma, Debre Zite reported minimum temperature as low as-1.5, 0.5, 1.4, 2.1, 2.5 and 2.5 ^{o} C respectively. This situation might have a negative impact for normal growth and development of plants

Generally the performance of moisture during the season particularly in the month of October and November was favorable for Meher crops that are not yet fully matured. In addition the extended unseasonal rainfall in October and November also benefited lately planted crop, the performance of perennial, annual crops as well as improved the pasture and water situation significantly. However, it induced negative impact on matured and unharvested fields.

A better **vegetation cover** and Rangeland index based on **WRSI** observed during the month of **October and November** on the lowlands of south and southeastern parts of the country result in positive impact for the availability of pasture and drinking water.

Dry and sunny Bega season prevailed after November will have a positive impact for Meher harvest and post harvest activities. Besides, the observed extreme minimum temperature of cool nights and early mornings as low as 5°C (repeatedly) lowering up to –5.0 over frost prone areas of High lands might have been frost risk on Meher crops that were not yet fully matured.

Generally with the exception of weather related adversities such as heavy falls, hailstorm, flooding, frost and **crop past** as well as the observed unseasoned rainfall situation over some areas. the overall situation was favorable for season's agricultural activities.

Bega Season month to month moisture index

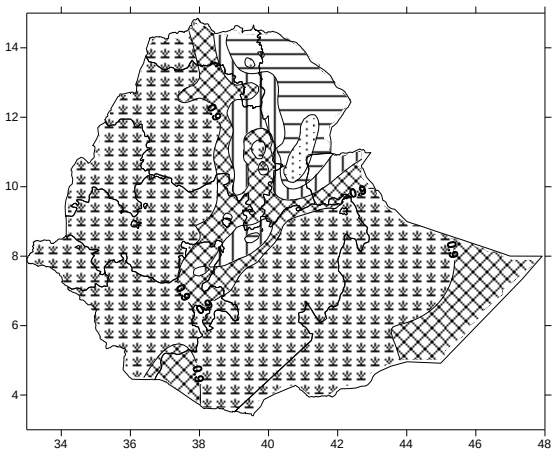


Fig 1. Moisture status for the month of October 2014

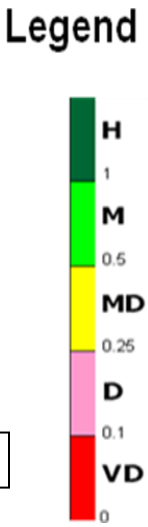


Fig 2. Moisture status for the month of November 2014

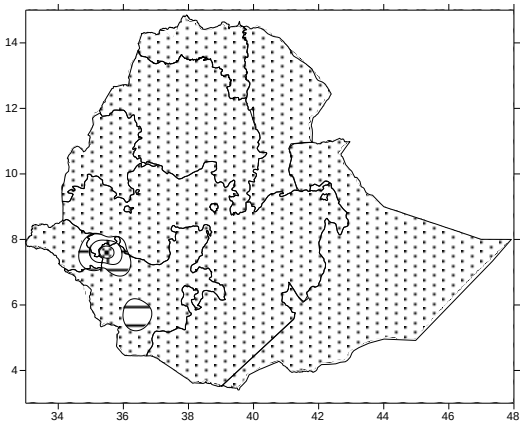


Fig 3. Moisture status for the month of December2014

Fig 4. Moisture status for the month of January 2014

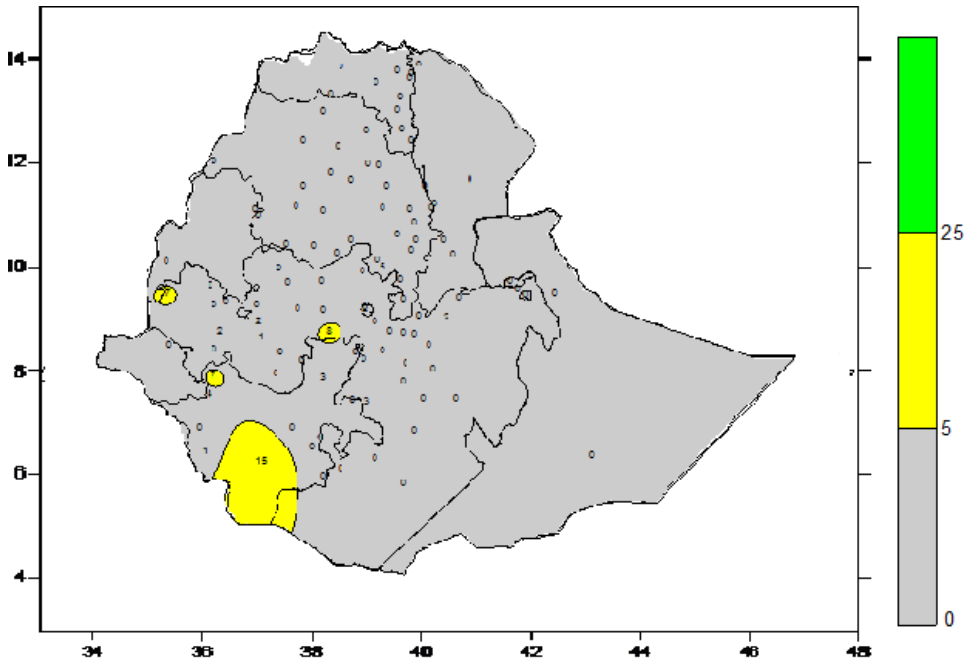


Fig. 5 Rainfall distribution in mm (21-31 January 2014)

1. WEATHER ASSESSMENT

1.1 21-31 January 2014

1.1.1 RAINFALL AMOUNT (Fig.5)

Western parts of SNNPR, pocket areas of western Oromia received 5-25 mm of rain fall. The rest parts of the country experienced little or no rainfall.

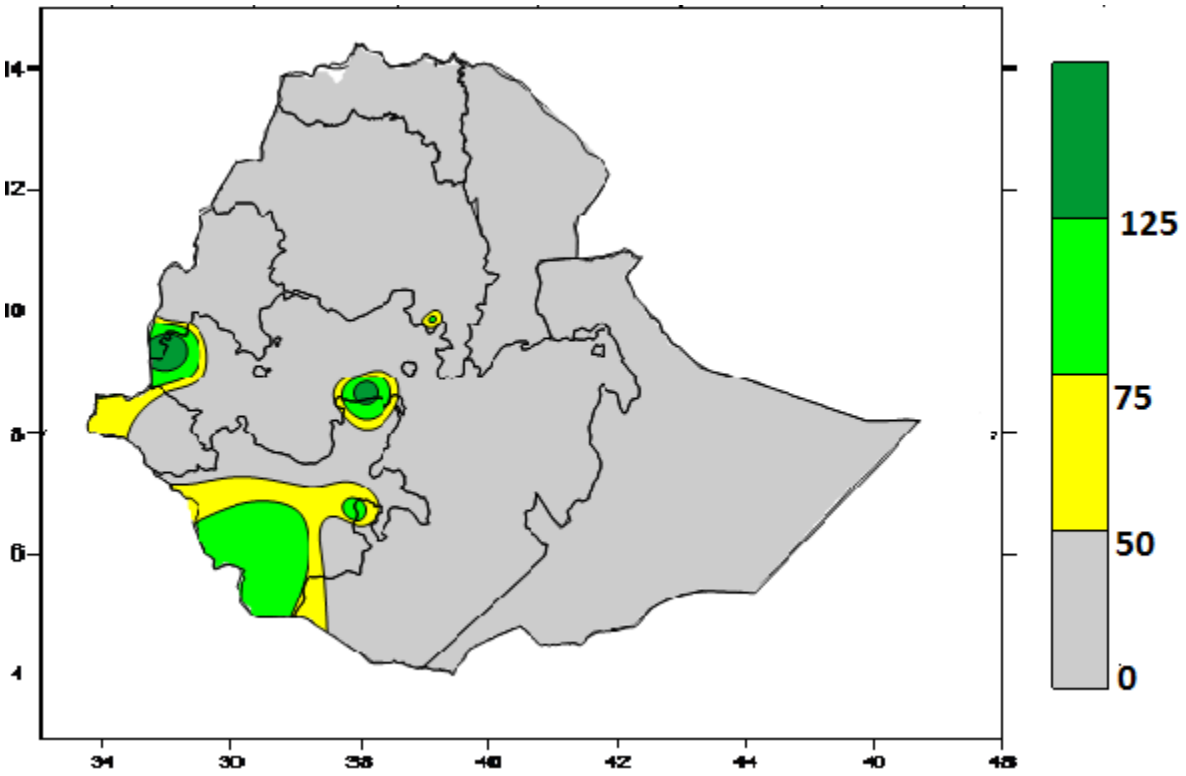


Fig. 6 Percent of normal rainfall (21-31January2014)

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. 6)

Western parts of SNNPR and western Oromia experienced normal to above normal rainfall. The rest parts of the country exhibited below to much normal rainfall.

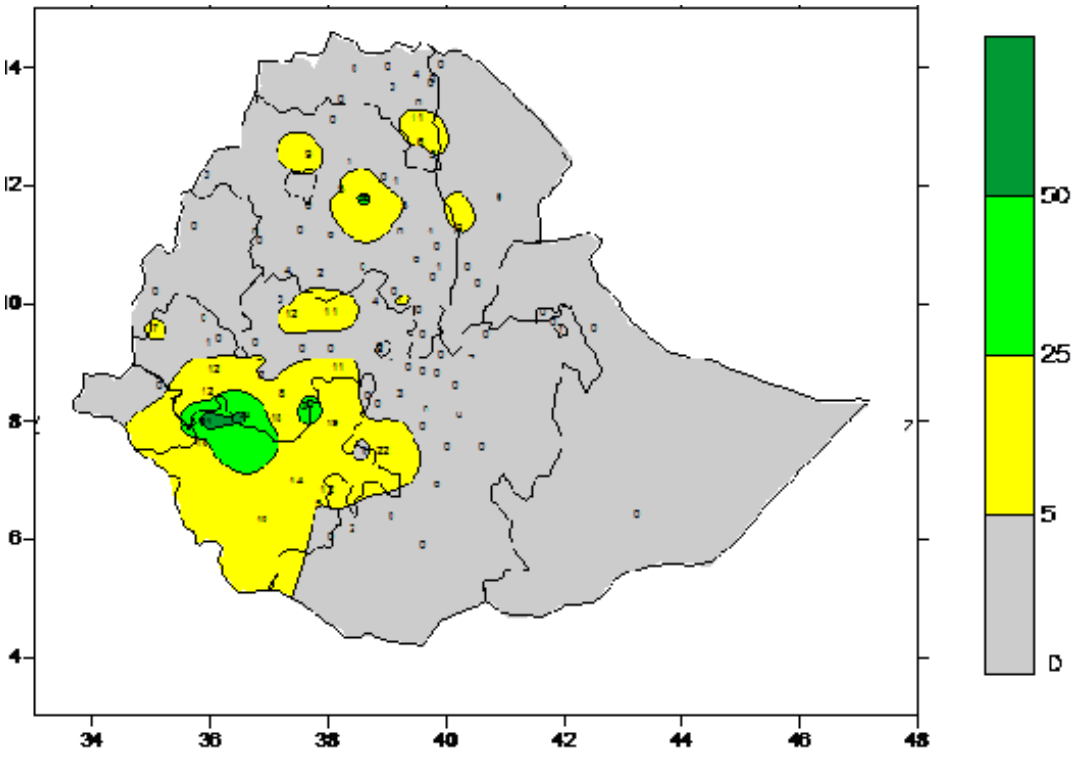


Fig. 7 Rainfall Distribution in mm for the month of January 2014

1.2 January 2014

1.2.1 Rainfall Amount (Fig.7)

Western tip of SNNPR received 50-100 mm of rainfall. Pocket area of western Oromia and western SNNPR received 25-50 mm of rainfall. Most parts of SNNPR, parts of SNNPR, pocket areas of central Amhara southern Tigray western Afar received 5-25 mm of rainfall. The rest parts of the country experienced little or no rainfall.

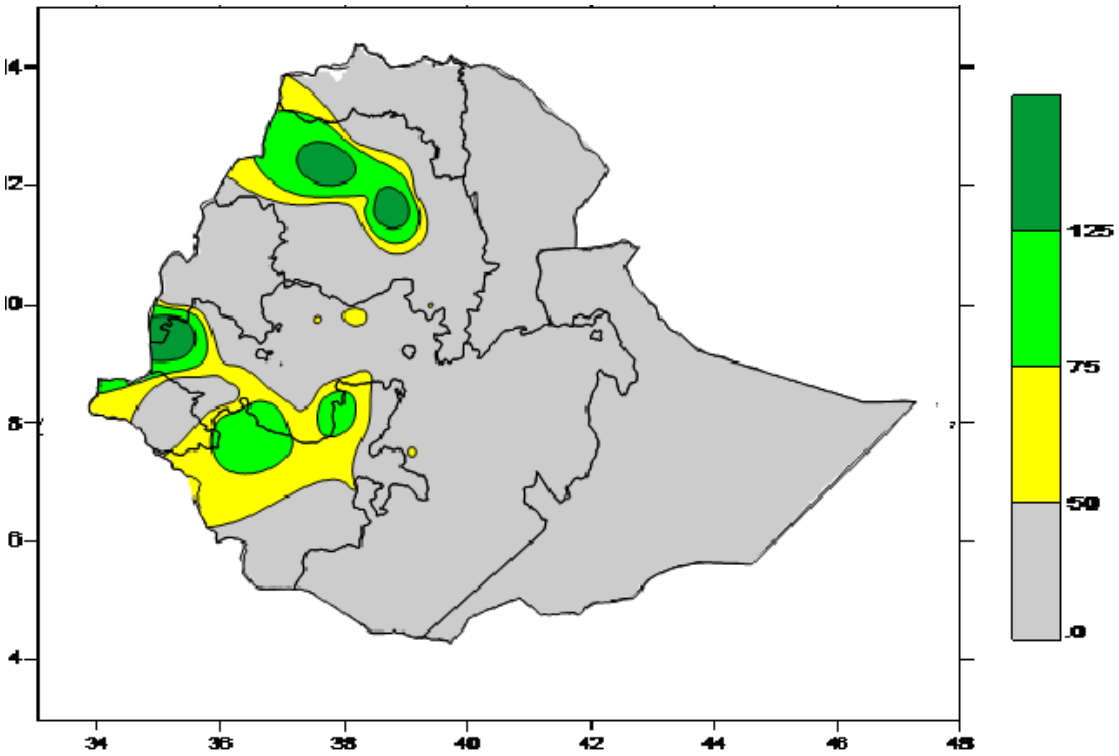


Fig. 8 Percent of Normal Rainfall for the month of January 2014

Explanatory notes for the Legend:

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

1.2.2 Rainfall Anomaly for the month of January 2014 (Fig. 8)

Parts of western Amhara, western Oromia and western SNNPR exhibited normal to above normal rainfall. The rest parts of the country experienced below to much below normal rainfall

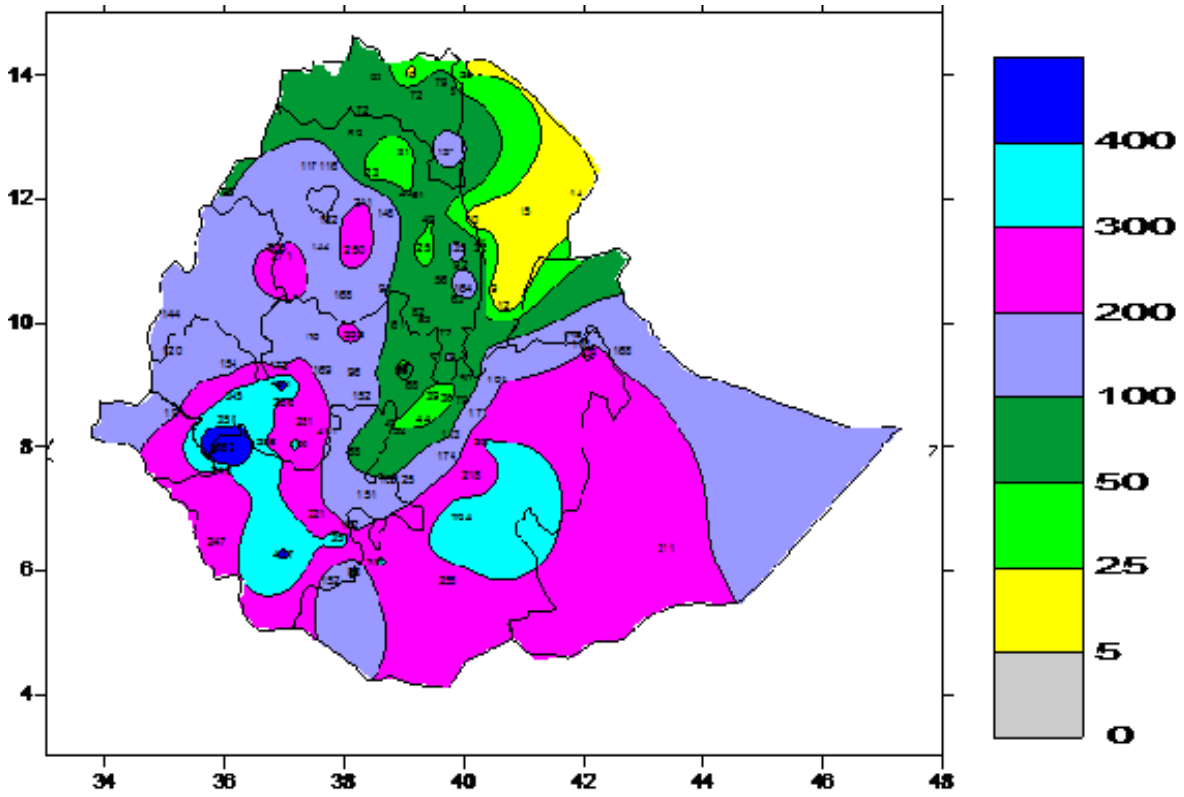


Fig. 9 Rainfall Distribution in mm for Bega 2014

1.3 BEGA 2013/ 2014

1.3.1 RAINFALL AMOUNT FOR BEGA 2013/ 2014 (Fig. 9)

Western part of SNNPR received 400-500 mm of rainfall. Western and southern Oromia and central and western parts of SNNPR received 300-400 mm of rainfall. Parts of eastern, western and southern tip of Amhara, most of southern and western Oromia, western half of Somali, most parts of SNNPR received 200-300 mm of rainfall. Eastern half of Somaliparts of eastern western and southern Oromia, western half of Gambela, Benshangul-Gumuze, most parts of western Amhara and pocket area of southern Tigray and western Amhara received 100-200 mm of rainfall. Most parts of Tigray and eastern half and northern parts of Amhara and central parts of the country received 50-100 mm of rainfall. Pocket areas eastern Amhara, north western Afar and central parts of the country received 25-50 mm of rainfall. Most parts of received 5-25 mm of rainfall.

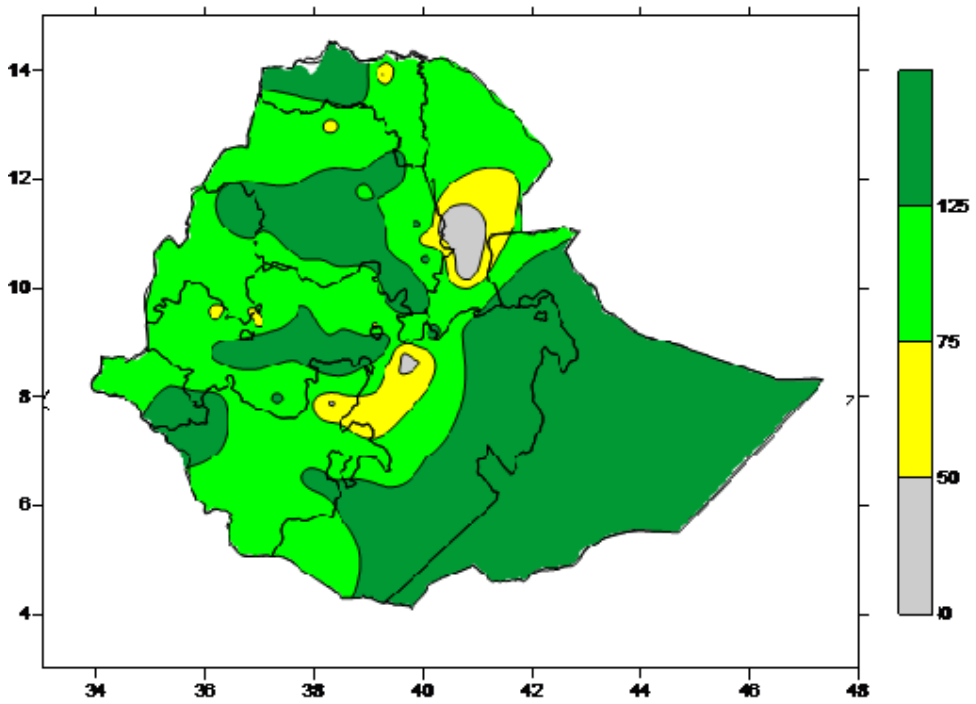


Fig. 10 Percent of normal rainfall for Bega 2013/ 2014

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

1.3.2 RAINFALL ANOMALY FOR BEGA 2013/ 2014(Fig. 10)

Most parts of the country except some parts of central and southern Afar experienced normal to above normal rainfall.

1.4 TEMPERATURE ANOMALY

During the month under review, some stations in the lowland parts of the country exhibited extreme maximum air temperature above 35^{o}C. Among the recording stations:, , Gawane,Quara, , Gambela, Gode, Sirba Abaya Arba mich and Metehara recorded extreme maximum temperature 36.0,41.0,41.0,36.3 35.5 and 35.2 ^{o}C. While, some stations, over the high lands, reported extreme minimum temperature below 5.0^{o}C. To mention some of them; Adele, Adigrat, Adwa , Robe, Alemaya, Dangla, Debre Berhan, Debre Zeite, Jijiga, Hagere Mariam, Combolcha, Mekele, ,Senkata, Amba mariam and Wegel Tena 3.8,-3.0,3.5,2.0,-1.0,3.5,2.2,0.0,2.5,4.9,4.5,1.5,3.3 and 0.0.The extreme temperature experienced aforementioned areas might have a negative impact on the normal growth and development of perennial plants and physiological activities and products of livestock.

2. AGROMETEOROLOGICAL CONDTIONS AND IMPACT ON AGRICULTURE

2.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING BEGA 2013/ 2014

The performance of moisture during the season particularly in the month of October and November was favorable for Meher crops that are not yet fully matured. In addition the extended unseasonal rainfall in October and November also benefited lately planted crop, the performance of perennial, annual crops as well as improved the pasture and water situation significantly. However, it induced negative impact on matured and unharvested fields.

A better in vegetation cover and Rangeland index based on WRSI observed during the month of October and November on the lowlands of south and southeastern parts of the country result in positive impact for the availability of pasture and drinking water.

Dry and sunny Bega season prevailed after November will have a positive impact for Meher harvest and post harvest activities. Besides, the observed extreme minimum temperature of cool nights and early mornings as low as 5°C (repeatedly) lowering up to –5.0 over frost prone areas of High lands might have been frost risk on Meher crops that were not yet fully matured.

Generally with the exception of weather related adversities such as heavy falls, hailstorm, flooding, frost and crop past as well as the observed unseasoned rainfall situation over some areas. The overall situation was favorable for season's agricultural activities.

2.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING BELG SEASON

Normally central parts of northern high lands, eastern highlands, part of central, south western and southern Ethiopia are known as Belg growing areas. The contribution of Belg rainfall is ranging from 5-30% over the north, north eastern and eastern highlands where as 30-60% over south and south western parts of the country from annual total crop production of the areas.

The analyzed moisture status of all selected analogue years expected to Moderate to good moisture over most of Belg growing areas particularly in the southern portion over SNNPR the expected good

moisture has paramount importance in the areas where their Belg production contribution ranges from 40-70 % from annual production.

Total crops water requirement in both analog year 1997 & 2002 said to be Poor for northeastern, parts of central & eastern and southern Oromia. Moderate to very good WRSI condition is confined over southern and some parts of eastern Oromia , Bale & Arsi zones of Belg growing areas of the country.

The expected Near normal onset and cessation is anticipated over the Belg rain benefiting regions of the country which is conducive for Belg agricultural activities starting earlier, availability of pastor & water over pastoral and agro pastoral areas.

Northeast, Rift Valley, East, parts of Central, south and southeast expected to prevail near normal with odds of above normal. the condition will conducive for Belg agricultural activities, Sowing of cereals like maize, sorghum and others including pulses is the major activities over most parts of the above mentioned areas, it will favour availability of pasture and drinking water.

Near normal to below normal rainfall is expected over Western region, which would have negatively affected planting of long cycle crops in the month of April to May.

The expected owing to the intra-seasonal variability, prolonged dry spells across Belg growing areas, including drought prone regions may influence the season. Thus, farmers need to utilize rain water harvesting, moisture conservation and planting of suitable crops needing less water requirements.

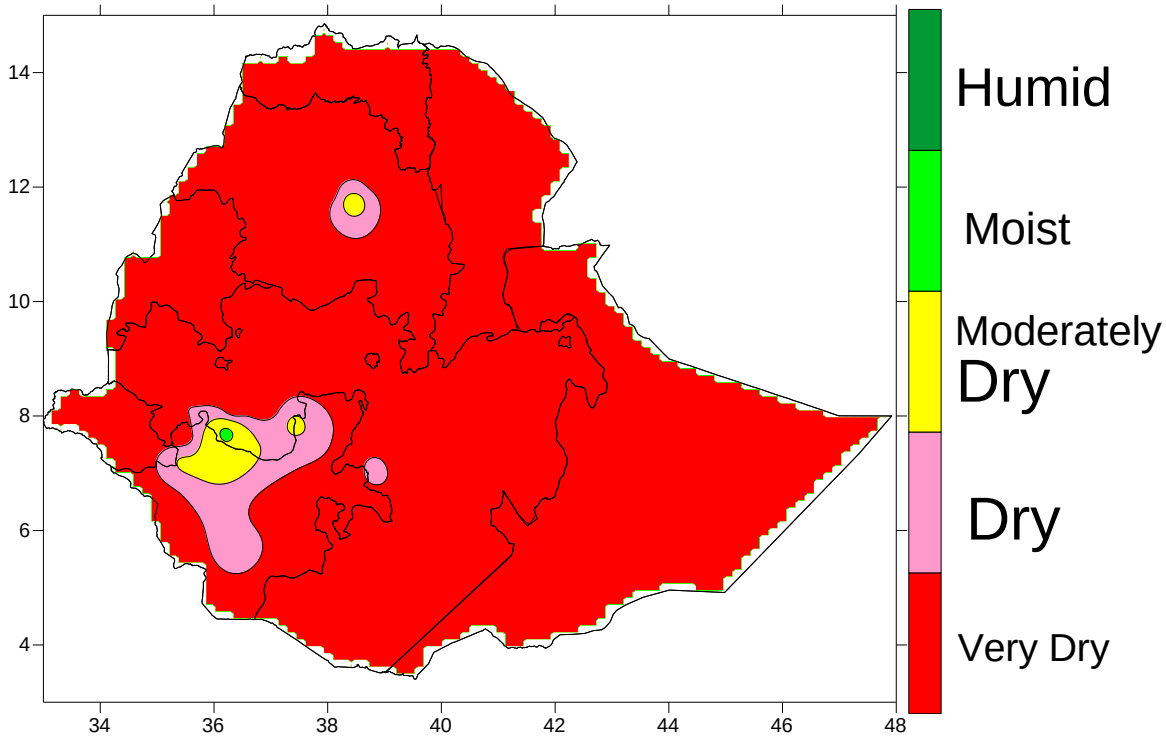


Fig.11 Moisture Status for January 2014

As depicted on the moisture status map above, few places of SNNPR and Amhara were found under moderately dry weather condition. The rest parts of the country remained under dry and very dry weather situation. In line with this, the period was favorable for post harvesting activities. Similarly, some places of SSNPR had favored in acquiring moderate moisture for grazing and land preparation for Belg season cultivation.

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 evapo-transpiration of a disease free crop, growing under non-restricting soil conditions including soil water and fertility.

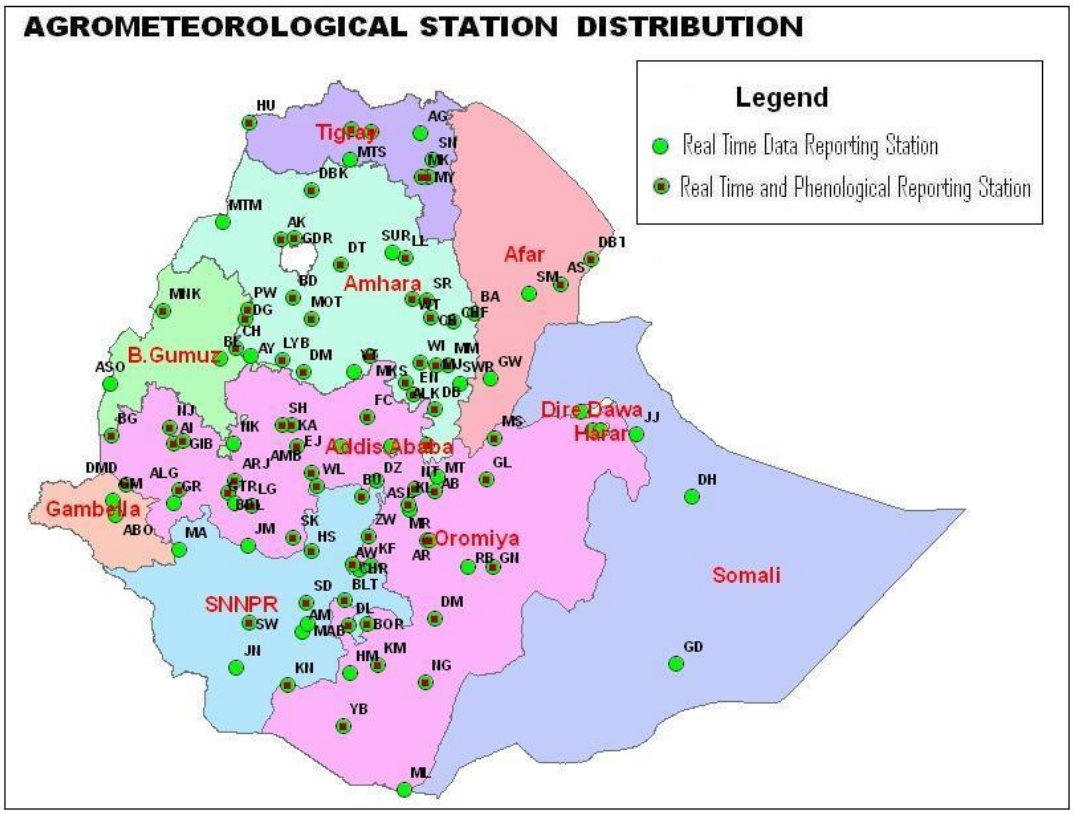
DEKAD: - First or second ten days or the remaining days of a month.

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 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		