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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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እ.ኤ.አ በጋ 2009/10

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።

በኦክቶበር ወር የዝናብ ሰጪ የአየር ገፅታዎች ከመጠናከራቸው ጋር ተያይዞ በአብዛኛው የደቡብና የምዕራብ የአገሪቷ አጋማሾች ዝናብ አግኝተዋል። በተለይም ምዕራብና ምስራቅ ትግራይ፣ ደቡብ አፋር፣ አብዛኛው አማራ፣ ቤንሻንጉል ጉሙዝ፣ አብዛኛው ኦሮሚያና የደቡብ ብሔር ብሔረሰብና ሀዝቦች ክልል፣ ጋምቤላ፣ በአብዛኛው ሶማሌ እንዲሁም ድሬደዋና ሐረሪ ዝናብ አግኝተዋል። ይህም ሁኔታ ዘግይተው ለተዘሩትና በተለያየ የእድገት ደረጃ ላይ ላሉት የመኸር ሰብሎች በቂሚነት በአካባቢው ለሚበቅሉ እፅዋቶች እንዲሁም በአካባቢው ለሚኖሩ አረብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃና ለግጦሽ ሳር ልምላሜ አዎንታዊ ተፅዕኖ ነበረው። በሌላ በኩል ከሁለተኛው አስር ቀናት በኋላ የአገሪቷ ሰሜናዊ አጋማሽ ደረቅ፣ ነፋሻና ፀሐያማ የአየር ሁኔታ ያመዘነባቸው በመሆኑ የቀኑ ዝቅተኛ ሙቀት በአንዳንድ ደጋማ ቦታዎች ከ5ዲ.ሴ በታች ተመዝግቧል። ይህም ሁኔታ በአካቢው ለሚበቅሉት ቋሚና በመኸር ተዘርተው በተለያየ የእድገት ደረጃ ላይ ላሉት ተክሎች እንዲሁም በአካባቢው ለሚኖር የቤት እንሰሳት አሉታዊ ተፅዕኖ ነበረው።

በኖቬምበር ወር በአብዛኛው የአገሪቷ አካባቢዎች የበጋው ደረቅ ፀሐያማና ነፋሻማ የአየር ሁኔታ አመዝኖ የተስተዋለ ሲሆን ከዚሁ ጋር በተያያዘ በአገሪቱ ከፍተኛ ቦታዎች ላይ የሌሊቱና የማለዳው ቅዝቃዜ ከ5ዲ.ሴ በታች ሆኖ ተመዝግቧል። ይህም ሁኔታ በመኸር ወቅት ተዘርተው ለደረሱት ሰብሎች ስብሰባ እና ድህረ ስብሰባ አመቺ ሁኔታ የፈጠረ ሲሆን በአንዳንድ የመኸር ሰብሎች ገና ፍሬ በመሙላትና በአበባ ላይ ላሉት እንዲሁም በአካባቢው ለሚበቅሉት ቋሚ ተክሎች እንዲሁም በአካባቢው ለሚኖሩ እንሰሳትና የእንሰሳት ተዋፅኦ ላይ አሉታዊ ተፅዕኖ እንደሚያሳድር እሙን ነው። ይሁን እንጂ በወሩ ውስጥ አልፎ አልፎ በደቡብና በደቡብ ምዕራብ እንዲሁም በምዕራብ የሀገሪቱ ክፍሎች ላይ ዝናብ የተመዘገበ ሲሆን የወሩ የመጨረሻ ቀናት ዝናቡ በመጠናከር በስምጥ ሸለቆ አካባቢ፣ በሰሜን ምስራቅ፣ በምስራቅና በመካከለኛው የአገሪቷ ክፍሎች ላይ ወቅታዊ ያልሆነ ዝናብ ተመዝግቦ ነበር። በተጨማሪም የደቡብና የደቡብ ምስራቅ የአገሪቱ ክፍሎች ዝናብ አግኝተዋል። ይህም ሁኔታ በአካባቢው ለሚበቅሉት ቋሚ ተክሎችና በአካባቢው ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃና ለግጦሽ ሳር አቅርቦት አዎንታዊ ተፅዕኖ ነበረው። በሌላ በኩል ይህ ወቅቱን ያልጠበቀ ዝናብ ለመኸር ሰብል ስብሳቦ እና ድህረ ሰብል ስብሳቦ አሉታዊ ተፅዕኖ ነበረው።

ባለፈው ዲሴምበር ወር ወቅቱን ላልጠበቀ ዝናብ መፈጠር አመቺ የሆኑ የአየር ገጽታዎች (ክስተቶች) በመፈጠራቸው ምክንያት በተለያዩ የሀገሪቱ ክፍሎች ወቅቱን ያልጠበቀ ዝናብ እንዲኖር መንስኤ ሆኖዋል። በመሆኑም የሰሜን ምስራቅ ከፍተኛ ቦታዎች፣ የምዕራብና የደቡብ ምዕራብ አካባቢዎች፣ የመካከለኛውና የምስራቅ ኢትዮጵያ ክፍሎች፣ እንዲሁም የስምጥ ሸለቆ ሥፍራዎች ወቅታዊ ያልሆነ ዝናብ ነበራቸው። የዝናቡ መጠንም በአንዳንድ አካባቢዎች ላይ በአንድ የዝናብ ቀን ብቻ ከ30

ሚ.ሜ የበለጠ ከባድ ዝናብ አግኝተዋል። ከባድ ዝናብ ከመዘገቡት ጣቢያዎች መካከል በጨፋ፣ በሳውላ፣ በደሎመና፣ በአዲስ አበባ፣ በጊደሌ፣ በአርባምንጭ፣ በጨርጨር፣ በደምቢደሎና በጊምቢ 73.2፣ 51.7፣ 51.6፣ 51.2፣ 45.0፣ 36.9፣ 32.0፣ 30፣ 30ሚ.ሜ እንደየቅደም ተከተላቸው መዝግቧል፡፡ ይህም ሁኔታ በተለይም የዝናብ ወቅታቸው ላልሆነው አካባቢዎች ባልተሰበሰቡና ተሰብስበው በአግባቡ ላልተከመሩ የመኸር ሰብሎች፣ እንዲሁም ለድህረ ሰብል ስብሰባ እንቅስቃሴ ላይ አሉታዊ ተፅዕኖ እንደነበረው ይገመታል። በሌላ በኩል ደግሞ ለቋሚ ተክሎች፣ ዘግይቶ ተዘርተው በተለያየ ዕድገትና ፍሬ መሙላት ላይ ለሚገኙ ሰብሎች ለግጦሽ ሳር እና ለመጠጥ ውሃ አቅርቦት የጎላ ጠቀሜታ እንደነበረው እሙን ነው፡፡

በጃንዋሪ ወር በአብዛኛው የአገሪቷ ክፍሎች የበጋው ደረቅና ነፋሻማ የአየር ሁኔታ ተዘውትሮ ተስተውሎ ነበር። በአንዳንድ የሰሜን ምስራቅና የምስራቅ የመካከለኛውና የደቡብ ከፍተኛ ቦታዎች የሌሊቱና የማለዳው ቅዝቃዜ 5 ዲ.ሴ በታች ሆኖ ቆይቷል ይህም ደረቅና ነፋሻማ የአየር ሁኔታ ለመኸሩ ሰብል ስብሰባና ድህረ ሰብል ስብሰባ አዎንታዊ ተፅዕኖ ቢኖረውም የሌሊቱና የማለዳው ቅዝቃዜ ግን በአካባቢው ለሚበቅሉት ቋሚ ተክሎችና በአካባቢው ለሚኖሩት እንሰሳት ሁኔታ ላይ አሉታዊ ተፅዕኖ እንደነበራቸው ይገመታል። በሌላ በኩል ከወሩ አጋማሽ በኋላ የስምጥ ሸለቆ እና አካባቢ የደቡብ የአገሪቷ አካባቢዎች ዝናብ አግኝተዋል ይህም ሁኔታ ለመኸሩ የሰብል ስብሰባ አሉታዊ ተፅዕኖ ቢኖረውም በአካባቢው ለሚበቅሉ ቋሚ ተክሎች እና በአካባቢው ለሚኖሩ አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃ አቅርቦት እና ለግጦሽ ሳር ልምላሜ እንዲሁም ለበልጉ እርሻ እና ማሳ ዝግጅት በጎ ጎን እንደነበረው ይገመታል።

በአጠቃላይ የበጋ ወቅት በመኸር አብቃይ አካባቢዎች ታይቶ የነበረው ከመደበኛ በላይ የሆነና ወደበጋው ወቀት የዘለቀው የዝናብ ስርጭት በግብርናው ላይ አዎንታዊና አሉታዊም ገፅታዎች እንደነበሩት የመስክ ሪፖርቶች ያመለክታሉ።አሉታዊ ገፅታዎችን በተመለከተ በተለይም በመካከለኛው ስምጥ ሸለቆና አዋሳኝ አካባቢዎች፣ የመኸር ሰብሎች ፈጥነው ሊደርሱባቸው በሚችሉ ሞቃታማ አካባቢዎች፣ በደረሱና በመታጨድ ላይ ባሉ፣ ታጭዶደው በተከመሩ ሰብሎች ላይ ጉዳቶች አስከትሎ እንደነበር ይህን በተመለከተ ቀደም ብሎ ከብሔራዊ የሚቲዎሮሎጂ ኤጀንሲ ሲተላለፉ የነበሩ ምክሮችን ተግባራዊ በማድረግ፣ እንደነኚህ አይነት ጉዳቶችን ለመቀነስ በየአካባቢው ከፍተኛ ርብርብ እንደነበር አይዘነጋም።አዎንታዊ ገፅታዎችን በተመለከተ በክረምት ወቅት ዘግይቶ መግባት ምክንያት ዘግይተው ዳግመኛ ለተዘሩ ሰብሎች ወደ በጋው የዘለቀው የዝናብ ስርጭት ለነኝህ ሰብሎች የውሀ ፍላጎታቸውን በማሟላትም ሆነ የዕድገት ጊዜያቸውን ለማጠናቀቅ ከፍተኛ አስተዋፅየ ስለነበረው በክረምት ወቅት ዘግይቶ መግባት ምክንያት ሊከሰት የሚችለውን አሉታዊ ገፅታ በማስተካከል በኩል የራሱ የሆነ አዎንታዊ ገፅታ ነበረው።

BEGA 2009/2010

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 practiced 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 2009, western and eastern Tigray, southern afar, much of Amhara, Benishangul- Gumuz, much of Oromya and SNNPR, Gambela, much of Somalia as well as Dire Dawa and Harrari received normal to above normal rainfall. This situation might have favored perennial and late sown Meher crops as well as availability of pasture and drinking water for pastoral l and agro pastoral area of the country. Some stations reported heavy falls exceeding 30 mm. Zeway, Wolita Sodo, Shambu, Nekemt, Nazereth, Metehara, Harar, Gore, Gode, Ginnir, Gimbi, Chira, Chagni, Bui, Bedelle, Asossa, Arba Minch, Alge, Alemaya and Arsi Robe recorded 71.7, 40.0, 44.0, 42.5, 45.5, 52.4, 50.5, 41.7, 49.8, 40.0, 42.2, 48.3, 45.6, 65.0, 58.5, 58.0, 48.8, 50.5, 62.0 and 40.0 mm of rainfall in one rainy day. In line with this crop damages were observed over Ziway, Alge and Bedelle. On the other hand dry, windy and sunny weather condition with cool nights and early mornings prevailed over the highlands of northern portions of the country. This situation might have a negative impact on Meher agriculture and perennial crops as well as livestock.

During the month of November 2009, Bega's dry, windy and sunny weather condition prevailed over most parts of the country. The situation might have favored Mehre harvest and post harvest activities. On the contrary, the daily extreme minimum temperature in some highland areas experienced below 5°C that might have increased the risk of frost damage on late planted Merhe crops that are found at pre-maturing stages, perennial crops and livestock. At the end of month rain giving meteorological phenomena over Rift valley, northeastern, eastern and central parts of the country caused to receive unseasonal rain. The situation might have favored perennial crops, availability of pasture and drinking water over pastoral and agro pastoral area of the country, on the contrary, the situation might have caused a negative impact on Matured Meher crops, harvest and post- harvest activities at some lowlands of Meher growing areas. Jimma, Chercher, Harar, Konso and Meisso reported 41.1, 34.9, 35.5, 58.0 and 37.4 mm of rainfall in one rainy day.

During the month of December 2009, due to unseasonal rainfall activities north eastern high lands, western, south western, central, eastern, rift valley and adjoining areas of the country experienced rainfall activities. In some areas the rain was heavy exceeding 30 mm. Some of the stations recorded heavy falls exceeding 30 mm in one rainy day. Cheffa, Sawla, Dolo Mana, Addis Ababa ,Gidole, Arbaminich, Chercher, Dembi Dolo and Ghimbi recorded 73.2, 51.7, 51.6, 51.2, 45.0, 36.9, 32.0, 30.0, 30.0 mm of rainfall respectively. The situation might have a negative impact on Meher harvest and post –harvest activities. On the other hand, it might have a positive impact on lately sown crops, perennial crops, improvement of pasture and water over agro pastoral and pastoral areas.

During the month of January 2009, Bega dry, windy and sunny weather condition prevailed over most parts of the country. The situation might have favored Mehre harvest and post harvest activities. On the contrary, the daily extreme minimum temperature in some highland areas experienced below 5°C which might have increased the risk of frost damage on late planted Merhe crops and perennial crops and livestock. Rift vally

areas and southern parts of the country were received rainfall. The situation might have favored Belg land preparation, perennial crops, availability of pasture and drinking water over pastoral and agro pastoral area of the country.

Generally the situation of Bega season was favorable for different agricultural activities. The moisture obtained during the season helped the performances of Meher crops that are not yet fully matured. In addition the situation was conducive for the general agricultural activities and availability of pasture and drinking water over southern and southeastern portions of the country. However, excess moisture obtained might have slightely affected harvest and post harvest activities especially over mid & lowlands of Meher growing areas. Better WRSI performance was observed on Teff, Wheat and Barley crops over most of Meher producing area. Slight deficit WRSI observed over southern and eastern Tigray, eastern Amhara and some parts of central and eastern parts of the country. WRSI analysis indicates also there was high probability of replanted crops due to excess moisture during October and November. WRSI analysis of long cycle crops indicated deficient as compared to that of 2008. On the other hand, the observed adverse condition in some pocket areas like hail damage, flood and pests due to the observed unseasoned rainfall condition over some pocket areas caused damage on some crops.

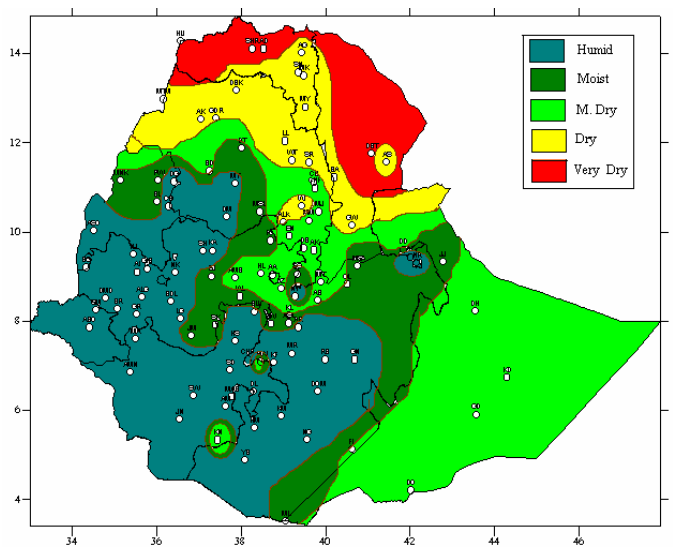


Fig 1. Moisture status for the month of October 2009

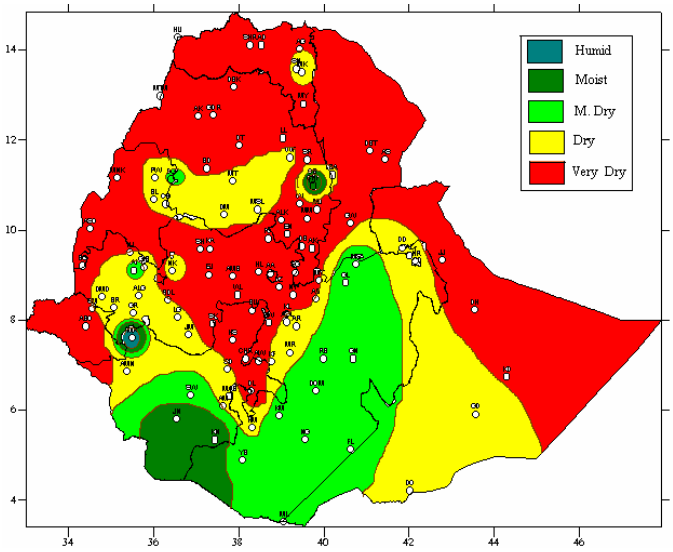


Fig 2. Moisture status for the month of November

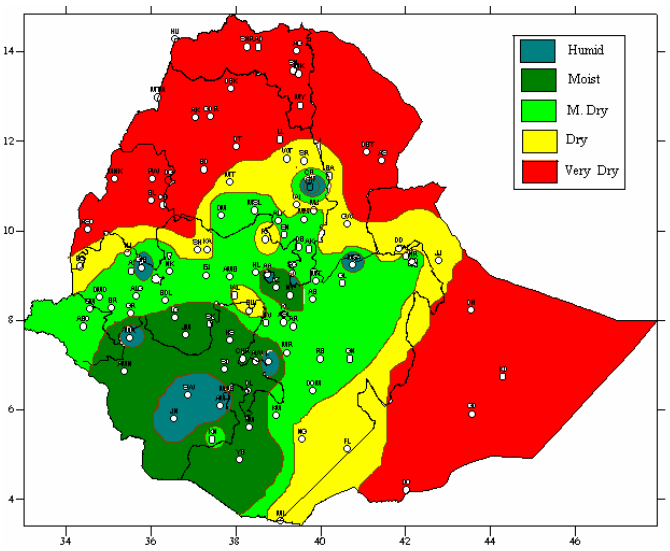


Fig 3. Moisture status for the month of December 2009

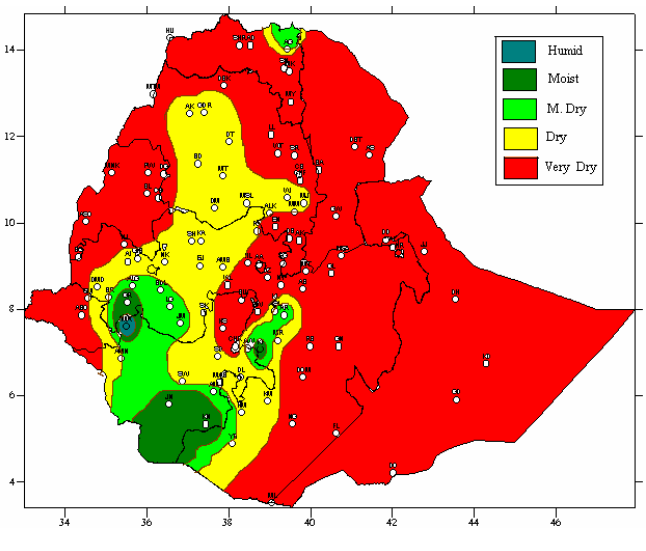


Fig 4. Moisture status for the month of Jaunary 2010

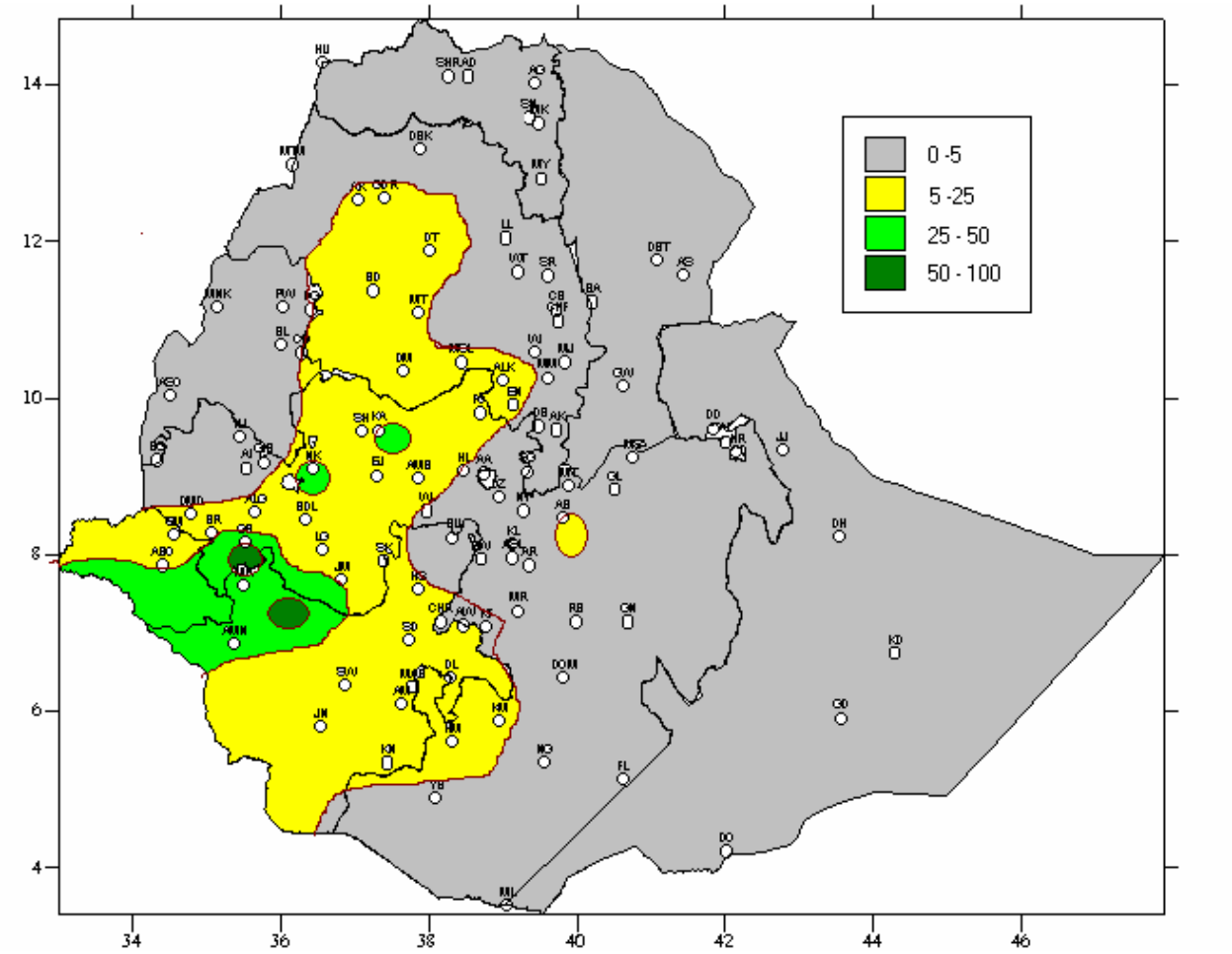


Fig. 7 Rainfall distribution in mm (21-31 January 2010)

1. WEATHER ASSESSMENT

1.1 January 21-31, 2010

1.1.1 Rainfall Amount (Fig 6)

Pocket areas western SNNPR and adjoining areas of Oromia received 50-100 mm rainfall. Much of southern and southeastern Gambella, western and southwestern SNNPR and pocket areas of western and southwestern Ormia received 25-50 mm rainfall. While central and southern Amhara SNNPR, southwestern and pocket areas of southern Oromia received 5-25 mm rainfall. The rest parts of the country experienced little or no rainfall.

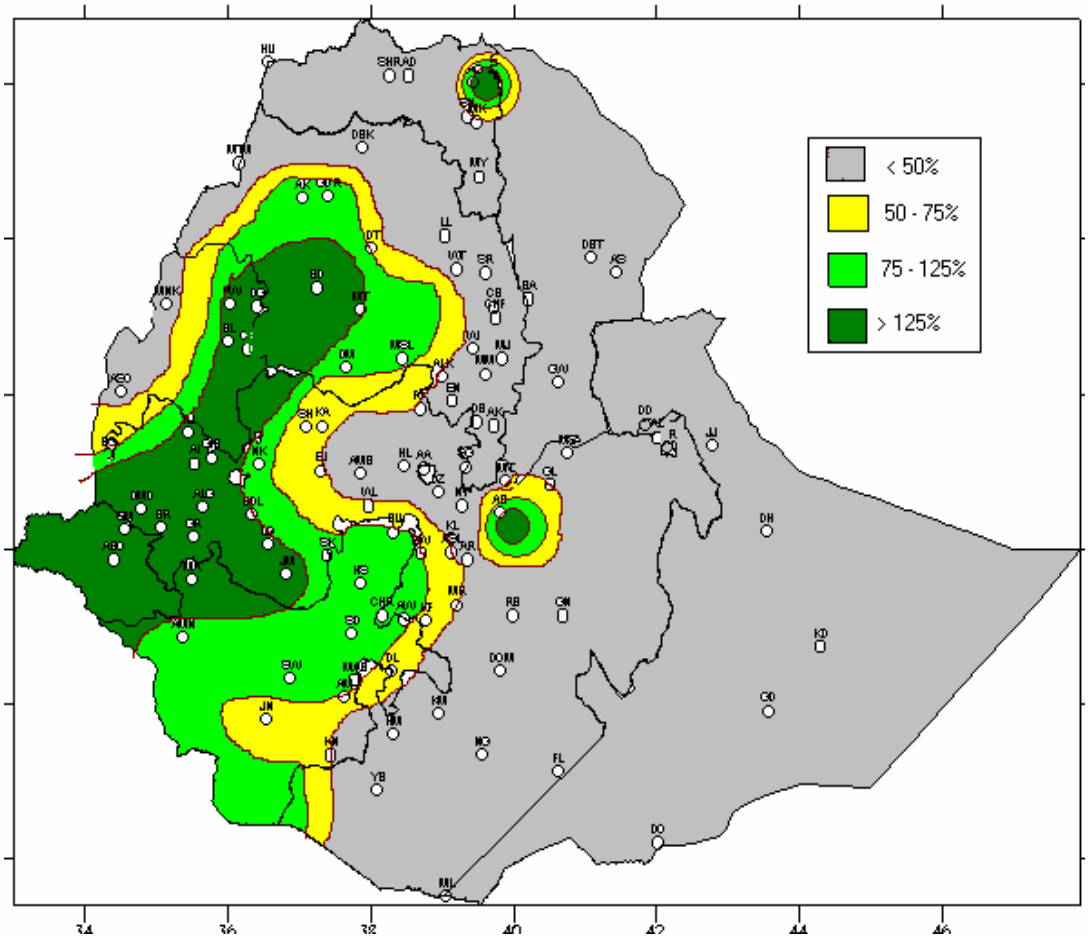


Fig. 8 Percent of normal (21-31 January 2010)

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 ofcentral and southern Amhara, SNNPR, Gambella, Benishangul-Gumuz, parts of western, southwestern and pocket areas southern Oromia, pocket areas of eastern Tigray received normal to above normal rainfall. While rest parts of the country experienced below normal to much below normal rainfall.

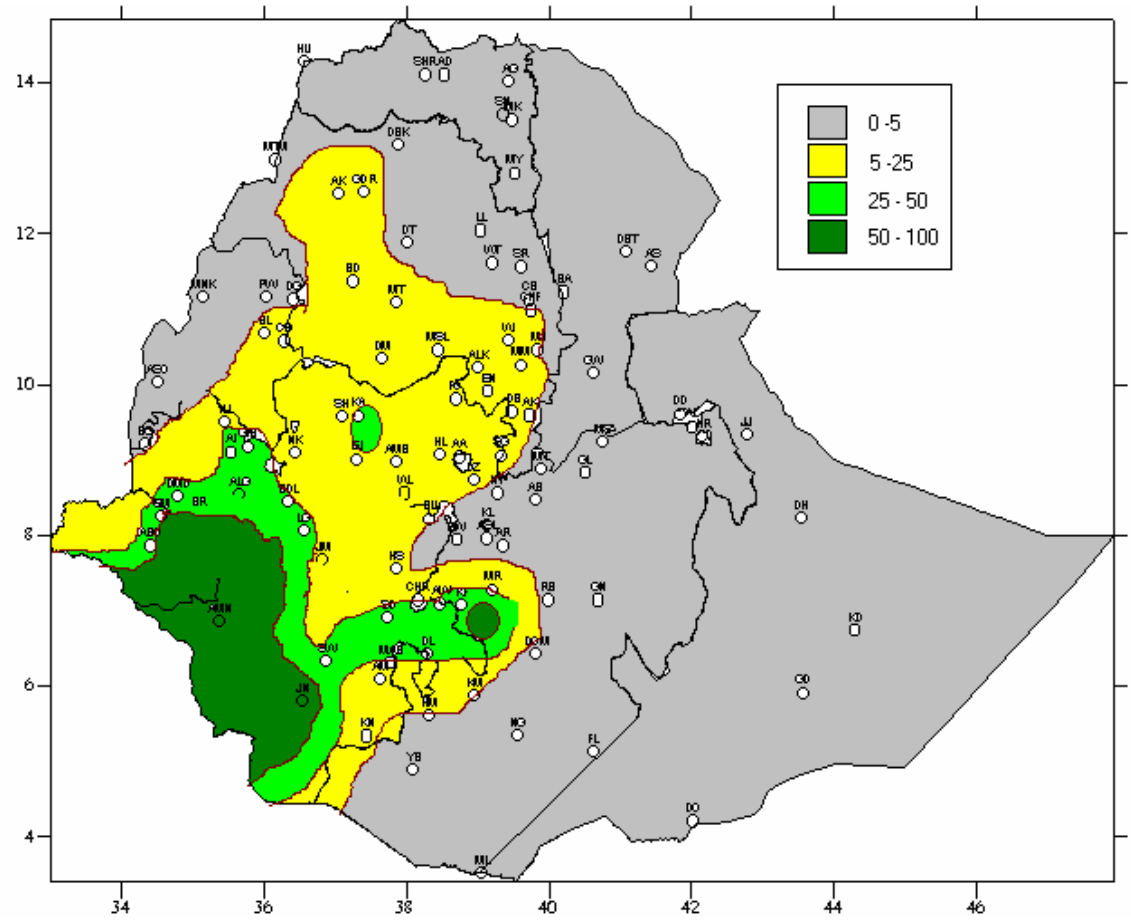


Fig. 9 Rainfall Distribution in mm for the month of January 2010

1.2 January 2010

1.2.1 Rainfall Amount (Fig. 8)

Much of southern and southwestern SNNPR, Gambela and pocket areas of southern Oromia received 50-100 mm rainfall. Some parts of southern Gambela, western and southwestern Oromia received 25-50 mm rainfall, while much of central, eastern and southern Amahra, southern Benshangul Gumuz, southwestern and central Oromia and some places of southern Oromia and western Gambela received 5-20 mm of rainfall . The rest parts of the country exhibited little or no rainfall.

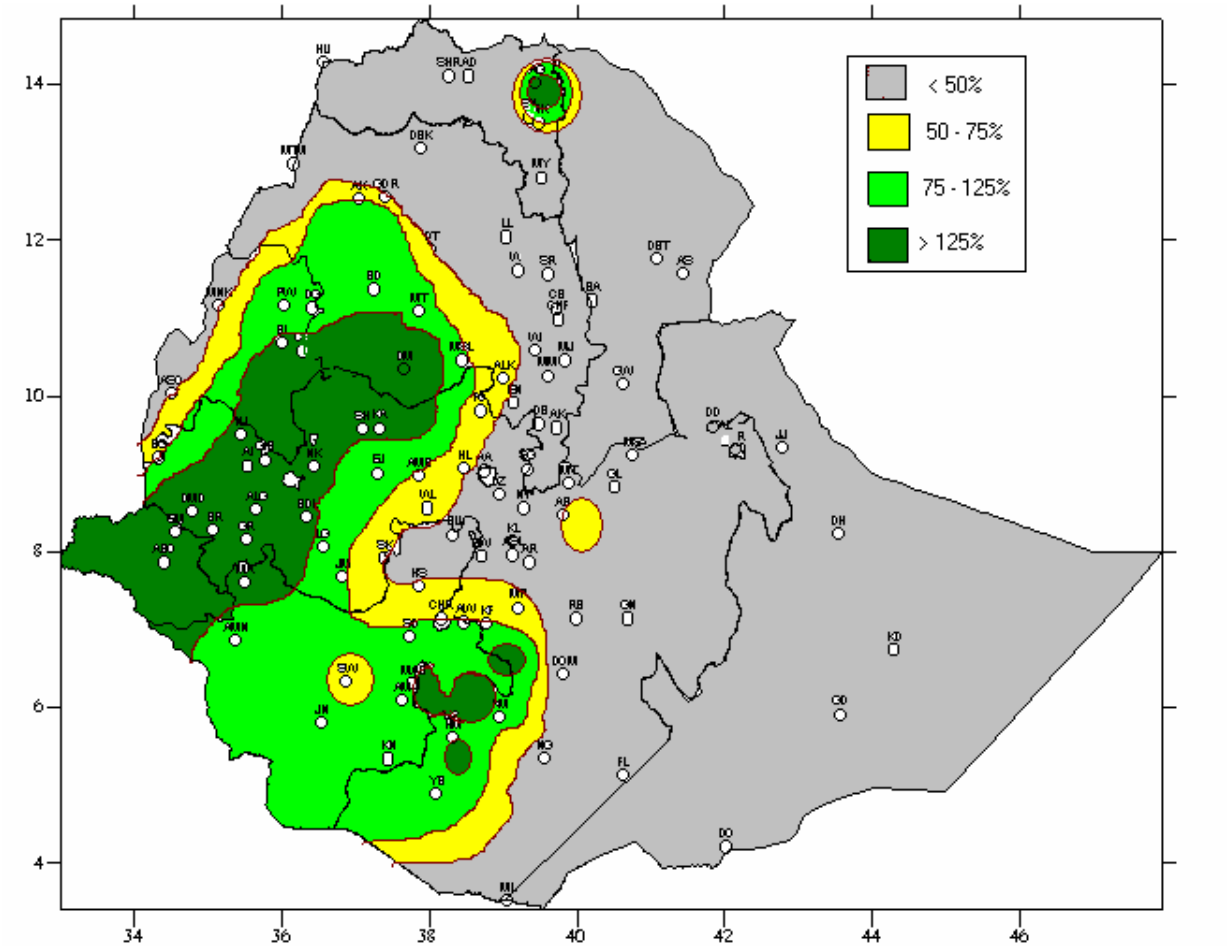


Fig. 10 Percent of Normal Rainfall for the month of January 2010

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)

Much of SNNPR, Gambella, Benishangul-Gumuz, southern and southwestern Amhara received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

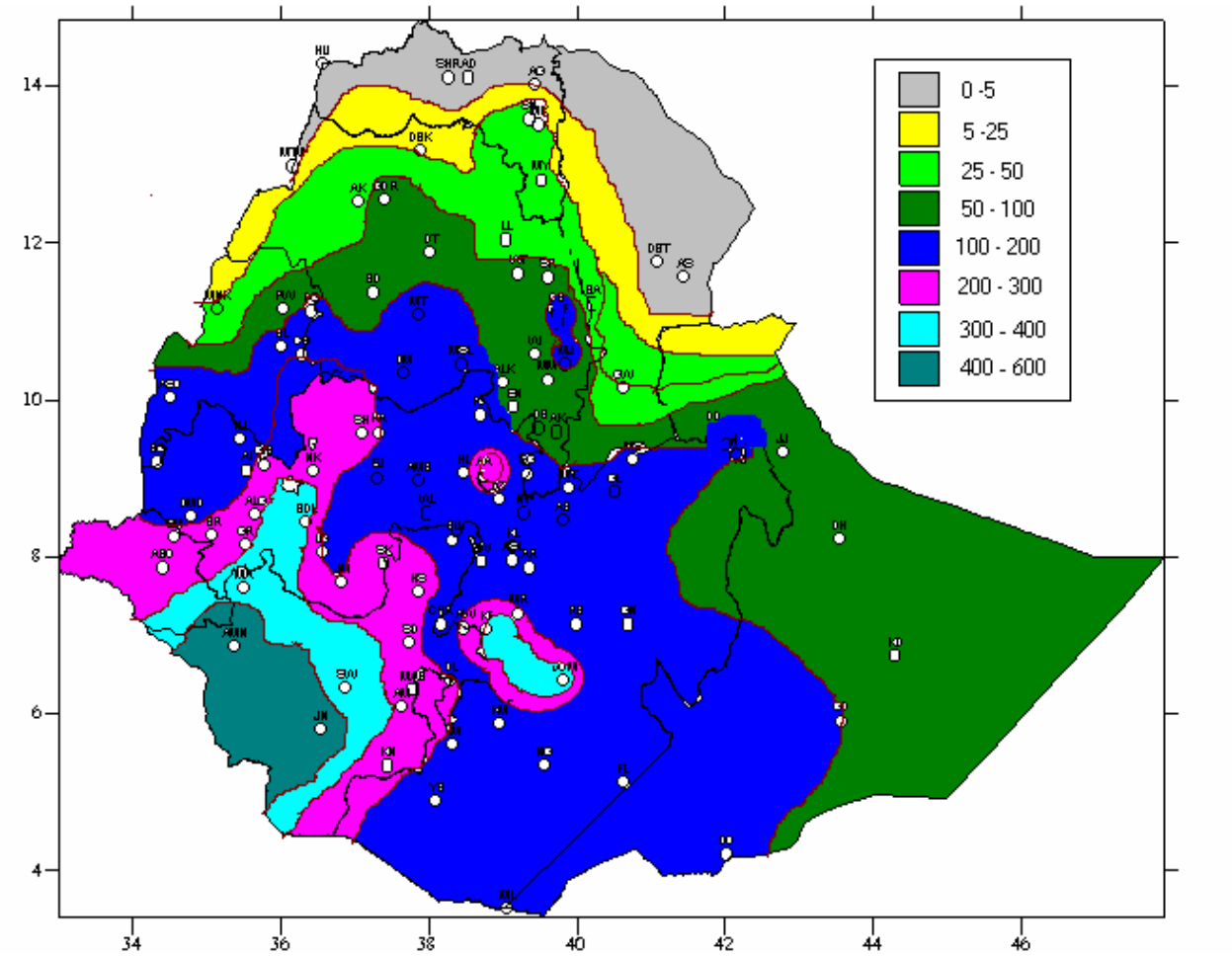


Fig. 11 Rainfall Distribution in mm for Bega 2009/2010

1.3 Bega 2009/10

1.3.1 Rainfall Amount (Fig. 10)

Much of southern SNNPR and adjoining areas of Gambela received 400-600mm of rainfall. Some parts of southern and southwestern SNNPR, southern Gambela and western and southern Oromia, received 300-400 mm. Much of Gambela,southern and southwestern SNNPR and Orimia experienced 200-300 mm. Much of Orimia, Beshangul-Gumuz, southern and eastern Amhara and southwestern Somalia received 100-200mm.Much of Somali, Amhara, Beshangul-Gumuz, northeastern Oromia received 50-100mm of rainfall. Much of southern and southeastern Amhara, southern Benshangul-Gumuz, southern and eastern Tigray and southern and southwestern Afar received 25-50mm of rainfall while the rest parts of the rest parts of the country exhibited below 25 mm.

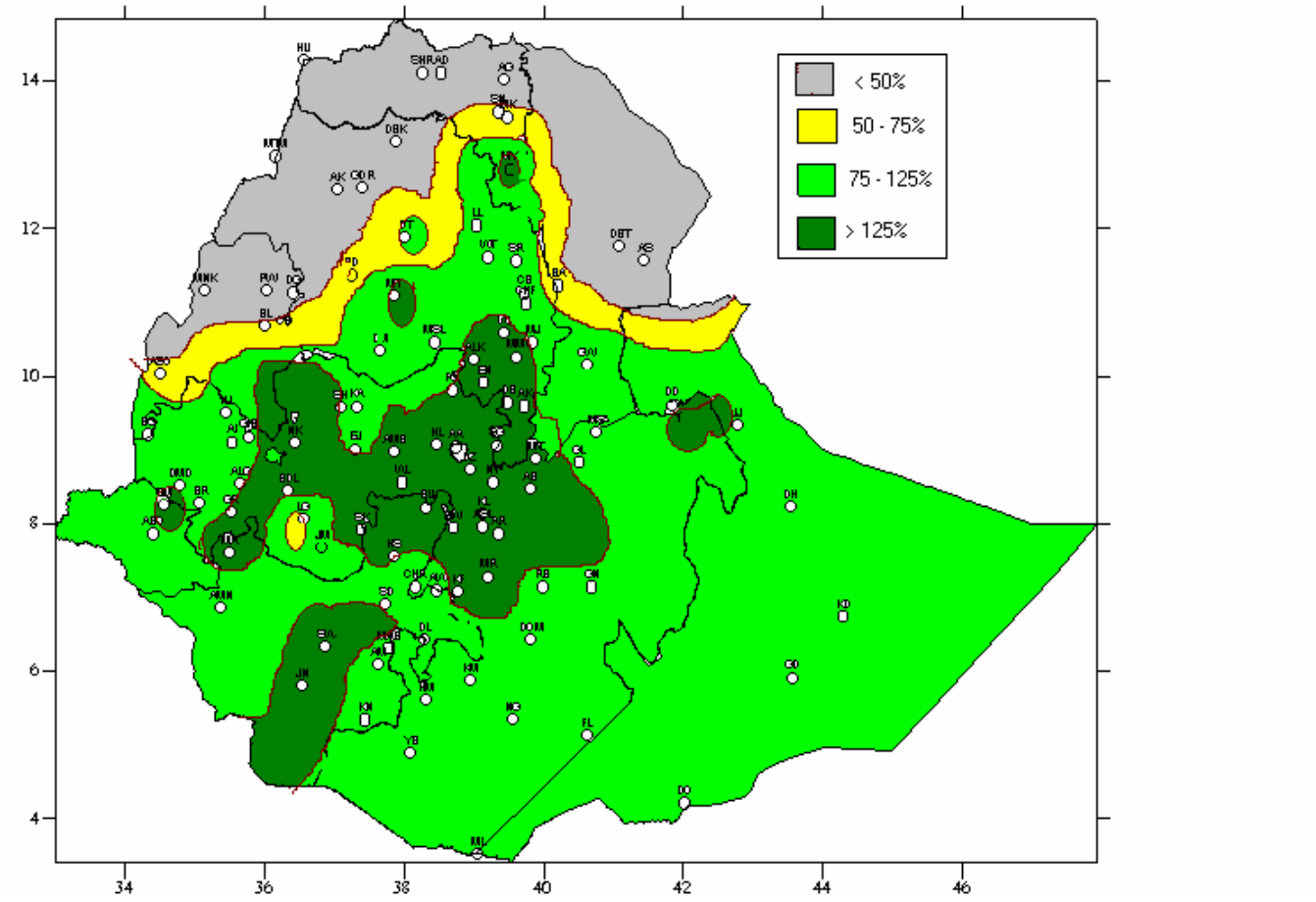


Fig. 11 Percent of Normal Rainfall for Bega 2009/10

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)

With the exception of Amahra, Tigray, Benshangul-Gumuz and Afar the rest parts of the country experienced normal to above normal rainfall.

1.4 TEMPERATURE ANOMALY

During the month under review some areas exhibited extreme maximum air temperature above 35 °C. Among the recording stations Siba abaya, Gode, Assaita, Assosa, Gambela, Humera, Mankush, Mirab abaya, Mytsemrie and Pawe recorded 38.6, 37.0, 38.2, 35.0, 42.2, 42.0, 39.0, 36.0, 35.5 and 36.8°C of extreme maximum temperature respectively. On the other hand the northern and eastern high lands of the country experienced a minimum temperature as low as 5°C to mention some of them Alemaya, Jiiga, Kofele, Dangla, Adigrat, Debre Zite, Mota, Kukumsa, Mehal meda, Dire Dawa, Bahir Dar, Atsbi and Jimma recorded -3.5, -1.0, 0.7, 1.0, 2.5, 2.5, 2.5, 2.5, 2.5, 2.8, 3.3, 3.5, 3.5 and 3.6°C of extreme minimum temperature respectively.

2. AGROMETEOROLOGICAL CONDTIONS AND IMPACT ON AGRICULTURE

2.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING BEGA 2009/10

The Bega situations was favorable for season's agricultural activities. The moisture obtained during the season helped the performances of Meher crops that are not yet fully matured. In addition the situation was conducive for the general agricultural activities and availability of pasture and drinking water over southern and southeastern portions of the country. However, excess moisture obtained might have affected harvest and post harvest activities especially over mid & lowlands of Meher growing areas. Better WRSI performance was observed on Teff, Wheat and Barley crops over most of Meher producing area. Slight deficit WRSI observed over southern and eastern Tigray, eastern Amhara and some parts of central and eastern parts of the country. WRSI analysis indicates also there was high probability of replanted crops due to excess moisture during October and November. WRSI analysis of long cycle crops shows that this year was not good for long Cycle crops compared with 2008. On the other hand, the observed adverse condition in some pocket areas like hail damage, flood and past as well as the observed unseasoned rainfall situation over some pocket areas damage some crops.

2.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING BELG SEASON

Normally Central parts of northern high lands, eastern highlands, parts of central, southwestern and southern Ethiopia are known as Belg growing areas. For pastoral areas of the south and southwest it is the main wet season and its contribution is vital for water and pasture availability. The contribution of Belg rainfall is ranging from 5-30% over the north, northeastern and eastern highlands where as30-60% over south and southwestern parts of the country from annual total crop production of the areas.

The probabilistic seasonal forecast over Southwestern, Western & northwestern Ethiopia will expect a probability of normal to above normal availability of moisture which is Conducive for general agricultural activities and planting of Belg & long cycle crops

The probabilistic seasonal forecast over Northeastern, central, eastern and parts of southern Ethiopia expected to experience probability of normal moisture condition, which will have a positive impact for Belg agricultural activities, availability of pastor & water over pastoral and agro pastoral areas with slight moisture stress over pocket area of the country. thus, farmers need to utilize rain water harvesting, moisture conservation and planting of suitable crops needing less water requirements

The probability of seasonal forecast over parts of southern and southeastern lowlands will expect a probability of normal to below normal condition which is conducive for Belg agricultural activities, availability of pastor & water over pastoral and agro pastoral areas with Slight negative impact over isolated areas,

Table1. Climatic and Agro-Climatic elements of different stations **for the month of January 2010**									
No.	**Stations**	**Region**	**A/ rainfall**	**Mean**	**%of Normal**	**Eto mm/day**	**Eto Monthly**	**Moisture**	**Moisture Statuse**
1	**Adigrat**		**0.4**	**16.6**	**2**	**4.51**	**135.3**	**0**	**VD**
2	**Adwa**		**1.8**	**104.5**	**2**	**4.68**	**140.4**	**0**	**VD**
3	**Atsbi**		**10**	**0**	**NA**	**NA**	**NA**	**NA**	**NA**
4	**Axum**		**11.2**	**58.5**	**19**	**4.83**	**144.9**	**0.2**	**D**
5	**Humera**		**128**	**92.3**	**139**	**6.61**	**198.3**	**0.8**	**M**
6	**Maichew**		**8.7**	**78.6**	**11**	**4.34**	**130.2**	**0.3**	**MD**
7	**Mekele**		**3.7**	**25.2**	**15**	**5.02**	**150.6**	**0**	**VD**
8	**Senkata**		**1.5**	**35.2**	**4**	**NA**	**NA**	**NA**	**NA**
9	**Shire**		**51.3**	**120.9**	**42**	**5.95**	**178.5**	**0.4**	**MD**
10	**Shaura**		**89.4**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
11	**Sheraro**	**TIGRAY**	**4.8**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1	**Assayta**		**1.7**	**12.8**	**13**	**4.45**	**133.5**	**0.1**	**D**
2	**Dubti**		**1.2**	**16.1**	**7**	**7.05**	**211.5**	**0**	**VD**
3	**Mille**		**0**	**NA**	**NA**	**6.31**	**189.3**	**0**	**VD**
4	**Semera**	**AFAR**	**1.8**	**NA**	**NA**	**8.5**	**255**	**0.1**	**D**
1	**A/Ketema**		**71.8**	**132.2**	**54**	**4.31**	**129.3**	**0.8**	**M**
2	**Adet**		**112.6**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
3	**A. Mariam**		**35.8**	**63.7**	**56**	**NA**	**NA**	**NA**	**NA**
4	**Ayehu**		**102.7**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
5	**B. Dar**		**122.3**	**193.2**	**63**	**3.57**	**107.1**	**1.3**	**H**
6	**Bati**		**41.3**	**76.8**	**54**	**4.53**	**135.9**	**0.5**	**MD**
7	**Cheffa**		**56.6**	**33.9**	**167**	**NA**	**NA**	**NA**	**NA**
8	**Combolcha**		**58.4**	**121.2**	**48**	**3.53**	**105.9**	**0.8**	**M**
9	**D.Berehan**		**31.3**	**76.1**	**41**	**3.22**	**96.6**	**0.6**	**M**
10	**D.Markos**		**88.9**	**212.4**	**42**	**3.52**	**105.6**	**1.1**	**H**
11	**D.Tabor**		**113.2**	**186.1**	**61**	**3.59**	**107.7**	**1.2**	**H**
12	**D/work**		**37.3**	**107.7**	**35**	**NA**	**NA**	**NA**	**NA**
13	**Enewari**		**64.4**	**99.3**	**65**	**5.72**	**171.6**	**0.4**	**MD**
14	**Gondar**		**62.6**	**116.1**	**54**	**4.19**	**125.7**	**0.7**	**M**
15	**Lalibela**		**20.2**	**43.4**	**47**	**4.07**	**122.1**	**0.4**	**MD**
16	**Layber**		**72.3**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
18	**M.Meda**		**47.9**	**69.9**	**69**	**4.38**	**131.4**	**0.6**	**M**
19	**Majete**		**82.9**	**119.8**	**69**	**4.7**	**141**	**0.8**	**M**
20	**Mota**		**131.3**	**151.2**	**87**	**2.67**	**80.1**	**1.7**	**H**
21	**M. Selam**		**26.3**	**NA**	**NA**	**3.96**	**118.8**	**0.4**	**MD**
2	**S. Abaya**		**18.7**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
23	**w/Illu**		**38.7**	**76.7**	**50**	**3.97**	**119.1**	**0.5**	**MD**
24	**W.Tena**	**AMHARA**	**5.3**	**62.2**	**9**	**NA**	**NA**	**NA**	**NA**

1	A. Robe		101.8	116.7	87	4.24	127.2	1	H
2	Abomsa		47.7	113.8	42	5.12	153.6	0.5	MD
3	Aira		188.7	271.8	69	NA	NA	NA	NA
4	Alemaya		62.7	112.7	56	4.19	125.7	0.7	M
5	Alge		288	298.9	96	3.7	111	2.4	H
6	Ambo		65.3	110.8	59	4.37	131.1	0.7	M
7	Asossa		224.2	194	116	3.87	116.1	2	H
8	Addele		66.8	92.6	72	NA	NA	NA	NA
9	Bedelle		217.5	221.7	98	4.28	128.4	1.5	H
10	Bui		116.8	45.5	257	5.11	153.3	0.9	M
11	Bilate		42.4	55.1	77	5.07	152.1	0.5	MD
12	Chria		259.1	217.2	119	3.84	115.2	2.3	H
13	D.Zeit		37.3	104	36	4.02	120.6	0.5	MD
14	D/mena		149.4	75.9	197	4.66	139.8	1.3	H
15	Dm.Dolo		135	151.6	89	3.66	109.8	0	VD
16	Fiche		98.8	121.3	81	4.04	121.2	1	H
17	Gelemso		72.6	125.5	58	3.92	117.6	0.7	M
18	Gimbi		196.2	320.1	61	3.91	117.3	1.7	H
19	Ginir		120.7	102.5	118	4.25	127.5	0.6	M
20	Gore		226.4	318.2	71	2.89	86.7	3	H
21	Jimma		209.5	182.9	115	3.33	99.9	2.4	H
22	Kachise		137.7	250.2	55	3.36	100.8	2.1	H
23	koffele		127.2	154.1	83	3.24	97.2	1.4	H
24	Kulumsa		90.4	103.1	88	3.95	118.5	0.9	M
25	Limugent		297	253.4	117	4.09	122.7	2.4	H
26	Masha		227.9	270.2	84	2.97	89.1	2.7	H
27	Metehara		37.3	46.3	81	5.55	166.5	0.4	MD
28	Mieso		75.8	78.2	97	5.88	176.4	0.6	M
29	Nazereth		34	102	33	5.87	176.1	0.4	MD
30	Negelle		45.9	40.2	114	5.02	150.6	0.5	MD
31	Nekemte		398.1	273.4	146	3.14	94.2	4.7	H
32	Nuraera		23.1	NA	NA	NA	NA	NA	NA
33	Robe		108.5	120.5	90	3.49	104.7	1.3	H
34	S.Gebeya		67.3	93.1	72	NA	NA	NA	NA
35	Sekoru		193.5	168.8	115	4.1	123	1.6	H
36	Shambu		126.1	254.2	50	NA	NA	NA	NA
37	S.robit		17.2	94.9	18	NA	NA	NA	NA
38	Woliso		107.2	144.6	74	4.43	132.9	0.9	M
39	Ziway	OROMIA	60.4	91.4	66	5.31	159.3	0.5	MD
1	Arbaminch	SNNPR	41.8	78.8	53	4.46	133.8	0.5	MD
2	Awassa		81	119.7	68	3.54	106.2	1	H
3	Jinka		139.2	100.9	138	4.25	127.5	1.1	H
4	K/Mingist		45.5	89.8	51	3.89	116.7	0.3	MD
5	Konso		57.6	49	118	5.03	150.9	0.6	M
6	Sawla		97.4	114.7	85	3.66	109.8	1.1	H
7	Sodo		21.8	130.7	17	NA	NA	NA	NA

8	**Arbaminch**		**41.8**	**78.8**	**53**	**4.46**	**133.8**	**0.5**	**MD**
9	**Awassa**		**81**	**119.7**	**68**	**3.54**	**106.2**	**1**	**H**
10	**Jinka**		**139.2**	**100.9**	**138**	**4.25**	**127.5**	**1.1**	**H**
1	**Bullen**		**205.6**	**258.8**	**79**	**7.3**	**219**	**0.9**	**M**
2	**Dangila**		**97.4**	**240.1**	**41**	**4.17**	**125.1**	**1.3**	**H**
3	**Chagni**		**225.4**	**284.6**	**79**	**4.07**	**122.1**	**1.8**	**H**
4	**Mankush**		**292**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
5	**Pawe**	**B/GUMUZ**	**159.1**	**258.8**	**61**	**4.43**	**132.9**	**1.3**	**H**
1	**Aysha**		**15.4**	**0**	**NA**	**NA**	**NA**	**NA**	**NA**
2	**D.Habour**		**13.5**	**36.3**	**37**	**NA**	**NA**	**NA**	**NA**
3	**Gode**			**4.2**		**7.29**	**218.7**	**0.1**	**D**
4	**Jiiiga**	**SOMALI**	**22.6**	**100.1**	**23**	**4.75**	**142.5**	**0.3**	**MD**
1	**Harar**	**HARAR**	**60**	**87.1**	**69**	**4.34**	**130.2**	**0.7**	**M**
1	**D/Dawa**	**D/DAWA**	**25.7**	**68.2**	**38**	**6**	**180**	**0.3**	**MD**
1	**A.A. Bole**		**77.1**	**139.3**	**55**	**4.04**	**121.2**	**1**	**H**
2	**A.A. Obs**	**A.A**	**108.9**	**174.2**	**63**	**NA**	**NA**	**NA**	

Explanatory Note:

ETo: Reference Evapo-transpiration (mm)

VD Very dry < 0.1
D Dry 0.1 – 0.25
MD Moderately Dry 0.25 - 0.5
M Moist 0.5 - 1
H Humid > 1

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.

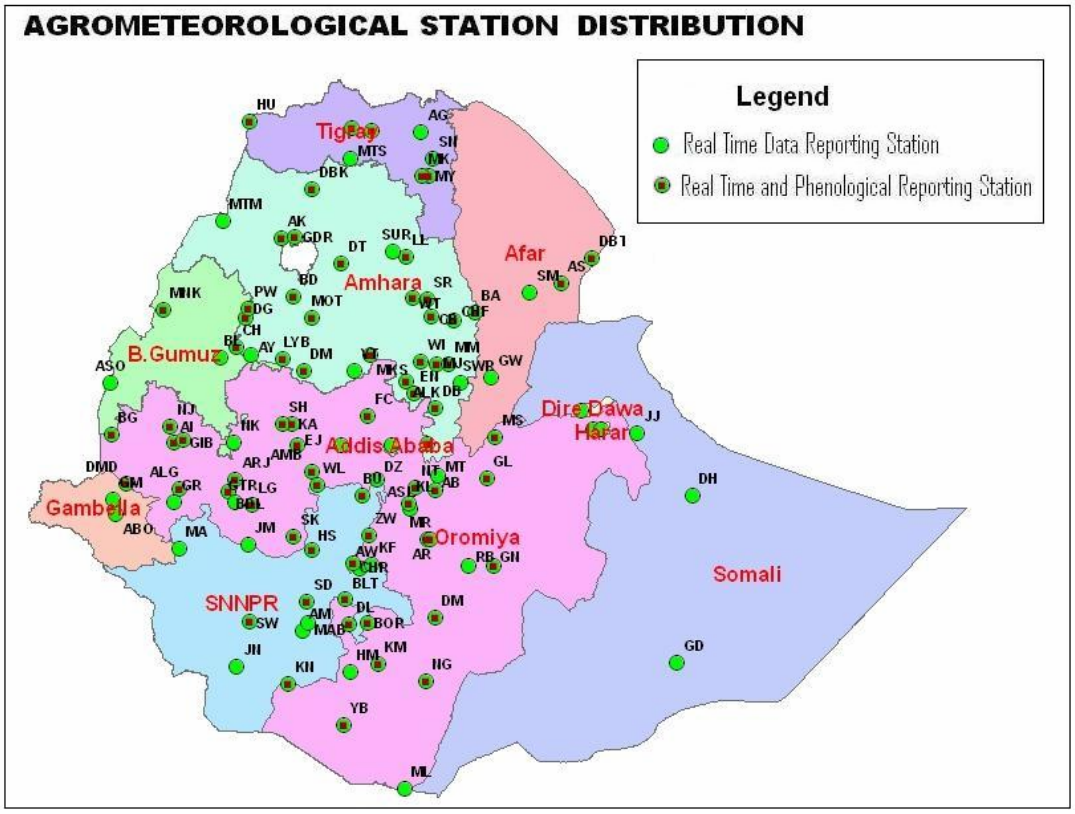
DEKAD: - First or second ten days or the remaining days of a month.

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 January 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		