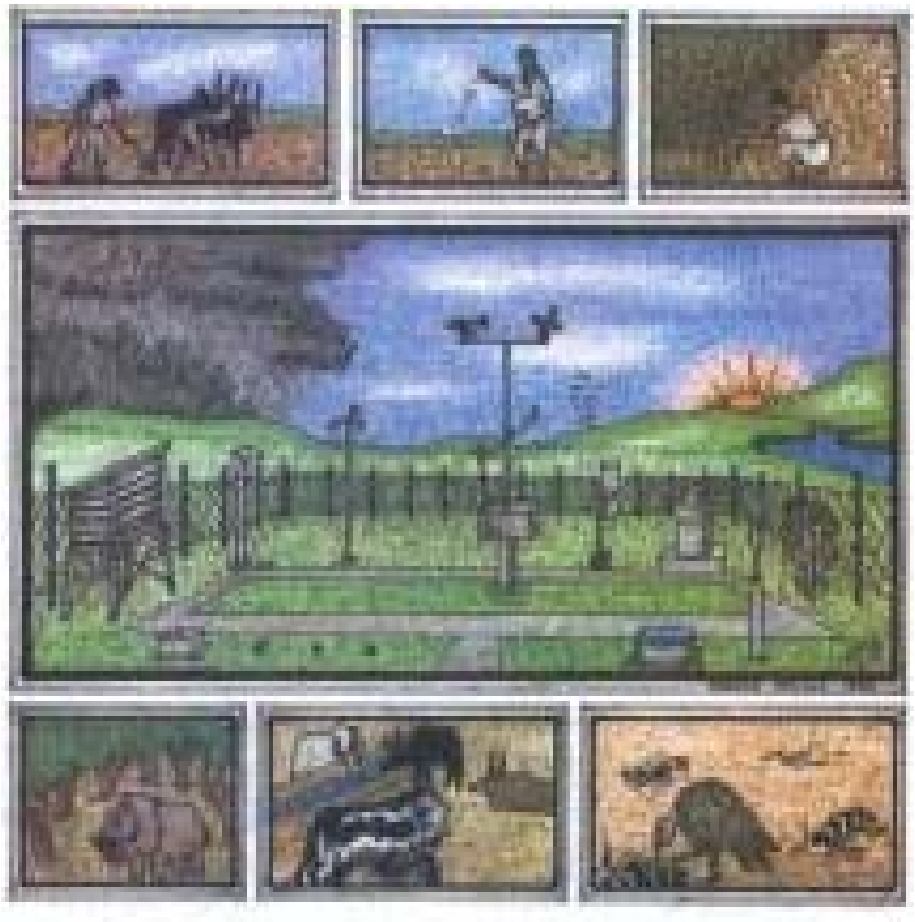
NATIONAL METEOROLOGICAL AGENCY AGROMETEOROLOGICAL BULLETIN

SEASONAL AGROMETEOROLOGICAL BULLETIN
KIREMT 2006
VOLUME 16 No. 27
DATE OF ISSUE: - OCTOBER 6, 2006



P.O.BOX 1090, ADDIS ABABA, ETHIOPIA
E.Mail: nmsa@ethionet.et Fax: 251-11-6625292, Tel. 251-11-6615779

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.

Director General
NMA
P.O.Box 1090
Tel: 011661-57-79
FAX 00251-11-6625292
E-mail nmsa@ethionet.et
Addis Ababa

አህፅሮት

እ.ኤ.አ. ክረምት 2006

የመኸር የእርሻ እንቅስቃሴን ስንመለከት ከክረምት ዝናብ በተጨማሪ በተለይ በሚያዝያና ግንቦት ማለትም ከበልጉ ሁለተኛ አጋማሽ ጀምሮ የሚዘንበው ዝናብ የዘርጊዚያቸው ለሆነው እንደ በቆሎና ማሽላ ላሉት አዝርዕት በጣም ተፈላጊ ነው። በመደበኛ ሁኔታ የእነዚህ በረጅም ጊዜ የሚደርሱ አዝርዕት የመዝሪያ ጊዜ የሚጀምረው ከመጋቢት አጋማሽ ጀምሮ ነው። እ.ኤ.አ በሚያዚያ 2006 በአብዛኛው የአገዳ ሰብል አብቃይ አካባቢዎች እንደ ደቡብ አማራ፣ የደቡብ ብሄርብሄረሰቦችና ህዝቦች ክልል፣ የሰሜንና የሰሜንምዕራብ አካባቢዎች እንዲሁም በምስራቅ ትግራይ የነበረው የእርጥበት ሁኔታ (moist to humid moisture status, Figure 1) ለረጅም ጊዜ ሰብሎች የዘር ጊዜ እና ለማሳ ዝግጅት አመቺ ሁኔታን ፈጥሮ ነበር። እንዲሁም እ.ኤ.አ በግንቦት ወር 2006 የነበረው የእርጥበት ሁኔታ (moist to humid moisture status, Figure 2) የአገዳ ሰብል የዘር ጊዜያቸው ለሆነው እንደ ቤንሻንጉልጉምዝ፣ ምዕራብ አማራ፣ ጋምቤላ የደቡብ ብሄር ብሄረሰቦች ህዝቦች ክልል እንዲሁም በአንዳንድ የምስራቅ ሐረርጌ ኪስ ቦታዎች ላይ በጎ ጎን ነበረው።

እ.ኤ.አ በሰኔ ወር 2006 ከአዝርዕት መረጃ መረዳት እንደተቻለው የሰብል የዕድገት ሁኔታ በአብዛኛው የሃገሪቱ ክፍል በጥሩ ሁኔታ ላይ ነበር። ይሁንና የተመዘገበው ከ30-93ሚ.ሜ የሚደርስ ከባድዝናብ በአንዳንድ የምዕራብ የመካከለኛው እንዲሁም የሰሜን ምዕራብ ኢትዮጵያ ኪስ ቦታዎች ላይ የሰብል ጉዳት አስከትሏል። በአንፃሩም ደግሞ በአንዳንድ የሰሜን ምዕራብ ትግራይ እንደ (ወረለኬ፣ ሀፍሮም እና ደጋ ተንቤን) እንዲሁም የአንዳንድ የሰሜን ምስራቅ አማራ (ሰሜንና ደቡብ ወሎ ዋግምራን ጨምሮ) እና ምስራቅ ኦሮሚያ አካባቢዎች (ምስራቅና ምዕራብ ሀረርጌ) በሰብል ላይ የእርጥበት ዕጥረት (moisture stress) ተከስቶ ነበር። በዚሁ ወር የነበረው ዝናብ የዘር ጊዜና የማሳ ዝግጅት በሚካሄድባቸው እንደ መካከለኛው ኦሮሚያ፣ ሰሜን ምዕራብ እና ምዕራብ አማራ ባሉት አካባቢዎች ላይ አወንታዊ ተፅዕኖ የነበረው ሲሆን በአጠቃላይ በመኸር አብቃይ አካባቢዎች ለእርሻ እንቅስቃሴ እገዛ አድርጎ ነበር። በወሩ ውስጥ የተከሰተውን የተባይ በሽታ ሁኔታ በተመለከተ እንደ ግብርናና ገጠር ልማት ሚኒስቴር መረጃ (የሰኔ ወር መፅሄት ላይ ጥር 11 /1998 ሃምሌ ሁለት የወጣ) ተምች በአንዳንድ የኦሮሚያ፣ የደቡብ ብሄር ብሄረሰቦችና ህዝቦች ክልል፣ አማራ፣ ሃረሪ፣ ትግራይ እና ድሬደዋ ላይ ተከስቶ ነበር። ሆኖም ግን በተወሰደው የመከላከል እርምጃ በቁጥጥር ስር ሊውል ችሏል።በሌላ በኩል ደግሞ በሁለት ወረዳዎች እንደ ኦሮሚያና የደቡብ ብሄር ብሄረሰቦችና ህዝቦች ክልል(ተልተሌና ኮንሶ) ግሪሳ ወፍ (Quelea Quelea) ተከስቶ ነበር።

እ.ኤ.አ በሐምሌ ወር 2006 የነበረው ዝናብ ከጥቂት የሰሜን ሶማሌ ፣የደቡብ ብሄርብሄረሰቦች ክልል ደቡባዊ አጋማሽ፣ እና የጋምቤላ ደቡባዊ ክፍል በስተቀር አብዘኛው የመኸር አብቃይ በሆኑ አካባቢዎች መደበኛና ከመደበኛ በላይ የሆነ ዝናብ ነበር ያገኙት ። ይሁንና አንዳንድ የሰሜን ምዕራብና ምስራቅ በተጨማሪም ምዕራብ ኢትዮጵያ ላይ በወሩ በተደጋጋሚ ከባድ ዝናብ ተመዝግቦባቸዋል። በአብዛኛው ትግራይ፣ አማራ፣ ቤንሻንጉል ጉምዝ፣

መካከለኛውና ምዕራብ ኦሮሚያ የደቡብ ብሄርብሄረሰቦች ሰሜናዊ ክፍል እና ምስራቅ ኦሮሚያ ላይ የእርጥበት ሁኔታ ጥሩ (moist to humid moisture status, Figure 4) ነበር። በአንፃሩ በአፋር ምስራቃዊ አጋማሽ አካባቢ የእርጥበት እጥረት ሁኔታ(moderately dry to dry moisture status, Figure 4) ታይቶባቸው ነበር። ከዘጋቢ ጣቢያዎቻችን መካከል አዲስ አበባ፣ ፓዌ፣ አለም ከተማ፣ አርጆ፣ ደብረብረሃን፣ ሻምቡ፣ ደብረዘይት፣ ደብረታቦር፣ ሞጣ፣ ባህርዳር፣ ዳንግላ፣ ጋምቤላ፣ አይራ ኮምቦልቻ፣ ቻግኒ እና ነቀምቴ ከ30ሚ.ሜ በላይ የሆነ ከባድ ዝናብ ከ3-7 የዝናብ ቀናት ተመዝግቦባቸው ነበር። በዚህም ሳቢያ በበደሌ፣ በጋምቤላ እና ፓዌ አካባቢዎች የሰብል ጉዳት እንደደረሰ ከስፍራው ከደረሰን መረጃ ለማወቅ ተችሏል። በአንፃሩም ደግሞ በምስርቅ አፋር እና በሶማሌ ሰሜናዊ ክፍል የተከሰተው የዝናብ እጥረት ለግጦሽ ሣርና መጠጥ ውሃ አቅርቦት አሉታዊ ተፅእኖ አሳድሮ ነበር። በግብርናና ገጠር ልማት መፅሄት (የሃምሌ ወር ቁጥር 12/98 በነሃሴ 5 የወጣ)ላይ እንደተገለፀው በአንዳንድ የትግራይ አካባቢዎች ከደቡብ ትግራይ ራያ አዘቦ እና አላማጣ ከምስራቅ ትግራይ አፀቢ ወንበርታ እንዲሁም ከምስራቅ አማራ ቆቦ፣ ጉባላፍቶ እና ሀቡሩ የአፋር አጎራባች አካባቢዎችን ጨምሮ ከኦሮሚያ ዞን እንደ ባቲና አርቱማ ፋንሲ ከሰሜን ሸዋ ዞን ቅወትና አንኮበር እንዲሁም በአንዳንድ የዋግህምራ ዞን እንደ ዝቋላ ባሉት አካባቢዎች የእርጥበት እጥረት (moisture stress) በማሳ ላይ ተከስቶ ነበር። ይሁንና የእርጥበት ሁኔታው በወሩ መጨረሻ አካባቢ ከላይ በተገለፁት አካባቢዎች ላይ የመሻሻል ሁኔታ አሳይቶ ነበር ። በወሩ ውስጥ ጎልቶ የታየ የተባይና በሽታ ክስተት እንደሌለ ከግብርናና ገጠር ልማት ሚኒስቴር ከተገኘው መረጃ ለመረዳት ተችሏል።

እ.ኤ.አ በነሀሴ 2006 በተለይ በመጀመሪያና በመጨረሻው የአስርተ ቀናት ተስፋፍቶ የታየው ዝናብ አብዛኛውን የሀገሪቱ ክፍሎች ከማድረሱም ባሻገር በክረምት ወቅት ዝናብ ማግኘት የማይገባቸውንም የደቡብ ኦሮሚያ አካባቢዎችንም ሸፍኖ ነበር የተስተዋለው። በሌላ በኩል ደግሞ ከዘጋቢው ጣቢያዎቻችን መካከል 30 ጣቢያዎች ከ30 ሚ.ሜ በላይ ከባድ ዝናብ በአንድ የዝናብ ቀን ብቻ ተመዝግቦባቸው ነበር። በዚሁም ሳቢያ በአንዳንድ አካባቢዎች ላይ የሰብል ጉዳት ተከስቶ ነበር። ለምሳሌ ሞጁ፣ ሽሬ፣ ሊሙገነት፣ ማጀቴ፣ ወገልጤና በወሩ ውስጥ በተደጋጋሚ ከ5-6 የዝናብ ቀናት ከባድ ዝናብ ተመዝግቦባቸዋል። በዚህም የተነሳ ለጎርፍ ተጋላጭ በሆኑ እንደ ድሬደዋ እና ባህር ዳር ባሉት አካባቢዎች ላይ ጎርፍ በመከሰቱ በአንዳንድ አካባቢዎች ላይ በከብቶችና በሰብሎችእንዲሁም በንብረት ላይ ጉዳት አስከትሏል። በተጨማሪም በአንዳንድ ከፍተኛ ቦታዎች ላይ የተከሰተው ከባድ ዝናብ ለወንዝ መሙላትና ውሃ ገብ በሆኑ አካባቢዎች ላይ ለጎርፍ መከሰት ምክንያት ሆኖ ነበር። ከዘጋቢ ጣቢያዎቻችን መካከል በነጆ፣ ማጀቴ፣ ጎሬ፣ ሰንቀጣ፣ መዘዞ፣ ሞጣ፣ ሞጁ፣ አዋሳ እና ባሌ ሮቤ በአገዳ ሰብሎች፣ በጥራጥሬና በቋሚ ሰብለሎች ላይ ጉዳት እንደ ደረሰ ከሥፍራው የደረሰን መረጃ ያመለክታል። በተለይ በወሩ ሦስተኛ አስር ቀናት የነበረው ከባድ ዝናብ ለወንዝ መሙላትና ለጎርፍ መከሰት ምክንያት ነበር። በዚህም ሳቢያ በ8 ክልልየሚገኙ ወደ 199,900 የሚሆኑ ሰዎች የችግሩ ሰለባ ሆነዋል(DPPA ,September 2006)። ከዚህም በተጨማሪ በአንዳንድ አካባቢዎች ላይ የተባይ ሁኔታ ተከስቶ ነበር። በዚሁም ሳቢያ እንደ ጨፋ ባሉ አካባቢዎች ላይ የሰብል ጉዳት ደርሷል። በአጠቃላይ

ከላይ በተጠቀሰው አንዳንድ አካባቢዎች ከደረሰው ጉዳት በስተቀር የአዝርዕት መረጃ እንደሚያረጋግጠዉ የሰብል ሁኔታ በአብዛኛው የሀገሪቱ ክፍሎች ላይ በጥሩ ሁኔታ ላይ ነበር። በተጨማሪም ምንም እንኳ የወንዙ ሙላትና ጎርፉ በአርሶ አደሩ አካባቢ ለሰው ህይወትና ለንብረት መውደም ምክንያት ቢሆንም በአንዳንድ የአርብቶ አደሩ አካባቢ እንደ ሸንሌ ዞን ባሉት አካባቢዎች በቀጣዩቹ ጥቂት ወራት ለመጠጥ ውሃ አቅርቦት የጎላ አስተዋፆ ይኖረዋል ማለትም በአካባቢው አጠራር በሞሮሽ ውሃ የመግኘት እድልን ያሰፋላቸዋል።

እ.ኤ.አ ሴፕቴምበር 2006 በደቡብ ብሄር ብሄረሰቦችና ሕዝቦች መካከለኛው ክፍል እንዲሁም በከፊል የደቡብ ኦሮሚያ ና የደቡብ ምስራቅ ሶማሌ ከታየው ከመደበኛው በታች የሆነ የዝናብ ሥርጭርት በስተቀር በአብዛኛው የአገሪቱ ክፍል የታየው የዝናብ ሥርጭት ለወቅቱ የግብርና እንቅስቃሴ በጎ ጎን ነበረው ። ይሁን እንጂ በወሩ ውስጥ በአንዳንድ የምዕራብ (ጊምቢ ፣አልጌ፣ ጎሬ፣ በደሌ፣ ሊሙጎነት እና ሻምቡ) የሰሜን ምዕራብ (መተማ፣ ደብረ ታቦር፣ ማንኩሽ ፣ቺግኒ) የምስራቅ (አለማያ፣ ሃረር)፣ የሰሜን ምስራቅ (ባቲ፣ ማጀቴ) የሰሜን (ሽሬ) እና የደቡብ ከፍተኛ ቦታዎች (ደሎመና) ከ30-80 ሚ.ሜ የሚደርስ ከባድ ዝናብ የተመዘገበ ሲሆን ከላይ በተጠቀሰው አንዳንድ ሥራዎች ማለትም እንደ በደሌ ካራቆሬ፣ ድሬደዋና ደጋ ሃቡር ባሉት አካባቢዎች በአመታዊና ቋሚ ሰብሎች እንዲሁም በንብረት እና ሕይወት ላይ ጉዳት አስከትሎ ነበር። በወሩ ውስጥ የተዛባ የዝናብ ሥርጭት በነበረባቸው አካባቢዎች ማለትም በደቡብ ብሄር ብሄረሰቦችና ሕዝቦች አንዳንድ ሥፍራዎች (አማሮ፣ ቡርጂ፣ ኮንሶ) ተምች እንዲሁም በሰሜን ምሥራቅ ቆላማ ሥፍራዎች የማሽላ ጢንዚዛ ተከስቶ ነበር።

በአጠቃላይ በአንዳንድ የሀገሪቱ ክፍሎች ላይ ከላይ ከተገለፀው ጎጂ የአየር ሁኔታዎች እንደ በረዶ፣ ጎርፍ ፣ በማሳ ላይ የእርጥበት መብዛት፣ የተዛባ የዝናብ ስርጭት በስተቀር በአብዛኛው የመኸር አብቃይ በሆኑት የሀገሪቱ ክፍሎች የነበረው ዝናብ ለእርሻ ስራ የታየው ወቅታዊ እንቅስቃሴ አመቺ ሁኔታን ፈጥሮ ነበር። አንዲሁም በነሐሴ ወር በደቡብ ኦሮሚያ የታየው ወቅታዊ ያልሆነ ዝናብ ለግጦሽ ሳርና ውሃ አቅርቦት በጎ ጎን ነበረው። በተጨማሪ እ.ኤ.አ ከመስከረም ወር አጋማሽ ጀምሮ በአንዳንድ የደቡብና ደቡብ ምስራቅ ቆላማ የአርብቶ አደሩ አካባቢዎች የታየው ዝናብ ለግጦሽ ሳርና ውሃ አቅርቦት በጎ ጎን ይኖረዋል።

KIREMT 2006
SUMMARY

Under normal circumstance during the Meher season in addition to the Kiremt season rainfall, the Belg season rainfall particularly the rainfall amount and distribution during the months of April and May has significant impact on the performance of long cycle crops like maize, millet and sorghum in terms of agricultural activities. The observed moist to humid moisture status during the month of April 2006 (Figure 1) over most parts of long cycle crop growing areas favoured early season's agricultural activities in areas like southern Amhara, north and north western SNNPR, Gambela and eastern Harargie. Moreover, the observed humid to moist moisture status during the month of May 2006 (Figure 2) over much of western half of the country had significant contribution for land preparation of long cycle crops in areas like Benshangul-Gumuz, western Amhara, Gambela, SNNPR as well as pocket areas of the highland of Eastern Harargie.

During the month of June 2006 the observed normal to above normal rainfall during the month of June 2006 over central Oromiya, northwestern and western Amhara favoured land preparation and sowing activities in areas where the practices are under question. Besides, the observed good amount of rainfall favored Season's agricultural activities in most parts of Meher growing areas. In addition to these the crop phenological data confirmed that the performance of crops were in good shape in most parts of reporting stations. Nevertheless, the observed heavy falls (30-93mm) in some pocket areas of western, central and northwestern Ethiopia resulted in crop damage in some areas. On the other hand, the deficient moisture condition observed over northern and western Tigry (Wereleke, Haferom and parts of D/Tenben), some areas of northeastern Amhara (South and North Wollo including Wag Hemra) and eastern Oromiya (East and West Harargie) resulted in water stress on crops in the areas. On the other hand, the deficient fall resulted in water stress and delayed sowing activities in some areas of eastern and western Tigrai. With regard to pest outbreak, as the MoARD (No 11/98Hamle 2 1998 E.C) has pointed out Armyworm outbreak has been observed over some areas of Oromia, SNNPR, Amhara, Harari and Tigray including Dire Dawa at epidemic level; however it was under control with effective chemical and traditional control measures taken by the Ministry. Besides, the outbreak of Quelea Quelea has been observed over two Weredas of Oromia and SNNPR (Teltele and Konso)

During the month of July 2006, with the exception of most parts of northern Somali, eastern and southern Oromia and southern half of SNNPR, most parts of Meher growing areas exhibited normal to above normal rainfall. However, some areas like northwestern and eastern as well as western Ethiopia exhibited heavy falls repeatedly during the month under review. Moist to humid moisture condition observed in most parts of Tigray, Amhara, Benshangul-Gmuz, central and western Oromia, northern SNNPR and eastern Oromia while dry to very dry moisture condition were observed in south and southeastern parts of the country as well as eastern half of Afar. Among the reporting stations, Addis Ababa, Pawe, Alem Ketema, Arjo, Debre Brhan, Shambu, Debre Zeit, Debre Tabor, Mota, Bahir Dar, Dangla, Gambela, Aira, Combolcha, Chagni and Nekemte recorded heavy falls above 30 mm for 3-7 rainy days during the month. As a result, some areas like Bedele, Gambela and Pawe reported crop damage due to heavy falls On the other hand; the observed shortage of moisture over Afar and northern Somali could have negative impact on the availability of pasture and drinking water. As the MoARD (No 12/98 Nehase 5 1998 E.C) has pointed out moisture stress on crop fields has been observed over some areas of Tigrai (Raya, Azebo and Alamata from the South and Atsbi Wenberta from the east), some areas of eastern Amhara (Kobo, Gubalafto and Habru including adjoining areas of Afar, Oromia Zone (Bati and Artuma Farsi), North Shewa Zone (Kewet and Ankober) including some areas of Waghemra Zone (Ziqula) during the month of July. However there was an improvement of moisture towards the end of the month over the aforementioned areas. Regarding pest and disease, no significant pest outbreak (at epidemic level) has been observed during the month (MoARD Bulletin No12/98 E.C).

During the month of August 2006, particularly the observed widespread rainfall during the first and third dekad of the month covers most parts of the country even areas which are not supposed to get rainfall during the season like southern Oromia. Besides, some areas (about 30 stations from the reporting stations) received heavy fall greater than 30 mm in one rainy day and resulted in crop damage in some areas. Fore instance, Chira, Shire, Limu Genet, Majete, Wegel Tena exhibited heavy falls for 5-6 days repeatedly during the month. As a result, flood damage has been observed over flood prone areas like Dire Dawa and Bahir Dar, thereby some areas experiencing crop damage and livestock losses. Moreover, heavy falls over the highlands also resulted in overflow of rivers and caused flood in low-lying areas in most places. Among the reporting stations Nedjo, Majete, Gore, Senkata, Mezezo, Mota, Chira, Awassa and Bale Robe reported cereal crops, pulse crops and perennial crops damage due to heavy falls during the month under review. The observed heavy fall particularly as of July third dekad 2006, resulted in flash floods and overflow of rivers and dams, thereby affecting 199,900 people in eight regions of Ethiopia (DPPA September 2006). In addition to these, pest outbreak has been observed in some areas like Chefa (reported severe crop damage due to disease). In general, with the exception of the aforementioned problems which were observed over some sensitive areas due to heavy fall, the crop phenological data confirmed that the performance of the crops were in good shape in most parts of the country. Moreover, although the observed overflow of rivers and flash floods over pastoral areas resulted in the death of the people and property loss, it would have positive contribution for pasture and drinking water for pastoral areas like Shinile for the coming few month and enable the pastoralists get water easily with little effort.

During the month of September 2006, with the exception of central part of SNNPR, half of southern Oromia and southeastern Somali, the observed good rainfall distribution over most part of the country favored season's agricultural activities. Nevertheless, during this month some areas from western (Gimbi, Alge, Gore, Bedelle, Limugent and Shambu), north western (Metema , D/Taboure , Mankush and Chagni), eastern (Alemaya , Harer), north eastern (Bati, Majete), northern (Shire) and southern high lands of the country like Dolomena records heavy fall ranging from 30-80 mm. As the result some areas of the aforementioned areas like Bedelle, Karakore, Dire Dawa and Degah Bure reported crop damage and property loses. The observed erratic rainfall distribution favored the outbreak of pests like Armyworm and *Sorghum Chaffer* in some areas of SNNPR (Amhara, Burgi and Konso) and in northeastern lowland areas, respectively.

Generally with the exception of the observed adverse weather situations like hail damage, water logging, flooding, excess moisture on crop's field and the erratic rainfall distribution over some areas of the country, the overall weather situation was favorable for season's agricultural activities in most Meher growing areas. Besides, the observed unseasonable rainfall condition over pastoral and agro pastoral areas of southern Oromia during the month of August favored the availability of pasture and drinking water in the areas. Moreover, the observed rainfall condition as of the second dekad of September 2006 over some areas of southern Ethiopia had significant contribution for the availability of pasture and drinking Water.

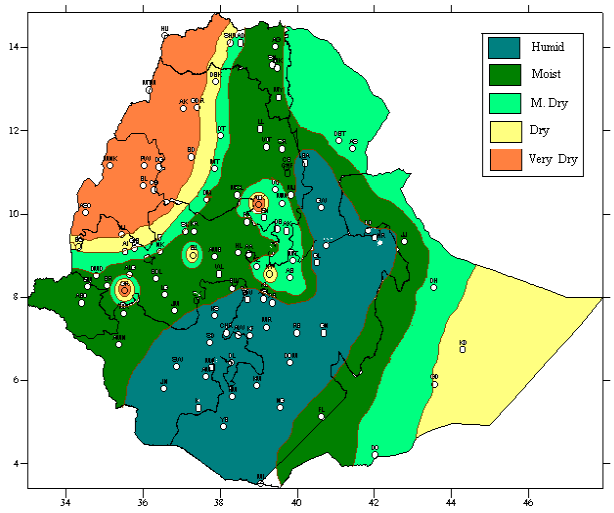


Figure 1 Moisture status for the month of April 2006

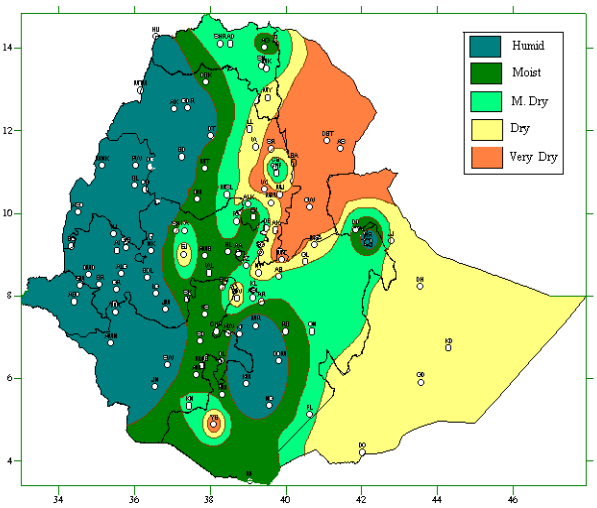


Figure 2 Moisture status for the month of May 2006

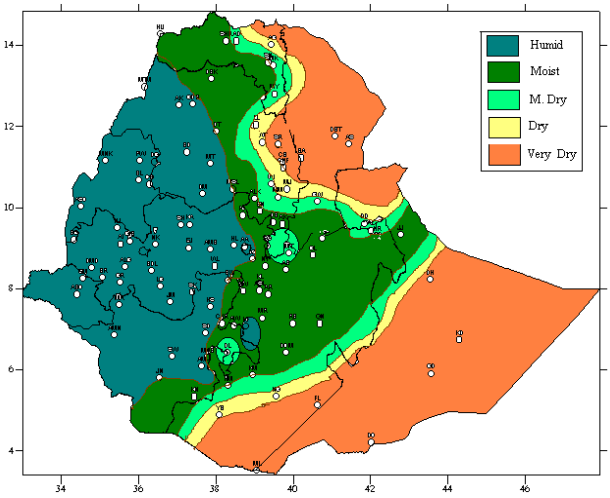


Figure 3 Moisture status for the month of June 2006

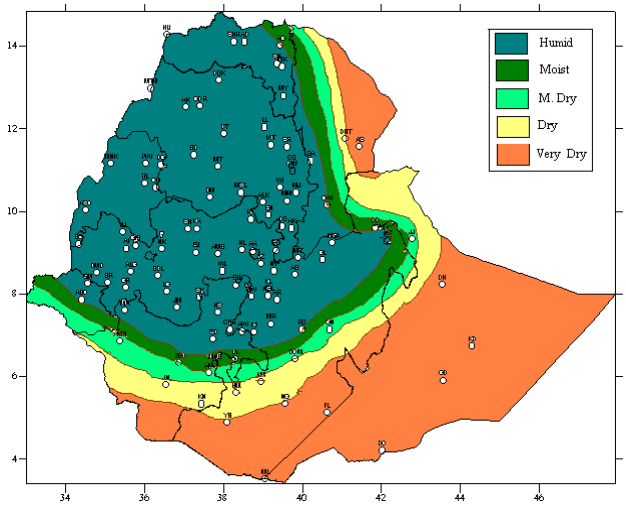


Figure 4 Moisture status for the month of July 2006

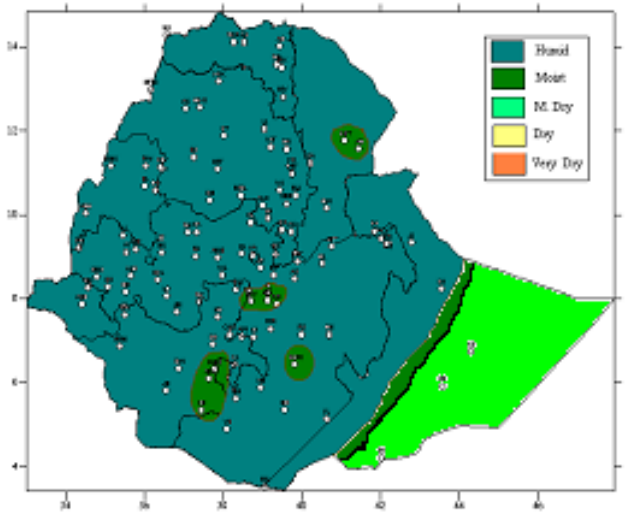


Figure 5 Moisture status for the month of August 2006

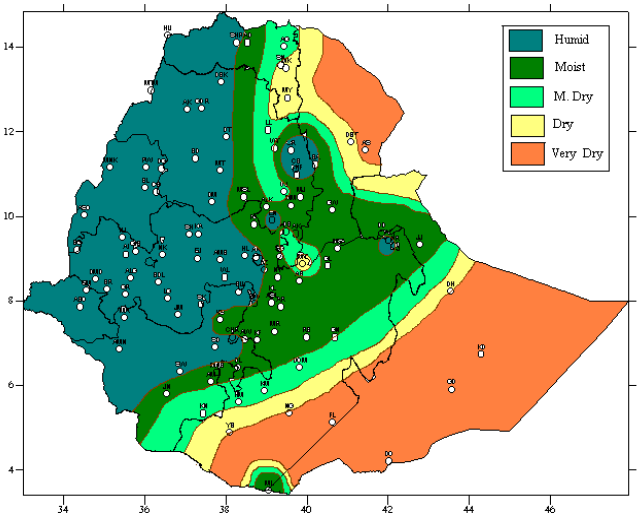


Figure6 Moisture status for the month of September 2006

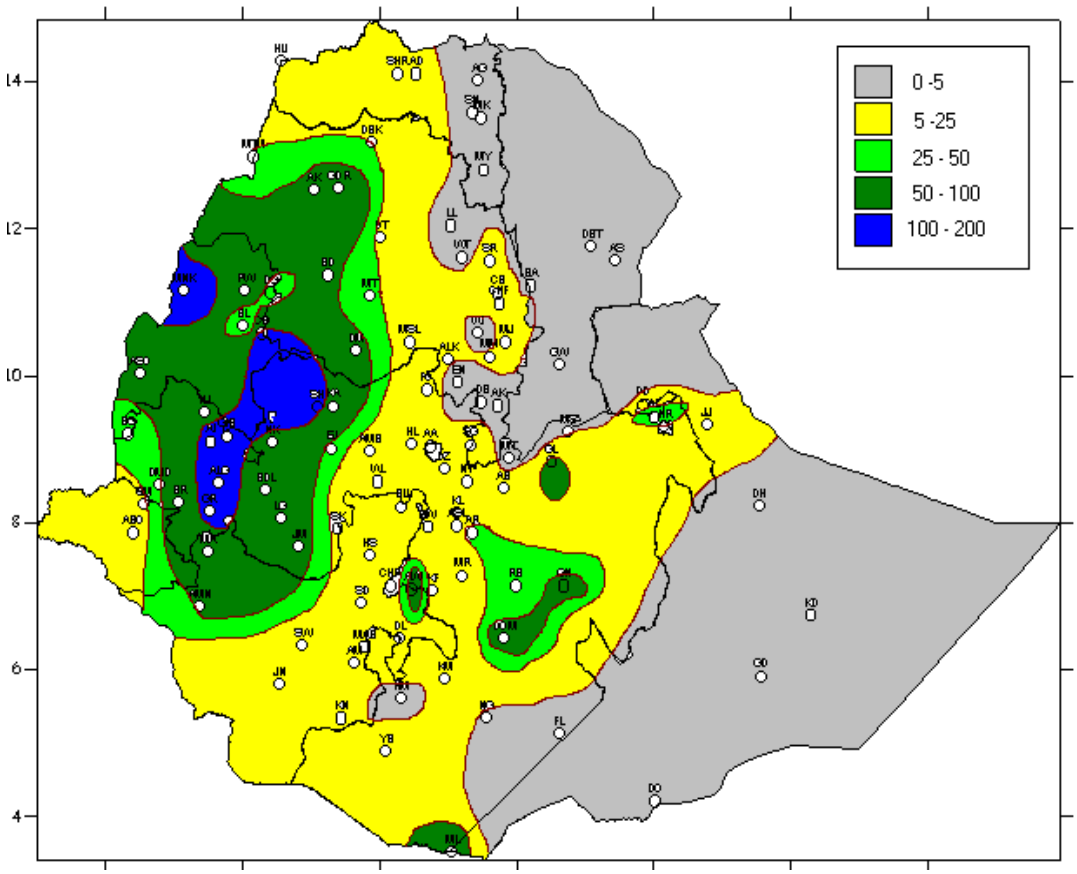


Fig. 7 Rainfall distribution in mm (21-30 September 2006)

1. WEATHER ASSESSMENT

1.1 September 21-30, 2006

1.1.1 Rainfall Amount (Fig 7)

Parts of northwestern Benshangul-Gumuz and western Oromia received 100-200mm of rainfall. Parts of western and south western Amhara, western Benshangul-Gumuz, western Oromia and SNNPR and pocket areas of southern and eastern Oromia experienced 50-100mm of rainfall. Parts of western and northwestern Amhara, western Oromia and SNNPR and pocket areas of eastern Oromia exhibited 25-50mm of rainfall. Most parts of western Tigray, eastern Amhara, central, eastern and southern Oromia, western Gambela and eastern half of SNNPR received 5-25mm of rainfall. There was little or no rainfall for the rest parts of the country.

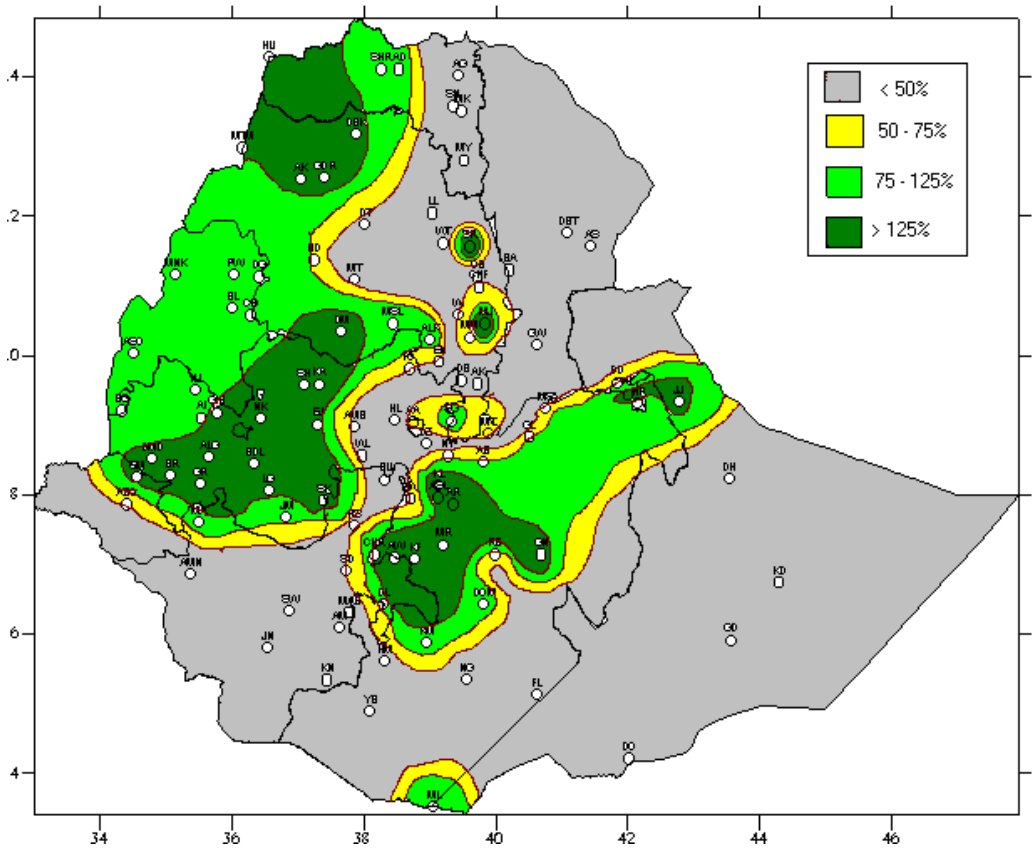


Fig. 8 Percent of normal (21-30 September 2006)

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 8)

Bensahngul-Gumuz, Parts of western half of Tigray, Amhara, most parts of western and eastern Oromia and pocket areas of southern Amhara and Oromia exhibited normal to above normal rainfall. While the rest parts of the country exhibited below normal to much below normal rainfall.

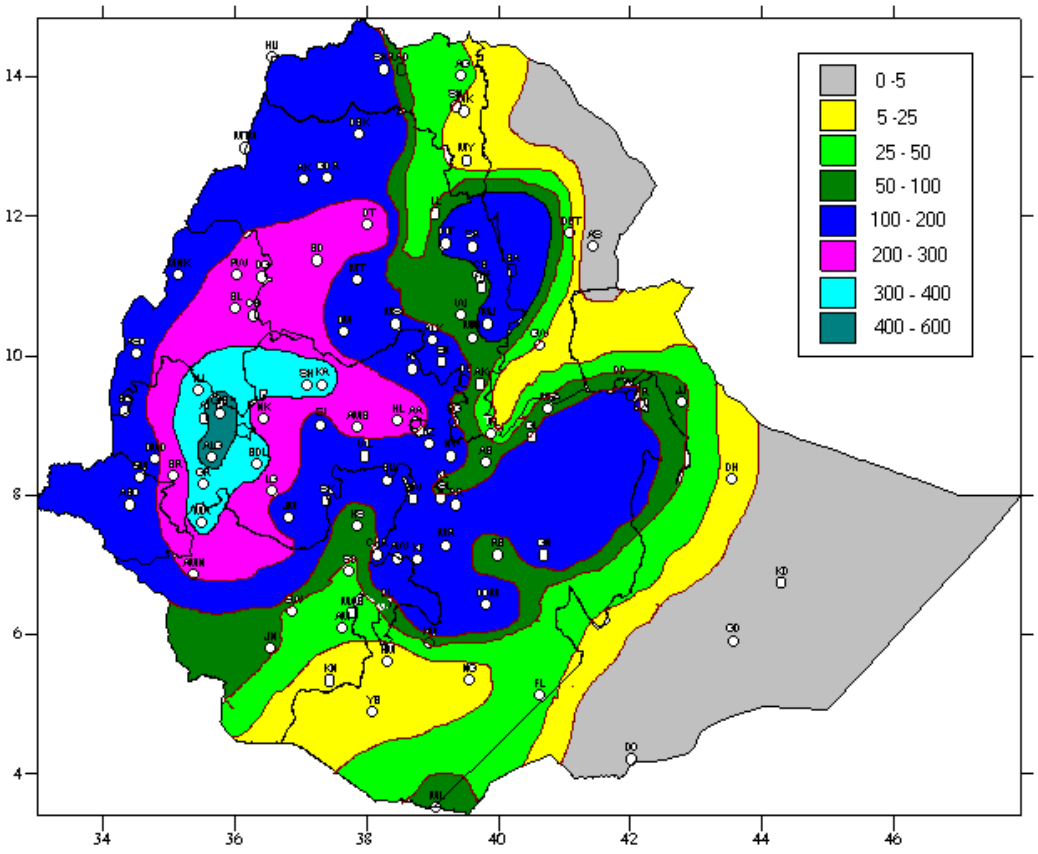


Fig. 9 Rainfall Distribution in mm for the month of September 2006

1.2 September 2006

1.2.1 Rainfall Amount (Fig. 9)

Pocket areas of western Oromia experienced 400-600mm of rainfall. Parts of western Oromia, south eastern Benshangul-Gumuz, received 300-400mm of rainfall. Some areas of southwestern Amhara, eastern Bensangul-Gumuz, central and western Oromia and parts of western SNNPR experienced 200-300mm of rainfall. Most parts of western Tigray, north western and western Amhara, western Afar, some areas of western Tip of Benshangul-Gumuz, Gambela and SNNPR, central and eastern Oromia experienced 100-200mm of rainfall. Few parts of western Tigray, southern Amhara, central, eastern and southern Oromia and eastern SNNPR experienced 50-100mm of rainfall. Parts of eastern Tigray and northeastern Amhara, western Afar, parts of northern Somli, southern Oromia and eastern SNNPR exhibited 25-50mm of rainfall. Parts of southern Tigray, southern Afar, northern and southern Somali and southern Oromia received 5-25mm of rainfall. There was little or no rainfall for the rest parts of the country.

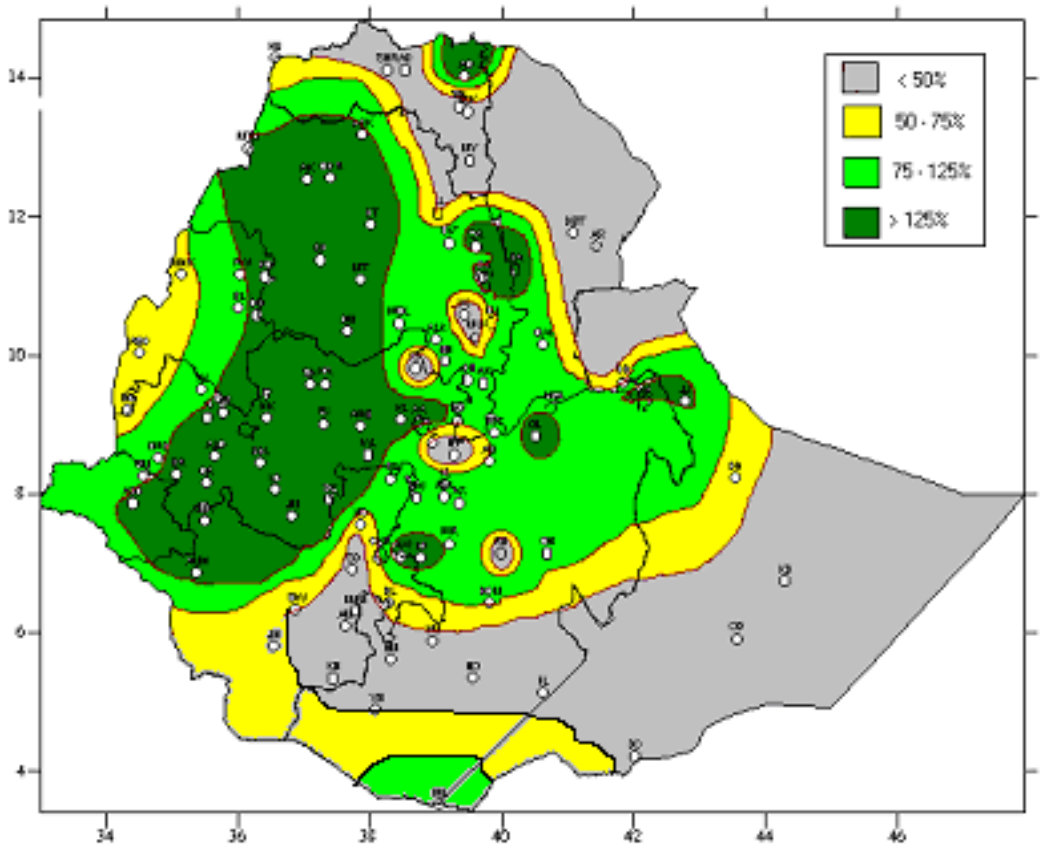


Fig. 10 Percent of Normal Rainfall for the month of September 2006

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. 10)

With the exception of most parts of Afar, north western and southern Tigray, northeastern Amhara, eastern half of SNNPR and most parts of southern Oromia and north and south eastern Somli; the rest parts of the country exhibited normal to above normal rainfall.

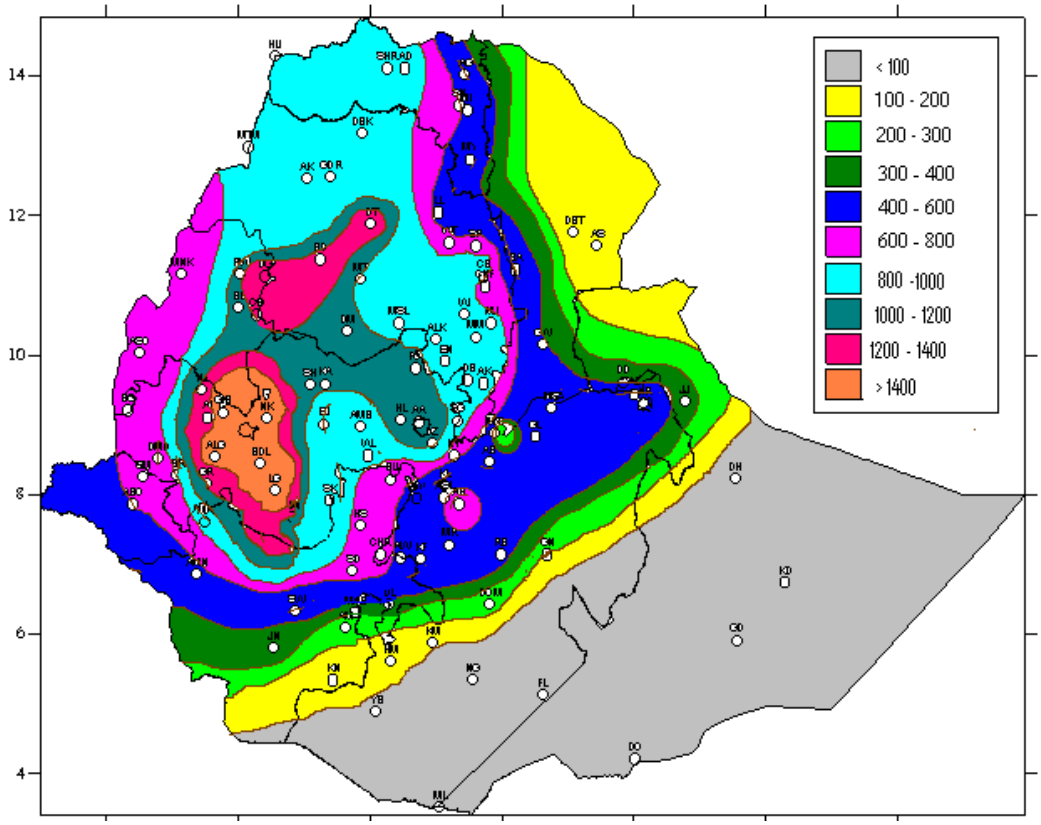


Fig. 11 Rainfall Distribution in mm for Kirmt 2006

1.3 Kiremt 2006

1.2.1 Rainfall Amount (Fig. 11)

Some pocket areas of western Oromia exhibited falls greater than 1400 mm like Gimbi, Aira, and Nekemte and Beadle. Parts of western Amhara, some parts of eastern Benishangul-Gomez and parts of western Oromia received 1200-1400mm of rainfall. Parts of western Amhara, central Oromia and eastern Benshangul-Gumuz experienced 1000-1200mm of rainfall. Most parts of western Tigray, western and southern Amhara, eastern Benshangul-Gumuz and western Oromia exhibited 800-1000mm of rainfall. Parts of eastern Tigray and eastern and south eastern Amhara and western tip of Bensahngul-Gumuz and eastern Gambela central Oromia and northern SNNPR experienced 600-800mm of rainfall. Parts of eastern Tip of Tigray, and Amhara, western Afar, most parts of eastern Oromia western Gambela and northern half of SNNPR exhibited 400-600 mm of rainfall. Western and southwestern Afar, parts of northern Somali, eastern Oromia and north and northwestern SNNPR exhibited 300-400mm of rainfall. Much of Afar northeastern Somali Arsi and Bale zone southwestern Oromia and southeastern SNNPR Exhibited 100-200mm of rainfall. . The rest parts of the country received less than 100 mm even less than that over southern and southeastern parts of the country where the seasonal rainfall started as of second dekad of September normally.

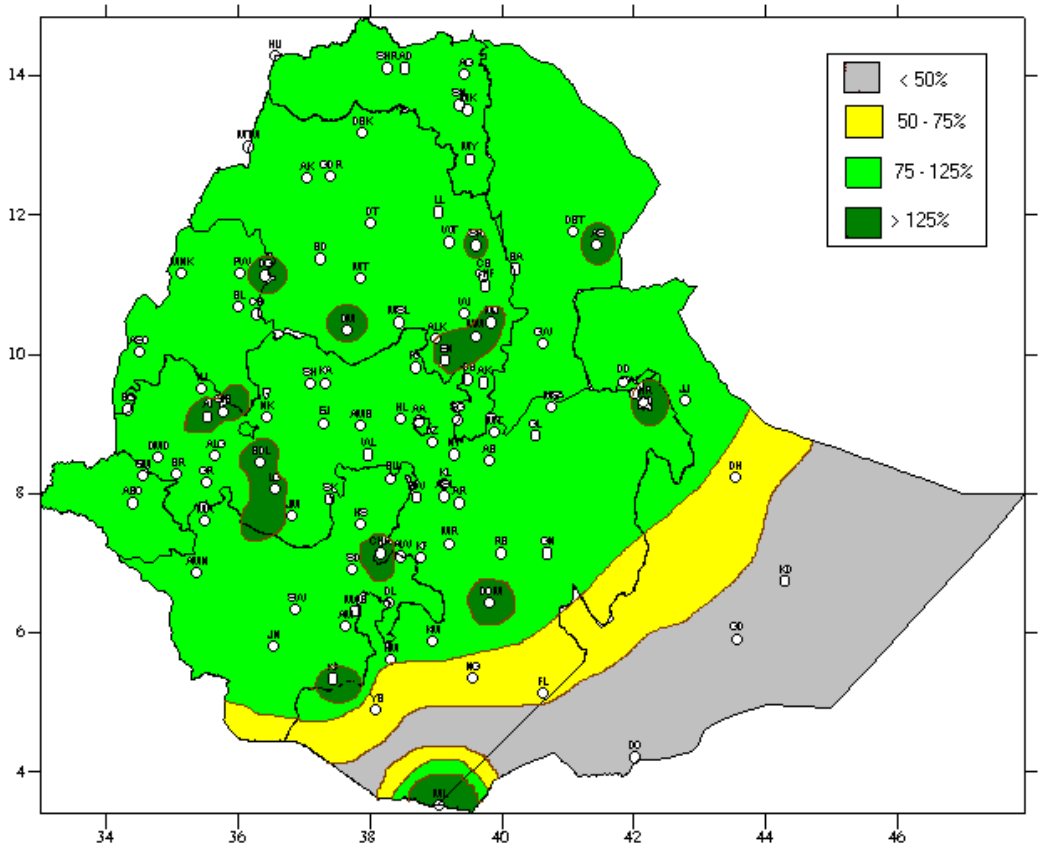


Fig. 12 Percent of Normal Rainfall for Kiremt 2006

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. 12)

With the exception of parts of north eastern Somali, southwestern Oromia and some parts of southern Oromia, the rest of the country exhibited normal to above normal rainfall.

1.4 TEMPERATURE ANOMALY

No significant temperature anomaly has been observed during the season.

2. WEATHER OUTLOOK

2.1 For the month of October 2006

In the coming month, the ITCZ and Bega's rain-Bearing systems are expected to have a better strength over south and southeastern portions of the country. As a result, west and south Oromia, Gambela, SNNPR and southern Somali, will get normal to above normal rainfall at many places. Besides, western Amhara, Benshangul-Gumuz, central and eastern Ethiopia as well as western Tigray are likely to receive close to normal rainfall. On the other hand, Afar, northeastern and adjoining Rift Valley areas are anticipated to have dry weather conditions. However, these areas will have little rainfall for few days.

2.2 For the Bega season, 2006/07

Under normal condition Bega season is dominantly influenced by dry and cool air mass intrusion with occasional rain showers, that unusually occur across varies portion of the country. In contrast Bega season is a second rainy season for south and southeast Ethiopia.

In the coming Bega season, there are enhanced probabilities of getting normal to above normal rains over much of the country. Besides, unseasonable rains are highly likely to occur mainly during the dry months. Similarly, southern and southeastern portions of the country will enjoy in receiving normal to above normal rains of the season. Also frost is less likely to occur over frost prone areas of the country.

3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

Generally the observed moist to humid moisture status over most parts of long cycle crop growing areas during the months of April and May 2006 favoured early season's agricultural activities like land preparation and sowing activities over Amhara, most parts of SNNPR and Oromia including Gambela and western margin of Northern Somali. Therefore, the rainfall amount and distribution was favourable for long cycle crops like maize and sorghum that are considered as a Meher crops and their contribution is 35% percent from total production.

The observed good moisture condition during the months of April and May favored pastoral and agro pastoral areas of southern Oromia and southern half of SNNP in terms of pasture and drinking water. It could also favor crop production in case of Agro pastoral areas. Although, the observed overflow of rivers and flash floods over pastoral areas resulted in the death of the people and huge amount of property damage, it would have positive contribution for pasture and drinking water for pastoral areas like Shinile for the coming few month i.e. enable the pastoralists get water easily with little effort.

On the other hand, the observed heavy fall particularly as of July third dekade 2006 resulted in flash floods and overflow of rivers and dams, thereby affecting 199,900 people in eight regions of Ethiopia. Besides, the occurrence of flood resulted in significant crop damage and huge amount of livestock losses over some areas of SNNP, Amhara, Afar, Oromia, Tigray, Dire Dawa, Somali and Gambela. Thus, this condition would have significant negative impact on the overall crop yield and livestock production.

The deficient moisture condition observed over northern and western Tigry (Werelehi, Haferom and parts of D/Tenben), some areas of northeastern Amhara (South and North Wollo including

Wag Hemra) and eastern Oromiya (East and West Harargie) resulted in water stress on crops in the areas. Moreover, the observed shortage of moisture over Afar and northern Somali during the month of July 2006 resulted in shortage of pasture and drinking water.

Generally with the exception of the observed adverse weather situations like hail damage, water logging, flooding, excess moisture on crop's field and the erratic rainfall distribution together with pest outbreak over some pocket areas of the country, the overall weather situation was favorable for season's agricultural activities in most Meher growing areas**.** Besides, the observed unseasonable rainfall condition over pastoral and agro pastoral areas of southern Oromia during the month of August favored the availability of pasture and drinking water in the areas since livestock production is a dominant feature of the areas.

3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING BEGA SEASON

Normally during the Bega season, harvest and post harvest activities are the major practices over most parts of Meher growing areas. It is time to perform water-harvesting activities for pastoral and agro pastoral areas of southern and southeastern lowlands. The weather situation would favor the outbreak of pests if there were favorable environment, susceptible host and the pest itself. Moreover, the dry and windy Bega's weather situation is favorable for the occurrence and spread of fire. Under normal circumstance, there is a possibility of frost hazard during the season, mainly over northeastern, central, eastern and southern highlands.

The Meher harvest usually begins in September in the lowland areas and extends through January to the typical highland areas. Pursuant to the crop phenological report (21-30 September 2006) crops are at different phenological stages (early vegetative, flowering and maturity stages) at this time of the year. Thus, the effect of rainfall can vary from place to place and month to month accordingly. As indicated in the Crop phenological report sowing of Sesame was underway in some areas of southern Oromia (Dolo Mena). Teff was at early vegetative stage in some areas of northern Oromia (Fitche), eastern Oromia (Gelemso, Mota), western Oromia (Sekoru), eastern Benshangul Gumuze (Dangila), central Oromia (A/Robe), south Amhara (Enewary), northern SNNPR (Bui) where as it was at tasseling and flowering stage in some areas of south western Benshangul Gumuze (Assosa), southern Amhara (Alem Ketema), eastern Amhara (Combolcha, Sirinka), western Oromia (Gimbi), south eastern Amhara (Majete). Moreover it was at ripeness stage in some areas of central Oromia (Ziway), western Oromia (Chira). Maize was at tasseling and flowering stage in some areas of eastern Benshangul Gumuze (Dangila) and eastern Amhara (Combolcha, Sirinka) while it was at wax ripeness and full ripeness stage in some areas of western Oromia (Gimbi, Alge, Sekoru, Aira, Bedelle), south eastern Amhara (Majete), south western Amhara (Chagni) and central Oromia (Ziway). Wheat was at emergence stage in some areas of central Oromia (A/Robe) while it was at tillering and shooting stage in some areas of western Oromia (Gimbi), eastern Amhara (W/Tena), northern SNNPR (Bui), southern Amhara (Shola Gebeya, Enewary). Moreover, it was at earring and flowering stage in some areas of northern and central Oromia (Fitche and Ziway). Millet was at shooting and tasseling stage in some areas central Oromia (A/Robe), eastern Benshangul Gumuze (Bullen) and western Oromia (Limugenet). Sorghume was at tassling in southwestern Benshangule Gumuze (Assosa), western Oromia (Aira) and eastern Amhara (Combolcha). Barley was at shooting stage in some areas of southern Amhara (Shola Gebeya). Beans and peas were at flowering stage in some areas of western Oromia (Chira), northern Oromia (Fitche), southern Amhara (Shola Gebeya, Enewary) and western Oromia (Shambu). In addition to this peas were at emergence stage in some areas of northern SNNPR (Bui). Nug was at budding stage in some areas of eastern Benshangule Gumuze (Bullen), southwestern Benshangule gumuze (Assosa) and southern Amhara (Alem Ketema).

The anticipated 75-85% probability of normal to above normal rainfall over most Meher growing areas would facilitate seed setting and grain filling process in areas where the crop phenological phases are at tasseling and flowering stages at this time of the year. Besides the expected rainfall condition would favor recently sown pulse crops and other crops over the midlands of southern Oromia. Moreover, the expected 80% probability of normal to above normal rainfall over southern and southeastern pastoral and agro pastoral areas of Ethiopia would favor the availability of pasture and drinking water over the areas. It would also be helpful for the late sown crops over the lowlands of some areas of northeastern Tigrai, eastern Amhara, including some areas of eastern Oromia. In addition to this the extended wet condition would favor flood affected areas where replanting of the crops has been going on recently.

The expected occasional rainfall over seasonally dry sectors of the country would have negative impact on harvest and post harvest activities in areas where the activities are under question. In accordance with the latest crop phenological report, crops were at ripeness stage even in some high land and mid land areas. Thus proper measures should be taken in areas where crops are ready to harvest in order to minimize post harvest loses.

The expected unseasonable rainfall over seasonally dry sector of the country would favor the occurrence of crop pests and post harvest pests. Therefore, proper precaution should be undertaken ahead of time to minimize loses below economic threshold level.

High probability of occasional falls particularly during the month of November would have negative effect on harvest and post harvest activities in areas where the activities are under question like Bale, Ayehu, Chagni, Bahir Dar, Adet, Nefas Mewucha, Addis Zemen Debark, Debre Markos, Abomsa, Ambo, Shambu, Gelemso, Fiche, Enewari, Alem Ketema, Debre Birhan, Shola Gebeya, Mehal Meda, Majete, Bati, Kombolcha, Meraro, Mega, Yabelo, Sidamo, Gedio, KT, Hadiya, Wolayta, Gamo Gofa, Dawuro, Gurage, Silte, Kefa, Sirinka. Thus, harvest and post harvest activities should be undertaken on time in order to avoid unnecessary harvest and post harvest loses.

Under normal circumstance, temperature is a limiting factor during the Bega season particularly over central, northern and southern highlands of Ethiopia. The anticipated low probability of occurrence of frost over frost prone areas would create favorable condition for the normal growth and development of plants in the areas.

There would be an increase in maximum temperature, thereby decreasing relative humidity over some pocket areas, which can be favorable for the outbreak of fire. Therefore, proper precaution should be taken near harvested crops and around the barn at the time when using fire is required.

Last but not least the onset, distribution and cessation of season’s rainfall are very important in terms of agricultural activities. Thus, users should interpret the weather forecast in terms of their area of interest and the existing condition of the specific area.

Table 1. Climatic and Agro-Climatic elements of different stations for the month of SEPTEMBER 2006

	Stations	Region	A/ rainfall	Normal	%of Normal	Eto mm/day	Monthly Eto	Moisture status
1	**Adigrat**	**TIGRAI**	34.0	19.1	178	3.3	99	MD
2	**Mekele**		23.5	77.2	30	3.1	93	D
1	**Assayta**	**AFAR**	2.0	172.1	1	3.6	108	VD
2	**Dubti**		7.5	126.8	6	NA	NA	NA
1	**Bahirdar**	**AMHARA**	209.4	130.7	160	3.6	108	H
2	**Bati**		102.4	33.7	304	2.9	87	H
3	**Combolcha**		144.0	211.8	68	3.5	105	H
4	**Chefa**		51.8	36.5	142	NA	NA	NA
5	**D.Markos**		279.1	105.8	264	3.2	96	H
6	**D.Tabor**		239.9	77.4	310	NA	NA	NA
7	**Dangla**		203.1	150.3	135	NA	NA	NA
8	**Enwary**		123.4	158.3	78	4	120	H
9	**Gonder**		187.5	93	202	NA	NA	NA
10	**M.Meda**		58.7	223.8	26	NA	NA	NA
11	**Majete**		104.9	43	244	3.7	111	M
12	**Metema**		177.5	117.8	151	3.3	99	H
13	**Lalibela**		42.1	104.8	40	3.1	93	MD
14	**S. Gebeya**		92.8	120.9	77	3.4	102	M
15	**Sirinka**		117.8	35.9	328	3	90	H
16	**Wegeltena**		38.8	33.6	115	3.6	108	MD
17	**Wereilu**		49.4	104.9	47	4.6	138	MD
1	**Abomsa**	**OROMIYA**	95.5	108.5	88	3.3	99	M
2	**Aira**		295.2	271.8	109	3.3	99	H
3	**Alemaya**		180.3	117.1	154	3.3	99	H
4	**Alge**		498.1	307.5	162	NA	NA	NA
5	**Arjo**		321.5	107.7	299	NA	NA	NA
6	**Bedelle**		343.7	125.7	273	3.2	96	H
7	**D.Dollo**		148.7	62.3	239	3.1	93	H
8	**D.Mena**		106.5	161.4	66	NA	NA	NA
9	**D.Zeit**		118.9	222.4	53	3.7	111	H
10	**Ejaji**		112.8	10.3	1095	NA	NA	NA
11	**Fitche**		96.0	252.2	38	3.3	99	M
12	**Gelemso**		164.9	102.2	161	NA	NA	NA
13	**Gimbi**		419.5	315.7	133	NA	NA	NA
14	**Ginir**		126.3	116.2	109	NA	NA	NA
15	**Gore**		330.4	155.8	212	4	120	H
16	**H. Mariam**		18.8	78.4	24	3.1	93	D
17	**Jimma**		160.0	98	163	2.7	81	H
18	**K.Mengist**		28.4	106.9	27	3.2	96	MD
19	**Kulumsa**		77.0	72.6	106	NA	NA	NA
22	**Metehara**		20.5	16.7	123	2.9	87	D
23	**Moyale**		68.9	308.7	22	3.4	102	M
24	**Nazreth**		128.7	268.3	48	NA	NA	NA

25	**Neghele**		4.2	103	4	5.4	162	VD
26	**Nedjo**		307.7	276.4	111	NA	NA	NA
27	**Nekemte**		278.3	104.5	266	5.9	177	H
28	**Robe(Bale)**		85.2	277.6	31	2.9	87	M
29	**Sekoru**		164.8	90.1	183	3.2	96	H
30	**Shambu**		313.8	149.3	210	NA	NA	NA
1	**Jijiga**	**SOMALI**	71.0	14.5	490	3.8	114	M
1	**A.Minch**	**SNNPR**	42.1	207.8	20	4.2	126	MD
2	**Awassa**		194.0	80.8	240	3.5	105	H
3	**Hosaina**		88.2	184.8	48	3.1	93	M
1	**Assosa**	**B/GUMUZ**	122.9	238	52	2.6	78	H
1	**A.A.Obs.**	**A.A**	239.1	173.6	138	2.84	85.2	H
2	**A.A. Bole**		97.5	138.6	70	3.5	105	M
1	**Diredawa**	**D.D**	75.4	145.9	52	2.9	87	M
1	**Harar**	**Harai**	114.5	97.4	118	NA	NA	NA

Legend

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

Explanatory Note

ETo Reference Evapotranspiration(mm)

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

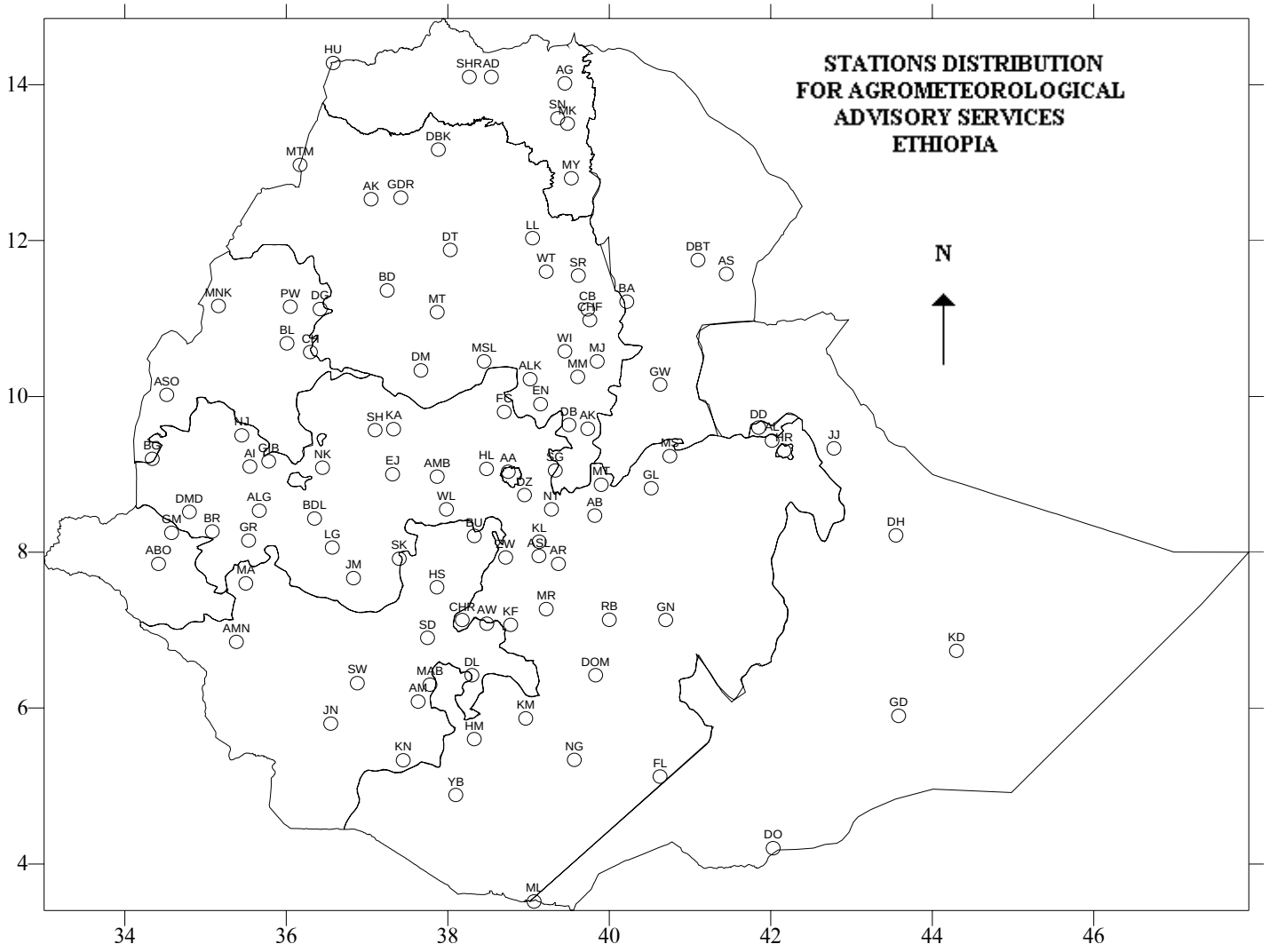
DEKAD: - First or second ten days or the remaining days of a month.

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	Harer	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		