

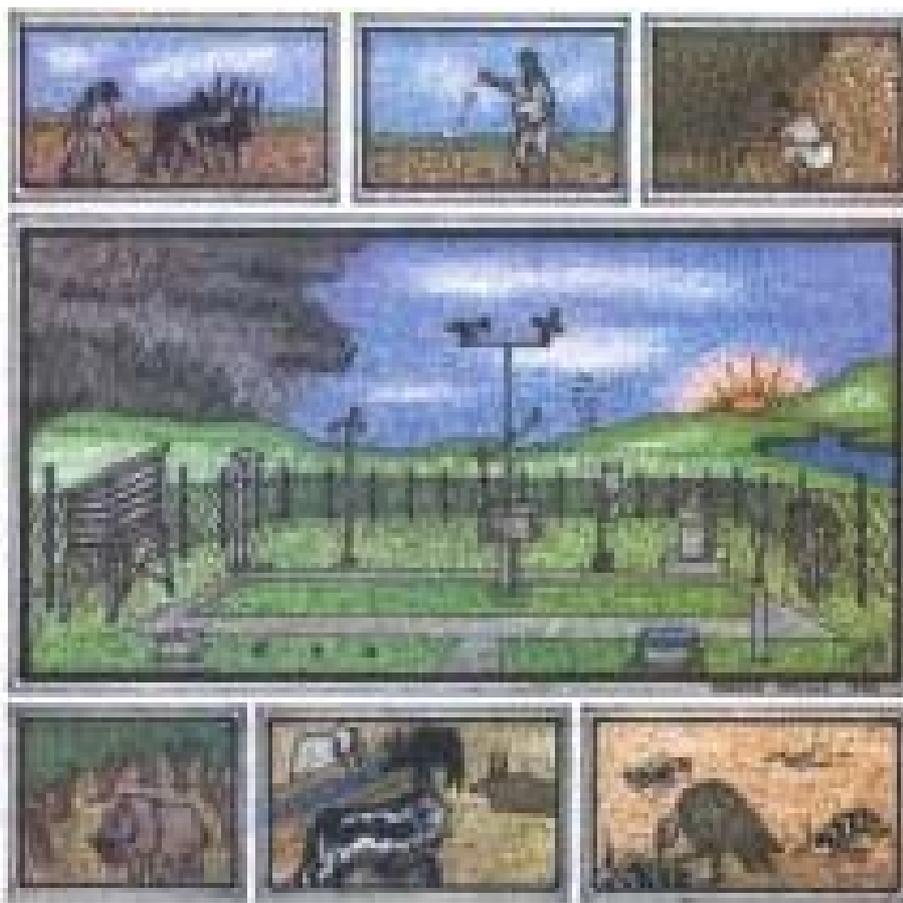
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P.O.BOX 1090, ADDIS ABABA, ETHIOPIA
E.Mail: mmsa@ethionet.et Fax: 251-11-6625292, Tel. 251-11-6615779

FOREWARD

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

አሀፅሮት
እ.ኤ.አ ጁላይ 2006

እ.ኤ.አ በጁላይ 2006 በመጀመሪያው አስርተ ቀናት በአብዛኛው ኦሮሚያ፣ ቤንሻንጉል ጉሙዝ፣ አማራ፣ ምሥራቅና ደቡብ ትግራይ የትግራይ፣ ምዕራብ ዳርቻን ጨምሮ የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች፣ የሰሜንና ደቡብ አፋር ዳርቻዎች ላይ የነበረው መደበኛና ከመደበኛ በላይ ዝናብ በመካሄድ ላይ ላለው የእርሻ እንቅስቃሴ በጎ ጎን ነበረው። በመሆኑም በአብዛኛው የአዝርዕት መረጃቸው በሚደርሰን ቦታዎች ላይ አዝርዕት በመልካም ሁኔታ ላይ ነበሩ። ይሁንና በመካከለኛውና ምዕራብ ኢትዮጵያ አንዳንድ ስፍራዎች ከ31.5-81.6 ሚ.ሜትር የሚደርስ ከባድ ዝናብ የተመዘገበ ሲሆን፣ በደብረብርሃን፣ ጊምቤ እና ሻምቡ ሁለት ቀናት በነቀምት ደግሞ ከአስሩ ቀናት በአራት ቀናት ከ30 ሚ.ሜትር በላይ የሆነ ከባድ ዝናብ ጥሎ ነበር። ሆኖም ከዘጋቢ ጣቢያዎቻችን በከባድ ዝናብ ሳቢያ የደረሰ የጉዳት ሪፖርት አልነበረም። በሌላ በኩል በመካከለኛው ትግራይ፣ በጋምቤላ፣ በደቡብ ብሄር ብሄረሰቦችና ሕዝቦች ደቡባዊ ክፍል፣ በከፊል የምሥራቅ ኦሮሚያና በአብዛኛው የሱማሌ ሰሜናዊ ክፍል የነበረው እጥረት በተለይ ከአለፈው አስር ቀናትጋ በተያያዘ መልኩ እጥረት በታየባቸው እንደ ሰሜን ሶማሌና ከፊል የምሥራቅ ኦሮሚያ በሰብሎች የውሃ ፍላጎት ላይ የሚደርስው አሉታዊ ተፅዕኖ የጎላ እንደሚሆን ይታመናል። የአየር ሙቀትን በተመለከተ ጋምቤላ፣ ሸዋሮቤት፣ ጨፋ፣ ድሬደዋ፣ መተሐራ፣ ሰመራ፣ አሳይታ እና ዱብቲ 35.5፣ 36.1፣ 36.2፣ 37.0፣ 38.5፣ 44.0፣ 44.0 እና 45.0 °C ከፍተኛ የሙቀት መጠን በቅደም ተከተላቸው ተመዝግቦባቸዋል።

እ.ኤ.አ በጁላይ 2006 በሁለተኛው አስርተ ቀናት በአብዛኛው ትግራይ፣ አማራ፣ መካከለኛውና ምዕራብ ኦሮሚያ፣ ቤንሻንጉል ጉሙዝ ደቡባዊ አጋማሽ፣ የጋምቤላ፣ የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ሰሜናዊ አጋማሽ እና አብዛኛው አፋር የነበረው መደበኛና ከመደበኛ በላይ ዝናብ በአብዛኛው ለሰብል እድገት አመቺ ሁኔታ ፈጥሮ ነበር። በአንዳንድ የሰሜን ምሥራቅ ክፍተኛ ቦታዎች የሰንዴ፣ የገብስ፣ የበቆሎ እና የጥራጥሬ አዝርዕት የዘር ጊዜ የነበረ ሲሆን፣ በአንዳንድ የሰሜን ምሥራቅ ቆላማ ስፍራዎች ሰብል እየተሰበሰበ ነበር። ይሁንና ከሰሜን ምሥራቅ በኮምቦልቻ፣ በባቲ፣ እነዋሪ፣ ፍቼ እና መዘዞ ከምዕራብ በአርጆ፣ በደሌ፣ ጋምቤላ፣ ጊምቤ፣ ሊሙገነት ከሰሜን ምዕራብ ቻግኒ፣ ደብረታቦር፣ ማንኩሽ እንዲሁም ከመካከለኛው በደብረ ዘይትና አዲስ አበባ ላይ ከ31-55.5 ሚ.ሜትር የሚደርስ ዝናብ ተመዝግቦ ነበር። በመሆኑም በበደሌ በረዶ ቀላቅሎ የዘነበው ዝናብ በበቆሎ ማሻሻልና በቡና ሰብል ላይ መጠነኛ ጉዳት አድርጎ ነበር። የአየር ሙቀትን በተመለከተ ድሬደዋ፣ መተሐራ፣ ሰመራ፣ አሳይታ እና ዱብቲ 36.2፣ 36.5፣ 42.2፣ 42.5 እና 43.5 °C ከፍተኛ የሙቀት መጠን በቅደም ተከተላቸው ተመዝግቦባቸዋል።

እ.ኤ.አ በጁላይ 2006 በሦስተኛው አስርተ ቀናት አብዛኛው የትግራይ ምሥራቃዊ አጋማሽ፣ መካከለኛውና ደቡብ ምሥራቅ አማራ፣ መካከለኛውና ምዕራብ ኦሮሚያ፣ አብዛኛው የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ክልል እና አብዛኛው ጋምቤላ የነበረው መደበኛና ከመደበኛ በላይ የሆነ ዝናብ በመካሄድ ላይ ላለው የግብርና እንቅስቃሴ አመቺ ሁኔታን ፈጥሮ የነበረ ሲሆን፣ በአንዳንድ የምዕራብ፣ ሰሜን ምዕራብና መካከለኛው ኢትዮጵያ ላይ ከ33-68 ሚ.ሜትር ከባድ ዝናብ በአንድ የዝናብ ቀን ብቻ መመዝገቡ በተለይ ውሃ ገብና ረባዳማ በሆኑ ማሳዎች አሉታዊ ተፅዕኖ እንደሚያሳድር እሙን ነው። በመሆኑም አንዳንድ አካባቢዎች በእፅዋት ላይ ጉዳት አስከትሎ ነበር ለምሳሌ በዝዋይ ጥሎ የነበረው ከባድ ዝናብ በአበባ ልማት ላይ ጉዳት ማስከተሉን ከደረሰው ሪፖርት መረዳት ተችሏል። በአንፃሩ በምሥራቅ አማራ ሰሜናዊ ክፍል በምሥራቅ ኦሮሚያ በጥቂት የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ምስራቃዊ ክፍልና በሰሜን ሶማሌ ክፍተኛ ቦታዎች የነበረ ከመደበኛ በታች የሆነ ዝናብ በማደግ ላይ ባሉ አዝርዕት የውሃ ፍላጎት ላይ አሉታዊ ተፅዕኖ እንደሚያሳድር ይታመናል። የአየር ሙቀትን በተመለከተ ሰመራ፣ ዱብቲ፣ ኤሊዳር፣ አሳይታ፣ ድሬደዋ እና መተሐራ

42.8፣ 42.6፣ 42.5፣ 42.2፣ 36.7 እና 35.5 °C ከፍተኛ የሙቀት መጠን በቅደም ተከተላቸው ተመዝግቦባቸዋል።

ጠቅለል ባለ መልኩ እ.ኤ.አ በጁላይ 2006 አብዛኛው የሰሜን ሶማሌ፣ ከፊል ምሥራቅ ኦሮሚያና የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ደቡባዊ አጋማሽ በስተቀር በአብዛኛው የመኸር አብቃይ አካባቢዎች ላይ መደበኛና ከመደበኛ በላይ የሆነ የዝናብ ሁኔታ ነበር የታየው። ይሁንና በአንዳንድ የሰሜን ምዕራብና ምሥራቅ፣ ምዕራብ ኢትዮጵያን ጨምሮ በተደጋጋሚ ከባድ ዝናብ የታየባቸው አካባቢዎች ነበሩ። ከዘጋቢ ጣቢያዎቻችን በአዲስ አበባ፣ በጋራ፣ በዓለም ከተማ፣ በአርጅ፣ በደብረ ብርሃን፣ በሻምቡ፣ በደብረ ዘይት፣ በደብረ ታቦር፣ በሞጣ፣ በባሕር ዳር፣ በዳንግላ፣ በጊምቤ፣ በአይራ፣ በኮምቦልቻ፣ በቻግኒ እና በነቀምት በወሩ ውስጥ ከ3-7 ቀናት ከ30 ሚ.ሜትር በላይ የሆነ ከባድ ዝናብ ተመዝግቦባቸው ነበር። በመሆኑም በበደሌ፣ በጋምቤላና በጋራ ይኸው ከባድ ዝናብ በአዝርዕት ላይ ጉዳት ማስከተሉን ከአዝርዕት መረጃ ሪፖርት መረዳት ተችሏል። በአንፃሩ በከፊል የምሥራቅ ኦሮሚያ፣ በአፋር እና በሰሜን ሶማሌ ከአዝርዕት የውሃ ፍላጎት እና ከግጥሽ ሳርና ውሃ አቅርቦት አንፃር ሲታይ በስርጭት ረገድ ያለመስተካከልና እጥረት ነበር።

SUMMARY

JULY 2006

During the first dekad of July 2006, the observed normal to above normal rainfall over most part of Oromia, Benshangul-Gumuz, Amhara, eastern and South Tigray including western margin of Tigray, most part of SNNPR, northern and southern margins of Afar could have significant contribution for the on going agricultural activities. Thus, as the crop phenological report indicates that the condition of crops was in a good shape over most part of the Meher growing areas. Nevertheless, some areas of central and western parts of Ethiopia exhibited heavy falls ranging from 31.5-81.6 mm in one rainy day. Besides, Debre Birhan, Gimbi, Shambu and Nekemt recorded heavy falls greater than 30mm for 2 - 4 days out of the ten days period. However no crop damage has been observed due to heavy fall from the reporting stations. On the other hand the observed deficient moisture condition over central Tigray, Gambela, southern parts of SNNPR, eastern half of Oromia and most part of northern Somali could have negative impact particularly over northern Somali and eastern half of Oromia in areas where there was deficient moisture condition during the preceding dekads.

During the second dekad of July 2006, the observed normal to above normal rainfall over most parts of Tigray, Amhara, central and western Oromia, southern half of Bensahgul-Gumuz, Gambella, southern half of SNNPR, could have significant contribution for normal growth and development of plants. Sowing activities of cereal crops (wheat, Barely) was observed over some areas of northeastern highlands (Wegel Tena, Sirinka, Majete) and pulse crops (beans, haricot bean) were underway over some areas of northeastern lowlands. However, heavy fall (31.8 – 60.8 mm in one rainy days) was observed over some areas of northeastern (Combolcha, Debre Brhan, Bati, Enwari) some areas of western (Arjo, Bedelle, Gambella, Gimbi, Limu Genet) some areas of northwestern (Chagni, D/tabor, Mankush) as well as some areas of central (Dber Zeit, Addids Ababa). As a result, Bedelle reported perennial crop like Coffee, and cereal crops like Maize and sorghum damage due to heavy fall together with hailstorm. Moreover, Gambela reported maize crop damage due to heavy rainfall during the dekad. With regard to extreme maximum temperature, Dire Dawa, Methera, Semera, Assayta and Dubti recorded extreme maximum temperature as high as 36.2, 36.5, 42.2, 42.5 and 43.5 °C respectively.

During the third dekad of July 2006, the observed normal to above normal rainfall over southern half of Tigray, most part of Amhara, south Afar, most part of Oromia, Benshangul-Gumuz, Gambela and northern part of SNNPR including some areas of northern Somali could have significant contribution for sowing activities of Teff, Wheat and Barley over some areas like central (Arsi Robe, Kulumsa, Koffele and Bui), northern part of SNNPR (Hossaina), northeastern (Fiche, Enwary, M/Selam, Majete, Ejaji, Woreilu, Lalibela and Sirinka) and northern (Adwa) parts of the country. Moreover it has favored Meher crops, which are found at different crop phenological stages in most parts of Meher growing areas as per the crop phenological report. On the other hand the observed dry weather condition in some days over northeastern (Sirinka), central (Merraro), SNNPR (Sidama, Hadia, Wolaita, Sheka) could have positive impact for harvesting Belg crops including some root crops like Potato. Among the reporting stations Addis Ababa, Woliso, Majete, Kulumsa, Bui, Fiche, Gimbi, Limu Genet, Bati, Enwary, Gore, Debre Birhane, Arjo, Dangla, Alem Ketema, Debre Tabor, Bahire Dar, Nekemte, Pawe, Combolcha, Gonder, Chagni and Gambela received heavy fall ranging from 33-81mm in one rainy day and the crop phenological report indicates that there was crop damage in Pawe due to heavy fall together with strong wind. With regard to air temperature, Semera, Dubti, Elidar, Assayta, Dire Dawa, and Metehara recorded extreme maximum temperature as high as 42.8, 42.6, 42.5, 42.2, 36.7 and 35.5 °C respectively.

Generally, during the month of July, with the exception of much of northern Somali, eastern half of Oromia and southern half of SNNPR, normal to above normal rainfall was observed over most parts of Meher growing areas. However, some areas like northwestern and eastern as well as western Ethiopia exhibited heavy falls repeatedly during the month under review. Among the reporting stations, Addis Ababa, Pawe, Alem Ketema, Arjo, Debre Brhan, Shambu, Debre Zeit, Debre Tabor, Mota, Bahir Dar, Dangle, Gambit, Aura, Combolcha, Cahgni 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 eastern half of Oromia, Afar and northern Somali could have negative impact in terms of crop water requirement and the availability of pasture and drinking water as well.

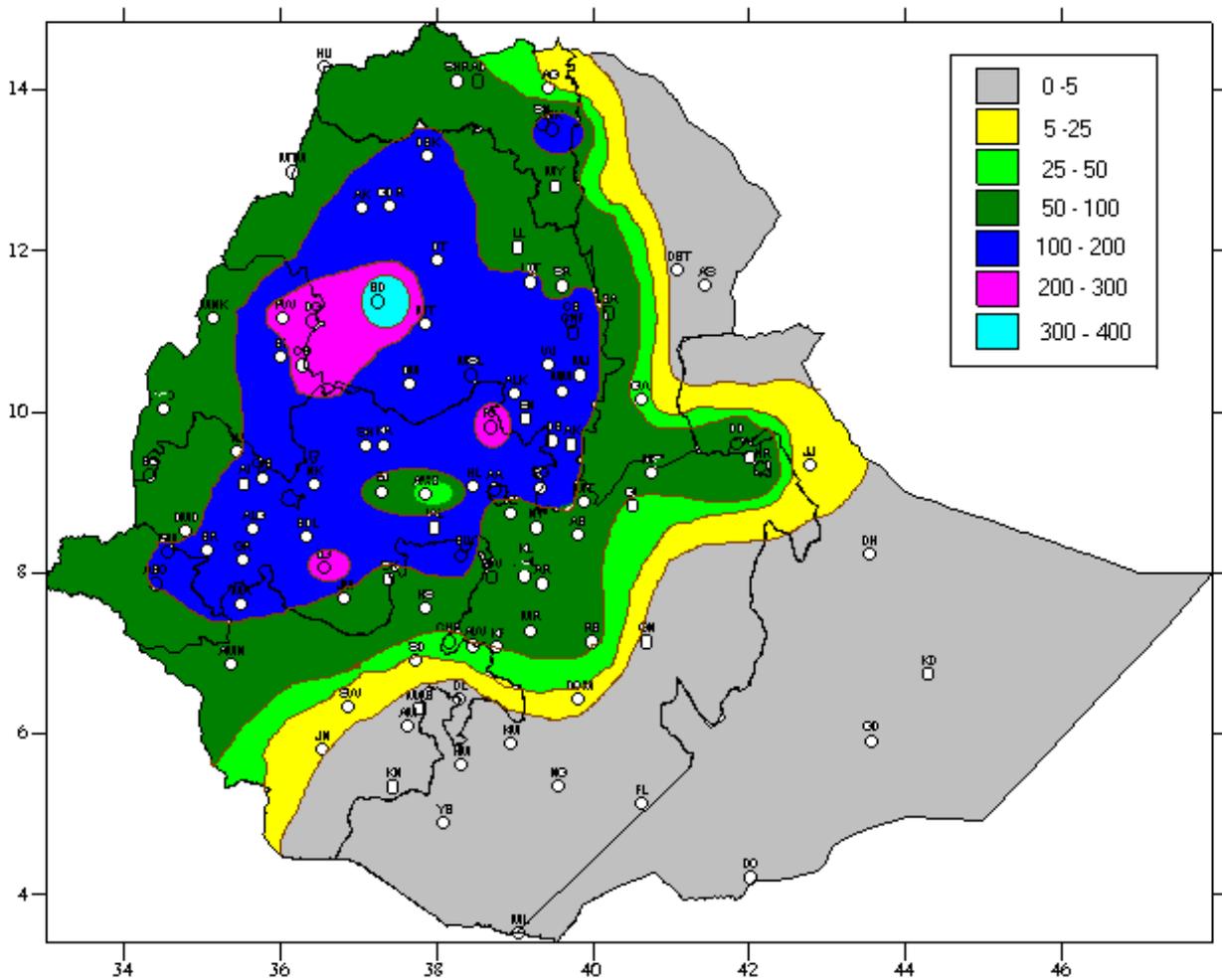


Fig 1. Rainfall distribution in mm (21 – 31 July, 2006)

1. WEATHER ASSESSMENT

1.1 (21- 31 July, 2006)

1.1.1 Rainfall amount (Fig.1)

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

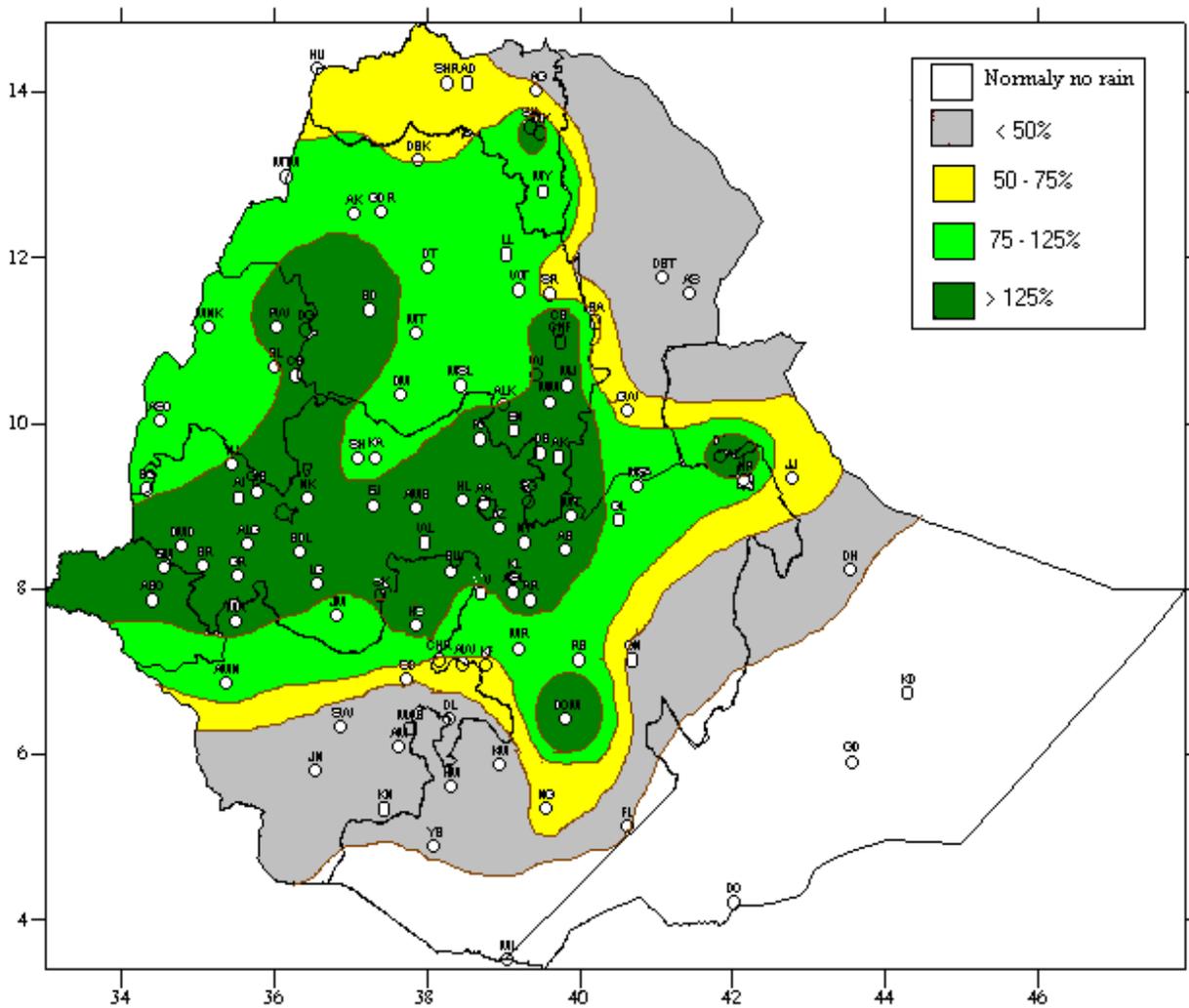


Fig. 2 Percent of normal rainfall distribution (21-30 July, 2006)

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. 2)

Bensahgul-Gumuz, Gambela, Amhara, much of central and western Oromia, some areas of southern Tigray, some parts of northern Somali, some areas of eastern and southern Somali and western and southwestern SNNPR exhibited normal to above normal rainfall. Below to much below normal rainfall was observed for the rest parts of the country. Normally, Kiremt is not a rainy season for southern Oromia and southern and southeastern Somali.

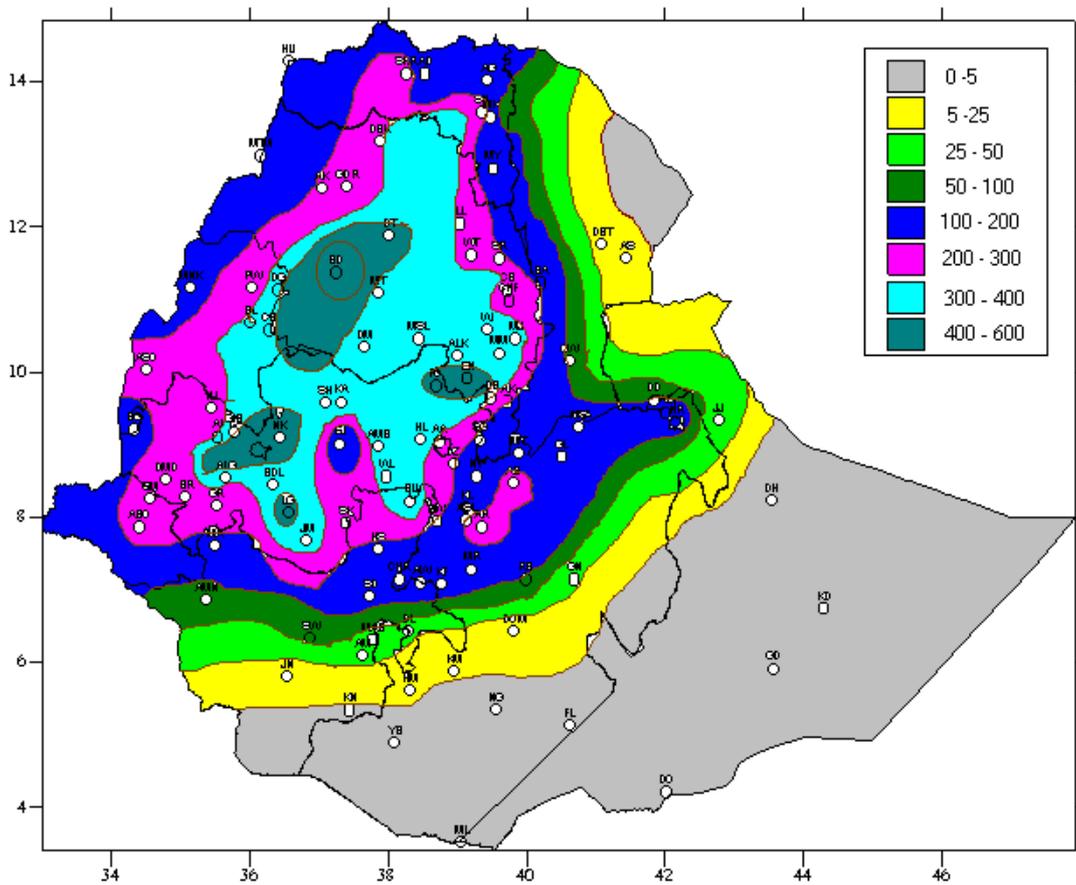


Fig. 3 Rainfall distribution in mm for the month of July 2006

1.2 July 2006

1.2.1 Rainfall distribution (Fig.3)

Pocket areas of southwestern Amhara some areas of eastern Tip of Bensahngul-Gumuz, pocket areas of central and western Oromia experienced 400 – 500 mm of rainfall. Most parts of Amhara, central and western Oromia, parts of eastern Benshagul-Gumuz parts of southern Tigray received 300-400mm of rainfall. Parts of western and southern Tigray, eastern western and southeastern Amhara, central and western Oromia, northern SNNPR, northeastern Gambela and southern Tip of Benshagul-Gumuz experienced 200-300 mm of rainfall. Parts of western Amhara, western and eastern Tigray, eastern and southern Oromia, northern SNNPR and western and southern Gambela received 50-100mm of rainfall. Parts of western and southwestern Afar, northern Somali, eastern and southern Oromia and western and northern SNNPR received 25-50mm of rainfall. Parts of eastern Afar and eastern and southern Oromia, western SNNPR exhibited 5-25mm of rainfall. There was little or no rainfall for the rest parts of the country.

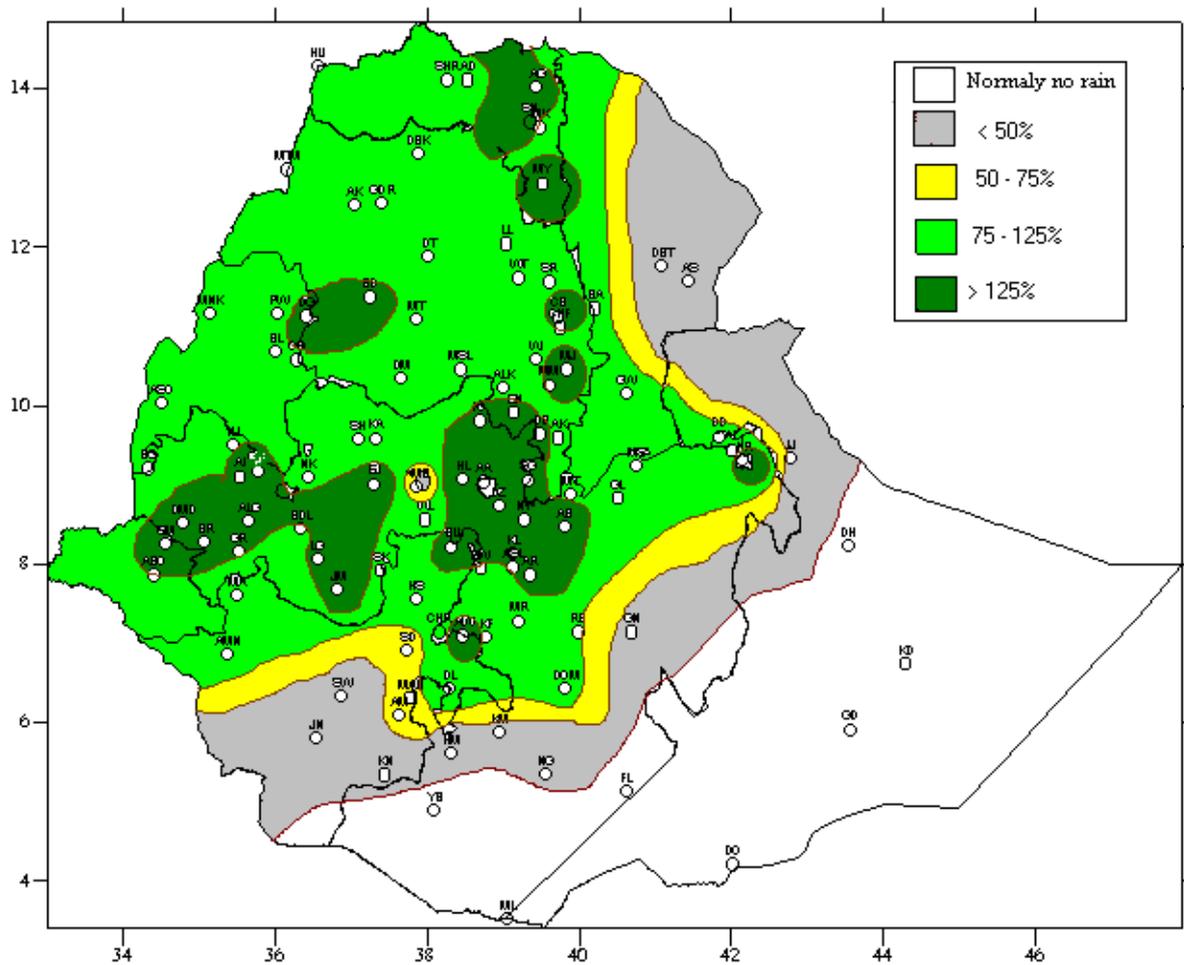


Fig. 4 Percent of Normal Rainfall distribution for the month of July 2006

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. 4)

Tigray, Amhara, Benshangul-Gumuz, much of Oromia, Gambela, part of northwestern Afar, parts of north, east and northwestern SNNPR exhibited normal to above normal rainfall. Below to much below normal rainfall has been observed for the rest parts of the country. Normally, Kiremt is not a rainy season for southern Oromia and southern and southeastern Somali.

1.3 TEMPERATURE ANOMALY

Gambela, Shoa Robit, Cheffa, ,Dire Dawa, Methera, Elidar, Assayta, Semera and Dubti, recorded extreme maximum temperature as high as 35.5, 36.1, 36.2, , 37.0, 38.5, 42.5, 44.0, 44.0 and 45.0 °C respectively during the month.

2. WEATHER OUTLOOK

2.1 For the first dekad of August 2006

For the coming tendays, the seasonal rain-bearing systems are expected to have a better strength over the Kiremt rain benefiting areas. In particular, northeastern and eastern parts of the country are likely to have good rainfall activity. In general, Tigray, much of Amhara, western and central Ethiopia and Benshgul-Gumuz are anticipated to get normal to above normal rainfall. Some places of the aforementioned areas will have heavy falls which can resulted in flash flooding. Besides, Gambela, northern SNNPR will receive normal rainfall. Harari, eastern Oromia, DireDawa, as well as northern half of Somali are likely to get close normal rainfall. However, in some place it will be below normal rainfall. South and southeastern portion of the nation will be under partly cloudy conditions.

2.1 For the month of August 2006

In the coming month, analyzed and forecasted meteorological information indicate that the seasonal rainfall activity is expected to continue more or less in similar manner over various parts of the country. As a result, western Tigray, much of Amhara, Benshangul-Gumuz, western and central Oromia including Addis Ababa and its surrounding will get normal to above normal rainfall. Some places will have heavy falls accompanied with thunder and hailstorm. Eastern Tigray, Gambela and northern SNNPR will receive normal rainfall. Besides, Afar, Dire Dawa, Harar, eastern and southern Oromia as well as southern half of SNNPR and northern Somali are likely to get close normal rainfall. However, some places will have below normal rainfall partly cloudy condition dominated across the rest of southern and southeastern parts of the country.

3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

Generally, during the month of July, with the exception of much of northern Somali, eastern half of Oromia and southern half or SNNPR, normal to above normal rainfall was observed over most parts of Meher growing areas. However, some areas like northwestern and eastern as well as western Ethiopia exhibited heavy falls repeatedly during the month under review. Among the reporting stations, Addis Ababa, Pawe, Alem Ketema, Arjo, Debre Brhan, Shambu, Debre Zeit, Debre Tabor, Mota, Bahir Dar, Dangla, Gambit, Aura, 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 eastern half of Oromia, Afar and northern Somali could have negative impact in terms of crop water requirement and the availability of pasture and drinking water as well. Pursuant to the crop phenological report sowing of wheat was under way in some areas of central Oromia (Kulumsa), eastern Amhara (Wegel Tena), northern SNNPR (Bui, Hosaina) while it was at emergence and third leaf stages in some areas of southeastern Amhara (Shola Gebeya), central and northern Oromia (Ziway, Fiche). Sowing of Teff was under way in some areas of eastern Amhara (Majete), western and northern Oromia (Sekoru, Fitcha), central Oromiya (Bui) while it was at emergence and third leaf stage in some areas of western Oromia (Gimbi), western Amhara (Dangla), southeastern Amhara (Alem Ketema) and central Oromia (Ziway). Maize was at emergence stage in some areas of eastern Benshangule-Gumuze (Dangla), eastern Amhara (Majete, Sirinka). It was at ninth leaf and tasseling stage in some areas of western Oromia (Algea, Gimbi, Sekoru, Nedjo), central Oromia (Ziway), eastern Benshangul-Gumuze (Chagni) while it was at flowering and waxy ripeness stage in some areas of western Oromia (Aira, Bedelle), western Benshangul-Gumuze (Assosa), eastern and southern Oromia (Gelemso, K/Mengist) and western Benshangul-Gumuze (Mankushe). Barley was at emergence and Sorghum was at shooting stage in some areas of south Amhara (Shola Gebeya) and western Oromia (Aira, Nedjo), respectively. Oat and Millet was at tillering stage in some areas of western Oromia (Aira, LimuGenet). Millet was at third leaf stage in some areas of western Oromia (Nedjo) and eastern Benshangul-Gumuze (Chagni). Sowing of Peas and Beans was under way in some areas of western and central Oromia (Shambu, Kulumsa) and eastern Amhara (Wegel Tena). Moreover Bean was at emergence and budding stage in some areas of western Oromia (Shambu), southern Amhara (Shola Gebeya) and northern Oromia (Fitcha). Nug was at emergence and elongation stage in some areas of eastern Benshangul-Gumuze (Bullen), and southeastern Amhara (Alem Ketema), respectively. Slight weed infestation has been reported in some areas of central Oromia (Ziway).

3.2 EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING MONTH

The anticipated strong and widespread rainfall over central, western, southwestern and parts of northeastern Ethiopia would have a positive impact for the remaining Meher agricultural activities. Although, better rainfall condition is expected over some lowland areas of eastern Ethiopia, there would be a possibility of shortage of moisture in some lowlands. Thus, appropriate water harvesting practices should be continued over the areas to minimize the risk due to the expected deficient fall. Generally the expected normal to above normal rainfall over western Tigray, much of Amhara, Benshangul-Gumuz, central and western Oromia as well as Addis Ababa including the expected near normal rainfall over eastern Tigray, Gambela, and northern SNNPR would create favorable condition for season's agricultural activities. However, the expected heavy rainfall over some areas of Amhara, Tigray, central and western Oromia would result in crop damage in crop fields particularly over low-lying areas and near riverbanks. Thus proper attention should be given in order to minimize the negative effect of the expected excess moisture condition.

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

	Stations	Region	A/ rainfall	Normal	%of Normal	ETo mm/day	Monthly ETo	Moisture Status
1	Adigrat	TIGRAY	178.0	157.8	112.8	3.42	106.0	H
2	Adwa		27.6	205.1	13.5	NA	NA	NA
3	Mekele		194.3	198.0	98.1	3.53	109.4	H
4	Michew		191.5	74.5	257.0	4	124.0	H
5	Shire		293.5	291.1	100.8	3.32	102.9	H
1	Assayta	AFAR	9.2	34.1	27.0	7.07	219.2	VD
2	Dubti		18.8	43.4	43.3	7.04	218.2	VD
1	A. Ketema	AMHARA	375.9	316.6	118.7	3.03	93.9	H
2	Bahirdar		562.9	422.5	133.2	3.39	105.1	H
3	Bati		158.5	174.3	90.9	4.09	126.8	H
4	Bullen		347.0	361.0	96.1	2.9	89.9	H
5	Chagni		467.2	342.8	136.3	2.9	89.9	H
6	Combolcha		365.8	265.1	138.0	3.83	118.7	H
7	Chefa		281.3	228.8	122.9	4.71	146.0	H
8	D.Birhan		424.7	264.3	160.7	3.02	93.6	H
9	D.Markos		364.1	297.2	122.5	2.81	87.1	H
10	Dangla		439.9	250.3	175.7	3.11	96.4	H
11	Enwary		413.9	223.5	185.2	3.04	94.2	H
12	Gonder		262.6	323.7	81.1	3.31	102.6	H
13	Lalibela		270.6	245.0	110.4	2.65	82.2	H
14	Majete		349.7	189.0	185.0	4.27	132.4	H
15	Metema		194.6	220.0	88.5	3.9	120.9	H
16	Motta		375.4	306.6	122.4	3.38	104.8	H
17	S. Gebeya		296.5	271.5	109.2	2.7	83.7	H
18	Sirinka		156.3	210.2	74.4	3.89	120.6	H
19	Wegeltena		243.8	233.1	104.6	2.78	86.2	H
20	Wereilu		244.9	358.3	68.4	3.13	97.0	H
1	Ambo Agi.	OROMIYA	39.3	226.3	17.4	NA	NA	NA
2	Arjo		387.4	314.0	123.4	2.39	74.1	H
3	Abomsa		221.9	161.3	137.6	4.43	137.3	H
4	Aira		419.5	301.9	139.0	2.78	86.2	H
5	Alemaya		119.6	101.0	118.4	3.75	116.3	H
6	Bedelle		348.3	316.6	110.0	2.71	84.0	H
7	D.Dollo		227.6	165.7	137.4	2.75	85.3	H
8	D.Mena		10.9	13.6	80.1	3.03	93.9	D
9	D.Zeit		284.5	219.1	129.8	3.55	110.1	H
10	Fitche		486.5	326.1	149.2	2.91	90.2	H
11	Gelemso		115.6	136.4	84.8	3.77	116.9	M
12	Gimbi		465.0	355.3	130.9	2.87	89.0	H
13	Gore		283.2	329.3	86.0	2.62	81.2	H
14	H. Mariam		7.4	119.0	6.2	2.31	71.6	D
15	Jimma		318.7	208.8	152.6	2.87	89.0	H
16	K.Mengist		2.5	28.8	8.7	2.35	72.9	VD
17	Kulumsa		163.4	124.2	131.6	3.16	98.0	H
18	Lumugenet		426.2	294.0	145.0	2.9	89.9	H

19	Metehara		142.1	120.0	118.4	5.53	171.4	M
20	Moyale		2.1	6.6	31.8	3.51	108.8	VD
21	Nazreth		159.5	218.4	73.0	4.57	141.7	H
22	Neghele		3.3	6.9	47.8	3.49	108.2	VD
23	Nekemte		476.1	401.9	118.5	2.54	78.7	H
24	Robe(Bale)		91.9	92.1	99.8	3.67	113.8	M
25	Shambu		328.6	366.5	89.7	2.92	90.5	H
26	Weliso		307.3	262.2	117.2	2.77	85.9	H
27	Yabello		1.8	13.6	13.2	3.24	100.4	VD
28	Ziway		165.6	146.1	113.3	4.02	124.6	H
1	Jijiga	SOMALI	35.1	74.4	47.2	5.54	171.7	D
1	A.Minch	SNNPR	24.4	47.9	50.9	3.36	104.2	D
2	Awassa		171.3	123.3	138.9	3.28	101.7	H
3	Hosaina		185.7	153.7	120.8	2.62	81.2	H
4	Jinka		18.5	103.4	17.9	3.04	94.2	D
5	Konso		5.0	21.9	22.8	3.34	103.5	VD
6	M.Abay		34.6	43.6	79.4	4.03	124.9	MD
1	Assosa	B/GUMUZ	254.1	234.4	108.4	3.22	99.8	H
1	Gambela	Gambela	249.5	201.9	123.6	NA	NA	NA
1	A.A.Obs.	A.A	352.1	259.4	135.7	2.43	75.3	H
2	A.A. Bole		312.7	239.7	130.5	3.17	98.3	H
1	Diredawa	D.D	87.5	92.6	94.5	6.57	203.7	MD
1	Harar	Harar	120.7	93.7	128.8	3.22	99.8	H

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)

DEFINITION 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 covers southern, central, eastern and northeastern parts of the country.

CROP WATER REQUIREMENTS: - The amount of water needed to meet the water loss through evapotranspiration of a disease free crop, growing under non-restricting soil conditions including soil water and fertility.

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

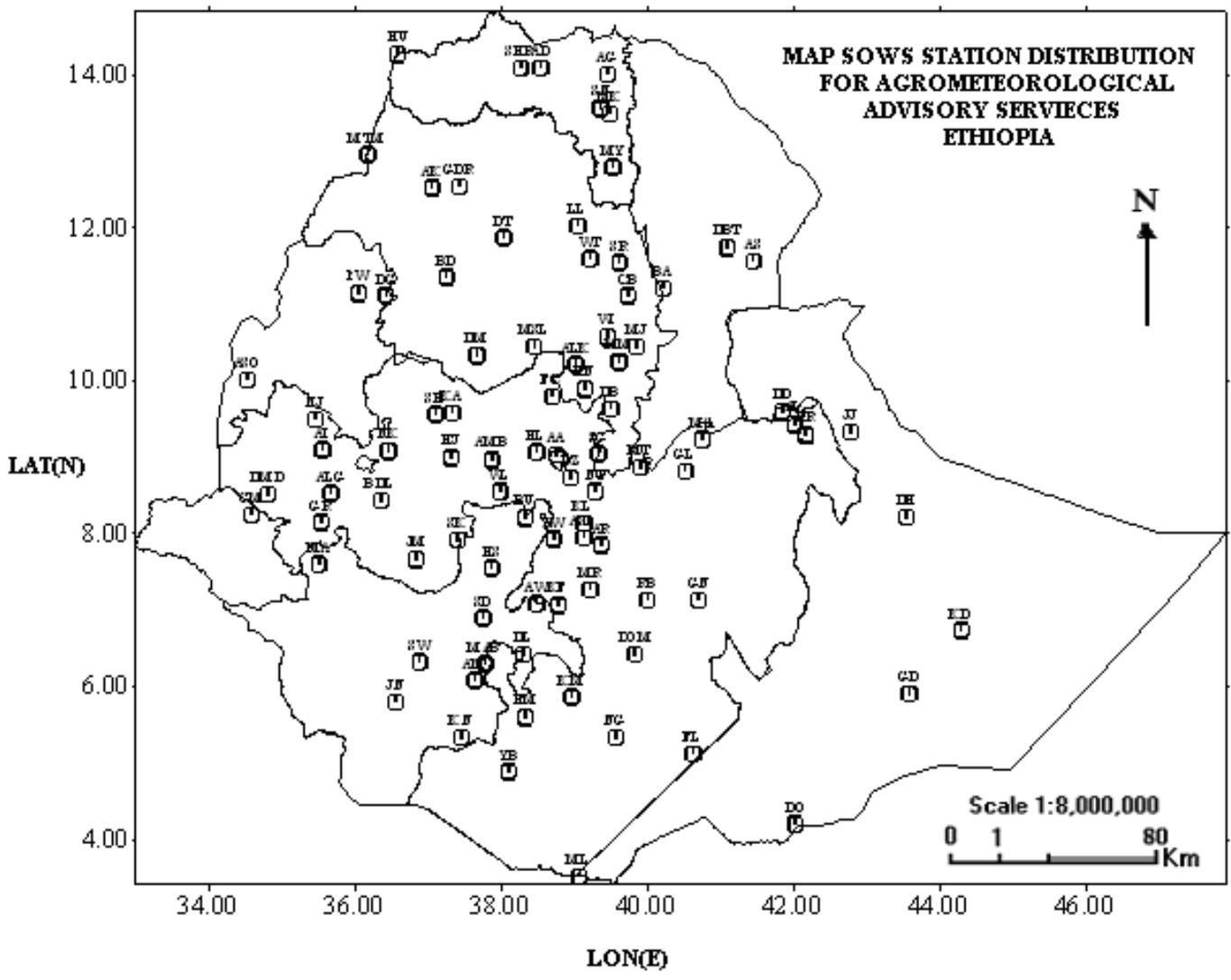
EXTREME TEMPERATURE: - The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

ITCZ: - Intertropical convergence zone (narrow zone where trade winds of the two hemispheres meet).

KIREMT: - Main rainy season that extends from June to September for most parts of the country with the exception of the southeastern lowlands of the country.

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

**MAP SOW'S STATION DISTRIBUTION
FOR AGROMETEOROLOGICAL
ADVISORY SERVICES
ETHIOPIA**



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