

## **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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አህዕድት  
እ.ኤ.አ ኖቬምበር 2006

እ.ኤ.አ በኖቬምበር 2006 በመጀመሪያው አስርተ ቀናት በደቡብና ደቡብ ምስራቅ ሱማሌ፣ ምዕራብና ደቡብ ኦሮሚያ፣ በደቡብ ምዕራብ፣ ቤንሻንጉል ጉሙዝ እንዲሁም አንዳንድ የምዕራብና ምስራቅ አማራ ኪስ ቦታዎች ላይ መደበኛና ከመደበኛ በላይ የሆነ ዝናብ አግኝተዋል ይህ የዝናብ ሁኔታ በተለይም በአሁኑ ጊዜ በመደበኛ ሁኔታ የዝናብ ወቅታቸው ለሆነው የደቡብ ኦሮሚያ፣ የደቡብና ደቡብ ምስራቅ ሱማሌ ላሉት የአርብቶ አደሩና ከፊል የአርብቶ አደሩ አካባቢዎች ለግጦሽ ሳርና ለመጠጥ ወሃ አቅርቦት የጎላ አስተዋፅኦ እንደሚኖረው እሙን ነው። ከዚህ በተጨማሪም ይህ መደበኛና ከመደበኛ በላይ የሆነ ዝናብ በአሁኑ ሰዓት በተለያየ የዕድገት ደረጃ ላይ ለሚገኙት አዝርዕቶች ጠቀሜታዊ ከፍተኛ እንደሆነ ይታመናል። ይሁን እንጂ አንዳንድ አካባቢዎች ከበድ ያለ ዝናብ በአንድ የዝናብ ቀናት ብቻ ተመዝግቦባቸው ነበር። ለምሳሌ ለመጥቀስ ያህል በሞያሌ 35.4 ሚ.ሜ እንዲሁም በሀገረ ማሪያም 38.9 በሚ.ሜ ይገኙበታል።

እ.ኤ.አ. በኖቬምበር 2006 በሁለተኛው አስርተ ቀናት በአብዛኛው የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል በከፊል የደቡብ የምስራቅና የምእራብ ኦሮሚያ አብዛኛው የቤንሻንጉል ጉሙዝ እና ከፊል የሰሜን ምስራቅና የመካከለኛው አማራ መደበኛና ከመደበኛ በላይ ዝናብ የተመዘገበ ሲሆን፣ በበደሌ፣ ጨራ፣ ሀገረ ማሪያም፣ ኮንሶ እና ምእራብ አባያ ከ30-46 ሚ. ሜትር የሚደርስ ከባድ ዝናብ በአንድ የዝናብ ቀን ብቻ ተመዝግቦ ነበር። ይህም ሁኔታ እንደ በደሌ እና ወገል ጤና ባሉት አካባቢዎች በደረሱ ሰብሎችና በማደግ ላይ ባሉ አዝርዕት ጉዳት ያደረሰ ሲሆን በእርጥብቱ መብዛት የተነሳ በሻንቡ የአረም መብዛት በአዝርዕት ጤናማ እድገት ላይ ተፅዕኖ እንዳደረሰ ከደረሰው ሪፖርት መረዳት ተችሏል። በተጨማሪ በአሰላ ወፎች በማሽላ አዝርዕት ላይ መጠነኛ ጉዳት እንዳደረሱ መረዳት ተችሏል።ጠቅለል ባለመልኩ ሲታይ በአብዛኛው የአገሪቱ ክፍል ታይቶ የነበረው የአየር ሁኔታ ለአዝርዕት ተስማሚ እንደነበር እና በአብዛኛው የሰሜኑ የአገሪቱ አጋማሽ የነበረው ብራ ሰሞን ለሰብል ስብሰባውና ድህረ ሰብል ስብሰባው ምቹ ሁኔታን ፈጥሮ ነበር ። በተጨማሪም በከፊል ደቡብና ደቡብ ምስራቅ ኢትዮ ያ የነበረው የአርጥበት ሁኔታ በአርብቶ አደሩ አካባቢ ለመጠጥ ወታ፣ ለግጦሽ ሣር አቅርቦት እና ለአካባቢው እፅዋት ልምላሜ የጎላ አስተዋፅኦ እንደሚኖረው እሙን ነው።

እ.ኤ.አ. በኖቬምበር 2006 በሦስተኛው አስርተ ቀናት የደቡብ ኦሮሚያ፣ የትግራይ ሰሜናዊ ክፍል፣እንዲሁም የምዕራብ ኦሮሚያ ባሉ ቦታዎች መደበኛና ከመደበኛ በላይ የዝናብ ስርጭት ነበረባቸው። ይህም ሁኔታ ከላይ በተጠቀሱት መኸር አብቃይ በሆኑ አካባቢዎች በሰብል ስብሰባና ድህረ ሰብል ስብሰባ ላይ አሉታዊ ተፅዕኖ እንደሚያሳድር እሙን ነው። በሌላ በኩል ዝቅተኛ የሙቀት መጠን ከ5 ሴንቲግራድ በታች በደቡብ አማራ (ደብረብርሃን) እንዲሁም በምስራቅ ኦሮሚያ (አለማያ) ደጋማ ሥፍራዎች የተስተዋለ ሲሆን ይህም ሁኔታ ዕድገታቸውን ባላጠናቀቁ ሰብሎች ጤናማ ዕድገት ላይ በጎ ጎን እንደሚኖረው ይታመናል ። በዚህ ባሳለፍነው አስር ቀናት በአገሪቱ ሰሜናዊ አጋማሽ የነበረው ደረቅና ፀሃያም ሁኔታ ለደረሱ ሰብሎች ስብሰባና ለድህረ ሰብል ስብሰባ ስራዎች በጎ ጎን የነበረው ሲሆን በአንፃሩ በወርጭ ተጠቂ በሆኑ ከፍተኛ ቦታዎች ከዝቅተኛ የአየር ሙቀት መቀነስ ጋር በተያያዘ ሁኔታ አሉታዊ ገፅታ እንደሚኖረው እሙን ነው ። በአንፃሩ በአገሪቱ ምዕራባዊ እና ደቡባዊ አጋማሽ የነበረው ዝናብ፤ እንደአካባቢው አሉታዊም ሆነ አወንታዊ ገፅታ እንደነበረው የተሰበሰቡት መረጃዎች ያመለክታሉ። በደቡብና በደቡብ ምስራቅ ባሉ የአርብቶ አደሩ እና ጥምር ግብርና የሚካሄድባቸው አካባቢዎች የነበረው ዝናብ ከጊዜ ወደ ጊዜ በመሻሻል ላይ ያለው የዕድገት ልምላሜ በጎ ጎን እንደነበረው ሲታወቅ በተጨማሪም በጥምር ግብርና አካባቢዎች ለሚመረቱ የአጭር ጊዜ ሰብሎች የወሃ ፍላጎት መሟላት በጎ ጎን

ነበረው። ከበድ ያለ ዝናብ በተመለከተ ሀገራዊ ስኬት፣ ሞያሌ እና በደሌ 38.9፣ 36.3፣ 35.4 እና 30.0 እንደየቅደም ተከተላቸው ተመዝግቦባቸዋል።

ጠቅለል ባለ መልኩ እ.ኤ.አ በኖቬምበር 2006 በአብዛኛው የደቡብ ብሄር ብሄረሰቦች ህዝቦች ክልል፣ በሶማሌ፣ በጥቂት የምዕራብ ኦሮሚያ አካባቢዎች፣ በአንዳንድ የአማራ ኪስ ቦታዎች እንዲሁም ጥቂት የምዕራብ ቤንሻንጉል ጉሙዝ አካባቢዎችን ጨምሮ የታየው መደበኛና ከመደበኛ በላይ የሆነ ዝናብ ባሁኑ ወቅት የዝናብ ጊዜያዊ ለሆነው ለደቡብ ብሄር ብሄረሰቦች ሕዝቦች ክልል እና ደቡብ ኦሮሚያ አካባቢዎች በተለያዩ የእድገት ደረጃ ላይ ላሉ ሰብሎች በጎ ጎን የነበረው ሲሆን በደቡብና ምስራቅ የአገሪቱ ክፍሎች ለግጦሽ ማርና ለመጠጥ ወሃ አቅርቦት አወንታዊ ተፅዕኖ ነበረው። ሆኖም በወሩ ውስጥ በአንዳንድ የምዕራብ፣ የደቡብ ምዕራብ እና ደቡብ ኦሮሚያ አካባቢዎች 30-46 ሚ.ሜ ዝናብ በአንድ የዝናብ ቀን ብቻ ተመዝግቦባቸዋል ነበር። ይህም ከበድ ያለ ዝናብ ከምዕራብ (በደሌ፣ ሰከሩ) እንዲሁም በሞግ በአንዳንድ አካባቢዎች የጤፍ ሰብሎች ላይ ጉደት ማድረሱ ከስፍራው በደረሰን መረጃ ማወቅ ተችሏል።

## **SMMUARY**

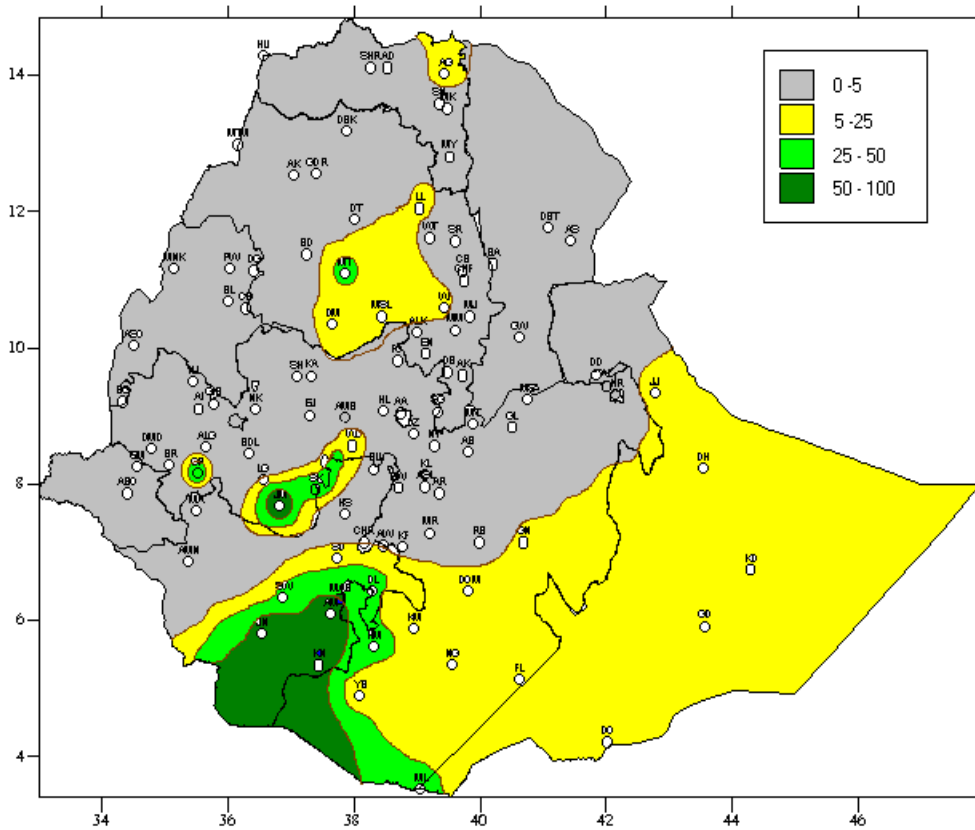
### **NOVEMBER 2006**

During the first dekad of November 2006, the observed normal to above normal rainfall over southern and south eastern Somali, western and southern Oromia, southern and western Benshangul- Gumuz and some pocket areas of western and eastern Amhara could favor for the availability of pasture and drinking water particularly over southern Oromia, southern and south eastern Somali which is rainy season at this time of the year. Besides this normal to above normal rainfall condition could have a positive contribution for crops, which are found at different phenological stage. Nevertheless some areas reported heavy fall greater than 30 mm. For instance Moyale and Hager Mariam recorded 35.4 and 38.9 mm of rainfall in one rainy day respectively.

During the second dekad of November 2006, most part of SNNPR, half of southeastern and western Oromia, most part of Benshangul-Gumuze and parts of northeastern and central Amhara experienced normal to above normal rainfall. Besides Bedelle, Chira, H/Mariam, Konso and M/Abaya recorded heavy fall ranging from 30-46mm in one rainy day. Due to this condition, some areas like Bedelle and Wegel Tena reported crop damage, which was found in early vegetative and ripeness stage. Besides, Shambu and Assosa reported weed infestation over crop field and slight bird damage on Sorghum crop respectively. Generally the observed good weather condition over most part of the country favored crops, which are found over the areas. Besides the observed dry and sunny condition over northern half of the country could have a positive contribution for harvest and post harvest activities. Moreover the observed moist condition over southeastern and southern half of the country could have a significant contribution for the availability of pasture and drinking water and the growth and development of the crops over the areas.

During the third dekad of November 2006, some areas of southern Oromia, northern parts of Tigray and western Oromia, received normal to above normal rainfall distribution. Thus, this condition had a negative impact for harvest and post harvest activities over meher growing areas. On the contrary, the observed extreme minimum temperature below 5<sup>0</sup>C over the highlands of southern Amhara (DebreBrhan), and eastern Oromia (Alemya), could have a negative contribution for the crops under different phenological stages. Besides, The observed dry and sunny weather condition over northern half of Tigray, had a positive contribution for harvest and post harvest activities. On the other hand, the decrease in extreme minimum temperature over the highlands could have a negative impact of frost prone areas. On the other hand, according to the meteorological report, the observed rainfall over western and southern half of the country would have a positive or negative impact depend upon on the areas. The observed good rainfall over southern and southeastern parts of the country could have a significant contribution for the availability of pasture and drinking water. Moreover, it could have a positive impact for short-cycle crops, in agropastoral areas. According to the reporting station, heavy fall above 30mm, observed over HagerMariam, Sekoru, Moyalle and Bedele 38.9, 36.3, 35.4 and 30.0 mm in one rainydays respectively.

Generally During the month of November 2006, the observed normal to above normal rainfall over the areas of SNNPR, Somali, some areas of western Oromia, pocket areas of Amhara, as well as some areas of western Bensahngul-Gumuz, would have significant contribution for crops which attaining at different phenological stages, more over, it also favored for the availability of pasture and drinking water over south and southeastern parts of the country. Besides, the observed heavy fall ranging from (30-46) mm in one rainy over the areas of western, southwestern, and southern Oromia. Bedelle. Sekoru and Mota reported crop ( teff) damage due to the above mentioned heavy fall.



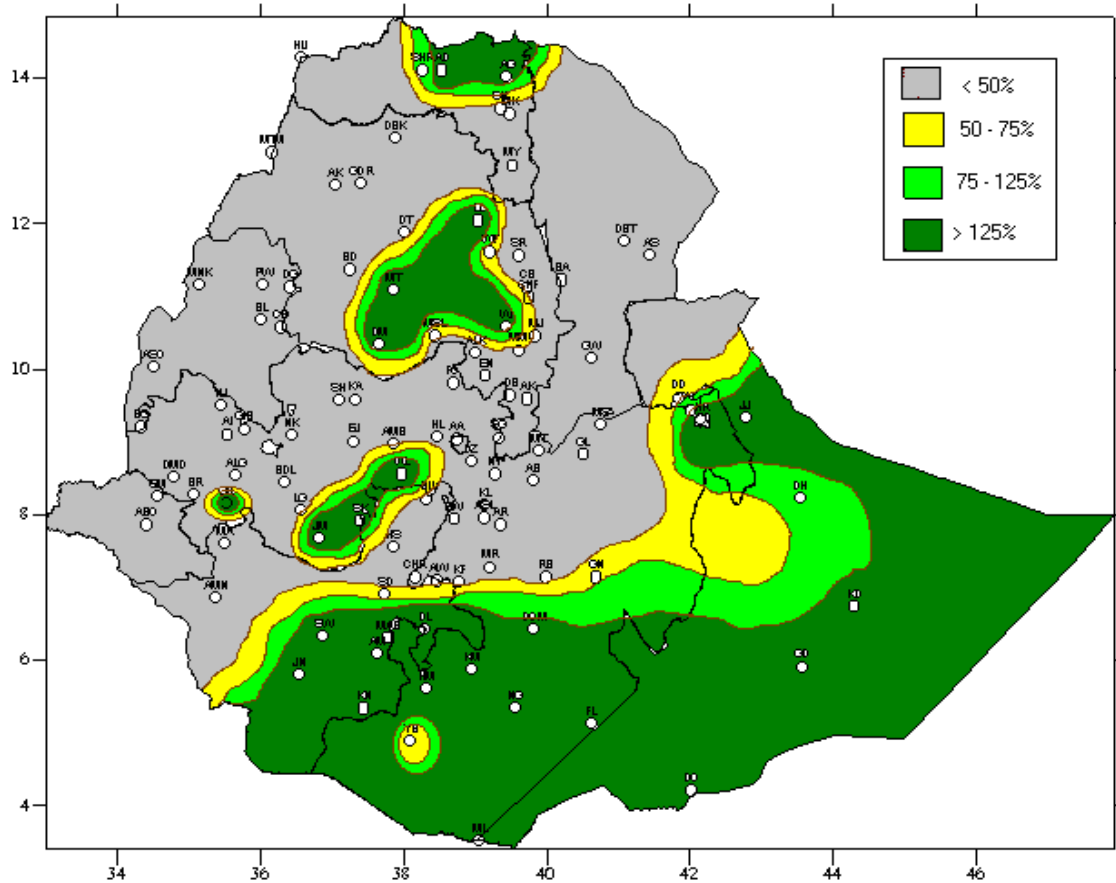
**Fig 1. Rainfall distribution in mm (21 - 30 November, 2006)**

## **1. WEATHER ASSESSMENT**

### **1.1 (21- 30 November, 2006)**

#### **1.1.1 Rainfall amount (Fig.1)**

Some parts of southern Oromia, southeastern parts of SNNPR and few pocket areas of western Oromia received 50-100 mm of rainfall. Parts of southern Oromia southeastern parts of SNNPR and pocket areas of western Oromia experienced 25-50 mm of rainfall. Most parts of Somali, few parts of northern Tigray and central Amhara and parts of western Oromia received 5-25 mm of rainfall. There was little or no rainfall for the rest parts of the country.

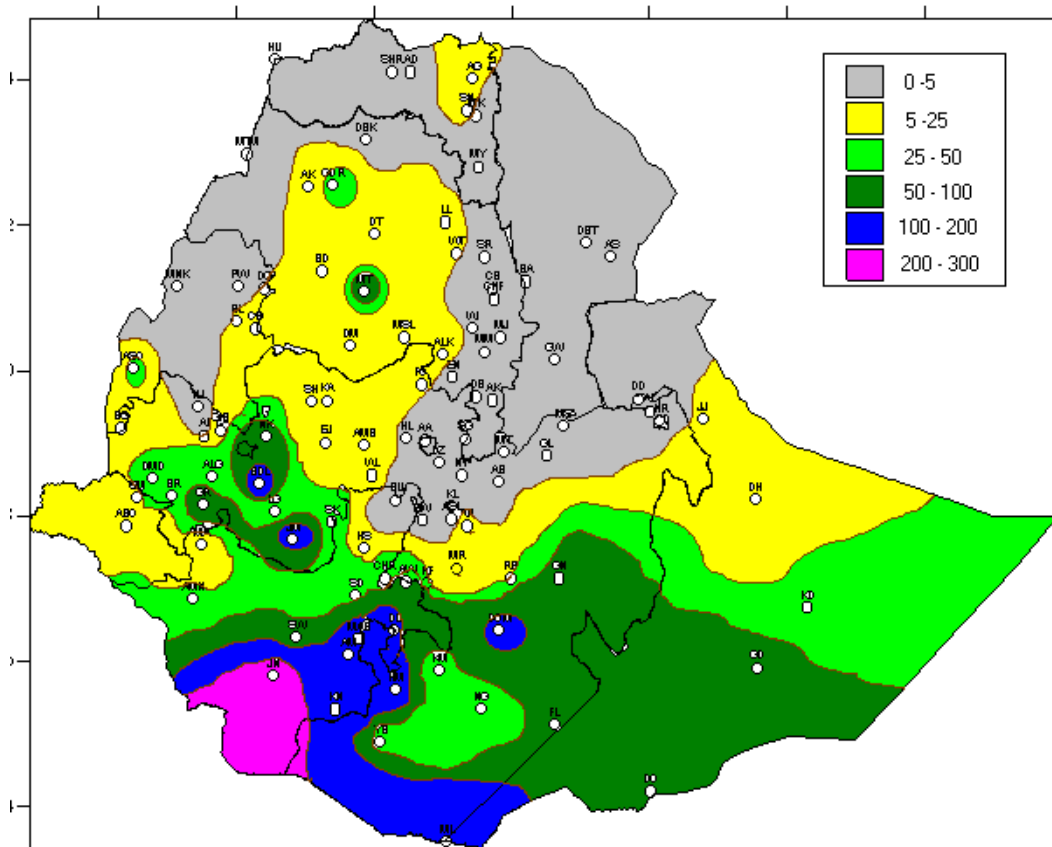


**Fig. 2 Percent of normal rainfall distribution (21-30 November, 2006)**

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)**

Parts of northern Tigray, south and south eastern Amhara, Pocket areas of western Oromia, much of Somali, southern Oromia and south and south eastern SNNPR received normal to above normal rainfall while the rest parts of the country experienced below to much below normal rainfall.

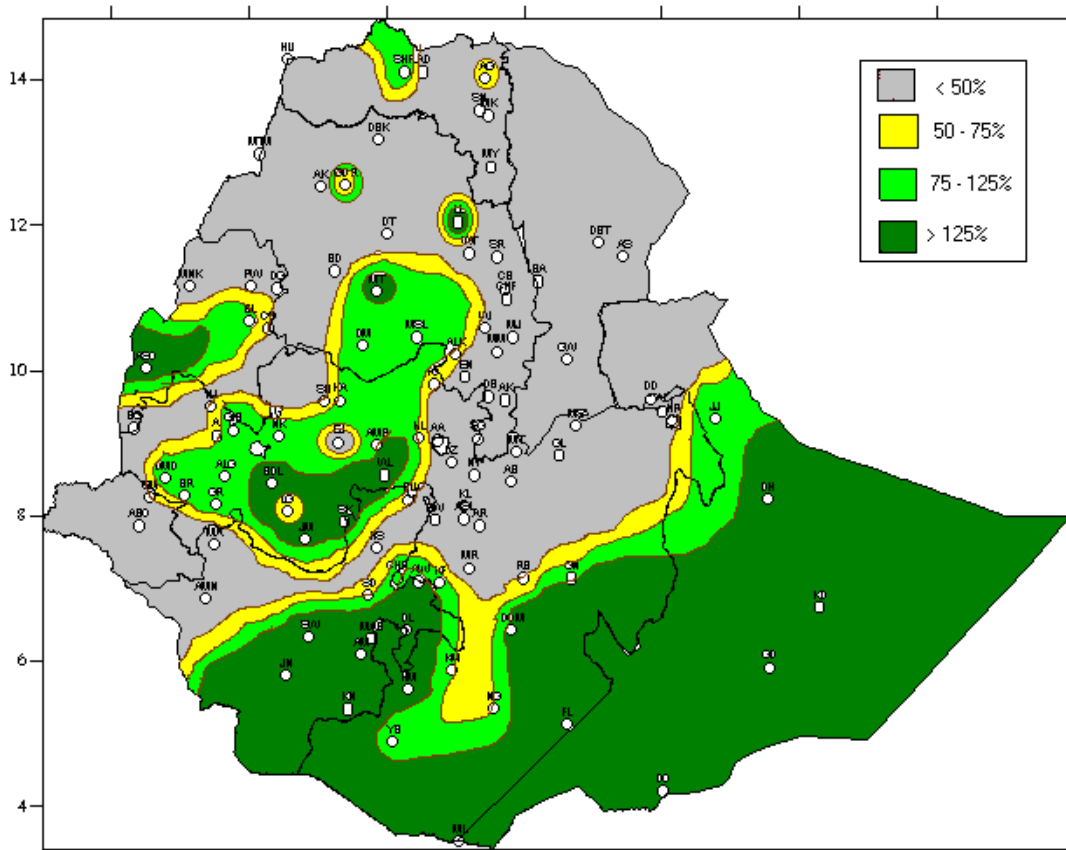


**Fig. 3 Rainfall distribution in mm for the month of November 2006**

**1.2 November 2006**

**1.2.1 Rainfall distribution (Fig.3)**

Part pf southern SNNPR experienced 200-300 mm of rainfall. Parts of southern tip of Oromia, south and southeastern SNNPR received 100-200 mm of rainfall. Much of southern Somali, southern Oromia , pocket areas of western Oromia and central Amhara and parts of south and northeastern SNNPR exhibited 50-100mm of rainfall. Pocket areas of western Amhara, some parts of western Oromia, western and north western SNNPR southern Oromia and eastern parts of Somali experienced 25-50mm of rainfall. Some parts of northern Tigray, most parts of Amhara, Gambela western Tip of Oromia, Benhsangul-Gumuz, and northern parts of Somali exhibited 5-25 mm 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 November 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)

Parts of northern Tigray, southern Amhara, western Oromia and southern Benhsangul-Gumuz much of Somli, southern Oromia and south and south eastern part of SNNPR received normal to above normal rainfall. The rest parts of the country exhibited below to much below normal rainfall.

### 1.3 TEMPERATURE ANOMALY

Some areas like DebreBrhan, Alemya, Wegeltena, Fitcha, Kofelle, Enwari and SholaGebeya experienced Extreme minimum temperature less than 5<sup>0</sup> C for 2-7 consecutive days. From the aforementioned areas Debra Brhan and Alemeya exhibited extreme minimum temperature below 0<sup>0</sup>C lowering up to -2.5<sup>0</sup>C 1-2 days.



## **2. WEATHER OUTLOOK**

### **2.1 For the first dekad of December 2006**

During the next ten days, the rain producing systems are expected to have a relative strength over southern half, central and eastern portion of the nation. Hence, western and southern Oromia, SNNPR Gambela and southern Somali will have normal rainfall. Besides, central and eastern Ethiopia as well as northeastern high lands will receive close to normal rainfall. On the other hand, much of northern half will be under dry and sunny weather conditions. However, there will be increment of cloud coverage in some places

### **2.1 For the month of December 2006**

For the up coming month, Even though the Bega's dry and sunny weather conditions will dominate much of the northern half due to the incursion of moisture there will be unseasonable rain over the high land. In general, western and southern Oromia, SNNPR, Gambela and Southern Somali will have normal rainfall. Moreover, northeastern, eastern and central Ethiopia will have occasional unseasonable rainfall it will be close to normal to above normal rainfall. Otherwise the Bega's dry weather conditions will dominate elsewhere.

## **3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE**

### **3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE**

Generally During the month of November 2006, the observed normal to above normal rainfall over the areas of SNNPR, Somali, some areas of western Oromia, pocket areas of Amhara, as well as some areas of western Benshangul-Gumuz, would have significant contribution for crops which attaining at different phenological stages, more over, it also favored for the availability of pasture and drinking water over south and southeastern parts of the country. Besides, the observed heavy fall ranging from (30-46) mm in one rainy over the areas of western, southwestern, and southern Oromia. Bedelle. Sekoru and Mota reported crop (teff) damage due to the above mentioned heavy fall. Pursuant to crop phenological report teff was at ripeness stage in some areas of western Oromia (Shambu, Chira and Limugenet), northern Oromia (Fiche), Central Oromia (Arsi Robe) and western Amhara (Mota). Sorghum was at ripeness stage in some areas of western Oromia (Nedjo) and eastern Amhara (Cheffa). Wheat was at earing stage in some areas of central Oromia (Arsi Robe) while it was at flowering stage in some areas of eastern Amhara (Wegel Tena), southern Amhara (Shola Gebeya) and northern SNNPR (Hossana). Moreover it was at wax and full ripeness stage in some areas of western Oromia (Gimbi) and northern Oromia (Fiche). Millet was at flowering stage in some areas of western Oromia (Nedjo, Limu Genet). Beans were at ripeness stage in some areas of western Oromia (Chira). Nug was at dark ripeness stage in some areas of southern Amhara (Alem Ketema). Flax was at flowering stage in some areas of southern Oromia (Dolo Mena).

### **3.2 EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING MONTH**

In general, the anticipated near normal rainfall over western and southern Oromia, Gambela, and SNNPR as well as southern Somali will have a significant contribution for the growth and development of plants, which are found over the aforementioned areas. And it also favors the availability of pasture and drinking water over pastoral and agro pastoral areas of southern Somali. However, the expected seasonal rainfall over some highland areas of northern, northeastern, central and eastern parts of Ethiopia would have a negative impact on harvest and post harvest activities are under question, in areas of (Enwari, AlemKetema, AmbaMariam, Ejaji, Silte, Gurage and Gelemso). Besides, the expected dry and sunny weather Condition over most parts of northwestern, western, tip of northeastern would have positive contribution for season agricultural activities like harvest and post harvest activities.

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

|    | Stations   | Region  | A/<br>rainfall | Normal | %of<br>Normal | Eto<br>mm/day | Monthly<br>Eto | Moisture<br>status |
|----|------------|---------|----------------|--------|---------------|---------------|----------------|--------------------|
| 1  | Adigrat    | TIGRAI  | 11.4           | 23.0   | 49.6          | 4.51          | 135.3          | VD                 |
| 2  | Adwa       |         | 1.8            | 4.4    | 40.9          | 1.37          | 41.1           | VD                 |
| 3  | Mekele     |         | 0.0            | 6.0    | 0.0           | 5.06          | 151.8          | VD                 |
| 4  | Michew     |         | 0              | 25.1   | 0.0           | NA            | NA             | NA                 |
| 5  | Senkata    |         |                |        |               |               |                |                    |
| 6  | Shire      |         | 1.4            | 1.8    | 77.8          | 4.7           | 141            | VD                 |
| 1  | Assayta    | AFAR    | 0.0            | 3.6    | 0.0           | 4.09          | 122.7          | VD                 |
| 2  | Dubti      |         | 0.0            | 10.4   | 0.0           | 6.11          | 183.3          | VD                 |
| 3  | Semera     |         |                |        |               |               |                |                    |
| 1  | A. Ketema  | AMHARA  | 6.2            | 9.4    | 66.0          | 4.32          | 129.6          | VD                 |
| 2  | Ambamariam |         | NA             | NA     | NA            | 1.87          | 56.1           |                    |
| 3  | Bahirdar   |         | 0.0            | 21     | 0.0           | 4.35          | 130.5          | VD                 |
| 4  | Bati       |         | 0.6            | 16.6   | 3.6           | 3.89          | 116.7          | VD                 |
| 5  | Bullen     |         | 17.1           | 18.6   | 91.9          | 3.97          | 119.1          | D                  |
| 6  | Combolcha  |         | 1.1            | 19.7   | 5.6           | 3.69          | 110.7          | VD                 |
| 7  | Chefa      |         | 2.9            | 33.1   | 8.8           | 4.4           | 132            | VD                 |
| 8  | D.Birhan   |         | 0.0            | 6.8    | 0.0           | 3.68          | 110.4          | VD                 |
| 9  | D.Markos   |         | 17.9           | 23.7   | 75.5          | 3.96          | 118.8          | D                  |
| 10 | D.Tabor    |         | 0.0            | 33.0   | 0.0           | NA            | NA             | NA                 |
| 11 | Dangla     |         | 6.8            | 31.8   | 21.4          | 3.67          | 110.1          | VD                 |
| 12 | Enwary     |         | 0.0            | 6.4    | 0.0           | 4.52          | 135.6          | VD                 |
| 13 | Gonder     |         | 28.2           | 24.3   | 116.0         | 4.12          | 123.6          | D                  |
| 14 | M.Meda     |         | 0.0            | 5.3    | 0.0           | NA            | NA             | NA                 |
| 15 | Majete     |         | 0.0            | 27.5   | 0.0           | NA            | NA             | NA                 |
| 16 | Metema     |         | 0.0            | 2.6    | 0.0           | 3.15          | 94.5           | VD                 |
| 17 | Motta      |         | 50.1           | 34.3   | 146.1         | 3.29          | 98.7           | M                  |
| 18 | Lalibela   |         | 23.6           | 13.3   | 177.4         | 3.12          | 93.6           | D                  |
| 19 | S. Gebeya  |         | 0.0            | 7.3    | 0.0           | 3.56          | 106.8          | VD                 |
| 20 | Sirinka    |         | 2.6            | 26.8   | 9.7           | 3.79          | 113.7          | VD                 |
| 21 | Wegeltena  |         | 6.0            | 13     | 46.2          | 3.58          | 107.4          | VD                 |
| 22 | Wereilu    |         | 6.7            | 9.1    | 73.6          | 4.17          | 125.1          | VD                 |
| 1  | Arsi Robe  | OROMIYA | 5.8            | 22     | 26.4          | NA            | NA             | NA                 |
| 2  | Ambo Agri. |         | NA             | NA     | NA            | NA            | NA             | NA                 |
| 3  | Abomsa     |         | 1.4            | 21     | 6.7           | 4.54          | 136.2          | VD                 |
| 4  | Aira       |         | 4.6            | 56.1   | 8.2           | 3.74          | 112.2          | VD                 |
| 5  | Alemaya    |         | 1.6            | 19.1   | 8.4           | 4.07          | 122.1          | VD                 |
| 6  | Alge       |         | 41.2           | 37.1   | 111.1         | NA            | NA             | NA                 |
| 7  | Arjo       |         | 62.5           | 51.7   | 120.9         | NA            | NA             | NA                 |
| 8  | Bedelle    |         | 104.0          | 26.8   | 388.1         | 3.6           | 108            | M                  |
| 9  | Begi       |         | 12.8           | 48.6   | 26.3          | NA            | NA             | NA                 |
| 10 | Bui        |         | 0.0            | 0      | 0.0           | NA            | NA             | NA                 |
| 11 | Chira      |         | 68.6           | 73.4   | 93.5          | NA            | NA             | NA                 |
| 12 | D.Dollo    |         | 37.3           | 36.5   | 102.2         | 3.26          | 97.8           | MD                 |
| 13 | D.Mena     |         | 145.8          | 52.5   | 277.7         | 4.29          | 128.7          | H                  |
| 14 | D.Zeit     |         | 0.0            | 5      | 0.0           | 4.98          | 149.4          | VD                 |

|    |                   |                |       |       |       |      |       |    |
|----|-------------------|----------------|-------|-------|-------|------|-------|----|
| 15 | <b>Ejaji</b>      |                | 6.5   | 15    | 43.3  | NA   | NA    | NA |
| 16 | <b>Fitche</b>     |                | 5.9   | 8.4   | 70.2  | 4.12 | 123.6 | VD |
| 17 | <b>Gelemso</b>    |                | 0.0   | 34.5  | 0.0   | 4.48 | 134.4 | VD |
| 18 | <b>Gimbi</b>      |                | 18.0  | 19.1  | 94.2  | 4    | 120   | D  |
| 19 | <b>Ginir</b>      |                | 79.7  | 60.4  | 132.0 | NA   | NA    | NA |
| 20 | <b>Gore</b>       |                | 79.2  | 93.9  | 84.3  | 3.23 | 96.9  | M  |
| 21 | <b>H. Mariam</b>  |                | 125.1 | 35.9  | 348.5 | 3.01 | 90.3  | H  |
| 22 | <b>Jimma</b>      |                | 128.4 | 58.6  | 219.1 | 3.6  | 108   | H  |
| 23 | <b>K.Mengist</b>  |                | 36.9  | 69.5  | 53.1  | 2.94 | 88.2  | MD |
| 24 | <b>Kachise</b>    |                | 0     | 32    | 0.0   | NA   | NA    | NA |
| 25 | <b>Koffele</b>    |                | 10.9  | 44.2  | 24.7  | 1.8  | 54    | D  |
| 26 | <b>Kulumsa</b>    |                | 2.0   | 12.8  | 15.6  | 4.81 | 144.3 | VD |
| 27 | <b>Lumugenet</b>  |                | 24.4  | 40.6  | 60.1  | 3.12 | 93.6  | MD |
| 28 | <b>Meisso</b>     |                | 0     | 20.6  | 0.0   | NA   | NA    | NA |
| 29 | <b>Metehara</b>   |                | 0.8   | 3.4   | 23.5  | 5.47 | 164.1 | VD |
| 30 | <b>Moyale</b>     |                | 178.7 | 60.1  | 297.3 | 4.31 | 129.3 | H  |
| 31 | <b>Nazreth</b>    |                | 0.5   | 7.8   | 6.4   | 5.7  | 171   | VD |
| 32 | <b>Neghele</b>    |                | 31.1  | 48.5  | 64.1  | 4.5  | 135   | D  |
| 33 | <b>Nedjo</b>      |                | 0.2   | 23.4  | 0.9   | 3.39 | 101.7 | VD |
| 34 | <b>Nekemte</b>    |                | 59.1  | 52.5  | 112.6 | 3.56 | 106.8 | M  |
| 35 | <b>Robe(Bale)</b> |                | 15.2  | 50.2  | 30.3  | 3.48 | 104.4 | D  |
| 36 | <b>Sekoru</b>     |                | 43.6  | 15.7  | 277.7 | 4.61 | 138.3 | MD |
| 37 | <b>Shambu</b>     |                | 12.0  | 23.9  | 50.2  | 2.61 | 78.3  | D  |
| 38 | <b>Wolliso</b>    |                | 16.2  | 6.6   | 245.5 | NA   | NA    | NA |
| 39 | <b>Yabello</b>    |                | 42.8  | 50.3  | 85.1  | NA   | NA    | NA |
| 30 | <b>Ziway</b>      |                | 0     | 4     | 0.0   | 5.36 | 160.8 | VD |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>Jijiga</b>     | <b>SOMALI</b>  | 22.2  | 18.7  | 118.7 | 1.97 | 59.1  | MD |
| 2  | <b>Gode</b>       |                | 10    | 29.2  | 34.2  | NA   | NA    | NA |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>A.Minch</b>    | <b>SNNPR</b>   | 112.7 | 61.7  | 182.7 | 3.58 | 107.4 | H  |
| 2  | <b>Awassa</b>     |                | NA    | NA    | NA    | NA   | NA    | NA |
| 3  | <b>Dilla</b>      |                | 91.5  | 66.6  | 137.4 | 3.34 | 100.2 | M  |
| 4  | <b>Hosaina</b>    |                | 6.0   | 17.3  | 34.7  | 4    | 120   | VD |
| 5  | <b>Jinka</b>      |                | 215.7 | 104.2 | 207.0 | 5.2  | 156   | H  |
| 6  | <b>Konso</b>      |                | 181.5 | 48.3  | 375.8 | 4.09 | 122.7 | H  |
| 7  | <b>M.Abay</b>     |                | 148.2 | 50.7  | 292.3 | 4.47 | 134.1 | H  |
| 8  | <b>Mankush</b>    |                | 0.0   | 0     | 0.0   | 4.29 | 128.7 | VD |
| 9  | <b>Sawla</b>      |                | 90.5  | 72.9  | 124.1 | 3.92 | 117.6 | M  |
| 10 | <b>Sodo</b>       |                | 27.0  | 43.2  | 62.5  | NA   | NA    | NA |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>Assosa</b>     | <b>B/GUMUZ</b> |       |       |       |      |       |    |
| 2  | <b>Pawe</b>       |                |       |       |       |      |       |    |
| 3  | <b>Chagni</b>     |                | 8.7   | 27.9  | 31.2  | 4.02 | 120.6 | VD |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>Gambela</b>    | <b>Gambela</b> | 17.2  | 35.5  | 48.5  | 4.07 | 122.1 | D  |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>A.A.Obs.</b>   | <b>A.A</b>     | 0.3   | 8.4   | 3.6   | 3.32 | 99.6  | VD |
| 2  | <b>A.A. Bole</b>  |                | 0.0   | 6.3   | 0.0   | 6.2  | 186   | VD |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>Diredawa</b>   | <b>D.D</b>     | 0.0   | 15.6  | 0.0   | 4.4  | 132   | VD |
|    |                   |                |       |       |       |      |       |    |
| 1  | <b>Harar</b>      | <b>Harai</b>   | 3.3   | 11.6  | 28.4  | 4.17 | 125.1 | VD |

Legend

VD Very Dry

D Dry < 0.1

0.1 - 0.25

|                  |                                  |            |
|------------------|----------------------------------|------------|
| MD               | Moderately 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.

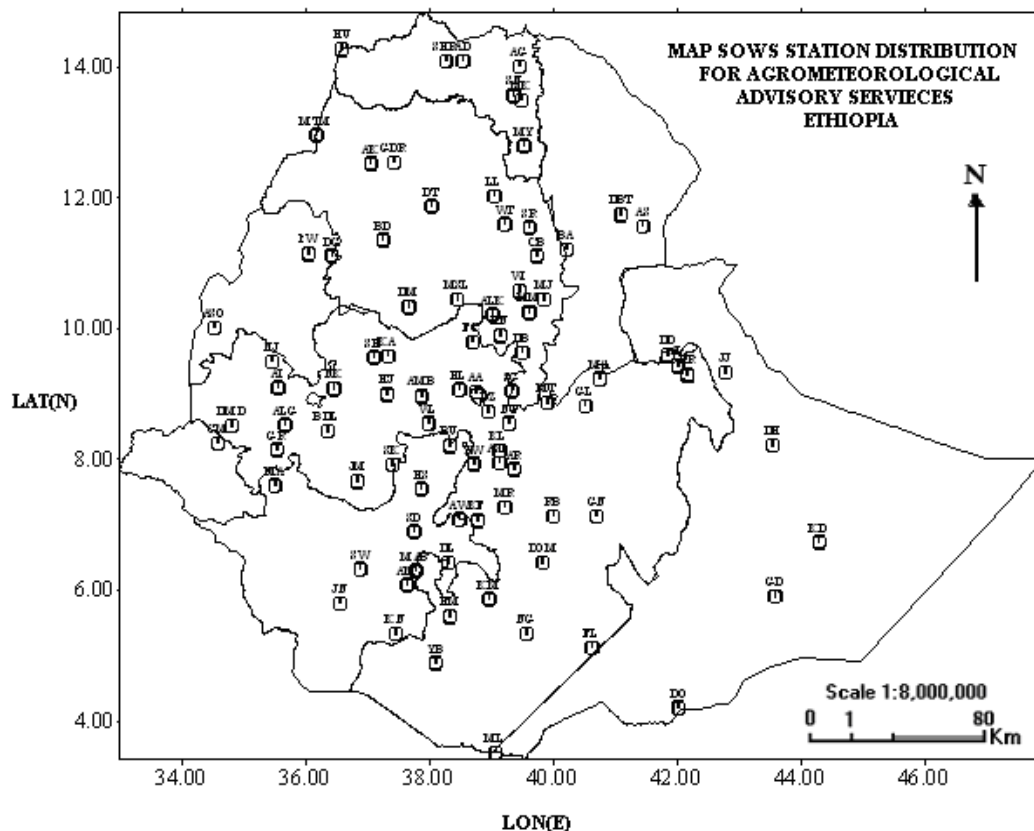
**DEKAD:** - First or second ten days or the remaining days of a month.

**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.



| 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   |              |      |