

## **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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**አህፅርት**  
**እ.ኤ.አ ጁላይ 2009**

እ.ኤ.አ ከጁላይ 1-10/2009 የክረምት ዝናብ ከቀን ወደቀን በመጠናከር የወቅቱን ዝናብ ተጠቃሚ አካባቢዎችን አዳርሶ ነበር። በተለይም ዝናቡ ዘግይቶ መጠናከር በጀመረባቸው የሰሜንና የሰሜን ምሥራቅ የሀገሪቱ አካባቢዎች የተሻለ ገፅታ እንደነበረው ከዝናብ መረጃ መረዳት ተችሏል። ይህም ሁኔታ አሁን እየተካሄደ ባለው የመኸር የእርሻ እንቅስቃሴ ማለትም ተዘርተው በመብቀል ላይ ላሉ ለማሳ ዝግጅት እና ለዘር ጊዜ እንዲሁም ለቋሚ ተክሎች፣ ለአርብቶ አደሩና ለከፊል አርብቶ አደሩና ለግጦሽ ሳር ልምላሜና ለውሃ አቅርቦት አመቺ ሁኔታ እንደነበረው ይታመናል። በተጨማሪም የደቡብ ምዕራብ፣ የሰሜን ምሥራቅ፣ የሰሜን የሀገሪቱ አካባቢዎች ከባድ ዝናብ ተመዝግቧል። ከዚህ ጋር በተያያዘ በፓዊ መጠኑ 88.4 ሚ.ሜ የሆነ ከባድ ዝናብ በበቆሎ ሰብል ላይ ጉዳት ሲያደርስ በባቲ መጠኑ 105.5 ሚ.ሜ የሆነ ከባድ ዝናብ ሰብል ለመዝራት ተዘጋጅቶና ታርሶ የነበረውን መሬት አፈር ጠርጎ በመውሰድ ጉዳት ማድረሱን ከሰብል መረጃ ክፍላችን ለማወቅ ተችሏል።

እ.ኤ.አ ከጁላይ 10-20/2009 የወቅቱ ዝናብ ከሞላ ጎደል አብዛኛውን የክረምት ዝናብ ተጠቃሚ አካባቢዎችን ያዳርስ ነበር። በመሆኑም ትግራይ፣ አማራ፣ አፋር፣ ቤንሻንጉል ጉምዝ፣ አብዛኛው ኦሮሚያ፣ የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ክልል፣ ሐረር፣ ዲሬዳዋና ሰሜን ሱማሌ ተከታታይነት ባይኖረው ዝናብ አግኝተዋል። ይኸም ሁኔታ ቀደም ብለው የመኸር እርሻ እንቅስቃሴ ለጀመሩትና ዘግይተው ለተዘሩ ሰብሎች የጎላ አስተዋፅኦ ይኖረዋል። እንዲሁም በሰሜን ምስራቅ ዝቅተኛ ቦታዎች ለሚገኙ አርብቶ አደሮች ለግጦሽና ለመጠጥ ውሃ አቅርቦት ጠቀሜታ ነበረው። በተጨማሪም በአንዳንድ የሀገሪቱ ክፍሎች በአንድ ቀን ከ30 ሚ.ሜ በላይ ዝናብ የጣለባቸው ቦታዎች ነበሩ። ይኸም ሁኔታ በተለይም የመሬት አቀማመጥ ተዳፋትና ሸክላማ አፈር ባለባቸው አካባቢዎች ላይ የአፈር በጎርፍ መጠረግ አስከትሏል።

እ.ኤ.አ ከጁላይ 21-31/2009 በጁላይ በሶስተኛው አስር ቀናት የክረምቱ ዝናብ በአብዛኛው የክረምት ዝናብ ተጠቃሚ አካባቢዎች ላይ የተሻለ ገጽታ ነበረው። በተለይም በሰሜን ምሥራቅ የሀገሪቱ አካባቢዎች ላይ ጥንካሬያቸው ጎልቶ ተሰተውሏል። በዚህም መሰረት ትግራይ፣ አማራ፣ ቤንሻንጉል-ጉሙዝ፣ ጋምቤላ፣

ምዕራብና መካከለኛው ኦሮሚያ፣ የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ክልል ሰሜናዊ አጋማሽ፣ አፋር የምሥራቅ ኦሮሚያና አጎራባች አካባቢዎች፣ ድሬዳዋ፣ ሐረሪ የሰሜን ሰማሌ አካባቢዎችን ጨምሮ ዝናብ አግኝተዋል። ይህም በመኸር አብቃይ አካባቢዎች ተስፋፍቶ የታየው ዝናብ ለወቅቱ የእርሻ እንቅስቃሴ እንዲሁም ሰሜን ምሥራቅ አካባቢ ላሉ ለአርብቶ አደሩና ጥምር ግብርና ለሚካሄድባቸው አካባቢዎች ለግጦሽና ለውሃ አቅርቦት ጠቀሜታው የጎላ ነው።

ይሁንና በሰሜን፣ በሰሜን ምሥራቅ፣ በምዕራብና በመካከለኛው ኪስ ቦታዎች በአንድ ቀን ብቻ ከ30-104 ሚ.ሜ ከባድ ዝናብ የተመዘገበባቸው ሲሆን፣ እንደ አዴት፣ ደብረብርሃን፣ ፍቼ፣ ማጀቱ፣ ማይፀምሪ፣ ሻምቡና ሾላ ገበያ በአስር ቀን ውስጥ ከ2-3 ጊዜ በተደጋጋሚ ከባድ ዝናብ መዝገብዋል። በመሆኑም በአንዳንድ ኪስ ቦታዎች በመዘራትና በመድረስ ላይ ባሉ ሰብሎች ላይ መጠነኛ ጉዳት ሊያደርስ ይችላል። ይሁን እንጂ በደቡብ ምዕራብ የሀገሪቱ ክፍሎች የተዳከመ ነበር። ይህም ሁኔታ በአካባቢው በወቅቱ ለሚካሄደው የእርሻ እንቅስቃሴ አሉታዊ ጎን ይኖረዋል።

በጁላይ ወር ዝናቡ በአጥጋቢ ሁኔታ አብዛኛውን የሀገሪቱ አካባቢዎች የሚያደርስበት ጊዜ ነው። በመሆኑም በአብዛኛው የሀገሪቱ የወቅቱ ዝናብ ተጠቃሚ አካባቢዎች ላይ የክረምት ዝናብ ቢኖርም ከደቡብ ምዕራብ በሰሜን ምስራቅ የሀገሪቱ ክፍሎች በተሻለ መልኩ ታይቷል። በአጠቃላይ ትግራይ፣ አማራ፣ ቤንሻንጉል፣ጉምዝ፣ ጋምቤላ፣ ምዕራብና መካከለኛው ኦሮሚያ፣ የደቡብ ብሔረሰቦችና ሕዝቦች ክልል፣ አፋር፣ ምስራቅ ኦሮሚያ፣ ድሬዳዋ፣ ሐረሪና ሰሜን ሰማሌ ዝናብ አግኝተዋል። ይኸም የዝናብ ሁኔታ ቀደም ሲል ከሰኔ በፊት ለተዘሩ የረጅም ጊዜ ሰብሎች እንደ በቆሎና ማሽላ ላሉት ምቹ ሁኔታን ከመፍጠሩም በላይ የብርዕ ሠብሎች እንደ ስንዴ፣ ገብስ፣ አጃ ለመሣሰሉት በዘርና በቡቃያ ደረጃ ላሉት በጎ ጎን እንደሚኖረው ይታመናል። ይሁንና በምዕራብ፣ በሰሜን ምዕራብ፣ በሰሜን ምስራቅ (በአልጌ፣በፖዊ፣ ራማ፣ ሻምቡ፣ ባቲና ዱብቲ) ኪስ ቦታዎች በወሩ በመጀመሪያና በሦስተኛው አስር ቀናት የጣለው ከፍተኛ ዝናብ ጎርፍ በማስከተሉ በመዘራትና በመድረስ ላይ ባሉ ሰብሎች ላይ መጠነኛ ጉዳት ማድረሱን ከደረሰን ሪፖርት መረዳት ተችሏል። በአጠቃላይ የነበረው የተስፋፋ ዝናብ ለክረምት ወቅት የእርሻ እንቅስቃሴ እንዲሁም በምስራቅና በሰሜን ምስራቅ ለሚገኙ አርብቶ አደሩና ጥምር ግብርና ለሚካሄድባቸው ለግጦሽና ለመጠጥ ውሃ አቅርቦት በጎ ጎን ነበረው።

## **SUMMARY**

### **JULY 2009**

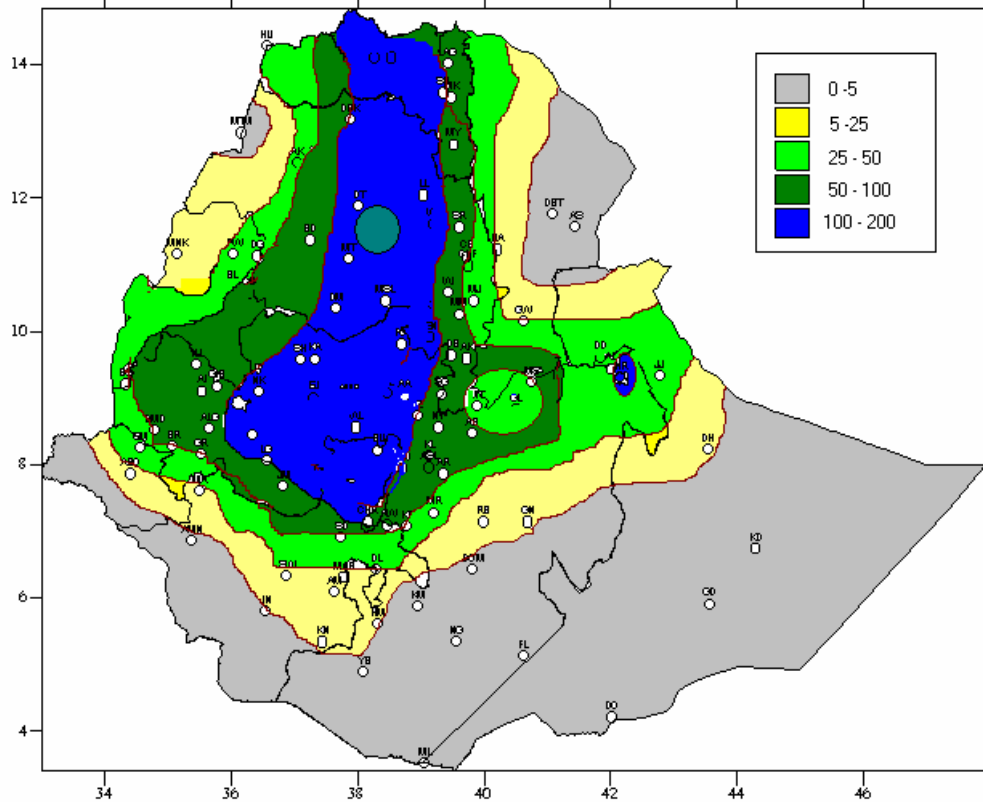
During the first dekad of July 2009, the rainfall was improved from day to day over kiremt rain benefited areas of the country. Especially, over northern and northeastern parts of the country better rainfall condition was observed. This situation might have favored Kiremt agricultural activities such as land preparation, sowing activities, for perennial crops, availability of drinking water and pasture. According to report of some stations, heavy fall was observed over southwestern, northeastern and northern part of the country. As result over Pawe and Bati the heavy fall caused damage on Maize crop and soil erosion from the plot farm respectively.

During the second dekad of July / 2009, kiremt rain almost covered much of kiremt rain benefiting areas. Hence, Tigray, Amahara, Afar, Benishangul –Gumuz, much of Oromia, SNNPR, Harari, Dire Dawa and northern Somali received rain, even though it was not continuous. This situation might have positive impact that favored early started meher agricultural activities as well as late sown crops. Besides these, it improved pasture and drinking water availability in the north eastern low lands of pastoral and agropastoral areas of the country. In addition to these, heavy fall greater than 30 mm. received in one rainy day at some stations which are found in different parts of the country. This situation might have positive impact on water harvesting where pods were prepared and that can be used in time of deficit. On the other hand, it would cause soil erosion particularly where land is sloppy and soil is clay.

During the third dekad of July 2009, the observed over all rainfall condition favored season's agricultural activity in most part of meher growing areas. Better rainfall was received northeastern parts of the country. Tigray, Amhara, Benshangul-Gumuze, Gambela, western, central and eastern Oromia, Northern half of SNNPR, Afar, Diredawa, Harari and northern Somali received better rain compared with the rest parts of the country. this situation could favor the on going seasonal agricultural activities. Besides, it would also favor for the availability of pasture and drinking water in pastoral and agro pastoral areas which are located in eastern and northeastern parts of the country. However, some pocket areas of northern, western and central parts of the country exhibited heavy fall ranging from 30-104mm in one rainy day. As a result some areas of the above mentioned areas like Adet, D/birhan, Fitcha, Majete, Mytsemery, Shambu and sholagebeya reported heavy falls repeatedly (2-5days).which can have damaging effect on crops occurred in the aforementioned pocket areas. Moreover, the rainfall was decreasing over southwestern parts of the country. This condition might be affected the performance of crops yield in the area.

Generally during the month of July, season's rainfall strengthened over most parts of kiremt benefiting areas. However, the distribution was in good shape in northeastern parts compared with southwestern parts of the country. Besides Tigray, Amhara

Benshangul-Gumuz, Gambela, western, eastern and central Oromia, SNNPR, Afar, Direedawa, Harari and northern Somali received rain. This situation could create positive contribution for early sown long cycle crops like Maize and sorghum and crops like wheat, barely and oat found at sowing and emergency stage.. On the other hand, at the first and third dekad of the month occasional heavy fall observed over pocket areas of western, northwestern and northeastern parts of the country, as a result slight crop damage was reported over Alge, Pawe, Rama, Shambu, bati and Dubti where crops were found at vegetative and maturity stage. On the other hand the observed over all rainfall condition would favor the availability of pasture and drinking water over eastern and northeastern pastoral and agro pastoral areas of the country.



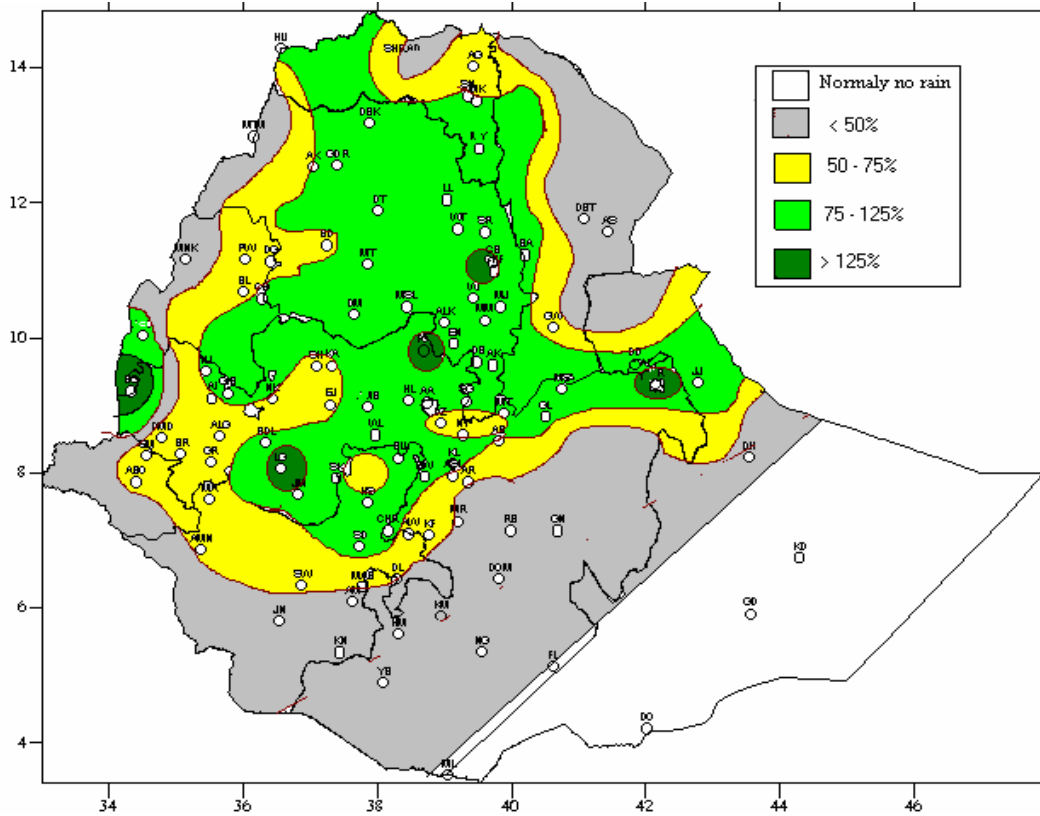
**Fig 1. Rainfall distribution in mm (21 – 31 July, 2009)**

## **1. WEATHER ASSESSMENT**

### **1.1 (21- 31 July, 2009)**

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

Eastern half of Tigray, some parts of northern and southern Amhara, some parts of western and eastern Oromia received 100-200mm of rainfall. Western and central Oromia, southeastern parts of Benshangul-gumuz, eastern margin and western parts of Tigray and eastern margin and central parts of Amhara received 50-100mm of rainfall. Eastern and western parts of Oromia, northern parts of SNNPR, western margin of Tigray northern tip of Somali and north western margin of Afar received 25-50mm of rainfall. Western parts of Benshangul-gumuz, central parts of SNNPR, southern Oromia received 5-25mm rainfall. The rest parts of the country exhibited little or no rainfall.



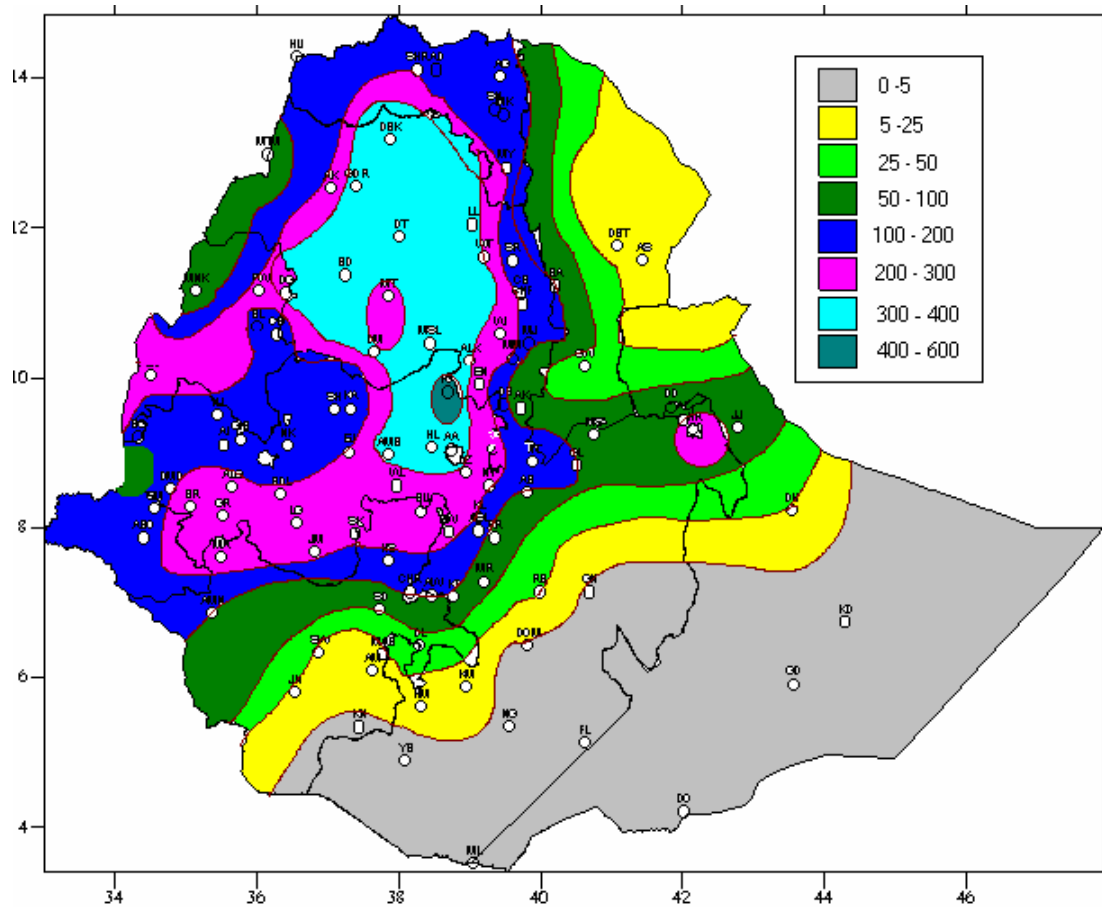
**Fig. 2 Percent of normal rainfall distribution (21-31 July, 2009)**

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)

Benshangul-gumuze, most parts of Amhara and Tigray, Eastern, central and western Oromia and northern parts of SNNPR exhibited normal to above normal rain fall. The rest parts of the country received below normal to much below normal rainfall.

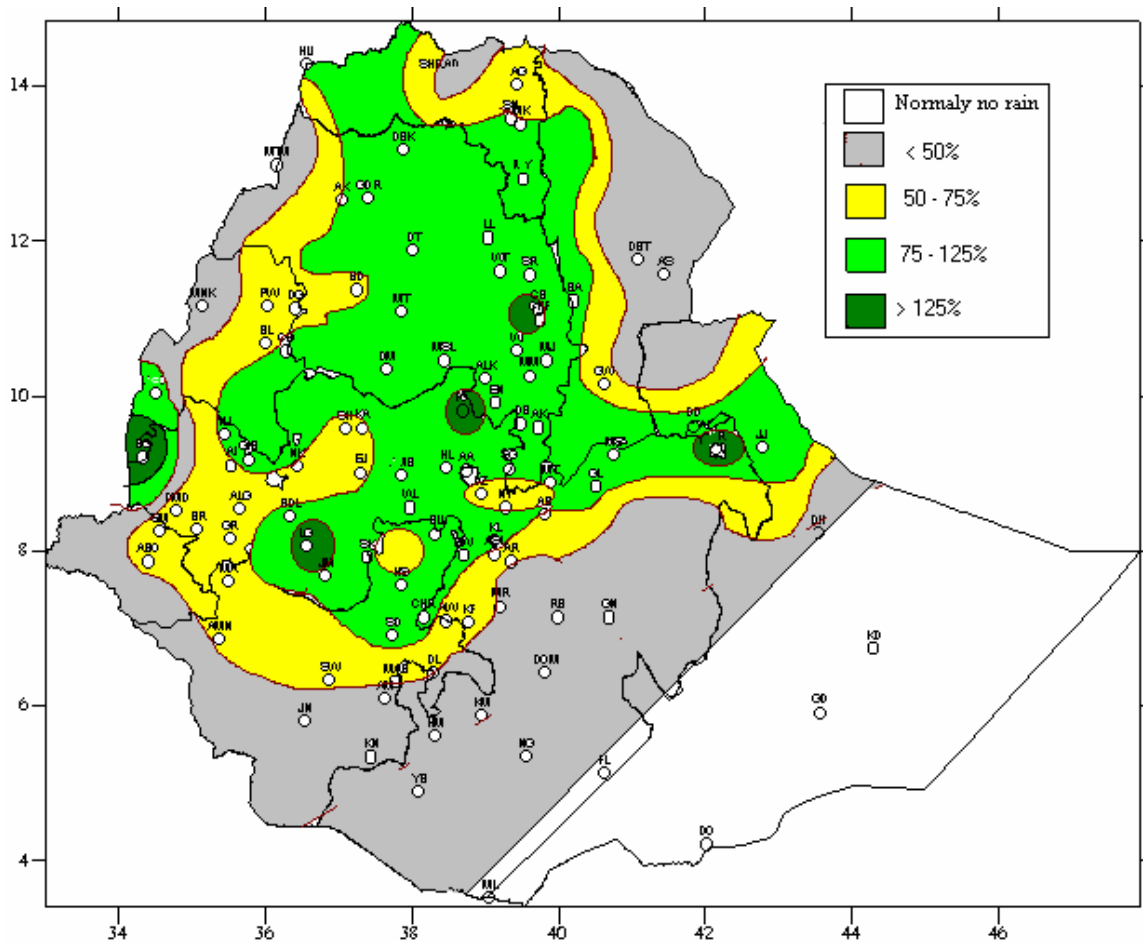


**Fig. 3 Rainfall distribution in mm for the month of July, 2009**

## **1.2 July, 2009**

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

Pocket area of Central Oromia received 400-600mm of rainfall, Most parts of Amhara, central Oromia received 300-400mm of rainfall, Eastern Margin of Amhara, central and northern parts of Tigray, western parts of Benshangl-gumuze, some parts of western, central and eastern Oromia exhibited 200-300mm of rainfall. Gambela, western Oromia, western Amhara, most parts of Tigray, Estern margin of Amhara received 100-200mm of rainfall. Most parts of eastern and southern Oromia, northern parts of SNNPR and southern margin of Afar received 50-100mm of rainfall. Northern Somali, central Oromia central parts of SNNPR received 25-50mm of rainfall. Eastern half of Afar, southern half of SNNPR received 5-25mm of rainfall. The rest parts of the country exhibited little or no rainfall.



**Fig. 4 Percent of Normal Rainfall distribution for the month of July, 2009**

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)

Most parts of Amhara, central, eastern and western tip of Oromia, south western margin of Afar exhibited normal to above normal rain fall. The rest parts of the country received below normal to much below normal rainfall.

### 1.3 TEMPERATURE ANOMALY

During the month under review some areas exhibited extreme maximum air temperature above 35 °C. Among the recording stations Shewa Robit, Humera, Gode, Gambela, , DireDawa, Methara, Aysha, Mille, Assayta, Dubti, Semera and Gewane recorded extreme maximum temperature as high as 35.2, 37.0 37.5, 37.5, 38.0, 38.8, 39.0, 42.6, 43.0, 43.0, 43.5 and 44.5 °C respectively.



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

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

Generally during the month of July, season's rainfall strengthened over most parts of kiremet benefiting areas. However, the distribution was in good shape in northeastern parts compared with southwestern parts of the country. Besides Tigray, Amhara Benshangul-Gumuze, Gambela, western, eastern and central Oromia, SNNPR, Afar, Diredawa, Harari and northern Somali received rain. This situation could create positive contribution for early sown long cycle crops like Maize and sorghum and crops like wheat, barely and oat found at sowing and emergency stage.. On the other hand, at the first and third dekad of the month occasional heavy fall observed over pocket areas of western, northwestern and northeastern parts of the country, as a result slight crop damage was reported over Alge, Pawe, Rama, Shambu, bati and Dubti which crops were found at vegetative and maturity stage. On the other hand the observed over all rainfall condition would favor the availability of pasture and drinking water over eastern and northeastern pastoral and agro pastoral areas of the country.

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

The anticipated normal and above normal rainfall over Benshangul-gumuze, western and central Oromia, Tigray, Amhara and northern half of SNNPR, would have positive impact for the remaining meher agricultural activities. It would also favor for the availability of pasture and drinking water in pastoral and agro pastoral areas of eastern and northeastern parts of the country. However, the anticipated widespread and heavy falls over some areas of the above mentioned areas might result in crop damage. Thus, proper precaution should be undertaken to minimize the effect of excess water particularly over low-lying areas and near river banks. On the other hand the anticipated near normal rainfall over some areas of Afar, eastern Oromia, northern Somali, Dire Dawa, harari eastern half of SNNPR and Bale zone would favor for the seasons agricultural activities. Besides, the expected little or no rainfall over southern and south eastern low lands would have a negative impact for the availability of pasture and drinking water for pastoral and agro pastoral areas.

**Table 1. Crop Phenological report Table1. Crop Phenological report for the month of July 2009.**

Station name	Region	Zone	Woreda	Major Crops			Phases		
				1	2	3	1	2	3
Adet	Amahara	Mirab Gojam		Wheat	Barely	Teff	Em	Ta	Em
A/Ketem	Amahara	Semen shewa		Teff	Nug	-	Em	Em	-
Chagni	Amahara	Awi	Guagnua	Maize	Millet		Ta	Tr-	
Chira				-	Teff	-	Hv	Em	-
D/Birhan	Amahara	Semen shewa		Barley	Wheat	Bean	Tr	Tr	Em
Fitch				Teff	Wheat	Bean	P/sow	Em	Bu
Gelemeso	Oromia	Mira Haraghe	Habro	Maize	-	-	Wr	-	-
Ghion				Nug	Wheat		-	TI	-
L/Genet				Maze	Millet	-	Sh	Ta	-
Majate	Amahara	Semen Shoa	Mizan antakiya	Teff	-	Maize	Tr	-	E m
Mehal Meda	Amahara	Semen Shoa	Gira mider	-	Barley	Beans	-	TI	TI
Mekane Selam	Amahara	Semen shewa		Wheat	Teff	Maize	Em	P/sow	Em
Nedjo	Oromia	Mira Wollega	Nedjo	Maize	Sorghum	Millet	TI	Ta	TR
Shaura	Amahara	SemenG onder	ALEF.T	Teff	-	-	P/sow	-	-
Shambu	Oromia	HoroWoll ega	Horo	-	Peans	Wheat	-	Em	P/sow
Sokoru	Oromia	Jimma	Sokoru	Maize	-	-	TI	-	-
S/Gebeya	Amahara	Semen Shewa	-	Wheat	Beans	-	Em	Em	-

**Key**

P/S= plant/ sow

Em= Emerge

TL=Third Leaf

FL = Fifth Leaf

SL = Seventh Leaf

YR= Yellow Ripe

NL = Ninth Leaf

El =Elongation

Ta= Tassel

Sh= Shoot

BS= Bear Soft

BH= Beary Hard

FI =flower

PH= Pin Heading

He= Heading

Bu= Buddin

CR=Consumer Ripeness

GR= Green Ripeness

WR= Wax Ripeness

LGR= Light green Ripeness

FR= Full Ripeness

R= Ripeness

H= Harvest

x = Data not available

Ti= Tiller

YGR= Yellow Green Ripeness

Table 1. Climatic and Agro-Climatic elements of different stations for the month of July 2009								
No.	Stations	Region	A/ rainfall	Normal	%of Normal	Eto mm/day	Monthly Eto	Moisture
1	Adigrat	TIGRAY	111.4	157.8	70.6	3.3	97.8	H
2	Adwa		168.8	205.1	82.3	3.3	97.5	H
3	Axum		175	218.2	80.2	3.2	94.5	H
4	Maichew		185.2	159.9	115.8	3.5	105	H
5	Mekele		227.8	199	114.5	3.3	100.2	H
6	Senkata		139.5	236.7	58.9	3.1	93.3	H
7	Shire		231.5	291.1	79.5	3.8	114.6	H
1	Assayta	AFAR	13.4	34.1	39.3	4.8	144	VD
2	Dubti		11.1	43.4	25.6	5.9	176.7	VD
3	semera		10.7	0		7.9	237.6	VD
4	Gewane		3.6	89.3	4	7.9	235.5	VD
1	A/Ketema	AMHARA	371.8	303.4	122.5	3	90	H
2	B. Dar		335	422.5	79.3	3	89.7	H
3	Bati		285.9	174.3	164	4	119.1	H
4	Chagni		217.8	342.8	63.5	2.7	82.2	H
5	Cheffa		140.1	197	71.1	4.4	132.3	H
6	Combolcha		369.2	260.6	141.7	3.6	106.5	H
7	D.Berehan		257.9	264.3	97.6	3.3	97.8	H
8	D.Markos		217.7	297.3	73.2	2.7	79.8	H
9	D.Tabor		399.7	448.7	89.1	2.6	77.4	H
10	D/work		288	266.3	108.1	3.7	111	H
11	Enewari		286.4	223.5	128.1	2.7	81.3	H
12	Gondar		295	323.7	91.1	3.1	93.3	H
13	Lalibela		211.5	245	86.3	2.4	72.6	H
14	M.Meda		302.3	282.9	106.9	2.5	74.1	H
15	Metema		60.9	219.9	27.7	4.1	122.1	MD
16	Mota		224.9	306.6	73.4	3.3	97.8	H
17	M/ Selam		297.8	0		2.3	68.7	H
18	S.Gebeya		260.7	271.5	96	3.3	100.2	H
19	W.Tena		73.9	233.2	31.7	2.8	84.9	M
20	w/lllu		13.3	358.2	3.7	2.6	78.6	D
1	A. Robe	OROMIA	107	180.5	59.3	3.6	107.4	M
2	Abomsa		136.1	161.6	84.2	4.7	140.4	M
3	Alemaya		142.3	101	140.9	3.4	101.7	H
4	Alge		293.3	306.1	95.8	2.9	86.7	H
5	Ambo		285.4	226.3	126.1	2.3	67.8	H
6	Arjo		126.3	314	40.2	2.9	87	H
7	Bedelle		266.3	316.6	84.1	2.6	77.7	H
8	Begi		185.9	190	97.8	2.8	82.8	H
9	Bui		254.4	83.7	303.9	3.3	97.5	H
10	Chria		198.3	252.2	78.6	2.8	83.4	H

11	D.Zeit		121.1	219.2	55.2	3.6	109.2	H
12	D/mena		0.8	13.7	5.8	3.7	111	VD
13	Dm.Dolo		135.3	165.6	81.7	2.7	79.8	H
14	Fiche		470.9	326	144.4	2.4	72.6	H
15	Gelemso		75.9	136.4	55.6	4	120.6	M
16	Gimbi		190.1	355.3	53.5	21.8	654	MD
17	Ginir		0	22	0	4.5	135.9	VD
18	Gore		223.9	329.2	68	2.7	79.8	H
19	Jimma		149.7	210.9	71	3	89.4	H
20	Kachise		357.6	420.7	85	2.4	72.6	H
21	koffele		92.6	140.4	66	2.6	78.3	H
22	Kulumsa		158.5	124.3	127.5	3.5	103.5	H
23	Limugent		290.9	294.1	98.9	2.8	83.7	H
24	Masha		225	293	76.8	2.4	72.3	H
25	Metehara		54.7	120	45.6	6	180.3	MD
26	Mieso		77.9	129.5	60.2	6.2	186.9	MD
27	Nazereth		148.5	214.3	69.3	6.9	206.4	M
28	Negelle		1.1	6.9	15.9	4.4	132.9	VD
29	Nekemte		195.2	397.9	49.1	2.6	78.9	H
30	Robe		39.8	88	45.2	3.8	114	MD
34	Woliso		224.1	274.8	81.6	2.9	87.6	H
35	Ziway		145.8	146.1	99.8	4.4	131.1	H
1	Arbaminch		1.4	47.9	2.9	4.2	124.8	VD
2	Awassa		83.9	123.3	68	3.7	110.7	M
3	Hossaina		188.6	153.7	122.7	2.8	82.5	H
4	Jinka		12.2	103.4	11.8	3.8	113.1	D
5	H.Mariyam		0	39.5	0	2.6	76.8	VD
6	K/Mingist		0	28.8	0	2.5	76.2	VD
7	Konso		11.9	21.8	54.6	3.4	102.6	D
8	Sawla		75.7	100.9	75	3.2	96.3	M
9	Sekoru		181.3	216.4	83.8	2.9	88.2	H
10	Sodo	<b>SNNPR</b>	24	215.2	11.2	2.9	86.4	MD
1	Asossa		248.8	234.8	106	3.1	92.7	H
2	Bullen		161.4	361	44.7	3	89.7	H
3	Dangila		124.5	250.3	49.7	2.6	78.6	H
4	Pawe	<b>B/GUMUZ</b>	269.2	340.9	79	3.1	94.2	H
1	Jiiiga		71.4	74.4	96	5.1	152.1	MD
2	Gode	<b>SOMALI</b>	0	0.7	0	6	180.9	VD
1	D/Dawa	<b>D/DAWA</b>	72.9	92.5	78.8	7.3	219.9	MD
1	Harar	<b>HARAR</b>	119.8	93.7	127.9	3.4	101.4	H
1	A.A. Bole		263.2	239.7	109.8	3	89.7	H
2	A.A. Obs	<b>A.A</b>	112.8	259.2	43.5	2.5	73.8	H

Explanatory Note Reference Evapo-transpiration (mm)

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

## **DEFNITION OF TERMS**

**ABOVE NORMAL RAINFALL:** - Rainfall in excess of 125% of the long term mean

**BELOW NORMAL RAINFALL:** - Rainfall below 75 % of the long term mean.

**NORMAL RAINFALL:** - Rainfall amount between 75 % and 125 % of the long term mean.

**BEGA:** - It is characterized with sunny and dry weather situation with occasional falls. It extends from October to January. On the other hand, it is a small rainy season for the southern and southeastern lowlands under normal condition. During the season, morning and night times are colder and daytime is warmer.

**BELG:** - Small Rainy season that extends from February to May and 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.

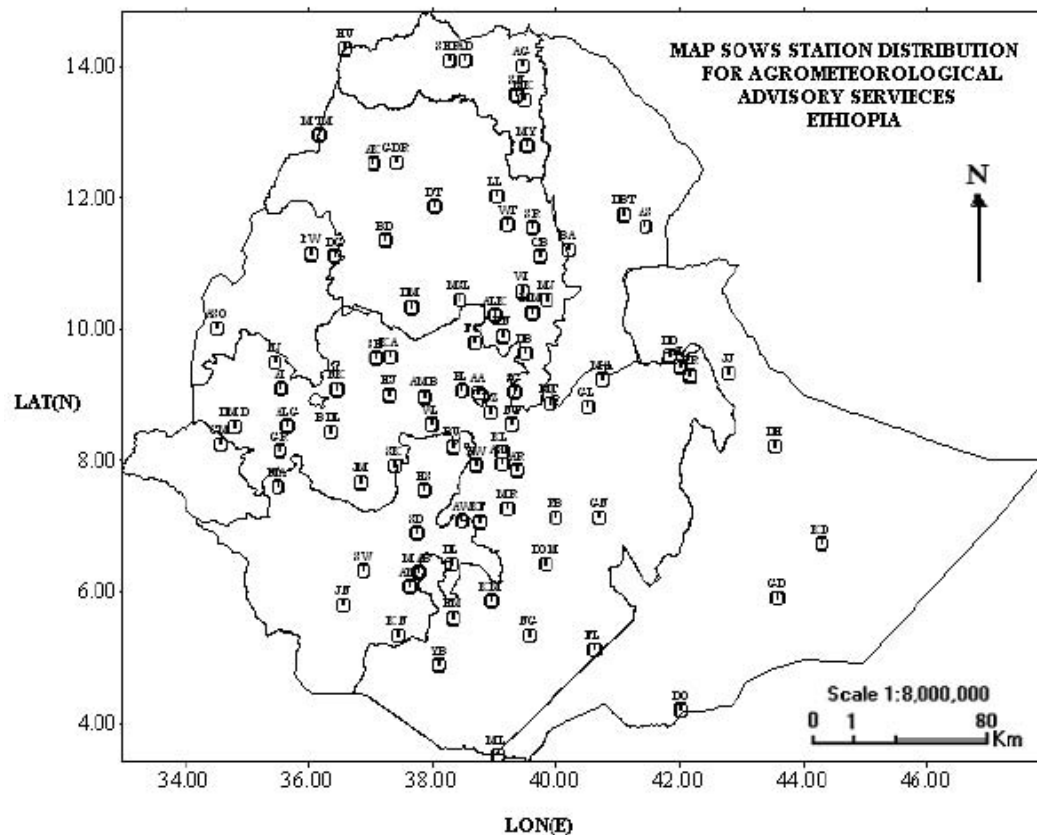
**DEKAD:** - First or second ten days or the remaining days of a month.

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