

## FORE WARD

This Agro met Bulletin is prepared and disseminated by the National Meteorological Agency (NMA). The aim is to provide those sectors of the community involved in Agriculture and related disciplines with the current weather situation in relation to known agricultural practices.

The information contained in the bulletin, if judiciously utilized, are believed to assist planners, decision makers and the farmers at large, through an appropriate media, in minimizing risks, increase efficiency, maximize yield. On the other hand, it is vital tool in monitoring crop/ weather conditions during the growing seasons, to be able to make more realistic assessment of the annual crop production before harvest.

The Agency disseminates ten daily, monthly and seasonal weather reports in which all the necessary current information's relevant to agriculture are compiled.

We are of the opinion that careful and continuous use of this bulletin can benefit to raise ones agro climate consciousness for improving agriculture-oriented practices. Meanwhile, your comments and constructive suggestions are highly appreciated to make the objective of this bulletin a success.

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እ.ኤ.አ ኦክቶበር 2009

በአክቶበር በመጀመሪያው አስርተ ቀናት የዝናብ መኖር መንስኤ የሆኑት የአየር ሁኔታ ገፅታዎች በአብዛኛው የሀገሪቱ ክፍሎች ላይ በመጠናከራቸው ብዙውን የሀገሪቱ ክፍሎች ያዳረሰ ዝናብ ተስተውሏል። በአስሩ ቀናትና በተለይም በአስሩ ቀን መጨረሻ አካባቢ የነበረው የዝናብ ስርጭት የተስፋፋና በመጠንም የተጠናከረ ነበር። በአጠቃላይ በምዕራብ፣ በምስራቅ፣ በደቡብ ምዕራብና በደቡብ የሀገሪቱ ክፍሎች መጠኑ ከባድ የሆነ ዝናብ ተስተውሎባቸዋል። በተጨማሪም ምስራቅና መካከለኛው አማራ፣ ደቡብ አፋር፣ ቤንሻንጉል ጉሙዝና ደቡብ ትግራይ ከመደበኛ ጋር የተቀራረበ ዝናብ አግኝተዋል። ይህም የዝናብ ሁኔታ በዚህ አካባቢ ዘግይተው የመኸር እርሻሥራ እንቅስቃሴ ለጀመሩና እንዲሁም በተለያዩ የእድገት ደረጃና ፍሬ በመሙላት ላይ ላሉ ሰብሎች በጎ ጎን የነበረው ሲሆን በደረሱ የመኸር ሰብሎች ላይ አሉታዊ ተፅዕኖ እንደነበረው ይገመታል። እንዲሁም በምስራቅና በደቡብ ምስራቅ ለሚኖሩ አርብቶ አደሩና ከፊል አርብቶ አደሩ ለግጦሽ ሳርና ለመጠዋ ውሃ አቅርቦት አመቺ ሁኔታን እንደፈጠረ ይገመታል። ከመረጃ ጣቢያዎቻችን ባገኘነው መረጃ በአንዳንድ የሀገሪቱ ክፍሎች ላይ በመጠን 30-60 በሚ.ሜ የሚደርስ ዝናብ በአንድ የዝናብ ቀን ብቻ ተመዝግቧል። ከዚህ ዝናብ ጋር በተያያዘ በሰብል ላይ የደረሰ ጉዳት የለም።

በአክቶበር ሁለተኛ አስር ቀናት ዝናብ ሰጪ የሚቲዎሮሎጂ ክስተቶች የተሻለ ጥንካሬ የነበራቸው በመሆኑ ሁለተኛው የዝናብ ወቅታቸው የሆኑት የሀገሪቱን ደቡብና ደቡብ ምስራቅ እንዲሁም በምዕራብ በደቡብ ምዕራብ እንዲሁም በመካከለኛውና በምስራቅና በሰሜን ምስራቅ የሀገሪቱ ክፍሎች ላይ ዝናብ ነበር። ይህም የዝናብ ሁኔታ በየአካባቢው ተዘርተው በመብቀል ላይ ላሉ የመኸር ሰብሎች እንዲሁም የዝናብ ወቅታቸው ለጀመረባቸው ለደቡብና ለደቡብ ምስራቅ አርብቶ አደሮችና ከፊል አርብቶ አደሮች የጎላ አስተዋፅዖ ነበረው። ሆኖም በአንዳንድ አካባቢዎች ከ30ሚ.ሜ በላይ ከባድ ዝናብ እንደነበረ ከተሰበሰቡ የዝናብ መረጃዎች ለማወቅ ተችሏል። ይህም ከፍተኛ ዝናብ መሰብሰብ በደረሱ ሰብሎች ላይ አሉታዊ ተፅዕኖ ይኖረዋል።

በአክቶበር ሶስተኛ አስር ቀናት በመካከለኛው አማራ፣ ቤንሻንጉል ጉሙዝ፣ ምዕራብና ደቡብ ኦሮሚያ፣ የደቡብ ብሔር ብሔረሰቦች ህዝቦች ክልል፣ ደቡብ ሶማሊያ፣ ምስራቃዊ የአገሪቷ ክፍሎች፣ የአርሲና ባሌ አካባቢዎችን ጨምሮ ዝናብ ነበራቸው። ይህም ሁኔታ ዘግይተው ለተዘሩትና በተለያዩ የእድገት ደረጃ ላይ ላሉት የመኸር ሰብሎች በቋሚነት በአካባቢው ለሚበቅሉ እፅዋቶች እንዲሁም በአካባቢው ለሚኖሩ አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠዋ ውሃና ለግጦሽ ሳር አቅርቦት አዎንታዊ ተፅዕኖ የነበረው ሲሆን በሌላ በኩል ደግሞ የቦጋው ደረቅ ፀሐያማና ነፋሻማ

የአየር ሁኔታ ጋር በተያያዘ በአንዳንድ የአገሪቷ ክፍተኛ ቦታዎች ላይ የማለዳውና የሌሊቱ ቅዝቃዜ ከ5 ዲ.ሲ በታች ሆኖ በመቆየቱ ምክንያት በተለያዩ የእድገት ደረጃ ላይ ላሉ የመኸር ሰብሎችና በአካባቢው ለሚበቅሉት ቋሚ ተክሎች እንዲሁም በአካባቢው ለሚኖሩት እንሰሳትና የእንሰሳት ምርት አሉታዊ ተፅዕኖ እንደነበረው ይታመናል።

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

## **SUMMARY**

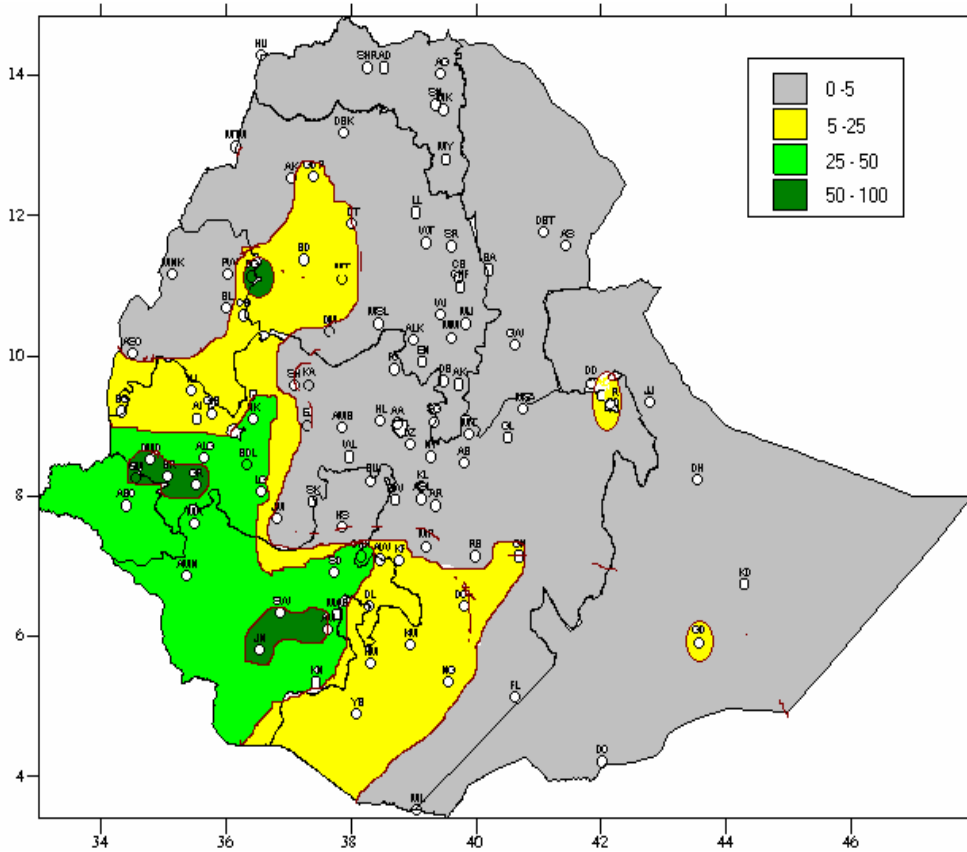
### **October 2009**

During the first dekad of October 2009, the rain-dominated over most parts of the country. However, wide spread heavy rainfall condition has been observed over western, eastern, southwestern and southern parts of the country. So eastern and central Amhara, southern Afar, Benishangul-Gumuz and southern Tigray received near normal rainfall. As the result, this rainfall situation expected to have Positive impact on late sown Meher crops, which are found at different growing and grain filling stage, and it would have negative impact for crops, which were at maturity stage. Besides it would create Conducive condition for the availability of pasture and drinking water over low lands of eastern and southeastern pastoral and agro pastoral area of the country. According to the reporting station heavy fall observed with in the range (30-60mm).

During the first dekad of October 2009, the rain- bearing system strengthened over the south and south eastern Parts of the country. Besides western, southwestern, central, eastern, northeastern received rainfall. Thus this situation was conducive for Meher crops, which are found at different growing stage and it would have positive impact on the availability of pasture and drinking water over low lands of southern and southeastern pastoral and agro pastoral area of the country. However according to the reporting station some station observed heavy fall above 30mm. Regarding heavy falls some stations reported crop damage over Ziway on Teff and Alge on coffee.

During the third dekad of October 2009, the previous ten days, central Amhara, Benishangul- Gumuz, western and southern Oromya, SNNPR, southern Somalia, eastern portions of the country including Arsi and Bale zone experienced rain. This situation would favor for perennial and late grown Meher crops as well as availability of pasture and drinking water for postural and agro postural area of the country. On the other hand Bega dry, windy and sunny condition with cool nights and early mornings prevailed over the highlands of northern portions of the country increasing the risk of frost damage. This situation would have a negative impact for meher and perennial crops as well as livestock and livestock products.

Generally during the month of October 2009, the rain bearing meteorological phenomena were prevailed over western and eastern Tigray, southern afar, much of Amhara, Benishangul- Gumuz, much of Oromya and SNNPR, Gambela, much of Somalia as well as Dire Dawa and Harrari. This situation would favor for perennial and late grown Meher crops as well as availability of pasture and drinking water for pastoral l and agro pastoral area of the country. Some stations reported heavy fall among the reporting stations Zeway, Wolita Sodo, Shambu, Nekemt, Nazereth, Metehara, Harar, Gore, Gode, Ginnir, Gimbi, Chira, Chagni, Bui, Bedelle, Asossa, Arba Minch, Alge, Alemaya and Arsi Robe with a magnitude of 71.7, 40.0, 44.0, 42.5, 45.5, 52.4, 50.5, 41.7, 49.8, 40.0, 42.2, 48.3, 45.6, 65.0, 58.5, 58.0, 48.8, 50.5, 62.0 and 40.0 mm of rainfall with in 24 hrs this heavy fall produced crop damage over Zeway, Alge and Bedelle during the month. On the other hand dry, windy and sunny weather condition with cool nights and early mornings prevailed over the highlands of northern portions of the country increasing the risk of frost damage. This situation would have a negative impact for meher agriculture and perennial crops as well as live stocks and livestock products.



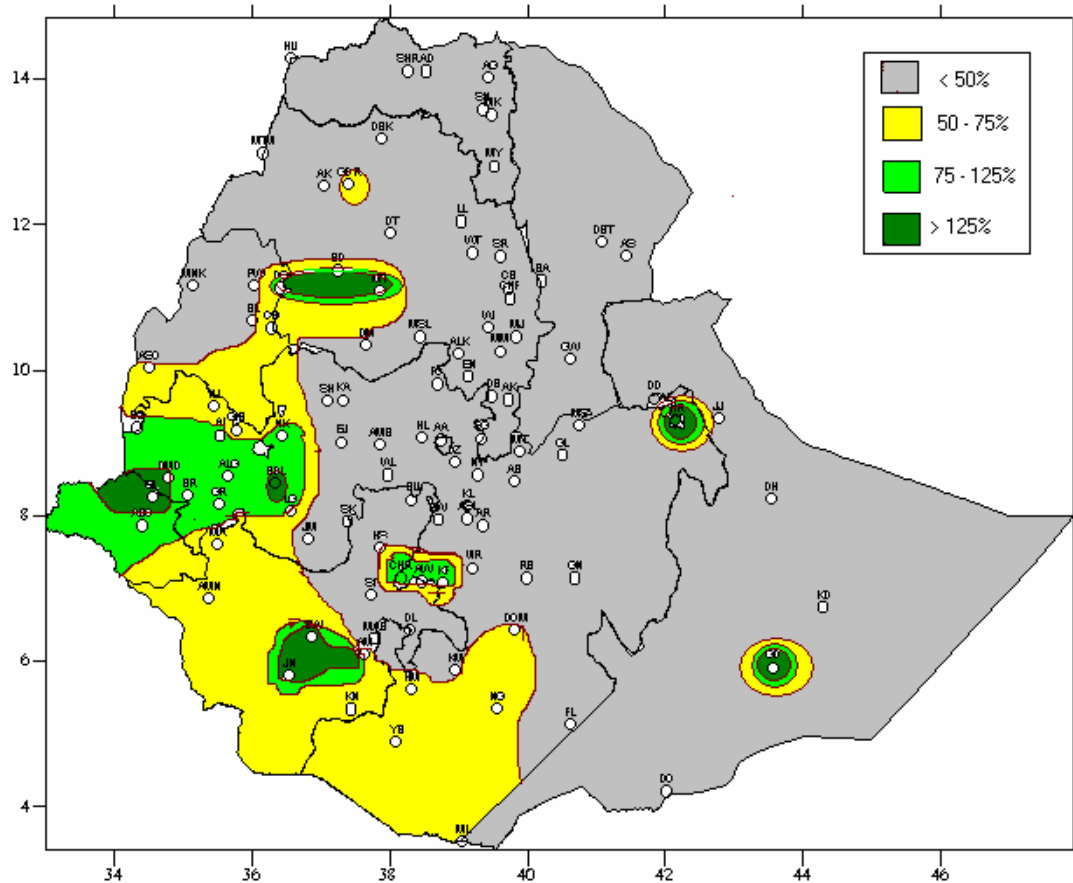
**Fig 1 Rainfall distribution in mm (21 – 31 October, 2009)**

**1. WEATHER ASSESSMENT**

**1.1 (21- 31 October, 2009)**

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

Pocket areas of southern SNNPR, western Oromia and western Amhara received 50-100 mm rainfall. Gambela, Most of SNNPR and parts of western Oromia experienced 25-50 mm rainfall. Parts of eastern SNNPR, southern and western Oromia, southern and eastern Benshangul-Gumuz and western Amhara and pocket areas of southern Somali received 5-25 mm rainfall. The rest parts of the country exhibited little or no rainfall.



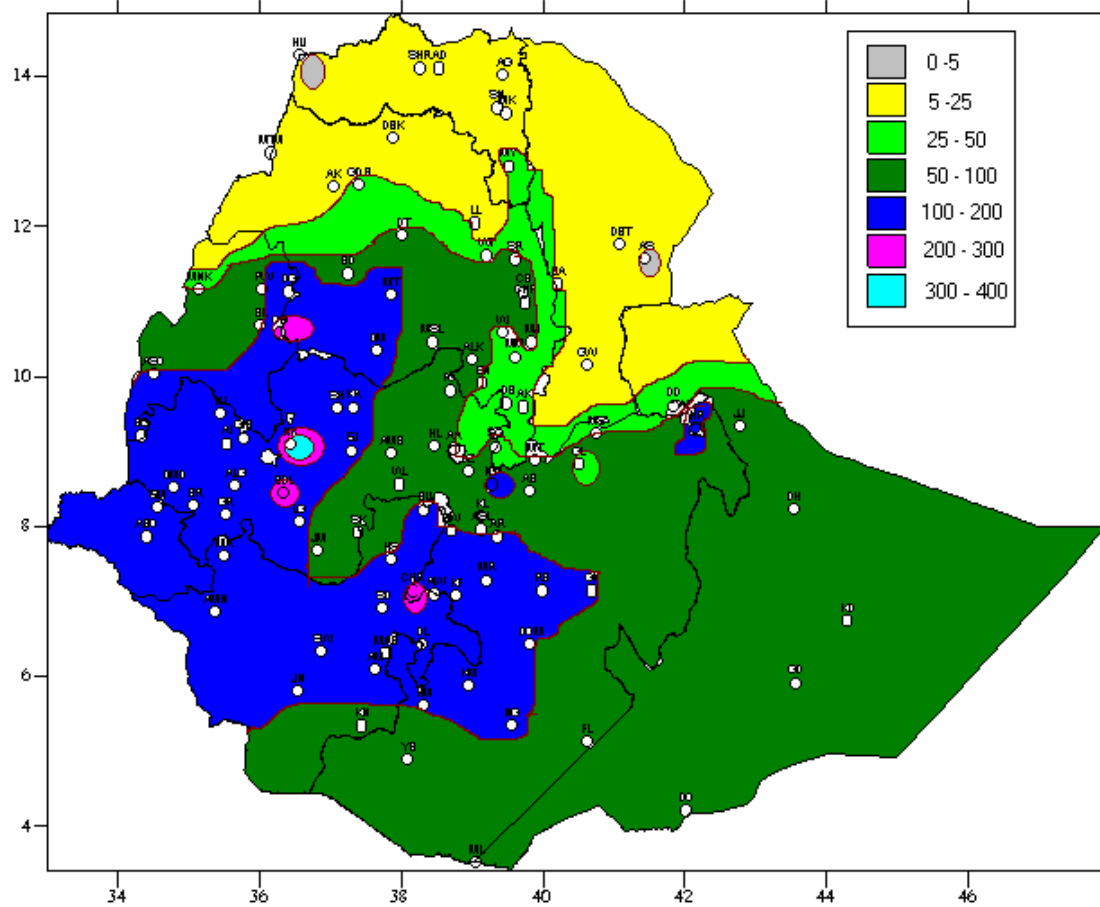
**Fig. 2 Percent of normal rainfall distribution (21-31 October, 2009)**

**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)**

Most of Gambela, part of western and pocket area of eastern Oromia and pocket areas of western Amhara, southern and eastern SNNPR and southern Somali received normal to above normal rainfall. The rest parts of the country experienced below normal to much below normal rainfall.

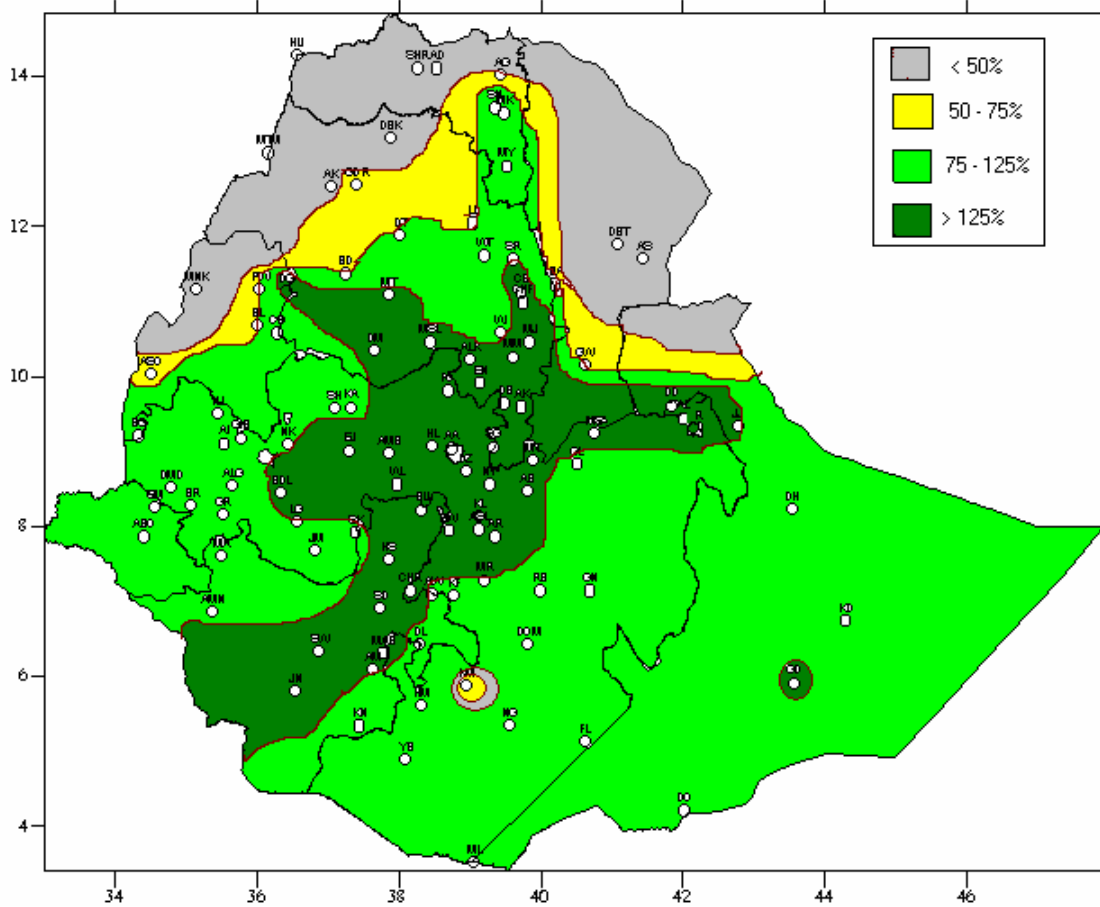


**Fig. 3 Rainfall distribution in mm for the month of October, 2009**

## **1.2 October, 2009**

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

Pocket area of western Oromia experienced 300-400 mm rainfall. Pocket areas of western Amhara, western Oromia and eastern SNNPR exhibited 200-300 mm rainfall. Gambela, most of SNNPR, parts of western and southern and pocket area of eastern Oromia, parts of southern and eastern Benshangul-Gumuz and western Amhara received 100-200 mm rainfall. Most of Somali, Parts of western, central, southern and eastern Oromia, southern and eastern Amhara, southern SNNPR and western Benshangul-Gumuz received 50-100 mm rainfall. Parts of central and eastern Amhara, eastern Oromia and northern Somali and tip of southern Tigray exhibited 25-50 mm rainfall. Afar, most of Tigray, parts of western and northern Amhara and northern Somali experienced 5-25 mm rainfall. The rest parts of the country exhibited little or no rainfall.



**Fig. 4 Percent of Normal Rainfall distribution for the month of October, 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)**

Afar, most of Tigray, western half of Amhara and Benshangul-Gumuz and parts of northern Somali received below normal to much below normal rainfall. The rest parts of the country exhibited normal to above normal rainfall.

**1.3 TEMPERATURE ANOMALY**

During the month of October 2009, some areas exhibited extreme maximum air temperature above 35 °C. Among the recording stations Gode, Gambella, Aysha, Assayta, Semera, Dire Dawa, Metehara, Sherkole, Nura Era, Mytsemrie, Miesso, Mankush, Humera, Gewane and Elidar, recorded extreme maximum temperature as high as 38.0, 37.5, 38.5, 42.5, 41.5, 36.5, 37.6, 35.3, 35.2, 35.0, 35.5, 37.0, 42.0, 44.6 and 41.5 °C respectively. On the other hand there are some stations which are reported a minimum below 5°C. Among those Arsi Robe, Wegel Tena, Gelemso, Debre Work, Debre Brihan, Bale Robe, Amba Mariam and Alemaya reported minimum Temperature as low as 4.0, 1.8, 4.0, 4.5, -0.5, 4.0, 3.6 and 0.0°C. This extreme hot and cool condition would have a negative impact on crops and livestock products which were found on the area.

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

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

Generally during the month of October 2009, the rain bearing meteorological phenomena were prevailed over western and eastern Tigray, southern afar, much of Amhara, Benishangul- Gumuz, much of Oromya and SNNPR, Gambela, much of Somalia as well as Dire Dawa and Harrari. This situation would favor for perennial and late grown Meher crops as well as availability of pasture and drinking water for pastoral and agro pastoral area of the country. Some stations reported heavy fall among the reporting stations Zeway, Wolita Sodo, Shambu, Nekemt, Nazereth, Metehara, Harar, Gore, Gode, Ginnir, Gimbi, Chira, Chagni, Bui, Bedelle, Asossa, Arba minch, Alge, Alemaya and Arsi robe with magnitude of 71.7, 40.0, 44.0, 42.5, 45.5, 52.4, 50.5, 41.7, 49.8, 40.0, 42.2, 48.3, 45.6, 65.0, 58.5, 58.0, 48.8, 50.5, 62.0 and 40.0 mm of rainfall with in 24 hrs this heavy fall produced crop damage over Zeway, Alge and Bedelle during the month. On the other hand dry, windy and sunny weather condition with cool nights and early mornings prevailed over the highlands of northern portions of the country increasing the risk of frost damage. This situation would have a negative impact for meher agriculture and perennial crops as well as live stocks and livestock products.

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

The rain- bearing meteorological phenomena will expect to prevail over our region due to raise of sea surface temperature over Indian ocean, Arabian sea, Mediterranean sea and Red sea which will facilitate near normal and irregular rain over western and southern Oromya, Gambella, Beshangul- Gumuz, SNNPR and southern Somalia, while Tigray, Amhara and eastern portions of the country will expect rainfall for few days, this will have positive impact for late sown and found at different phenological stages of Meher and perennial crops and availability of pasture and drinking water over pastoral and agro pastoral areas. On the other hand the expected windy, sunny and dry Bega weather condition with cool nights and early mornings will prevail over the highlands of northeastern, eastern and central portions of the country will increasing the risk of frost damage. This situation will expect negative impact for meher agricultural crops which are found at different phonological stages and perennial crops as well as live stocks and livestock products. Due to this farmers and agricultural workers must give attention to take the risk.



**Table 1 Crop Phenological report for the third dekad of October 2009**

Station name	Region	Zone	Woreda	Major Crops			Phases		
				1	2	3	1	2	3
Adet	Amahara	M/ Gojjam	Adet	Maize	-	Teff	FR	-	R
A/Ketem	Amahara	S/ Shewa	Laybet	Teff	Nug	-	FI	FI	-
Chagni	Amahara	Awi	Guagnua	Maize	Millet	-	-	-	-
Zeway	oromiya	E/Shewa	Ziway	Wheat	Teff	-	H	FI	-
D/Birhan	Amahara	S/ shewa	D/Birhan	Barley	Wheat	Beans	H	FI	R
Fitch	Oromiya	N/Shewa	GrarJars o	Teff	Wheat	Beans	Ta	FI	R
Beddle	Oromiya	Illubabour	Yem	Maize	Teff	-	H	FI	-
Motta	Amhara	W/Gojjam	H/tij Ynese	Teff	-	-	FI	-	-
Pawe	Amhara	Agewawi	Dangla	Maize	Seaseme	-	-	H	-
Gihion	Oromiya			-	Wheat	Teff	-	-	FI
M/ Meda	Amahara	S/ Shewa	Gira mider	-	Barley	Beans	FI	-	-
M/ Selam	Amahara	S/ Shewa	D/Sina	Wheat	Teff	Bean	-	-	-
Chira	Oromiya	Illbabour	kulukont a	Oats	Teff	-	H	Ta	-
Bullen	B/Gumuz	Metekel	Bullen	Millet	Teff	-	-	FI	
Shaura	Amahara	S/ Gonder	Alef.T	Teff	-	-	TL	-	-
Shambu	Oromia	Horo	Horo	Beans	Peans	Wheat	-	-	-
S/Gebeya	Amahara	M/ Shewa	kesem	Wheat	Beans		FI	FI	-
D/mena	Oromia	Bale	Mena	Teff	Seaseme	-	-	-	-

**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= Barely Hard  
FI = Flower  
PH= Pin Heading  
He= Heading  
Bu= Budding  
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 2. Climatic and Agro-Climatic elements of different stations for the month of October 2009**

No.	Stations	Region	A/ rainfall	Normal	Per. Normal	Eto mm/day	Eto Monthly
1	Axum	TIGRAY	0	30	0	NA	NA
2	Adigrat		17.6	27.8	63	NA	NA
3	Adwa		0	27.3	0	NA	NA
4	Humera		3.9	15.8	25	3.98	123.38
5	Maichew		39.6	49.7	80	NA	NA
6	Mekele		17.9	6	298	5.19	160.89
7	Maytsermi		11	NA	NA	NA	NA
8	Senkata		11.9	41.8	28	2.39	74.09
1	Assayta	AFAR	2	6.3	32	6.85	212.35
2	Elidar		0	13.1	NA	NA	NA
3	Gewane		5	16	31	NA	NA
4	semera		0	23.6	0	NA	NA
1	A/Ketema	AMHARA	23.1	26.9	86	NA	NA
2	Adet		80.2	NA	NA	NA	NA
3	A/ Mariam		29.2	NA	NA	NA	NA
4	Atsbi		21.5	NA	NA	NA	NA
5	Ayder		6.8	NA	NA	NA	NA
6	Ayehu		108	NA	NA	NA	NA
7	B. Dar		56.2	96.4	58	3.59	111.29
8	Bati		17.2	30.3	57	3.69	114.39
9	Chagni		223.1	185.3	120	3.09	95.79
10	Cheffa		60.7	41.8	145	4.09	126.79
11	Combolcha		82.6	36.4	227	3.32	102.92
12	D.Berehan		29.9	23.9	125	3.98	NA
13	D.Markos		106.7	81.6	131	3.64	112.84
14	D.Tabor		79.1	86.6	91	NA	NA
15	D/work		100	25.6	391	NA	NA
16	Enewari		12	8.4	143	NA	NA
18	Gondar		49.6	71.6	69	NA	NA
19	Lalibela		8.7	16.6	52	NA	NA
20	Layber		78.8	NA	NA	NA	NA
21	M.Meda		39.2	29.2	134	NA	NA
22	Majete		65.3	33.8	193	NA	NA
23	Mota		160.4	84.3	190	3.49	106.64
24	M/ Selam		71	NA	NA	NA	NA
25	S.Gebeya		96.6	66.7	145	3.67	NA
26	S/ robit		80.4	36.6	220	NA	NA
27	Shaura		36.9	NA	NA	NA	NA
28	w/illu		8.1	13.6	60	3.89	
29	W.Tena		9.8	8.3	118	NA	NA
1	A. Robe		OROMIA	140.2	68.4	205	3.52
2	Aira	103.8		135	77	NA	NA
3	Alemaya	139.9		45.1	310	2.84	88.04
4	Alge	182.3		154.3	118	NA	NA
5	Ambo	56.1		41.5	135	4.58	141.98
6	Arjo	23.2		108.8	21	NA	NA
7	Asossa	103.8		132.6	78	3.48	107.88
8	Addele	73.4				NA	NA
9	Bedelle	255.8		129.3	198	NA	NA
10	Bui	99.4		21.8	456	NA	NA
11	Bullen	75.2		159.7	47	NA	NA
12	Bilate	99.5		61.5	162	NA	NA
13	Chria	206.6		144.8	143	NA	NA
14	Chercher	28		NA	NA	NA	NA

15	D.Zeit		59.3	21.5	276	4.15	128.65
16	D/mena		186	214.5	87	NA	NA
17	Dm.Dolo		127.9	110.7	116	3.18	98.58
18	Fiche		62.9	28.6	220	NA	NA
19	Gelemso		8.7	90.9	10	3.62	112.22
20	Gimbi		144.7	131.9	110	3.31	102.61
21	Ginir		159.8	190.7	84	NA	NA
22	Gore		184.5	194.3	95	3.09	95.79
23	Jimma		93.4	101.5	92	3.27	101.37
24	Kachise		109.7	106.3	103	3.55	98.58
25	koffele		114.9	98.1	117	3.51	108.81
26	Kulumsa		67.5	38.1	177	4.22	130.82
27	Limugent		106.4	188.3	57	3.64	112.84
28	Masha		154.9	202.8	76	NA	NA
29	Metehara		69.6	21.1	330	4.69	145.39
30	Mieso		73	40.5	180	3.18	98.58
31	Nazereth		132.7	53.6	248	5.05	108.81
32	Negelle		129	125.1	103	4	124
33	Nekemte		307.1	182	169	3.23	100.13
34	Nuraera		40.7			NA	NA
35	Robe		102.1	118	87	NA	NA
36	Sekoru		70.9	152.2	47	3.6	112.84
37	Shambu		181.7	81.8	222	NA	NA
38	S/ Abaya		57.5			NA	NA
39	Woliso		83.9	39.4	213	3.29	101.99
40	Ziway						
1	Arbaminch		166.6	119.8	139	4.05	125.55
2	Awassa		49.1	84.3	58	3.91	121.21
3	H.Mariyam		98.9	125.1	79	3.18	98.58
4	Hossaina		197.3	79.8	247	NA	NA
5	Jinka		182.7	136.7	134	3.44	106.64
6	K/Mingist		70.6	183.5	38	4.52	140.12
7	Konso		61.7	88.2	70	2.97	92.07
8	Sawla		158.4	64.7	245	3.86	119.66
9	Sodo	SNNPR	68.9	107.5	64	3.29	101.99
1	CHAGINI		223.1	185.3	120.4	3.09	95.79
2	Dangila		154.7	81.9	189	2.99	92.69
3	Pawe		58.9	137.9	43	3.73	NA
4	Mankush	B/GUMUZ	6	NA	NA	NA	NA
1	Aysha		0	Na	Na	Na	Na
2	Gode		92.4	59.4	156	92.4	59.4
3	Jiiiga	SOMALI	66.7	49.5	135	66.7	49.5
1	Harar	HARAR	139.7	42.4	329	3.45	106.95
1	D/Dawa	D/DAWA	38.6	25.5	151	4.16	128.96
1	A.A. Bole		44.4	33.7	132	5.16	159.96
2	A.A. Obs	A.A	45.8	41.1	111	3.63	112.53

Explanatory Note:

ETo: Reference Evapo-transpiration (mm)

VD Very Dry < 0.1

D Dry 0.1 - 0.25

MD Moderately Dry 0.25 - 0.5

M Moist 0.5 - 1

H Humid > 1

## **DEFNITION OF TERMS**

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

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

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

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

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

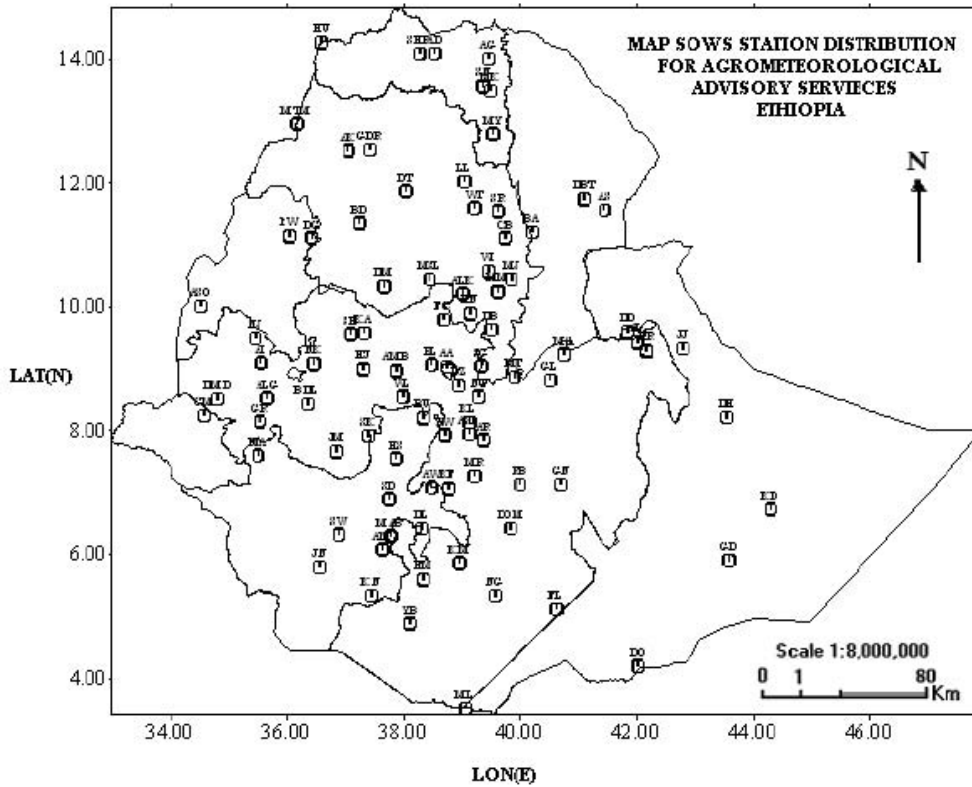
**DEKAD:** - First or second ten days or the remaining days of a month.

**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. Harbour	DH	Holleta	HL	Moyale	ML		