

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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አህፅሮት

እ.ኤ.አ ኖቬምበር 2009

እ.ኤ.አ ከኖቬምበር 2009 የመጀመሪያው አስር ቀናት በአገሪቱ እርጥበት አዘል አየር በመግባቱ የተነሳ የደቡብ ምስራቅ የአገሪቷ ስፍራዎች ዝናብ አግኝተዋል። ይህም ሁኔታ ዘግይተው ለተዘፋና ፍሬ በመሙላት ላይ ላሉት የመኸር ሰብሎች የውሃ ፍላጎት መሟላት እንዲሁም በአካባቢው ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃና ለግጦሽ ሳር ልምላሜ አዎንታዊ ተፅዕኖ የጎላ ነበር። በሌላ በኩል የበጋው ደረቅ ፀሐያማ ነፋሻማ የአየር ሁኔታ ጋር በተያያዘ በአብዛኛው የአገሪቱ አካባቢዎች ማለትም የሰሜን ምስራቅ፣ የምስራቅ፣ የመካከለኛውና የደቡብ ከፍተኛ ቦታዎች የቀኑ ዝቅተኛ የሙቀት መጠን ከ5ዲ.ሴ በታች የተመዘገበ ሲሆን በአንዳንድ ቦታዎቻቸው ላይ ከዜሮ በታች ወርዶ ተስተውሏል። ይህም ሁኔታ በአካባቢው ዘግይተው ለተዘፋ እና ገና ፍሬ በመሙላትና በአበባ ላይ ለሚገኙ የመኸር ሰብሎች በአካባቢው ለሚኖሩ እንሰሳትና የእንሰሳት ምርት ላይ አሉታዊ ተፅዕኖ እንደሚኖረው ይገመታል።

እ.ኤ.አ በኖቬምበር 2009 ሁለተኛ አስር ቀናት በከባቢ አየር ውስጥ እርጥበት አዘል አየር አልፎ አልፎ በመጨመሩ ምክንያት የምዕራብ፣ የደቡብ ምዕራብና የደቡብ የአገሪቷ አካባቢዎች ከነበራቸው የደመና ሽፋን ጋር በተያያዘ የምዕራብ አማራ፣ ምዕራብና ደቡብ ኦሮሚያ፣ የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል ዝናብ አግኝተዋል። ይህም ሁኔታ ዘግይተው ተዘርተው ገና ፍሬ በመሙላትና በአበባ ላይ ላሉት የመኸር ሰብሎች እንዲሁም በአካባቢው ለሚበቅሉ ቋሚ ተክሎች እና በአካባቢው ለሚኖሩ አርብቶ አደሮችና ከፊል አርብቶ አደሮች የውሃ ፍላጎት መሟላት አዎንታዊ ተፅዕኖ የጎላ ነበር። በሌላ በኩል በአብዛኛው የአገሪቱ አካባቢዎች ላይ የበጋው ደረቅ ፀሀያማና ነፋሻማ የአየር ሁኔታ ሰፍኖ ቆይቶባቸዋል ይህም ሁኔታ ለደረሱት የመኸር ሰብል ሰብሰቦና ድህረ ሰብል ሰብሰባ ጥሩ ጎን ቢኖረውም የመለዳውና የሌሊቱ ቅዝቃዜ በአንዳንድ የአገሪቱ አካባቢዎች ዘግይተው ለተዘፋት ገና ፍሬ በመሙላት ላይ ላሉት የመኸር ሰብሎች እንዲሁም በአካባቢው ለሚኖሩት እንሰሳት ላይ አሉታዊ ተፅዕኖ እንደሚኖረው ተስተውሏል።

እ.ኤ.አ በኖቬምበር 2009 ሦስተኛ አስር ቀናት በአብዛኛው የአገሪቱ ክፍሎች ላይ የበጋው ደረቅ ፀሐያማና እና ነፋሻማ የአየር ሁኔታ አመዝኖ የቆየ ቢሆንም በመጨረሻዎቹ አስር ቀናት ዝናብ ሰጪ የአየር ሁኔታ ገፅታዎች ለዝናብ መኖር ምቹ ሁኔታ በመፍጠራቸው የስምጥ ሸለቆ አካባቢዎች፣ የሰሜን ምስራቅ፣ የምስራቅ፣ የደቡብ ምዕራብ፣ የምዕራብ እና የደቡብ ምስራቅ አካባቢዎች ዝናብ

ነበራቸው በተለይም በሰሜን ምስራቅ፣ በምስራቅ፣ በመካከለኛውና በአንዳንድ የምዕራብ የአገሪቱ አካባቢዎች ወቅታዊ ያልሆነ ዝናብ ተስተውሏል። በመሆኑም ምስራቅ ትግራይ፣ ምስራቅና መካከለኛው አማራ እንዲሁም አገራዊ የቤንሻንጉል ጉሙዝ አካባቢዎች፣ የምዕራብ እና ደቡብ ኦሮሚያ፣ ጋምቤላ፣ የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል መካከለኛውና ምስራቅ ኢትዮጵያ እና ሶማሌ ዝናብ የነበራቸው ሲሆን ይህም ሁኔታ በአካባቢው ለሚበቅሉት ቋሚ ተክሎችና በአካባቢው ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃና ለግጦሽ ሳር አቅርቦት አዎንታዊ ተፅዕኖ ነበረው። በተቃራኒው ደግሞ ይህ ወቅቱን ያልጠበቀ ዝናብ ለመኸር ሰብል ስብሰባ እና ድህረ ሰብል ስብሰባ አሉታዊ ተፅዕኖ ነበረው።

በኖቬምበር ወር በአብዛኛው የአገሪቷ አካባቢዎች የበጋው ደረቅ ፀሐያማና ነፋሻማ የአየር ሁኔታ አመዝኖ የተስተዋለ ሲሆን ከዚህ ጋር በተያያዘ በአገሪቱ ክፍተኛ ቦታዎች ላይ የሌሊቱና የማለዳው ቅዝቃዜ ከ5ዲ.ሴ በታች ሆኖ ተመዝግቧል። ይህም ሁኔታ በመኸር ወቅት ተዘርተው ገና ፍሬ በመሙላትና በአበባ ላይ ላሉት እንዲሁም በአካባቢው ለሚበቅሉት ቋሚ ተክሎች እንዲሁም በአካባቢው ለሚኖሩ እንሰሳት ላይ አሉታዊ ተፅዕኖ እንደሚያሳድር እሙን ነው። ይሁን እንጂ በወሩ ውስጥ አልፎ በደቡብና በደቡብ ምዕራብ እንዲሁም በምዕራብ የሀገሪቱ ክፍሎች ላይ ዝናብ የተመዘገበ ሲሆን የወሩ የመጨረሻ ቀናት ዝናቡ በመጠናከር በስምጥ ሸለቆ አካባቢ፣ በሰሜን ምስራቅ፣ በምስራቅና በመካከለኛው የአገሪቷ ክፍሎች ላይ ወቅታዊ ያልሆነ ዝናብ ተመዝግቦ ነበር። በተጨማሪም የደቡብና የደቡብ ምስራቅ የአገሪቱ ክፍሎች ዝናብ አግኝተዋል። ይህም ሁኔታ በአካባቢው ለሚበቅሉት ቋሚ ተክሎችና በአካባቢው ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለመጠጥ ውሃና ለግጦሽ ሳር አቅርቦት አዎንታዊ ተፅዕኖ ነበረው። በሌላ በኩል ይህ ወቅቱን ያልጠበቀ ዝናብ ለመኸር ሰብል ስብሰባ እና ድህረ ሰብል ስብሰባ አሉታዊ ተፅዕኖ ነበረው።

SUMMARY NOVEMBER 2009

During the first dekad of November 2009, wet weather condition favored rainfall activities over southeastern portions of the country. The situation might have favored perennial and late grown Meher crops as well as availability of pasture and drinking water over pastoral and agro pastoral area of the country. On the other hand, the Bega dry, windy and sunny condition might have favored Mehre harvest and post harvest activities. The daily extreme minimum temperature in some highland areas experienced below 5°C, which might have caused increase the risk of frost damage on late planted Merhe crops that are found at pre-maturing stages and livestock conditions.

During the second dekad of November 2009, the entrance of wet weather condition to our territory increased the cloud coverage over western, southwestern and southern portions of the country. As result favored rainfall activities over western Amhara, western and southern Oromiya and SNNPR. The situation might have caused a positive impact on late sown Meher crops at some highlands that are at pre-maturing and flowering stages, perennial crops and availability of pasture and drinking water over pastoral and agro pastoral area of the country, on the contrary the situation might have a negative impact on Matured Meher crops, harvest and post- harvest activities at some lowlands of the aforementioned areas. On the other hand, the Bega dry, windy and sunny condition might have favored Mehre harvest and post harvest activities. While, the daily extreme minimum temperature in some highland areas experienced below 5°C which might have caused increase in the risk of frost damage on late planted Merhe crops that are found at pre-maturing stages and livestock.

During the third dekad of November 2009, Bega dry, windy and sunny weather condition was prevailed over most parts of the country, thus, favored Mehre harvest and post harvest activities. On the other hand, at the end of the dekad due to the formation of rain bearing meteorological phenomena over our regions refit valley, northeastern, southwestern, western and southeastern parts of the country might have received rainfall. The situation might have favored for perennial crops and availability of pasture and drinking water over pastoral and agro pastoral area of the country, on the contrary the situation might have a negative impact on Matured Meher crops, harvest and post- harvest activities at some lowlands of the aforementioned areas

Generally during the month of November 2009, Bega dry, windy and sunny weather condition prevailed over most parts of the country. The situation might have favored Mehre harvest and post harvest activities. On the contrary, the daily extreme minimum temperature in some highland areas experienced below 5°C might have increase in the risk of frost damage on late planted Merhe crops that are found at pre-maturing stages and perennial crops, livestock and livestock products. At the same time, southern and southwestern and western portions of the country get rain. At the end of month rain giving meteorological phenomena over rift valley, northeastern, eastern and central parts of the country caused to receive unseasonal rain. The situation might have favored perennial crops, availability of pasture and drinking water over pastoral and agro pastoral area of the country, on the contrary, the situation might have caused a negative impact on Matured Meher crops, harvest and post-harvest activities at some lowlands of the aforementioned areas. Jimma, Chercher, Harar, Kons and Meisso reported heavy falls 41.1, 34.9, 35.5, 58.0 and 37.4 mm of rainfall in one rainy day.

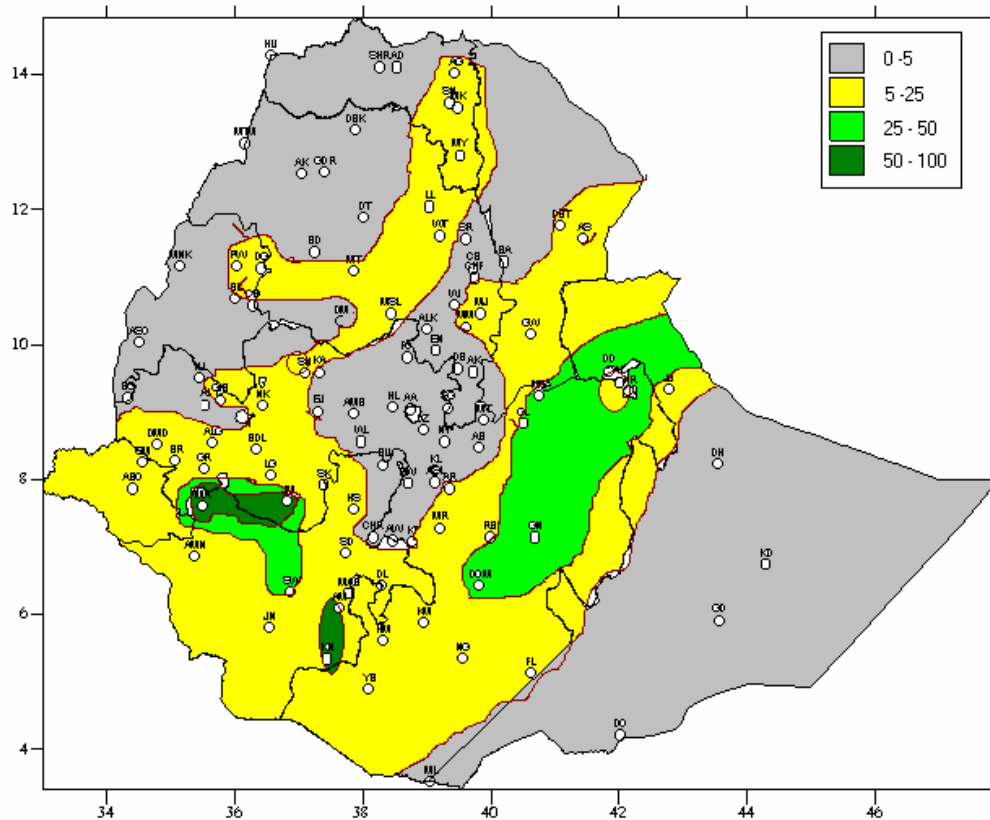


Fig 1 Rainfall distribution in mm (21 – 31 November, 2009)

1. WEATHER ASSESSMENT

1.1 (21 – 31 November, 2009)

1.1.1 Rainfall amount (Fig.1)

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

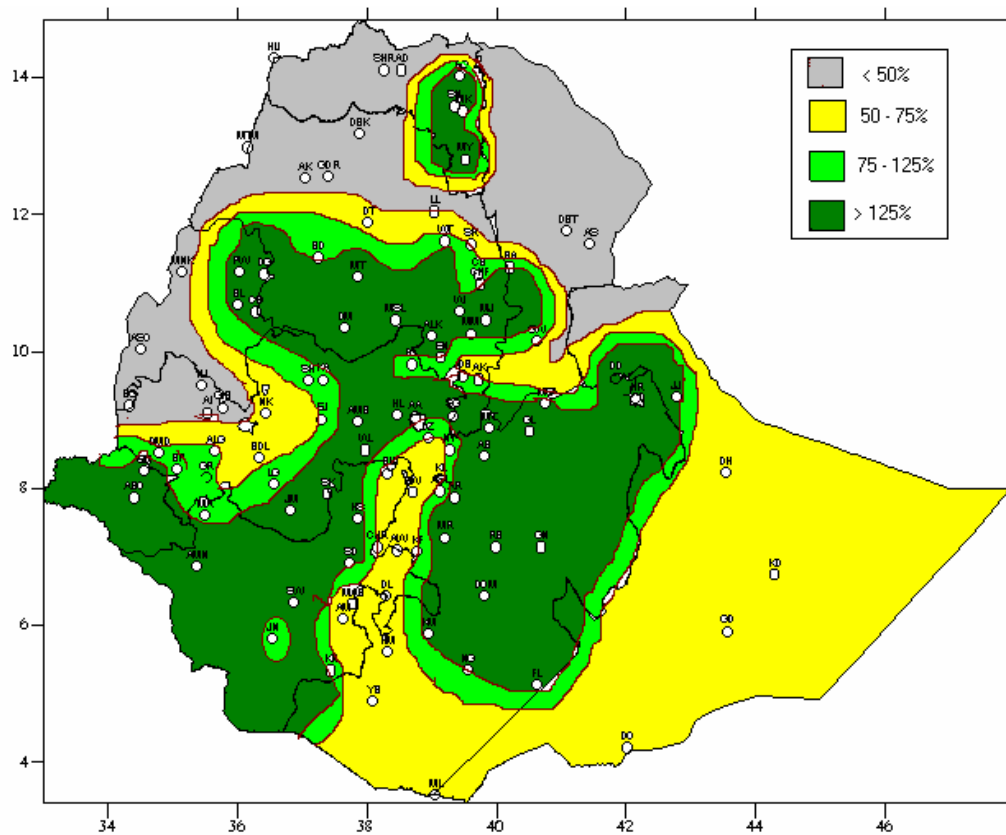


Fig. 2 Percent of normal rainfall distribution (21 – 31 November, 2009)

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)

Gambela, SNNPR, southern half of Amhara, parts of eastern Benshangul-Gumuz, central, southern and eastern Oromia, southwestern Somali and eastern Tigray received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

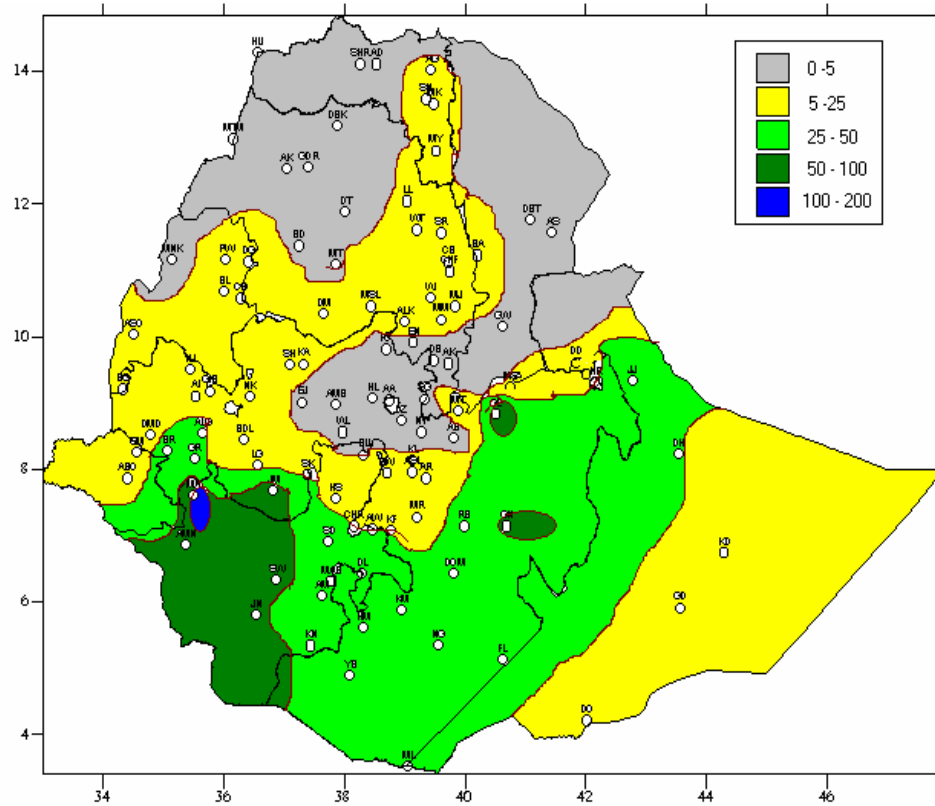


Fig. 3 Rainfall distribution in mm for the month of November, 2009

1.2 November, 2009

1.2.1 Rainfall distribution (Fig.3)

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

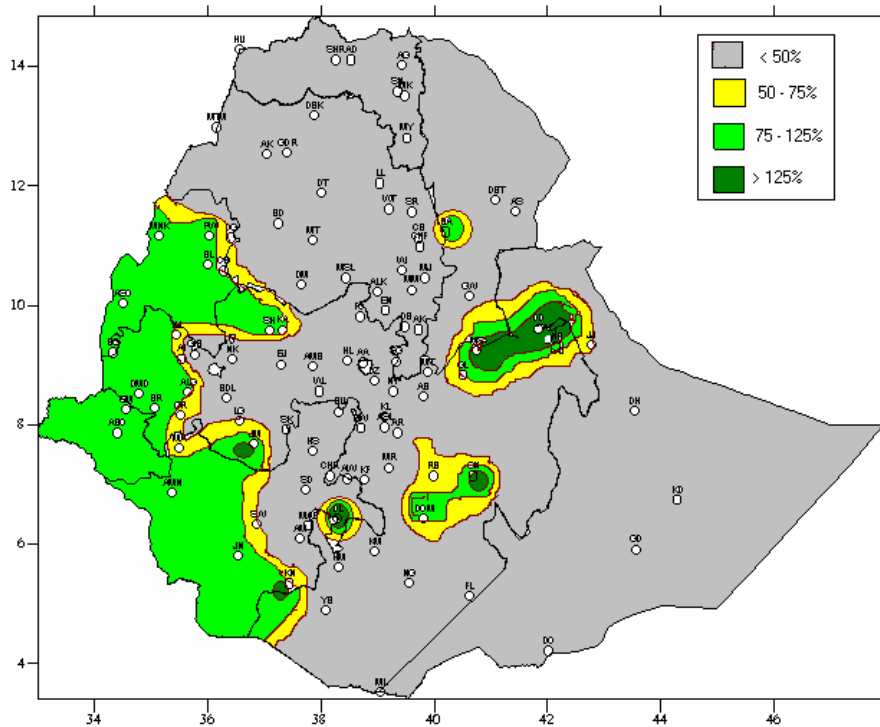


Fig. 4 Percent of Normal Rainfall distribution for the month of October, 2009

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)

Gambela, much of Benshangul-Gumuz, western half of SNNPR, parts of western and pocket areas of southern and eastern Oromia and pocket area of eastern Amhara received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

1.3 TEMPERATURE ANOMALY

During the month of November 2009, some areas exhibited extreme maximum air temperature above 35 °C. Among the recording stations Gode, Gambella, Assayta, Semera, Metehara, Mytsemrie, Mankush, Humera, Pawe and Sirba abaya, recorded extreme maximum temperature as high as 36.0, 40.0, 38.0, 38.0, 35.6, 36.5, 38.0, 41.6, 35.2 and 35.5°C respectively. On the other hand there are some stations which are reported a minimum below 5°C. Among those Arsi Robe, Wegel Tena, Debre Markos, Debre Brihan, Robe, Shola Gebeya, Motta, Mehal Meda, laiber, Kulumsa, Koffle, Fitch, Enwary, debre Zite, Nekemt, Jimma, Adele, Adet, Atsbi, Dangla and Alemaya reported minimum Temperature as low as 2.5, -0.4, 4.5, -2.5, 3.2, 4.0, 2.0, 1.2, 4.5, 2.4, -0.7, 1.0, 4.0, 0.1, 4.8, 0.0, 2.5, 4.5, 4.0, 4.0 and -2.0°C. This extreme hot and cool condition would have a negative impact on crops and livestock 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 November 2009, Bega dry, windy and sunny weather condition prevailed over most parts of the country. The situation might have favored Mehre harvest and post harvest activities. On the contrary, the daily extreme minimum temperature in some highland areas experienced below 5°C might have increase in the risk of frost damage on late planted Merhe crops that are found at pre-maturing stages and perennial crops, livestock and livestock products. At the same time, southern and southwestern and western portions of the country get rain. At the end of month rain giving meteorological phenomena over Rift valley, northeastern, eastern and central parts of the country caused to receive unseasonal rain. The situation might have favored perennial crops, availability of pasture and drinking water over pastoral and agro pastoral area of the country, on the contrary, the situation might have caused a negative impact on Matured Meher crops, harvest and post-harvest activities at some lowlands of the aforementioned areas. Jimma, Chercher, Harar, Kons and Meisso reported heavy falls 41.1, 34.9, 35.5, 58.0 and 37.4 mm of rainfall with in one rainy day.

2.2 EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING MONTH

Unseasonal rainfall activity expected to occur due to rain bearing meteorological phenomena due to the warming of the Indian and Atlantic Ocean and Arabian and Mediterranean Sea starting from the last dekad of November 2009. The rainfall activity will prevail over the adjoining areas of rift valley, southwestern, southern and central eastern and northeastern portions of the country. As a result eastern Tigray, eastern and central Amhara and eastern and central Ethiopia and western and southern Oromiya and SNNPR will receive normal to above normal rainfall while, southern portions of Benishangul- Gumuz, Gambela, southern portions of Somalia will receive near normal rainfall. The situation will favor perennial and late sown Meher crops and availability of pasture and drinking water for pastoral and agro pastoral area of the country. On the contrary, the situation might have a negative impact on Matured Meher crops, harvest and post- harvest activities at some aforementioned areas of the country.

Table 1 Crop Phenological report for the third dekad of November 2009

Station name	Region	Zone	Woreda	Major Crops			Phases		
				1	2	3	1	2	3
Adele	Oromiya	Arsi	Amiga	Maize	-	-	FR	-	H
A/Ketem	Amahara	N/Shoa	Laybet	Teff	Nug	-	H	DR	-
Fitch	Oromiya	N/Shoa	G/Jarso	Teff	Wheat	Beans	R	WR	-
Dangla	Amhara	Agawawi	Dangla	-	Millet	-	H	Ta	-
Gihion	Oromiya	W/Shoa	Wiliso	-	Wheat	Teff	-	-	FI
Shambu	Oromia	E/Wollega	H/Gudru	Beans	Peans	Wheat	H	H	-
Gelmsa	Oromiya	W/Haririgie	Habru	-	-	Teff	-	-	R
D/Markos	Amhara	E/Gojam	Gozamin	Teff	Wheat	-	R	WR	-

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 November 2009

No.	Stations	Region	Rainfall	Normal	% of Normal	ETo mm/day	Eto Monthly	Moisture	Moisture statues
1	Humera	TIGRAY	0	0.2	0	6.02	180.6	0	VD
2	Maichew		13.3	25.1	53	NA	NA	NA	NA
3	Mekele		5.6	6	93.3	5.32	159.6	0	VD
4	Maytsermi		2.7	0	NA	NA	NA	NA	A
5	Senkata		20.7	17.1	121.1	4.48	134.4	0.1	D
1	Assayta	AFAR	0	2.5	0	6.19	185.7	0	VD
2	Elidar		0	3.7	0	6	0	0	VD
3	semera		0	0	0	6.27	188.1	0	VD
1	ADET	AMHARA	6.8	NA	NA	3.12	93.6	0.1	D
2	BAHIR DAR		3	21	14.3	4.02	120.6	0	VD
3	BATI		16.3	16.6	98.2	3.66	109.8	0.1	D
4	COMBOLCHA		11.5	19.7	58.4	3.37	101.1	0.1	D
5	DBREBREHAN		1.2	6.8	17.6	4.16	124.8	0	VD
6	DEBEREMARKOS		10.9	23.7	46	3.94	118.2	0.1	D
7	DEBRETABOR		3	33	9.1	3.28	98.4	0	VD
8	DEBREWOK		3.7	13	28.5	NA	NA	NA	NA
9	ENEWARI		0	7.2	0	4.18	125.4	0	VD
10	GONDER		3.2	24.3	13.2	3.94	118.2	0	VD
11	HUMERA		0	0.2	0	6.02	180.6	0	VD
12	LAIBER		0.6	0		3.59	107.7	0	VD
13	LALIBELA		NA	NA	NA	3.74	112.2	0	VD
14	MEHALMEDA		5.3	5.3	100	3.79	113.7	0	VD
15	MEKANESELAM		10	NA	NA	3.74	112.2	0.1	D
16	MOTTA		13.7	34.3	39.9	3.67	110.1	0.1	D
18	SHAHURA		20.5	NA	NA	NA	NA	NA	NA
19	SHOLAGEBEYA		0	NA	NA	3.85	115.5	0	VD
20	WEGEL TENA		0	13	NA	3.5	105	0	VD
21	WOREILU		0	9.1	NA	3.68	110.4	0	VD
1	ADELE		OROMIA	16.9	NA	NA	3.76	112.8	0.1
2	AIRA	0.5		44.2	1.1	NA	NA	NA	N A
3	ALAGE	29.3		37.1	79	3.64	109.2	0.3	MD
4	ALEMEYA	12.4		19.1	64.9	2.95	88.5	0.1	D
5	ALEMKETEMA	1		10.3	9.7	4.16	124.8	0	VD
6	AMBO AGRC.	1.7		5.3	32.1	4.49	134.7	0	VD
7	ARSI ROBE	11		22	50	3.63	108.9	0.1	D
8	BEDELLE	0.6		26.8	2.2	3.7	111	0	VD
9	BLATE	34.6		27.5	125.8	4.71	141.3	0.2	D
10	BUI	0		6	0	4.55	136.5	0	VD
11	CHERCHER	37.5		NA	NA	NA	NA	NA	NA
12	CHIRA	0		NA	NA	3.92	117.6	0	VD
13	DEBREZEIT	0.8		5	16	4.73	141.9	0	VD
14	DEMBI DOLLO	0		NA	NA	3.6	108	0.1	D
15	DOLOMENA	47.5		52.5	90.5	3.94	118.2	0.4	MD
16	FITCHE	0		8.4	0	3.49	104.7	0	VD
17	GELEMSO	63.4		34.5	183.8	4.11	123.3	0.5	MD
18	GIMBI	0.7		19.1	3.7	3.57	107.1	0	VD
19	GINIR	83.4		60.4	138.1	4.13	123.9	0.7	
20	GORE	20.4		93.9	21.7	3.46	103.8	0.2	D
21	JIMMA	78.4		58.6	133.8	3.21	96.3	0.8	M
22	KACHISE	4.5	32	14.1	3.45	103.5	0	VD	

23	KOFELLE		12.2	44.2	27.6	3.49	104.7	0.1	D
24	KULUMSA		0.9	12.8	7	4.48	134.4	0.1	D
25	LIMUGENET		8	40.6	19.7	3.58	107.4	0.1	D
26	MAJETE		11.4	27.5	41.5	3.86	115.8	0.6	M
27	MASHA		110.4	128.9	85.6	2.77	83.1	1.3	H
28	METEHARA		2.5	3.4	73.5	4.58	137.4	0	VD
29	MIESSO		38.4	20.6	186.4	4.43	132.9	0.3	MD
30	NAZRETH		0.4	7.8	5.1	5.39	161.7	0	VD
31	NEKEMTE		15.3	52.5	29.1	3.43	102.9	0.1	D
32	ROBE		36.2	50.2	72.1	3.46	103.8	0.3	MD
33	SEKORU		10.7	15.7	68.2	3.69	110.7	0.1	D
34	SHAMBU		22.7	23.9	95	NA	NA	NA	NA
35	ZWAYE		0	4	0	3.29	98.7	0	VD
1	ARBA MINCH	SNNPR	13.2	61.7	21.4	4.22	126.6	0.1	D
2	AWASSA		5.4	40.9	13.2	4.06	121.8	0	VD
3	SAWLA		52.1	72.9	71.5	3.9	117	0.4	MS
4	HAGEREMARIAM		21.4	57.5	37.2	3.21	96.3	0.2	D
5	HOSSAINA		5.1	17.3	29.5	NA	NA	NA	NA
6	JINKA		84.7	104.2	81.3	3.54	106.2	0.8	M
7	KIBREMENGIST		33.8	69.5	48.6	3.37	101.1	0.3	MD
8	KONSO		90.9	48.3	188.2	4.66	139.8	0.7	M
1	BULLEN	B/GUMUZ	0	18.6	0	2.9	87	0	VD
2	CHAGINI		23	27.9	82.4	3.71	111.3	0.2	D
3	DANGLA		26.6	31.8	83.6	3.02	90.6	0.3	MD
4	PAWE		6.3	12.8	49.2	4.2	126	0.1	D
	MANKUSH		1	NA	NA	NA	NA	NA	NA
1	Gode	SOMALIA	14	29.2	47.9	5.33	159.9	0.1	D
2	Jiiiga		4.9	18.7	26.2	4	120	0	VD
1	Harar	HARAR	44	11.6	379.3	3.89	116.7	0.4	D
1	D/Dawa	D/DAWA	35.8	15.6	229.5	4.3	129.9	0.3	D
1	A.A. Bole	A.A	2.7	8.4	32.1	3.7	109.8	0	VD
2	A.A. Obs		3.4	6.3	54	5	149.4	0	VD

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.

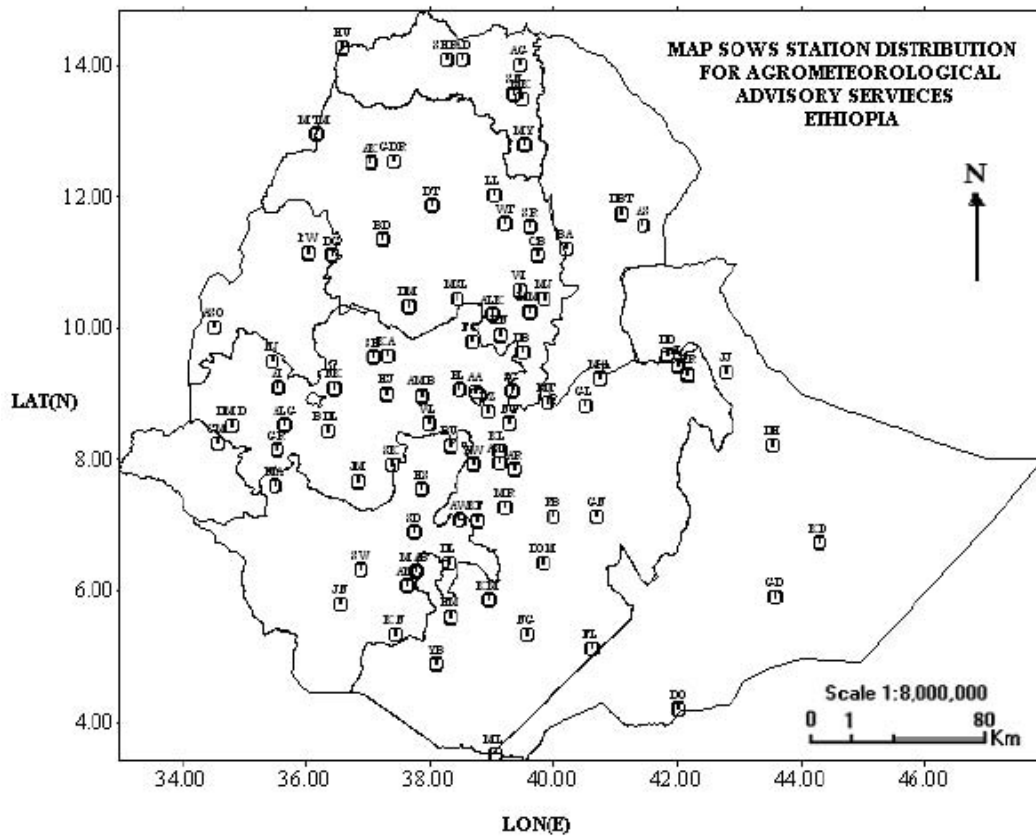
DEKAD: - First or second ten days or the remaining days of a month.

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

ITCZ: - Inter tropical 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		