## NATIONAL METEOROLOGICAL SERVICES AGENCY AGROMETEOROLOGICAL BULLETIN

## MONTHLY AGROMETEOROLOGICAL BULLETIN FEBRUARY 2006 VOLUME 17 No. 6 DATE OF ISSUE: - March 5, 2007



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# FORE WARD

This Agro met Bulletin is prepared and disseminated by the National Meteorological Services 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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# አሀፅሮት እ.ኤ.አ ፌብርዋሪ 2007

እ.ኤ.አ በፌብርዋሪ 2007 በመጀመሪያዉ አስርተ ቀናት ምስራቅ ትግራይና አማራ፣ ደቡብ አፋር፣ ምዕራብና ደቡብ ኦሮሚያ፣ የደቡብ ብሄር ብሄረሰቦች ህዝቦች ክልል እንዲሁም መካከለኛዉ ምስራቅ ኢትዮጵያ ዝናብ አግኝተዋል። ይህም የነበረዉ የእርሞበት ሁኔታ ለበልግ ወቅት የእርሻ እንቅስቃሴ በጎ ጎን እንደሚኖረዉ ይታመናል። በተጨማሪም የበልግ ወቅት ማሳ ዝግጅትና የአቄርና የመካከለኛዉ ጊዜ ሰብሎች ቀደም ብለዉ ለሚዘሩት አካባቢዎች እንደ ደቡብ አማራ፣ የደቡብ ብሄር ብሄረሰቦች ሕዝቦች ክልል ደጋማ ሥፍራዎች ዋሩ አስተዋፅኦ እንደሚኖረዉ ይታመናል። በሌላ በኩል ደግሞ በተጠቀሱት አካባቢዎች የነበረዉ የእርጥበት ሁኔታ የቀኑን ዝቅተኛ የአየር ሙቀት እንደሚጨምር በማድረግ የዉርጭ ክስተትን ያዳክማል። ይህም ሁኔታ ለቋሚ ሰብሎች (perennial crops) ለአትክልትና ፍራፍሬ በጎ ጎን እንደሚኖረዎ ይታመናል። ከባድ ዝናብን በተመለከተ በኮፌሌ 59፣ በጅንካ 37.7 እንዲሁም በወሊሶ 30.1 ሚ.ሜ. ዝናብ በአንድ የዝናብ ቀናት ብቻ አግኝተዋል። የሙቀት መጠንን በተመለከተ በአብዘዛኛዉ የሀገሪቱ ስፍራዎች ዝቅተኛ የሙቀት መጠን ቀንሶ ነበር የታየዉ። ከ5 ዲ.ሴ. በታች የነበረዉ ዝቅተኛ የሙቀት መጠን አልተከሰተም። ይህም ሁኔታ በቋሚ ሰብሎችና የጓሮ አትክልት እንዲሁም በአንዳንድ አካባቢዎች ባልተሰበሰቡ አዝርዕት ላይ ዋሩ ጎን እንደሚኖረዉ ይታመናል።

እ.ኤ.አ በፌብርዋሪ 2007 በሁለተኛወ አስርተ ቀናት በአብዛኛወ የአማራ ምስራቅና ደቡብ ምስራቅ ትግራይ፣ ዋቂት የመካከለኛ ኦሮሚያ፣ አንዲሁም አብዛኛወ የኦሮሚያ ክፍል፣ የሰሜን ሱማሌ ኪስ ቦታዎችን ጨምሮ መደበኛና ከመደበኛ በላይ ዝናብ አግኝተዋል። ይህም ከላይ በተጠቀሱት አካባቢዎች የነበረወ እርሞበት ለበልግ ወቅት የእርሻ እንቅስቃሴ ለምሳሌ የማሳ ዝግጅትን ለማድረግ፣ ዘር ለመዝራት፣ በተጨማሪም ተዘርተወ በቡቃያ ላይ ላሉ ሰብሎች በነ ጎን እንደሚኖረወ ይታመናል። በተጨማሪም በአንዳንድ የሰሜን ምስራቅ የአርብቶ አደሩ ስፍራዎች ለግጦሽ ሣርና ለመጠዋ ወኃ አቅርቦት ዋሩ አስተዋፆኦ ይኖረዋል። ከበድ ያለ ዝናብን በተመለከተ አንዳንድ የመካከለኛወ (ኩሉምሳ፣ መሀልሜዳ፣ ሸዋሮቢት) የምእራብ (ሻምቡ) እና የሰሜን ምስራቅ (ሲሪንቃና ጨፋ) የሀገሪቱ ክፍሎች ከ25-50.9 ሚ.ሜ የሚደርስ ዝናብ በአንድ የዝናብ ቀናት ብቻ አግኝተዋል። ይህም የዝናብ ሁኔታ ለወቅቱ የእርሻ እንቅስቃሴ በጎ አስተዋፆኦ እንደሚኖረወ እሙን ነወ።

እ.ኤ.አ በየካቲት 2007 በሦስተኛዉ አስርተ ቀናት አብዛኛዉ ጋምቤላ፣ አንዳንድ የምዕራብ ኦሮሚያና የደቡብ ብሔር ብሔረሰቦች ምስራቃዊ ኪስ ቦታዎች በስተቀር በአብዘኛዉ የአገሪቱ ክፍሎች ከመደበኛዉ በታች የሆነ ዝናብ ነበር ያገኙት። ይህም ሁኔታ በልግ አብቃይ ለሆኑትና በአሁኑ ስአት

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የማሳ ዝግጅትና የዘር ጊዜአቸዉ ለሆኑትና በተለይ በአለፌዉ የአሥር ቀናት እጥረት ለነበረባቸዉ የመካከለኛዉና ምስራቅ ኦሮሚያ፣ የምስራቅ የደቡብ ብሄር ብሄረሰኖችና ሕዝቦች ክልል በልግ አብቃይ አካባበቢዎች በአሥሩ ቀን የታየዉ የእርጥበት እጥረት የጎላ አሉታዊ ተፅዕኖ እንደሚያሣድር እሙን ነዉ።

በአጠቃሳይ እ.ኤ.አ በፌብርዋሪ 2007 በተለይ በወሩ ሦስተኛ አስር ቀናት በአብዛኛዉ በልግ አብቃይ አካባቢዎች የዝናብ እጥረት ነበር። ይሁን እንጂ በሁለተኛዉ አሥር ቀናት በምሥራቅና ደቡብ ትግራይ፣ በምሥራቅ አግራ በመጀመሪያዉ አሥር ቀናት ደግሞ ከደቡብ ትግራይና ሰሜን ምሥራቅ አማራ በስተቀር በአብዛኛዉ የበልግ አምራች አካባቢዎች ለማሣ ዝግጅትና ለዘር ጊዜ አመቺ የሚሆን ዝናብ ነበር። ጠቅለል ባለ መልኩ ሲወሰድ በተለይ ቀደም ብለዉ ከታህሣሥ ወር ጀምረዉ የማሣ ዝግጅት በሚጀምፉትና በአብዛኛዉ በዋር ወር ወደ ዘር ለሚሽጋገሩት እንደ ደቡብ ትግራይና ሰሜን ምሥራቅ አማራ ላሉት አካባቢዎች በወሩ የመጀመሪያና ሦስተኛ አስር ቀናት ላይ የዝናብ እምረት መኖሩ ቀዴም ብለዉ ተዘርተዉ በቡቃያ ላይ ባሉ አዝርዕት የወኃ ፍላጎት ላይ አሉታዊ ተፅዕኖ እንደሚያስክትል እሙን ነዉ። በሌላ በኩል በወሩ ዉስዋ በመደበኛ ሁኔታ የዋራዋሬ አዝርዕት (አተር፣ ባቄሳና ምሥር)፣ የብርዕ ሰብልና የአገዳ ሰብል የዘር ጊዜያቸዉ ለሆነዉ እንደ አርሲ ሮቤ፣ ወገል **ጤና፣ ጪራ፣ ባሌ ሮቤ፣ ወናሳ፣ ይር**ጋ ጨፌ፣ ዓለማያ፣ ቡሌ፣ ኮቸሬ፣ ቡኢ፣ <u> የዮሴ፣ ከምባታና ሃዲያ በመሣሰሉት ቦታዎች በአመዛኙ ማለትም</u> በመጀመሪያዎቹ ሁለት አሰርት ቀናት የነበረዉ የዝናብ ሁኔታ አመቺ እንደሚሆን ይታመናል።

# SUMMARY FEBRUARY 2007

During the first dekad of February 2007, the observed normal to above normal rainfall over southern Afar, eastern and southern Oromia, southern Amhara and central parts of eastern Ethiopia and the exhibited below normal rainfall over eastern Tigray would have a positive contribution for the ongoing Belg season agricultural activities. Moreover, it would have positive impact in areas like southern Amhara, highlands of SNNPR, where Belg activities like land preparation and sowing activities of short and medium cycle crops starts earlier. Besides, the observed wet moisture condition over the aforementioned areas decreases the extreme minimum temperature from frost prone areas. Regarding heavy fall, Weliso, Jinka and Kofelle reported heavy fall 30.1, 32.7 and 59.0 respectively in one rainy day. With regard to air temperature, there was a significant improvement of extreme minimum temperature i.e. rise in amount in most parts of frost prone areas. No station reported extreme minimum temperature of frost prone areas. No station reported extreme minimum temperature of frost prone areas. No station reported extreme minimum temperature of frost prone areas. No station reported extreme minimum temperature of plants.

During the second dekad of February 2007, During the second dekad of February 2007, the observed normal to above normal rainfall over most parts of northeastern Amhara, southeastern Tigray, few areas of central Oromia as well as pocket areas of northern Somali could have a positive contribution for Belg agricultural activities like land preparation, sowing activities, and crops which are at early vegetative stage over the aforementioned areas. Moreover, it could also have a positive impact for the availability of pasture and drinking water over some areas of northeastern pastoral areas. Besides, central (Kulumsa, Mehal Meda, Shewa Robit), western (Shambu), northeastern (Sirinka and Cheffa) recorded heavy fall ranging from 25-50.9 mm in one rainy day. This situation would have a positive contribution for the ongoing Belg agricultural activities

During the third dekad of February 2007, with the exception of most parts of Gambela, some areas of western Oromia and pocket areas of eastern SNNPR, it has been a dry spell over most parts of the country. Thus this situation could have negative impact on Belg crops in areas where sowing activity has performed earlier. Besides it could have significant negative effect on early season's Belg agricultural activities particularly in areas like central and eastern Oromia including eastern parts of SNNP where the deficient moisture condition persisted during the preceding dekad.

Generally throughout the month under review particularly during the third dekad of the month the deficient rainfall condition has been observed over most parts of the country. However the observed good rainfall over most parts of Belg growing areas, excluding South Tigrai and northeastern Amhara, during the first dekad and over eastern and South Tigray including eastern Amhara, during the second dekad, could favor land preparation and sowing activities in the areas. When we see the over all performance of Belg rainfall situation since the on set of the season there was deficient rainfall during the first dekad and third dekad of the month particularly in some pocket areas where the Belg agricultural activities start earlier like South Tigray and northeaster Amhara. Therefore, this condition could result in water stress on the existing crops over the aforementioned areas. On the other hand the observed better rainfall particularly during the first and second dekad of February 2007 over most parts of SNNPR, central Oromia, eastern Amhara including pocket areas of eastern highlands could favour sowing activity in areas like Arsi Robe, Wegel Tena, Chira, Bale Robe, Wonago, Yirga Chefe, Alemaya, Bule, Kochere, Bui, Gidole, Kembata and Hadia where sowing of pulses (beans, peas and lentil) and cereals is the normal practice at this time of the year.



## Fig 1. Rainfall distribution in mm (21 - 28 February, 2007)

## 1. WEATHER ASSESSMENT

1.1 (21 – 28 February, 2007)

## 1.1.1 Rainfall amount (Fig.1)

Only pocket areas of western and southern Oromia, eastern Gambela, pocket area of eastern SNNPR, and pocket area of southern Amahara received 5-25mm rainfall. The rest parts of the country exhibited little or no rainfall.



Fig. 2 Percent of normal rainfall distribution (21-28 February, 2007)

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)

Only pocket areas of western, northern Gambela, eastern Benshalgul-Gumuz and southern Amahra 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 February 2007

## 1.2 February 2007

## 1.2.1 Rainfall distribution (Fig.3)

Only pocket area of southern SNNPR received 100-200mm rainfall. Western, eastern, northern and southern SNNPR, western, southern and pocket area of central Oromia and pocket areas of eastern and southern Amahra experienced 50-100mm rainfall. Northern and southeastern SNNPR, western, northern, central and southern Oromia, eastern Gambela, eastern and southeastern Amahra, tip of eastern Benshalgul-Gumuz and eastern Somali exhibited 25-50mm rainfall. Western, central, eastern and southern Oromia, northern, western and southern Gambela, eastern Benshalgul-Gumuz, southern and eastern Amahra, northeastern Tigray, southern Afar and northern Somai received 5-25mm rainfall. The rest parts of the country exhibited little or no rainfall.



Fig. 4 Percent of Normal Rainfall distribution for the month of February 2007

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 western, northwestern and southern SNNPR, all parts of Gambela, western, central, northern and southern Oromia, eastern Benshalgul-Gumuz, southern and eastern Amahra, tip of northern Tigray and northern Somali received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

## **1.3 TEMPERATURE ANOMALY**

Some areas like Metema and Gambela exhibited extreme maximum temperature greater than  $40^{\circ}$ C during the month.

## 2. WEATHER OUTLOOK

## 2.1 For the first dekad of March 2007

For the coming ten days, the dry and hot weather conditions will continue in similar manner over various portions of the country. However, relative moisture incursion towards the country is expected across few places of the nation. As a result western and southern Oromia including SNNPR will get near normal rainfall. Besides eastern Tigray and Amhara central and eastern Ethiopia will receive light rain shower from their cloud coverage, however, it will be below normal. Other wise the rest parts of the country will be under dry and hot weather conditions.

## 2.2 For the month of March 2007

During the next month, the seasonal rainfall activity is expected to have better performance over the main Belg rainfall benefiting areas while due to the Belg season's high variable nature there will be dry spells on consecutive days.

In general, eastern Tigray and Amhara, western and southern Somalia as well as SNNPR will receive close to normal rainfall. Moreover central and eastern Ethiopia will have a chance of getting near normal rainfall. On the other hand northwestern north eastern and southern eastern low lands of the country will have below normal rainfall and will experience hot and dry weather conditions.

## 3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

#### 3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

Throughout the month under review particularly during the third dekad of the month the deficient rainfall condition has been observed over most parts of the country. However the observed good rainfall over most parts of Belg growing areas, excluding South Tigrai and northeastern Amhara, during the first dekad and over eastern and South Tigray including eastern Amhara, during the second dekad, could favor land preparation and sowing activities in the areas. When we see the over all performance of Belg rainfall situation since the on set of the season there was deficient rainfall during the first dekad and third dekad of the month particularly in some pocket areas where the Belg agricultural activities start earlier like South Tigray and northeaster Amhara. Therefore, this condition could result in water stress on the existing crops over the aforementioned areas. On the other hand the observed better rainfall particularly during the first and second dekad of February 2007 over most parts of SNNPR, central Oromia, eastern Amhara including pocket areas of eastern highlands could favour sowing activity in areas like Arsi Robe, Wegel Tena, Chira, Bale Robe, Wonago, Yirga Chefe, Alemaya, Bule, Kochere, Bui, Gidole, Kembata and Hadia where sowing of pulses (beans, peas and lentil) and cereals is the normal practice at this time of the year.

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

The anticipated near normal rainfall over Belg growing areas of South Tigray, eastern Amhara, Oromia and SNNPR would favor the water requirements of the existing Belg crops. Moreover the expected moisture condition over the aforementioned areas would have positive impact on early season's agricultural activities over central (Meraro, Ziway, Kulumsa), SNNPR (Hosaina, Awasa, Wenago, Yirga Chefe, Kochere, Sidama, Tepi), northeastern (Srinka), eastern (Gelemso, Mieso, Alemaya) and southern midlands of Ethiopia (Dolo Mena) where sowing and land preparation is the normal practices at this time of the year. On the other hand the expected erratic rainfall distribution particularly over the lowlands would negatively affect crop's water requirement. Thus farmers are advised to give proper attention for appropriate water-harvesting techniques especially over the lowlands. The expected near normal rainfall over western Ethiopia would favour sowing and land preparation in areas like Limu Genet, Sekoru and the like. Besides it would have positive contribution for perennial crops. Nevertheless, the anticipated below normal rainfall over pocket areas of the aforementioned areas would have negative impact. Thus, the concerned personnel should design appropriate alternate solution to tackle the expected adverse condition to minimize the risk. The expected erratic rainfall in some lowlands of Belg growing areas would favour the outbreak of pest and diseases. Therefore, close monitoring and appropriate preparedness measures should be undertaken ahead of time particularly over sensitive areas to control the danger below economic threshold level.

		-	Α/		%of	ETo	Monthly	
	Stations	Region	rainfall	Normal	Normal	mm/day	ETo	Moisture
								status
1	Adigrat	TIGRAI	16.5	10.0	165.0	NA	NA	NA
2	Maichew		0.0	25.2	0.0	NA	NA	NA
3	Mekele		5	9	54.5	4.8	134.4	VD
1	Assayta	AFAR	0.3	9.5	3.2	5.19	145.32	VD
2	Dubti		3.5	15.3	22.9	NA	NA	NA
1	A Ketema	AMHARA	33.4	20.5	162.9	4 1	114.8	MD
3	Avkel	,	0	22	0.0	NA	NA	NA
4	Bahir Dar		0	1.8	0.0	4 1	114.8	VD
5	Bati		91	41 7	21.8	3.52	98.56	VD
6	Bullen		32	0.3	1066.7	3.96	110.88	VD
7	Combolcha		34	37.3	91.2	36	100.8	MD
8	Chefa		71.9	40.0	179.8	3.9	109.2	M
9	D.Birhan		30.6	18.6	164.5	3.86	108.08	MD
10	D.Markos		15.6	17.6	88.6	4 3	120.4	D
11	D.Tabor		0.5	6.8	7.4	NA	NA	NA
12	Enwary		57.5	13	456.3	4.72	132.16	MD
13	M.Meda		51.2	26	198.4	3.66	102.48	MD
14	Maiete		20.1	49	41.2	3 74	104 72	D
15	Metema		0	0	0.0	4.74	132.72	VD.
16	Motta		12.4	13	98.4	4.05	113.4	D
17	Lalibela		10.7	13	84.9	3.68	103.04	D
18	S. Gebeya		11.2	24	46.1	3.83	107.24	D
19	Sirinka		78.3	61	128.4	3.3	92.4	М
20	W. Tena		17.6	23	76.5	3.71	103.88	D
21	Wereilu		25.3	30	83.2	3.54	99.12	MD
1	Ambo Agri		14.2	36.6	20.0	ΝΑ	ΝΙΔ	ΝΔ
1	Allibo Agri.	OROIVITA	14.2		30.0			
2	Alla		9.1	24.1	12.7	1 2	120.4	
3	Aleniaya		3.3	17.0	120.6	4.3 NA	120.4 NA	
4	Ange		23.2	36.6	38.8			
6	Ario		80	23.7	375.5			
7	Bedelle		59.3	20.7	278.4	3.86	108.08	M
8	Begi		2.8	8.0	35.0	NA	NA	NA
g	Bui		33.4	19.8	168.7	NA	NA	NA
10	Chira		62.8	56.0	112.1	NA	NA	NA
11	D.Dollo		31.6	14.1	224.1	3 511	98 308	MD
12	D.Mena		64	34.6	18.5	3 05	85.4	VD
13	D.Zeit		3.3	25.4	13.0	4.8	134.4	VD
14	Fitche		46.4	33	140.6	3.65	102.2	MD
15	Gelemso		5.5	35	15.9	4.61	129.08	VD
16	Gimbi		27.3	4	682.5	NA	NA	NA
17	Ginir		0.3	24	1.2	NA	NA	NA
18	H. Mariam		10.4	25	41.6	3.67	102.76	VD
19	Jimma		51.3	47	109.1	3.4	95.2	M
20	K.Mengist		18.2	22	84.7	3.81	106.68	D
21	Kachisa		37.5	27	137.4	3.8	106.4	MD

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

 of February 2007

22	Koffele		63.9	57	111.9	NA	NA	NA
23	Kulumsa		59.9	44	135.2	4.1	114.8	М
24	L. Genet		61.8	37	168.9	NA	NA	NA
25	Metehara		44	30	144.7	5.4	151.2	MD
26	Moyale		29.6	22	136.4	NA	NA	NA
27	Nazreth		21.6	27	79.4	5.46	152.88	D
28	Neghele		2.5	22	11.6	6.3	176.4	D
29	Nedjo		2.5	5	48.1	3.18	89.04	D
30	Nekemte		54.4	16	346.5	3.6	100.8	М
31	Robe(Bale)		40.6	32	128.9	4.3	120.4	MD
32	Sekoru		26.7	37	71.8	3.29	92.12	MD
33	Shambu		77.9	27	286.4	NA	NA	NA
34	Wolliso		44.8	30	149.3	NA	NA	NA
35	Yabello		14.2	37	38.8	NA	NA	NA
36	Ziway		37.1	35	107.2	4.46	124.88	MD
1	Gode	SOMALI	0.0	4.8	0.0	3.9	109.2	VD
2	Jijiga		34	25	136.8	NA	NA	NA
1	A.Minch	SNNPR	35.5	31.8	111.6	4.4	123.2	MD
2	Awassa		56.3	58.9	95.6	4.1	114.8	MD
3	Hosaina		51	52	98.3	NA	NA	NA
4	Jinka		102	47	216.1	2.66	74.48	Н
5	Konso		4	40	9.5	5.23	146.44	VD
6	M.Abay		29	32	88.5	4.87	136.36	D
7	Masha		79.7	53	150.7	2.97	83.16	М
8	Sawla		49	36	138.0	4.12	115.36	MD
1	Assosa	B/GUMUZ	0.0	4.2	0.0	5.36	150.08	VD
2	Chagni		6.3	7.1	88.7	5.01	140.28	VD
1	Gambela	Gambela	7	3	241.4	4.41	123.48	VD
1	A.A.Obs.	A.A	16.6	36	46.1	3.4	95.2	D
2	A.A. Bole		21.3	37.6	56.6	NA	NA	NA
1	Dire Dawa	D.D	28.6	32.7	87.5	4.2	117.6	D
1	Harar	Harai	3	12	28.8	NA	NA	NA

Legend					
VD	Very Dry	< 0.1			
D	Dry	0.1 - 0.25			
MD	Moderately Dry	0.25 - 0.5			
Μ	Moist	0.5 - 1			
Н	Humid	>1			
Explanatory Note					
ETo	Reference Evapotranspiration (mm)				

## **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 cover s southern, central, eastern and northeastern parts of the country.

**CROP WATER REQUIREMENTS**: - The amount of water needed to meet the water loss through evapotransipiration 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
Arbaminch	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	Movale	ML		