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 ፌብሩዋሪ 2010

እ.ኤ.አ በፌብርዋሪ 2010 የመጀመሪያው አስር ቀናት ዝናብ ሰጪ የሚቲዎሮሎጇ ክስተቶች በስምዋ ሸለቆ አካባቢዎች፣ በመካከለኛው በሰሜን ምስራቅ፣ በምስራቅና በደቡብ የሀገሪቱ ክፍሎች ላይ ዋንካሬ ስለነበራቸው በስርቄት የተስፋፋና በመጠንም በአንዳንድ አካባቢዎች ላይ ከባድ ዝናብ ተመዝግቧል። በዚሁ መሥረት በምስራቅና ደቡብ አማራ፣ አብዛኛው ኦሮሚያ፣ ደቡብ አፋር፣ የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ክልል ምስራቃዊ አጋማሽ እና የሰሜን ሱማሌ አካባቢዎች የተስፋፋ ዝናብ አግኝተዋል። ይህም ሁኔታ ለበልግ እርሻ እንቅስቃሴ እና ለማሳ ዝግጅት በተጨማሪ ለአርብቶ አደሩ እና ክፊል አርብቶ አደር ለግሎሽ ሳር እና የመጠዋ ውሃ አቅርቦት የጎላ ጠቀሜታ እንደነበረው እሙን ነው። በቀሪዎቹ የሀገሪቱ ክፍሎች ከአስሩ ቀን አጋማሽ በኋላ በአብዛኛው ክፊል ደመናማ የአየር ሁኔታ አመዝኖባቸው ቆይተዋል። ይህም ሁኔታ በመጠኑ ቢሆን የውሃ ትንትን ስለሚቀንስ በቋሚ ተክሎች ላይ የሚኖረውን የእርዋበት ችግር እንደሚቀንስ ይታመናል።

እ.ኤ.አ በፌብሪዋሪ 2010 በሁለተኛው አስር ቀናት የበልግ ዝናብ ሰጪ ክስተቶች የተሻለ ገዕታ ነበራቸው በመሆኑም በደቡብና ምስራቅ ትግራይ፣ በምስራቅ አማራና አጎራባች የአፋር አካባቢዎች፣ በአብዛኛው ኦሮሚያ፣ በሰሜን ሶማሌ፣ የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል አንዲሁም ጋምቤላና የቤንሻንጉል ጉሙዝ ደቡባዊ አካባቢዎች ዝናብ አግኝተዋል። ይህም ሁኔታ አብዛኛው በልግ አብቃይ አካባቢዎችን የሸፌን በመሆኑ የበልግ የእርሻ እንቅስቃሴን ቀድመው ለሚጀምሩትም ሆነ የማሳ ዝግጅትና የዘር ጊዜ በማካሄድ ላይ ላሉት ቦታዎች ጠቀሜታው የጎላ ነው። እንዲሁም በሰሜን ምስራቅና አጎራባች አካባቢዎች ለሚገኙት አርብቶ አደሮች ለግጦሽ ሳርና ለመጠዋ ውሃ አቅርቦት ጥሩ አስተዋፅኦ ነበረው። በሌላም በኩል የሰሜን ምዕራብ የሰሜን ምስራቅ እንዲሁም የደቡብ ምስራቅ ዝቅተኛ ቦታዎች ደረቅና ዐሐያማ ሁኔታ አመዝኖባቸው ቆይተዋል። ይህም ሁኔታ ከላይ ለተጠቀሱት ቦታዎች የእርሻ እንቅስቃሴ አሉታዊ ጎን አንደሚኖረው ይታመናል።

እ.ኤ.አ በፌብሪዋሪ 2010 የበልግ ዝናብ በመደበኛ ሁኔታ ከፌብርዋሪ አጋግሽ ጀምሮ በበልግ አብቃይ ሥፍራዎች ላይ የሚጀምርበት ጊዜ ነው። ባለፌው ፌብርዋሪ የሰምዋ ሸለቆና አጎራባች የሆኑ የሀገሪቱ ክፍሎች በአብዛኛው ዝናብ የነበራቸው ሲሆን በወሩ መጨረሻ ቀናት አብዛኛው የበልግ ዝናብ ተጠቃሚ የሆኑ የሀገሪቱ አካባቢዎች የተሰፋፋ ዝናብ አግኝተዋል። በመሆኑም አብዛኛው የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፤መካከለኛውና ምሥራቃዊ የሀገሪቱ ምሥራቅና ደቡብ አማራ፣ ምዕራብና ደቡብ ኦሮሚያ፣ መካከለኛውና ደቡብ ሶማሌ ምሥራቅ ትግራይና የቤንሻንጉል-ጉሙዝ አካባቢዎች እንደዚሁም የበልግ ዝናብ ተጠቃሚ አካባቢዎች፣ ቤንሻንጉል-ጉሙዝ፣ ጋምቤላና የምዕራብ ኦሮሚያ አብዛኛዎቹ አካቢቢዎች ና ደቡብ ትግራይ፣ አማራ የትግራይ አዋሣኝ የሆነው የአፋር ክልል፣ ተቂት የምዕራብ ኦሮሚያና የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፣ ኪስ ቦታዎች እንዲሁም የሶማሌ ደቡባዊ ክፍል ዝናብ አግኝተዋል ። ይጠበቃል።ይህም ሁኔታ በአካባቢው ለሚበቅሉ ቋሚ ተክሎችና በአካባቢው ለሚኖሩ አርብቶ አደሮችና ክፌል አርብቶ አደሮች ለመጠዋ ውሃና ለግጦሽ ሳር አቅርቦት፣ ለበልጉ የእርሻ እንቅስቃሴ እና ለመኸሩ እርሻ ማሳ ዝግጅት አዎንታዊ ተፅዕኖ እንደሚኖረው አሙን ነው።

በአጠቃላይ መልኩ ሲታይ በፌብሪዋሪ የነበረው የዝናብ መጠን ከመደበኛው ጋር ሲንጻጸር አብዛኛው የበልግ ዝናብ ተጠቃሚ አካባቢዎች፣ ቤንሻንጉል-ጉሙዝ፣ ጋምቤላና የምዕራብ ኦሮሚያ አብዛኛዎቹ አካቢቢዎች እንዲሁም ደቡብ ትግራይ፣ አማራ የትግራይ አዋሣኝ የሆነው የአፋር ክልል፣ ተቂት የምዕራብ ኦሮሚያና የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፣ ኪስ ቦታዎች እንዲሁም የሶማሌ ደቡባዊ እና አብዛኛው የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፣ ኪስ ቦታዎች እንዲሁም የሶማሌ ደቡባዊ እና አብዛኛው የደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል፣መካከለኛውና ምሥራቃዊ የሀገሪቱ ክፍሎች፣ ምሥራቅና ደቡብ አማራ፣ ምዕራብና ደቡብ ኦሮሚያ፣ መካከለኛውና ደቡብ ሶማሌ ምሥራቅ ትግራይና የቤንሻንጉል-ጉሙዝ አካባቢዎች ዝናብ አግኝተዋል። ይህም ሁኔታ በአካባቢው ለሚበቅሉ ቋሚ ተክሎችና በአካባቢው ለሚኖሩ አርብቶ አደሮችና ክፌል አርብቶ አደሮች ለመጠዋ ውሃና ለግጣሽ ሳር አቅርቦት፣ ለበልጉ የእርሻ እንቅስቃሴ እና ለመሽሩ እርሻ ማሳ ዝግጅት አዎንታዊ ተዕዕኖ እንደማኖረው እሙን ነው።

SUMMARY

February, 2010

During the first dekad of February 2010, due to strengthening of rain bearing meteorological phenomenon, there was extended and heavy falls over adjoining areas of Rift Valley, north eastern, eastern and southern parts of the country. North and southern Amahara, much parts of Oromia, southern Afar, eastern half of SNNPR and northern Somali received normal to above normal rainfall. The situation might have positive impact on Belg land preparation, availability of pasture and water over pastoral and agro-pastoral areas of the country. On the other hand, the rest of the country was dominated by partially cloudy condition which contributes in reducing the moisture stress.

During the second dekad of February 2010, due to the extended belg rain southern and eastern Tigray, eastern Amhara, adjoining area of Afar, most parts of Oromia, northern Somali, SNNPR also southern parts of Gambela and Benshangul-Gumuze received normal to above normal dekadal rainfall. The situation might have favored Belg agricultural activities where the season normally starts earlier and favored land preparation and sowing activities over Belg growing areas of the country as well as availabilities of pasture and drinking water over northeastern low lands of the country. On the other hand, dry and sunny conditions were dominated over northeastern, northwestern and southeastern parts of the country. The situation might have imposed negative impact on Belg agricultural activities of the aforementioned areas.

During the third dekad of February 2010, normal Belg rains were strengthened over Belg growing areas of Rift valley and the adjoining areas, much of SNNPR, central and eastern portions of the country, eastern and southern Amhara, western and southern Oromia, central and eastern Somalia, eastern Tigrya, Bensahgul-Gumuz, Gambela. The situation mighthave favor Belg agricultural activities, perennial crops and availability of pasture and drinking water.

In general the month of February 2010, normal Belg rains prevailed over Belg rain benefiting areas of the country. Belg rain favored over much of Benshangul-Gumuz, Gambela, western portions of Oromia, southern Tigrya and adjoining areas of Afar, Amhara and few places of western Oromia and pocket areas of SNNPR, southern portions of Somalia and much of SNNPR, central and eastern portions of the country, eastern and southern Amahra, western and southern Oromia, central and southern Somalia, eastern Tigrya, Benshangul-Gumuz. The situation was conducive for Belg agricultural activities, perennial crops and availability of pasture and drinking water over pastoral and agro pastoral areas.

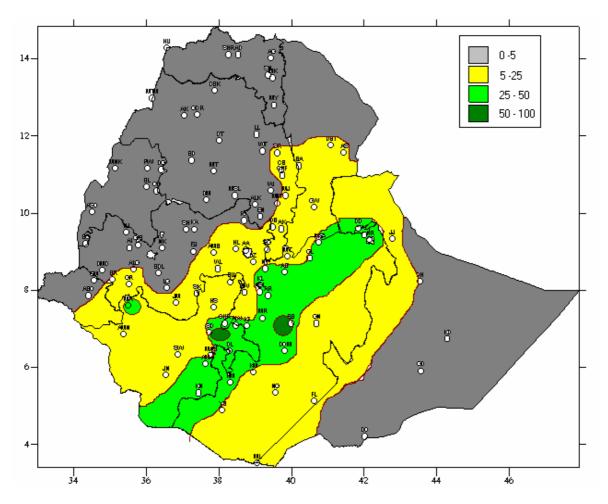


Fig 1 Rainfall distribution in mm (21-28 February, 2010)

1. WEATHER ASSESSMENT

1.1 Rainfall distribution in mm (21-28 February, 2010)

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

1.1.1 RAINFALL AMOUNT (Fig.1)

SNNPR, much of Oromia and parts of southern Afar and northern Somali and tip of southern Amhara received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

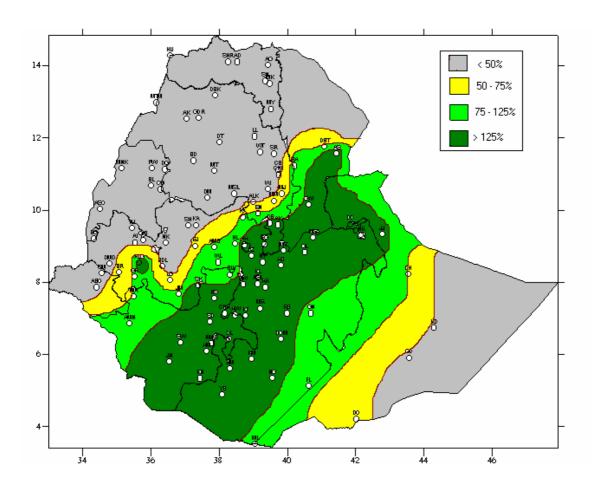


Fig.2 Percent of normal rainfall (21-28 February, 2010)

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)

Western half of SNNPR, eastern half of Gambella, part of western and southern Oromia, part of southern and pocket area of northern Amhara and pocket areas of eastern Benshangul–Gumuz received normal to above normal rainfall. The rest parts of the country experienced below normal to much below normal rainfall.

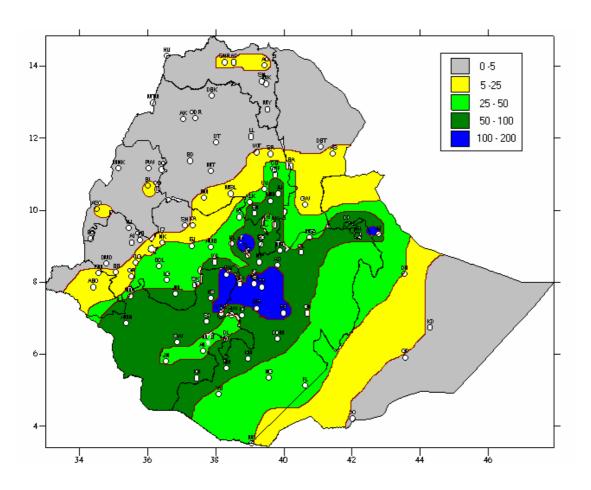


Fig 3 Rainfall distribution in mm for the month of February, 2010

1.3 February, 2010

1.1.3 Rainfall distribution (Fig.3)

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

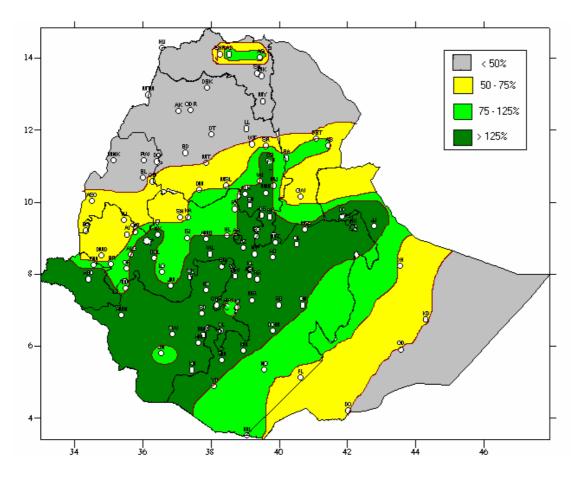


Fig.4 Percent of normal rainfall for the month of February, 2010 Explanatory notes for the legend:

<50 -- Much below normal 50—75% -- below normal 75—125% --- Normal >125% ---- Above normal

Gambela, SNNPR, most of Oromia, parts of northern Somali, southern Afar and southeastern Amhara and pocket area of northern Tigray received normal to above normal rainfall. The rest parts of the country exhibited below normal to much below normal rainfall.

1.1.4 TEMPERATURE ANOMALY

During the month some stations recorded extreme maximum temperature greater than 35 °C, among them Metehara, Assaita, Blate, Chagni, Elidar, Gambela, Gewane, Hagre Mariam, Humera, Mankush, Mile, Mytsemre, Pawe, Semera, Shire, Sirba Abaya, Kemesh reported 37.4, 37.2, 36.7, 35.5, 36.3, 44.0, 39.2, 38.0, 43.0, 41.0, 35.7, 36.5, 38.5, 36.4, 38.0, 39.5 and 36.2 °C, respectively. On the other hand some stations reported extreme minimum temperature below 5°C, among those stations, Alemaya, Debre Tabour, Jijiga, Kofelle, Shahura and Wegel Tena reported 1.0, 4.4, 4.5, 3.9, 1.5 and 4.5° C, respectively the situation might have a negative impact on the normal growth and development of plants.

2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

2.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

In the month of February, 2010, normal Belg rains prevailed over Belg rain benefiting areas of the country. Belg rain favored over much of Benshangul-Gumuz, Gambela, western portions of Oromia, southern Tigrya and adjoining areas of Afar, Amhara and few places of western Oromia and pocket areas of SNNPR, southern portions of Somalia and much of SNNPR, central and eastern portions of the country, eastern and southern Amahra, western and southern Oromia, central and southern Somalia, eastern Tigrya, Benshangul-Gumuz. The situation was conducive for Belg agricultural activities, perennial crops and availability of pasture and drinking water over pastoral and agro pastoral areas.

2.2 EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING DEKAD

In the coming March 2010, starting from third dekad of February 2010 Belg rain with the exception of southeastern lowlands of the country more or less will increase over most Belg growing areas of the country. Rift valley and adjoining areas, eastern and southern Tigry, eastern Amhara and adjoining of southern Afar, SNNPR, central, eastern and southern Oromia, northern Somalia, will receive normal to above normal rainfall. Moreover, eastern Oromia, Gambela, southern portions of Benshangul Gumuz and southern portions of Somalia expected to get near normal rainfall. The condition will favor Belg agricultural activities, perennial crops, availability of pasture and drinking water over postural and agro postural areas, while, the rest parts of the country will dominate by dry and sunny condition. The situation will have slight negative impact on perennial crops and availability of pasture and drinking water over the areas.

No. Stations Region Fainfall Mean Normal Normal Normal Normal Normal Sistus Status		Table1. Climatic	and Agro-Cli	matic eleme	nts of dif	ferent stations	for the month	ı of Febroury	2010
No. Stations Region rainfall Mean Normal mm/day Monthly Status				A /		0/ of	Eto	Eto.	Moisture
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The first						INA			
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1 Elidar 2 Assayta 3 Mille AFAR 16.2 9.2 176.1 5.8 162.4 D D Markos D D.Markos D D D.Markos D D D D D D D D D	_					-			
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31.6 37.3 84.7 3.93 110.04 MD	6								
B D.Berehan 9 D.Markos 10 D.Tabor 11 D/work 11 D/work 12 Enewari 13 Lalibela 14 Gondar 15 Layber 16 M.Meda 17 House 17 House 18 Mankush 18 Mankush 18 Mankush 18 Mekane 19 Selam 22.9 ft. 12.6 22.9 ft. 37.5 3.6 100.8 100.8 12.9 110.04 VD 12.0 VD 12.0 VD 12.0 VD 14.0 VD 15.3 VD VD 15.3 VD VD VD 16 M.Meda 17 Majete 18 Mankush Mekane 19 Selam NA									
D.Markos									
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13 Lalibela 14 Gondar 15 Layber 16 M.Meda 17 Majete 17 Majete 18 Mankush Mekane 19 Selam 19 Selam 19 Selam 19 Seles 19 Millu 10 Moral 10 Moral 10 Moral 10 Chria Chria			AMHARA						
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	10			102.1		182.3			
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	12	D.Zeit		36.2	25.4	142.5	3.73	104.44	MD

13	D/mena		60.4	34.6	174.6	4.2	117.6	Ιм
14	Fiche	1	NA	NA	NA	3.07	85.96	1
15	Gelemso	1	55.6	34.5	161.2	3.98	111.44	М
16	Gimbi	1	0	4	0	NA	NA	NA
17	Ginir		65.3	24.2	269.8	NA NA	NA NA	NA
18	Gore	•	14.9	37.5	39.7	3.77	105.56	D
19		•	24.3		89		103.36	D
19	Kachise Kibre	1	24.3	27.3	09	3.72	104.10	+ -
20	Mengist					3.36	94.08	VD
21	Jimma		88.4	47	188.1	2.78	77.84	H
22	koffele	•	87.6	57.1	153.4	3.04	85.12	H
23	Kulumsa	•	127.4		287.6	3.24	90.72	H
24		•	25.8	44.3 36.6	70.5	3.52	98.56	MD
	Limugent	1						M
25	Mieso		70.4	39.9	176.4	3.75	105	
26	Metehara		07.0	07.0	057.7	4.82	134.96	VD
27	Nazereth		97.3	27.2	357.7	4.71	131.88	M
28	Nedjo		3.9	5.2	75	5.36	150.08	VD
29	Negelle		24.9	21.5	115.8	NA 2.45	NA	NA
30	Nekemte		25.6	15.7	163.1	3.45	96.6	MD
31	Robe		137.1	31.5	435.2	3.46	96.88	Н
32	Sekoru		48.8	37.2	131.2	3.36	94.08	М
33	Shambu		2.2	27.2	8.1	NA	NA	NA
34	Woliso		NA	NA	NA	NA	NA	NA
35	Ziway		137.9	34.6	398.6	4.24	118.72	Н
1	Awassa		44.4	58.9	75.4	3.75	105	MD
2	Arbaminch		48.9	31.8	153.8	3.89	108.92	MD
3	Bilate		80.9	39.2	206.4	3.83	107.24	М
4	H.Mariyam				#DIV/0!	2.99	83.72	VD
5	Hossaina	CNINIDD	83.6	51.6	162	3.14	87.92	М
6	Jinka	SNNPR	35.7	47.2	75.6	3.65	102.2	MD
7	K/Mingist		50.1	21.5	233	NA	NA	NA
8	Konso	1	61.9	39.8	155.5	4.75	133	MD
9	Mirababaya	1	25.8	32.3	79.9	4.54	127.12	VD
10	Masha	1				2.82	78.96	VD
11	Sawla		59.4	35.8	165.9	3.3	92.4	М
1	Asossa	1	12.5	4.2	297.6	4.92	137.76	VD
	Bullen	_ ,	8.8	0.3	2933.3	3.55	99.4	VD
3	Chagni	B/GUMUZ	0	7.1	0	4.2	117.6	VD
4	Dangila	1	0	3.4	0	3.76	105.28	VD
5	Pawe	1	0	1	0	4.64	129.92	VD
				<u> </u>		710-7	. 20.02	+
1	Gode						1	†
2	D/Habur	SOMALI	13.2	6.9	191.3	NA	NA	NA
3	Jiiiga		101	25	404	6.26	175.28	M
	Jinga		101	20	704	0.20	173.20	101
1	Harar	HARAR	94.3	11.8	799.2	3.69	103.32	М
-	11a1 a1	HANAK	37.3	11.0	1 33.2	5.03	103.32	101
1	D/Dawa	D/DAWA	90.3	32.7	276.1	3.46	96.88	М
	D/Dawa	DIDAWA	3 0.3	32.1	210.1	3.40	30.00	IVI
1	A A Dela		11F 2	27.6	206.4	2.04	110.22	ш
1	A.A. Bole	A.A	115.2	37.6	306.4	3.94	110.32	H
2	A.A. Obs		73.9	36	205.3	3.32	92.96	М

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
Н	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 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 evapotranspiration of a disease free crop, growing under non-restricting soil conditions including soil water and fertility.

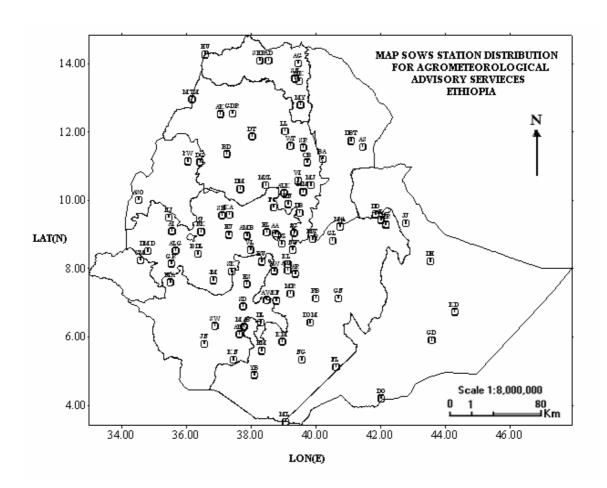
DEKAD: - First or second ten days or the remaining days of a month.

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		