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BULLETIN**

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FORE WARD

This Agro met Bulletin is prepared and disseminated by the National Meteorological Services Agency (NMSA). 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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SUMMARY

November 2004

During the first dekad of November, 2004 Gambela, western, central and parts of eastern Tigray, northern Amhara, southern half of SNNPR, southern Oromiya, southern Somali as well as pocket areas of southern Oromiya and eastern Benishangul-Gumuz exhibited normal to above normal rainfall while the rest portions of the country received below normal rainfall. This better rainfall condition had positive impact on the enhancement of the availability of pasture and drinking water over southern Ormiya, southern SNNPR and southern Somali. Besides, it favored the ongoing agricultural activities over the above Agro pastoral areas.

During the second dekad of November 2004, southern Oromiya, southeastern SNNPR, parts of western Oromiya and pocket areas of western SNNPR as well as pocket areas of southern Somali experienced normal to above normal rainfall distribution while the rest parts of the country were under below normal fall. In general, the pronounced dry weather condition over much of Meher growing areas of the country had indispensable contribution to the on going harvest and post harvest activities of long and medium cycle crops. Besides, the observed normal to above normal rainfall distribution over southern Oromiya including the lowland of Borena, eastern and southeastern SNNPR as well as pocket areas of southern Somali had positive impact on the availability of pasture and drinking water.

During the third dekad of November 2004, With the exception of most parts of Tigray, north tip of Afar, few areas of northeastern Amhara, pocket areas of western Oromiya and western margin of Benishangul-Gumuz the rest of the country received normal to above normal rainfall. This situation adversely affected the on going harvest and post harvest activities over much of Meher growing areas. However, the observed better rainfall condition over pastoral and agro pastoral areas of the country had indispensable contribution to the enhancement of pasture and drinking water. Regarding heavy falls Bati, Aira, Awassa, Sirinka, Majete, Alge, Chira, Dolo Mena, Cheffa, Gonder, Kibre Mengist and Combolcha recorded 124, 73.2, 67.1, 61.6, 53.5, 50.2, 44.8, 42.7, 41.8, 40.3, 39.4 and 38.9 mm of heavy falls, respectively. As the result, Dolo Mena, Kibre Mengist, Bedelle, Majete, Woliso, Aira, Alge, Chagni, Nejo, Jinka and Chira reported moderate to heavy damage on crops that were being at ripeness stage. Regarding air temperature, some northern and central highlands of the country reported the occurrence of frost due to the persisted fall in minimum air temperature below 5⁰C for two to seven consecutive days. This situation might have negative effect on the normal growth and development of the existing short cycle pulse crops that were being at flowering and gain filling stages over the above-mentioned areas. Pursuant to the crop phenological report, harvest of maize, teff and sorghum was under way in some areas of western and northeastern parts of the country. Maize was at full ripeness stage over western, southern and eastern Oromiya. Sorghum was at ripeness stages over much of western Oromiya, southwestern and eastern Benishangul-Gumuz, and northern SNNPR. In addition to this, millet was at flowering stage over some areas of western Oromiya. Teff was at ripeness stage over western, central and some areas of southern Oromiya, southwestern Benishangul-Gumuz and northern SNNPR while at flowering stage over some areas of southern Oromiya. Wheat was at full ripeness stage over central Oromiya, northeastern Amhara and northern SNNPR while at flowering stage over some areas of southern Amhara; barley was at ripeness stage over Bale and Arsi highlands. Nug was at yellow ripeness stage over central and western Oromiya. Pulse crops like beans and peas were at ripeness stage over some areas of western Oromiya.

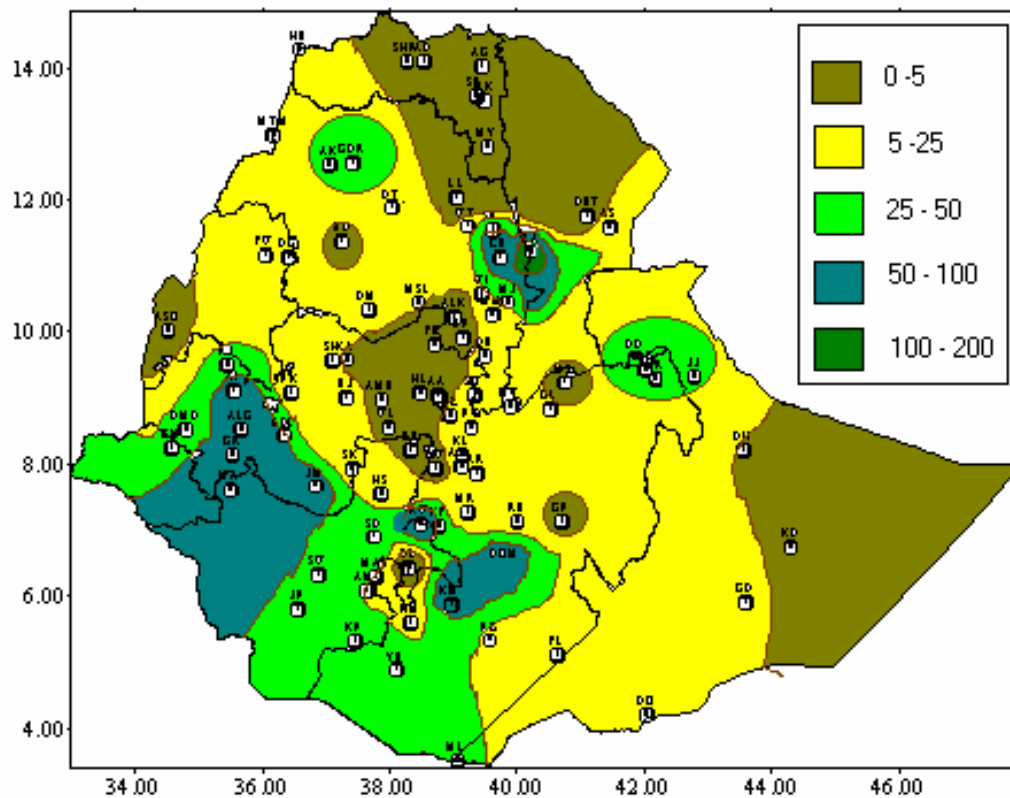


Fig 1. Rainfall distribution in mm (21-30 November, 2004)

1. WEATHER ASSESSMENT

1.1 21-30 November 2004

1.1.1 Rainfall amount (Fig.1)

Bati, Chira, Gore, Aira, Kibre Mengist, Sirinka, Jimma, Masha, Dollo Mena, Majete, Limu Genet, Alge and Bedelle received 124, 90.2, 84, 73.8, 73.4, 63.5, 62.6, 62.2, 61.3, 59.4, 57.9, 50.5 and 50.3 mm of dekadal rainfall, respectively.

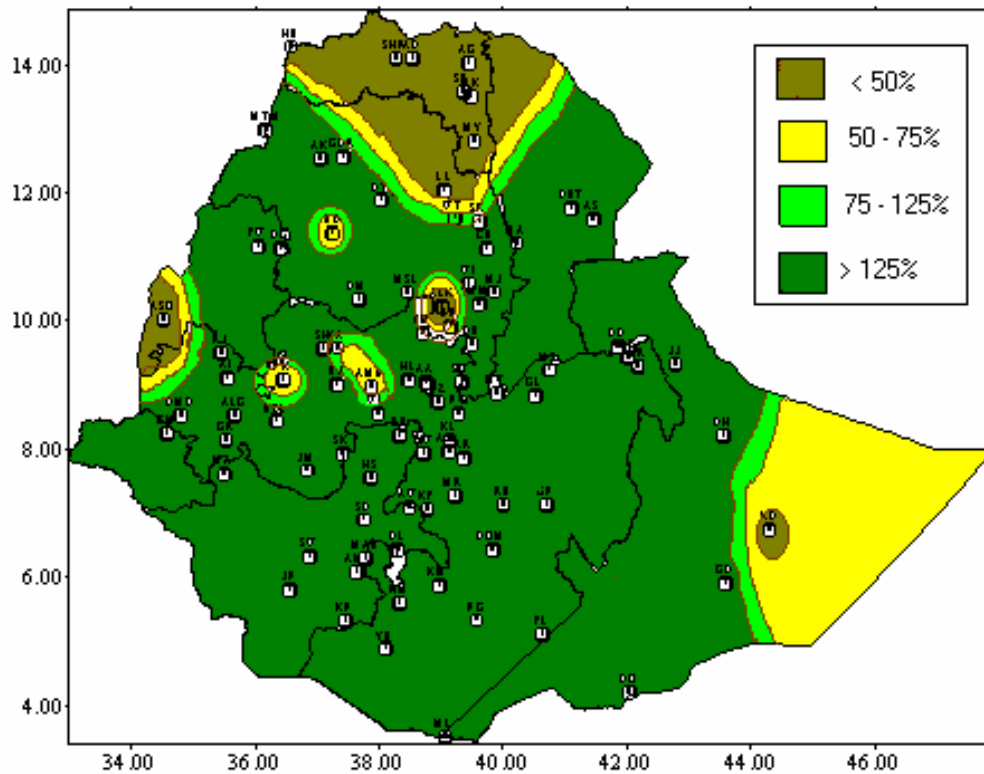


Fig. 2 Percent of normal rainfall (21-30 November, 2004)

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)

With the exception of most parts of Tigray, northern tip of Afar, few areas of northeastern Amhara, pocket areas of western Oromyia and western margin of Benishangul-Gumuz the rest of the country received normal to above normal rainfall.

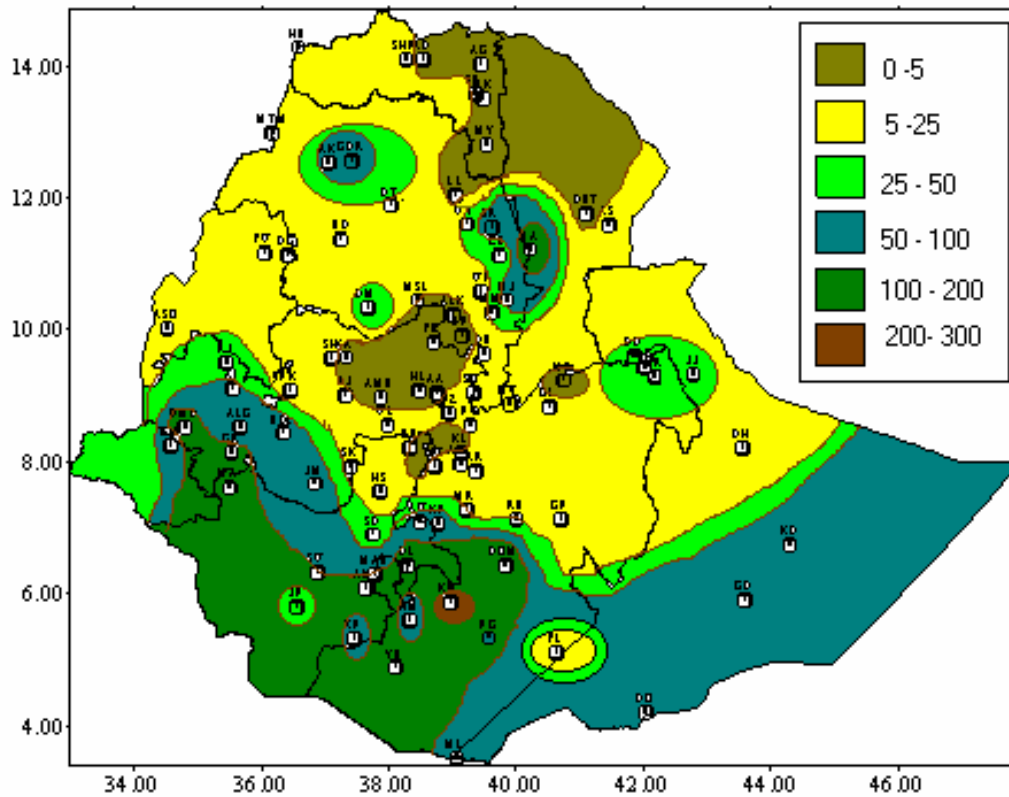


Fig. 3 Rainfall Distribution in mm for the month of November 2004

1.2 November 2004

1.2.1 Rainfall November (Fig.3)

Kibre Mengist, Masha, Dolo Mena, Yabello, Jinka, Dembi Dollo, Arba Minch, Dilla, Gore, Alge, Sawla, Chira and Mirab Abaya received 225.7, 178.5, 174.4, 158.9, 158.5, 144.3, 134.3, 125.9, 124.2, 114.1, 108.8, 107.5 and 104.4 mm of monthly rainfall, respectively.

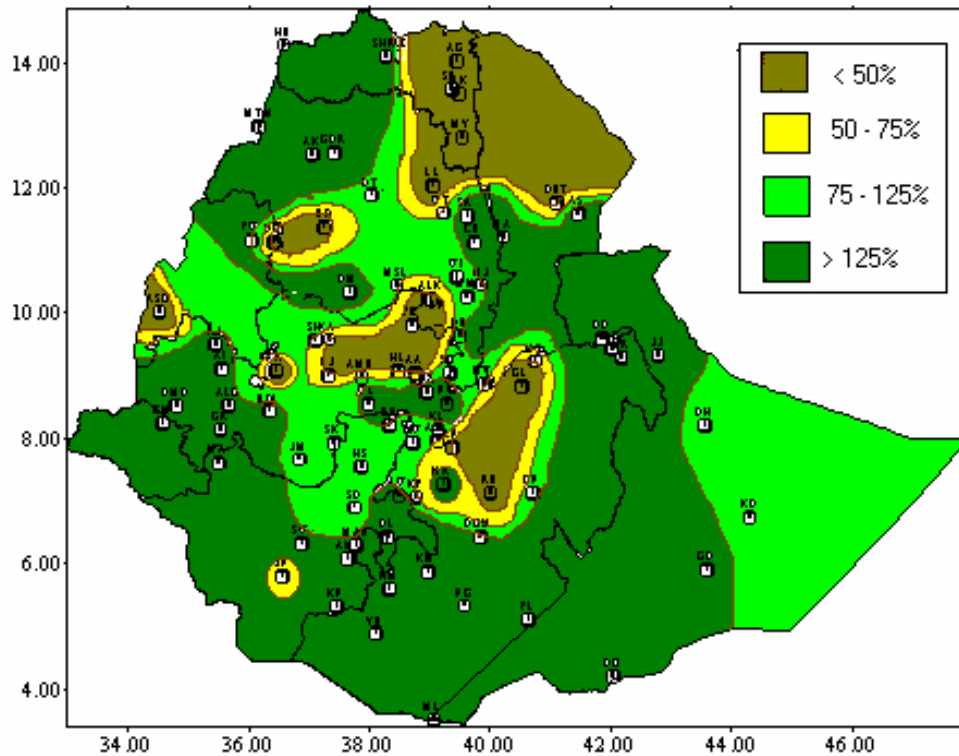


Fig. 4 Percent of Normal Rainfall for the month of November 2004

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, SNNPR, much of Ormiya, most parts of Benishangul-Gumuz, much of Amhara, western and central Tigray, southern half of Afar, SNNPR experienced normal to above normal rainfall distribution. Below normal rainfall has been observed over parts of eastern and central Oromiya, few areas of western Amhara and pocket area of Benishangul Gumuz.

1.3 TEMPERATURE ANOMALY

The highlands of Amhara (Debre Birhan, Enewary, Mehal Meda and Wegel Tena), Tigray (Adigrat), and Oromiya (Jimma, Bale Robe, Arsi Robe, Alemaya, Fitcha, Kofelle) exhibited extreme air temperature below 5⁰C for two to seven consecutive days; particularly Debre Brehan recorded extremism air temperature below 0⁰C for two consecutive days.

2. WEATHER OUTLOOK

2.1 For the first dekad of December 2004

In the coming dekad Gambela, southern Oromiya, few areas of southern SNNPR will have near normal rainfall. There will be a chance of occasional falls over eastern Amhara, southern Afar, most parts of Somali and eastern Oromiya. Besides, most parts of SNNPR and central Ethiopia will have isolated rains. There will be dry spell for the rest of the country.

2.2 For the month of December 2004

Under normal circumstance, December is one of the driest months over much of the country. During this month, the Bega's dry and sunny weather condition prevails over the country. In particular, a fall in nighttime and early morning temperature is common phenomenon due to the strengthening of northeasterly winds. However, unseasonable rainfall occurs occasionally along the Rift Valley and adjoining areas. During the forecast period, a weak to moderate Tropical Cyclone, which originated from northern Indian Ocean, is anticipated to approach in southwest direction towards the Horn of Africa. In association with this, moisture incursion is expected towards eastern Ethiopia. Generally, Gambela, southern Oromiya and some places of SNNPR will have normal rain shower. Besides, eastern Amhara, southern Afar, much of Somali and eastern Oromiya are expected to have a chance of getting unseasonable rain showers. More over, much of SNNPR as well as central Ethiopia will have a chance of rain shower with partly cloudy condition. Nevertheless, dry and sunny weather condition will prevail elsewhere.

3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

The observed wet weather condition over much of Meher growing areas of the country hampered the on going harvest and post harvest activities. Heavy falls over Dolo Mena, Kibre Mengist, Bedelle, Majete, Woliso, Aira, Alge, Chagni, Nejo, Jinka and Chira resulted in moderate to heavy damage on crops that were being at ripeness stage. However, the observed better rainfall over pastoral and agro pastoral areas of the country had indispensable contribution to the enhancement of pasture and drinking water. Pursuant to the crop phenological report, harvest of maize, teff and sorghum was under way in some areas of western and northeastern parts of the country. Maize was at full ripeness stage over western, southern and eastern Oromiya. Sorghum was at ripeness stages over much of western Oromiya, southwestern and eastern Benishangul-Gumuz, and northern SNNPR. In addition to this, millet was at flowering stage over some areas of western Oromiya. Teff was at ripeness stage over western, central and some areas of southern Oromiya, southwestern Benishangul-Gumuz and northern SNNPR while at flowering stage over some areas of southern Oromiya. Wheat was at full ripeness stage over central Oromiya, northeastern Amhara and northern SNNPR while at flowering stage over some areas of southern Amhara; barley was at ripeness stage over Bale and Arsi highlands. Nug was at yellow ripeness stage over central and western Oromiya. Pulse crops like beans and peas were at ripeness stage over some areas of western Oromiya.

3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING MONTH

The anticipated moisture influx towards eastern parts of the country and its effect (Occasional falls) together with the observed unseasonable wet weather condition over most parts of the country during the preceding dekad would have negative impact on harvest and post harvest activities. Thus, in order to minimize the effect of the expected occasional falls over eastern Amhara, southern Afar and eastern Oromiya, proper action should be undertaken such as harvesting of crops which are ready to harvest and collecting of the harvested grain in the way in which the situation is not favorable for the outbreak of fungal diseases. Moreover, the barn should be prepared in the way it allows circulation of air to avoid favorable media for storage pests. Besides, in order to minimize post harvest losses the grains should be kept their standard storage level of dryness before storage.

With regard to air temperature, the expected moisture incursion would minimize the observed stress due to frost occurrence particularly in areas where there was extreme minimum temperature below 5°C like Debre Birhan, Alemaya, Mehal Meda, Wegel Tena, Kofele Adigrat and Robe for four to eight consecutive days during the preceding dekad.

Table 1 Climatic and Agro-Climatic elements of different stations for the month
Of November 2004

	Stations	Region	A/ rainfall	Normal	%of Normal	ETo mm/day	Monthly ETo	Moisture Status
1	Adigrat	TIGRAI	3.5	18.5	18.9	3.33	99.9	VD
2	Adwa		0	6.2	0.0	NA	NA	NA
3	Mekele		0.8	5.5	14.5	5.21	156.3	VD
4	Michew		3.2	25.6	12.5	3.3	99	VD
5	Senkata		12.6	37.2	33.9	3.05	91.5	D
6	Shire		10.7	3.9	274.4	NA	NA	NA
								NA
1	Assayta	AFAR	23.2	4	580.0	6.85	205.5	D
2	Dubti		1	7.1	14.1	5.1	153	VD
3	Gewane		6.1	5.6	108.9	5.46	163.8	VD
								NA
1	Alemketema	AMHARA	0	7.1	0.0			NA
2	Bahir Dar		9.1	17.7	51.4	3.86	115.8	D
3	Bati		124	14.6	849.3	3.74	112.2	H
3	Combolcha		401	20.9	191.9	3.42	102.6	H
4	Chagni		NA	NA	NA	3.53	105.9	NA
5	Chefa		44.4	58.5	75.9	4.14	124.2	H
6	D.Birhan		11.8	3.5	337.1	3.76	112.8	D
7	D.Markos		37.7	22.6	166.8	3.6	108	MD
8	D.Tabor		42.5	34.3	123.9	NA	NA	NA
9	Dangla		21	42.2	49.8	3.32	99.6	D
10	Debre Markos		37.7	22.6	166.8	NA	NA	NA
11	Debark		0	2.1	0.0	NA	NA	NA
12	Dubiti		1	7.1	14.1	NA	NA	NA
13	Enwary		2.7	6.4	42.2	4.54	136.2	VD
14	Gonder		65.9	22.5	292.9	3.84	115.2	M
15	M.Meda		7.3	6.9	105.8	NA	NA	NA
16	Majete		59.4	17	349.4	3.85	115.5	M
17	Lalibela		0.8	8.1	9.9	3.72	111.6	VD
18	Sirinka		63.5	25.9	245.2	3.74	112.2	M
19	Woreilu		7.5	7	107.1	4.85	145.5	VD
20	Wegel Tena	11.4	11.8	96.6	3.42	102.6	D	
								NA
1	Aira	OROMIYA	92.6	66.9	138.4	3.26	97.8	M
2	Abomssa		14.1	15.2	92.8	NA	NA	NA
3	Alge		114.1	35.5	321.4	NA	NA	NA
4	Alemaya		38.6	15.6	247.4			NA
5	Ambo		NA	NA	NA	3.09	92.7	NA
6	Arsi Robe		7.7	20.4	37.7	NA	NA	NA
7	Assela		21.1	23	91.7	NA	NA	NA
8	Bedelle		61.2	33.7	184.3	3.64	109.2	M
9	Dembi Dollo		144.3	30.3	476.2	NA	NA	NA
10	Dolo Mena		174.4	174.4	55.6	3.67	110.1	H
11	Debre Zeit		10.3	4.8	214.6	4.81	144.3	D
12	Ejaji		21.4	30.2	70.9	3.95	118.5	D
13	Fitche		3.7	19.6	18.9	3.46	103.8	VD
14	Gelemso		23.4	40.9	57.2	4.23	126.9	D
15	Gimbi		26.8	23.4	114.5			0

16	Gore		124.2	104.9	118.4	3.34	100.2	H
17	Jimma		68.6	60.1	114.1	3.26	97.8	M
18	Kibre Mengist		225.7	63.9	353.2	3.29	98.7	H
19	Koffele		54.6	49.1	111.2	3.65	109.5	MD
20	Kulumsa		0.9	12.2	7.4	4.85	145.5	VD
21	Masha		178.5	91.8	194.4	NA	NA	NA
22	Meisso		0.9	12.4	7.3	4.62	138.6	VD
23	Metehara		8	6.5	123.1	6.16	184.8	VD
24	Moyale		97.5	74.8	130.3	3.61	108.3	M
25	Nazreth		12.8	6.6	193.9	5.61	168.3	D
26	Neghele		12.8	50.7	250.5	4.1	123	D
27	Nedjo		33.3	25.1	132.7	3.13	93.9	MD
28	Nekemte		20.4	59.3	34.4	3.45	103.5	D
29	Robe(Bale)		14.5	29	50.0	3.46	103.8	D
30	Sekoru		17	19	89.5	3.58	107.4	D
31	Shambu		19.8	21.5	92.1	NA	NA	NA
32	Woliso		8.9	6.6	134.8	NA	NA	NA
33	Yabello		158.9	45	353.1	NA	NA	NA
34	Zeway		2.7	3	90.0	4.94	148.2	VD
1	Dege Habur	SOMALI	12.6	12.6	11.6	5.37	161.1	D
2	Gode		83.4	83.4	31.3	4.44	133.2	M
3	Jijiga		31.1	16.7	186.2	4.59	137.7	D
1	Arba Minch	SNNPR	134.3	50.4	266.5	4.08	122.4	H
2	Awassa		94.1	49.3	190.9	3.87	116.1	M
3	Dilla		125.9	37.2	338.4	NA	NA	NA
4	Hosaina		17.3	17.3	100.0	4.12	123.6	D
5	Konso		83.5	32.3	258.5	4.07	122.1	M
6	Jinka		158.5	67.2	235.9	3.23	96.9	H
7	Sodo		39.1	40.8	95.8	4.94	148.2	MD
1	Pawe	B/GUMUZ	15.1	11.6	130.2	3.98	119.4	D
2	Asossa		11.3	26.5	42.6	NA	NA	NA
1	Addis Aababa.Obs	A.A	0	NA	NA	3.27	98.1	NA
1	Dire Dawa	D.D	25.3	NA	NA	4.21	126.3	D
1	Harar	Harai	39.7	NA	NA	4.46	133.8	MD

Legend

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

Explanatory Note

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

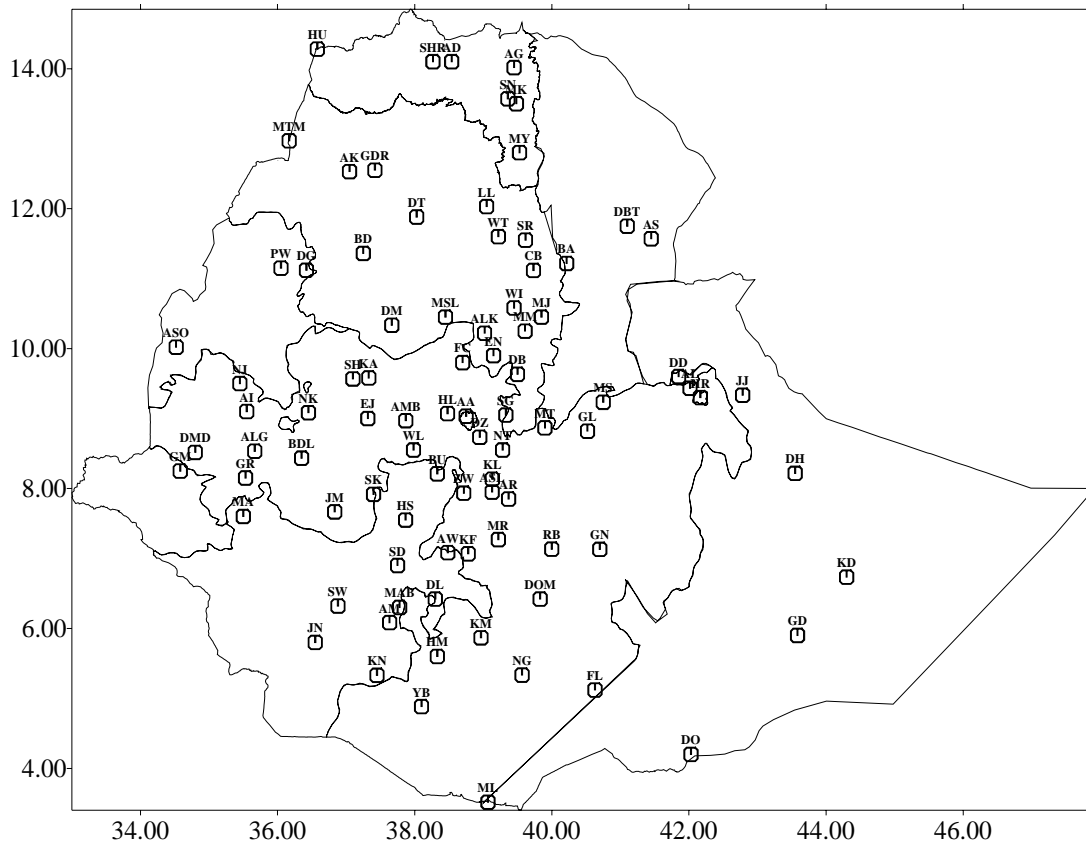
DEKAD: - First or second ten days or the remaining days of a month.

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.



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