# MONTHLY AGROMETEOROLOGICAL BULLETIN DECEMBER 2003 VOLUME 13 No. 36

DATE OF ISSUE: - January 5, 2003

#### **FOREWARD**

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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#### **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.

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During the first dekad of December 2003, the observed occasional falls in most parts of the country negatively affected the on going harvest and post harvest activities. Some areas from central, eastern western and northeastern parts of the country exhibited heavy falls greater than 30 mm in one rainy day. Among the reporting stations Dolo Mena, Were Ilu, Debre Zeit, Addis Ababa Bole, Combolcha, Ejaji, Bui, Alemaya, Nazerat, Skoru, Dubti, Masha, Mierab Abaya, Addis Ababa Observatory, Bati and Dire Dada recorded 30.3, 32.5, 33.2, 33.3, 34.1, 35.3, 35.5, 36.8, 40.0, 40.0, 43.2, 45.8, 54.9, 59.5, 60.4 and 111.3 mm of heavy falls in a rainy day. As a result, some areas reported crop damage due to heavy falls. For instance, Sinana, Dinsho, Robe (Bale) and Tepi reported cereals and pulse crops damage due to heavy falls accompanied with hailstorms. Rise in minimum temperature was observed due to the persisted cloud cover as compared to that of the preceding dekades over highland areas of eastern and central Oromiya including eastern Amhara.

During the second dead of December 2003, the observed dry and sunny condition over most parts of the country favourd the on going harvest and post harvest activities in most areas. With regard to air temperature, some areas of central highlands experienced extreme minimum temperature lowering up to –4.5°C. Among the reporting stations Adigrat, Were Ilu, Kulumsa, Kofele, Addis Ababa, Combolcha, Jima, Maichewu, Arsi Robe, Meraro, Debre Birhan, Wegel Tena, Alemaya and Bui exhibited minimum temperature less than 5°C for two to ten consecutive days. Thus, this condition could have negative impact on the normal growth and development of crops, which are not attaining their maturity including perennial plants and horticultural crops.

During the third dekad of December 2003 the observed sunny and dry Bega situation favord harvest and post harvest activities in most parts of the country. With regard to air temperature most parts of central highlands like Kofele, Dangila, Adigrat, Jima, Mehal Meda, Robe (Bale), Arsi Robe, Fitche, Merao, Wegel Tena, Alemaya and Debre Birhan exhibited minimum temperature less than 5°C for 5 – 9 consecutive days. Debre Birhan exhibited below 0°C lowering up to –7°C for six consecutive days. This condition could have significant negative impact on the normal growth and development of plants in the areas.

Generally during the month harvest and post harvest activities were on progress in most parts of Meher growing areas. However, the observed occasional falls in most parts of the country during the first dekad of the month have negatively affected the on going harvest and post harvest activities. As a result, some areas reported crop damage due to heavy falls. With regard to air temperature some stations such as Wegel Tena, Alemaya, Meraro and Debre Birhan exhibited minimum temperature less than  $5^{\circ}$ C for 15-25 days during the month under review. Thus, this condition could have negative impact on the normal growth and development of field crops, which are not attaining their maturity stage during the month including perennial plants and horticultural crops.

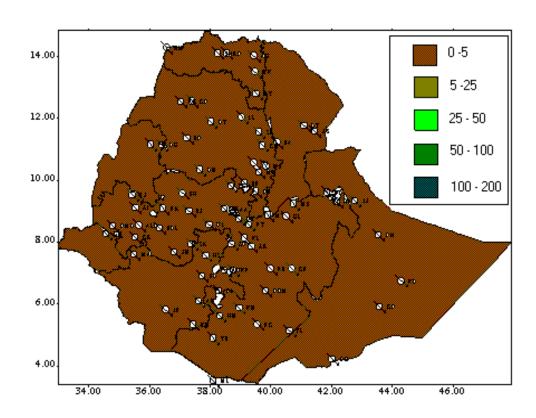


Fig 1. Rainfall distribution in mm (21-31 December, 2003)

### 1. WEATHER ASSESSMENT

### 1.1 21-31 December 2003

# 1.1.1 Rainfall amount (Fig.1)

Most parts of the country received falls less than 5 mm.

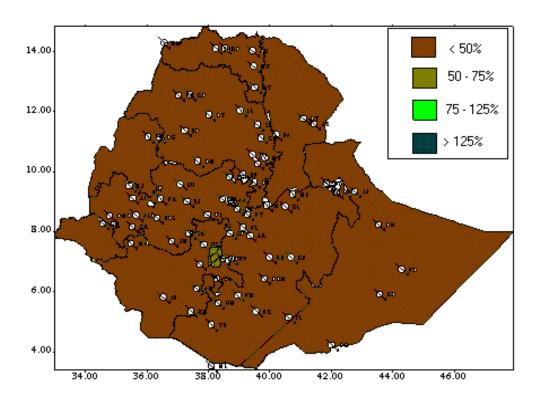


Fig. 2 Percent of normal rainfall (21-31 December, 2003)

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 parts of the country experienced below normal rainfall.

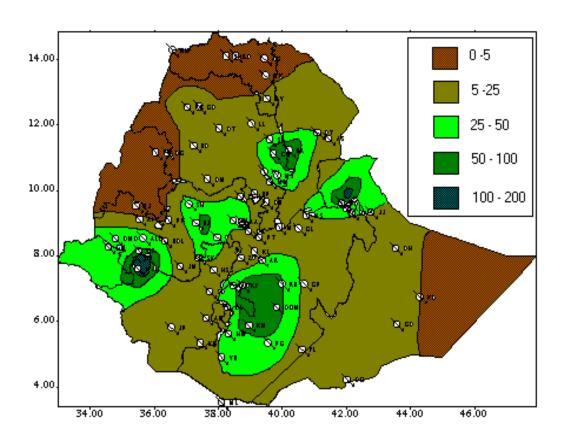


Fig. 3 Rainfall Distribution in mm for the month of December 2003

#### 1.2 December 2003

#### 1.2.1 Rainfall Amount (Fig.3)

Few areas of eastern Amhara, southwestern Afar, central, eastern tip, parts of southern and western Oromiya, Gambela and northern Somali experienced falls ranging from 25 - 128 mm. Most parts of Amhara, Afar, eastern Oromiya, few areas of southern Tigray, most parts of SNNPR and Somali received falls in the range of 5 - 25 mm. The rest of the country experienced below 5 mm of rainfall.

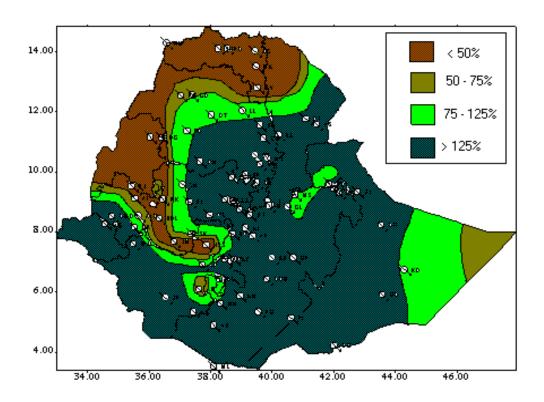


Fig. 4 Percent of Normal Rainfall for the month of December 2003

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 Afar, Amhara, Oromiya, Somali and SNNPR including Gambela received above normal rainfall while the reverse was true over Tigray, northern and northwestern Amhara, parts of western Oromiya, Benishangul – Gumuz, few areas of northern and eastern SNNPR including southeastern tip of Somali.

#### 1.3 TEMPERATURE ANOMALY

Some stations such as Wegel Tena, Alemaya, Meraro and Debre Birhan exhibited minimum temperature less than  $5^{\circ}$ C for 15-25 days during the month under review. Some areas like Debre Birhan exhibited extreme minimum temperature below  $0^{\circ}$ C lowering up to  $-7^{\circ}$ C. Thus, this condition could have negative impact on the normal growth and development of field crops, which are not attaining their maturity stage during the month including perennial plants and horticultural crops.

#### 2. WEATHER OUTLOOK

#### 2.1 For the first dekad of January 2003

The Bega's dry and sunny weather condition will dominate much of the country during the forecast period. However, the rain bearing systems are expected to strengthen relatively towards the end of the decade. As result, the daily minimum temperature is anticipated to rise over much of the country. Furthermore, the probability of the occurrence of unseasonable rainfall is highly likely over the country though mostly sunny weather condition will dominate

#### 2.1 For the month of January 2003

In the coming January, an intrusion of cold and dry air will sometimes lead a fall in night time and early morning temperature over the highlands of the country. On the other hand, an incursion of moist air will produce occasional rain showers over various portion of the country.

Generally, eastern Amhara, SNNPR, areas adjoining the Rift Valley of western and southern Oromiya will have light to moderate rains.

#### 3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

#### 3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

Generally during the month harvest and post harvest activities were on progress in most parts of Meher growing areas. However, the observed occasional falls in most parts of the country during the first dekad of the month has negatively affected the on going harvest and post harvest activities. As a result, some areas reported crop damage due to heavy falls. With regard to air temperature some stations such as Wegel Tena, Alemaya, Meraro and Debre Birhan exhibited minimum temperature less than  $5^{\circ}$ C for 15-25 days during the month under review. Thus, this condition could have negative impact on the normal growth and development of crops, which are not attaining their maturity stage during the month including perennial, vegetable and horticultural crops, thereby decreasing yield quality and amount.

# 3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING DEKAD

The expected occasional rainfall over eastern Amhara, SNNPR, and areas adjoining the Rift Valley of western and southern Oromiya would have negative impact on post harvest activities by favouring storage pests in areas where there are no proper storage facilities. Thus, the concerned personnel should under take proper precaution during the process of grain storage.

Table 1 Climatic and Agro-Climatic elements of different stations for the month of December 2003

	Stations	Region	1	1	ı	ETo mm/day	I	Moisture
		- 3 -					, ,	status
1	Adigrat	TIGRAI	1.7	14.7	11.6	3.2	99.2	VD
	Mekele		0.1	1.1	9.1	5.02	155.62	VD
	Mychew		17.9	NA	NA	2.95	91.45	D
1	Dubti	AFAR	43.1	2.1	2052.4	4.33	134.23	MD
	Assayta		23.4	0.3	7800.0	NA	NA	NA
1	Bahir Dar	AMHARA	5.7	2.2	259.1	3.15	97.65	VD
	Bati		89.8	55	163.3	3.11	96.41	М
3	Combolcha		60.2	19.7	305.6	NA	NA	NA
4	D.Markos		18.8	14.1	133.3	3.88	120.28	D
5	D.Tabor		12.1	10.1	119.8	NA	NA	NA
6	Dangla		0	NA	NA	3.32	102.92	VD
7	Enwary		8.1	NA	NA	4.55	141.05	VD
	Gonder		5.7	10.7	53.3	4.1	127.1	VD
9	M.Meda		8.9	7	127.1	NA	NA	
10	Majete		61.1	26	235.0	3.44	106.64	М
11	Sirinka		48.3	34.9	138.4	3.41	105.71	MD
12	Woreilu		38	9	422.2	4.62	143.22	MD
1	Aira	OROMIYA	3.5	NA	NA	3.21	99.51	VD
2	Alemaya		40.7	10.2	399.0	3.76	116.56	MD
3	Arsi Robe		48.2	16.3	295.7	3.41	105.71	MD
4	Bedelle		2.3	22.2	10.4	3.29	101.99	VD
5	D.Mena		81.1	21.6	375.5	3.74	115.94	MD
6	D.Zeit		33.6	103.9	32.3	3.89	120.59	MD
7	Gelemso		19.7	16.5	119.4	NA	NA	NA
8	Jimma		15.1	34.7	43.5	2.94	91.14	D
9	K.Mengist		52.2	17.6	296.6	3.28	101.68	MD
10	Kulumsa		19.5	11.5	169.6	4.14	128.34	D
11	Meisso		25.7	8.2	313.4	4.04	125.24	D
12	Metehara		15.7	7.1	221.1	4.63	143.53	D
13	Neghele		43.5	11.2	388.4	5.37	166.47	MD
14	Nedjo		0	4.7	0.0	3.43	106.33	VD
15	Nekemte		9.5	18.2	52.2	3.35	103.85	VD
16	Robe(Bale)		64.2	10	642.0	NA	NA	NA
17	Sekoru		48.8	23.1	211.3	3.3	102.3	MD
18	Shambu		30.7	18.8	163.3	3.52	109.12	MD
19	Yabello		31.4	21.1	148.8	4.39	136.09	D

20	Zeway		17.4	3.4	511.8	4.25	131.75	D
1	Jijiga	SOMALI		NA	NA	NA	NA	NA
1	A.Minch	SNNPR	14.8	23.9	61.9	NA	NA	NA
2	Hosaina		4.6	20.3	22.7	3.87	119.97	VD
1	Pawe	B/GUMUZ	0	0.4	NA	NA	NA	NA
1	Gambela	GAMBELA		NA	NA	NA	NA	NA
1	A.A.Obs.	A.A	33.3	4.2	792.9	3.08	95.48	MD
1	Dire Dawa	D.D	128	103.9	123.2	3.85	119.35	Н
1	Harar	Harai		NA	NA	NA	NA	NA

# Legend

 VD
 Very Dry
 < 0.1</th>

 D
 Dry
 0.1 - 0.25

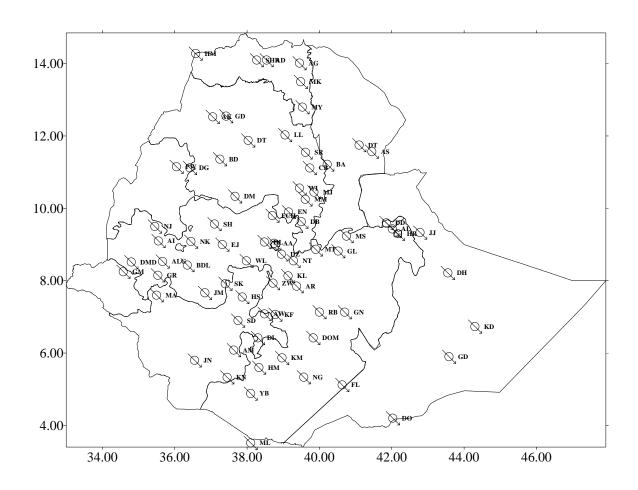
 MD
 Moderatly Dry
 0.25 - 0.5

 M
 Moist
 0.5 - 1

 H
 Humid
 >1

#### **Explanatory Note**

ETo Reference Evapotranspiration(mm)



Station	Symbol	Dm.Dolo	DMD	Mekele	MK
A. Robe	AR	Dubti	DB	Metehara	MT
A.A. Bole	AAB	Ejaji	EJ	Mieso	MS
A.A. Obs	AAO	enwary	EN	Moyale	ML
Adwa	AD	Fiche	FCH	Nazereth	NT
Adigrat	AG	Gode	GD	Nedjo	NJ
Alemaya	AL	Gonder	GOR	Negelle	NG
Alge	ALG	Gore	GR	Nekemte	NK
Aira	AI	Harara	HR	Robe	RB
Arba Minch	. AM	Holleta	HL	sekoru	SK
Awassa	AW	Hossaina	HS	Shambu	SH
B. Dar	BD	Jiiiga	JI	Shire	SHR
Bati	BA	Jimma	JM	S.Gebeya	SG
Bedelle	BD	K.Dehar	KD	Sirinka	SR
Combolcha	СВ	K/Mingist	KM	Sodo	SD
D.Berehan	DB	Koffele	KOF	Woreilu	WI
D.Habour	DH	Kulumsa	KL	Woliso	WL
D.Markos	DM	M.Meda	MM	Yabello	YB
D.Zeit	DZ	Maichew	MY	Ziway	ZW
D/Dawa	DD	Majete	MJ		