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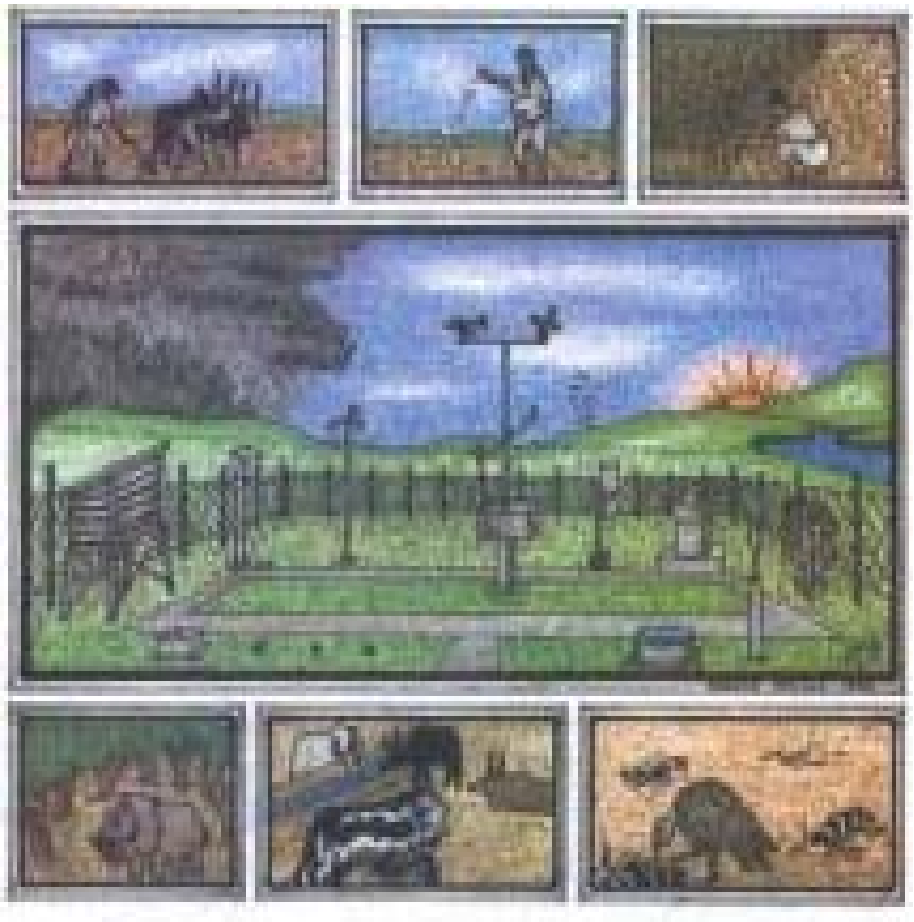

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FORE WARD

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
June 2004

During the first dekad of June 2004, the observed below normal rainfall over most parts of the country could result in water stress on the existing crops in the field at this time of a year. Besides, it could exacerbate the deficient moisture condition persisted over most parts of Tigray, parts of eastern Amhara and SNNPR including parts of northern Somali and eastern Oromiya. For instance, Combolcha and Sodo reported slight wilting and partial drying due to water stress on sorghum and maize fields, respectively. On the contrary some areas of western and central Oromiya reported heavy falls ranging from 30 – 40 mm. Among the reporting stations Bedelle, Woliso, Arsi Negele, Nekemte and Nedjo recorded 30, 32, 33.8, 38.4 and 40 mm of rainfall in one rainy day. With regard to air temperature, there was no significant temperature anomaly as compared to that of the long years mean in most places.

During the second dekad of June 2004 the observed normal to above normal rainfall over most parts of Tigray, Amhara and SNNPR, parts of western and central Oromiya including pocket areas of eastern Oromiya favoured season's agricultural activities. Nevertheless, heavy fall ranging from 32 – 56 mm, which could cause crop damage, has been observed over some areas of central, western and northeastern parts of the country in one rainy day. On the contrary, some areas of eastern, central and western Oromiya were still under deficient condition. As a result, some areas of eastern (Gelemso), central (Bui) and western (Assosa) Oromiya including eastern Amhara (Combolcha) reported medium field condition due to water stress during the second dekad of the month. With regard to air temperature no significant anomaly was observed, however, there was a decrease in maximum temperatures (1.4 – 2.47 °C), which has no significant effect on crop growth, in some areas of eastern Ethiopia as compared to that of the long-term average.

During the third dekad of June 2004 Tigray, Amhara, most parts of Benishangul Gumuz, western half of Afar, most parts of western and central Oromiya including southern Oromiya, northern and western Gambela, northeastern tip of SNNPR and few areas of northern Somali received normal to above normal rainfall. As a result, season's agricultural activities were in a good shape in the aforementioned areas. Nevertheless, some areas of central and southern highlands (Bui and Dolo Mena), eastern (Gelemso and Mieso), western (Assosa), northeastern (Combolcha) and northern parts of southern highlands (Sodo) reported medium to bad general field condition due to water stress. On the other hand, some areas of northern (Adawa), western (Gore, Nekemte, Bedele, Gimbi, Limu Genet and Shanbu), northeastern highlands (Enewary, Debre Birhan), central (Arsi Robe, Nazerat, Kachisie) and northwestern (Pawe, Bullen) reported heavy falls ranging from 31 – 51 mm in one rainy day. Besides some areas like Nekemte, Bedele, Enewary, Kachsie, Limu Genet and Shambu exhibited heavy falls 2-4 times during the ten days period. As a result, some areas of eastern and western Oromiya reported crop damage due to heavy falls and hailstorm.

Pursuant to the crop phonological report sowing of wheat was under way in some areas of northern and central Oromiya. The recently sown pulses were at emergence stage in northern Oromiya. Sorghum was at tillering and third leaf stages in some areas of eastern Amhara, western and central Oromiya while at ripeness stage in some areas of eastern Oromiya. Nug was at emergence stage in some areas of central Oromiya. Maize was at ninth and tasseling stage in some areas of eastern Amhara and western Oromiya while it was at flowering and full ripeness stages in southern and eastern highlands of Oromiya and in some areas of northern SNNPR. On the other hand, similar crop was at emergence stage in some areas of western Amhara and central Oromiya. With regard to air, temperature there was no significant temperature anomaly over most parts of the country during the dekad.

Generally the observed normal to above normal rainfall over most parts of Tigray, Amhara, central and western Oromiya favored season's agricultural activities. As a result sowing of pulses and cereals was under way in some areas of central, eastern and western Oromiya, western Amhar and Harari. Besides, the rainfall situation favored crops, which were at different phonological stages in most parts of the aforementioned areas. However, the observed heavy falls in some areas of northern (Adawa), western (Gore, Nekemte, Bedele, Gimbi, Limu Genet, Nedjo and Shanbu), northeastern highlands (Enewary, Debre Birhan), central (Arsi Robe, Nazerat, Kachisie, Woliso, Arsi Negele) and northwestern (Pawe, Bullen) resulted in crop damage in some pocket areas of the above mentioned areas. On the other hand, some areas of central, eastern, western, northeastern and northern parts of southern highlands reported medium to bad general field condition due to the erratic nature of rainfall. Moreover, the erratic distribution of rainfall observed during the month under review favored the outbreak of pests in some areas of SNNPR, central Oromiya and eastern Amhara. Thus, this condition could affect the performance of crop yield in the areas.

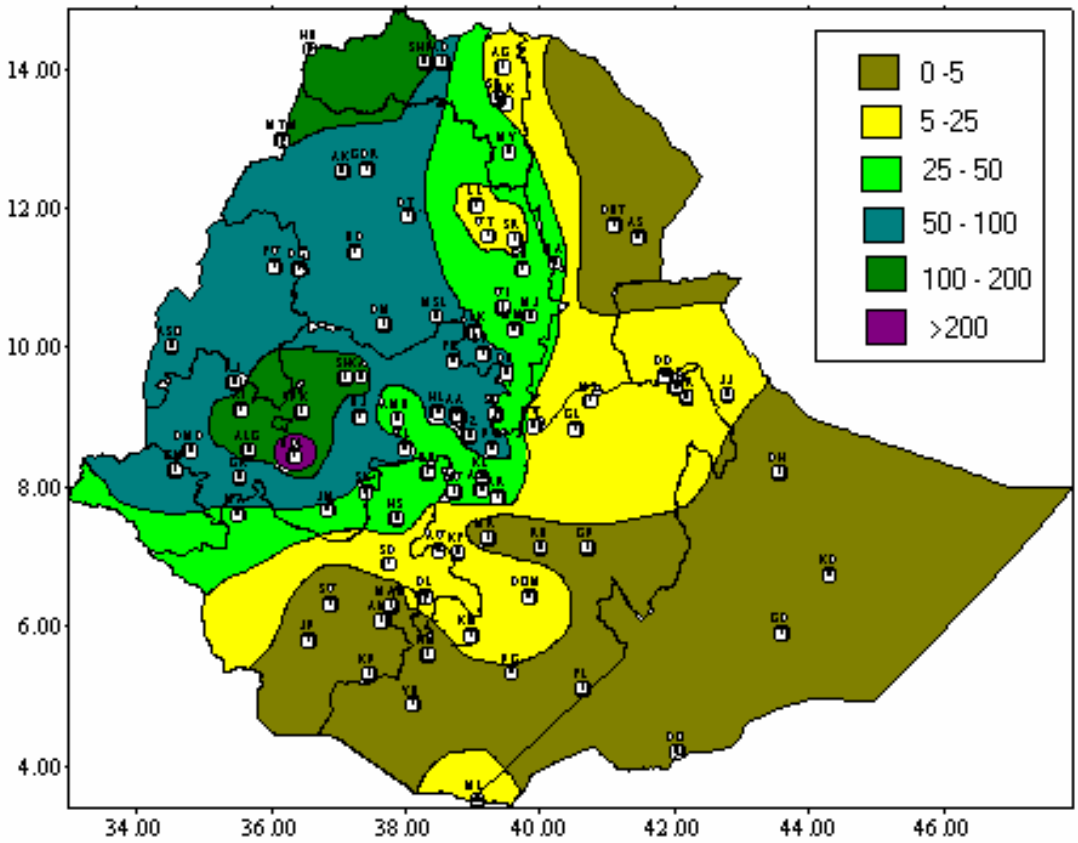


Fig 1. Rainfall distribution in mm (21-30 June, 2004)

1. WEATHER ASSESSMENT

1.1 21-30 June 2004

1.1.1 Rainfall amount (Fig.1)

Western half of Tigray, most parts of Amhara, Benishangul Gumuz, western parts of central Oromiya received falls greater than 50 mm; eastern parts of Tigray and Amhara, parts of central Oromiya, most parts of Gambela and few areas of northwestern and northern SNNPR experienced falls ranging from 25 – 50 mm; western half of Afar, northern Somali, eastern Oromiya, parts of western, central and parts of eastern SNNPR received falls in the range of 5 – 25 mm. There was little or no rain for the rest of the country.

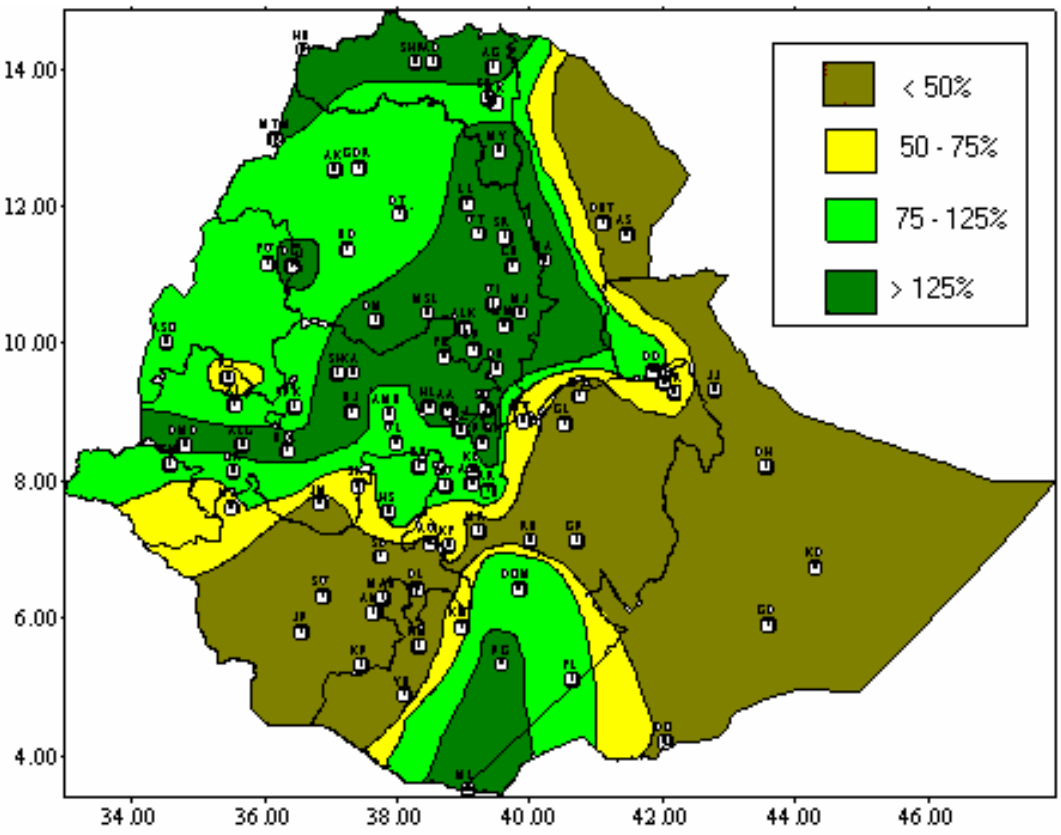


Fig. 2 Percent of normal rainfall (21-30 June, 2004)

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)

Tigray, Amhara, most parts of Benishangul Gumuz, western half of Afar, most parts of western and central Oromiya including southern Oromiya, northern and western Gambela, northeastern tip of SNNPR and few areas of northern Somali received normal to above normal rainfall. The rest parts of the country experienced below normal rainfall.

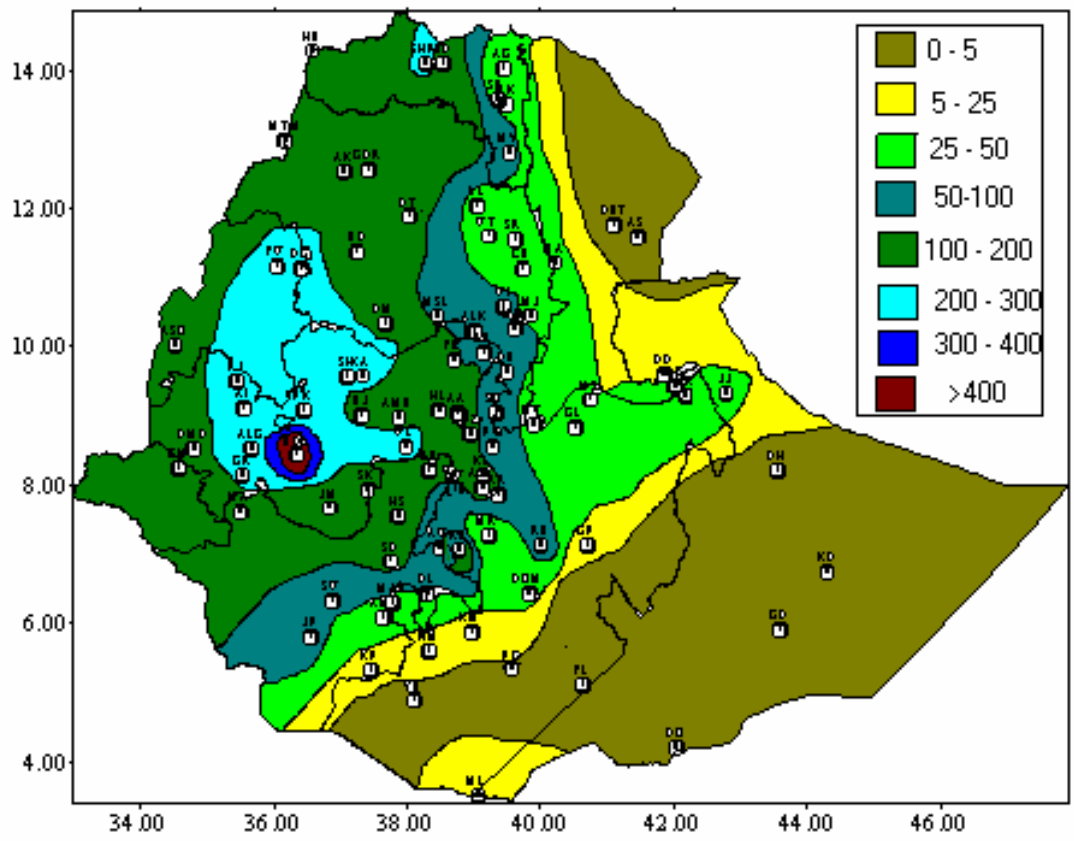


Fig. 3 Rainfall Distribution in mm for the month of June 2004

1.2 June 2004

1.2.1 Rainfall Amount (Fig.3)

Central Tigray, eastern half of Benishangul Gumuz, parts of western and central Oromiya received falls greater than 200mm; most parts of western half of Tigray, Binishangul – Gumuz and Amhara, parts of western and central Oromiya, Gambela, parts of western and northern SNNPR received falls in the range of 100 – 200 mm; Eastern Tigray and Amhara, parts of central and eastern Oromya and most parts of SNNPR experienced 25-100 mm of rainfall. The rest of the country received less than 25 mm of rainfall during the month under review.

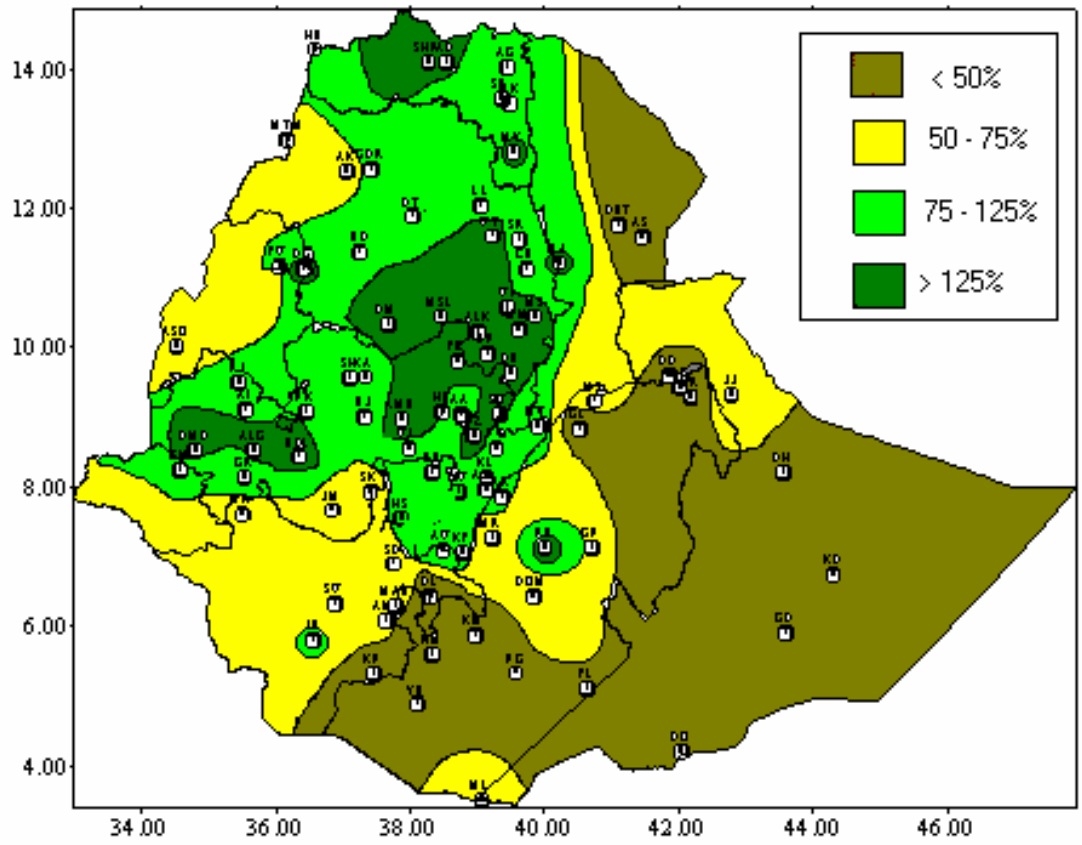


Fig. 4 Percent of Normal Rainfall for the month of June 2004

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)

Most parts of Tigray, Amhara, central and western Oromiya exhibited normal to above normal rainfall whereas the rest of the country experienced below to much below normal rainfall.

1.3 TEMPERATURE ANOMALY

There was no significant temperature anomaly over most parts of the country, as compared to that of the long-term average during the month.

2. WEATHER OUTLOOK

2.1 For the first dekad of July 2004

In the coming ten days, the Kiremt rain producing systems are expected to strengthen further with time. Furthermore, the availability of abundant moisture will lead to heavy falls after mid of the forecast period. Generally, Tigray, Amhara, western Oromiya, central Ethiopia, Benshangul-Gumuz, southern and western SNNPR are expected to have normal to above normal rainfall with occasional heavy falls at few places. Besides, Afar, eastern Amhara, northern Somali, eastern Oromiya and the highlands of southern Ethiopia are anticipated to get rainfall amount close to normal. The southern and the southeastern lowlands will have below normal rainfall.

2.2 For the month of July 2004

In the coming month, there are enhanced probabilities of getting widespread rainfall distribution across rain benefiting portion of the country. In association with this, heavy falls that accompanied with thunders and hails is highly probable to occur over some places of central, western and northern Ethiopia. Generally, in the coming July normal to above normal rains are anticipated over Tigray, western half of Amhara, Benishangul Gumuz western Oromiya and central Ethiopia. Whereas, eastern margins of Tigray, eastern half of Amhara, parts of Afar, eastern Oromiya, Harari, Dire Dawa, northern Somali, Gambella and SNNPR will have near normal rains with a probability of having below normal rains at places. Nevertheless, southern SNNPR and Oromiya as well as northern half of Somali will experienced dry weather conditions.

3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

The observed normal to above normal rainfall over most parts of Tigray, Amhara, central and western Oromiya during the month under review favored season's agricultural activities. As a result sowing of pulses and cereals was under way in some areas of central, eastern and western Oromiya, western Amhara and Harari. Besides, the rainfall situation favored crops, which were at different phonological stages in most parts of the aforementioned areas. However, the observed heavy falls in some areas of northern (Adawa), western (Gore, Nekemte, Bedele, Gimbi, Limu Genet, Nedjo and Shanbu), northeastern highlands (Enewary, Debre Birhan), central (Arsi Robe, Nazerat, Kachisie, Woliso, Arsi Negele) and northwestern (Pawe, Bullen) resulted in crop damage in some pocket areas of the above mentioned areas. On the other hand, some areas of central, eastern, western, northeastern and northern parts of southern highlands reported medium to bad general field condition due to the erratic nature of rainfall. Moreover, the erratic distribution of rainfall favored the outbreak of pests in some areas of SNNPR, central Oromiya and eastern Amhara. Thus, this condition could affect the performance of crop yield in the areas.

In accordance with the crop phonological report, sowing of wheat was under way in some areas of northern and central Oromiya during the third dekad of the month. Assosa reported slight water logging due to heavy fall. Bui and Combolcha reported severe weed infestation and slight disease occurrence on maize and sorghum fields, respectively. The recently sown pulses were at emergence stage in northern Oromiya. Sorghum was at tillering and third leaf stages in some areas of eastern Amhara, western and central Oromiya while at ripeness stage in some areas of eastern Oromiya. Nug was at emergence stage in some areas of central Oromiya. Maize was at ninth and tasseling stage in some areas of eastern Amhara and western Oromiya while it was at flowering and full ripeness stages in southern and eastern highlands of Oromiya and in some areas of northern SNNPR. On the other hand, similar crop was at emergence stage in some areas of western Amhara and central Oromiya. With regard to air, temperature there was no significant temperature anomaly over most parts of the country during the month under review.

3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING MONTH

The anticipated widespread rainfall over Kiremt rain benefiting areas would favor season's agricultural activities. However, the expected heavy falls accompanied with thunder and hails over some places of central, western and northern Ethiopia would result in crop damage. Thus, attention should be given in areas where there is no proper drainage system and low-lying areas in order to mitigate the effect of excess rain. The expected normal to above normal rainfall over Tigray, western half of Amhara, Benishangul Gumuz western Oromiya and central Ethiopia would favour sowing of teff in central Ethiopia like Abomsa, Nazerate, Arsi Robe, Kulumsa, Ziway, Woliso, Ambo, Mekane Selam, Kachsie; southern highlands like Robe, Hosaina; northern like Adwa; western like Assosa, Shanbu, Dangila; northeastern like Enewari, Shola Gebeya, Majete, Chefa, Were Ilu, Wegel Tena, Lalibela, Sirinka, Combolcha. The anticipated near normal rains with a probability of having below normal rains over eastern margin of Tigray, eastern half of Amhara, parts of Afar, eastern Oromiya, Harari, Dire Dawa, northern Somali, Gambela and SNNPR would favour season's agricultural activities to some extent, however, special attention should be given for water harvesting technique to minimize unnecessary moisture losses.

Table 1Climatic and agroclimatic elements of different stations for the month of June 2004

	Stations	Region	A/ rainfall	Normal	%of Normal	Eto mm/day	Monthly Eto	M-STATUS
1	Adigrat	TIGRAI	34.2	32.9	104.0	4.5	135	MD
2	Adwa		129	72.7	177.4	4.6	138	M
3	Mekele		25.4	28.9	87.9	4.9	147	D
4	Michew		59.6	36.1	165.1	4.5	135	MD
5	Senkata		27	115.5	23.4	4.3	129	D
6	Shire		204.8	145.9	140.4	5.0	150	H
1	Assayta	AFAR	3.2	432	0.7	7.4	222	VD
2	Dubti		0	5.8	0.0	6.7	201	VD
1	Bahirdar	AMHARA	144.3	189.4	76.2	3.7	111	H
2	Bati		38.3	15.4	248.7	4.6	138	MD
3	Cheffa		19.9	33.2	59.9	5.1	153	D
4	Combolcha		36.1	32.7	110.4	4.2	124.8	MD
5	D.Birhan		73.6	52.8	139.4	3.9	117	M
6	D.Markos		172	96.1	179.0	3.2	96	H
7	Dangla		230.5	NA	NA	3.5	105	H
8	D.Tabor		140.7	184.8	76.1	NA	NA	NA
9	Enwary		157.5	NA	NA	4.1	123	H
10	Gonder		118.2	158.3	74.7	4.2	126	M
11	M.Meda		59.7	41.6	143.5	NA	NA	NA
12	Majete		47.5	28.2	168.4	4.8	144	MD
13	S.Gebeya		NA	57.1	NA	3.9	117	NA
14	Sirinka		30.5	26.3	116.0	4.9	147	D
15	Wegeltena		48.8	16.4	197.6	4.3	129	M
16	Wereilu		23.3	NA	NA	4.7	141	D
1	Abomssa	OROMIYA	59.7	56.9	104.9	NA	NA	NA
2	Aira		219.7	NA	NA	3.2	96	H
3	Alemaya		25.5	61.9	41.2	4.5	135	D
4	Alge		295.9	201.7	146.7	NA	NA	NA
5	Arsi Robe		78.5	104.1	75.4	3.9	117	M
6	Assela		NA	139	0.0	NA	NA	NA
7	Bedelle		446.6	290.7	153.6	3.0	90	H
8	Bui		117	NA	NA	3.7	111	H
9	D.Dollo		148.9	76.1	195.7	NA	NA	NA
10	D.Mena		34.8	58.6	59.4	3.6	108	MD
11	D.Zeit		150.2	93.9	160.0	4.2	126	H
12	Ejaji		172.4	178.1	96.8	3.3	99	H
13	Fitche		151.5	79	191.8	3.8	114	H
14	Gelemso		30	82.4	36.4	NA	NA	NA
15	Gimbi		320.1	316.8	101.0	NA	NA	NA
16	Gore		252.8	325	77.8	2.6	78	H
17	Jimma		114.7	217.4	52.8	3.0	90	H
18	Kachise		248.2	NA	NA	NA	NA	NA
19	K.Mengist		23.6	57.4	41.1	2.7	81	MD
20	Koffele		105.9	104.4	101.4	2.9	87	H

21	Kulumsa		102.5	80.2	127.8	NA	NA	NA
22	Meiso		37.8	53.8	70.3	6.1	183	D
23	Metehara		21.2	28.3	74.9	4.9	147	D
24	Nazreth		63.3	68.6	92.3	NA	NA	NA
25	Neghele		5.1	11.4	44.7	3.9	117	VD
26	Nedjo		257.5	305.5	84.3	2.9	87	H
27	Nekemte		293.2	379.9	77.2	2.9	87	H
28	Robe(Bale)		69	51.1	135.0	4.3	129	M
29	Sekoru		130.3	238.5	54.6	3.2	96	H
30	Shambu		271.4	244.4	111.0	NA	NA	NA
31	Woliso		215.2	190.8	112.6	3.3	99	H
32	Yabello		0	25.4	0.0	3.6	108	VD
33	Zeway		94.1	80.1	117.5	5.5	165	M
1	Gode	SOMALI	0	0.9	0.0	7.4	222	VD
2	Jijiga		34.4	57	60.4	3.7	111	MD
1	M/Abaya		56.1	75.6	74.2	NA	NA	NA
2	A.Minch	SNNPR	34.8	63.3	55.0	4.3	129	MD
3	Awassa		85.3	NA	NA	NA	NA	NA
4	Dilla		40.9	91.1	44.9	3.2	96	MD
5	Hosaina		134.7	121.4	111.0	3.1	93	H
6	Jinka		60.7	74.5	81.5	3.2	96	M
7	Konso		4.8	47.9	10.0	5.1	153	VD
8	Masha		191.1	294.7	64.8	2.5	75	H
9	Sodo		110.6	150.1	73.7	2.8	84	H
1	Assosa	B/GUMUZ	124	NA	178.8	69.4	NA	NA
1	A.A.Obs.	A.A	141.6	122.3	115.8	2.8	84	H
1	Diredawa	D.D	12.6	36.7	34.3	7.6	228	D
1	Harar	Harai	86	65	132.3	3.7	111	M

Legend

VD	Very Dry	< 0.1
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)

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.

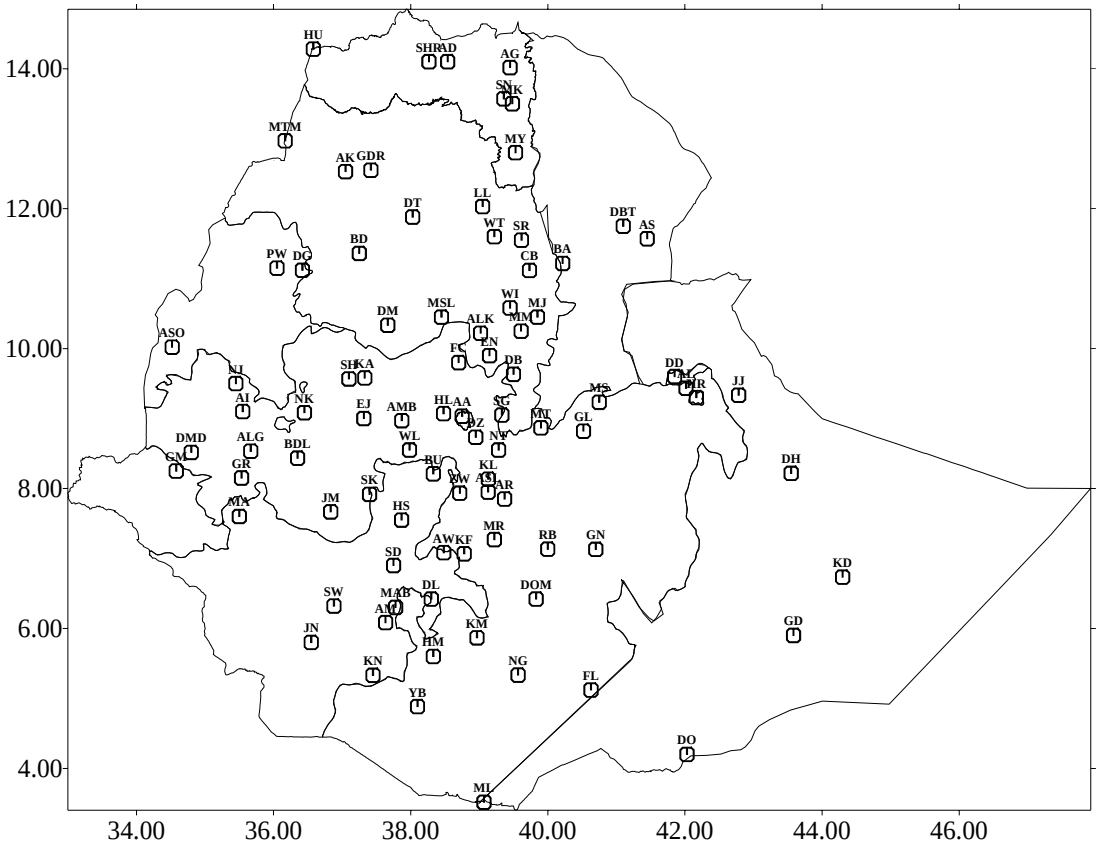
DEKAD: - First or second ten days or the remaining days of a month.

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.



STATIONS DISTRIBUTION FOR THE PREPARATION OF AGROMETEOROLGICAL BULETINS

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Adwa	AD
Aira	AI
Alemaya	AL
Alem Ketema	ALK
Alge	ALG
Ambo	AMB
Arbaminch	AM
Asaita	AS
Asela	ASL
Assosa	ASO
Awassa	AW
Aykel	AK
B. Dar	BD
Bati	BA
Bedelle	BDL
BUI	BU
Combolcha	CB
D.Berehan	DB
D.Habour	DH
D.Markos	DM
D.Zeit	DZ
D/Dawa	DD
D/Mena	DOM
D/Odo	DO
D/Tabor	DT
Dangla	DG
Dilla	DL
Dm.Dolo	DMD
Dubti	DBT
Ejaji	EJ
Enwary	EN
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Kachise	KA
Koffele	KF
Konso	KN
Kulumsa	KL
Lalibela	LL
M.Meda	MM
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Majete	MJ
Masha	MA
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Nazereth	NT
Nedjo	NJ
Negelle	NG
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Pawe	PW
Robe	RB
Sawla	SW
Sekoru	SK
Senkata	SN
Shambu	SH
Shire	SHR
Shola Gebeya	SG
Sirinka	SR
Sodo	SD
Wegel Tena	WT
Woliso	WL
Woreilu	WI
Yabello	YB
Ziway	ZW