

SUMMARY

Kiremt 2004

During the month of June 2004, the observed normal to above normal rainfall over most parts of Tigray, Amhara, central and western Oromiya favored season's agricultural activities. Besides, the moisture status analysis indicator indicates that western half of Meher producing areas of the country were under moist to humid moisture condition. This situation had significant contribution to crops that were attaining at early vegetative stage, field preparation and sowing of short and medium cycle crops (wheat, barley, teff) as well as pulse and oil crops. Moreover, it helped to revitalize and replant the previous long cycle crops that were crucially affected by the prolonged dry spells. 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, the erratic and uneven rainfall distributions with long dry spells created suitable condition for the out break of pest in some areas of SNNPR, central Oromiya and eastern Amhara. Besides, the prevailed long dry spells in the lowlands and dry midlands of eastern Oromiya (eastern Shoa, western and eastern Hararghe) negatively adversely affected the on going agricultural activities and led to failure of maize over the low and mid dry land of east and west Hararghe.

During the month of July 2004, moist and humid moisture condition was observed over much of Meher growing areas of the country. This situation favored the ongoing season's agricultural activities. It also recharged the moisture content of top soil over places where dry spells persisted for a long period of time, particularly over eastern Tigray, eastern and western Hararghe as well as eastern Shoa, It also had great contribution to late sown Meher crops and to replace the previous partially and totally dry long season varieties which are less productive than long cycle crops. Besides, heavy rain accompanied with hailstorm in July produced water logging and flash flooding, this situation resulted in crop damage in Harar, Shire, Adwa, Pawe, Mankush, Arsi Negele, Fitcha and Woliso. In addition to this, the prolonged dry spells over agro-pastoral areas of northern Somali aggravated water stress and shortage of pasture.

During the month of August, much of Meher growing areas of the country experienced moist and humid moisture condition and it had significant contribution to fulfill crop water requirement for the remaining growing periods as well as to plant short cycle crops that don't require excess moisture (like chickpeas, lentil etc...). It was also beneficial to the low land and mid dry land areas of long cycle crops, facilitating their flowering and grain filling stages, which are the critical stages in terms of crop production for most cereal crops. However, heavy rains in August followed by hailstorm and flash flood caused damage on crop, livestock and property loss in Jama Degolo, Gudoberet, Mezezo, Enewary, D/Tabor, Gina Ager and Chagni, particularly it caused land slide in Mezezo and Gudoberet.

During the month of September 2004, Gambella, Benishangul-Gumuz, much of Oromiya, SNNPR and Amhara and western Tigray exhibited better moisture condition. This condition had great contribution to satisfy the water requirements of the crops that were attaining at different phase. It also assisted to plant short cycle crops that do not require excess moisture. On the other hand, the erratic rainfall with long dry spells favored the outbreak of pest and disease as well as weed infestation in some areas of southwestern Benishangul-Gumuz (Assosa), western Oromiya (Gimbi and Shambu). More over, heavy falls over SNNPR (Boditi and Shone), eastern Benishangul-Gumuz (Pawe), western and central Oromiya (Dembi Dolo, Shambu and Fitcha) caused severe crop damage on long cycle crops (maize, sorghum) and oil crops. However, the observed moisture deficit (dry and very dry condition) over eastern half of the country aggravated the failure

of crops over those areas. Besides, it exacerbated the shortage of pasture and drinking water over northern Somali. In accordance with crop phenological reports, maize was at full ripeness stage on central and western Oromiya (Woliso, Zeway and Nejo) and at wax ripeness stage on eastern and southern Amhara (Sirinka and Majete), eastern and western Oromiya (Gelemso, Bedelle, Gimbi, Dembi Dolo, Aira and Sekoru,) and at tasseling stage on eastern Amhara (Bati and Cheffa) and at flowering stage (Meisso) and 9th leaf stage on Bale Zone (Dolo Mena). Soghum was at Tasseling stage in eastern Amhara (Combolcha, Bati, Cheffa), northern SNNPR (Bui), eastern and western Oromiya (Meisso, Aira and Nejo) and at flowering stage in eastern and western Oromiya (Gelemso and Dembi Dolo) and at shooting stage on western Oromiya (Shambu) and at tillering stage on some areas of western Oromiya (Gimbi). Millet was at tasseling stage on some areas of western Oromiya (Nejo) and at shooting stage on eastern Benishangul-Gumuz (Bullen). Teff was at flowering stage on eastern and southern Amhara (Combolcha and Sirinka), central and western Oromiya (Nazareth, Zeway, Kulumsa and Gimbi) and northeastern SNNPR (Sodo) while at Tasseling stage on western Amhara (Dangila) and western and central Oromiya (Kachisse and Bedelle), eastern Oromiya (Gelemso) and northern SNNPR (Bui) while at shooting stage on eastern Amhara (Cheffa and Bati), central Oromiya (Fitch and Woliso) and at 3rd leaf stage on Bale Zone (Dolo Mena). Wheat was at flowering stage on eastern Amhara (Combolcha) and central Oromiya (Fitch, Zeway) and at earing stage on some areas of central Oromiya (Kachisse) and at shooting stage on some areas of western Oromiya (Shambu) while at Tillering and 3rd leaf stages on northeastern Amhara (Wegel Tena) and western Oromiya (Dembi Dolo), respectively also barley was at ripeness stage on some areas of central Oromiya (Kulumsa). In addition to this, pulse crops like beans and peas were at flowering stage on northeastern Amhara (Wegel Tena) and western and central Oromiya (Shambu and Fitch) and at emergence stage on northeastern SNNPR (Sodo). Nug was at green ripeness and budding stages on central Oromiya (Woliso and Kachisse) and western Benishangul-Gumuz (Bullen), respectively. In addition to this, Gimbi, Dembi Dolo, Assosa, Meisso, Fitch, Zeway, Bui, Sodo, Meisso, Majete and Cheffa, Shambu and Bullen reported medium field condition on their fields. Besides, Shambu reported severe weed infestation and persistence wilting on bean. Zeway and Bullen reported slight wilting on maize and slight damage on millet due to insect, respectively.

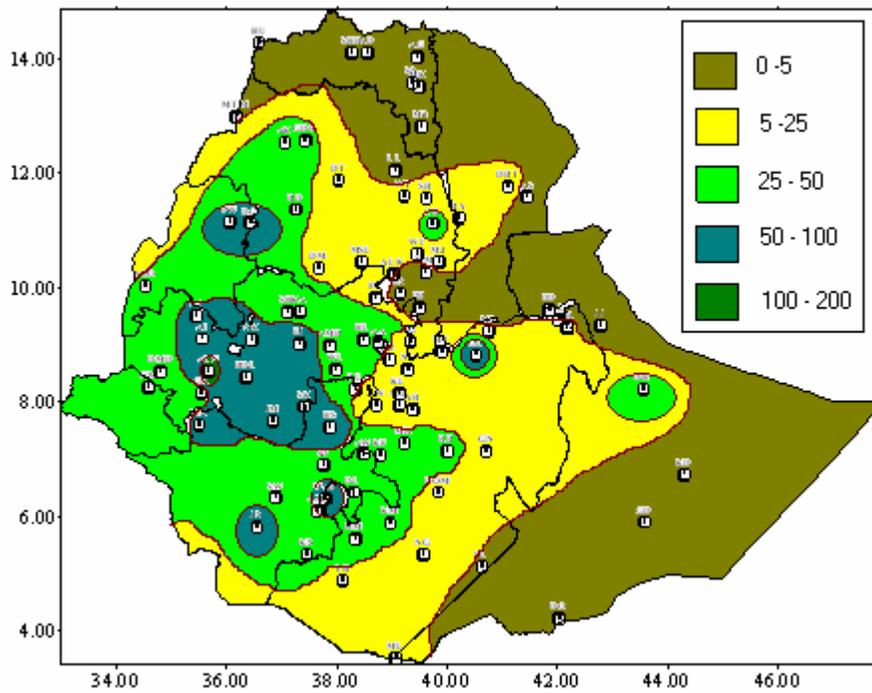


Fig.1 Rainfall distribution in mm (21- 30 September, 2004)

1. WEATHER ASSESSMENT

1.1 September 21-30, 2004

1.1.1 Rainfall Amount (Fig 1)

Chagni, Alge, Mirab Abaya, Nekemt, Aira, Masha, Gelemso, Jinka, Jimma, Bedelle and Hossaina received 121.5, 103.1, 96.7, 96.3, 90.9, 87.1, 83.2, 79.9, 78, 77.1 and 73 mm of rainfall, respectively.

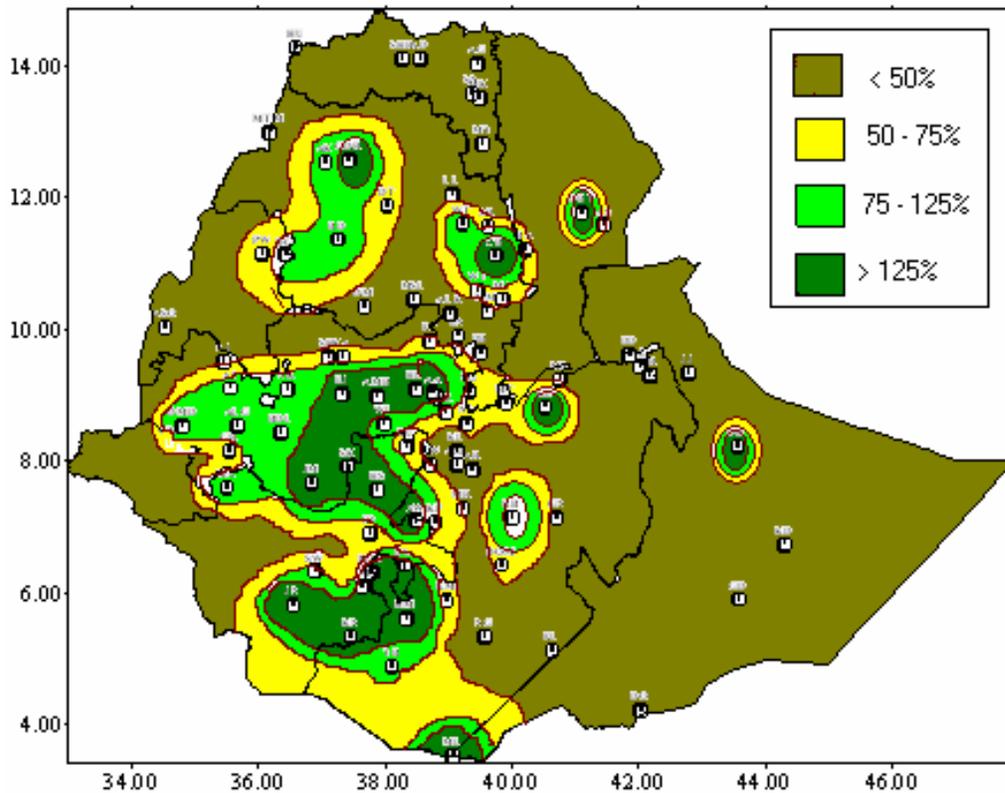


Fig. 2 Percent of normal rainfall (21-30 September, 2004)

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 central and western Oromiya, northern and southern SNNPR, central Amhara and pocket areas of eastern Amhara the rest portions of the country experienced below normal rainfall.

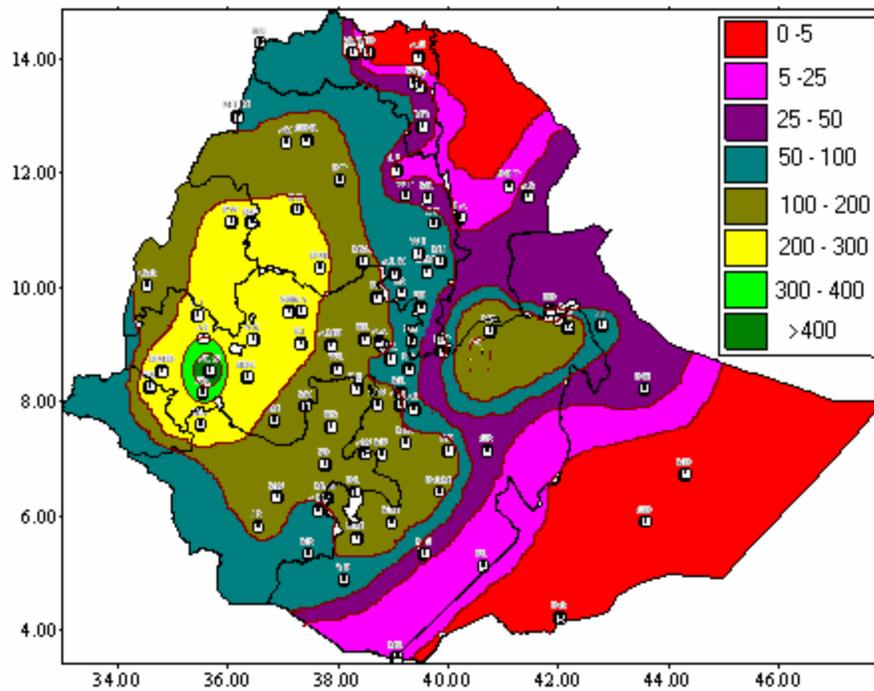


Fig. 3 Rainfall distribution in mm for the month of September 2004

1.2 September 2004

1.2.1 Rainfall Amount (Fig. 3)

Gimbi, Pawe, Dangila, Bedelle, Bahir Dar, Shambu, Bullen Nedjo, Nekemt, Mankus, Ejaji, Dembi Dolo, Masha and Debre Markos received 365.6, 295, 266.6, 253.3, 249.5, 242.5, 239.2, 236.2, 233.7, 228.7, 218.3, 208.4, 207.6 and 203.5 mm of rainfall, respectively.

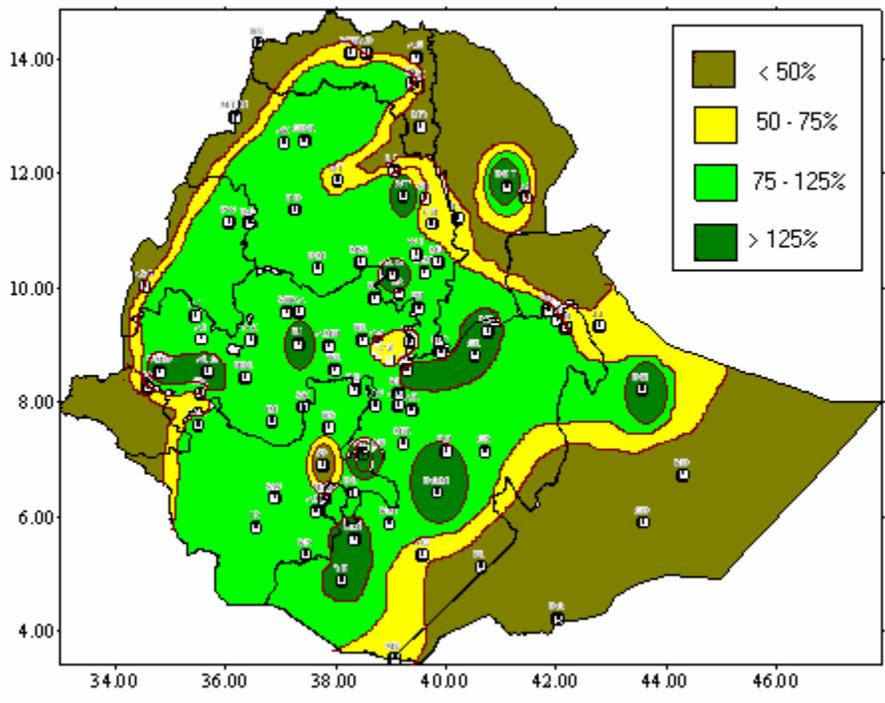


Fig. 4 Percent of normal rainfall for the month of September 2004

Explanatory notes for legend
 < 50 -- Much below normal
 50 -75% --- Below normal
 75 - 125% --- Normal
 > 125% ---- Above normal

1.2.2 Rainfall Anomaly (Fig. 4)

Much of Amhara, SNNPR, Oromiya, Benishangul-Gumuz, pocket areas of eastern Afar and Somali experienced normal to above normal rainfall while the rest parts of the country below normal rainfall.

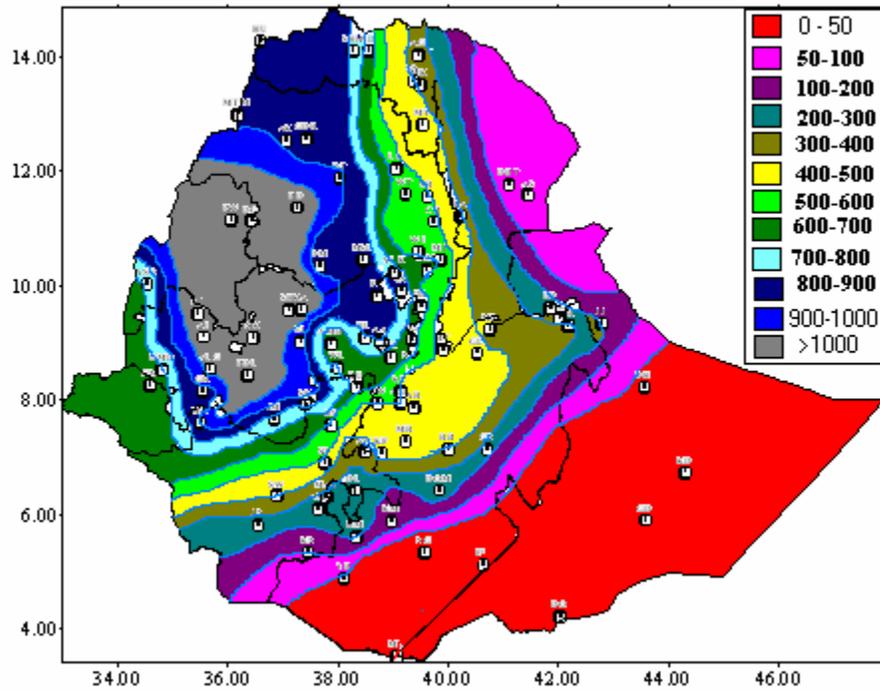


Fig. 5 Rainfall distribution in mm for Kiremt 2004

1.3 Kiremt 2004

1.3.1 Rainfall Amount Fig. 5)

Alge, Pawe, Gimbi, Nekemt, Dangila, Kachissie, Bedelle, Bahir Dar, Aira, Nedjo, Shambu, Masha, Woliso and Shire received 1491.9, 1461.1, 1401.5, 1362.2, 1349.1, 1297.4, 1259.5, 1239.4, 1204.8, 1180.2, 1088.2, 1079.8, 912.8 and 835.9 mm of seasonal rainfall, respectively.

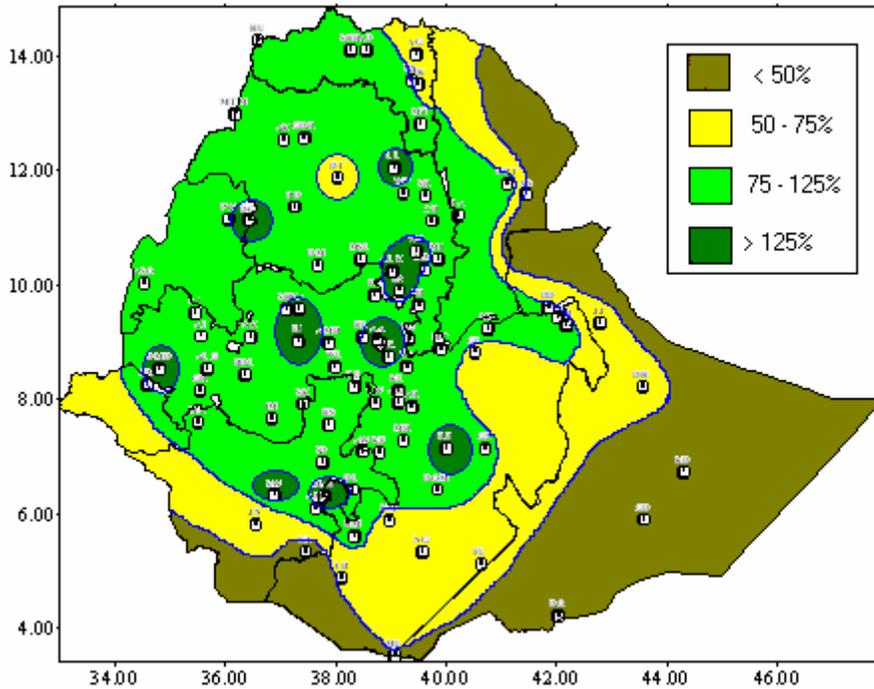


Fig. 6 Percent of Normal rainfall for Kiremt season, 2004

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

1.3.2 Rainfall Anomaly

Amhara, Benishangul-Gumuz, much of Tigray, southern half of Afar, northern half of SNNPR, central and western Oromiy, Arsi and Bale highlands experienced above normal rainfall while the rest parts of the country below normal rainfall.

1.4 TEMPERATURE ANOMALY

No significant temperature anomaly has been observed during the season.

2. WEATHER OUTLOOK

2.1 For the month of October 2004

In genera, Gambella, western Oromya, Benishangul-Gumuz, SNNPR and Western Amhara will have normal to above normal rains. Eastern and Southern Oromya, Dire Dawa, Harari, Tigray, Afar, Somali, central and eastern Amhara will have normal rains. In addition, under normal condition, the occurrence of a fall in nighttime and early marring temperature is less likely over northern, central and eastern portions of the country.

2.3 For the Bega season, 2004/5

During the Bega season, (October through January) most parts of the northern half of the country will be under windy dry and sunny weather condition. Besides, cool early morning and night time temperatures are experienced over various parts of the country. On the other hand, Bega is the second rainy season for the south and southeastern parts of Ethiopia. In addition, Unseasonal rains occur over central, eastern northern and northeastern parts of the country in some occasions. In producing the outlook for the coming Bega season, the current global, regional and local weather producing systems as well as the future trends of the global and regional ocean sea surface temperature anomalies were considered. Accordingly, in coming Bega season, the eastern half of the country including central and southern Ethiopia will be under wet Bega. In general, normal to above normal rains are anticipated over Somali, eastern half of SNNPR, central, eastern and southern Oromiya, eastern Tigray and Amhara, Afar, Harari, Dire Dawa and Addis Ababa while near normal rains are highly likely prevail over Gambella, western half of SNNPR, western Oromiya and much of Benishangul-Gumuz. On the other hand, normal to below normal rain is expected over western Tigray, central and western Amhara and the adjoining areas of Benishangul-Gumuz. In association with this, the occurrence of frost is very less even over the frost-prone areas of the country.

3. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

3.1 VEGETATION CONDITION AND IMPACT ON AGRICULTURE

The observed rainfall distribution during the month of April favored field preparation and planting long cycle crops like maize, sorghum and millet over western and eastern Oromiya (eastern and western Hararghe). However, the prevailed long dry spells over western and central Tigray, western Amhara as well as western half of Benishangul-Gumuz adversely affected the ongoing early season's agricultural activities. Moreover, during May dry and very dry moisture condition was pronounced over much of the country with the exception of parts of western Oromiya, Gambella and SNNPR this situation accelerated the evapo transpiration process and negatively affected the physiological process. Thus, such dry and very dry condition led to partially dry and totally dry condition on the recently sown long cycle crops over eastern Oromiya (eastern Shoa, western and eastern Hararghe). During the month of June the rainfall covered much of Meher growing areas of the country, this situation had great contribution to land preparation and planting of short and medium cycle crops as well as to revitalize and replant the previous long cycle crops which were crucially affected by the persisted dry spells over eastern Oromiya and northeastern Amhara. During the month of July, better rainfall condition was observed over much of Meher producing areas of the country. However, the observed erratic rainfall both in amount and distribution before mid July created conducive atmosphere for the out break of pest and disease over eastern Amhara, eastern and southwestern Benishangul-Gumuz, eastern Oromiya, particularly long cycle crops like maize and sorghum were severely attacked by stock borer (maize was severely affected by such adverse condition), thus, due to such adverse condition farmers were forced to replace the previously sown long cycle crops with short cycle varieties that is less productive than long cycle crops. This situation particularly occurred over the low land and mid dry land areas of eastern Shoa, western and eastern Hararghe. In addition to this, the observed long dry spell and isolated convective activities over eastern Shoa resulted in crop damage. For instance about 900 and 725 hectares of crops were damaged by torrential rain in Adamitulu and Boset Weredas respectively. Moreover, the Prevailed dry weather condition over eastern Tigray, southern Oromiya (Kibre Mengist), the lowland of Bale (Dolo Mena), northeastern SNNPR (Sodo) faced partially dry condition on maize and teff. These partially dry conditions affected the performance of crop yields over thus areas. The prolonged dry spell over Agro-pastoral areas of

northern Somali aggravated water stress and the availability of pasture and drinking water. On the other hand, heavy fall over western, eastern and central Oromiya (Kachissi, Woliso A/Negele, Alge, and Fitcha), Tigray (Shire and Adwa), western Benishangul-Gumuz (Pawe and Mankush) and eastern Amhara (Jama Degolo) caused crop damage. During the month of August, normal to above normal rainfall distribution experienced over much of Meher producing areas. This condition had significant contribution to fulfill crop water requirement for the remaining growing period as well as to plant short cycle crops that do not require excess moisture. It also beneficial to the low land and mid dry land areas of long cycle crops, facilitating their flowering stages which are the critical stages in terms of crop production for most cereal crops. Besides, heavy fall in August followed by hailstorm and flash flood caused extensive damage on crops, livestock and property lose in southern and western Amhara, particularly it caused land slide in Mezezo and Gudo Beret also slight to severe water logging prevailed over northeastern and northern SNNPR, western Oromiya, eastern and southern Amhara and southwestern Benishangul-Gumuz, this excess saturation negatively affected on the quality and the performance of crop yields. During the month of September Gambela, Benishangul-Gumuz, much of Oromiya, SNNPR and Amhara exhibited moist to humid moisture condition. This good moisture condition had indispensable contribution to fulfill the water requirements of the crops that were attaining at different phase. It also assisted to sow short cycle crops that do not require excess rain and moisture. However, the erratic rainfall with long dry spells averted the outbreak of pest and disease as well as weed infestation in some areas of southwestern Benishangul-Gumuz (Assosa), western Oromiya (Gimbi and Shambu). Moreover, heavy falls over SNNPR (Bodit and Shone), eastern Benishangul-Gumuz (Pawe), western and central Oromiya (Dembi Dolo, Shambu and Fitcha) caused severe crop damage on long cycle crops (maize, sorghum) and oil crops like (nug and selit). Besides, the observed moisture deficit (dry and very dry condition) over eastern half of the country intensified the failure of crops and it exacerbated the shortage of pasture and drinking water over northern Somali. In general, the performance of Kiremt 2004 and impact on long cycle crops can be considered positive over the western half of the country including the central high lands. The long cycle crops over the lowlands and dry midlands of the eastern half of the country can be considered as poor due to prolonged dry spells up to mid July (due to the late onset of the Kiremt season over these portion of the country). The performance of long cycle crops over the wet midland and highlands over the eastern half of the country can be considered as highly much better as compared with the lowlands. The performance of short to medium cycle Meher crops can be considered much better condition over significant parts of the country.

3.2 EXPECTED WEATHER IMPACTS ON AGRICULTURE DURING THE COMING BEGA SEASON

Major agricultural importance of the Bega season is harvest and post harvest activities over the Meher growing areas. It is a time for replenishment of pasture and drinking water over southern and south-eastern lowlands as it is their short rainy season during the first half of the season. In addition to this, it is a cropping time for southern midlands and lowlands of agro-pastoral areas. More over, Bega season is also a time for pest out breaks due to adverse weather condition. The anticipated forecast of normal to above normal rainfall over the southern and southeastern lowlands is expected to have positive impact on the continued problem of pasture over the aforementioned areas. The normal to above normal rainfall expected over eastern parts of the country and along the Rift Valley would have more positive impact for late planted crops (due to the replanting activities) and short cycle crops planted late in the season. However, it should be stressed that close monitoring of pest outbreak should be conducted. The anticipated normal to above normal rainfall distribution over central and northern parts of the country is expected to have negative impact on crops which have to be harvested and positive on water harvesting activities.

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

	Stations	Region	A/ rainfall	Normal	%of Normal	Eto mm/day	Monthly Eto	Moisture status
1	Adigrat	TIGRAI	NA	NA	NA	4.27	128.1	NA
2	Adwa		3.8	126.4	3.0		0	NA
3	Mekele		1.4	38	3.7	4.77	143.1	VD
4	Michew		27.4		NA	3.8	114	D
5	Senkata		NA	NA	NA	5.33	159.9	NA
6	Shire		75.3	120.9	62.3	4.06	121.8	M
1	Assayta	AFAR	27.2	129.8	21.0	6.27	188.1	D
2	Dubti		22.8	13.9	164.0	5.27	158.1	D
3	Gewane		48.1	33.9	141.9	NA	NA	NA
1	Amba Mariam	AMHARA	NA	NA	NA	3.54	106.2	NA
2	Bahirdar		249.5	205.8	121.2	NA	NA	NA
3	Bati		43.9	80.8	54.3	4.06	121.8	MD
4	Combolcha		82.5	125.7	65.6	3.65	109.5	M
5	Chagini		NA	NA	NA	3.09	92.7	NA
6	Chefa		89.4	33.7	265.3	4.13	123.9	M
7	D.Birhan		78.9	89.3	88.4	NA	NA	NA
8	D.Markos		203.5	211.8	96.1	3.27	98.1	H
9	D.Mena		111.9	NA	NA	4.08	122.4	M
10	D.Tabor		109.2	182.7	59.8	NA	NA	NA
11	Dangla		266.6	222.4	119.9	3.49	104.7	H
12	Enwary		95.5	62.3	153.3	3.67	110.1	M
13	Gonder		112.4	116.2	96.7	4.08	122.4	M
14	M.Meda		62.8	81.4	77.1	NA	NA	NA
15	Majete		98.6	104.8	94.1	3.93	117.9	M
16	Lalibela		16.5	41.1	40.1	3.47	104.1	D
17	Sirinka		68.7	90.1	76.2	3.73	111.9	M
18	Woreilu		69.3	NA	NA	4.07	122.1	M
19	Wegeltena		44.9	35.9	125.1	3.52	105.6	MD
1	Aira	OROMIYA	313	271.8	115.2	3.46	103.8	H
2	Alemaya		121.8	117.1	104.0	3.97	119.1	H
3	Ambo		103.2	107.7	95.8	3.18	95.4	H
4	Arsi Robe		78.7	125.4	62.8	NA	NA	NA
5	Assossa		114.4	207.8	55.1	3.6	99.6	H
6	Bedelle		253.3	276.3	91.7	3.32	126.9	H
7	Bui		129.5	115.3	112.3	4.23	126.9	H
8	D.Dollo		208.4	150.3	138.7	NA	NA	NA
9	D.Mena		111.9	77.4	144.6	NA	NA	NA
10	D.Zeit		68.5	105.8	64.7	3.98	119.4	M
11	Ejaji		218.3	153.8	141.9	3.3	99	H
12	Fitche		127.4	126.8	100.5	3.39	101.7	H
13	Gelemso		167.4	124.7	134.2	3.89	116.7	H
14	Gimbi		365.6	NA	NA	NA	NA	NA

15	Gore		166.2	323.9	51.3	2.97	89.1	H
16	Jimma		198.3	184.8	107.3	NA	NA	NA
17	K.Mengist		101.6	98.7	102.9	3.44	103.2	M
18	Koffele		105.8	148.8	71.1	2.67	80.1	H
19	Kulumsa		155.1	106.9	145.1	3.04	91.2	H
20	Meisso		109.2	77.2	141.5	4.83	144.9	M
21	Merraro		18.5	13.2	140.2	NA	NA	NA
22	Metehara		39.6	43	92.1	5.4	162	D
23	Moyale		11.7	16.7	70.1	4.53	135.9	VD
24	Nazreth		77.1	106.4	72.5	4.69	140.7	M
25	Neghele		20.8	40.8	51.0	5.27	158.1	D
26	Nedjo		236.2	308.7	76.5	3.36	100.8	H
27	Nekemte		233.7	268.3	87.1	2.97	89.1	H
28	Robe(Bale)		129.1	103	125.3	3.35	100.5	H
29	Sekoru		142.4	180.6	78.8	3.29	98.7	H
30	Shambu		242.5	277.6	87.4	3.42	102.6	H
31	Woliso		171.6	160.7	106.8	3.32	99.6	H
32	Yabello		56.7	33.6	168.8	NA	NA	NA
33	Zeway		92.7	86.2	107.5	4.39	131.7	M
1	D.habur	SOMALI	47.3	NA	NA	5.19	155.7	MD
2	Gode		0	5.2	0.0	7.73	231.9	VD
3	Jijiga		52.5	97.4	53.9	3.55	106.5	MD
1	A.Minch	SNNPR	76.4	77.4	98.7	4.42	132.6	M
2	Awassa		116	73.7	157.4	3.41	102.3	H
3	Hosaina		136.9	155.8	87.9	NA	NA	NA
4	Jinka		127.7	127.7	100.0	3.5	105	H
5	Konso		64.5	54.6	118.1	4.74	142.2	MD
6	Masha		207.6	223.8	92.8	2.67	80.1	H
7	Sawla		121.5	NA	NA	3.62	108.6	H
8	Sodo		63.6	149.3	42.6	3.53	105.9	M
1	Pawe	B/GUMUZ	295	276.4	106.7	3.81	114.3	H
2	Bullen		239.2	140.7	170.0	3.42	102.6	H
3	Mankushi		228.7	89.6	255.2	NA	NA	NA
1	A.A.Obs.	A.A	157.8	173.6	90.9	2.99	89.7	H
1	Diredawa	D.D	41.4	47.2	87.7	5.67	170.1	D
1	Harar	Harai	104.7	93	112.6	3.59	107.7	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)

