REPUBLIC OF MALAWI

Ministry of Natural Resources, Energy and Mining
Department of Climate Change and Meteorological Services

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In support of national early warning systems and food security

Be wise be weather-wise

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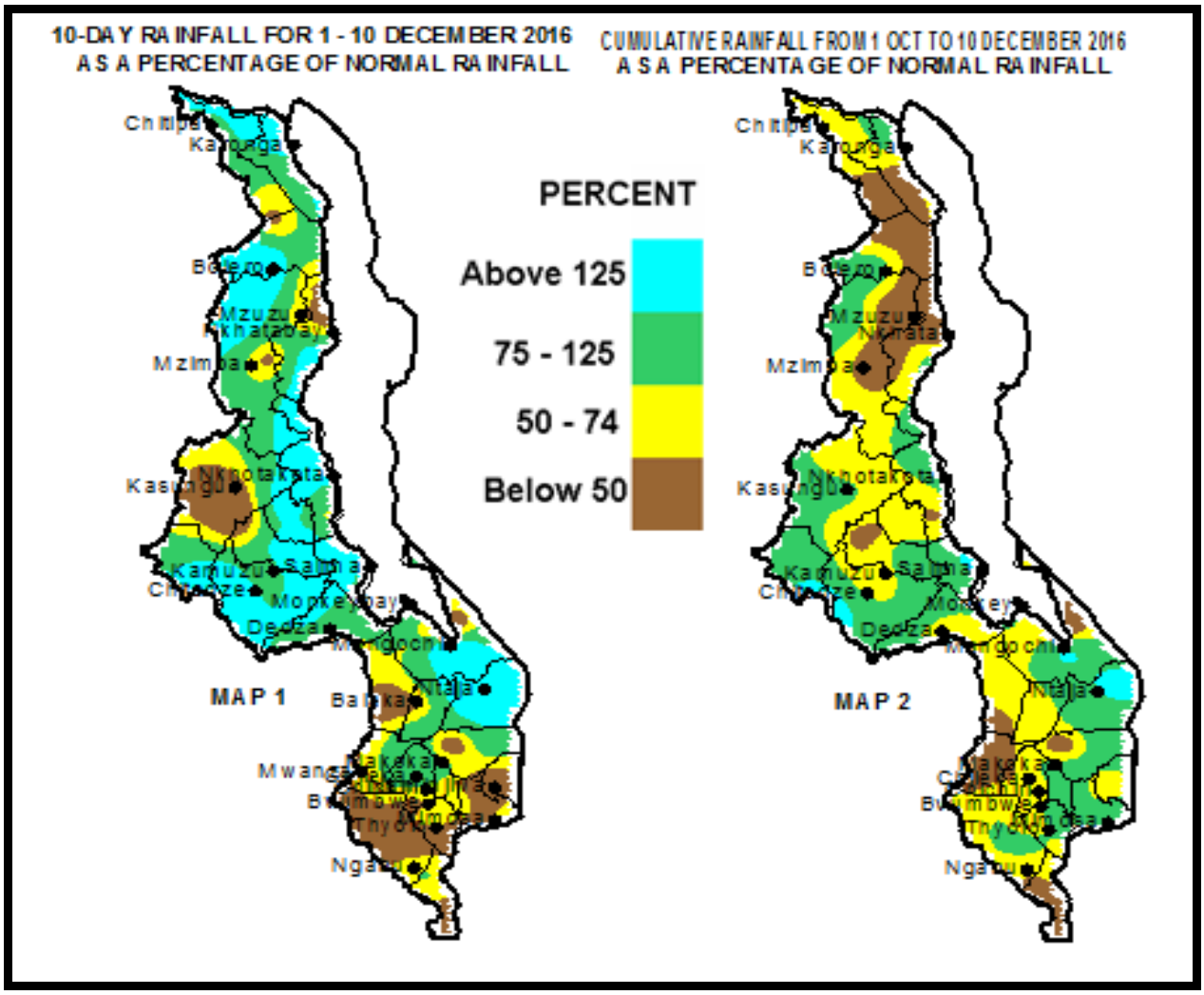
HIGHLIGHTS

- **Moderate to locally heavy rainfall experienced over Malawi…**
- **Crops reported encouraging between planting and early vegetative stages…**
- **Good rainfall distribution expected during 11 to 20th December 2016…**



Rainfall Maps for 01 to 10 December 2016

1.0 WEATHER SUMMARY

During the first ten days of December 2016, both main rain bearing systems namely the Inter Tropical Convergence Zone and Congo Air Mass got established and were active over Malawi. As a result most areas in Malawi received moderate to heavy rainfall. Many areas registered average to above average rainfall (Green to light blue Colours on Map 1).

All inquiries should be addressed to: The Director of Climate Change and Meteorological Services, P.O. Box 1808, Blantyre, MALAWI
Tel: (265) 1 822 014/106 Fax: (265) 1 822 215 E-mail: metdept@metmalawi.com Homepage: www.metmalawi.com

1.1 RAINFALL SITUATION

During the first ten days of December 2016, most areas in Malawi had received widespread moderate to locally heavy rainfall amounts. Areas that had accumulated at least 80mm of rainfall included Chileka-Namitete in Lilongwe which had received 173mm, Chintheche Agric in Nkhata Bay had 171mm, Thyolo Boma 149mm, Dwangwa 138mm, Ntaja Met in Machinga had reported 116mm, Dowa Agric 110mm, Euthini Agric in Mzimba 94mm, Lujeri Tea Estate had accumulated 93mm, Chikweo Agric in Machinga had 91mm, Chancellor College in Zomba 85mm, Lifuwu Research Station in Salima and Mchinji Boma recorded 82mm while Baka Research Station in Karonga reported 81mm. These rainfall amounts were more than the long expected rainfall amounts for the respective areas. More details are in Table 1 and Map 1.

Map 2 shows cumulative rainfall performance for the period 1st October to 10th December 2016. Generally the map shows that Malawi has received average to below average rainfall amounts with very few pockets of below average cumulative rainfall amounts.

1.3 AIR TEMPERATURE

During the first ten days of December 2016, average daily maximum temperatures in Malawi were above 28°C except at Dedza where the maximum was at 25.3°C. Average maximum temperatures had ranged from 25.3°C at Dedza to 37.3°C at Ngabu Met in Chikwawa while average minimum temperatures had ranged from 16.2°C at Dedza to 25.6°C at Ngabu Met. The highest maximum temperature was still reported at Ngabu (42.7°C) in Chikwawa while the lowest temperature was 14.8°C recorded at Mzuzu Airport. For more details see Table 2.

1.4 WIND SPEEDS

Average wind speeds measured at a height of two metres above the ground level across the country varied from 0.7Km per hour at Makoka Met to 10.1km per hour at Chileka Met. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the first ten days of December 2016, daily average relative humidity values collected from various stations in Malawi had ranged from 58% at Ngabu Met to 73% at Chitipa and Ntaja Met stations. Details are on the Table 2.

1.6 SUNSHINE HOURS

The daily average hours of bright sunshine across Malawi were between 3.7 and 7.6 hours. The lowest was registered at Chitipa while the highest was reported at Salima Met. Details are on the Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

Good rainfall amounts were received over most parts of the country. As a result ten day rainfall amounts during the period under review had been average to above average over most parts of the country. The major farming activities during the period included land preparation, acquisition of farm inputs, and application of basal fertilizer and planting of crops. The rains have significantly improved pasture availability for animal production, water resources, soil moisture reserves and supported seed germination, growth and development of crops.

The general crop stand in the fields particularly for maize was reported in good condition. Maize crop ranged from planting to early vegetative stages. For proper utilization of the rains, farmers are encouraged to adhere to principles of good husbandry including use of appropriate seeds, timely planting, implementation of proper plant population and spacing, control of weeds, pests and diseases and fertilizer application. Farmers are advised to seek further advice and guidance from Agricultural Extension Officers.

3. PROSPECTS FOR 2016/17 RAINFALL SEASON

The rainfall forecast for the 2016/2017 season in Malawi is that during the first half (October to December 2016), the greater part of southern half of Malawi is likely to receive normal to above normal rainfall amounts while the northern half is likely to receive normal to below normal rainfall amounts. During the second half (January to March 2017) the greater part of Malawi is expected to experience normal to above normal rainfall amounts. In view of this forecast farmers are advised to ensure timely planting, plant drought tolerant food crops such as cassava, sweet potatoes, sorghum and millet, in the early days of the rainy season, plant early maturing crop varieties and apply adequate manure to improve soil moisture retention

4. OUTLOOK FOR 11 – 20 DECEMBER 2016

Medium range weather forecast products indicate that both main rain bearing systems namely the Inter Tropical Convergence Zone and Congo Air mass will remain active during the second ten days of December 2016. As a result most areas in Malawi are likely to experience good rainfall distribution and amounts. These rains are likely to support land preparation, planting of crops, seed germination, growth and development of most crops.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 01 TO 10 DECEMBER 2016

ADD	RAINFALL STATION	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL (EXPECTED) RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL	ACTUAL TOTAL RAINFALL TODATE (mm)	NORMAL (EXPECTED) RAINFALL TODATE (mm)	ACTUAL TODATE AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL	RAINY DAYS ≥ 0.3 mm
	Chitipa Met	81.3	54.4	149	83.9	97.3	86	2
	Karonga Met.	49.2	42.5	116	67.3	118.4	57	6
	Lupembe	70.9	37.6	189	88.8	87.1	102	4
	Vinthukutu Agric	20.5	26.1	79	20.5	65.5	31	2
MZUZU	Bolero Met	56.0	27.5	204	68.4	71.5	96	4
	Bwengu Agric.	22.6	29.8	76	25.3	87.1	29	6
	Chikangawa forest	19.0	54.7	35	31.0	142.6	22	4
	Chelinda (Nyika)	17.5	62.9	28	22.0	187.5	12	3
	Chintheche Agric	170.9	73.1	234	209.9	204.8	102	2
	Euthini Agric.	94.2	45.1	209	117.2	105.3	111	5
	Mbawa Res. Stn	29.9	29.3	102	67.7	99.5	68	6
	Mzimba Met	30.4	47.9	63	37.7	111.2	34	6
	Mzuzu Met.	23.1	45.6	51	45.0	153.0	29	3
	NkhataBay Met.	33.2	79.8	42	48.1	175.4	27	5
	Rumphi Boma	34.6	26.5	131	35.2	69.9	50	4
KASUNGU	Dowa Agric	110.0	45.7	241	114.3	103.5	110	6
	Kaluluma DTC	55.9	68.3	82	60.9	108.6	56	3
	Kasungu Met	12.0	46.1	26	78.7	99.0	79	1
	Lisasadzi	0.4	55.3	1	25.4	100.7	25	1
	Malomo Agric	39.2	22.9	171	39.2	66.6	59	3
	Madisi Agric	19.6	42.3	46	28.1	91.6	31	3
	Mchinji Boma	82.2	69.3	119	205.3	182.7	112	4
	Mponela Agric	69.1	54.2	127	71.7	117.6	61	5
	Ntchisi Boma	38.3	78.3	49	51.0	140.5	36	4
SALIMA	Dwangwa Sugar	137.7	76.6	180	164.2	168.8	97	5
	Lifuwu	82.2	63.1	130	172.6	105.5	164	4
	Salima Met	69.7	62.0	112	119.3	104.7	114	4
LILONGWE	Chileka Namitete	172.9	60.4	286	266.1	160.3	166	5
	Chitedze Met.	38.1	44.0	87	54.9	130.0	42	7
	Dzonzi Forest	11.5	68.0	17	84.8	161.9	52	3
	K.I.A Met	29.8	32.7	91	58.8	98.4	60	4
	Mlangeni Njolomole	36.5	56.5	65	77.1	146.3	53	1
	Mtakataka Airwing	76.3	62.9	121	120.2	115.3	104	2
	Nathenje Agric	66.1	38.9	170	120.6	112.5	107	4
	Ntcheu - Nkhande	39.8	64.8	61	80.9	156.8	52	6
	Dedza Met	33.8	49.8	68	52.7	132.5	40	4
MACHINGA	Balaka Township	16.7	38.1	44	75.3	138.8	54	2
	Chancellor College	84.5	99.5	85	195.7	223.0	88	4
	Chikweo Agric.	90.5	60.6	149	202.6	145.3	139	6
	Chingale Agric	19.9	61.4	32	56.7	150.1	38	4
	Mpilipili (Makanjila)	39.5	55.8	71	43.0	119.9	36	5
	Makoka Met	64.7	71.7	90	166.9	164.6	101	3
	Mangochi Met.	56.1	30.7	183	94.3	76.1	124	4
	Monkey Bay Met.	31.0	28.6	108	39.8	50.6	79	3
	Namiasi Agric	9.0	50.0	18	25.2	89.6	28	2
	Namwera Agric	68.3	67.2	102	113.4	161.4	70	5
	Ntaja Met.	116.2	52.0	223	156.2	125.8	124	4
	Phalula Agric	56.6	50.6	112	105.1	164.7	64	5
	Toleza Farm	40.0	60.4	66	81.0	143.0	57	3
	Zomba Agric	65.1	92.9	70	144.1	203.4	71	5
BLANTYRE	Bvumbwe Met.	28.4	79.2	36	97.4	207.8	47	1
	Chichiri Met.	21.3	82.1	26	178.3	383.7	46	4
	Chileka Airport	65.5	53.4	123	108.9	176.4	62	4
	Chiradzulu Agric	39.4	60.4	65	163.2	183.3	89	3
	Chizunga Factory	55.7	105.8	53	196.7	263.4	75	4
	Lujeri Tea Estate	92.8	109.9	84	487.4	426.1	114	4
	Masambanjati Agric	22.0	77.4	28	142.3	227.8	62	2
	Mimosa Met.	58.9	101.3	58	338.0	305.0	111	4
	Mpemba Vet	49.3	71.7	69	162.1	217.6	74	2
	Mulanje Boma	55.2	110.7	50	294.0	404.6	73	2
	Mwanza Boma	30.2	54.8	55	77.8	198.5	39	2
	Naminjiwa Agric	5.0	67.7	7	82.7	163.2	51	1
	Thuchila Agric	43.0	51.3	84	155.5	146.4	106	3
	Thyolo Boma	148.7	76.0	196	221.4	198.3	112	4
	Thyolo Met	23.2	66.9	35	88.2	210.5	42	4
SHIRE VALLEY	Chikwawa Boma	12.9	56.3	23	15.8	154.0	10	1
	Kasinthula Res. Stn.	1.7	48.9	3	1.7	129.3	1	1
	Makhanga Met	41.0	52.0	79	83.3	144.7	58	1
	Nchalo	2.2	38.2	6	114.8	116.3	99	1
	Ngabu Met.	38.4	48.9	79	68.3	137.2	50	2
	Nsanje Boma	13.7	59.3	23	58.8	213.6	28	1

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 DECEMBER 2016

ADD/ STATION	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEED Km/hour	RH %	SUN SHINE HOURS	Eo mm per day	Et mm per day	RAD-TION calcm^{-2} p/day
KARONGA ADD										
Chitipa	27.4	18.3	31.2	17.2	7.9	73	3.7	5.4	4.3	6.9
Karonga	30.7	22.8	33.5	19.5	5.8	66	4.4	6.2	5.0	7.3
MZUZU ADD										
Bolero	30.3	19.3	32.9	17.4	3.6	64	4.6	5.9	4.7	7.5
Mzimba	28.0	17.4	31.0	15.4	3.2	66	4.7	5.6	4.5	7.6
Mzuzu	26.7	16.7	29.2	14.8	5.0	71	4.8	5.5	4.4	7.6
Nkhata Bay	31.7	20.9	25.5	19.2	2.5	71	5.4	6.2	4.9	8.0
KASUNGU ADD										
Kasungu	29.9	19.4	32.5	18.2	7.9	59	6.9	7.1	5.7	9.0
LILONGWE ADD										
Chitedze	29.2	18.7	31.6	18.2	2.5	72	4.9	5.7	4.5	7.8
Dedza	25.3	16.2	27.9	14.9	9.0	71	4.0	5.4	4.3	7.2
KIA	28.0	18.1	31.0	16.8	5.4	67	5.4	6.0	4.8	8.1
SALIMA ADD										
Salima	31.9	23.0	35.5	20.5	5.8	64	7.6	4.9	3.8	9.5
MACHINGA ADD										
Makoka	29.0	19.2	32.8	16.6	0.7	72	6.4	6.2	4.9	8.8
Mangochi	33.5	23.6	36.5	22.0	7.6	64	6.0	7.3	6.0	8.5
Monkey Bay	32.0	23.8	33.9	21.9	7.9	64	7.3	7.7	6.3	9.3
Ntaja	31.8	23.3	36.1	19.6	6.1	73	5.6	6.7	5.4	8.2
BLANTYRE ADD										
Bvumbwe	27.7	18.0	31.8	15.6	5.4	69	6.3	6.3	5.0	8.7
Chichiri	28.7	19.5	33.1	17.1	3.6	66	0.6	4.4	3.7	5.0
Chileka	31.2	21.2	35.5	18.9	10.1	67	6.2	7.1	5.8	8.6
Mimosa	31.6	19.9	36.0	17.5	3.6	59	6.0	6.6	5.3	8.5
SHIRE VALLEY ADD										
Ngabu	37.3	25.6	42.7	22.3	4.0	58	6.5	7.8	6.4	8.8

Glossary of some terms on this table

- Eo = Potential Evaporation, Et = Potential Evapotranspiration and RH = Relative Humidity
- Mean Temperature of the day =(Max of the day + Min of the same day)/2
- ABS Max (Min) = Absolute Maximum (minimum) is the highest (lowest) of maximum (minimum) temperatures observed for a given number of days (calendar month) of a specified period of months (years).
- To convert Meters Per Second (mps) to Kilometers per hour (Km/hr) = mpsx3.6