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

- **Dryness covered southern and central Malawi during early January 2016…**
- **Maize crop wilting mostly at vegetative stage across Malawi…**
- **Rainfall performance likely to improve during 11 to 20 January 2016…**

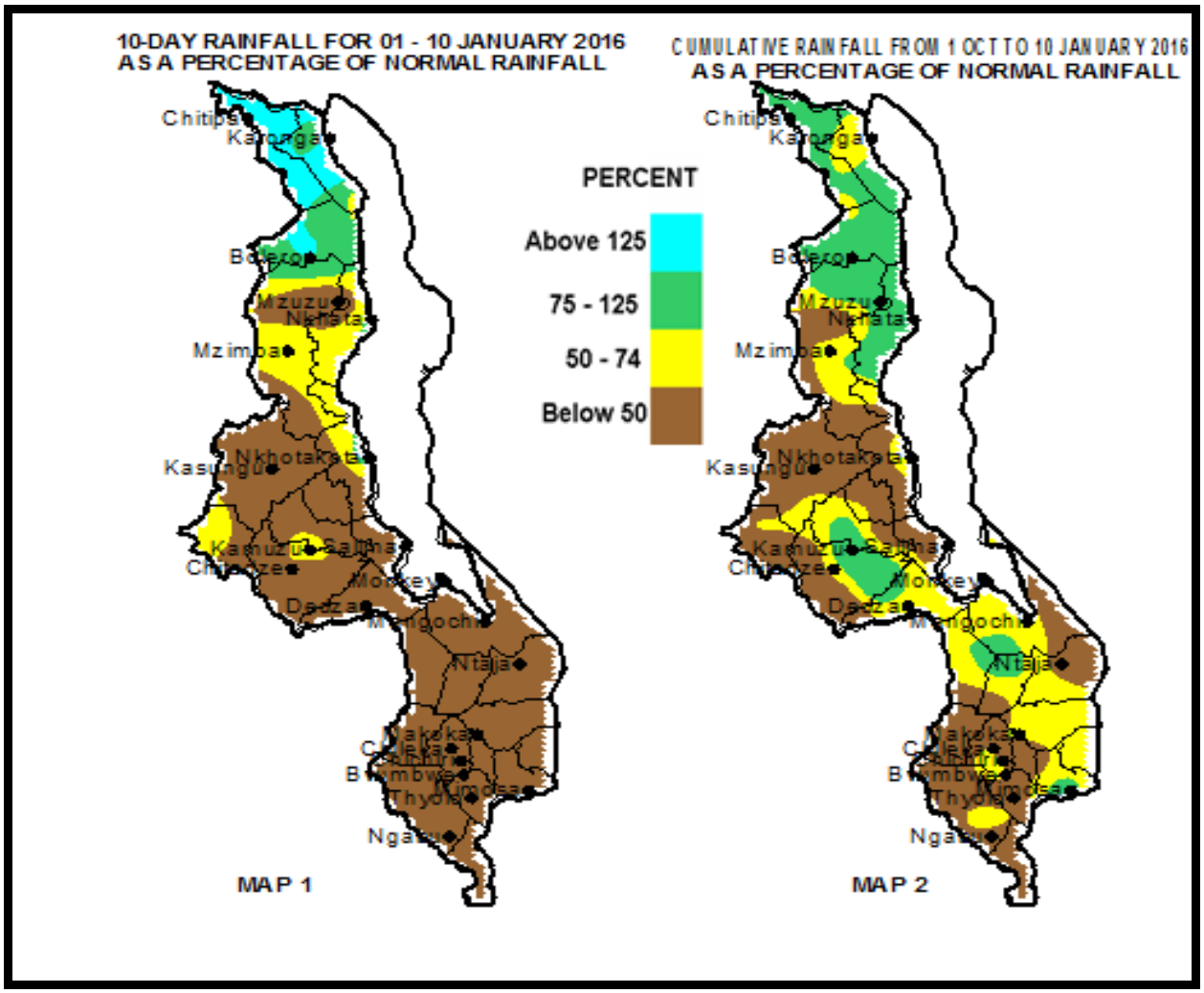

Figure 1: Rainfall Maps for 01 to 10 January 2016

1.0 WEATHER SUMMRY

During the first ten days of January 2016, the rain-belt had shifted to extreme northern parts of Malawi while central and southern Malawi was mainly under a ridge from the south. As a result good and well distributed rainfall amounts were mainly confined to the north.

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1.1 RAINFALL SITUATION

During the first ten days of January 2016 low rainfall and dry spells had spread to most areas in the south and some parts of central Malawi. In the south some stations like Monkey Bay Met, Namiasi Agric, Balaka township, Toleza Farm, Chingale Agric, Lujeri Tea Estate, Masambanjati Agric Nchalo Illovo, Ngabu Met, Chikwawa Agric, Thuchila Agric, and Mwanza Agric recorded nil rainfall throughout the period 01 to 10 January 2016, a situation that has led to far below average cumulative rainfall (yellow and brown colours on map 1). The impact of dryness was worst in low altitude areas where by 10 January 2016 places like Makhanga in Nsanje district had recorded more than twenty consecutive dry days. On the other hand the extreme northern areas of Malawi had recorded above average cumulative rainfall amounts. A few stations in the north and centre had registered cumulative rainfall amounts of at least 80mm during the first ten days of January 2016. Such stations had included Chitipa Met and Lupembe Agric which had recorded 129mm, Nkhotakota Met 103mm, Bolero Met and Rumphi Agric 82mm. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October up to 10 January 2016. The map shows that below-average rainfall (yellow and brown colours) has been received in many parts of Malawi, with more rainfall being received in the northern areas. The following stations mainly in the north and centre have experienced above average to average rainfall situation: Nathenje and Chintheche Agric stations 127%, Vinthukutu Agric 121%, Zombwe Agric 118%, Kamuzu International Airport 113% and Bolero Met 111%. Refer to Map 2 and Table 1 for more details.

1.3 AIR TEMPERATURE

The period 01 to 10 January 2016 was even hotter than the last ten days of December 2015. The average daily maximum temperatures had ranged from 27.0°C at Dedza to 37.4°C at Ngabu in Chikwawa while average minimum temperatures had ranged from 17.0°C at Dedza to 25.7°C at Monkey Bay. The highest maximum temperature was still reported at Ngabu (41.1°C) in Chikwawa while the lowest temperature was 14.8°C recorded at Dedza. For more details see Table 2.

1.4 WIND SPEEDS

During the period 01 to 10 January 2016 average wind speeds measured at a height of two metres above the ground level across the Malawi varied from 2.5Km per hour at Mkondezi in Nkhata Bay to 12.2km per hour at Ngabu in Chikwawa. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the first ten days of January 2016, daily average relative humidity values sampled from selected stations in Malawi showed that air over Malawi had remained fairly moist. The daily average values had ranged from 48% at Mimosa to 78% at Chitipa Met. Details are on the Table 2.

1.6 SUNSHINE HOURS

The mean durations of bright sunshine hours across Malawi continued to increase due to decrease in cloudiness. Most areas had experienced daily average sunshine hours of more than six hours. The highest mean sunshine hours was 10.9 hours observed in Kamuzu International Airport. Details are on the Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period 01 to 10 January 2016 good rains for agricultural production remained over most parts of the north. This had facilitated growth and development of most crops and had also improved water resources, soil moisture reserves and pasture availability for communal grazing of livestock. At the same time dry conditions led to crops experiencing moisture stress, particularly in the southern areas. The situation was reported worst in low altitude areas due to high temperatures and evapotranspiration rates However, there is still chance for crop recovery if rains return by mid-January 2016.

Most crops were planted in December 2015 and were generally in the early-vegetative stage. Pastures were in good condition and water for livestock was sufficient

Due to dry conditions that covered most areas in the south and Centre the major on-farm agricultural activities during the first ten days of January 2016 were restricted to weeding and application of herbicides and insecticides while in the north included basal fertilizer application and planting of various crops. In a normal season planting of crops in southern Malawi and some parts of central Malawi get finalized by December while for north planting of crops can continue into January.

3. PROSPECTS FOR 2015/16 RAINFALL SEASON

Updated rainfall outlook for the 2015/16 season shows that most parts of northern half Malawi are likely to receive average to higher than average rainfall amounts while in the southern half below average rainfall amounts are expected to continue during January to March (JFM) 2016. A few areas particularly in the Shire Valley are likely to experience prolonged dry spells towards the end of season.

4. OUTLOOK FOR 11 –20 JANUARY 2016

Models for short and medium range rainfall forecasts show that both rain bearing systems namely Congo Air mass and the Inter Tropical Convergence Zone will get established in southern Malawi and are expected to become more active within the second ten days January 2016 starting from 14th January 2016. Hence expect an improvement in rainfall performance especially in southern Malawi as wet weather conditions are expected to return to most areas.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 01 TO 10 JANUARY 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
KARONGA	Baka Res. Stn.	36.9	66.1	56	127.1	322.3	39	2
	Chitipa Met	129.1	71.2	181	390.5	332.3	118	8
	Karonga Met.	77.3	63.0	123	150.2	276.4	54	3
	Lupembe	129.0	62.6	206	192.0	226.4	85	3
	Vinthukutu Agric	29.1	72.5	40	379.5	313.4	121	3
MZUZU	Bolero Met	81.9	62.6	131	265.3	238.2	111	5
	Chikangawa forest	54.2	82.4	66	261.3	368.8	71	5
	Chintheche Agric	79.9	107.7	74	610.1	481.0	127	3
	Ekwendeni Agric.	24.1	86.3	28	139.5	350.1	40	1
	Euthini Agric.	29.2	72.9	40	175.0	296.6	59	4
	Mbawa Res. Stn	33.5	76.3	44	124.3	318.2	39	4
	Mzimba Met	77.4	92.7	83	290.9	336.6	86	6
	Mzuzu Met.	16.1	66.6	24	321.9	337.8	95	4
	NkhataBay Met.	77.5	89.9	86	353.1	409.2	86	5
	Rumphi Boma	81.6	64.5	127	238.4	245.6	97	2
	Zombwe Agric	20.3	68.6	30	313.8	265.2	118	2
KASUNGU	Dowa Agric	14.8	70.6	21	111.8	312.0	36	4
	Kaluluma Agric	7.9	59.1	13	125.2	307.1	41	2
	Kasungu Met	17.0	70.1	24	143.9	281.9	51	2
	Lisasadzi	9.9	77.2	13	147.2	321.1	46	2
	Madisi Agric	35.0	69.0	51	200.3	290.3	69	1
	Mchinji Boma	55.8	83.0	67	202.7	427.8	47	2
	Mkanda Met	42.8	67.6	63	177.6	349.2	51	3
	Mponela Agric	26.3	68.0	39	257.0	282.1	91	3
	Ntchisi Boma	12.7	93.3	14	150.2	434.5	35	4
SALIMA	Dwangwa	63.4	85.8	74	165.9	418.9	40	6
	Lifuwu	26.7	85.3	31	93.7	344.6	27	2
	Nkhotakota Met	103.2	108.8	95	296.4	423.0	70	3
	Salima Met	35.5	94.8	37	110.8	364.3	30	6
LILONGWE	Chileka Namitete	0.0	86.1	0	122.2	384.6	32	0
	Chitedze Met.	70.2	68.9	102	178.1	321.0	55	4
	Dedza Met	2.4	82.5	3	189.7	336.2	56	1
	Dedza Agric	3.3	75.4	4	187.0	346.9	54	1
	Dzonzi Forest	0.0	70.9	0	208.2	389.4	53	0
	K.I.A Met	63.6	72.7	87	333.1	295.4	113	4
	Kasiya Agric	24.0	87.3	27	216.8	419.5	52	2
	Mlangeni Njolomole	0.0	70.8	0	257.7	356.1	72	0
	Mtakataka Airwing	0.0	50.7	0	47.6	284.4	17	0
	Nathenje Agric	31.8	72.1	44	394.0	311.2	127	2
MACHINGA	Balaka Township	0.0	84.1	0	230.1	333.5	69	0
	Chikweo Agric.	3.4	86.1	4	137.8	389.3	35	1
	Chingale Agric	0.0	70.4	0	223.6	362.6	62	0
	Mpilipili (Makanjila)	5.3	91.9	6	210.5	346.7	61	1
	Makoka Met	17.4	76.4	23	207.6	379.4	55	1
	Mangochi Met.	2.3	54.2	4	136.7	210.7	65	2
	Monkey Bay Met.	0.0	49.1	0	79.0	199.4	40	0
	Namiasi Agric	0.0	59.0	0	166.7	269.6	62	0
	Namwera Agric	2.1	89.6	2	88.5	385.2	23	1
	Ntaja Met.	6.6	70.1	9	129.9	329.4	39	1
	Phalula Agric	17.6	72.7	24	111.4	345.1	32	1
	Toleza Farm	0.0	64.8	0	333.0	338.3	98	0
	Zomba Agric	12.7	81.7	16	368.8	469.0	79	2
BLANTYRE	Bvumbwe Met.	3.7	80.2	5	236.5	416.5	57	1
	Chichiri Met.	1.1	88.2	1	254.5	666.2	38	1
	Chileka Airport	18.4	68.1	27	206.3	352.8	58	1
	Chiradzulu Agric	0.0	66.4	0	54.3	385.5	14	0
	Chizunga Factory	8.2	96.6	8	168.1	573.8	29	1
	Lujeri Tea Estate	0.0	135.4	0	746.2	813.6	92	0
	Mimosa Met.	1.1	97.7	1	342.3	561.7	61	1
	Mpemba Vet	27.8	87.5	32	262.9	456.5	58	1
	Mulanje Boma	17.2	107.1	16	639.4	702.4	91	1
	Mwanza Boma	0.0	73.5	0	152.2	401.6	38	0
	Neno Agric	14.0	96.0	15	119.6	415.2	29	1
	Satemwa Tea Est.	0.0	75.6	0	186.5	417.4	45	0
	Thuchila Agric	0.0	67.7	0	153.4	331.5	46	0
	Thyolo Met	0.0	80.2	0	143.4	433.7	33	0
SHIRE VALLEY	Chikwawa Boma	0.0	66.8	0	138.4	326.7	42	0
	Makhanga Met	0.0	62.2	0	126.1	320.6	39	0
	Nchalo Sucoma	0.0	53.1	0	154.1	255.9	60	0
	Ngabu Met.	0.0	61.3	0	147.7	312.3	47	0
	Nsanje Boma	5.6	75.7	7	193.9	430.9	45	1

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 JANUARY 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	29.0	19.4	31.0	18.5	6.8	78	6.0	6.2	4.9	8.4
Karonga	31.3	22.8	32.8	20.4	5.4	71	6.1	6.8	5.5	8.5
MZUZU ADD										
Bolero	30.4	20.1	32.2	18.2	7.2	64	6.1	6.8	5.5	8.5
Mzimba	29.5	18.4	31.6	16.5	3.2	69	7.0	6.6	5.2	9.2
Mzuzu	27.5	18.2	30.1	16.6	4.7	77	7.0	6.3	5.0	9.1
Nkhata Bay	32.3	22.0	34.7	20.8	2.5	75	6.3	6.7	5.3	8.7
KASUNGU ADD										
Kasungu	32.6	20.5	35.5	19.1	7.2	50	9.0	8.2	6.6	10.5
LILONGWE ADD										
Chitedze	31.7	19.8	34.2	18.4	2.9	63	9.9	8.0	6.3	11.1
Dedza	27.0	17.0	28.9	14.8	10.4	62	8.5	7.4	5.8	10.2
K I A	29.4	19.2	31.8	18.0	5.4	61	10.9	8.2	6.4	11.7
SALIMA ADD										
Nkhotakota	30.9	23.7	33.0	21.1	6.5	77	9.8	8.5	6.8	11.0
Salima	32.9	24.2	35.0	22.0	7.2	61	10.0	8.7	7.0	11.1
MACHINGA ADD										
Makoka	30.6	19.1	33.3	17.6	5.0	64	8.2	7.4	5.9	10.0
Mangochi	35.2	25.0	36.2	24.0	2.9	61	9.6	8.8	7.0	10.9
Monkey Bay	33.7	25.7	36.0	24.6	9.7	60	9.4	9.2	7.5	10.8
Ntaja	33.0	22.7	36.6	21.6	9.4	61	8.2	8.3	6.8	10.0
BLANTYRE ADD										
Bvumbwe	27.6	18.6	31.1	17.0	7.2	67	9.3	7.5	5.9	10.7
Chichiri	29.6	19.1	33.1	17.6	6.1	62	9.0	7.7	6.1	10.5
Chileka	32.4	21.7	36.0	20.4	11.5	53	10.3	9.2	7.5	11.4
Mimosa	32.6	19.8	35.7	17.5	4.7	48	9.0	8.0	6.4	10.5
SHIRE VALLEY ADD										
Ngabu	37.4	25.0	41.1	23.6	12.2	55	10.5	10.4	8.6	11.5

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