REPUBLIC OF MALAWI

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In support of national early warning systems and food security

Be wise be weather-wise

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HIGHLIGHTS

- **Malawi experienced rainfall improvement during 11 to 20 January 2016…**
- **Soil moisture stress affect crops between vegetative and tasseling stages…**
- **More rains to persist over northern half Malawi during 21 to 31January 2016…**

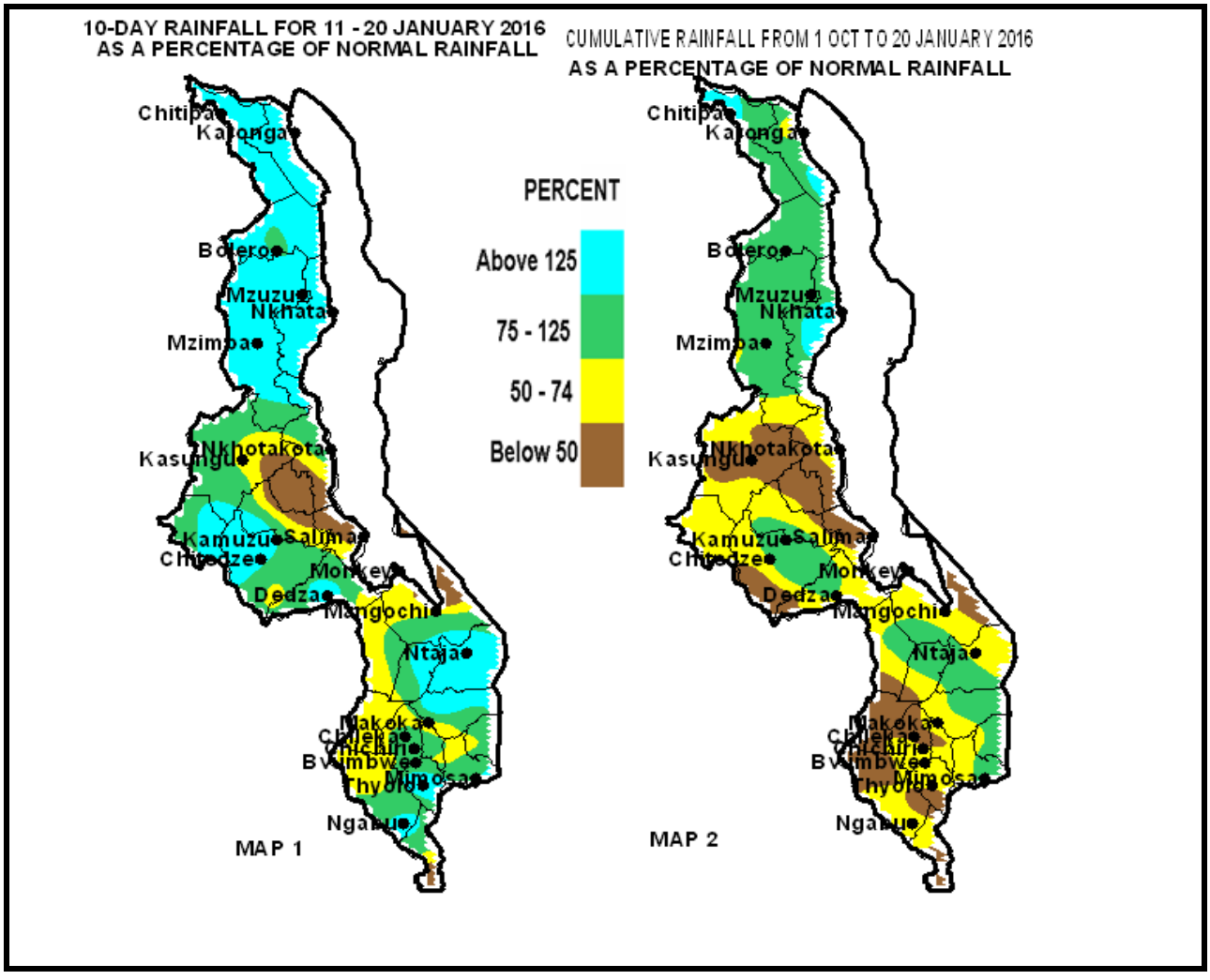

Figure 1: Rainfall Maps for 11 to 20 January 2016

1.0 WEATHER SUMMRY

During the period 11 to 20 January 2016, both rain bearing systems namely Congo Air mass and the Inter Tropical Convergence Zone were established over Malawi and were very active in most areas of the country. As a result there was an improvement in rainfall performance in most areas of Malawi.

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1.1 RAINFALL SITUATION

During the period 11 to 20 January 2016, there was an improvement in spatial distribution and rainfall amounts over Malawi. Most rainfall stations in Malawi had recorded significant cumulative rainfall amounts. Significant rainfall amounts of at least 150mm were reported in some stations. Such stations in the south received included Thyolo Met which had recorded 211mm in five days, Mulanje Agric 121mm, Lujeri Tea Estate 206mm, Ntaja Met 165mm and Chikweo Agric 150mm. In central region such high rainfall amounts were only recorded at Kasiya Agric 150mm while in the north Vinthukutu Agric had 176mm, Lupembe Agric 184mm, Chitipa Met 156mm, Nkhata Bay Met 212mm, Mzuzu Met 186mm and Chintheche Agric had registered 414mm. As result of high rainfall intensity during the period 11 to 20 January 2016 most areas in northern Malawi had above average rainfall situation (light blue colour on Map 1) and floods were reported around Phwezi in Rumphi district. However some areas in Salima and Nkhotakota in central Malawi and some western parts of southern Malawi had experienced low rainfall, a situation that has led to below average ten-day cumulative rainfall (yellow and brown colours on map 1). More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October up to 20 January 2016. The map shows that below-average rainfall (yellow and brown colours) has been received in some parts of central and southern Malawi, with more rainfall being received in northern Malawi. Refer to Map 2 and Table 1 for more details.

1.3 AIR TEMPERATURE

The period 11 to 20 January 2016 warm to hot temperatures were experienced over Malawi. The average daily maximum temperatures had ranged from 23.2°C at Dedza to 34.5°C at Ngabu in Chikwawa while average minimum temperatures had ranged from 16.1°C at Dedza to 23.8°C at Ngabu. The highest maximum temperature was still reported at Ngabu (39.0°C) in Chikwawa while the lowest temperature was 14.3°C recorded at Dedza. For more details see Table 2.

1.4 WIND SPEEDS

During the period 11 to 20 January 2016 average wind speeds measured at a height of two metres above the ground level across Malawi varied from 2.4Km per hour at Mzimba to 10.4km per hour at Chileka Airport and Ngabu in Chikwawa. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the second ten days of January 2016, daily average relative humidity values sampled from selected stations in Malawi indicated that air over Malawi was fairly moist. The daily average values had ranged from 67% at Mimosa to 88% at Mkondezi in Nkhata Bay. Details are on the Table 2.

1.6 SUNSHINE HOURS

The mean durations of bright sunshine hours across Malawi were relative low due to increase in cloudiness. Most areas had experienced daily average sunshine hours of not more than six hours. The highest mean sunshine hours was 6.8 hours observed at Chileka Airport. Details are on the Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period 11 to 20 January 2016 good rains for agricultural production fell over most parts of Malawi. This had facilitated growth and development of most crops and had also improved water resources, soil moisture reserves and pasture availability for grazing of livestock. At the same time low rainfall and dry conditions were experienced in some parts of the country particularly in Salima and Nkhota kota districts and western parts of southern Malawi. This has led to crop wilting as a result of soil moisture stress.

Crops that were planted in October 2015 particularly hybrid maize varieties were reported to have started flowering and require more moisture. Other crops were mostly at vegetative stage. Pastures were in good condition and water for livestock was sufficient.

Major on-farm agricultural activities during the period 11 to 20 January 2016 included weeding, application of herbicides and insecticides and where there was enough moisture farmers were applying basal fertilizer and continued 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 northern half of Malawi is likely to receive average to above average rainfall amounts while the southern half of Malawi is expected to receive below average rainfall amounts 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 21 –31 JANUARY 2016

Models for short and medium range rainfall forecasts show that the main rain bearing systems namely Congo Air mass and the Inter Tropical Convergence Zone are likely remain active over northern and central Malawi and will be less active in southern Malawi. Hence expect more rains to be confined to central and northern Malawi while reduced and mainly light to moderate rainfall are expected in southern Malawi during the last ten days of January 2016.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 TO 20 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.	86.3	60.6	142	213.4	382.9	56	8
	Chitipa Met	159.5	65.9	242	550.0	398.2	138	10
	Karonga Met.	47.0	55.3	85	197.2	331.7	59	9
	Lupembe Agric	184.0	49.3	373	376.0	275.7	136	6
	Vinthukutu Agric	175.5	69.0	254	555.0	382.4	145	7
MZUZU	Bolero Met	53.8	52.0	103	319.1	290.2	110	8
	Bwengu Agric.	66.8	59.2	113	300.4	332.9	90	6
	Chikangawa forest	192.9	83.5	231	454.2	452.3	100	7
	Chelinda (Nyika)	101.0	79.6	127	386.5	499.0	77	8
	Chintheche Agric	413.5	83.1	498	1023.6	564.1	181	5
	Embangweni R.L	121.2	53.0	229	186.1	390.5	48	5
	Ekwendeni Agric.	36.3	53.6	68	175.8	403.7	44	4
	Euthini Agric.	135.7	52.6	258	310.7	349.2	89	5
	Mbawa Res. Stn	92.2	59.4	155	216.5	377.6	57	7
	Mzimba Met	141.4	71.1	199	432.3	407.7	106	7
	Mzuzu Met.	179.9	69.3	260	501.8	407.1	123	8
	NkhataBay Met.	212.2	65.6	323	565.3	474.8	119	8
	Rumphi Boma	102.4	57.9	177	340.8	303.5	112	8
	Zombwe Agric	124.6	54.0	231	438.4	319.2	137	7
KASUNGU	Dowa Agric	44.2	82.0	54	156.0	394.0	40	6
	Kaluluma Agric	74.9	76.9	97	200.1	384.0	52	3
	Kasungu Met	37.2	62.3	60	181.1	344.2	53	7
	Lisasadzi	56.0	67.7	83	203.2	388.8	52	3
	Malomo Agric	29.6	125.7	24	83.3	379.7	22	4
	Madisi Agric	43.0	81.5	53	243.3	371.8	65	4
	Mchinji Boma	62.8	79.7	79	265.5	507.5	52	5
	Mkanda Met	94.1	83.3	113	271.7	432.5	63	3
	Mponela Agric	41.5	68.1	61	298.5	350.2	85	3
	Ntchisi Boma	40.3	98.2	41	190.5	532.7	36	4
SALIMA	Dwangwa Sugar	105.8	81.6	130	271.7	500.5	54	5
	Lifuwu	53.9	128.0	42	147.6	472.6	31	3
	Nkhotakota Met	113.3	105.9	107	409.7	528.9	77	4
	Salima Met	37.6	117.2	32	148.4	481.5	31	4
LILONGWE	Chileka Namitete	114.1	61.3	186	236.3	445.9	53	4
	Chitedze Met.	103.1	79.5	130	281.2	400.5	70	5
	Dedza Met	110.2	69.3	159	299.9	405.5	74	8
	Dzonzi Forest	43.2	81.9	53	251.4	471.3	53	4
	K.I.A Met	107.3	87.2	123	440.4	382.6	115	5
	Kasiya Agric	149.7	53.9	278	366.5	473.4	77	6
	Mlangeni Njolomole	46.0	82.4	56	303.7	438.5	69	5
	Mtakataka Airwing	35.4	59.2	60	83.0	343.6	24	5
	Nathenje Agric	56.4	57.7	98	450.4	368.9	122	2
	Ntcheu - Nkhande	60.3	97.6	62	60.3	503.1	12	5
	Dedza RTC	68.0	87.2	78	255.0	434.1	59	7
MACHINGA	Balaka Township	78.5	70.2	112	308.6	403.7	76	2
	Chancellor College	116.4	89.4	130	124.1	601.5	21	5
	Chikweo Agric.	150.0	107.3	140	287.8	496.6	58	5
	Chingale Agric	105.8	64.4	164	329.4	427.0	77	5
	Mpilipili (Makanjila)	24.9	65.9	38	235.4	412.6	57	1
	Makoka Met	33.0	79.4	42	240.6	458.8	52	6
	Mangochi Met.	43.5	64.6	67	180.2	275.3	65	8
	Monkey Bay Met.	44.0	54.0	81	123.0	253.4	49	5
	Namiasi Agric	12.7	78.3	16	179.4	347.9	52	3
	Namwera Agric	41.1	86.6	47	129.6	471.8	27	1
	Ntaja Met.	165.0	75.2	219	294.9	404.6	73	6
	Phalula Agric	47.2	61.9	76	158.6	407.0	39	2
	Toleza Farm	96.0	70.8	136	429.0	409.1	105	3
	Zomba Agric.	106.0	90.7	117	474.8	559.7	85	5
BLANTYRE	Bvumbwe Met.	77.3	84.0	92	313.8	500.5	63	5
	Chichiri Met.	130.7	74.8	175	385.2	741.0	52	7
	Chileka Airport	50.6	63.9	79	256.9	416.7	62	4
	Chiradzulu Agric	62.1	60.3	103	116.4	445.8	N/A	6
	Chizunga Factory	105.4	70.9	149	273.5	644.7	42	3
	Lujeri Tea Estate	206.5	127.7	162	952.7	941.3	101	5
	Masambanjati Agric	89.3	82.2	109	131.5	596.1	N/A	4
	Mimosa Met.	93.0	93.8	99	435.3	655.5	66	4
	Mpemba Vet	53.8	88.8	61	316.7	545.3	58	2
	Mulanje Boma	120.6	109.7	110	760.0	812.1	94	4
	Mwanza Boma	54.2	69.9	78	206.4	471.5	44	3
	Naminjiwa Agric	47.7	84.8	56	70.2	458.1	N/A	3
	Neno Agric	66.4	95.7	69	186.0	510.9	36	4
	Satemwa Tea Est. No.1	118.4	61.5	193	304.9	478.9	64	5
	Thuchila Agric	44.1	67.6	65	197.5	399.1	49	5
	Thyolo Boma	107.6	56.6	190	142.8	515.1	28	5
	Thyolo Met	210.6	84.0	251	354.0	517.7	68	5
SHIRE VALLEY	Chikwawa Boma	36.3	61.2	59	174.7	387.9	45	4
	Makhanga Met	48.7	47.7	102	174.8	368.3	47	2
	Nchalo Sucoma	50.5	58.1	87	204.6	314.0	65	3
	Ngabu Met.	89.1	55.8	160	236.8	368.1	64	3
	Nsanje Boma	25.4	97.8	26	219.3	528.7	41	2

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 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	25.9	18.6	27.2	17.6	4.3	86	2.6	4.5	3.5	6.2
Karonga	30.1	22.0	32.3	21.2	5.0	77	4.4	5.8	4.7	7.4
MZUZU ADD										
Bolero	26.7	19.7	29.1	19.0	5.4	81	6.0	6.0	4.7	8.5
Mzimba	25.6	18.0	28.8	17.3	1.4	83	3.0	4.6	3.6	6.5
Mzuzu	25.2	17.8	28.0	16.1	4.3	86	2.5	4.4	3.5	6.2
Nkhata Bay	29.4	21.8	32.3	21.0	2.2	88	2.6	4.7	3.7	6.2
KASUNGU ADD										
Kasungu	28.4	19.5	30.8	17.6	5.0	73	5.0	5.9	4.7	7.9
LILONGWE ADD										
Chitedze	27.9	19.3	31.7	16.9	2.9	77	5.3	5.8	4.6	8.0
Dedza	23.2	16.1	26.4	14.3	9.4	81	5.0	5.3	4.2	7.9
K I A	26.6	18.4	28.6	16.1	5.0	77	5.3	5.7	4.5	8.0
SALIMA ADD										
Nkhotakota	28.4	22.6	29.5	21.0	7.2	78	5.7	6.4	5.2	8.3
Salima	30.1	23.0	32.0	21.3	7.2	72	6.5	6.8	5.5	8.8
MACHINGA ADD										
Makoka	27.1	18.9	31.4	16.6	6.1	76	6.0	6.1	4.9	8.6
Mangochi	30.8	23.0	35.0	22.5	2.2	69	5.2	6.3	5.0	8.0
Monkey Bay	30.7	23.6	33.1	23.2	9.0	71	5.9	7.0	5.7	8.4
Ntaja	28.8	21.3	33.1	19.6	7.2	76	4.4	5.9	4.7	7.5
BLANTYRE ADD										
Bvumbwe	25.1	17.9	27.9	15.9	6.1	79	5.9	5.8	4.6	8.5
Chichiri	26.5	18.6	29.7	16.4	5.0	75	6.0	6.0	4.8	8.5
Chileka	29.2	20.9	32.3	18.6	10.4	70	6.8	7.1	5.7	9.1
Mimosa	29.8	20.0	32.9	18.0	4.3	67	6.0	6.5	5.2	8.5
SHIRE VALLEY ADD										
Ngabu	34.5	23.8	39.0	21.5	10.4	74	6.0	7.4	6.1	8.6

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