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

- **Heavy rains caused floods in Karonga, Mzuzu and Nkhata bay…**
- **Maize crop was mostly at drying and harvesting stages…**
- **More rains expected in the north, lakeshore and highlands during 11 to 20th …**

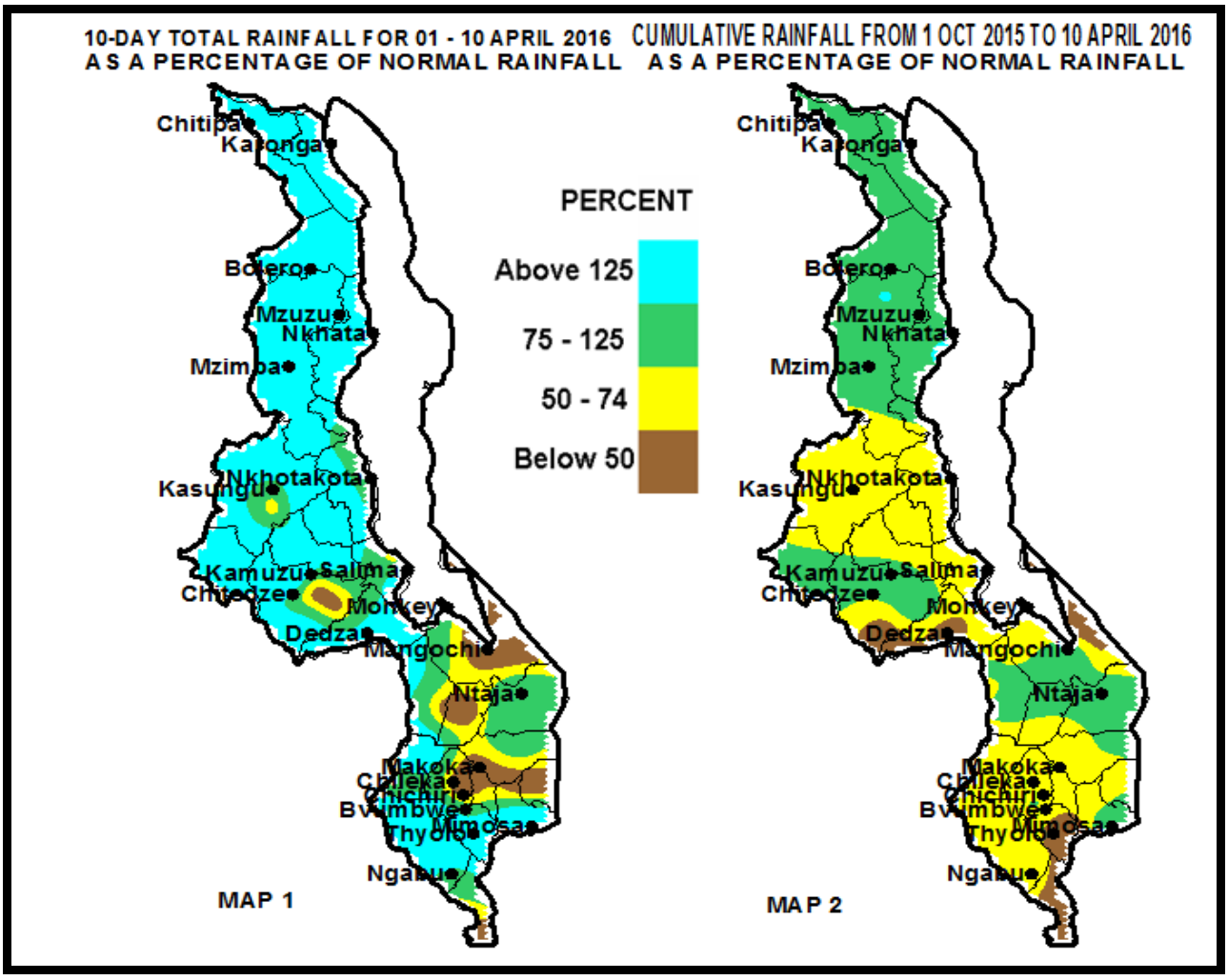

Figure 1: Rainfall Maps for 01 to 10 April 2016

1.0 WEATHER SUMMRY

During the first ten days of April 2016 the main rain belt had covered northern Malawi while Easterly waves were active in central and southern Malawi. As a result northern Malawi had experienced widespread heavy rainfall while central and southern Malawi had received scattered moderate to locally heavy rainfall amounts.

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1.1 RAINFALL SITUATION

During the first ten days of April 2016, northern Malawi had received widespread persistent high intensity rainfall and heavy flooding, destruction of crops, infrastructure and in some cases loss of lives have been reported in Karonga and Nkhata Bay districts and in Mzuzu City. Very high rainfall amounts exceeding 200mm during the ten day period were reported particularly in Karonga and Nkhata Bay districts as well as around Mzuzu city. For instance in Karonga during the ten day period 354mm of rainfall was accumulated at Baka Research Station, Karonga Met and Vinthukutu Agric had registered 283mm each while Lupembe Agric reported 249mm. In Nkhata Bay district, 545mm was deposited at Nkhata Bay Met while Chintheche Agric had recorded 451mm and around Mzuzu city, Mzuzu Met had collected 343mm. Other rainfall stations that had registered very high rainfall amounts in Southern Malawi include Lujeri Tea Estate which had 255mm and Mulanje Agric reported 241mm. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 10 April 2016. The map suggests that northern Malawi has received between 75 and 125% (green colour) of long term average rainfall amounts and seasonal rainfall deficits (yellow and brown colours) still exist in southern and central Malawi. Refer to Map 2 and Table 1 for more details.

1.3 AIR TEMPERATURE

During the period 01 to 10 April 2016 generally warm to hot weather was experienced over Malawi. The average daily maximum temperatures had ranged from 23°C at Mzuzu to 31°C at Ngabu in Chikwawa district. The average minimum temperatures were between 15°C and 23°C at Dedza and Ngabu respectively. The highest maximum temperature was 36°C still recorded at Ngabu in Chikwawa while the lowest temperature was 13°C reported at Mzuzu and Dedza. For more details refer to Table 2.

1.4 WIND SPEEDS

During the first ten days of April 2016 daily average wind speeds measured at a height of two metres above the ground level across Malawi had ranged from 2.9Km per hour at Mangochi to 10.4km per hour at Chileka. High wind speeds are good for generation of wind energy. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the first ten days of April 2016, air over Malawi was fairly moist and unstable. The daily average relative humidity values had ranged from 68% at Salima Met to 91% at Mzuzu Airport. More details are in Table 2.

1.6 SUNSHINE HOURS

During the period 01 to 10 April 2016, the mean durations of bright sunshine hours in Malawi had dropped mainly due to increased cloudiness. The mean values had ranged from 3.3 hours at Mzuzu to 6.9 hours at Salima. Details are in Table 2. More sunshine hours are required for drying crops which are between drying and harvesting stages.

2. AGROMETEOROLOGICAL ASSESSMENT

During the first ten days of April 2016 extremely wet weather had persisted over most parts of Malawi particularly in northern Malawi as indicated by very much above average cumulative rainfall amounts. The wet weather had facilitated growth and development of root and tuber crops as well as the late planted crops. The rains had also increased prospects for residual moisture and irrigated farming. However in northern Malawi particularly in Karonga, Nkhata Bay and Mzuzu, persistent high rainfall amounts had caused heavy flooding which have washed away of crops, destroyed infrastructure and caused loss of lives in Mzuzu city. Wet weather had also hampered harvesting and drying of matured crops.

Maize crop was mostly at drying and harvesting stages. Reports have indicated that the food security situation has improved slightly because some farmers have started harvesting matured crops. However, the relief is temporally as most farmers particularly in southern Malawi will not harvest enough this season due to the negative impacts of strong El Nino conditions that have resulted in erratic rainfall, lowers yields and crop failure.

Based on the agrometeorological model the national maize production estimates is projected at **2,627,560MTs** which is 8% lower than 2014/15 model estimates of **2,846,840MTs**

3. PROSPECTS FOR 2015-2016 RAINFALL SEASON

Most climate models predict that strong El Nino conditions are weakening and expected to reach neutral levels by May to July 2016 and La Nina conditions during 2016/17 agriculture season. However, updated rainfall outlook for April to June (AMJ) 2016 suggest that Malawi is likely to experience above average rainfall amounts during the period with most of the rains falling in April 2016.

4. OUTLOOK FOR 11 TO 20 APRIL 2016

Models for short and medium range rainfall forecasts suggest that the main rain belt will shift northwards and Malawi will be under Easterly waves. Therefore substantial rainfall amounts are expected over highlands, lakeshore and northern areas during the period 11 to 20 April 2016.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 01 TO 10 APRIL 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.	354.4	140.5	252	801.0	1200.4	67	8
	Chitipa Met	161.6	37.9	426	964.7	918.4	105	9
	Karonga Met.	283.1	88.0	322	692.7	895.7	77	9
	Lupembe Agric	249.0	63.1	395	992.5	773.9	128	8
	Vinthukutu Agric	282.7	112.7	251	1110.9	993.7	112	9
MZUZU	Bolero Met	65.5	18.2	360	715.1	614.1	116	8
	Bwengu Agric.	121.0	21.7	558	790.1	733.9	108	7
	Chikangawa forest	136.6	70.3	194	964.0	1039.0	93	7
	Chintheche Agric	450.6	146.7	307	1990.5	1472.3	135	8
	Ekwendeni Agric.	136.3	42.2	323	672.6	779.8	86	7
	Euthini Agric.	122.9	22.6	544	777.5	748.1	104	6
	Mbawa Res. Stn	45.0	16.5	273	623.0	781.6	80	6
	Mzimba Met	72.0	23.5	306	883.6	862.3	102	8
	Mzuzu Met.	343.4	89.2	385	1187.0	965.4	123	8
	NkhataBay Met.	544.5	133.0	409	1472.4	1215.9	121	9
	Rumphi Boma	67.2	30.0	224	816.4	706.8	116	8
	Zombwe Agric	104.6	36.0	291	942.5	716.9	131	5
KASUNGU	Dowa Agric	44.1	24.5	180	572.0	859.9	67	3
	Kaluluma DTC	53.6	24.6	218	473.2	789.3	60	4
	Kasungu Met	16.7	17.6	95	583.7	760.8	77	4
	Lisasadzi	7.4	15.8	47	478.7	792.1	60	2
	Malomo Agric	48.4	16.3	297	402.2	808.4	50	2
	Madisi Agric	21.9	16.3	134	492.8	812.7	61	2
	Mchinji Boma	52.0	29.3	177	788.1	977.9	81	6
	Mkanda Met	54.6	25.9	211	636.9	853.3	75	5
	Ntchisi Boma	64.9	47.4	137	683.5	1189.0	57	4
SALIMA	Dwangwa	81.3	92.8	88	874.3	1228.9	71	7
	Lifuwu	7.7	46.3	17	519.5	1175.2	44	3
	Nkhotakota Met	55.5	97.1	57	728.8	1341.7	54	8
	Salima Met	63.9	44.8	143	555.6	1168.2	48	4
LILONGWE	Chileka Namitete	47.3	27.9	170	786.2	889.5	88	3
	Chitedze Met.	14.6	29.3	50	623.6	859	73	4
	Dzonzi Forest	19.0	20.5	93	837.4	952.3	88	1
	K.I.A Met	19.6	19.6	100	781.5	830.4	94	4
	Kasiya Agric	77.1	19.0	406	764	928.2	82	3
	Mlangeni Njolomole	45.8	24.3	188	734.8	939.5	78	4
	Mtakataka Airwing	57.1	29.9	191	257.1	793.4	32	5
	Nathenje Agric	4.5	44.0	10	932.5	840.3	111	1
	Ntcheu - Nkhande	28.3	19.0	149	614.0	1011	61	3
	Dedza Met	41.6	22.5	185	609.3	967.5	63	7
MACHINGA	Balaka Agric	0.0	21.4	0	701.9	830.9	84	0
	Chancellor College	40.8	36.5	112	N/A	1236.6	N/A	5
	Mpilipili (Makanjila) Agric	3.5	18.5	19	432.6	864.0	50	1
	Makoka Met	7.6	30.7	25	545.1	935.0	58	4
	Mangochi Met.	4.3	20.2	21	661.3	683.5	97	4
	Monkey Bay Met.	5.6	6.5	86	286.9	558.1	51	2
	Namiasi Agric	0.0	4.6	0	395.5	737.6	54	0
	Namwera Agric	0.0	34.5	0	302.8	1006.7	30	0
	Ntaja Met.	39.1	31.2	125	670.9	858.4	78	7
	Phalula Agric	12.5	14.3	87	434.8	799.1	54	1
	Toleza Farm	13.0	27.7	47	657.0	833.8	79	2
	Zomba Agric	28.9	42.0	69	846.0	1153.8	73	6
BLANTYRE	Bvumbwe Met.	35.1	30.7	114	891.4	1046.8	85	7
	Chichiri Met.	13.4	29.0	46	760.4	1057.5	72	6
	Chileka Airport	3.8	20.0	19	585.0	846.9	69	2
	Chiradzulu Agric	10.0	22.4	45	556.3	941.9	59	4
	Chizunga Factory	52.6	54.5	97	503.9	1257.8	40	5
	Lujeri Tea Estate	254.5	106.5	239	2104.5	1850.5	114	7
	Masambanjati Agric	95.8	51.7	185	623.2	1240.3	50	7
	Mimosa Met.	138.2	63.8	217	1205.5	1331.8	91	8
	Mpemba Agric	38.9	32.1	121	797.5	1072.6	74	6
	Mulanje Boma	241.0	82.2	293	1581.0	1606.3	98	7
	Mwanza Boma	25.8	34.9	74	536.8	971.8	55	4
	Neno Agric	91.4	36.3	252	549.2	1047.4	52	5
	Satemwa Tea Est.	92.2	46.5	198	778.7	1024.9	76	8
	Thuchila Agric	31.1	25.5	122	402.1	840.6	48	3
	Thyolo Boma	88.9	42.6	209	456.5	1091.4	42	6
	Thyolo Met	36.2	30.7	118	726.5	1137.8	64	6
SHIRE VALLEY	Chikwawa Boma	57.2	21.2	270	494.2	735.2	67	7
	Kasinthula Res. Stn.	45.2	18.1	250	122.9	685.3	18	7
	Nchalo Sucoma	41.6	18.9	220	341.7	624.3	55	7
	Ngabu Met.	16.3	17.9	91	468.4	722.7	65	4
	Nsanje Boma	8.9	21.7	41	352.4	1022.2	34	3

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 APRIL 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	26.0	17.7	30.3	16.8	6.5	85	5.0	5.4	4.2	7.8
Karonga	29.6	21.1	32.5	20.5	5.0	78	5.3	6.0	4.8	8.0
MZUZU ADD										
Bolero	26.3	18.8	30.9	16.5	5.4	80	4.0	4.8	3.8	6.6
Mzimba	25.6	17.0	30.0	13.9	5.4	79	4.0	4.7	3.7	6.7
Mzuzu	23.3	17.3	27.4	13.2	6.1	91	3.3	4.1	3.2	6.2
Nkhata Bay	28.5	21.1	31.9	19.5	3.2	88	3.7	4.7	3.7	6.5
KASUNGU ADD										
Kasungu	28.1	17.8	31.6	16.4	4.0	75	5.5	5.4	4.3	7.7
LILONGWE ADD										
Chitedze	27.1	17.9	30.4	16.2	3.6	73	6.1	5.6	4.4	8.1
Dedza	23.5	15.0	27.1	12.6	7.2	82	5.0	4.8	3.8	7.4
K I A	26.2	16.9	28.0	15.1	7.2	75	6.9	5.9	4.6	8.6
SALIMA ADD										
Nkhotakota	28.7	21.6	30.6	20.1	4.7	74	5.0	5.6	4.5	7.4
Salima	29.6	22.1	32.0	21.1	4.7	68	6.9	6.4	5.1	8.6
MACHINGA ADD										
Makoka	24.9	17.6	27.7	15.5	5.8	78	5.7	5.3	4.2	7.9
Mangochi	29.9	21.4	33.0	18.0	2.9	77	5.3	5.7	4.5	7.6
Monkey Bay	30.5	22.7	32.7	19.8	9.0	69	6.8	6.9	5.6	8.6
Ntaja	27.5	20.2	31.6	17.6	5.4	79	4.4	5.3	4.2	7.2
BLANTYRE ADD										
Bvumbwe	23.1	17.1	27.4	14.4	7.6	83	4.4	4.7	3.7	7.1
Chichiri	25.1	17.9	29.6	15.2	6.1	80	5.0	5.1	4.1	7.5
Chileka	27.3	19.7	31.0	16.4	10.4	77	5.5	5.8	4.7	7.8
Mimosa	28.1	19.9	31.5	17.5	4.0	76	5.0	5.5	4.3	7.5
SHIRE VALLEY ADD										
Ngabu	31.1	23.1	35.7	20.2	7.6	79	6.0	6.4	5.2	8.2

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 Kilometers per hour (Km/hr) to meters per second (mps) = (Km/Hr)/3.6