Government of Malawi
Ministry of Natural Resources, Energy and Mining

Malawi 10-day Weather and Agrometeorological Bulletin

"In support of National Early Warning Systems and Food Security"

Be wise be weather-wise
Department of Climate Change and Meteorological Services

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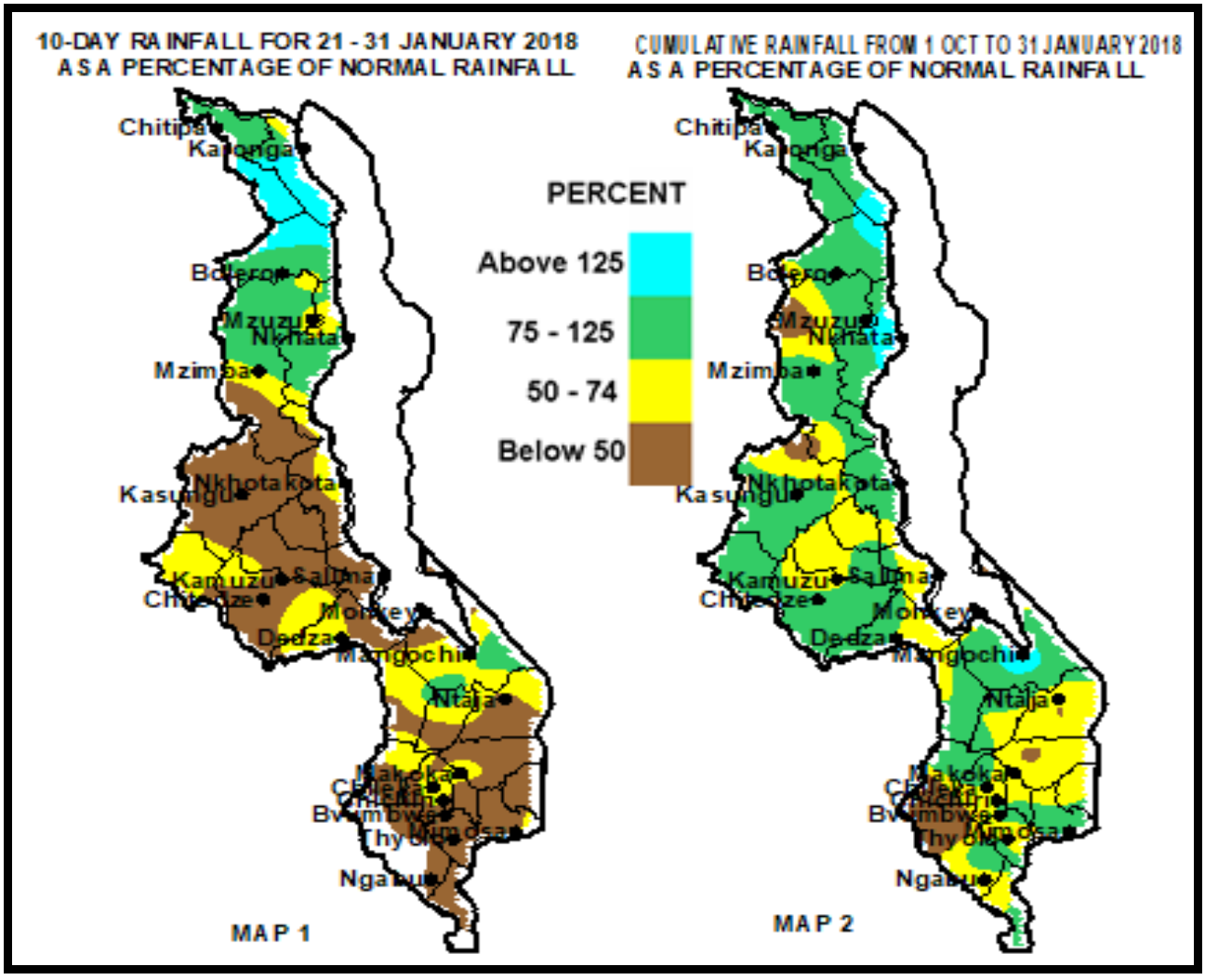
HIGHLIGHTS

- **Low rainfall and dry conditions extend to central Malawi …**
- **Prolonged dry spells reduce chances of good harvest in 2017/18 season …**
- **Improved rainfall performance expected during the period 01 to 10 February 2018…**



Rainfall Maps by 31 January 2018

1.0 WEATHER SUMMARY

During the period 21 to 31 January 2018, the Inter Tropical Convergence Zone (ITCZ) remained over northern Malawi and relaxed while a ridge of high pressure covered most of southern and central Malawi. As a result the north reported average to above average rainfall amounts while most areas in southern and central Malawi experienced below average cumulative rainfall amounts (Yellow and Brown colours on Map 1).

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1.1 RAINFALL SITUATION

During the period 21 to 31 January 2018, northern Malawi experienced average to above average locally heavy rainfall amounts. High cumulative rainfall amounts in excess of 100mm during the ten day period remained over very few places mainly over the north including Lupembe Agric 147mm, Chelinda (Nyika) had 131mm and Vinthukutu Agric reported 112mm. At the same time significant cumulative rainfall amounts in excess of 75mm was reported in sporadic areas including Chintheche Agric and Lujeri Tea Estate which had 99mm each, Toleza Farm had 90mm, Namwera Agric 89mm, Zomba Agric 87mm, Nkhotakota Met reported 83mm and Neno Agric 80mm. Otherwise during the ten day period low rainfall and dry conditions were experienced over several places in southern and central Malawi as shown by Yellow and Brown colours in Map 1 and most areas in lower Shire districts of Nsanje and Chikwawa reported nil rainfall throughout the period. More details are in Table 1 and Map 1.

Map 2 shows the spatial distribution of cumulative rainfall since the 2017/18 rainfall season started in October 2017 up to 31 January 2018. The map shows that normal to above normal (Green and light Blue) cumulative rainfall amounts have been received over northern Malawi while normal to below normal rainfall amounts have been received over most of southern and some parts of central Malawi (Green and Yellow colours).

1.3 AIR TEMPERATURE

Warm to hot temperatures continued to prevail over Malawi during the period 21 to 31 January 2018. Mean daily maximum temperatures ranged between 25°C at Dedza to 34°C at Ngabu while the average daily minimum temperatures had ranged from 15.5°C at Dedza and Bvumbe to 23.9°C at Ngabu. During the same period the highest temperature was 37°C reported at Ngabu in Chikwawa. On the otherhand the lowest temperature was 13°C recorded at Bvumbwe. Details are in Table 2.

1.4 WIND SPEEDS

During the period 21 to 31 January 2018 most parts of Malawi continued to experience light to moderate wind speeds. The daily average wind speeds measured at a height of two metres above the ground level across the Malawi had ranged from 1.8km per hour at Chitedze to 10.4km per hour at Chileka International Airport. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the last ten days of January 2018, air over Malawi was still fairly moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 60% at Ngabu to 83% at Mzuzu. Details are on the Table 2.

1.6 SUNSHINE HOURS

Malawi had experienced an increase in cloudiness during the period 21 to 31 January 2018. The daily average values of sunshine hours had ranged between 4 and 9 hours. Consequently the amount of solar radiation received over most areas had also increased and ranged from seven and ten calories per square centimeter per day. More details are in Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the last ten days January 2018 good rainfall for crop production was confined to northern Malawi. The good rainfall that continued falling over northern Malawi supported planting of roots and tubers, growth and development of crops, improved water availability, soil moisture reserves and pasture availability. Most of southern and some parts of central Malawi continued experiencing low rainfall and prolonged dry spells. This has caused soil moisture stress and wilting of crops. In some cases particularly in low altitude areas crops like maize have dried up permanently. This has compromised crop yields, production and household food security this season.

The crop stand in most fields particularly in the south was reported to be in poor to average state. Maize, the staple food crop was reported to be ranging from vegetative to cob formation stages. The early planted crop particularly early maturing hybrid maize varieties were at maturity stage.

3. PROSPECTS FOR 2017/2018 RAINFALL SEASON

The Sea Surface Temperatures which drive the rainfall patterns of the world including Malawi indicate that weak La Niña conditions have been established and are predicted to persist up to April 2018. Based on weak La Niña conditions, the updated rainfall forecast for 2017/18 season in Malawi is that during the period February to April 2018 most parts of Malawi would experience normal to above normal total rainfall amounts.

4. OUTLOOK FOR 01 TO 10 FEBRUARY 2018

Models for short and medium range forecasts show that the Inter Tropical Convergence Zone is likely to become active over southern and central Malawi while purses of Congo Air mass are likely to affect northern Malawi. Therefore expect an improvement in rainfall performance during 01 to 10 February 2018.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 21 TO 31 JANUARY 2018

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.	63.4	63.6	100	567.4	446.5	127	3
	Chitipa Met	73.2	75.3	97	462.9	473.5	98	9
	Karonga Met.	35.1	56.0	63	445.5	387.7	115	3
	Lupembe	147.1	56.7	259	360.4	332.4	108	4
	Vinthukutu Agric	112.0	58.8	191	667.4	441.2	151	4
MZUZU	Bolero Met	47.0	53.3	88	319.4	343.5	93	5
	Bwengu Agric.	47.1	74.0	64	241.0	406.9	59	7
	Chikangawa forest	64.2	73.1	88	374.6	525.4	71	6
	Chelinda (Nyika)	131.2	77.4	170	691.2	576.4	120	7
	Chintheche Agric	99.3	91.6	108	918.7	655.7	140	3
	Ekwendeni Agric.	52.0	41.2	126	285.9	444.9	64	5
	Euthini Agric.	65.5	58.9	111	110.5	408.1	27	7
	Mbawa Res. Stn	17.4	63.2	28	510.3	440.8	116	4
	Mzimba Met	51.5	68.6	75	463.2	476.3	97	8
	Mzuzu Met.	33.3	68.9	48	642.4	476.0	135	4
	NkhataBay Met.	58.0	64.2	90	831.7	539.0	154	5
	Rumphi Boma	19.1	70.0	27	482.7	373.5	129	3
	Zombwe Agric	56.4	54.2	104	341.3	373.4	91	3
KASUNGU	Dowa Agric	34.3	92.4	37	450.3	486.4	93	2
	Kaluluma DTC	21.0	75.7	28	131.7	459.7	29	2
	Kasungu Met	20.2	70.0	29	420.6	414.2	102	2
	Malomo Agric	8.2	55.1	15	302.0	434.8	70	2
	Mchinji Boma	53.0	79.2	67	651.7	586.7	111	4
	Mponela Agric	29.2	77.2	38	251.8	427.4	59	4
	Ntchisi Boma	17.6	103.3	17	448.7	636.0	71	3
SALIMA	Dwangwa	41.1	84.7	49	572.8	585.2	98	6
	Lifuwu	40.3	100.7	40	311.4	573.3	54	5
	Nkhotakota Met	83.0	97.8	85	677.3	626.7	108	7
	Salima Met	13.1	99.2	13	318.2	580.7	55	5
LILONGWE	Chileka Namitete	24.6	86.9	28	568.8	532.8	107	3
	Chitedze Met.	9.6	79.2	12	440.0	479.7	92	2
	Dedza Met	56.9	116.3	49	351.1	550.4	64	5
	Dzonzi Forest	33.6	80.8	42	417.3	552.1	76	3
	K.I.A Met	24.2	69.5	35	284.6	452.1	63	4
	Kasiya Agric	42.0	67.3	62	289.5	540.7	54	1
	Mlangeni Njolomole	49.9	73.6	68	325.1	512.1	64	5
	Nathenje Agric	74.0	90.8	82	525.5	459.7	114	3
	Ntcheu - Nkhande	40.7	84.6	48	425.0	587.7	72	6
MACHINGA	Balaka Agric	52.8	102.2	52	365.4	505.9	72	3
	Chancellor College	25.5	103.4	25	406.5	704.9	58	2
	Chikweo Agric.	65.5	98.7	66	452.1	595.3	76	6
	Chingale Agric	37.8	90.7	42	250.7	517.7	48	3
	Mpilipili (Makanjila)	11.1	78.9	14	191.9	491.5	39	2
	Makoka Met	63.5	89.6	71	300.0	548.4	55	5
	Monkey Bay Met.	12.8	74.0	17	180.7	327.4	55	3
	Namwera Agric	88.8	100.3	89	452.1	572.1	79	5
	Ntaja Met.	36.7	91.4	40	229.8	496.0	46	6
	Phalula Agric	29.9	74.1	40	393.8	481.1	82	3
	Toleza Farm	90.0	90.3	100	412.0	499.4	83	5
	Zomba Agric	86.8	107.3	81	456.1	667.0	68	5
BLANTYRE	Bvumbwe Met.	39.5	106.7	37	529.6	607.2	87	4
	Chichiri Met.	53.2	53.8	99	442.8	794.8	56	4
	Chileka Airport	35.8	81.3	44	388.2	498.0	78	3
	Chiradzulu Agric	1.0	99.6	1	294.5	545.4	54	1
	Chizunga Factory	8.4	92.2	9	442.6	736.9	60	2
	Lujeri Tea Estate	98.7	134.8	73	1549.8	1076.1	144	5
	Masambanjati Agric	6.5	93.9	7	606.4	690.0	88	2
	Mimosa Met.	39.5	117.1	34	736.1	772.6	95	4
	Mpemba Agric	22.2	95.8	23	436.6	641.1	68	2
	Mulanje Agric	35.3	145.4	24	1102.9	957.5	115	3
	Mwanza Agric	0.0	94.4	0	N/A	565.9	N/A	0
	Naminjiwa Agric	27.0	96.5	28	290.0	554.6	52	2
	Neno Agric	80.0	103.0	78	871.8	613.9	142	3
	Thuchila Agric	26.2	83.9	31	484.8	483.0	100	3
	Thyolo Met	36.5	103.9	35	N/A	621.6	N/A	7
SHIRE VALLEY	Chikwawa Agric	3.5	74.5	5	170.6	462.4	37	1
	Kasinthula Res. Stn.	0.0	62.5	0	157.1	387.3	41	0
	Makhanga Met	18.7	51.9	36	303.7	420.2	72	2
	Nchalo	0.0	50.7	0	397.6	364.7	109	0
	Ngabu Met.	0.0	61.2	0	241.5	429.3	56	0
	Nsanje Agic	0.0	84.8	0	561.1	613.5	127	0

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 31 JANUARY 2018

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	27.1	16.6	28.7	15.6	4.7	77	4.5	5.3	4.2	7.5
Karonga	30.1	21.2	31.2	19.1	3.2	75	6.0	6.3	5.0	8.5
MZUZU ADD										
Bolero	25.9	16.7	27.9	15.8	2.2	83	4.9	5.2	4.0	7.8
Mzimba	29.2	16.9	30.9	16.6	5.4	73	4.7	5.6	4.5	7.6
Mzuzu	27.0	16.2	27.8	14.3	2.2	76	4.9	5.3	4.2	7.8
Nkhata Bay	29.9	20.7	32.0	19.8	2.2	82	5.1	5.8	4.6	7.9
KASUNGU ADD										
Kasungu	27.5	20.0	28.0	18.0	3.6	65	7.4	6.7	5.3	9.4
LILONGWE ADD										
Chitedze	29.0	18.3	32.2	16.2	1.8	69	7.4	6.6	5.1	9.4
Dedza	25.0	15.5	26.8	13.8	5.8	75	7.4	6.2	4.8	9.4
KIA	27.0	17.5	28.5	14.7	4.3	74	7.4	6.4	5.0	9.4
SALIMA ADD										
Nkhotakota	28.5	21.8	30.0	20.4	2.2	78	5.9	6.3	5.0	8.4
Salima	31.0	22.7	32.3	21.5	6.5	72	8.3	7.4	5.9	10.0
MACHINGA ADD										
Makoka	31.6	19.8	30.5	14.3	1.8	74	6.7	6.6	5.2	9.0
Mangochi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monkey Bay	30.9	23.4	33.1	22.5	8.3	61	8.3	8.1	6.5	10.0
Ntaja	30.9	20.4	33.2	18.9	6.8	68	6.4	6.9	5.5	8.8
BLANTYRE ADD										
Bvumbwe	26.0	15.5	28.4	13.4	6.1	76	7.9	6.4	5.0	9.8
Chichiri	27.4	18.2	29.3	14.6	5.4	71	7.5	6.7	5.2	9.5
Chileka	30.7	20.2	33.0	16.0	10.4	63	8.7	8.0	6.5	10.3
Mimosa	29.9	19.4	32.1	16.5	3.6	65	7.5	6.9	5.5	9.5
SHIRE VALLEY ADD										
Ngabu	34.3	23.9	36.8	21.8	2.9	60	9.0	8.3	6.6	10.5

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 Kilometres per hour (Km/hr) = mpsx3.6
- kWh = 3.6 MJ