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"

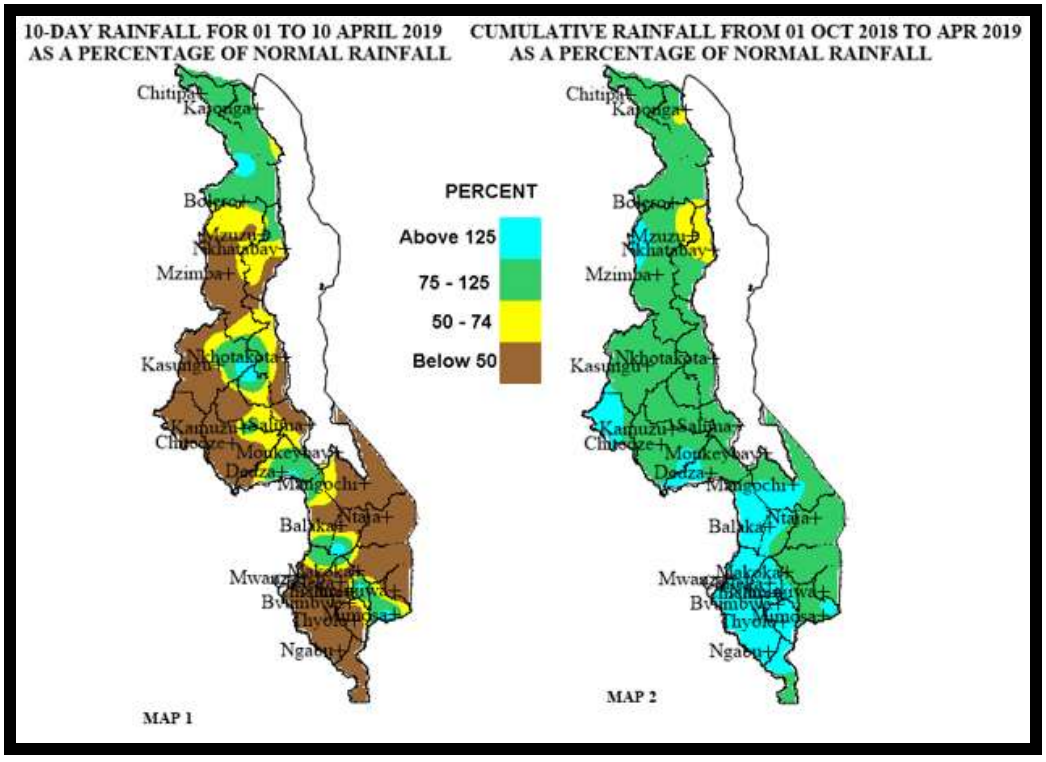
Be wise be weather-wise
Department of Climate Change and Meteorological Services

Period: 01 – 10 April 2019 | Season: 2018/2019 | Issue No.19

Release date: 15 April 2019

HIGHLIGHTS

- **Moderate to locally heavy rainfall amounts were experienced over northern Malawi…**
- **Maize crop doing well between maturing and drying stages…**
- **Moderate to locally heavy rainfall expected during the period 11 to 20 April 2019 over northern half…**



Rainfall Maps for 01 to 10 April 2019

1.0 WEATHER SUMMARY

During the period 01 to 10 April 2019, northern half of the country remained within the vicinity of the Inter-Tropical Convergence Zone (ITCZ) thereby influencing weather over north and parts of central Malawi while a high pressure system in the Indian Ocean extended a ridge into the Eastern Sub-continent hence influencing weather over southern half of country. As a result, more areas over the north and few selected areas like Lilongwe, Mangochi, Chiradzulu and Mulanje received normal to above normal rainfall amounts (green and light blue colours on Map 1) while most areas over central and southern Malawi received below normal rainfall amounts. (brown and yellow colours on Map 1)

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1.1 RAINFALL SITUATION

During the period 01 to 10 April 2019, moderate to locally heavy rainfall amounts were recorded over more northern and selected central and southern areas of Malawi. The ten-day total rainfall amounts were higher than the long-term average rainfall amounts for the period over these areas while most central and southern districts recorded ten-day total rainfall amounts that were below the long-term average rainfall amounts, (brown and yellow colours in Map1). Areas that had recorded cumulative rainfall amounts of at least 15mm included Baka Research Station in Karonga District which recorded 140.4mm, Mulanje Boma recorded 140.1mm, Karonga Airport recorded 111.3mm, Lujeri Tea Estate in Mulanje recorded 100mm, Nkhatabay Met station recorded 90.4mm, Chelinda in Rumphi recorded 77.8mm, Mzuzu Airport recorded 74.4mm, Vinthukutu Agriculture in Karonga recorded 70.1mm, Chikangawa Forest recorded 58.5mm, Dwangwa recorded 54mm, Mimosa Met station recorded 53.3mm, Lupembe in Karonga recorded 44.9mm, Chitipa Aerodrome recorded 38.5mm, Chiradzulu Agriculture recorded 35.5mm, Dedza recorded 32.9mm, Neno Agriculture recorded 31.8mm, Chinthenche Agriculture in Nkhatabay recorded 29.7mm, Malomo Agriculture in Ntchisi district recorded 28.8mm, Rumphi Boma recorded 25.7mm, Phalula Agriculture in Balaka recorded 24mm, Mlangeni Njolomole in Ntcheu recorded 22.9mm, Nkhotakota Met station recorded 20.5mm, Kamuzu International Airport recorded 20mm, Lifuwu Research Station in Salima recorded 19.6mm, Zombwe Agriculture in Rumphi district recorded 18.9mm, Dowa Agriculture recorded 17.9mm, Bwengu Agriculture in Rumphi recorded 17.6mm, Bvumbwe Met station in Thyolo recorded 17.2mm, Kasungu Met station recorded 17mm and Toleza Farm in Balaka recorded 15mm. More details in Table 1.

Map 2 indicates the spatial cumulative rainfall distribution since the start of the 2018/19 rainfall season in October 2018, up to 10 April 2019. The map generally indicates that most areas over Malawi have received normal to above normal rainfall amounts (green and light blue colours) with isolated cases of below normal rainfall amounts over parts of Karonga, Nkhatabay and Mzimba Districts in the north as shown by yellow colour on Map 2.

1.3 AIR TEMPERATURE

Generally warm to hot temperatures were experienced over Malawi during the period 01 to 10 April 2019. Mean daily maximum temperatures had ranged from 25°C at Dedza to 33°C at Ngabu in Chikwawa District while the mean daily minimum temperatures had ranged from 15°C at Dedza to 23°C at Salima Met station. Details in Table 2.

1.4 WIND SPEEDS

During the period under review, most parts of Malawi continued to experience light to moderate wind speeds. Daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 0.7 km per hour at Ngabu in Chikwawa and Chitedze in Lilongwe to 13.0 km per hour at Chitipa Aerodrome. More details in Table 2.

1.5 RELATIVE HUMIDITY

Air over Malawi was relatively moist during the period 01 to 10 April 2019. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 59% at Ngabu in Chikwawa district to 82% at Mzuzu Airport. Details as in Table 2.

1.6 SUNSHINE HOURS

Generally long hours of bright sunshine were observed over Malawi during the period 01 to 10 April 2019. The daily values had ranged from 7.5 hours per day at Nkhatabay Met station to 9.8 hours per day at Salima Met station and consequently the amount of Solar Radiation had ranged from 8.9 to 10.5 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, wet conditions prevailed over most northern areas of Malawi with drier conditions prevailing over most central and southern areas. Rainfall experienced over northern areas provided much needed moisture to reduce water stress of late planted Maize crop as well as support rice crop growth in the Rice growing districts like Karonga, Nkhotakota, Salima, among others.

Furthermore, the rains supported the growth and development of pastures for Livestock production as well as boosting soil moisture reserves for growth and development of root and tuber crops like potatoes.

Maize was reported doing well at various growing stages. Countrywide, the maize crop was reported between maturing and drying stages. For the crop that was at drying stage, more sunshine is required for proper drying. Harvesting is in progress in some areas of southern Malawi.

Basing on the current crop stand, good crop yields and production are anticipated this season provided good rains continue through April particularly over central and northern Malawi. However, in some southern areas crops have been negatively affected by the heavy rains and flooding which occurred in early March, a situation which is likely to cause localised reduction in the 2018/19 production.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

ENSO-neutral conditions are present over central equatorial Pacific Ocean. Therefore, as the 2018/19 rainfall season comes to an end, northern Malawi is likely to experience favourable rainfall amounts for agricultural purposes through April.

4. OUTLOOK FOR 11 TO 20 April 2019

Models for short and medium range forecasts show that moderate to locally heavy rainfall amounts are likely to persist over most parts of northern half of Malawi while light rainfall amounts are likely to be experienced over southern half of Malawi during the period 11-20 April 2019.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 01 TO 10 APRIL 2019

ADD	STATION NAME	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL EXPECTED RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	ACTUAL TOTAL RAINFALL TO DATE (mm)	NORMAL (EXPECTED) RAINFALL TO DATE (mm)	ACTUAL TO DATE AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	RAINY DAYS ≥0.3mm
KARONGA	Baka Res. Stn.	140.4	140.5	100	794.9	1200.4	66	8
	Chitipa Met	38.5	37.9	102	970.5	918.4	106	5
	Karonga Met.	111.3	88	126	829.2	895.7	93	8
	Lupembe	44.9	63.1	71	598.7	773.9	77	3
	Vinthukutu Agr	70.1	112.7	62	1080.4	993.7	109	4
MZUZU	Bolero Met	13.6	18.2	75	466.1	614.1	76	2
	Bwengu Agric.	17.6	21.7	81	506.6	733.9	69	2
	Chikangawa fo	58.5	70.3	83	888.8	1039	86	5
	Chelinda	77.8	52.3	149	1043.9	1124	93	7
	Chintheche Agr	29.7	146.7	20	1193.8	1472.3	81	3
	Emfeni Agric	13	26.8	49	627.3	775.8	81	1
	Ekwendeni Agri	14	42.2	33	552.8	779.8	71	5
	Euthini Agric.	11	22.6	49	1078.8	748.1	144	1
	Mbawa Res. Stn	0	16.5	0	904.7	781.6	116	0
	Mzimba Met	2.2	23.5	9	905.6	862.3	105	2
	Mzuzu Met.	74.4	89.2	83	616	965.4	64	7
	NkhataBay Met.	90.4	133	68	765.4	1215.9	63	5
	Rumphi Boma	25.7	30	86	610.8	706.8	86	4
	Zombwe Agric	18.9	36	53	521.3	716.9	73	4
KASUNGU	Dowa Agric	17.9	24.5	73	912.6	859.9	106	1
	Kasungu Met	17	17.6	97	658.8	760.8	87	1
	Lisasadzi	8	15.8	51	791.4	792.1	100	2
	Malomo Agric	28.8	16.3	177	965.2	808.4	119	2
	Mchinji Boma	1	29.3	3	1406.9	977.9	144	1
	Mkanda Met	7.2	25.9	28	1200.6	853.3	141	1
	Mponela Agric	0.8	11.6	7	776.5	779	100	1
	Mwimba Res	0	15.8	0	831.8	856.2	97	0
	Ntchisi Boma	7.8	47.4	16	1026.7	1189	86	1
LILONGWE	Chitedze Met.	2.2	29.3	8	776.8	859	90	1
	K.I.A Met	20	19.6	102	900.2	830.4	108	1
	Mlangeni Njol	22.9	24.3	94	1196.7	939.5	127	2
	Nathenje Agric	7.5	44	17	1106.5	840.3	132	1
	Ntcheu - Nkhan	6.4	19	34	1366.2	1011	135	1
	Dedza RTC	32.9	22.5	146	1167	967.5	121	3
SALIMA	Dwangwa Sugar	54	92.8	58	1014.4	1228.9	83	6
	Lifuwu	19.6	46.3	42	1134	1175.2	96	2
	Nkhotakota Met	20.5	97.1	21	1315.4	1341.7	98	2
	Salima Met	10.8	44.8	24	1067	1168.2	91	2
MACHINGA	Balaka Town	1.8	21.4	8	1128	830.9	136	1
	Chancellor Co	1	36.5	3	934.3	1236.6	76	1
	Makoka Met	1.3	30.7	4	1073.3	935	115	1
	Mangochi Met.	6.1	20.2	30	912.3	683.5	133	1
	Monkey Bay M	2.9	6.5	45	673	558.1	121	1
	Naminjiwa Agri	0	18.6	0	1133.6	928.7	122	0
	Namwera Agric	0	34.5	0	1249.54	1006.7	124	0
	Ntaja Met.	1.4	31.2	4	921.9	858.4	107	1
	Phalula Agric	24	14.3	168	986.2	799.1	123	1
	Toleza Farm	15	27.7	54	1182	833.8	142	1
	Zomba RTC	2.1	42	5	1053.3	1153.8	91	1
BLANTYRE	Bvumbwe Met.	17.2	30.7	56	1416.5	1046.8	135	2
	Chichiri Met.	7.7	29	27	1512.8	1057.5	143	2
	Chileka Airport	0	20	0	1202.8	846.9	142	0
	Chiradzulu Agr	35.5	22.4	158	1205	941.9	128	2
	Chizunga Fact	12.3	54.5	23	1673.9	1257.8	133	2
	Lujeri Tea Estat	100	106.5	94	2467.7	1850.5	133	2
	Mimosa Met.	53.3	63.8	84	1312.6	1331.8	99	2
	Mpemba Vet	12.5	32.1	39	1720.9	1072.6	160	1
	Mulanje Boma	140.1	82.2	170	1876	1606.3	117	2
	Neno Agric	31.8	36.3	88	1862.7	1047.4	178	1
	Satemwa Tea	8.5	46.5	18	1683.1	1024.9	164	1
	Thuchila Agric	13	25.5	51	1053.9	840.6	125	1
	Thyolo Met	7	30.7	23	1371.1	1137.8	121	1
SHIRE VALLEY	Chikwawa	0	21.2	0	933.4	735.2	127	0
	Makhanga Met	0	16.4	0	1214.4	692.4	175	0
	Nchalo Sucoma	0	18.9	0	927.6	624.3	149	0
	Ngabu Met.	0	17.9	0	936.3	722.7	130	0
	Nsanje Boma	0	21.7	0	917.8	1022.2	90	0

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 APRIL 2019

STATION/ADD	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEED Km/hr	RH %	SUN SHINE HOURS	Eo mm per day	Et mm per day	RAD-TION cal cm^{-2} p/day
KARONGA										
CHITIPA	27.1	18.5	28.1	17.5	13.0	75	7.6	7.0	5.5	9.6
KARONGA	30.7	20.6	31.6	19.8	5.4	73	8	7.2	5.8	9.9
MZUZU										
BOLERO	29.1	18.1	30.2	16.3	2.5	70	8	6.3	4.9	9.2
MZIMBA	28.1	16.1	30.6	14.4	4.0	70	8.2	6.2	4.8	9.4
MZUZU	25.4	17	26.7	14.4	4.7	82	8	5.9	4.5	9.2
NKHATA BAY	30.3	20.5	32.1	18.6	2.9	79	7.5	6.3	5.0	8.9
KASUNGU										
KASUNGU	29.4	16.4	29.5	9.5	4.3	68	8.5	6.5	5.1	9.6
LILONGWE										
CHITEDZE	28.5	15.5	29.6	14.9	0.7	72	8.5	6.2	4.7	9.7
DEDZA	24.7	14.9	26.2	11.2	5.4	76	8	5.9	4.5	9.4
K I A	27.2	16.7	28	12.6	5.8	71	9.1	6.6	5.1	10.0
SALIMA										
NKHOTAKOTA	29.8	19	31	16.7	3.2	70	9	6.9	5.4	9.9
SALIMA	31.1	22.9	32.1	19.5	6.8	63	9.8	7.9	6.3	10.5
MACHINGA										
NTAJA	29.2	19.5	30.3	16.4	5.4	71	8.2	7.0	5.5	9.9
MAKOKA	27.5	15.8	29.1	12	2.9	75	8	6.1	4.7	9.4
MANGOCHI	31.5	21.3	33.1	19.1	2.5	61	8.5	7.1	5.6	9.7
MONKEY BAY	31.6	22.3	32.9	19.7	5.4	60	8.5	7.4	6.0	9.7
BLANTYRE										
BVUMBWE	25.5	16	27.4	12.9	6.1	69	8	6.2	4.8	9.5
CHICHIRI	26.1	17.4	29.4	13.5	4.7	65	8	6.3	4.9	9.5
CHILEKA	28.8	18.4	30.1	16.6	7.2	66	8.4	6.9	5.5	9.7
MIMOSA	29.4	17.8	30.6	14.5	3.6	71	8	6.5	5.1	9.5
SHIRE VALLEY										
NGABU	32.9	21.9	34.3	19.2	0.7	59	8.5	7.2	5.7	9.8

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 Kilometres per hour (Km/hr) = mpsx3.6