



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: 11 – 20 March 2020

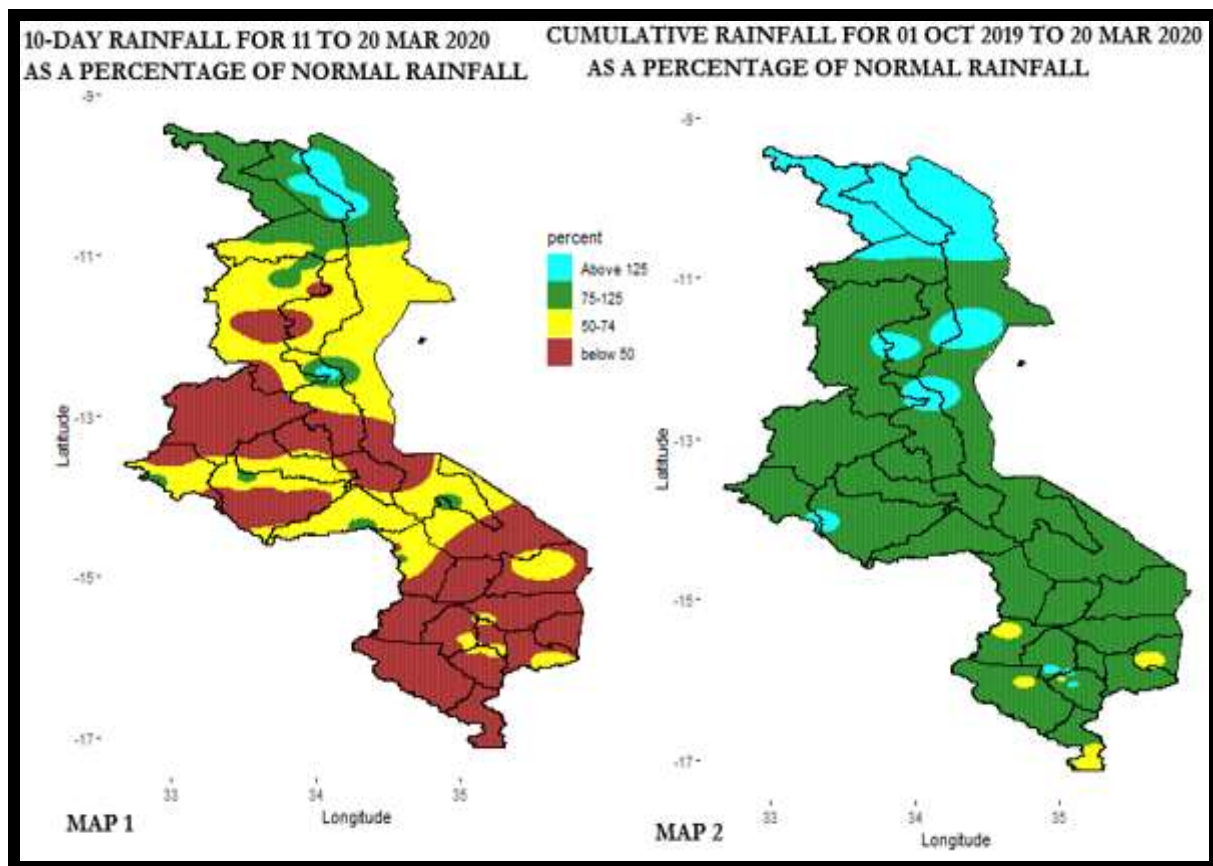
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HIGHLIGHTS

- Moderate to heavy rainfall experienced mainly over northern areas while the south remained largely dry...
- Maize crop between maturity and drying stages...
- Moderate to heavy rainfall amount anticipated mainly over central and northern Malawi during 21-31 March 2020...



1.0 WEATHER SUMMARY

During the period 11 to 20 March 2020, northernmost areas of Malawi were in the vicinity of the Inter-Tropical Convergence Zone (ITCZ) with easterly airmass dominant over central and southern areas of Malawi. Hence moderate to heavy rainfall amounts were recorded mainly over northern areas of the country. On the other hand, mostly dry conditions persisted over southern and central areas.

1.1 RAINFALL SITUATION

Moderate to heavy rains were experienced over northern areas of Malawi during 11 to 20 March 2020. Cumulative ten-day rainfall amounts were higher than the long-term average rainfall amounts for this period over most northern areas of Malawi, represented by light blue and green colours in Map1. However, mostly dry conditions were experienced over central and southern areas of the country, resulting in lower than long-term average rainfall amounts over these areas. These are represented by yellow and brown colours in Map1.

Areas that had reported ten-day cumulative rainfall amounts of at least 50mm included Vinthukutu Agriculture which recorded 260.1mm, Karonga Meteorological station recorded 159.3mm, Dwangwa Sugar Estate in Nkhokhota recorded 141.8mm, Baka Research station recorded 125.5mm, Chelinda in Rumphi recorded 91.9mm, Lupembe recorded 88.9mm, Chitipa Meteorological station recorded 76.4mm, Mimosa Meteorological station in Mulanje recorded 65.7mm, Nkhonde in Ntcheu recorded 58.9mm, Bwengu Agriculture recorded 57.8mm and Nkhata Bay Meteorological station recorded 53.9mm. More details in table 1

Map 2 indicates the cumulative spatial rainfall distribution over Malawi since the start of the 2019/20 rainfall seasonal monitoring on 01 October 2019 up to 20 March 2020. The map indicates that Malawi has thus far received normal to above normal rainfall amounts (depicted by green and light blue colours) with isolated cases of below normal rainfall over parts of Neno, Thyolo, Chikwawa and Nsanje districts (as shown by the yellow colour). Extra details in Table 1.

1.3 AIR TEMPERATURE

Generally warm to hot temperatures were experienced over Malawi during the period 11 to 20 March 2020. Mean daily maximum temperatures had ranged from 23.2°C at Mzuzu Meteorological station to 34.0°C at Ngabu Meteorological station. On the other hand, mean daily minimum temperatures had ranged from 15.5°C at Dedza Meteorological station to 24.0°C at Ngabu. Details in Table 2.

1.4 WIND SPEED

Light to moderate wind speeds were experienced in most parts of the country during the period under review. Daily average wind speed measured at a height of two metres above the ground level across the country had ranged from 1.4 km per hour at Bolero, Mzimba, Chitedze and Ngabu Meteorological stations to 10.1 km per hour at Chileka Meteorological station. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the second ten days of March 2020, air over Malawi was generally humid. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 58% at Ngabu Meteorological station to 85% at Nkhata Bay Meteorological station. Details as shown in Table 2.

1.6 SUNSHINE HOURS

Generally low to medium hours of bright sunshine were observed over Malawi during the period under review. Mean daily values had ranged from 6.2 hours per day at Chitipa and Mzuzu Meteorological stations to 9.2 hours per day at Salima Meteorological station. As a result, calculated amount of Solar Radiation had ranged from 8.3 to 10.3 cal/cm²/day. For details refer to Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was good spatial rainfall distribution over northern areas of Malawi while most parts of central and southern areas reported drier conditions. The rains supported growth and development of crops especially the staple crop, maize at its critical stage as well as rice over northern areas while the drier conditions over southern half of the country facilitated the drying of already matured crops. The rains also improved pasture availability for livestock production, water resources and soil moisture reserves.

Maize crop is reported at maturity to drying stages over northern and central areas while mostly at drying stage over southern areas with farmers reportedly having started harvesting.

Basing on the current crop stand, good crop yields and production are anticipated this agricultural season provided the rains continue through March 2020 over central and northern areas. However, reported drier conditions over parts of central Malawi if prolongs has the potential to negatively impact the good crop stand, especially late planted crops, thereby affecting overall national production outlook.

3. PROSPECTS FOR 2019/2020 RAINFALL SEASON

ENSO-neutral conditions are prevailing over central Tropical Pacific Ocean with a neutral Indian Ocean Dipole present. Therefore, as the 2019/2020 rainfall season comes to an end, Malawi is likely to experience favourable rainfall amounts for agricultural purposes for the last days of March as well as through April.

4. OUTLOOK FOR 21-31 MARCH 2020

Short to medium range forecasts indicate that rains are expected to continue and may be heavy at times mainly over central and northern areas of Malawi. Rain showers are anticipated over southern areas. These rain shower conditions are due to the periodic influx of moist and unstable easterly airmass.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 11 TO 20 MARCH 2020

ADD	STATION NAME	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL EXPECTED RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	DEKADAL RAINY DAYS ≥.3mm	ACTUAL TOTAL RAINFALL TO DATE (mm)	NORMAL (EXPECTED) RAINFALL TO DATE (mm)	ACTUAL TO DATE AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)
KARONGA	Baka Res. Stn.	125.5	140.0	90	6	1341.6	871.3	154
	Chitipa Met	76.4	66.1	116	6	1191.9	827.7	144
	Karonga Met.	159.3	78.9	202	8	884.9	693.7	128
	Lupembe	88.9	62.8	142	5	844.1	621.4	136
	Vinthukutu Agric	260.1	79.5	327	8	1675.8	758.5	221
	Bwengu Agric.	57.8	47.5	122	5	764.4	662.9	115
	Chikangawa forest	30.9	63.1	49	7	1221.0	873.5	140
	Chelinda (Nyika)	91.9	85.1	108	6	1341.6	982.6	137
	Emfeni Agric	12.0	38.2	31	3	633.1	717.9	88
	Ekwendeni Agric.	0.0	31.9	0	0	518.3	692.3	75
	Mbawa Res. Stn	26.6	40.4	66	5	710.9	729.3	97
	Mzimba Met	18.2	41.7	44	3	965.7	790.6	122
	Mzuzu Met.	7.5	58.2	13	3	890.2	775.3	115
	NkhataBay Met.	53.9	96.7	56	6	1425.4	915.9	156
Rumphi Boma	21.5	37.7	57	6	797.4	638.4	125	
Zombwe Agric	31.5	35.5	89	5	717.2	624.2	115	
KASUNGU	Dowa Agric	31.5	45.4	69	2	890.5	794.1	112
	Kaluluma DTC	16.0	50.3	32	1	792.4	736.9	108
	Kasungu Met	3.9	38.7	10	2	760.1	712.1	107
	Lisasadzi	0.0	33.7	0	0	673.2	752.8	89
	Malomo Agric	6.7	46.7	14	1	651.8	761.3	86
	Madisi Agric	2.4	33.6	7	1	643.9	768.9	84
	Mchinji Boma	39.5	46.7	85	3	898.2	898.0	100
	Mkanda Met	12.6	41.3	31	2	820.6	783.7	105
Mwimba Research	9.2	38.9	24	2	656.6	810.1	81	
LILONGWE	Chileka Namitete	11.4	44.6	26	1	1131.0	827.0	137
	Chitedze Met.	4.2	51.1	8	2	783.6	788.1	99
	K.I.A Met	24.3	41.8	58	3	891.5	763.5	117
	Kasiya Agric	39.0	38.9	100	2	1004.8	873.0	115
	Mlangeni Njolomole	13.2	54.0	24	2	710.3	870.9	82
	Nathenje Agric	4.8	39.1	12	1	889.0	757.8	117
	Ntcheu - Nkhande	58.9	50.4	117	3	1043.7	947.0	110
	Dedza RTC	41.9	49.2	85	3	774.0	900.7	86
SALIMA	Dwangwa Sugar Corp.	141.8	91.8	154	6	1484.4	992.3	150
	Lifuwu	2.2	78.7	3	1	1233.9	1057.2	117
	Salima Met	4.8	85.6	6	1	996.2	1051.8	95
MACHINGA	Balaka Township	15.2	40.2	38	2	593.4	776.7	76
	Chancellor College	15.1	82.6	18	2	962.0	1124.8	86
	Chingale Agric	5.5	52.0	11	2	877.0	833.1	105
	Mpilipili (Makanjila)	21.7	39.6	55	2	770.3	810.5	95
	Makoka Met	28.0	46.7	60	3	927.6	871.8	106
	Mangochi Met.	15.8	44.1	36	2	751.8	630.1	119
	Monkey Bay Met.	17.1	16.3	105	3	585.4	538.2	109
	Naminjiwa Agric	4.5	44.3	10	1	624.0	873.6	71
	Namwera Agric	3.4	69.3	5	1	957.2	920.5	104
	Ntaja Met.	28.7	44.6	64	1	619.5	778.6	80
	Phalula Agric	0.0	37.0	0	0	820.6	757.6	108
	Toleza Farm	18.5	45.4	41	2	928.6	776.8	120
Zomba R.T.C	8.6	73.9	12	1	810.4	1053.6	77	
BLANTYRE	Bvumbwe Met.	33.4	54.2	62	2	1204.0	958.2	126
	Chichiri Met.	9.5	16.1	59	2	966.2	1013.2	95
	Chileka Airport	1.7	45.8	4	2	609.2	782.4	78
	Chiradzulu Agric	3.0	38.1	8	1	909.2	875.0	104
	Chizunga Factory	8.1	84.5	10	1	822.5	1131.8	73
	Masambanjati Agric	4.5	74.7	6	2	983.9	1123.7	88
	Mimosa Met.	65.7	89.0	74	1	1099.9	1186.7	93
	Mpemba Vet	15.2	61.9	25	1	1263.3	988.4	128
	Mwanza Boma	0.0	55.4	0	0	966.1	901.7	107
	Neno Agric	0.0	46.9	0	0	614.7	968.5	63
	Satemwa Tea Est. No.1	20.0	63.1	32	2	1186.8	917.2	129
	Thuchila Agric	22.0	37.9	58	2	960.3	774.9	124
	Thyolo Met	10.0	58.6	17	2	829.9	1050.8	79
	SHIRE VALLEY	Chikwawa Boma	0.0	32.9	0	0	480.3	680.1
Kasinthula Res. Stn.		0.0	29.6	0	0	618.6	646.0	96
Makhanga Met		0.0	38.0	0	0	659.7	650.5	101
Nchalo Sucoma		5.2	19.3	27	1	582.9	578.8	101
Ngabu Met.		1.3	37.3	3	1	572.0	669.7	85
Nsanje Boma	2.4	49.9	5	1	555.1	942.8	59	

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 MARCH 2020

STATION	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	RADIATION cal cm ⁻² p/day
KARONGA ADD										
CHITIPA	27.0	18.7	29.0	17.8	2.9	81	6.2	6.0	4.7	8.4
KARONGA	29.9	20.8	31.2	20.1	2.9	81	7.2	6.7	5.4	9.0
MZUZU ADD										
BOLERO	28.5	18.9	30.8	17.9	1.4	79	7.2	6.3	5.0	9.0
MZIMBA	27.5	16.3	30.5	13.7	1.4	74	6.6	5.9	4.6	8.6
MZUZU	23.2	17.6	27.5	16.4	3.8	83	6.2	8.8	7.6	8.3
NKHATA BAY	30.0	21.5	31.9	20.3	2.9	85	7.2	6.7	5.3	9.0
KASUNGU ADD										
KASUNGU	29.6	18.9	31.5	17.0	2.5	71	7.3	6.8	5.4	9.1
LILONGWE ADD										
CHITEDZE	28.3	18.3	31.2	16.8	1.4	75	6.8	6.2	4.9	8.8
DEDZA	25.4	15.5	27.2	12.4	4.7	78	7.0	6.2	4.9	8.9
K I A	27.2	18.1	29.5	15.6	5.4	73	7.5	7.1	5.7	9.2
SALIMA ADD										
NKHOTAKOTA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SALIMA	31.2	23.5	33.2	22.5	7.6	69	9.2	6.0	4.8	10.3
MACHINGA ADD										
NTAJA	30.6	20.9	32.3	19.4	5.4	71	6.9	7.5	6.2	8.8
MAKOKA	28.6	17.6	30.4	15.1	1.4	74	7.4	6.4	5.0	9.2
MANGOCHI	32.8	22.5	33.7	20.6	3.6	69	8.3	8.1	6.6	9.8
MONKEY BAY	31.8	23.2	32.8	22.1	6.5	65	8.0	8.9	7.4	9.5
BLANTYRE ADD										
BVUMBWE	26.0	17.7	28.4	16.1	7.2	77	7.3	7.0	5.7	9.1
CHICHIRI	28.1	17.6	30.2	15.9	3.2	72	8.2	7.0	5.6	9.7
CHILEKA	29.8	19.9	31.3	18.1	10.1	65	8.4	9.4	7.9	9.8
MIMOSA	29.6	19.4	31.5	17.0	2.5	72	6.9	6.7	5.3	8.8
SHIRE VALLEY ADD										
NGABU	34.0	24.0	35.5	21.5	1.8	58	8.8	8.3	6.7	10.1

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 Kilometres per hour (Km/hr) to Meters Per Second (mps) = Km/hr ÷3.6