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: 21 – 29 February 2020 | Season: 2019/2020 | Issue No.15

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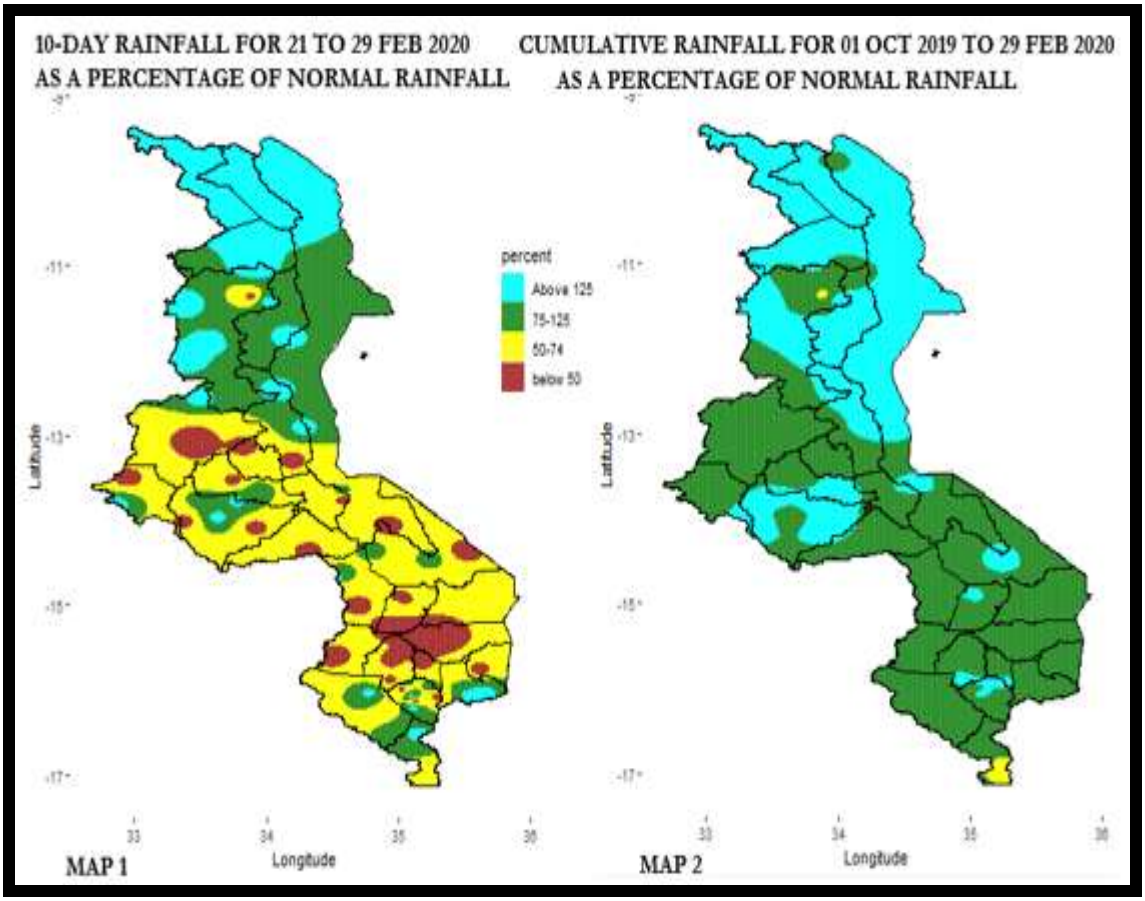
HIGHLIGHTS

- **Moderate to heavy rainfall experienced mainly over northern Malawi …**
- **Maize crop between cobing and drying stages…**
- **Moderate to heavy rainfall anticipated over northern half of Malawi during 01-10 March 2020…**



1.0 WEATHER SUMMARY

During the period 21 to 29 February 2020, the Inter-Tropical Convergence Zone (ITCZ) remained active mainly over northern areas of Malawi. Hence moderate to heavy rainfall amounts were recorded mainly over northern areas of the country.

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1.1 RAINFALL SITUATION

The cumulative ten-day rainfall amounts were higher than the long-term average rainfall amounts for this period over most northern areas of Malawi (light blue and green colours in Map1) with lower than long-term average rainfall amounts observed over central and southern areas of the country (yellow and brown colours in Map1). Some areas reported up to 7 rainy days while others registered no rainy day during the whole period under review. Areas that had reported ten-day cumulative rainfall amounts of at least 100mm included Baka Research station in Karonga which recorded 181.4mm, Chelinda in Rumphi recorded 176.7mm, Lupembe in Karonga recorded 166.0mm, Nkhotakota Meteorological station recorded 163.4mm, Dwangwa in Nkhotakota recorded 156.0mm, Vinthukutu Agriculture in Karonga recorded 149.9mm, Lujeri Tea estate in Mulanje recorded 143.5mm, Chintheche Agriculture in Nkhata Bay recorded 120.9mm, while Mulanje Boma recorded 117.0mm, Masambanjati Agriculture 116.0mm and Chitipa Meteorological station recorded 102.0mm. 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 in October 2019 up to 29 February 2020. The map indicates that Malawi has this far received normal to above normal rainfall amounts (green and light blue colours) with isolated cases of below normal rainfall over Nsanje district and Mzimba particularly Ekwendeni area (yellow and brown colours). Extra details in Table 1.

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the period 21 to 29 February 2020. Mean daily maximum temperatures had ranged from 24.9°C at Dedza Meteorological station to 31.5°C at Mangochi Meteorological station. On the other hand, mean daily minimum temperatures had ranged from 16.0°C at Dedza Meteorological station to 23.2°C at Monkey Bay. Details in Table 2.

1.4 WIND SPEED

Light to moderate wind speeds were experienced in most parts of the country during 21 to 29 February 2020. Daily average wind speed measured at a height of two metres above the ground level across the country had ranged from 1.1 km per hour at Mimosa Meteorological station in Mulanje, to 9.4 km per hour at Chileka International Airport in Blantyre. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 21 to 29 February 2020, air over Malawi was generally humid. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 68% at Mimosa Meteorological station to 88% at Nkhata Bay Meteorological station. Details as 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 4.5 hours per day at Chitipa Meteorological station to 8.4 hours per day at Salima Meteorological station. As a result, the amount of Solar Radiation had ranged from 7.4 to 9.9 cal/cm²/day. For details see 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 relatively drier conditions. The rains supported growth and development of crops especially the staple crop, maize at its critical stage. The rains also improved pasture availability for livestock production, water resources and soil moisture reserves.

Maize crop is at cob formation to maturity stages over central and northern Malawi while the crop is reported at maturing to drying stages over southern Malawi. 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 flooding cases leading to field wash-away and waterlogging conditions particularly over the northern Lakeshore district of Karonga has the potential to negatively impact the good crop stand thereby affecting overall national production outlook.

3. PROSPECTS FOR 2019/2020 RAINFALL SEASON

ENSO-neutral conditions are prevailing over central tropical Pacific Ocean. Climate models are projecting that the ENSO-neutral conditions and a neutral Indian Ocean Dipole are likely to persist throughout the 2019/2020 rainfall season. Based on these expectations and other analyses conducted, the updated rainfall forecast for January to March 2020 (JFM) sub-season is that:

> **"most of the north and northern parts of central areas of the country are expected to receive normal to above normal rainfall amounts, while southern areas and southern parts of central areas are expected to receive above normal to normal rainfall amounts."**

4. OUTLOOK FOR 01-10 MARCH 2020

Short to medium range forecasts indicate that the Inter-Tropical Convergence Zone (ITCZ) will continue to influence weather over Malawi hence moderate to heavy thunderstorms should be expected especially central and northern areas. This will provide the much required water amounts to continue supporting growth and development of late planted crops especially maize at this critical stage particularly over central and northern areas.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 29 FEBRUARY 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.	181.4	54.6	332	5	1102.0	615.5	179
	Chitipa Met	102.0	58.7	174	7	984.7	697.3	141
	Karonga Met.	97.1	55.9	174	6	604.3	541.4	112
	Lupembe	166.0	52.4	317	4	720.7	493.0	146
	Vinthukutu Agric	149.9	48.9	307	4	1314.4	602.3	218
MZUZU	Bwengu Agric.	69.0	45.4	152	3	663.9	577.3	115
	Chikangawa forest	78.1	63.9	122	7	1097.3	734.3	149
	Chelinda (Nyika)	176.7	73.6	240	7	1148.6	814.5	141
	Chintheche Agric	120.9	66.2	183	2	1161.9	875.3	133
	Ekwendeni Agric.	4.5	47.4	9	2	452.8	614.1	74
	Euthini Agric.	85.2	53.5	159	5	776.8	587.7	132
	Mbawa Res. Stn	72.2	46.8	154	4	601.0	620.1	97
	Mzimba Met	97.5	54.4	179	6	858.5	677.2	127
	Mzuzu Met.	58.1	42.9	135	6	797.6	636.1	125
	NkhataBay Met.	68.6	55.3	124	5	1009.9	721.7	140
	Rumphi Boma	57.0	44.5	128	3	719.8	539.3	133
KASUNGU	Dowa Agric	62.7	64.9	97	4	855.7	673.9	127
	Kaluluma DTC	89.0	40.8	218	3	727.7	617.1	118
	Kasungu Met	21.0	59.6	35	2	736.4	609.1	121
	Lisasadzi	2.9	54.8	5	1	649.0	666.2	97
	Malomo Agric	0.0	48.8	0	0	645.1	630.3	102
	Madisi Agric	39.3	73.7	53	3	628.3	668.6	94
	Mchinji Boma	90.0	70.0	129	2	858.7	793.5	108
	Mkanda Met	9.6	59.0	16	1	735.4	682.2	108
	Mponela Agric	18.0	61.3	29	2	625.9	643.2	97
	Mwimba Research	5.2	69.8	7	1	637.0	694.7	92
	Ntchisi Boma	0.0	75.3	0	0	731.1	905.4	81
LILONGWE	Chileka Namitete	11.0	60.4	18	1	997.2	737.7	135
	Chitedze Met.	88.6	66.9	132	3	748.5	669.5	112
	Dzonzi Forest	3.0	46.0	7	1	577.3	753.4	77
	K.I.A Met	84.4	66.5	127	2	865.2	652.6	133
	Kasiya Agric	61.7	81.8	75	2	965.8	750.6	129
	Mlangeni Njolomole	75.7	57.8	131	3	683.1	738.6	92
	Nathenje Agric	20.0	66.5	30	1	868.7	656.0	132
	Ntcheu - Nkhande	51.4	69.3	74	4	984.8	817.3	120
	Dedza RTC	20.1	42.3	48	3	721.7	764.7	94
SALIMA	Dwangwa Sugar Corp.	156.0	70.1	223	6	1303.6	792.1	165
	Lifuwu	71.2	86.4	82	4	1231.7	879.8	140
	Nkhotakota Met	163.4	85.7	191	5	1394.9	870.2	160
	Salima Met	33.1	92.8	36	3	991.4	867.5	114
MACHINGA	Balaka Township	34.5	47.2	73	1	578.2	679.0	85
	Chancellor College	28.0	68.0	41	4	946.9	953.8	99
	Chingale Agric	6.3	54.0	12	1	871.5	723.5	120
	Makoka Met	2.0	56.8	4	2	899.6	760.0	118
	Mangochi Met.	55.7	47.5	117	3	736.0	530.9	139
	Monkey Bay Met.	12.9	33.7	38	1	568.3	479.5	119
	Namwera Agric	13.4	63.1	21	3	953.8	780.1	122
	Nankumba Agric	56.0	44.7	125	1	622.0	668.5	93
	Phalula Agric	6.8	57.6	12	3	820.6	663.4	124
	Zomba RTC	5.9	66.1	9	2	801.8	903.7	89
BLANTYRE	Bvumbwe Met.	75.7	62.4	121	6	1167.5	833.7	140
	Chichiri Met.	33.7	52.5	64	6	953.2	972.5	98
	Chileka Airport	4.4	47.9	9	2	607.5	684.8	89
	Chiradzulu Agric	17.7	53.3	33	3	901.9	763.8	118
	Chizunga Factory	7.7	60.7	13	2	789.6	958.2	82
	Lujeri Tea Estate	143.5	110.3	130	4	1623.4	1451.5	112
	Masambanjati Agric	116.0	75.6	153	3	949.8	948.7	100
	Mimosa Met.	88.9	62.9	141	3	1006.3	1002.6	100
	Mpemba Vet	15.7	54.7	29	2	1246.5	848.6	147
	Mulanje Boma	117.0	55.9	209	3	1305.0	1209.8	108
	Mwanza Boma	21.4	57.4	37	2	966.1	780.5	124
	Satemwa Tea Est. No.1	88.5	48.5	182	3	1142.0	781.1	146
	Thuchila Agric	36.4	47.4	77	3	931.1	668.4	139
	Thyolo Met	31.0	136.2	23	3	806.9	921.9	88
SHIRE VALLEY	Chikwawa Boma	74.7	32.8	228	3	474.4	603.4	79
	Kasinthula Res. Stn.	13.8	41.4	33	3	613.6	529.2	116
	Makhanga Met	51.6	33.4	154	3	654.7	564.1	116
	Nchalo Sucoma	26.4	37.2	71	3	570.0	518.5	110
	Nsanje Boma	27.9	43.6	64	2	552.7	811.4	68

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 29 FEBRUARY 2020

ADD/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	RADIA-TION cal cm^{-2} p/day
KARONGA ADD										
CHITIPA	27.5	18.4	30.3	17.4	4.3	82	4.5	5.7	4.6	7.4
KARONGA	30.2	21.3	33.2	19.5	2.9	83	5.2	6.1	4.9	7.9
MZUZU ADD										
BOLERO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MZIMBA	26.9	16.4	30.8	15.8	1.4	79	6.4	5.8	4.6	8.6
MZUZU	25.6	17.5	28.0	16.3	4.3	76	5.5	6.0	4.9	8.0
NKHATA BAY	30.0	21.1	32.6	21.1	2.5	88	5.2	5.8	4.6	7.8
KASUNGU ADD										
KASUNGU	28.4	19.6	32.0	17.9	2.9	71	7.2	6.9	5.5	9.2
LILONGWE ADD										
CHITEDZE	28.5	18.6	32.0	17.4	2.5	79	6.5	6.3	5.0	8.7
DEDZA	24.9	16.0	29.0	14.2	4.0	81	6.3	5.9	4.7	8.5
K I A	27.6	18.0	30.6	16.2	5.4	77	7.5	7.1	5.7	9.4
SALIMA ADD										
NKHOTAKOTA	29.4	21.7	31.5	20.8	2.2	78	6.0	6.5	5.2	8.4
SALIMA	30.4	22.8	32.4	21.9	7.2	73	8.4	8.6	7.1	9.9
MACHINGA ADD										
NTAJA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAKOKA	27.0	18.1	30.2	17.1	4.3	81	6.9	6.4	5.1	8.9
MANGOCHI	31.5	23.1	34.5	20.3	3.3	76	7.5	7.5	6.1	9.3
MONKEY BAY	30.5	23.2	32.1	21.2	5.4	75	7.6	7.9	6.5	9.4
BLANTYRE ADD										
BVUMBWE	25.3	18.1	27.6	15.4	5.1	83	6.5	6.2	4.9	8.6
CHICHIRI	27.8	17.8	30.1	16.4	5.4	78	6.7	6.7	5.4	8.8
CHILEKA	29.7	19.8	33.5	18.5	9.4	72	8.2	8.7	7.2	9.8
MIMOSA	29.3	19.8	34.0	18.0	1.1	68	6.8	6.5	5.1	8.8
SHIRE VALLEY ADD										
NGABU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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