



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 – 31 January 2020

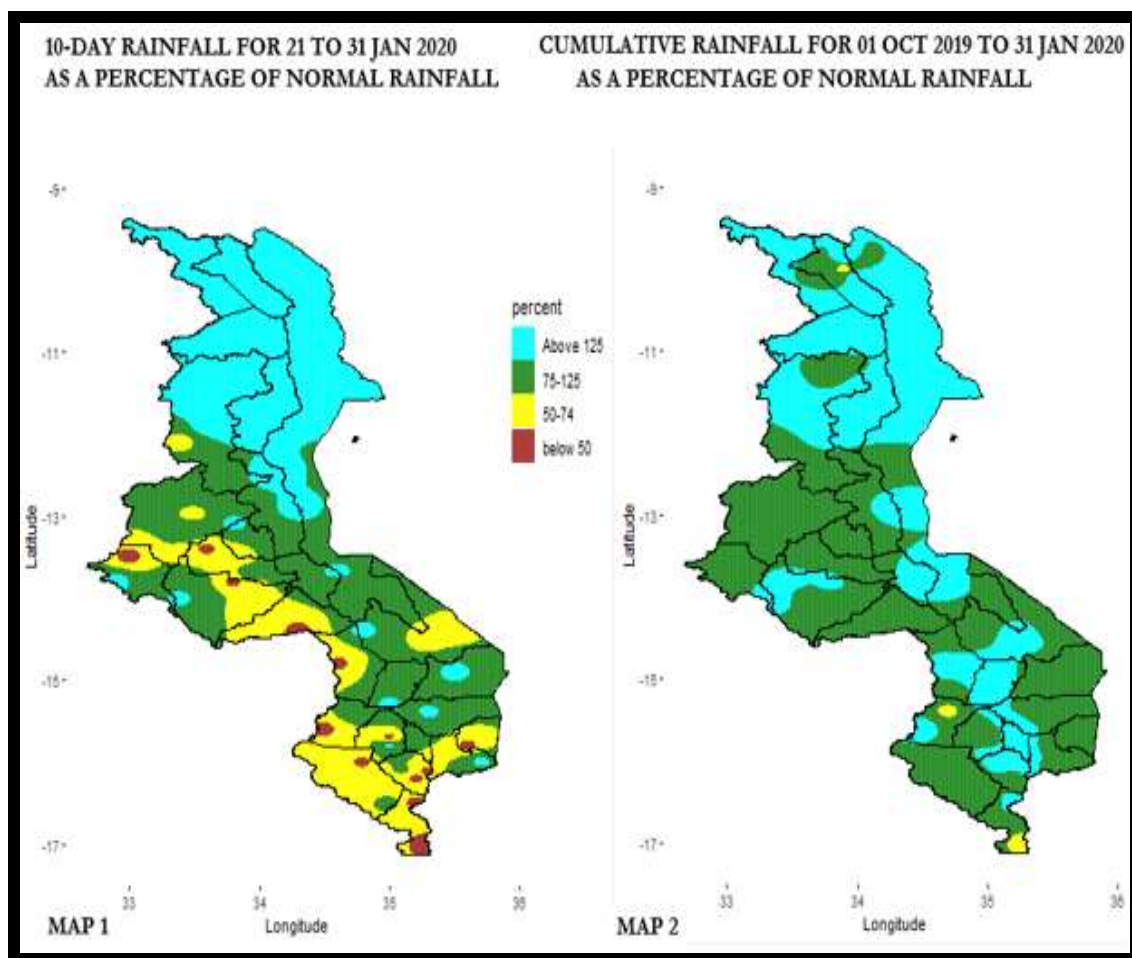
Season: 2019/2020

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HIGHLIGHTS

- Moderate to heavy rainfall experienced mainly over northern Malawi ...
- Maize crop is between tasseling and cobing stages and reported doing well...
- Heavy rainfall anticipated mainly over northern half during 01-10 February 2020....



1.0 WEATHER SUMMARY

During the period 21 to 31 January 2020, the Inter-Tropical Convergence Zone (ITCZ) remained active mainly over northern half of Malawi. Hence moderate to heavy rainfall amounts were recorded mainly over northern areas of the country.

1.1 RAINFALL SITUATION

During the period under review, moderate to heavy rainfall amounts were recorded mainly over northern half of Malawi. The cumulative ten-day rainfall amounts were higher than the long-term average rainfall amounts for the period over most northern areas (light blue and green colours in Map1) with cases of lower than long-term average rainfall amounts over central and southern areas (brown and yellow colours in Map1). Some areas reported as high as 11 rainy days during the period under review. Areas that had reported ten-day cumulative rainfall amounts of at least 100mm included Lujeri Tea Estate which recorded 227.2mm, Nkhotakota Meteorological station recorded 214.8mm, Chitipa Meteorological station recorded 198.6mm, Vinthukutu Agriculture in Karonga recorded 197.9mm, Nankumba Agriculture recorded 193.0mm, Dwangwa Sugar recorded 183.0mm, Nkhata Bay Meteorological station recorded 174.8mm, Chelinda in Nyika recorded 168.9mm, Lifuwu in Salima recorded 166.1mm, Ntaja Meteorological station recorded 161.3mm, Mchinji Boma recorded 152.8mm, Mzuzu Meteorological station recorded 148.0mm, Mzimba Meteorological station recorded 143.1mm, Baka Research station recorded 137.6mm, Chileka-Namitete in Lilongwe recorded 130.8mm, Mimosa Meteorological station recorded 130.0mm, Chingale Agriculture recorded 129.3mm, Chichiri Meteorological station recorded 126.0mm, Lupembe in Karonga recorded 123.7mm, Salima Meteorological station recorded 122.5mm, Chakangawa forest recorded 121.8mm, Bvumbwe Meteorological station recorded 121.1mm, Rumphu Boma recorded 114.3mm, Zombwe Agriculture recorded 112.7mm, Mulanje Boma recorded 109.8mm, Neno Agriculture recorded 109.0mm and Karonga Meteorological station recorded 107.8mm. See more details in Table 1.

Map 2 indicates the cumulative spatial rainfall distribution since the start of the 2019/20 rainfall seasonal monitoring in October 2019 up to 31 January 2020. The map indicates that most areas over Malawi have this far received normal to above normal rainfall amounts (green and light blue colours) with isolated cases of below normal rainfall over Nsanje, Neno and Karonga districts (brown and yellow colours). Extra details in Table 1.

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the period 21 to 31 January 2020. Mean daily maximum temperatures had ranged from 23.6°C at Dedza Meteorological station to 32.7°C at Ngabu. On the other hand, mean daily minimum temperatures had ranged from 15.5°C at Dedza Meteorological station to 22.1°C at Ngabu. Details in Table 2.

1.4 WIND SPEED

During the period 21 to 31 January 2020, most parts of Malawi experienced light to moderate wind speed. Daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 1.4 km per hour at Ngabu Meteorological station to 9.4 km per hour at Chileka International Airport. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 21 to 31 January 2020, air over Malawi was generally humid. Daily average relative humidity values

recorded from various weather stations in Malawi had ranged from 40% at Monkey Bay Meteorological station to 88% at Makoka Meteorological. 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 2.4 hours per day at Mzuzu Meteorological station to 8.9 hours per day at Ngabu and Monkey Bay Meteorological stations. Consequently, the amount of Solar Radiation had ranged from 6.1 to 10.4 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was good spatial rainfall distribution over northern half of Malawi. The rains supported growth and development of crops especially 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 tasseling to cob formation stage. The staple crop is reported doing very well particularly where both basal and top-dressing fertilizers and/or manure have already been applied. Basing on the current crop stand, good crop yields and production are anticipated this agricultural season provided the rains continue through March 2020.

However, there are incidences of combined Fall Army Worm and African Army Worm attacks; as well as reported flooding cases leading to field wash-away and waterlogging conditions particularly over northern areas. This has the potential to negatively impact on the good crop stand if heavy rains continue in such areas thereby affecting local food security.

For proper utilization of rain water, farmers should adhere to principles of good agricultural practices including moisture conservation, timely control of weeds, pests and diseases and fertilizer/ manure application. Water harvesting technologies should also be practiced for future use during periods of suppressed rainfall.

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 FEBRUARY 2020

Short to medium range forecasts indicate that the Inter-Tropical Convergence Zone will remain active mainly over northern half of Malawi hence heavy rains are anticipated over northern half while moderate rainfall is expected over southern half of the country.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 31 JANUARY 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.	137.6	63.6	216	10	580.8	446.5	130	
	Chitipa Met	198.6	75.3	264	9	697.8	473.5	147	
	Karonga Met.	107.8	56	193	11	242.6	387.7	63	
	Lupembe	123.7	56.7	218	5	426.7	332.4	128	
	Vinthukutu Agric	197.9	58.8	337	7	686.8	441.2	156	
MZUZU	Bwengu Agric.	93.6	74	126	7	420.1	406.9	103	
	Chikangawa forest	121.8	73.1	167	9	826	525.4	157	
	Chelinda (Nyika)	168.9	77.4	218	10	718.4	576.4	125	
	Euthini Agric.	94.1	58.9	160	5	518.2	408.1	127	
	Mbawa Res. Stn	40.4	63.2	64	5	416.1	440.8	94	
	Mzimba Met	143.1	68.6	209	8	629.9	476.3	132	
	Mzuzu Met.	148	68.9	215	8	595.3	476	125	
	NkhataBay Met.	174.8	64.2	272	9	789.8	539	147	
	Rumphu Boma	114.3	70	163	8	483.2	373.5	129	
	Zombwe Agric	112.7	54.2	208	7	450.4	373.4	121	
KASUNGU	Dowa Agric	93.2	92.4	101	6	553.6	486.4	114	
	Kaluluma DTC	65.9	75.7	87	5	446.9	459.7	97	
	Kasungu Met	39.3	70	56	5	508	414.2	123	
	Lisasadzi	81.4	80.9	101	3	527	469.7	112	
	Malomo Agric	87	55.1	158	5	471.9	434.8	109	
	Madisi Agric	13.7	74.3	18	1	486.4	446.1	109	
	Mchinji Boma	152.8	79.2	193	5	554.7	586.7	95	
	Mkanda Met	11	71	15	3	552.1	503.5	110	
	Mponela Agric	38.7	77.2	50	2	468.2	427.4	110	
	Mwimba Research	63.8	71.1	90	4	469.6	476.8	98	
LILONGWE	Chileka Namitete	130.8	86.9	151	4	926	532.8	174	
	Chitedze Met.	85.8	79.2	108	6	509.6	479.7	106	
	K.L.A Met	34	69.5	49	6	625.1	452.1	138	
	Kasiya Agric	64.2	67.3	95	2	698.3	540.7	129	
	Mlangeni Njolomole	40.1	73.6	54	4	391.7	512.1	76	
	Nathenje Agric	54	90.8	59	2	538.1	459.7	117	
	Ntcheu - Nkhonde	39.8	84.6	47	4	757.2	587.7	129	
	Dedza RTC	55.8	116.3	48	6	602.5	550.4	109	
	SALIMA	Dwangwa Sugar Corp.	183	84.7	216	8	726.5	585.2	124
		Lifuwu	166.1	100.7	165	5	1012.3	573.3	177
Nkhotakota Met		214.8	97.8	220	6	983.2	626.7	157	
Salima Met		122.5	99.2	123	4	808.6	580.7	139	
MACHINGA	Chingale Agric.	129.3	90.7	143	5	585.5	517.7	113	
	Mpikipili	70.9	78.9	90	3	609.3	491.5	124	
	Makoka Met	76.0	89.6	85	5	733.6	548.4	134	
	Mangochi Met.	43.8	70.7	62	5	532.8	346.0	154	
	Namwera Agric	70.6	100.3	70	5	712.0	572.1	124	
	Nankumba Agric	193.0	78.0	247	3	510.5	473.7	108	
	Ntaja Met.	161.3	91.4	176	5	459.8	496.0	93	
	Phalula Agric	99.7	74.1	135	5	639.2	481.1	133	
	Toleza Farm	88.0	90.3	97	4	799.6	499.4	160	
BLANTYRE	Bvumbwe Met.	121.1	106.7	113	6	919.8	607.2	151	
	Chichiri Met.	126.0	53.8	234	5	859.4	794.8	108	
	Chileka Airport	37.5	81.3	46	3	434.8	498.0	87	
	Chiradzulu Agric	75.4	99.6	76	6	717.2	545.4	131	
	Lujeri Tea Estate	227.2	134.8	169	8	1208.8	1076.1	112	
	Masambanjati Agric	47.2	93.9	50	4	764.4	690.0	111	
	Mimosa Met.	130.0	117.1	111	7	837.5	772.6	108	
	Mpemba Vet	94.1	95.8	98	5	1007.3	641.1	157	
	Mulanje Boma	109.8	145.4	76	5	968.3	957.5	101	
	Mwanza Boma	34.0	94.4	36	5	837.1	565.9	148	
	Naminjiwa Agric	43.1	96.5	45	4	444.6	554.6	80	
	Neno Agric	109.0	103.0	106	3	453.5	613.9	74	
	Satemwa Tea Est. No.1	65.0	90.3	72	6	956.1	569.2	168	
	Thuchila Agric	45.4	83.9	54	5	791.8	483.0	164	
	Thyolo Met	37.1	103.9	36	5	730.9	621.6	118	
SHIRE VALLEY	Chikwawa Boma	32.6	74.5	44	1	383.1	462.4	83	
	Kasinthula Res. Stn.	25.2	62.5	40	4	482.2	387.3	125	
	Makhanga Met	18.0	51.9	35	1	567.4	420.2	135	
	Nchalo Sucoma	34.9	50.7	69	3	445.4	364.7	122	
	Ngabu Met.	52.0	61.2	85	4	486.9	429.3	113	
Nsanje Boma	9.0	84.8	11	1	440.7	613.5	72		

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 31 JANUARY 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										
CHITIPA	26.4	18.4	29.0	17.8	2.5	84	3.0	4.8	3.8	6.5
KARONGA	29.3	20.9	31.5	19.7	3.6	85	3.2	5.2	4.3	6.6
MZUZU										
BOLERO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MZIMBA	25.7	17.5	27.9	16.0	1.8	83	3.1	4.7	3.8	6.6
MZUZU	24.9	18.5	26.5	17.8	4.0	86	2.4	4.6	3.7	6.1
NKHATA BAY	29.3	22.0	32.0	21.1	2.1	86	4.5	5.7	4.5	7.5
KASUNGU										
KASUNGU	27.2	19.0	31.5	17.0	4.7	75	8.3	7.5	6.0	10.0
LILONGWE										
CHITEDZE	27.4	18.5	32.1	16.5	2.1	77	8.3	7.0	5.5	10.0
DEDZA	23.6	15.5	27.2	12.9	4.7	82	8.3	6.4	5.0	9.5
K I A	26.1	17.6	29.5	15.5	5.0	76	7.6	7.2	5.8	10.0
SALIMA										
NKHOTAKOTA	28.8	21.6	30.6	20.4	3.6	77	6.6	7.0	5.7	8.9
SALIMA	29.1	22.1	31.9	20.7	7.9	78	6.9	7.8	6.4	9.1
MACHINGA										
NTAJA	27.6	20.3	30.7	18.4	2.1	82	7.5	6.7	5.3	9.5
MAKOKA	26.6	18.0	30.7	15.7	4.0	78	7.4	6.8	5.4	9.4
MANGOCHI	29.7	21.5	33.6	20.0	3.2	88	8.2	7.3	5.7	9.9
MONKEY BAY	27.7	19.6	35.5	19.0	6.5	40	8.9	9.8	8.2	10.4
BLANTYRE										
BVUMBWE	24.4	16.5	27.2	14.8	7.2	82	7.5	6.8	5.4	9.5
CHICHIRI	29.0	17.0	30.0	15.5	3.2	75	7.2	7.4	5.8	10.3
CHILEKA	32.7	21.7	31.5	17.1	9.4	79	8.8	9.1	7.5	10.3
MIMOSA	27.7	19.6	31.0	18.5	2.2	71	7.2	6.8	5.4	9.3
SHIRE VALLEY										
NGABU	32.3	20.9	36.5	20.8	1.4	67	8.9	7.9	6.3	10.4

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