



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 December 2019

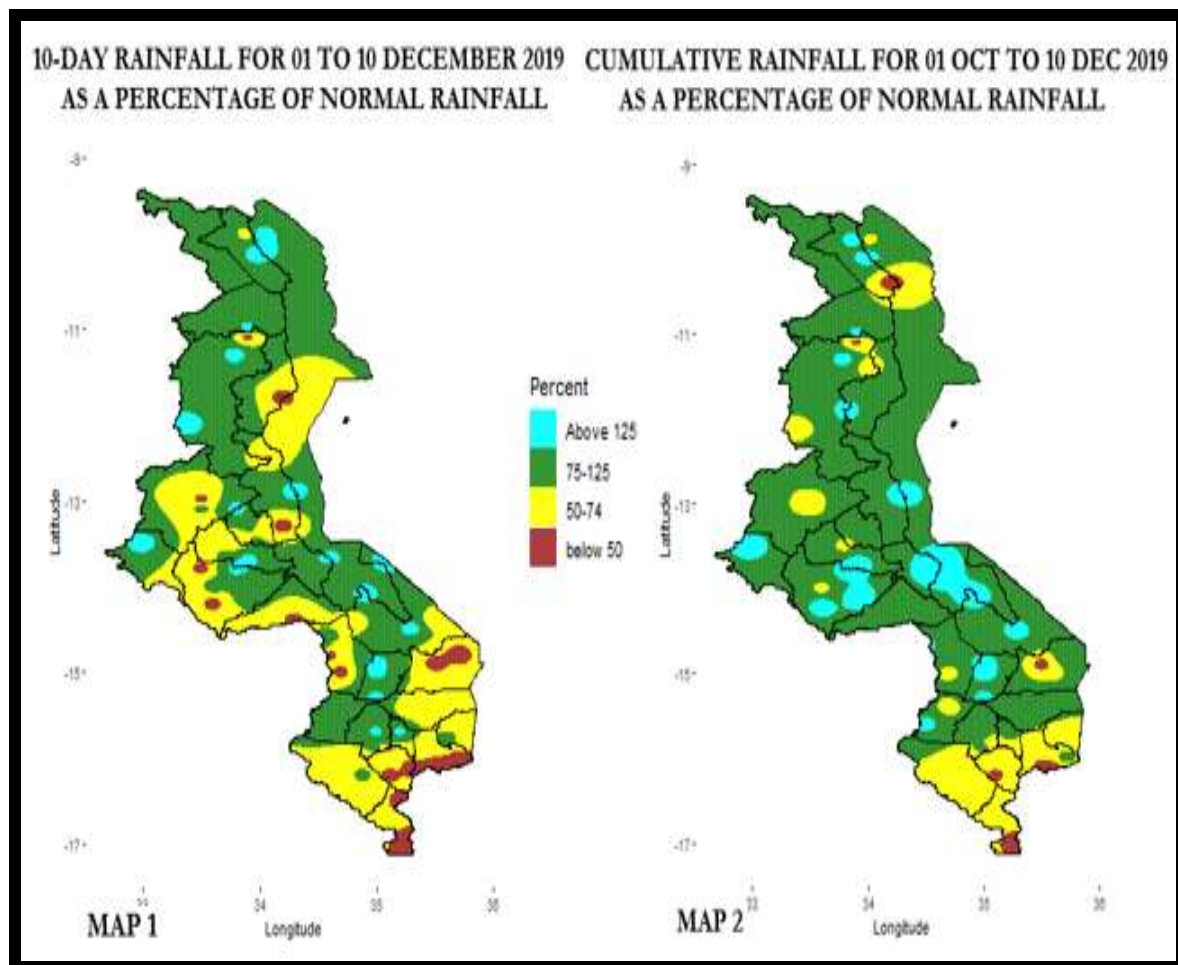
Season: 2019/2020

Issue No.07

Release date: 13 December 2019

HIGHLIGHTS

- Light to moderate rainfall experienced over Malawi ...
- Major on-farm activities included planting, basal dressing and weeding ...
- Moderate to locally heavy rainfall expected during the period 11-20 December 2019



1.0 WEATHER SUMMARY

During the first ten days of December 2019, a broad Equatorial rain-belt remained active over Malawi. Hence light to moderate rainfall amounts were observed over the country.

1.1 RAINFALL SITUATION

During the first ten days of December 2019, light to moderate rainfall amounts were recorded over Malawi. The cumulative ten-day rainfall amounts were generally higher than the long-term average rainfall amounts for the period over most areas of northern Malawi as well as selected areas of central and southern Malawi (light blue and green colours in Map1). Some areas reported as high as 7 rainy days during the period. Areas that had reported ten-day rainfall amounts of at least 40mm included Phalula Agriculture which recorded 143.7mm, Nkhotakota Meteorological station recorded 130.8mm, Zombwe Agriculture recorded 122.8mm, Dowa Agriculture recorded 107.9mm, Lifuwu in Salima recorded 101.7mm, Lupembe in Karonga recorded 101.0mm, Chiradzulu Agriculture recorded 98.4mm, Tolesa Farm recorded 89.3mm, Zoa Tea Estate recorded 86.3mm, Chichiri Meteorological station recorded 84.1mm, Naminjiwa Agriculture recorded 81.5mm, Chileka International Airport recorded 80.3mm, Makanjila recorded 73.0mm, Njolomole recorded 72.2mm, Balaka Township recorded 70.1mm, Mangochi Meteorological station recorded 67.4mm, Salima Meteorological station recorded 66.6mm, Mkanda Meteorological station recorded 65.5mm, Kamuzu International Airport recorded 64.7mm, Chelinda recorded 64.0mm, Mpemba Veterinary recorded 63.4mm, Chikangawa Forest recorded 61.3mm, Zomba Agriculture recorded 58.5mm, Chancellor College recorded 57.3mm, Chizunga Factory recorded 54.8mm, Mwimba Research station recorded 53.6mm, Dwangwa Sugar Factory recorded 48.5mm, Neno Agriculture recorded 48.2mm, Lujeri Tea Estate and Karonga Meteorological station recorded 47.7mm, Nkhata Bay Meteorological station recorded 46.9mm, Mwanza Boma recorded 46.3mm, Mzimba Meteorological station recorded 45.4mm, Nathenje Agriculture recorded 41.8mm, Mbawa Research station recorded 41.8mm, Malomo Agriculture in Ntchisi recorded 41.5mm, Mulanje Boma recorded 40.9mm, Monkey Bay and Mzuzu Meteorological stations recorded 40mm. 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 10 December 2019. The map generally indicates that most areas over northern, central and southern highlands of Malawi have received normal to above normal rainfall amounts (green and light blue colours) with cases of below normal rainfall amounts mostly over Shire Valley as shown by yellow and brown colours.

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the period 01 to 10 December 2019. Mean daily maximum temperatures had ranged from 25.6°C at Dedza to 37.8°C at Ngabu. On the other hand, mean daily minimum temperatures had ranged from 17.2°C at Dedza Meteorological station to 26.1°C at Ngabu. Details in Table 2.

1.4 WIND SPEED

During the period 01 to 10 December 2019, most parts of Malawi experienced light wind speed. Daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 2.5 km per hour at

Mangochi Meteorological station to 10.9 km per hour at Chileka and Chitipa. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 01 to 10 December 2019, air over Malawi was moderately humid. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 46% at Ngabu to 82% at Mimosa. Details as in Table 2.

1.6 SUNSHINE HOURS

Generally medium to long hours of bright sunshine were observed over Malawi during the period under review. Mean daily values had ranged from 5.8 hours per day at Mzuzu Meteorological station to 8.9 hours per day at Chileka International Airport and Salima Meteorological station. Consequently, the amount of Solar Radiation had ranged from 8.3 to 10.4 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was an improvement in spatial distribution of rainfall over northern half of Malawi, hence light to moderate rainfall amounts were recorded. Over most areas of southern Malawi, farmers were applying basal fertilizer and weeding while most farmers over central and northern Malawi were planting and applying basal fertilizer. For proper utilization of rain water, farmers should adhere to principles of good agricultural practices including use of recommended seeds, moisture conservation, timely control of weeds, pests and diseases and fertilizer/ manure application.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

ENSO-neutral conditions are prevailing over central tropical Pacific Ocean. Climate models are projecting that the ENSO-neutral conditions are likely to persist throughout the 2019/2020 rainfall season. Based on these expectations and other analyses conducted, the rainfall forecast for the 2019/2020 is that:

“During October to December 2019, most of the north and northern parts of central areas of the country are expected to receive normal to below normal rainfall amounts, while most of the south and southern parts of central areas are expected to receive normal to above normal rainfall amounts;

During January to March 2020, most of the north and northern parts of central areas of the country are expected to receive above normal to normal rainfall amounts, while southern areas and southern parts of central areas are expected to receive normal to below normal rainfall amounts.”

4. OUTLOOK FOR 11-20 DECEMBER 2019

Models for short to medium range forecasts indicate that the Equatorial rain-belt will continue oscillating over Malawi thereby influencing weather over Malawi during the period 11-20 December 2019.

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

ADD	STATION NAME	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL EXPECTED RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	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.	28.9	54.4	53	2	244.9	97.3	252
	Karonga Met.	47.7	37.6	127	3	49.4	87.1	57
	Lupembe	101.0	26.1	387	2	198.0	65.5	302
	Vinthukutu Agric	34.8	44.7	78	4	34.8	110.4	32
Mzuzu	Bwengu Agric.	8.2	29.8	28	3	8.2	87.1	9
	Chikangawa forest	61.3	54.7	112	5	188.8	142.6	132
	Chelinda (Nyika)	64.0	62.9	102	4	164.9	187.5	88
	Chintheche Agric	20.8	73.1	28	1	230.5	204.8	113
	Mbawa Res. Stn	41.8	29.3	143	4	56.4	99.5	57
	Mzimba Met	45.4	47.9	95	4	87.6	111.2	79
	Mzuzu Met.	40.0	45.6	88	6	113.3	153	74
	NkhataBay Met.	46.9	79.8	59	7	216.4	175.4	123
	Rumpho Boma	89.3	26.5	337	4	89.3	69.9	128
Zombwe Agric	122.8	30.8	399	5	167.9	91	185	
Kasungu	Dowa Agric	107.9	45.7	236	6	155.2	103.5	150
	Kasungu Met	8.0	46.1	17	1	61.1	99	62
	Lisasadzi	37.2	55.3	67	4	106.9	100.7	106
	Malomo Agric	41.5	22.9	181	5	62.2	66.6	93
	Madisi Agric	27.9	42.3	66	3	98.6	91.6	108
	Mkanda Met	65.5	42.9	153	5	185.0	128.8	144
	Mponela Agric	32.7	54.2	60	5	72.7	117.6	62
	Mwimba Research	53.6	46	117	3	66.6	113.4	59
	Ntchisi Boma	35.6	78.3	45	5	167.5	140.5	119
Lilongwe	Chileka Namitete	38.0	60.4	63	1	177.5	160.3	111
	Chitedze Met.	36.8	44	84	4	81.5	130	63
	K.I.A Met	64.7	32.7	198	5	136.6	98.4	139
	Mlangeni Njolomole	72.2	56.5	128	4	266.7	146.3	182
	Nathenje Agric	41.8	38.9	107	5	147.8	112.5	131
	Ntcheu – Nkhande	27.1	64.8	42	4	145.3	156.8	93
	Dedza RTC	23.8	49.8	48	5	123.7	132.5	93
Salima	Dwangwa Sugar Corp.	48.5	76.6	63	5	173.5	168.8	103
	Lifuwu	101.7	63.1	161	4	207.4	105.5	197
	Nkhotakota Met	130.8	76.2	172	6	283.5	132.1	215
	Salima Met	66.6	62	107	4	160.5	104.7	153
Machinga	Balaka Township	70.1	38.1	184	5	191.4	138.8	138
	Chancellor College	57.3	99.5	58	6	238.7	223	107
	Chikweo Agric.	24.6	60.6	41	3	113.5	145.3	78
	Chingale Agric	36.6	61.4	60	4	152.3	150.1	101
	Mpilipili (Makanjila)	73.0	55.8	131	5	116.4	119.9	97
	Mangochi Met.	67.4	30.7	220	3	174.2	76.1	229
	Monkey Bay Met.	40.0	28.6	140	6	94.0	50.6	186
	Naminjiwa Agric	81.5	67.7	120	3	81.5	163.2	50
	Namwera Agric	34.8	67.2	52	4	176.4	161.4	109
	Nankumba Agric	32.0	60.9	53	1	118.5	124.2	95
	Ntaja Met.	16.4	52	32	4	16.4	125.8	13
	Phalula Agric	143.7	50.6	284	4	214.2	164.7	130
	Toleza Farm	92.0	60.4	152	4	304.5	143	213
	Zomba RTC	58.5	92.9	63	6	208.9	203.4	103
Blantyre	Bvumbwe Met.	38.1	79.2	48	5	130.7	207.8	63
	Chichiri Met.	84.1	82.1	102	5	208.3	383.7	54
	Chileka Airport	80.3	53.4	150	5	193.7	176.4	110
	Chiradzulu Agric	98.4	60.4	163	4	162.8	183.3	89
	Chizunga Factory	54.8	105.8	52	3	193.3	263.4	73
	Lujeri Tea Estate	47.7	109.9	43	7	376.9	426.1	88
	Masambanjati Agric	18.4	77.4	24	2	111.0	227.8	49
	Mimosa Met.	6.8	101.3	7	3	63.3	305	21
	Mpemba Vet	63.4	71.7	88	4	251.7	217.6	116
	Mulanje Boma	40.9	110.7	37	4	182.2	404.6	45
	Mwanza Boma	46.3	54.8	84	2	346.4	198.5	175
	Neno Agric	48.2	63.7	76	4	122.3	181.2	67
	Satemwa Tea Est. No.1	28.5	65.6	43	6	132.0	200	66
	Thuchila Agric	20.8	51.3	41	3	261.8	146.4	179
	Thyolo Met	39	66.9	58	3	51.4	210.5	24
	Zoa Tea Est.	86.3	88.6	97	1	86.3	257.3	34
	Shire Valley	Kasinthula Res. Stn.	21.0	48.9	43	1	86.7	129.3
Makhanga Met		11.4	52	22	2	93.9	144.7	65
Nchalo Sucoma		35.8	38.2	94	2	73.5	116.3	63
Ngabu Met.		28.5	48.9	58	1	96.4	137.2	70
Nsanje Boma		3.1	59.3	5	1	103.2	213.6	48

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 DECEMBER 2019

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	RADIATION cal cm ⁻² p/day
KARONGA ADD										
CHITIPA	27.5	19.0	29.8	18.1	10.9	62	6.5	8.1	6.7	9.2
KARONGA	32.0	21.8	34.5	19.0	6.2	68	7.5	8.5	7.0	9.3
MZUZU ADD										
BOLERO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MZIMBA	28.0	19.0	32.9	17.8	4.0	68	7.0	7.1	5.8	9.1
MZUZU	27.8	18.3	29.7	15.7	5.1	75	5.8	6.6	5.3	8.3
NKHATA BAY	32.4	22.1	34.3	21.0	2.9	80	6.5	7.0	5.6	8.7
KASUNGU ADD										
KASUNGU	30.6	19.2	32.4	12.5	8.0	60	7.2	8.9	7.5	9.2
LILONGWE ADD										
CHITEDZE	29.7	19.5	32.4	18.8	2.9	65	7.1	7.2	5.8	9.2
DEDZA	25.6	17.2	27.0	16.5	5.1	64	6.8	7.1	5.8	9.0
K I A	28.1	19.2	30.2	18.1	6.5	69	6.8	7.6	6.3	9.0
SALIMA ADD										
NKHOTAKOTA	31.2	22.3	34.5	21.0	3.3	69	8.5	8.3	6.7	10.1
SALIMA	31.9	23.6	34.0	20.4	7.2	66	8.9	9.6	8.0	10.4
MACHINGA ADD										
NTAJA	32.2	22.4	33.9	20.4	7.2	64	7.6	9.2	7.7	9.5
MAKOKA	29.5	19.5	31.1	18.4	3.6	70	7.2	7.3	5.9	9.3
MANGOCHI	33.4	23.0	35.3	18.2	2.5	67	8.2	8.2	6.6	9.9
MONKEY BAY	33.1	23.4	34.8	23.3	8.0	64	7.9	9.7	8.2	9.7
BLANTYRE ADD										
BVUMBWE	27.8	18.9	30.2	17.1	6.9	74	7.2	7.6	6.2	9.3
CHICHIRI	29.4	19.2	31.0	16.6	4.0	51	7.5	8.0	6.6	9.4
CHILEKA	31.3	21.9	32.9	20.0	10.9	61	8.9	10.7	9.1	10.4
MIMOSA	33.0	20.8	36.0	19.9	3.6	82	7.7	7.6	6.1	9.6
SHIRE VALLEY ADD										
NGABU	37.8	26.1	40.5	24.0	3.6	46	8.3	9.9	8.3	10.0

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