



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: 1 – 10 December 2018

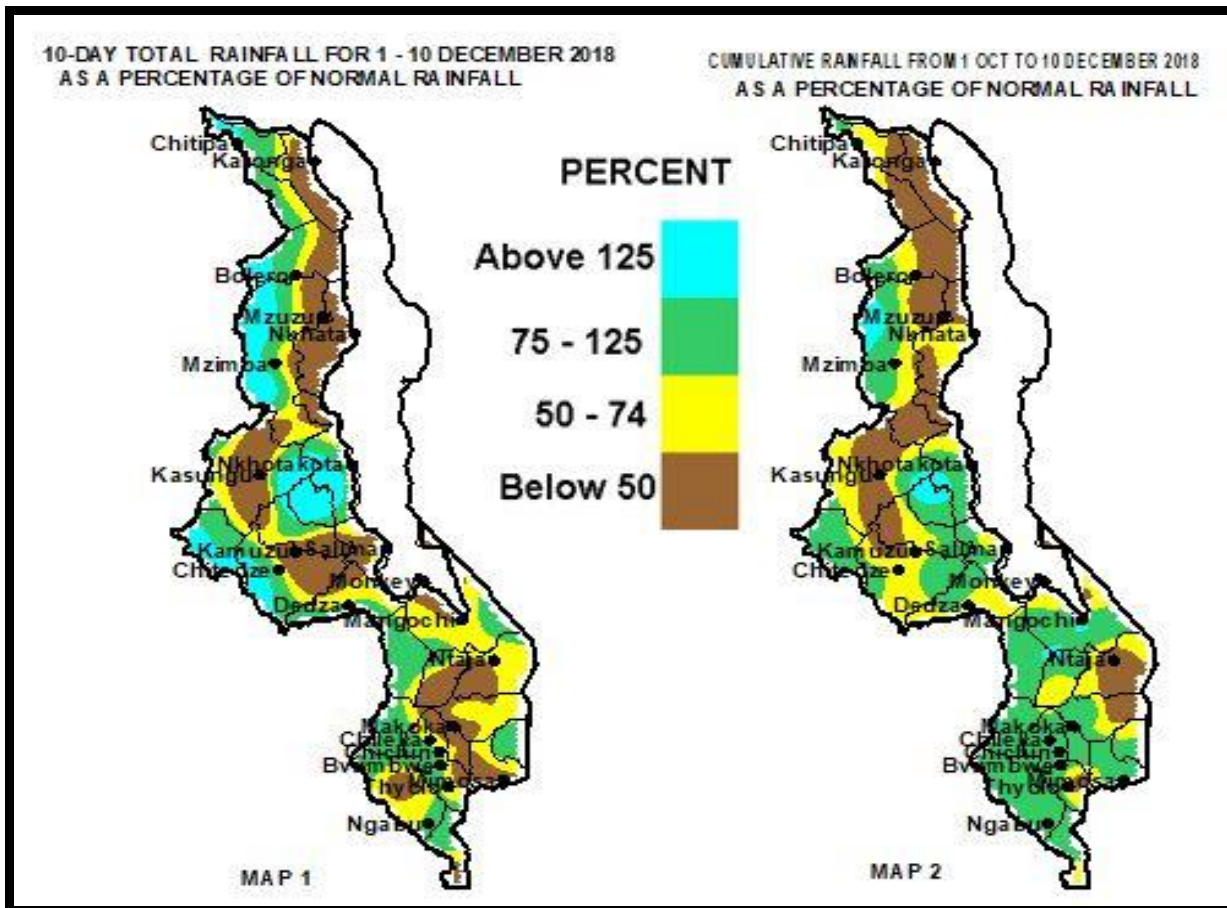
Season: 2018/2019

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HIGHLIGHTS

- Locally heavy and light to moderate rainfall amounts were recorded...
- Major agro-activities included planting, basal dressing and weeding...
- More rainfall expected during the period 11 to 20 December 2018...



Rainfall Maps for 1 to 10 December 2018

1.0 WEATHER SUMMARY

During the first ten days of December 2018, inland surface heating over the interior subcontinent coupled with frontal low pressure system off south east coast of Republic of South Africa had maintained pressure falls over the Eastern subcontinent including Malawi. As a result, the Equatorial rain-belt and rain clouds had persisted over Malawi. Hence, light to moderate and locally heavy rainfall amounts were still observed over Malawi.

1.1 RAINFALL SITUATION

During the first ten days of December 2018, light to moderate rainfall amounts were still reported over Malawi. However, the cumulative amounts were generally lower than the long-term mean rainfall amounts for the period over some selected areas countrywide (Yellow and Brown colours in Map1). Areas that had reported cumulative rainfall amounts exceeding 50mm during the ten-day period included Chitipa which recorded 57.1mm, Mbawa Research Station recorded 77.8mm, Ntchisi Boma recorded 79.2mm, Euthini in Mzimba recorded 91mm, Mkanda Agric in Mchinji recorded 56.2mm, Malomo Agric in Ntchisi had 86.6mm, Chileka Namitete in Lilongwe recorded 115.9mm, Chizunga reported 112.5mm, Mpemba Agric recorded 105.2mm and Makhanga Agric recorded 74mm. More details are in Table 1 and Map 1.

Map 2 indicates the spatial cumulative rainfall distribution since the start of the 2018/19 rainfall season in October 2018, up to 10 December 2018. The map generally indicates that most northern and central areas have received below normal rainfall (Brown and Yellow colours) with most southern areas receiving normal rainfall (Green colour).

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the first ten days of December 2018. Mean daily maximum temperatures had ranged from 27°C at Dedza to 36°C at Ngabu in Chikwawa while the mean daily minimum temperatures had ranged from 16°C at Dedza to 25°C at Monkey Bay in Mangochi district. Details in Table 2.

1.4 WIND SPEEDS

During the period 1 to 10 December 2018 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 2.2km per hour at Makoka in Zomba district to 10.4km per hour at Chileka in Blantyre district. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 1 to 10 December 2018, air over Malawi was fairly moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 54% at Bolero in Rumphi district to 71% at Bvumbwe and Ngabu in Thyolo district and Chikwawa district respectively. Details as in Table 2.

1.6 SUNSHINE HOURS

Generally, fairly cloudy conditions were observed over Malawi as suggested by medium hours of bright sunshine that were reported over Malawi during the first ten days of December 2018. The daily values had ranged from around 6 hours per day at Chitipa to around 8.8 hours per day at Salima and consequently the amount of Solar Radiation had ranged from 8.4 at Chitipa to 10.3 cal/cm²/day at Salima, Mangochi and Ngabu. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the first ten days of December 2018 there was an improvement in spatial coverage of rainfall over Malawi. These rains had supported planting, seed germination, growth and development of crops and application of basal fertilizer. The rains have also improved pasture availability for livestock production, water resources and soil moisture reserves. The general crop stand in the fields was reported in good condition. Maize crop ranged from planting to vegetative stages. For proper utilization of the rains, farmers are encouraged to adhere to principles of good crop husbandry including use of appropriate seeds, timely planting, implementation of proper plant population and spacing, control of weeds, pests and diseases and including timely fertilizer application.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

Global models are projecting the development of weak to moderate El Nino conditions during the month of December 2018. Therefore, the rainfall forecast for the 2018/19 season in Malawi based on expectations of El Nino is that: **“During the period October 2018 to March 2019, most of the northern areas spilling over into north of central areas of the country are expected to receive normal to above normal rainfall amounts, while most of the southern areas spilling over into south of central areas of the country are expected to receive normal to below normal rainfall amounts.”**

4. OUTLOOK FOR 11 TO 20 DECEMBER 2018

Models for short and medium range forecasts show that most parts of Malawi are likely to experience improved rainfall performance during the second ten days of December 2018. Farmers are therefore encouraged to take advantage of the wet weather by intensify planting of various crops and basal fertilizer application during the period 11 to 20 December 2018

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 1 TO 10 DECEMBER 2018

ADD	RAINFALL STATION	ACTUAL DEKDAL 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 ≥3mm	
KARONGA	Baka Res. Stn.	1.5	54.4	3	3.9	97.3	4	1	
	Chitipa Met	57.2	42.5	135	88.7	118.4	75	4	
	Karonga Met.	1.1	37.6	3	11.3	87.1	13	1	
	Lupembe	0.0	26.1	0	11.0	65.5	17	0	
	Vinthukutu Agric	0.0	44.7	0	65.4	110.4	59	0	
MZUZU	Bolero Met	19.6	27.5	71	39.0	71.5	55	2	
	Bwengu Agric.	2.0	29.8	7	8.3	87.1	10	1	
	Chikangawa	21.7	54.7	40	59.4	142.6	42	3	
	Chelinda (Nyika)	59.1	62.9	94	77.0	187.5	41	3	
	Chintheche Agric	0.0	73.1	0	139.5	204.8	68	0	
	Ekwendeni Agric.	7.0	51.6	14	23.3	154.5	15	2	
	Euthini Agric.	91.0	45.1	202	167.5	105.3	159	4	
	Mbawa Res. Stn	77.8	29.3	266	127.8	99.5	128	5	
	Mzimba Met	16.6	47.9	35	74.1	111.2	67	3	
	Mzuzu Met.	18.8	45.6	41	73.5	153.0	48	2	
	NkhataBay Met.	11.1	79.8	14	95.3	175.4	54	3	
	Rumpho Boma	3.5	26.5	13	19.1	69.9	27	2	
	Zombwe Agric	16.9	30.8	55	16.9	91.0	19	2	
	KASUNGU	Dowa Agric	8.5	45.7	19	71.9	103.5	69	1
Kaluluma DTC		0.0	68.3	0	8.6	108.6	8	0	
Kasungu Met		3.3	46.1	7	29.2	99.0	29	2	
Lisasadzi		0.0	55.3	0	13.2	100.7	13	0	
Malomo Agric		86.6	22.9	378	126.3	66.6	190	2	
Madisi Agric		17.1	42.3	40	24.7	91.6	27	1	
Mchinji Boma		90.1	69.3	130	201.2	182.7	110	4	
Mkanda Met		56.2	42.9	131	139.9	128.8	109	3	
Mponela Agric		70.6	54.2	130	80.3	117.6	68	4	
Mwimba Research		15.5	46.0	34	78.7	113.4	69	2	
Ntchisi Boma		79.2	78.3	101	132.7	140.5	94	2	
LILONGWE		Chileka Namitete	115.9	60.4	192	170.7	160.3	106	2
		Chitedze Met.	30.2	44.0	69	68.8	130.0	53	1
		Dzonzi Forest	77.9	68.0	115	208.1	161.9	129	5
	K.T.A Met	0.3	32.7	1	57.7	98.4	59	1	
	Kasiya Agric	31.6	53.3	59	58.8	163.0	36	2	
	Mlangeni Njolomole	56.6	56.5	100	114.6	146.3	78	5	
	Nathenje Agric	6.1	38.9	16	137.3	112.5	122	3	
	Ntcheu - Nkhanda	34.7	64.8	54	98.0	156.8	63	4	
	Dedza RTC	48.2	49.8	97	75.0	132.5	57	3	
	SALIMA	Dwangwa Sugar	22.3	76.6	29	55.2	168.8	33	3
Lifuwu		27.9	63.1	44	54.9	105.5	52	3	
Nkhotakota Met		42.3	76.2	56	98.1	132.1	74	3	
Salima Met		37.2	62.0	60	75.8	104.7	72	2	
MACHINGA		Balaka Township	13.4	38.1	35	88.9	138.8	64	2
	Chancellor College	41.0	99.5	41	70.3	223.0	32	3	
	Chingale Agric	39.8	61.4	65	173.4	150.1	116	2	
	Mpilipili (Makanjila)	20.5	55.8	37	44.4	119.9	37	2	
	Makoka Met	10.1	71.7	14	153.1	164.6	93	3	
	Mangochi Met.	15.3	30.7	50	97.0	76.1	127	4	
	Monkey Bay Met.	7.9	28.6	28	33.0	50.6	65	2	
	Namiasi Agric	20.1	50.0	40	43.2	89.6	48	1	
	Namwera Agric	69.9	67.2	104	133.3	161.4	83	2	
	Phalula Agric	8.9	50.6	18	80.8	164.7	49	1	
	Toleza Farm	73.0	60.4	121	209.8	143.0	147	5	
	Zomba RTC.	29.5	92.9	32	52.3	203.4	26	2	
	BLANTYRE	Bvumbwe Met.	21.8	79.2	28	187.5	207.8	90	5
		Chichiri Met.	53.4	82.1	65	210.5	383.7	55	5
Chileka Airport		35.3	53.4	66	152.9	176.4	87	6	
Chiradzulu Agric		33.6	60.4	56	223.1	183.3	122	5	
Chizunga Factory		112.5	105.8	106	193.2	263.4	73	3	
Lujeri Tea Estate		33.7	109.9	31	453.2	426.1	106	4	
Mimosa Met.		27.2	101.3	27	163.2	305.0	54	3	
Mpemba Vet		105.2	71.7	147	255.5	217.6	117	3	
Mulanje Boma		22.0	110.7	20	438.6	404.6	108	2	
Mwanza Boma		73.0	54.8	133	232.0	198.5	117	5	
Naminjiwa Agric		73.5	67.7	109	153.9	163.2	94	3	
Neno Agric		60.0	63.7	94	190.4	181.2	105	3	
Satemwa Tea Est.		36.9	65.6	56	227.0	200.0	114	5	
Thuchila Agric		8.4	51.3	16	100.8	146.4	69	3	
SHIRE VALLEY		Chikwawa Boma	11.0	56.3	20	156.4	154.0	102	2
		Kasinthula Res. Stn.	13.8	48.9	28	13.8	129.3	11	2
	Makhanga Met	74.0	52.0	142	150.4	144.7	104	2	
	Nchalo Sucoma	26.5	38.2	69	122.8	116.3	106	2	
	Ngabu Met.	36.0	48.9	74	137.7	137.2	100	3	
	Nsanje Boma	17.2	59.3	29	140.8	213.6	66	2	

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 1 TO 10 DECEMBER 2018

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	29.3	19.0	32.4	17.0	8.3	65	6.0	6.5	5.3	8.4
KARONGA	33.5	23.3	36.5	22.2	6.8	59	6.8	7.6	6.2	8.9
MZUZU										
BOLERO	32.6	20.4	35.2	18.4	3.6	54	7.5	7.2	5.8	9.4
MZIMBA	29.8	17.9	32.5	16.4	4.7	60	7.0	6.7	5.3	9.1
MZUZU	28.6	17.5	30.2	16.2	5.8	68	6.9	6.5	5.1	9.0
NKHATA BAY	32.9	21.7	35.9	20.6	2.9	66	6.9	7.0	5.6	9.0
KASUNGU										
KASUNGU	29.0	19.9	33.0	18.6	7.9	56	8.4	7.6	6.1	10.0
LILONGWE										
CHITEDZE	30.6	18.9	33.4	15.5	5.8	58	7.3	7.1	5.7	9.3
DEDZA	27.3	16.2	29.9	12.8	9.0	63	7.0	6.7	5.3	9.1
K I A	29.5	18.8	33.2	16.0	5.8	59	7.3	7.0	5.6	9.3
SALIMA										
NKHOTAKOTA	32.1	21.1	35.0	18.9	4.0	65	8.6	7.7	6.2	10.1
SALIMA	33.3	23.6	35.6	21.4	9.0	59	8.8	8.5	6.9	10.3
MACHINGA										
NTAJA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAKOKA	29.8	19.2	33.4	14.4	2.2	64	6.1	6.3	5.0	8.6
MANGOCHI	34.5	23.1	38.0	19.6	5.0	63	8.8	8.3	6.7	10.3
MONKEY BAY	33.4	24.5	36.1	21.5	8.6	56	8.8	8.7	7.1	10.3
BLANTYRE										
BVUMBWE	27.7	18.4	31.8	14.1	4.0	71	6.5	6.3	4.9	8.8
CHICHIRI	28.5	18.6	32.5	15.0	3.6	67	6.5	6.4	5.0	8.8
CHILEKA	30.6	19.9	35.0	15.8	10.4	58	6.9	7.5	6.1	9.1
MIMOSA	31.3	19.7	35.6	14.5	2.9	60	6.5	6.7	5.4	8.8
SHIRE VALLEY										
NGABU	35.9	24.0	41.1	19.5	2.5	71	8.8	8.3	6.7	10.3

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