



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 January 2019

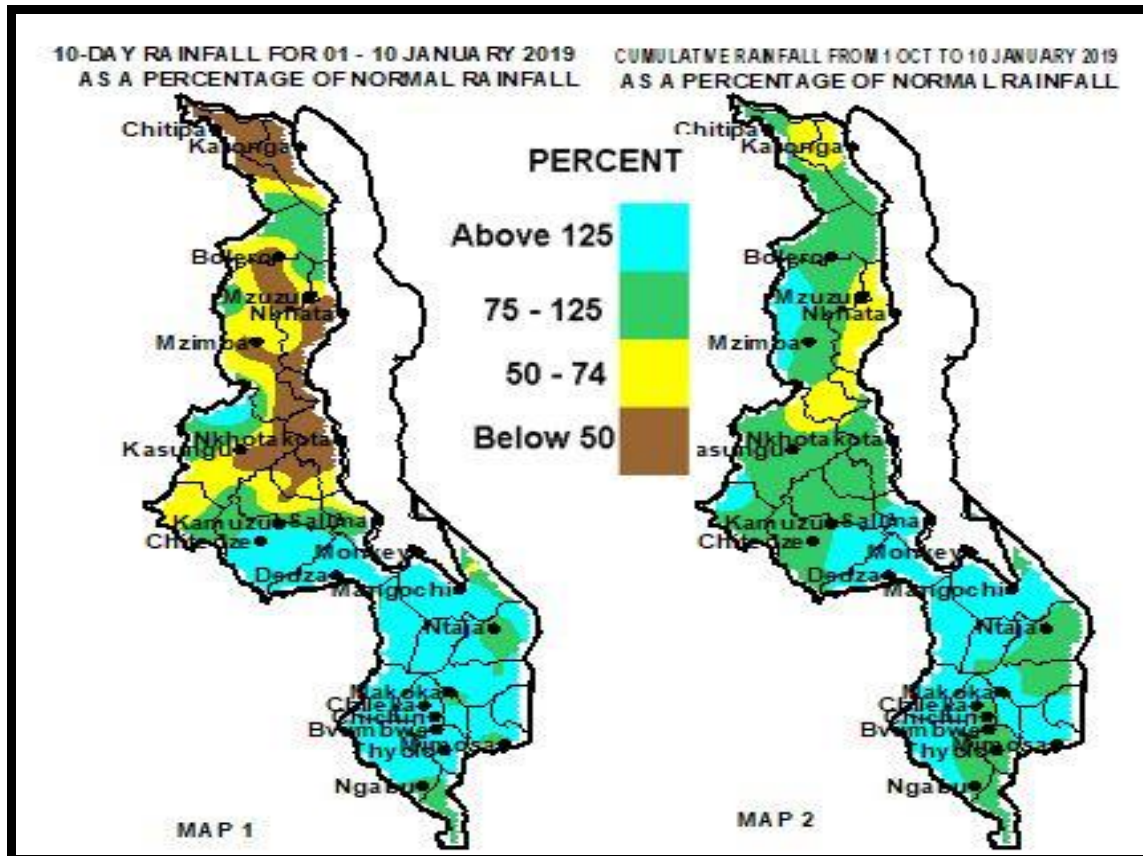
Season: 2018/2019

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HIGHLIGHTS

- Locally heavy rainfall experienced over southern Malawi ...
- Maize crop doing well between vegetative and flowering stages...
- More rainfall expected during the period 11 to 20 January 2019...



Rainfall Maps for 01 to 10 January 2019

1.0 WEATHER SUMMARY

During the first ten days of January 2019, a low pressure area in the Mozambique channel had caused moist and unstable North Westerly airmass to cover southern and some parts of central Malawi while a broad trough had covered northern and some parts of central Malawi. As a result, most areas in southern Malawi spilling over to some parts of central Malawi registered above average cumulative rainfall amounts (light Blue colour on Map 1) while low rainfall amounts (Brown colour on Map 1) were recorded over northern half of Malawi.

1.1 RAINFALL SITUATION

During the first ten days of January 2019, scattered to widespread moderate to locally heavy rainfall amounts were reported over southern and some parts of central Malawi. High cumulative rainfall amounts of greater than 125mm during the ten-day period were reported in some places including Balaka Agric which recorded 251mm, Neno Agric had 225mm, Lujeri Tea Estate reported 189mm, Ntcheu-Nkhande 185mm, Naminjiwa Agric in Phalombe recorded 170mm, Nathenje Agric in Lilongwe registered 155mm, Satemwa Tea Estate had 153mm, Mwanza Agric 151mm, Toleza Farm in Balaka had 148mm, Kasinthula Research Station in Chikwawa had 141mm, Chikwawa Boma (Mitole) reported 138mm, Mimosa Met 129mm, Chikweo and Chingale Agric stations had reported 127mm each, Chichiri Met 126mm and Chizunga Factory 125mm. The ten-day cumulative rainfall amounts were higher than the long-term mean rainfall amounts for the period particularly in the south and some parts of central Malawi (light Blue colour in Map1). At the same time, most of the northern half of Malawi had registered below average cumulative rainfall amounts

Map 2 indicates the spatial cumulative rainfall distribution since the start of the 2018/19 rainfall season in October 2018, up to 10 January 2019. The map generally indicates that most areas in Malawi have received normal to above normal cumulative rainfall amounts (Green to light Blue colours) with pockets of cumulative rainfall deficits in northern Malawi.

1.3 AIR TEMPERATURE

Warm to hot temperatures were reported over most areas in Malawi during the first ten days of January 2019. Mean daily maximum temperatures had ranged from around 25°C at Dedza Boma to 33°C at Ngabu in Chikwawa while the average daily minimum temperatures had ranged from 17°C at Dedza Boma to 25°C at Ngabu in Chikwawa district. During the same period the hottest temperature was 36°C recorded at Ngabu in Chikwawa. On the otherhand the lowest temperature was 15°C recorded at Dedza Boma. Details are in Table 2.

1.4 WIND SPEEDS

During the period 01 to 10 January 2019 most parts of Malawi continued to experience light to moderate wind speeds. The daily average wind speeds measured at a height of two metres above the ground level across the Malawi had ranged from 1.4 km per hour at Ngabu to 7.9km per hour at Chileka International Airport in Blantyre. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the first ten days of January 2019, air over Malawi was fairly moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 69% at Karonga to 84% at Nkhata Bay (Mkondezi). Details are on the Table 2.

1.6 SUNSHINE HOURS

Due to increased cloudiness, generally low duration of sunshine hours was observed over Malawi during the first ten days of January 2019. The daily values had ranged from 4.8 hours per day to 8.0 hours per day and the amount of Solar Radiation had ranged from 7.8 to 9.7 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the first ten days of January 2019, high intensity rainfall amounts was confined to southern and a few areas in central Malawi while light rainfall had maintained soil moisture reserves over most of the north and some parts of the centre These rains also supported growth and development of crops, improved pasture availability for livestock production and water resources.

Maize, the staple food crop in Malawi, had ranged from vegetative stage for the late planted crop to arrowing and flowering stages for the early planted crop and was reported doing very well particularly where both basal and top dressing fertilizers have been applied. Based on rainfall performance so far, good crop yields and production are anticipated this season provided good rains continue through January and February 2019.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

Global models are projecting 80 percent chance of El Nino conditions developing during early 2019. Meanwhile the Sea Surface Temperatures (SSTs) are slightly above 0.5°C. However, so far Malawi has enjoyed good rainfall performance and the outlook for January to March 2019 is that good rainfall performance is likely to persist over Malawi.

4. OUTLOOK FOR 11 TO 20 JANUARY 2019

Models for short and medium range forecasts show that generally Malawi is likely to continue experiencing good rainfall for agriculture production during the second ten days of January 2019. These rains will continue supporting growth and development of crops in most parts of Malawi.

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

ADD	RAINFALL STATION	ACTUAL DEKADAL 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 ≥ 3 mm	
KARONGA	Baka Res. Stn.	2.5	66.1	4	93.9	322.3	29	2	
	Chitipa Met	15.5	71.2	22	267.8	332.3	81	4	
	Karonga Met.	17.7	63.0	28	226.6	276.4	82	4	
	Lupembe	0.0	62.6	0	220.6	226.4	97	0	
MZUZU	Bwengu Agric.	80.5	63.8	126	219.5	273.7	80	4	
	Chikangawa forest	59.0	82.4	72	297.6	368.8	81	6	
	Chelinda (Nyika)	103.1	77.0	134	438.5	419.4	105	6	
	Chintheche Agric	30.4	107.7	28	271.9	481.0	57	1	
	Emfeni Agric	50.0	77.0	65	90.5	313.2	29	2	
	Euthini Agric.	66.5	72.9	91	501.0	296.6	169	3	
	Mbawa Res. Stn	41.7	76.3	55	452.3	318.2	142	4	
	Mzimba Met	33.1	92.7	36	327.5	336.6	97	5	
	Mzuzu Met.	38.0	66.6	57	211.3	337.8	63	4	
	NkhataBay Met.	9.5	89.9	11	229.5	409.2	56	3	
	Rumphi Boma	8.9	64.5	14	193.3	245.6	79	4	
	Zombwe Agric	14.7	68.6	21	185.2	265.2	70	2	
	KASUNGU	Dowa Agric	51.2	70.6	73	326.8	312.0	105	5
Kaluluma DTC		117.5	59.1	199	193.7	307.1	63	6	
Kasungu Met		33.5	70.1	48	259.5	281.9	92	4	
Lisasadzi		29.3	77.2	38	126.5	321.1	39	4	
Madisi Agric		64.7	69.0	94	317.6	290.3	109	5	
Mchinji Boma		56.0	83.0	67	360.6	427.8	84	6	
Mkanda Met		38.7	67.6	57	514.0	349.2	147	4	
Mponela Agric		23.9	68.0	35	166.1	282.1	59	5	
Ntchisi Boma		53.7	93.3	58	423.2	434.5	97	4	
Dedza RTC		89.9	75.4	119	377.9	346.9	109	8	
LILONGWE	Chileka Namitete	107.2	86.1	125	277.9	384.6	72	4	
	Chitedze Met.	115.8	68.9	168	314.3	321.0	98	6	
	K.I.A Met	87.4	72.7	120	362.9	295.4	123	4	
	Kasiya Agric	101.4	87.3	116	403.1	419.5	96	3	
	Mlangeni Njolomole	64.0	70.8	90	518.3	356.1	146	5	
	Nathenje Agric	154.5	72.1	214	490.6	311.2	158	3	
	Ntcheu - Nkhonde	184.5	86.3	214	663.7	405.5	164	5	
	Dedza RTC	89.9	75.4	119	377.9	346.9	109	8	
	SALIMA	Dwangwa	8.6	85.8	10	344.7	418.9	82	3
Lifuwu		41.2	85.3	48	503.2	344.6	146	5	
Nkhotakota Met		34.6	108.8	32	393.6	423.0	93	4	
Salima Met		79.1	94.8	83	646.0	364.3	177	6	
MACHINGA	Balaka Township	250.6	84.1	298	510.2	333.5	153	6	
	Chancellor College	107.6	100.5	107	228.7	512.1	45	8	
	Chikweo Agric.	126.5	86.1	147	430.9	389.3	111	6	
	Chingale Agric	126.5	70.4	180	488.9	362.6	135	6	
	Mpilipili (Makanjila)	30.5	91.9	33	268.1	346.7	77	1	
	Makoka Met	87.0	76.4	114	493.1	379.4	130	7	
	Mangochi Met.	104.4	54.2	193	339.4	210.7	161	8	
	Monkey Bay Met.	105.8	49.1	215	323.4	199.4	162	4	
	Namiasi Agric	48.9	59.0	83	292.9	269.6	109	3	
	Namwera Agric	85.3	89.6	95	574.1	385.2	149	5	
	Ntaja Met.	65.4	70.1	93	344.0	329.4	104	9	
	Phalula Agric	93.6	72.7	129	387.6	345.1	112	6	
	Toleza Farm	147.5	64.8	228	620.3	338.3	183	6	
Zomba RTC	95.1	81.7	116	470.2	469.0	100	6		
BLANYTRE	Bvumbwe Met.	78.5	80.2	98	480.0	416.5	115	5	
	Chichiri Met.	126.0	88.2	143	547.6	666.2	82	6	
	Chileka Airport	104.3	68.1	153	466.6	352.8	132	6	
	Chiradzulu Agric	85.1	66.4	128	558.9	385.5	145	4	
	Chizunga Factory	125.4	96.6	130	489.3	573.8	85	7	
	Lujeri Tea Estate	189.0	135.4	140	1014.7	813.6	125	9	
	Mimosa Met.	129.3	97.7	132	512.8	561.7	91	7	
	Mpemba Vet	121.9	87.5	139	669.6	456.5	147	5	
	Mulanje Boma	38.5	107.1	36	842.3	702.4	120	3	
	Mwanza Boma	151.0	73.5	205	793.1	401.6	197	7	
	Naminjiwa Agric	169.7	76.2	223	585.8	373.3	157	6	
	Neno Agric	224.6	96.0	234	734.2	415.2	177	7	
	Satemwa Tea Est	152.5	75.6	202	379.5	417.4	91	6	
	Thuchila Agric	122.6	67.7	181	414.5	331.5	125	4	
	Thyolo Met	110.6	80.2	138	279.4	433.7	64	6	
	SHIRE VALLEY	Chikwawa Boma	138.3	66.8	207	410.9	326.7	126	3
		Kasinthula Res. Stn.	140.9	62.9	224	416.5	291.5	143	5
Makhanga Met		82.2	62.2	132	366.2	320.6	114	5	
Nchalo Sucoma		93.6	53.1	176	291.6	255.9	114	3	
Ngabu Met.		56.9	61.3	93	392.6	312.3	126	6	
Nsanje Boma	69.5	75.7	92	314.6	430.9	73	4		

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 JANUARY 2019

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 ADD										
CHITIPA	28.6	19.2	30.2	17.4	6.8	71	7.0	6.7	5.3	9.1
KARONGA	32.3	22.9	33.7	22.0	5.0	69	8.0	7.6	6.1	9.7
MZUZU ADD										
BOLERO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MZIMBA	27.2	17.7	30.5	16.3	2.9	71	7.5	6.5	5.0	9.5
MZUZU	27.2	17.8	29.0	16.5	4.3	78	7.5	6.4	5.0	9.5
NKHATA BAY	31.9	21.1	33.5	20.7	2.2	84	5.9	6.2	5.0	8.4
KASUNGU ADD										
KASUNGU	28.5	19.5	30.0	18.7	5.8	71	6.4	6.5	5.2	8.8
LILONGWE ADD										
CHITEDZE	29.0	19.3	30.9	18.6	2.2	74	6.5	6.3	5.0	8.8
DEDZA	25.0	16.5	26.3	15.3	5.4	79	7.5	6.3	4.9	9.5
K I A	28.9	18.7	30.9	17.7	5.0	77	6.2	6.2	4.9	8.6
SALIMA ADD										
NKHOTAKOTA	30.0	20.9	31.3	19.6	1.8	72	7.7	7.1	5.6	9.6
SALIMA	29.8	22.4	31.6	20.6	5.8	78	6.8	6.8	5.5	9.0
MACHINGA ADD										
NTAJA	29.6	21.6	31.6	20.9	4.7	80	6.5	6.6	5.2	8.9
MAKOKA	28.0	19.7	30.0	19.0	2.2	82	4.9	5.6	4.4	7.8
MANGOCHI	31.4	23.4	33.6	22.3	2.9	81	6.8	6.9	5.5	9.1
MONKEY BAY	30.1	23.7	32.0	22.1	5.4	80	6.8	6.9	5.5	9.0
BLANTYRE ADD										
BVUMBWE	26.0	19.2	29.1	18.1	4.3	82	4.8	5.5	4.3	7.8
CHICHIRI	27.1	19.4	29.0	18.6	3.2	80	4.8	5.5	4.4	7.8
CHILEKA	28.6	20.7	30.2	19.9	7.9	78	4.8	6.0	4.8	7.8
MIMOSA	29.8	21.1	32.2	19.8	2.9	83	4.8	5.7	4.6	7.8
SHIRE VALLEY ADD										
NGABU	33.1	24.5	36.3	23.1	1.4	83	7.7	7.5	6.0	9.7

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