



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: 11 – 20 January 2020

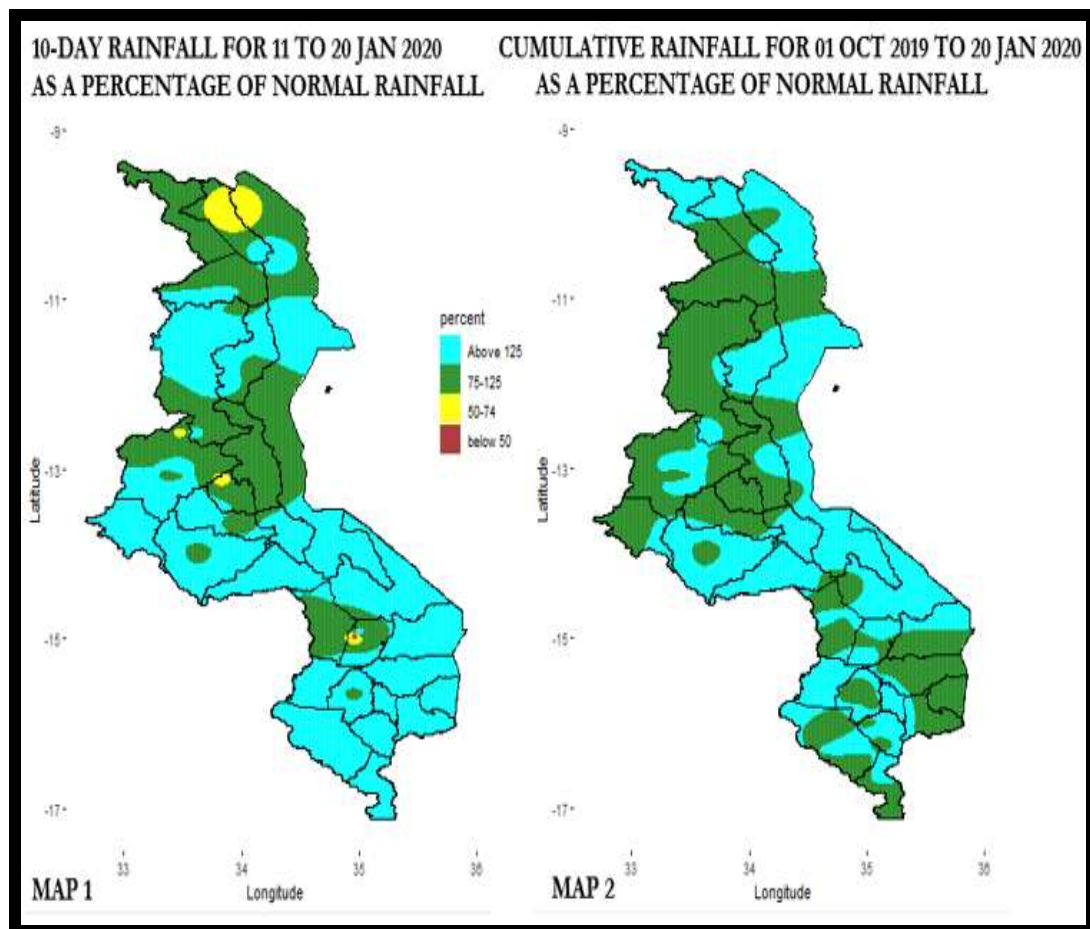
Season: 2019/2020

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## HIGHLIGHTS

- Moderate to heavy rainfall experienced over Malawi ...
- Maize crop is between vegetative and tasseling stages and reported doing well...
- Heavy rainfall anticipated mainly over northern half during 21-31 January 2020....



## 1.0 WEATHER SUMMARY

During the period 11 to 20 January 2020, the Inter-Tropical Convergence Zone (ITCZ) coupled with Congo Air mass influenced weather over Malawi. Hence moderate to heavy rainfall amounts were recorded over Malawi.

### 1.1 RAINFALL SITUATION

During the period under review, moderate to heavy rainfall amounts were recorded over Malawi. The cumulative ten-day rainfall amounts were higher than the long-term average rainfall amounts for the period over most areas of Malawi (light blue and green colours in Map1) with isolated spots of lower than long-term average rainfall amounts. Some areas reported as high as 10 rainy days during the period under review. Areas that had reported ten-day cumulative rainfall amounts of at least 150mm included Mulanje Boma which recorded 346.3mm, Masambanjati Agriculture recorded 329.7mm, Satemwa Tea Estate recorded 311.4mm, Mimosa Meteorological station recorded 309.8mm, Bvumbwe Meteorological station recorded 284.9mm, Mpemba Veterinary recorded 284.0mm, Nsanje Boma recorded 271.6mm, Chizunga recorded 270.9mm, Makhanga Meteorological station recorded 240.4mm, Thyolo Meteorological station recorded 234.8mm, Lujeri Tea Estate recorded 233.0mm, Kasinthula Research station recorded 232.4mm, Chichiri Meteorological station recorded 227.3mm, Salima Meteorological station recorded 205.7mm, Chikwawa Boma recorded 200.3mm, Lifuwu in Salima recorded 199.1mm, Nankumba Agriculture recorded 199.0mm, Mpilipili in Mangochi recorded 195.6mm, Mwanza Boma recorded 178.7mm, Nchalo recorded 177.5mm, Thuchila Agriculture recorded 169.6mm, Lisasadzi in Kasungu recorded 167.8mm, Makoka Meteorological station recorded 161.8mm, Kasiya Agriculture recorded 155.3mm and Mchinji Boma recorded 153.5mm. 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 20 January 2020. The map indicates that Malawi has this far received normal to above normal rainfall amounts (green and light blue colours). Extra details in Table 1.

### 1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the period 11 to 20 January 2020. Mean daily maximum temperatures had ranged from 23.9°C at Dedza Meteorological station to 32.4°C at Ngabu. On the other hand, mean daily minimum temperatures had ranged from 17.0°C at Dedza Meteorological station to 24.5°C at Ngabu. Details in Table 2.

### 1.4 WIND SPEED

During the period 11 to 20 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 8.3 km per hour at Chileka International Airport. More details in Table 2.

### 1.5 RELATIVE HUMIDITY

During the period 11 to 20 January 2020, air over Malawi was humid. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 68% at Kasungu Meteorological station to 89% 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 3.5 hours per day at Kamuzu International Airport to 5.3 hours per day at Nkhotakota Meteorological station. Consequently, the amount of Solar Radiation had ranged from 6.9 to 8.1 cal/cm<sup>2</sup>/day. For details see Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was good spatial rainfall distribution over 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 over southern Malawi while the crop is reported at vegetative to tasseling stage over central and northern Malawi. The staple crop is reported doing very well particularly where both basal and top-dressing fertilizers 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. 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 21-31 JANUARY 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. This will provide the required water amounts to continue supporting growth and development of crops especially maize at this critical stage.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 11 TO 20 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.	40.0	60.6	66	6	443.2	382.9	116	
	Chitipa Met	69.1	65.9	105	7	499.2	398.2	125	
	Lupembe	33.5	49.3	68	1	303.0	275.7	110	
	Vinthukutu Agric	86.9	69.0	126	5	488.9	382.4	128	
MZUZU	Bwengu Agric.	61.5	59.2	104	4	326.5	332.9	98	
	Chikangawa forest	123.0	83.5	147	8	704.2	452.3	156	
	Chelinda ( Nyika)	86.0	79.6	108	8	549.5	499.0	110	
	Chintheche Agric	98.5	83.1	119	3	893.7	564.1	158	
	Emfeni Agric	94.0	61.1	154	4	488.6	374.3	131	
	Euthini Agric.	119.3	52.6	227	7	424.1	349.2	121	
	Mbawa Res. Stn	64.0	59.4	108	7	375.7	377.6	99	
	Mzimba Met	116.5	71.1	164	9	486.8	407.7	119	
	Mzuzu Met	87.3	69.3	126	8	534.6	407.1	131	
	NkhataBay Met.	95.3	65.6	145	7	615.0	474.8	130	
	Rumpho Boma	92.1	57.9	159	8	368.9	303.5	122	
Zombwe Agric	72.6	54.0	134	6	337.7	319.2	106		
KASUNGU	Dowa Agric	87.2	82.0	106	5	460.4	394.0	117	
	Kaluluma DTC	41.1	76.9	53	5	381.0	384.0	99	
	Kasungu Met	111.9	62.3	180	7	468.7	344.2	136	
	Lisasadzi	167.8	67.7	248	7	445.6	388.8	115	
	Malomo Agric	80.5	125.7	64	4	384.9	379.7	101	
	Madisi Agric	142.3	81.5	175	5	472.7	371.8	127	
	Mchinji Boma	153.5	79.7	193	9	401.9	507.5	79	
	Mponela Agric	89.2	68.1	131	7	429.5	350.2	123	
LILONGWE	Mwimba Research	78.6	82.4	95	4	405.8	405.7	100	
	Chileka Namitete	89.3	61.3	146	7	795.2	445.9	178	
	Chitedze Met.	63.4	79.5	80	9	423.8	400.5	106	
	Dzonzi Forest	73.2	81.9	89	8	378.9	471.3	80	
	K.I.A Met	143.5	87.2	165	8	591.1	382.6	154	
	Kasiya Agric	155.3	53.9	288	6	634.1	473.4	134	
	Mlangeni Njolomole	67.5	82.4	82	8	351.6	438.5	80	
	Nathenje Agric	96.8	57.7	168	6	484.1	368.9	131	
SALIMA	Ntcheu - Nkhonde	117.9	97.6	121	8	717.4	503.1	143	
	Dedza RTC	121.2	87.2	139	9	546.7	434.1	126	
	Dwangwa Sugar Corp.	88.0	81.6	108	7	543.5	500.5	109	
	Lifuwu	199.1	128.0	156	8	846.2	472.6	179	
	Nkhotakota Met	129.2	105.9	122	8	768.4	528.9	145	
	Salima Met	205.7	117.2	176	8	686.1	481.5	142	
	MACHINGA	Balaka Township	30.2	70.2	43	5	476.3	403.7	118
		Chancellor College	123.6	89.4	138	9	647.3	601.5	108
Chingale Agric		97.0	64.4	151	9	456.2	427.0	107	
Mpilipili		195.6	65.9	297	8	538.4	412.6	130	
Makoka Met		161.8	79.4	204	8	657.6	458.8	143	
Mangochi Met.		102.6	64.6	159	7	489.0	275.3	178	
Monkey Bay Met.		115.3	54.0	214	6	455.9	253.4	180	
Namwera Agric		128.6	86.6	148	8	641.4	471.8	136	
Phalula Agric		101.4	61.9	164	5	539.5	407.0	133	
BLANTYRE	Toleza Farm	100.8	70.8	142	8	711.6	409.1	174	
	Zomba RTC	117.6	90.7	130	9	504.1	559.7	90	
	Bvumbwe Met.	284.9	84.0	339	9	798.7	500.5	160	
	Chichiri Met.	227.3	74.8	304	8	733.4	741.0	99	
	Chileka Airport	77.1	63.9	121	9	397.3	416.7	95	
	Chiradzulu Agric	116.3	60.3	193	10	641.8	445.8	144	
	Chizunga Factory	270.9	70.9	382	9	659.5	644.7	102	
	Lujeri Tea Estate	233.0	127.7	182	9	981.6	941.3	104	
	Masambanjati Agric	329.7	82.2	401	10	717.2	596.1	120	
	Mimosa Met.	309.8	93.8	330	9	707.5	655.5	108	
SHIRE VALLEY	Mpemba Vet	284.0	88.8	320	8	913.2	545.3	167	
	Mulanje Boma	346.3	109.7	316	9	858.5	812.1	106	
	Mwanza Boma	178.7	69.9	256	8	803.1	471.5	170	
	Satemwa Tea Est. No.1	311.4	61.5	506	8	891.1	478.9	186	
	Thuchila Agric	169.6	67.6	251	8	746.4	399.1	187	
	Thyolo Met	234.8	84.0	280	9	693.8	517.7	134	
	Chikwawa Boma	200.3	61.2	327	7	350.5	387.9	90	
	Kasinthula Res. Stn.	232.4	33.3	698	8	457.0	324.8	141	
	Makhanga Met	240.4	47.7	504	9	549.4	368.3	149	
	Nchalo Sucoma	177.5	58.1	306	9	410.5	314.0	131	
SHIRE VALLEY	Ngabu Met.	128.4	55.8	230	9	434.9	368.1	118	
	Nsanje Boma	271.6	97.8	278	10	431.7	528.7	82	

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 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	RADIATION cal cm <sup>-2</sup> p/day
<b>KARONGA ADD</b>										
CHITIPA	27.3	18.7	30.0	17.4	4.7	77	5.0	6.2	5.0	7.8
KARONGA	31.5	21.5	36.3	20.0	4.7	74	4.9	6.8	5.6	7.7
<b>MZUZU ADD</b>										
BOLERO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MZIMBA	26.1	17.4	28.0	16.5	3.6	84	4.5	5.4	4.3	7.5
MZUZU	26.4	18.1	28.1	17.5	5.8	83	4.0	N/A	N/A	N/A
NKHATA BAY	30.2	22.2	33.0	21.0	2.5	80	3.9	5.7	4.6	7.1
<b>KASUNGU ADD</b>										
KASUNGU	27.6	18.9	29.5	16.0	4.3	68	4.5	6.4	5.3	7.5
<b>LILONGWE ADD</b>										
CHITEDZE	26.7	19.5	29.2	18.1	2.2	81	3.6	5.2	4.2	6.9
DEDZA	23.9	17.0	26.7	15.9	3.6	87	4.0	5.0	4.0	7.2
K I A	25.7	18.8	27.5	17.6	5.4	82	3.5	5.4	4.4	6.9
<b>SALIMA ADD</b>										
NKHOTAKOTA	28.7	22.0	31.4	20.0	2.2	83	5.3	6.2	5.0	8.1
SALIMA	28.4	22.2	31.1	20.1	5.4	86	3.6	5.6	4.6	6.9
<b>MACHINGA ADD</b>										
NTAJA	28.8	21.5	30.7	20.4	3.6	77	5.0	6.4	5.2	7.9
MAKOKA	26.5	19.5	28.1	18.7	5.0	89	5.2	5.8	4.6	8.0
MANGOCHI	30.1	20.9	32.0	15.0	5.0	84	5.1	6.3	5.1	7.9
MONKEY BAY	28.8	23.1	30.6	21.6	5.8	79	5.1	6.8	5.6	7.9
<b>BLANTYRE ADD</b>										
BVUMBWE	26.9	18.2	28.1	15.9	5.0	88	4.2	5.4	4.3	7.4
CHICHIRI	27.2	19.0	28.7	17.5	3.2	82	4.3	5.6	4.5	7.4
CHILEKA	28.3	21.4	31.1	20.8	8.3	82	5.1	6.8	5.6	7.9
MIMOSA	29.0	21.2	30.5	19.6	2.2	74	4.2	5.9	4.8	7.4
<b>SHIRE VALLEY ADD</b>										
NGABU	32.4	24.5	35.1	23.6	1.4	78	5.2	6.5	5.3	8.0

**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