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

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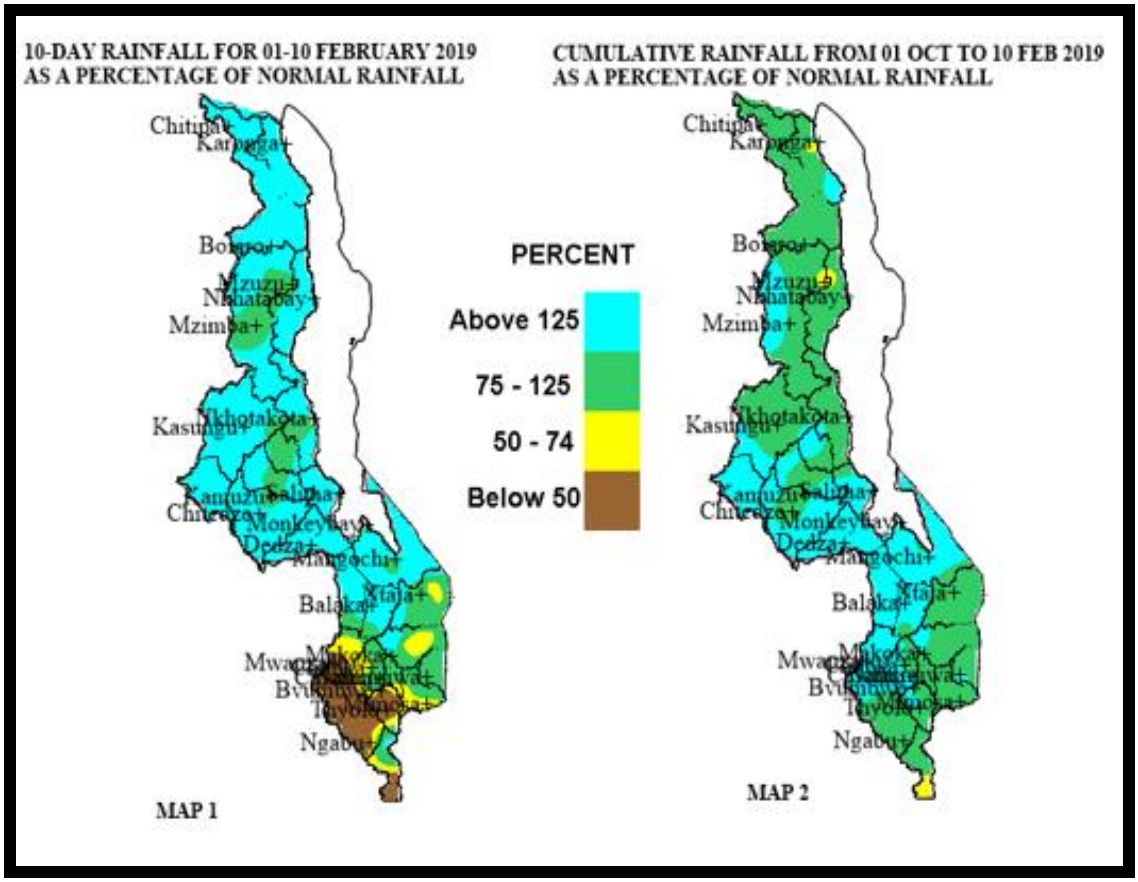
HIGHLIGHTS

- **Well distributed moderate to locally heavy rainfall amounts were experienced over Malawi…**
- **Maize crop reported doing well between vegetative, tasseling and maturing stages…**
- **Moderate rainfall amounts expected during the period 11 to 20 February 2019…**



Rainfall Maps for 01 to 10 February 2019

1.0 WEATHER SUMMARY

During the period 01 to 10 February 2019, the Inter-Tropical Convergence Zone (ITCZ) oscillated over northern and central Malawi while a High Pressure System over the Indian Ocean extended a ridge into extreme southern parts of Malawi. As a result, more areas over northern, central and northern parts of southern Malawi experienced locally heavy rainfall amounts (Green and light blue colours on Map 1) while light rainfall amounts covered some parts of Nsanje, Chikwawa, Thyolo and Mwanza districts (Yellow and Brown colours on Map1)

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1.1 RAINFALL SITUATION

During the period 01 to10 February 2019, moderate to heavy rainfall amounts were reported over more areas in Malawi. The ten-day total rainfall amounts were generally higher than the long-term mean rainfall amounts for the period over northern and central areas of Malawi (light Blue colour in Map1) with cases of ten-day total rainfall amounts being lower than long-term rainfall amounts (Yellow and Brown colours in Map1) over some parts of southern districts. Areas that had recorded cumulative rainfall amounts exceeding 120mm during the period under review included Namwera Agric which recorded 272.6mm, Chitipa Met recorded 202.5mm, Chintheche Agric recorded 181.4mm, Dwangwa recorded 174mm, Chingale recorded 165.6mm, Ntchisi recorded 161.1mm, Karonga Met recorded 157.8mm, Vinthukutu Agric recorded 157.3mm, Madisi recorded 156.6mm, Namiasi Agric recorded 154.7, NkhataBay Met recorded 150mm, Mchinji Boma recorded 146mm, Lisasadzi Agric recorded 142.6mm, Bwengu Agric recorded 142.1mm, Kasiya Agric recorded 130.8mm, Lupembe Agric recorded 129mm, Toleza farm recorded 127.5mm, Chelinda (Nyika) recorded 122.2mm, Kasungu Met recorded 121.5 and Euthini Agric recorded 120.6mm. More details as in Table 1 and on Map 1.

Map2 indicates the spatial cumulative rainfall distribution since the start of the 2018/19 rainfall season in October 2018, up to 10 February 2019. The map generally indicates that most areas over Malawi have received normal to above normal rainfall (Green to light Blue colours) with few spots of below normal rainfall amount over Karonga as well as some parts of NkhataBay and Mzimba districts in the north and Nsanje District in the south as shown by Brown and Yellow colours on Map 2.

1.3 AIR TEMPERATURE

Generally warm to hot temperatures were experienced over Malawi during the period 01 to10 February 2019. Mean daily maximum temperatures had ranged from 24°C at Dedza to 33°C at Ngabu in Chikwawa District while the mean daily minimum temperatures had ranged from 17°C at Dedza to 24°C at Ngabu in Chikwawa District. Details in Table 2.

1.4 WIND SPEEDS

During the period 01 to 10 February 2019 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 1.4km per hour at Ngabu in Chikwawa District, Chitedze in Lilongwe District and Bolero in Rumphi District to 7.6 km at Chileka in Blantyre District. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the first ten-days of January 2019, air over Malawi was moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 67% at Kasungu to 86% at Dedza. Details as in Table 2.

1.6 SUNSHINE HOURS

Generally low hours of bright sunshine were observed over Malawi during the period 01 to 10 February 2019. The daily values had ranged from around 2.8 hours per day at Mzuzu to around 6.0 hours per day in Nkhotakota and Ngabu in Chikwawa District and consequently the amount of Solar Radiation had ranged from 6.5 to 8.5 cal/cm-^{2}/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period 01 to 10 February 2019 there was good spatial coverage of rainfall over more areas of Malawi with well distributed moderate to locally heavy rainfall amounts recorded. The rains boosted the soil moisture reserves thereby facilitating good support to vegetative crop growth as well as replenishing water resources over most parts of the country. Furthermore, the rains supported the growth of pastures countrywide for Livestock production.

Maize over northern Malawi was reported between arrowing and cob formation stages while over central Malawi had ranged from tasseling to cob formation stages and over southern areas was reported at cob formation and maturing stages. Basing on the current crop stand, good crop yields and production are anticipated this season provided good rains continue through March 2019.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

ENSO-neutral conditions are present. Therefore, Malawi is likely to continue receiving favourable rainfall amounts during the period between February and April 2019. However, climatologically rainfall is expected to start declining starting from southern Malawi by end of March.

4. OUTLOOK FOR 11 TO 20 February 2019

Models for short and medium range forecasts show that most parts of Malawi are likely to experience moderate to locally heavy rainfall amounts during the second ten days of February 2019. The rains will support growth and development of crops over most parts of the country

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

ADD	STATION NAME	ACTUAL TEN-DAY TOTAL RAINFALL (mm)	TEN-DAY 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.	98.6	51.0	193	272.9	497.5	55	8
	Chitipa Met	202.5	87.6	231	658.8	561.1	117	9
	Karonga Met.	157.8	48.7	324	488.7	436.4	112	10
	Lupembe	129.0	49.8	259	440.6	382.2	115	5
	Vinthukutu Agric	157.3	53.6	293	690.0	494.8	139	5
MZUZU	Bolero Met	74.8	51.2	146	346	394.7	88	5
	Bwengu Agric.	142.1	58.8	242	414.4	465.7	89	3
	Chelinda (Nyika)	122.2	83.5	146	753.9	659.9	114	9
	Chintheche Agric	190.8	76.0	251	884.6	731.7	121	5
	Emfeni Agric	106.5	65.3	163	409.6	513.7	80	6
	Euthini Agric.	120.6	62.7	192	702.1	470.8	149	7
	Mbawa Res. Stn	80.4	66.5	121	676.7	507.3	133	8
	Mzimba Met	51.2	67.2	76	664.2	543.5	122	9
	Mzuzu Met.	38.4	51.9	74	353.3	527.9	67	7
	NkhataBay Met.	150.0	65.3	230	527.6	604.3	87	7
	Rumphi Boma	78.8	56.1	140	354.2	429.6	82	4
	Zombwe Agric	49.8	48.8	102	358.8	422.2	85	5
KASUNGU	Dowa Agric	84.7	66.2	128	690.6	552.6	125	9
	Kasungu Met	121.5	72.0	169	469.7	486.2	97	9
	Lisasadzi	142.6	77.8	183	542.0	547.5	99	7
	Malomo Agric	62.1	81.0	77	742.3	515.8	144	4
	Madisi Agric	156.6	72.9	215	685.6	519.0	132	6
	Mchinji Boma	146.0	62.1	235	1038.5	648.8	160	9
	Mkanda Met	106.2	64.6	164	931.6	568.1	164	7
	Ntchisi Boma	161.1	103.8	155	784.7	739.8	106	7
LILONGWE	Chitedze Met.	82.1	65.2	126	561.3	544.9	103	9
	K.I.A Met	64.6	72.1	90	613.7	524.2	117	9
	Kasiya Agric	130.8	64.5	203	761.4	605.2	126	4
	Mlangeni Njolo	181.4	81.5	223	875.7	593.6	148	8
	Nathenje Agric	113.7	56.4	202	852.3	516.1	165	6
	Ntcheu - Nkhande	119.5	84.6	141	967.1	672.3	144	8
SALIMA	Dwangwa Sugar	174.0	76.7	227	726.5	661.9	110	8
	Nkhotakota Met	98.9	84.2	117	862.5	710.9	121	8
	Salima Met	174.1	102.3	170	940.0	683.0	138	8
MACHINGA	Balaka Township	149.8	79.3	189	870.7	585.2	149	5
	Chancellor College	53.7	106.2	51	558	811.1	69	5
	Chikweo Agric.	43.5	78.5	55	617.5	673.8	92	5
	Chingale Agric	165.6	83.6	198	887.1	601.3	148	7
	Makoka Met	102.8	91.7	112	737.3	640.1	115	7
	Mangochi Met.	72.6	72.4	100	584.3	418.4	140	4
	Monkey Bay Met.	76.4	71.7	107	549.2	399.1	138	5
	Namiasi Agric	154.7	92.2	168	587.1	515.2	114	6
	Naminjiwa Agric	94.8	83.6	113	834.6	638.2	131	3
	Namwera Agric	272.6	83.2	328	987.8	655.3	151	10
	Ntaja Met.	70.8	65.8	108	476.0	561.8	85	6
	Phalula Agric	58.8	67.3	87	625	548.4	114	6
	Toleza Farm	127.5	69.5	183	906.0	568.9	159	8
	Zomba RTC	82.0	100.2	82	665.6	767.2	87	4
BLANTYRE	Bvumbwe Met.	34.8	90.3	39	878.4	697.5	126	6
	Chichiri Met.	96.5	72.9	132	1087.4	867.7	125	8
	Chileka Airport	61.8	88.5	70	701.2	586.5	120	6
	Chizunga Factory	26.0	74.2	35	944.6	811.1	116	5
	Lujeri Tea Estate	89.8	126.3	71	1392.7	1202.4	116	9
	Mimosa Met.	49.3	95.2	52	770.0	867.8	89	9
	Mpemba Vet	82.3	84.8	97	1076.1	725.9	148	8
	Mulanje Boma	82.9	109.5	76	1114.6	1067	104	5
	Mwanza Boma	31.6	91.2	35	978.7	657.1	149	4
	Neno Agric	66.4	107.8	62	1097.6	721.7	152	5
	Thuchila Agric	38.8	80.2	48	617.9	563.2	110	5
	Thyolo Met	13.7	90.3	15	724.7	711.9	102	4
SHIRE VALLEY	Chikwawa Boma	13.7	66.7	21	607.8	529.1	115	2
	Makhanga Met	97.1	58.5	166	592.1	478.7	124	4
	Nchalo Sucoma	17.3	70.2	25	486.1	434.9	112	2
	Ngabu Met.	32.7	69.1	47	544.3	498.4	109	4
	Nsanje Boma	3.9	81.8	5	437.7	695.3	63	2

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 FEBRUARY 2019

STATION/ADD	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEE Km/hr	RH %	SUN SHINE HOURS	Eo mm per day	Et mm per day	RAD-TION cal cm^{-2} p/day
KARONGA ADD										
CHITIPA	27.6	18.0	28.9	17.5	6.1	79	4.7	5.5	4.4	7.6
KARONGA	29.8	20.7	30.5	19.5	4.3	77	5.4	6.1	4.8	8.1
MZUZU ADD										
BOLERO	28.5	20.0	31.0	19.0	1.4	79	3.0	3.9	3.1	6.5
MZIMBA	27.1	14.5	29.2	14.5	1.8	79	3.0	4.5	3.6	6.5
MZUZU	25.8	18.3	27.0	17.1	4.3	83	2.8	4.6	3.6	6.4
NKHATA BAY	29.7	21.9	31.5	21.0	2.5	80	5.0	5.8	4.6	7.8
KASUNGU ADD										
KASUNGU	26.5	19.1	27.5	18.0	2.5	67	3.5	5.1	4.1	6.8
LILONGWE ADD										
CHITEDZE	26.2	18.5	27.6	17.0	1.4	83	3.5	4.7	3.7	6.8
DEDZA	24.0	16.6	25.4	14.9	3.0	86	3.5	4.6	3.6	6.8
K I A	26.0	18.7	27.5	16.9	5.0	84	3.5	4.9	3.8	6.8
SALIMA ADD										
NKHOTAKOTA	29.5	20.6	30.6	19.8	2.2	77	6.0	6.2	4.9	8.5
SALIMA	29.0	22.4	35.5	21.1	5.0	82	5.0	5.9	4.7	7.8
MACHINGA ADD										
NTAJA	29.1	21.3	30.2	20.4	5.4	79	5.0	5.9	4.7	7.8
MAKOKA	27.6	19.1	29.0	17.5	2.5	84	5.0	5.4	4.3	7.8
MANGOCHI	31.2	22.4	33.2	21.7	2.9	78	5.5	6.2	5.0	8.1
MONKEY BAY	29.1	22.9	30.6	21.7	6.8	81	5.5	6.2	5.0	8.1
BLANTYRE ADD										
BVUMBWE	25.5	18.7	27.8	17.4	5.8	81	5.0	5.4	4.3	7.8
CHICHIRI	26.4	19.0	28.0	17.7	4.3	79	5.0	5.5	4.3	7.8
CHILEKA	28.5	20.0	29.5	18.2	7.6	79	5.4	6.0	4.8	8.0
MIMOSA	29.6	19.2	31.8	16.4	3.2	77	4.5	5.5	4.4	7.4
SHIRE VALLEY ADD										
NGABU	33.4	24.1	34.5	23.0	1.4	76	6.0	6.7	5.3	8.4

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 Meters Per Second (mps) to Kilometres per hour (Km/hr) = mpsx3.6