



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: 21 – 28 February 2019

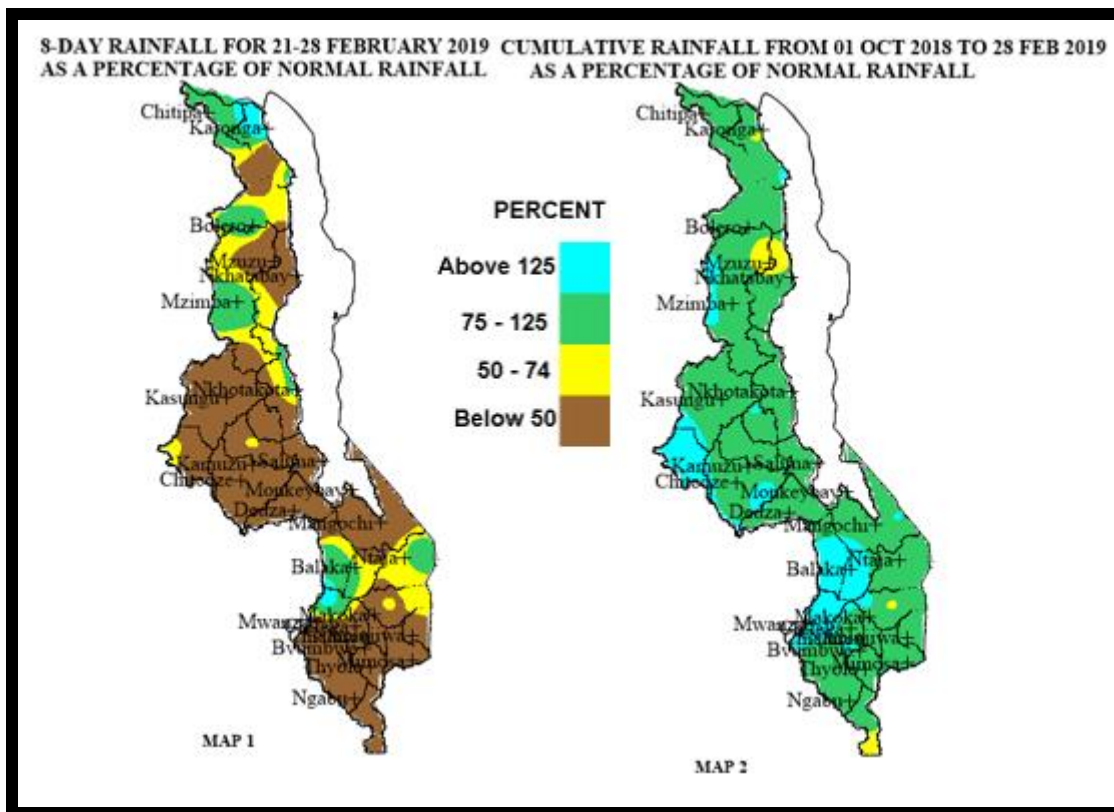
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HIGHLIGHTS

- Dry conditions were experienced over most parts of Malawi...
- Maize crop doing well mostly between cob formation and maturing stages...
- More rainfall expected over southern and central Malawi during 01 to 10 March 2019...



Rainfall Maps for 21 to 28 February 2019

1.0 WEATHER SUMMARY

During the period 21 to 28 February 2019, a diffused Inter-Tropical Convergence Zone (ITCZ) oscillated mainly over northern Malawi and a ridge from Indian Ocean High Pressure System caused dryness over central and southern Malawi. As a result, most areas in Malawi received below normal rainfall amounts with isolated cases of above normal rainfall amounts over some parts of Karonga and Neno Districts (light blue colours on Map 1).

1.1 RAINFALL SITUATION

During the last ten-days of February 2019, light rainfall amounts with an average of one rainy day were reported over more areas of Malawi. In most areas of Malawi, the ten-day total rainfall amounts were generally lower than the long-term mean rainfall amounts for the period (Yellow and Brown colours in Map1). However, very few areas had ten-day total amounts of greater than the long-term mean rainfall amounts (light blue colour in Map1). Such areas existed in some parts of Karonga and Chitipa Districts in the north as well as some parts of Neno, Balaka and Zomba Districts in the south. Areas that had recorded cumulative rainfall amounts exceeding 40mm during the period under review included Baka Research Station in Karonga District recorded 109.4mm, Karonga Met recorded 99.8mm, Nkhotakota Met recorded 83.5mm, Ntcheu-Nkhande recorded 78.5mm, Neno Agriculture recorded 76.6mm, Chikweo Agric in Machinga District had recorded 63.7mm, Mzimba Met recorded 61.8mm, Dwangwa in Nkhotakota District received 56.5mm, Zomba RTC reported 46.2mm, Mbawa Research Station registered 45.8mm, Vinthukutu Agriculture in Karonga recorded 45.5mm, Bolero Met in Rumphu 44.8mm, Chitipa Met recorded 43.3mm, Rumphu Boma recorded 42.6mm and Balaka recorded 40.8mm. More details are in Table 1.

Map 2 indicates the spatial cumulative rainfall distribution since the start of the 2018/19 rainfall season in October 2018, up to 28 February 2019. The map generally indicates that most areas in Malawi have received normal to above normal rainfall amounts (Green to light Blue colours) with few spots of below normal rainfall amount over some parts of Nkhata Bay District 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 21 to 28 February 2019. Mean daily maximum temperatures had ranged from 26°C at Dedza to 34°C at Ngabu in Chikwawa District while the mean daily minimum temperatures had ranged from 14°C at Dedza to 22°C at Ngabu in Chikwawa District. Details in Table 2.

1.4 WIND SPEEDS

During the last days of 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 1.1km per hour at Ngabu in Chikwawa District to 9.7km per hour at Chileka in Blantyre District. More details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 21 to 28 February 2019, air over Malawi was drier in the south and relatively moist in the north. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 55% at Chichiri in Blantyre District to 79% at Chitipa Met. Details are in Table 2.

1.6 SUNSHINE HOURS

Generally medium to long hours of bright sunshine were observed over Malawi during the period last of February 2019. The daily values had ranged from around 6.2 hours per day at Chitipa to 9.5 hours per day at Ngabu in Chikwawa District and consequently the amount of Solar Radiation had ranged from 8.5 to 10.6 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period 21 to 28 February 2019 generally dry conditions prevailed over central and southern areas of Malawi. The dry conditions had facilitated harvesting and drying of matured crops. However, in localised areas of the country crops were reported wilting between vegetative and flowering stages due to extended dry spells. According to field reports, such areas included Nsanama in Machinga district in Southern Malawi, Luwina in Mzuzu City and Zolokere in Rumphu West. On the other hand, light to moderate rainfall amounts that were recorded in some parts of the country boosted the soil moisture reserves thereby supporting crop growth and development as well as water resources. Furthermore, the rains supported the growth of pastures for Livestock production.

Maize was reported generally doing well at various growing stages. Countrywide the crop had ranged from tasselling to maturity and drying stages. For the crop that was at drying stage, more sunshine is required for proper drying. Basing on the current crop stand, good crop yields and production are anticipated this season provided good rains continue through March 2019 especially over central and north.

3. PROSPECTS FOR 2018/2019 RAINFALL SEASON

ENSO-neutral conditions are present. Therefore, as the main rainfall season comes to an end. Malawi is expected to experience good rainfall performance for agricultural production during the months of March and April 2019.

4. OUTLOOK FOR 01 TO 10 MARCH 2019

Models show that most parts of southern and central Malawi are likely to experience locally heavy rainfall amounts associated with strong winds and lightning during the first ten days of March 2019.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 28 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 ≥ 3 mm
KARONGA	Baka Res. Stn.	109.4	54.6	200	409.4	615.5	67	3
	Chitipa Met	43.3	58.7	74	768.8	697.3	110	3
	Karonga Met.	99.8	55.9	179	601.8	541.4	111	4
	Vinthukutu Agric	45.5	48.9	93	804.8	602.3	134	2
MZUZU	Bolero Met	44.8	35.1	128	410.3	490.5	84	2
	Bwengu Agric.	15.3	45.4	34	462.6	577.3	80	2
	Chelinda	19.6	73.6	27	831.7	814.5	102	4
	Chintheche Agri	20.1	66.2	30	913.7	875.3	104	1
	Ekweneni Agri	11.8	47.4	25	322.4	614.1	52	2
	Euthini Agric.	29.4	53.5	55	766.3	587.7	130	1
	Mbawa Res. Stn	45.8	46.8	98	785.8	620.1	127	3
	Mzimba Met	61.8	54.4	114	776.6	677.2	115	3
	Mzuzu Met.	9.2	42.9	21	393.3	636.1	62	2
	NkhataBay Met.	22.4	55.3	41	586.8	721.7	81	3
	Rumphi Boma	42.6	44.5	96	489.1	539.3	91	3
KASUNGU	Dowa Agric	22.0	64.9	34	757.0	673.9	112	1
	Kasungu Met	0.0	59.6	0	538.2	609.1	88	0
	Lisasadzi	0.0	54.8	0	651.6	666.2	98	0
	Malomo Agric	1.1	48.8	2	826.2	630.3	131	1
	Madisi Agric	20.3	73.7	28	735.5	668.6	110	1
	Mchinji Boma	37.0	70.0	53	1075.5	793.5	136	2
	Mkanda Met	29.3	59.0	50	1047.5	682.2	154	2
	Mponela Agric	39.5	61.3	64	657.6	643.2	102	1
LILONGWE	Chileka Namitete	15.9	60.4	26	954.7	737.7	129	1
	Chitedze Met.	0.0	66.9	0	592.0	669.5	88	0
	K.I.A Met	0.0	66.5	0	666.0	652.6	102	0
	Kasiya Agric	12.9	81.8	16	840.6	750.6	112	2
	Mlangeni Njolo	22.8	57.8	39	929.5	738.6	126	2
	Nathenje Agric	15.2	66.5	23	916.0	656.0	140	1
	Ntcheu - Nkhande	78.5	69.3	113	1111.2	817.3	136	1
	Dedza RTC	18.2	42.3	43	705.5	764.7	92	2
SALIMA	Dwangwa Sugar	56.5	70.1	81	856.9	792.1	108	4
	Nkhotakota Met	83.5	85.7	97	1015.0	870.2	117	2
	Salima Met	29.1	92.8	31	1005.6	867.5	116	1
MACHINGA	Balaka Township	40.8	47.2	86	924.9	679	136	1
	Chancellor College	29.5	68.0	43	642.3	953.8	67	1
	Chikweo Agric.	63.7	67.5	94	703.0	806.4	87	1
	Chingale Agric	12.1	54.0	22	948.0	723.5	131	1
	Mpilipili	23.8	58.4	41	539.9	709.4	76	1
	Makoka Met	0.0	56.8	0	772.7	760.0	102	0
	Mangochi Met.	0.8	47.5	2	605.0	530.9	114	1
	Monkey Bay Met.	1.8	33.7	5	585.2	479.5	122	1
	Naminjiwa Agric	19.3	53.5	36	861.5	763.0	113	1
	Namwera Agric	3.5	63.1	6	1018.24	780.1	131	1
	Toleza Farm	27.0	49.9	54	941.5	667.4	141	1
Zomba RTC	46.2	66.1	70	764.1	903.7	85	2	
BLANTYRE	Bvumbwe Met.	23.5	62.4	38	967.2	833.7	116	1
	Chichiri Met.	0.0	52.5	0	1136	972.5	117	0
	Chileka Airport	9.1	47.9	19	730.3	684.8	107	1
	Chiradzulu Agric	31	53.3	58	815.3	763.8	107	1
	Chizunga Factory	13.2	60.7	22	965.4	958.2	101	1
	Lujeri Tea Estate	14.0	110.3	13	1611.7	1451.5	111	1
	Mimosa Met.	5.5	62.9	9	823.5	1002.6	82	1
	Mwanza Boma	8.1	57.4	14	1066.9	780.5	137	1
	Neno Agric	76.6	51.2	150	1239.7	841.7	147	1
	Satemwa Tea Est.	3	48.5	6	995.3	781.1	127	1
	Thuchila Agric	4.9	47.4	10	642.6	668.4	96	1
Thyolo Met	39.0	136.2	29	820.5	921.9	89	1	
SHIRE VALLEY	Chikwawa Boma	0.0	32.8	0	640.6	603.4	106	0
	Kasinthula Res. Stn	0.0	41.4	0	697.8	529.2	132	0
	Makhanga Met	0.0	33.4	0	701.1	564.1	124	0
	Nchalo Sucoma	0.0	37.2	0	560.8	518.5	108	0
	Ngabu Met.	0.0	40.9	0	653.7	590.6	111	0
	Nsanje Boma	0.0	43.6	0	481.5	811.4	59	0

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 28 FEBRUARY 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	27.9	18.0	30.0	16.0	6.1	79	6.2	6.0	4.8	8.5
KARONGA	30.7	21.1	31.3	19.4	4.0	73	7.4	6.9	5.5	9.3
MZUZU ADD										
BOLERO	29.9	18.7	31.0	17.3	2.2	68	7.5	6.6	5.2	9.4
MZIMBA	28.6	15.7	30.2	13.2	2.5	72	6.5	5.9	4.6	8.7
MZUZU	26.6	16.6	28.5	13.4	4.3	77	7.0	6.0	4.7	9.0
NKHATA BAY	30.9	20.9	34.4	18.0	2.5	72	7.1	6.7	5.3	9.1
KASUNGU ADD										
KASUNGU	28.5	18.0	31.0	16.5	2.5	69	8.5	6.8	5.3	10.0
LILONGWE ADD										
CHITEDZE	28.7	17.4	31.1	15.3	1.4	71	8.5	6.7	5.2	10.0
DEDZA	25.5	14.3	28.4	11.4	5.4	72	8.4	6.3	4.9	9.9
K I A	28.6	17.0	31.0	15.1	4.0	69	8.4	6.8	5.3	9.9
SALIMA ADD										
NKHOTAKOTA	29.4	19.6	32.3	18.7	1.8	70	6.7	6.4	5.1	8.9
SALIMA	30.5	21.9	33.6	19.8	4.7	71	8.1	7.1	5.7	9.7
MACHINGA ADD										
MAKOKA	28.7	17.1	31.4	13.0	1.8	70	8.9	6.8	5.3	10.2
MANGOCHI	32.3	21.4	35.1	18.6	2.5	61	8.0	7.3	5.8	9.6
MONKEY BAY	30.6	21.8	33.4	19.4	4.0	66	8.0	7.2	5.7	9.6
NTAJA	30.9	20.1	33.2	16.8	5.8	64	8.5	7.4	5.9	10.0
BLANTYRE ADD										
BVUMBWE	26.3	16.5	28.9	14.2	4.7	65	9.0	6.8	5.3	10.3
CHICHIRI	27.3	18.1	29.7	15.5	5.0	55	9.0	7.1	5.6	10.3
CHILEKA	29.5	19.2	32.3	16.3	9.7	59	9.1	7.8	6.2	10.4
MIMOSA	30.6	18.2	33.1	14.0	2.5	63	9.0	7.1	5.6	10.3
SHIRE VALLEY ADD										
NGABU	34.2	22.3	36.5	19.4	1.1	66	9.5	7.9	6.3	10.6

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) = mps x 3.6