Government of Malawi
Ministry of Forestry and Natural Resources

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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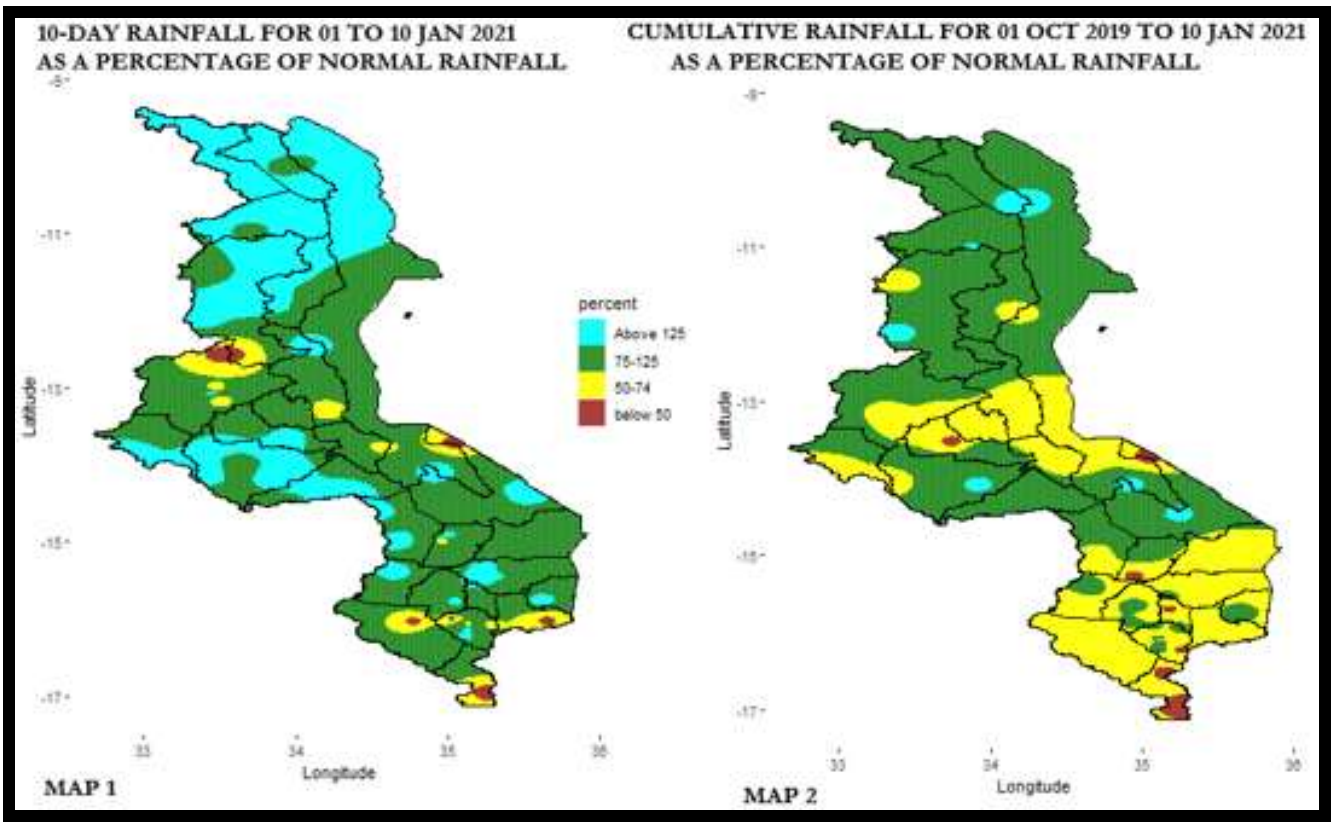
HIGHLIGHTS

- **Moderate to heavy rainfall amounts received countrywide …**
- **Major on-farm activities included weeding, fertilizer application and banking…**
- **Moderate to locally heavy rainfall expected during 11 to 20 January 2021 countrywide….**



1.0 WEATHER SUMMARY

During the period 01 to 10 January 2021, a combined influence of the Inter-tropical Convergence Zone (ITCZ) and Congo air mass resulted in fairly scattered rainfall activities with moderate to locally heavy rainfall amounts particularly over northern, central and southern highland areas of Malawi.

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1.1 RAINFALL SITUATION

During the first dekad of January 2021, scattered cases of moderate to locally heavy rainfall amounts were reported over the country. The cumulative ten-day rainfall amounts were generally higher than the long-term average rainfall amounts for the period over most areas of Malawi (green and light blue colours on Map1) with few cases of lower than long- term average rainfall amounts for the dekad mainly over southern and central areas of the country. Areas that recorded at least 120.0mm of rainfall included Masambanjati Agriculture in Thyolo which recorded 184.8mm, Nathenje Agriculture in Lilongwe recorded 182.5mm, Namwera Agriculture in Mangochi recorded 180.9mm, Baka Research station in Karonga recorded 179.7mm, Dzonzi Forest in Ntcheu recorded 170.9mm, Chileka in Lilongwe recorded 165.5mm, Ekwendeni Agriculture in Mzimba recorded 159.2mm, Mbawa Research station in Mzimba recorded 155.7mm, Neno Agriculture recorded 154.0mm, Karonga Meteorological station recorded 153.5mm, Chichiri Meteorological station in Blantyre recorded 145.3mm, Dwangwa Sugar Estate in Nkhotakota recorded 143.6mm, Thyolo Meteorological station recorded 142.0mm, Chikangawa Forest in Mzimba recorded 139.7mm, Vinthukutu Agriculture in Karonga recorded 138.2mm, Naminjiwa Agriculture in Phalombe recorded 137.6mm, Kasiya Agriculture in Lilongwe recorded 136.0mm, Dedza Meteorological station recorded 135.9mm, Mzuzu Meteorological station recorded 133.6mm, Kamuzu International Airport recorded 130.9mm, Mchinji Boma recorded 129.6mm, Toleza farm in Balaka recorded 129.5mm, Nkhotakota Meteorological station recorded 126.0mm, Mzimba Meteorological station recorded 125.9mm, Chancellor College in Zomba recorded 122.1mm, Chitipa Meteeorological station recorded 121.7 and Makoka Meteorological station in Zomba recorded 121.6mm. Details in Table1.

Map 2 indicates the spatial distribution of cumulative rainfall since the start of monitoring of the 2020/2021 rainfall season in October 2020, up to 10 January 2021. The map generally indicates that most southern, central Lakeshore areas and part of central plains have received below normal rainfall amounts (yellow and brown colours) with normal rainfall amounts over northern and some greater part of central areas of the country (green and light blue colours).

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over Malawi during the period 01 to 10 January 2021. Mean daily maximum temperatures had ranged from 24.9°C at Mzuzu Meteorological station to 37.0°C at Ngabu Meteorological station in Chikwawa, which also recorded the highest daily maximum temperature of 40.0°C. On the other hand, mean daily minimum temperatures had ranged from 15.7°C at Dedza Meteorological station to 25.2°C at Ngabu Meteorological station in Chikwawa. Details in Table 2.

1.4 WIND SPEED

During the period 01 to 10 January 2021 most parts of Malawi experienced light to moderate winds. Daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 0.7 km per hour at Bolero Meteorological station in Rumphi to 9.4 km per hour at Chichiri Meteorological station in Blantyre. Details in Table 2.

1.5 RELATIVE HUMIDITY

During the period 01 to 10 January 2021, air over Malawi was generally humid. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 66% at Ngabu Meteorological station to 85% at Mzuzu Meteorological station. Details are shown in Table 2.

1.6 SUNSHINE HOURS

Generally medium to long hours of bright sunshine were observed over Malawi during the period 01 to 10 January 2021. The daily average values had ranged from 6.0 hours per day at Mzuzu and Chichiri Meteorological stations to 8.5 hours per day at Ngabu Meteorological station and consequently the amount of Solar Radiation had ranged from 8.1 to 10.0 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was an improvement in spatial distribution of rainfall in most parts of the country. The main on-farm activities over Malawi included weeding, fertilizer application and banking. Majority of farmers in the southern and central regions were reported to be applying top dressing fertilizer as well as banking while majority of farmers in the north were weeding and applying basal fertilizer. Farmers in some parts were still accessing farm inputs under the Malawi Government's Affordable Inputs Programme (AIP).

For proper utilization of rain water during the 2020/2021 rainfall season, farmers are encouraged to adhere to principles of good agricultural practices including use of recommended seeds, moisture conservation, timely control of weeds, pests and diseases; and fertilizer/ manure application.

3. PROSPECTS FOR 2020/2021 RAINFALL SEASON

La Nina conditions are expected to continue influencing the rainfall season over Malawi. Global models are projecting that these conditions are likely to persist to the end of the 2020/2021 rainfall season. Based on these expectations, the rainfall forecast for Malawi during the second half of the 2020/2021 season is that:

> **"During January to March 2021, most areas in the south, center and the north are expected to receive normal to above-normal rainfall amounts. However, pockets of dry conditions are expected mostly over south and center"**

At national level, there are higher chances of normal rainfall amounts over most parts.

4. OUTLOOK FOR 11-20 JANUARY 2021

Models for short and medium range forecasts indicate high chance of rainfall activities countrywide during second dekad of January 2021.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 01 TO 10 JANUARY 2021

ADD	STATION NAME	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL EXPECTED RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	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.	179.7	66.1	272	7	349.9	322.3	109
	Chitipa Met	121.7	71.2	171	8	286.2	332.3	86
	Karonga Met.	153.5	63.0	244	8	299.3	276.4	108
	Lupembe	48.5	62.6	77	3	213.5	226.4	94
	Vinthukutu Agric	138.2	72.5	191	7	438.8	313.4	140
MZUZU	Bolero Met	71.6	62.6	114	8	179.5	238.2	75
	Bwengu Agric.	118.8	63.8	186	8	239.4	273.7	87
	Chikangawa forest	139.7	82.4	170	10	347.2	368.8	94
	Chintheche Agric	110.4	107.7	103	5	297.4	481.0	62
	Ekwendeni Agric.	159.2	86.3	184	8	326.5	350.1	93
	Euthini Agric.	88.5	72.9	121	6	154.7	296.6	52
	Mbawa Res. Stn	155.7	76.3	204	8	453.5	318.2	143
	Mzimba Met	125.9	92.7	136	7	293.1	336.6	87
	Mzuzu Met.	133.6	66.6	201	8	301.8	337.8	89
	NkhataBay Met.	88.3	89.9	98	8	326.8	409.2	80
	Rumphi Boma	90.0	64.5	140	8	315.3	245.6	128
	Zombwe Agric	107.6	68.6	157	5	226.0	265.2	85
KASUNGU	Dowa Agric	107.2	70.6	152	7	305.0	312.0	98
	Kasungu Met	49.9	70.1	71	6	248.6	281.9	88
	Lisasadzi	54.4	77.2	70	6	218.5	321.1	68
	Mchinji Boma	129.6	83.0	156	8	273.1	427.8	64
	Mkanda Met	62.7	67.6	93	7	274.5	349.2	79
	Mponela Agric	78.9	68.0	116	4	115.6	282.1	41
	Mwimba Research	92.7	68.4	136	5	225.3	323.3	70
	Ntchisi Boma	52.3	93.3	56	7	244.8	434.5	56
LILONGWE	Chileka Namitete	165.5	86.1	192	3	274.4	384.6	71
	Chitedze Met.	67.9	68.9	99	5	291.9	321.0	91
	Dzonzi Forest	170.9	70.9	241	7	286.0	389.4	73
	K.I.A Met	130.9	72.7	180	6	344.4	295.4	117
	Kasiya Agric	136.0	87.3	156	4	345.1	419.5	82
	Mlangeni Njolomole	104.3	70.8	147	7	413.6	356.1	116
	Nathenje Agric	182.5	72.1	253	5	418.2	311.2	134
	Ntcheu - Nkhande	86.4	86.3	100	6	305.0	405.5	75
	Dedza RTC	135.9	75.4	180	8	381.4	346.9	110
SALIMA	Dwangwa Sugar Corp.	143.6	85.8	167	7	451.9	418.9	108
	Nkhotakota Met	126.0	108.8	116	7	262.2	423.0	62
	Salima Met	58.7	94.8	62	8	232.0	364.3	64
MACHINGA	Balaka Township	45.1	84.1	54	6	275.4	333.5	83
	Chancellor College	122.1	100.5	121	7	305.3	512.1	60
	Chingale Agric	89.9	70.4	128	6	202.7	362.6	56
	Mpilipili	33.6	91.9	37	6	110.7	346.7	32
	Makoka Met	121.6	76.4	159	7	379.0	379.4	100
	Mangochi Met.	62.3	54.2	115	6	271.8	210.7	129
	Monkey Bay Met.	83.0	49.1	169	8	294.4	199.4	148
	Namwera Agric	180.9	89.6	202	9	311.8	385.2	81
	Ntaja Met.	77.8	70.1	111	8	236.2	329.4	72
	Toleza Farm	129.5	64.8	200	3	395.0	338.3	117
	Zomba RTC	107.0	81.7	131	5	346.4	469.0	74
BLANTYRE	Bvumbwe Met.	95.2	80.2	119	8	418.6	416.5	101
	Chichiri Met.	145.3	88.2	165	8	366.0	666.2	55
	Chileka Airport	72.2	68.1	106	6	408.5	352.8	116
	Chiradzulu Agric	50.4	66.4	76	6	142.4	385.5	37
	Lujeri Tea Estate	52.7	135.4	39	7	432.8	813.6	53
	Masambanjati Agric	184.8	96.9	191	7	537.8	513.9	105
	Mpemba Vet	83.2	87.5	95	6	421.2	456.5	92
	Mwanza Boma	72.6	73.5	99	4	284.0	401.6	71
	Naminjiwa Agric	137.6	76.2	181	7	418.4	373.3	112
	Neno Agric	154.0	96.0	160	5	324.2	415.2	78
	Satemwa Tea Est. No.1	85.2	75.6	113	7	422.3	417.4	101
	Thuchila Agric	63.7	67.7	94	7	300.5	331.5	91
	Thyolo Boma	52.7	82.5	64	4	196.8	458.5	43
	Thyolo Met	142.0	80.2	177	4	488.4	433.7	113
	Zoa Tea Est.	54.4	69.9	78	3	168.3	490.1	34
SHIRE VALLEY	Chikwawa Boma	27.2	66.8	41	1	193.0	326.7	59
	Kasinthula Res. Stn.	43.9	62.9	70	5	151.6	291.5	52
	Makhanga Met	52.1	62.2	84	5	131.3	320.6	41
	Nchalo Sucoma	63.1	53.1	119	2	183.0	255.9	72
	Ngabu Met.	60.8	61.3	99	2	200.2	312.3	64
	Nsanje Boma	3.6	75.7	5	1	109.5	430.9	25

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 JANUARY 2021

ADD /STATION NAME	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	25.5	17.9	30.5	16.5	5.0	81	6.4	6.2	5.0	8.7
KARONGA	29.6	20.1	31.9	18.2	4.7	73	6.5	6.8	5.6	8.8
MZUZU ADD										
BOLERO	26.9	19.1	30.9	18.4	0.7	76	7.1	4.8	3.4	9.2
MZIMBA	25.5	16.6	28.7	15.6	2.9	80	6.8	5.4	4.3	9.0
MZUZU	24.9	17.4	28.1	16.2	3.6	85	6.0	4.6	3.2	8.5
NKHATA BAY	28.6	21.3	31.7	20.0	2.2	83	6.8	5.7	4.6	9.0
KASUNGU ADD										
KASUNGU	26.4	19.2	31.0	17.5	6.1	77	7.2	6.4	5.3	9.3
LILONGWE ADD										
CHITEDZE	27.4	18.9	30.3	17.0	1.4	77	7.5	5.2	4.2	9.5
DEDZA	25.2	15.7	26.7	14.1	4.3	82	6.6	5.0	4.0	8.9
K I A	26.6	18.2	29.3	16.6	5.0	78	6.8	5.4	4.4	9.0
SALIMA ADD										
NKHOTAKOTA	26.3	20.5	31.2	19.0	2.2	80	7.5	6.2	5.0	9.5
SALIMA	30.6	22.0	32.9	20.5	6.8	76	7.0	5.6	4.6	9.2
MACHINGA ADD										
NTAJA	29.9	21.2	32.2	19.9	5.0	76	6.5	6.4	5.2	8.9
MAKOKA	28.4	19.0	30.7	17.0	3.2	77	6.5	5.8	4.6	8.9
MANGOCHI	31.8	22.8	34.6	20.6	2.5	79	7.9	6.3	5.1	9.8
MONKEY BAY	30.2	23.1	31.9	21.1	6.5	74	8.0	6.8	5.6	9.8
BLANTYRE ADD										
BVUMBWE	26.7	18.6	29.9	1.6	4.7	74	6.2	5.4	4.3	8.7
CHICHIRI	27.9	19.2	29.5	17.8	9.4	70	6.0	5.6	4.5	8.5
CHILEKA	29.1	20.9	31.4	19.2	9.0	69	6.8	6.8	5.6	9.1
MIMOSA	31.3	20.4	34.5	18.5	4.0	77	6.5	5.9	4.8	8.9
SHIRE VALLEY										
NGABU	37.0	25.2	40.0	22.5	2.9	66	8.1	6.5	5.3	10.0

Glossary of some terms on this table

- Eo = Potential Evaporation, Et = Potential Evapotranspiration and RH = Relative Humidity
- 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