



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 – 31 December 2021

Season: 2021/2022

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HIGHLIGHTS

- Dry and hot to very hot conditions experienced over Malawi ...
- Major agro-activity remained acquisition of farm inputs...
- Moderate to locally heavy rainfall expected during the dekad 01 to 10 January 2021...

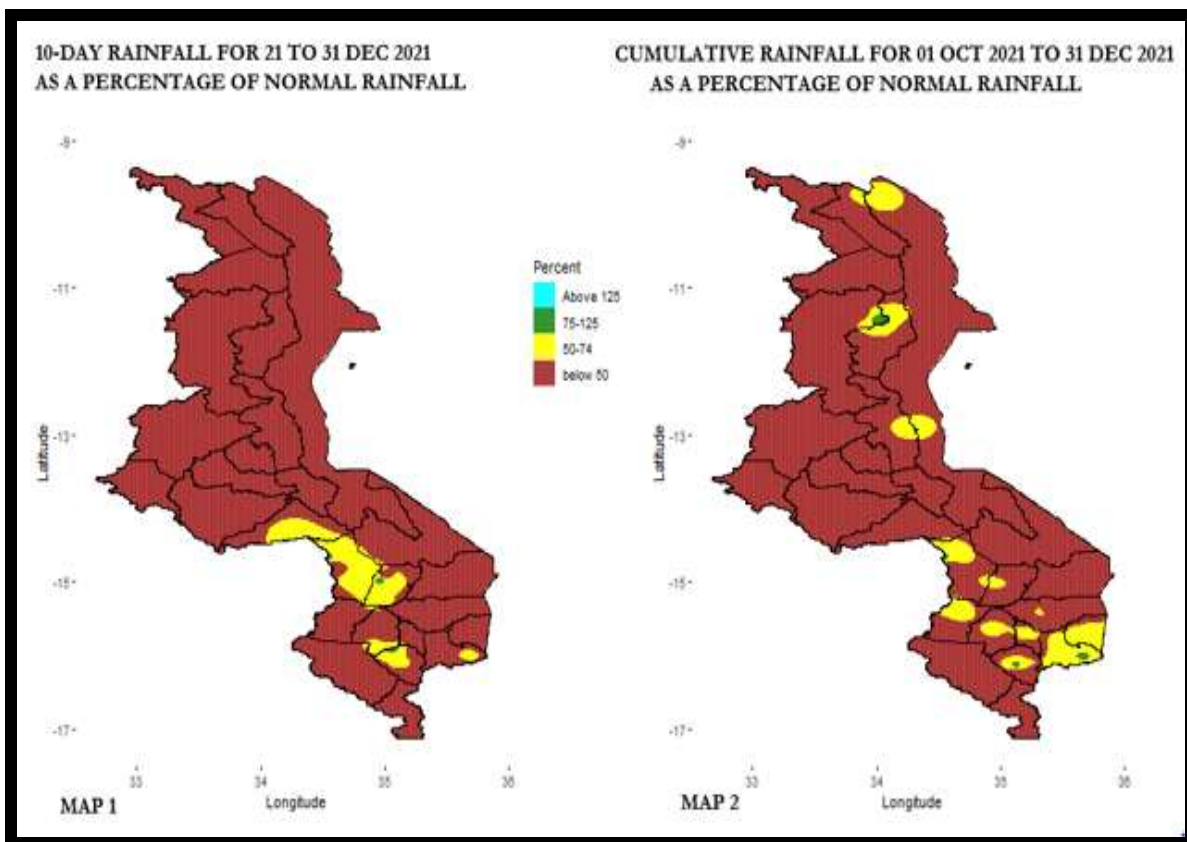


Figure 1: Observed rainfall dekadal and seasonal rainfall as percentage of normal for Malawi

1.0 WEATHER SUMMARY

During the period 21 to 31 December 2021, warm north easterly airflow was dominant over Malawi. This resulted in dry and hot to very hot conditions over the country.

1.1 RAINFALL SITUATION

During the last dekad of December 2021, dry conditions prevailed over the country. The cumulative ten-day rainfall amounts were lower than the long-term average rainfall amounts for the period over most areas of the country (brown colour in Map1) with near long-term average amounts over parts of Ntcheu, Dedza Balaka, Blantyre Thyolo and Mulanje districts (Yellow colour in Map1).

Cumulatively for the period under review, areas that recorded at least 40.0mm included Lujeri Tea estate in Mulanje district which recorded 78.2mm, Bvumbwe Meteorological station in Thyolo district recorded 57.6mm, Njolomole in Ntcheu recorded 50.5mm, Mpemba Veterinary in Blantyre recorded 48.9mm, Balaka Township recorded 48.7mm, Mulanje Boma recorded 47.3mm and Dedza Meteorological station recorded 43.4mm. More details in Table 1.

Map 2 indicates the spatial cumulative rainfall distribution since the start of monitoring of the 2021/2022 rainfall season in October 2021, up to 31 December 2021. The map indicates that most areas over Malawi have received outright below normal rainfall amounts (brown colour).

1.2 AIR TEMPERATURE

Malawi continued to experience hot to very hot conditions during the period 21 to 31 December 2021. Mean daily maximum temperatures had ranged from 22.9°C at Bvumbwe Meteorological station in Thyolo to 39.4°C at Ngabu Meteorological station in Chikwawa, with highest absolute maximum temperature of 44.0°C also recorded at Ngabu. Mean daily minimum temperatures had ranged from 10.6°C at Makoka Meteorological station in Zomba to 26.5°C at Ngabu Meteorological station. Details in Table 2.

1.3 WIND SPEEDS

During the period 21 to 31 December 2021 most parts of Malawi experienced 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 2.2 km per hour at Nkhotakota Meteorological station to 10.4 km per hour at Chileka International Airport in Blantyre. More details in Table 2.

1.4 RELATIVE HUMIDITY

During the period 21 to 31 December 2021, air over Malawi was relatively humid. Daily average relative humidity values recorded from various weather stations had ranged from 51% at Ngabu Meteorological station to 83% at Mzuzu Meteorological station in Mzimba district. Details as in Table 2.

1.5 SUNSHINE HOURS

Generally medium to long hours of bright sunshine were observed over Malawi during the period 21 to 31 December 2021. Daily average values had ranged from 6.6 hours per day at Mzuzu Meteorological station to 10.4 hours per day at Salima Meteorological station and consequently the amount of Solar Radiation had ranged from 8.8 to 11.4 cal/cm²/day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, dry conditions prevailed over the country. The dry conditions led to water stressing of already germinated crops particularly over Southern half of Malawi, as well as delayed planting for farmers in the northern half of the country.

The main agro-activities during the period under review was acquisition of farm inputs under the Malawi Government's Affordable Inputs Programme (AIP) and other initiatives.

3. PROSPECTS FOR 2021/2022 RAINFALL SEASON

La Nina conditions have been established over eastern-central equatorial Pacific Ocean. Global models are projecting that these conditions are likely to persist throughout the 2021/2022 rainfall season. The rainfall forecast for the 2021/2022 season is that:

“During October to December 2021, most of the southern and central areas are expected to receive normal to below-normal rainfall amounts while most of the northern areas are expected to receive normal to above-normal rainfall amounts.

During January to March 2022, most areas in the south, center and the north are expected to receive normal to above-normal rainfall amounts.”

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

4. OUTLOOK FOR 01-10 JANUARY 2022

Models for short and medium range forecasts indicate a high chance of rainfall activities over Malawi during the period 01 to 10 January 2022. The anticipated dekadal rainfall amounts are likely to be within the normal to above normal categories of the historical dekadal values as shown in figure 2 below.

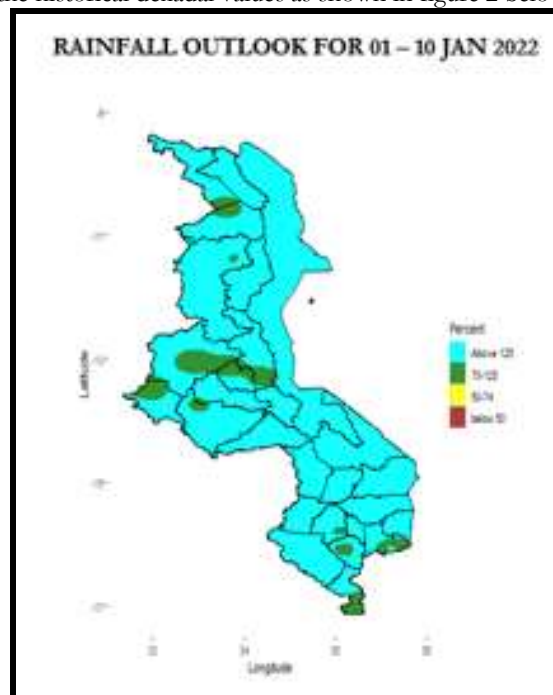


Figure 2: Dekadal rainfall outlook for Malawi as percentage of normal rainfall

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 31 DECEMBER 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.	0.0	73.9	0	0	88.0	256.2	34
	Karonga Met.	25.6	63.0	41	2	135.0	213.4	63
MZUZU	Bolero Met	0.5	58.4	1	1	21.9	175.6	12
	Bwengu Agric.	6.9	62.9	11	1	43.7	209.9	21
	Chikangawa forest	29.6	77.2	38	1	131.4	286.4	46
	Ekwendeni Agric.	0.0	35.8	0	0	113.1	263.8	43
	Mbawa Res. Stn	2.3	71.0	3	1	70.8	241.9	29
	Mzimba Met	0.0	69.6	0	0	54.5	243.9	22
	Mzuzu Met.	4.1	63.1	6	1	203.6	271.2	75
	NkhataBay Met.	2.7	76.0	4	1	71.3	319.3	22
Rumphi Boma	7.0	67.2	10	1	21.8	181.1	12	
KASUNGU	Dowa Agric	20.0	71.2	28	2	66.4	241.4	28
	Kasungu Met	0.5	54.0	1	1	25.8	211.8	12
	Lisasadzi	0.0	66.8	0	0	40.7	243.9	17
	Malomo Agric	0.0	53.2	0	0	73.0	188.0	39
	Mchinji Boma	32.3	89.8	36	3	83.0	344.8	24
	Mkanda Met	0.0	78.8	0	0	29.7	281.6	11
	Mwimba Research	0.0	71.8	0	0	104.0	254.9	41
	Ntchisi Boma	1.4	109.8	1	1	5.8	341.2	2
LILONGWE	Chitedze Met.	7.8	70.5	11	1	73.4	252.1	29
	Dedza Met	43.4	68.6	63	3	98.6	253.7	39
	K.I.A Met	6.2	72.1	9	1	9.9	222.7	4
	Mlangeni Njolomole	50.5	64.3	79	2	269.5	285.3	94
	Nathenje Agric	0.0	63.6	0	0	24.0	239.1	10
	Ntcheu - Nkhande	4.0	87.6	5	1	73.2	319.2	23
SALIMA	Dwangwa Sugar	27.9	85.6	33	3	71.8	333.1	22
	Lifuwu	14.1	82.2	17	2	14.1	259.3	5
	Nkhotakota Met	24.6	94.1	26	3	212.0	314.2	67
	Salima Met	9.4	84.0	11	2	103.8	269.5	39
MACHINGA	Balaka Township	48.7	52.4	93	2	177.5	249.4	71
	Chancellor College	39.3	94.3	42	2	156.7	411.6	38
	Chikweo Agric.	27.1	74.6	36	2	112.3	303.2	37
	Chingale Agric	19.1	68.6	28	2	97.6	292.2	33
	Makoka Met	16.0	77.9	21	3	129.2	303.0	43
	Mangochi Met.	18.4	39.2	47	3	34.6	156.5	22
	Monkey Bay Met.	24.0	53.4	45	2	65.5	150.3	44
	Namwera Agric	2.1	72.7	3	2	58.1	295.6	20
	Ntaja Met.	2.2	69.4	3	1	33.3	259.3	13
	Phalula Agric	29.0	56.9	51	3	98.6	272.4	36
BLANTYRE	Toleza Farm	17.2	71.1	24	3	124.1	273.5	45
	Zomba RTC	35.4	83.4	42	3	203.3	387.3	52
	Bvumbwe Met.	57.6	61.9	93	4	156.0	336.3	46
	Chichiri Met.	8.7	104.4	8	2	153.3	578.0	27
	Chileka Airport	21.9	57.7	38	4	189.7	284.7	67
	Chiradzulu Agric	3.8	72.7	5	1	161.1	319.1	50
	Lujeri Tea Estate	78.2	125.3	62	4	784.5	678.2	116
	Masambanjati Agric	20.4	100.8	20	4	149.2	417.0	36
	Mimosa Met.	30.5	76.5	40	4	281.4	464.0	61
	Mpemba Vet	48.9	77.0	64	3	145.2	369.0	39
	Mulanje Boma	47.3	98.4	48	1	343.1	595.3	58
	Mwanza Boma	0.0	61.2	0	0	75.7	328.1	23
	Neno Agric	6.8	71.9	9	1	187.8	319.2	59
	Thuchila Agric	0.0	64.2	0	0	115.6	263.8	44
Thyolo Met	52.4	71.4	73	4	271.7	353.5	77	
Zoa Tea Est.	10.2	78.3	13	2	50.0	420.2	12	
SHIRE VALLEY	Chikwawa Boma	0.0	54.7	0	0	97.8	259.9	38
	Makhanga Met	8.3	62.2	13	1	55.1	258.4	21
	Nchalo Sucoma	17.3	43.0	40	3	61.6	202.8	30
	Ngabu Met.	26.3	61.0	43	3	84.6	251.0	34
Nsanje Boma	20.0	65.0	31	1	80.2	355.2	23	

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 31 DECEMBER 2021

ADD/STATION NAME	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND (Km/Hr)	RH (%)	SUN SHINE (Hrs)	Eo mm per day	Et mm per day	RADIATION cal cm ⁻² p/day
KARONGA ADD										
KARONGA	34.9	21.6	39.3	18.7	5.0	77.0	9.2	8.2	7.3	10.5
MZUZU ADD										
BOLERO	33.8	21.9	35.8	19.7	3.6	76.0	8.1	7.8	6.4	9.8
MZIMBA	31.4	18.0	33.6	15.4	5.0	77.0	7.4	6.7	5.8	9.4
MZUZU	29.1	16.7	31.9	14.4	4.3	83.0	6.6	6.6	5.7	8.8
NKHATA BAY	35.9	21.0	37.4	19.0	2.9	80.0	7.9	7.7	6.5	9.7
KASUNGU ADD										
KASUNGU	32.8	20.9	35.5	18.6	9.4	68.0	7.9	7.5	6.0	9.7
LILONGWE ADD										
CHITEDZE	33.0	21.3	36.5	19.4	3.2	71.0	8.3	8.0	7.5	10.0
DEDZA	28.5	17.9	31.2	15.9	6.1	73.0	6.9	7.9	6.0	9.1
K I A	32.4	19.4	35.1	18.5	7.6	75.0	8.2	7.8	6.8	9.9
SALIMA ADD										
NKHOTAKOTA	34.0	22.2	36.8	18.4	2.2	72.0	9.8	9.6	8.7	11.0
SALIMA	35.4	25.4	38.4	22.5	7.9	68.0	10.4	10.2	9.4	11.4
MACHINGA ADD										
NTAJA	35.3	23.4	38.9	20.9	10.1		7.7	7.8	6.3	9.7
MAKOKA	31.6	10.6	34.4	18.8	4.3	76.0	7.9	7.6	6.4	9.8
MANGOCHI	37.0	25.3	39.2	22.7	6.5	68.0	10.1	9.8	8.1	11.2
MONKEY BAY	35.3	25.5	37.1	23.0	6.8	61.0	9.8	9.8	8.2	11.0
BLANTYRE ADD										
BVUMBWE	22.9	19.6	33.3	17.1	6.5	66.0	7.4	6.8	5.4	9.4
CHICHIRI	31.0	20.6	33.2	17.9	4.0	71.0	7.6	7.4	5.8	9.6
CHILEKA	27.5	18.3	36.8	20.5	10.4	60.0	9.9	9.1	7.5	11.1
MIMOSA	33.1	19.1	37.0	19.6	4.3	60.0	7.5	7.8	6.4	9.5
SHIRE VALLEY										
NGABU	39.4	26.5	44.0	24.0	4.3	51.0	10.2	9.9	8.3	11.3

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