



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

Period: 21 – 30 November 2021

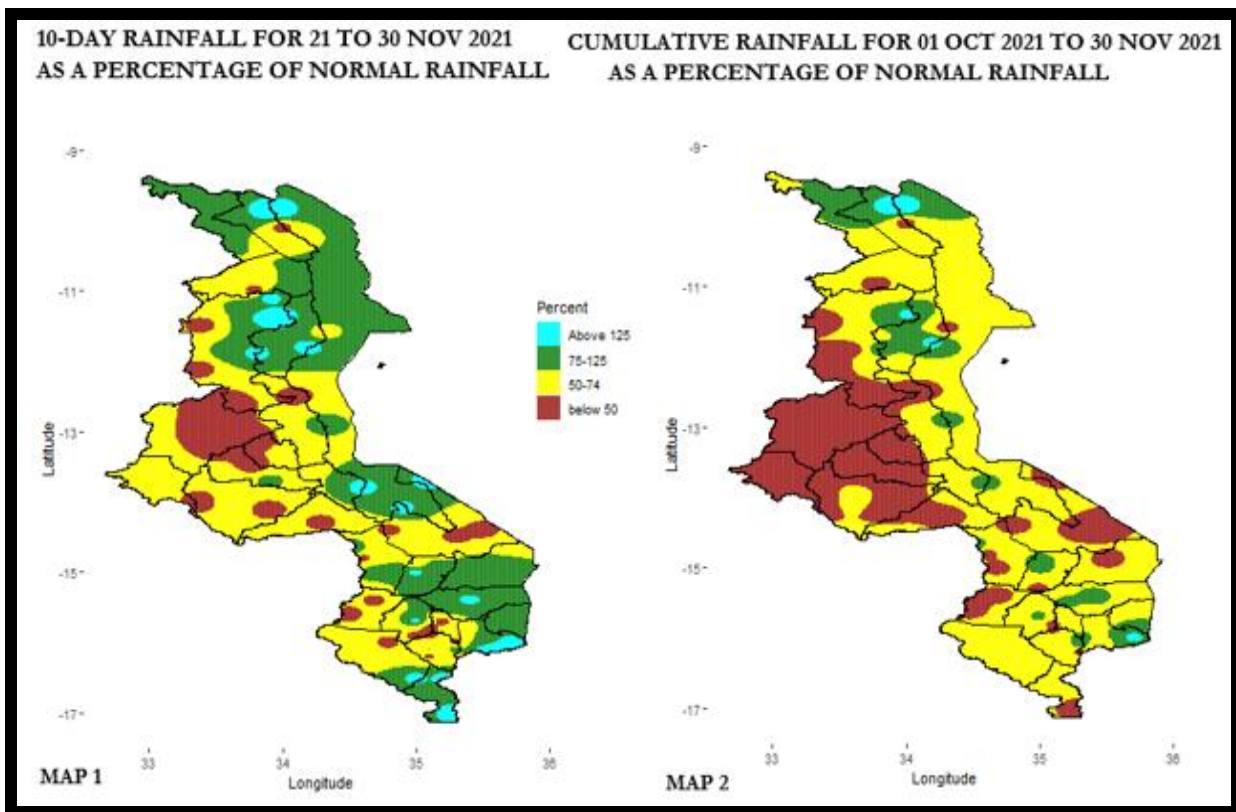
Season: 2021/2022

Issue No.06

Release date: 03 December 2021

## HIGHLIGHTS

- Moderate to locally heavy rainfall experienced over parts of Malawi ...
- Major agro-activities included land preparation, acquisition of farm inputs, and planting...
- Isolated moderate rainfall amounts expected during 01 to 10 December 2021...



## 1.0 WEATHER SUMMARY

During the period 21 to 30 November 2021, convergence of cool and moist south easterly air mass with warm north easterly airmass resulted in moderate to locally heavy rainfall experienced in some areas of the country.

### 1.1 RAINFALL SITUATION

During the last ten days of November 2020, isolated cases of moderate to locally heavy rainfall amounts were reported over some parts of the country. The cumulative ten-day rainfall amounts were generally higher than the long-term average rainfall amounts for the period over most southern highlands, northern lakeshore areas, parts of Salima and Nsanje district (green and cyan colours in Map1) with cases of lower than the long-term average rainfall amounts particularly over central areas of the country (yellow and brown colours in Map1).

Cumulatively for the period under review, areas that recorded at least 40.0mm of rainfall included Lujeri Tea estate in Mulanje which recorded 341.7mm, Chintcheche Agriculture in Nkhata Bay recorded 318.3mm, Mulanje Boma recorded 174.1mm, Mlangeni in Ntcheu recorded 142.5mm, Zomba Agriculture recorded 121.2mm, Mimosa Meteorological station in Mulanje recorded 109.4mm, Karonga Meteorological station recorded 95.5mm, Balaka Town recorded 87.8mm, Mzuzu Meteorological station recorded 86.0mm, Baka Research station in Karonga recorded 74.9mm, Chileka International Airport in Blantyre recorded 68.0mm, Chancellor College in Zomba recorded 67.8mm, Ekwendeni Agriculture in Mzimba recorded 63.2mm, Chikangawa Forest in Mzimba recorded 53.7mm, Nsanje Boma recorded 49.0mm, Satemwa Tea estate in Thyolo recorded 47.9mm, Salima Meteorological station recorded 45.1mm and Ngabu Meteorological station in Chikwawa recorded 43.3mm. 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 30 November 2021. The map generally indicates that most areas over Malawi have received below normal to normal rainfall amounts (yellow and brown colours) with isolated cases of normal to above normal rainfall amounts (green and cyan colours). This entails, Malawi has received generally normal to below rainfall amounts at this stage of the 2021/2022 rainfall season.

### 1.2 AIR TEMPERATURE

Malawi continued to experience hot to locally very hot conditions during the period 21 to 30 November 2021. Mean daily maximum temperatures had ranged from 26.3°C at Dedza Meteorological station to 35.5°C at Salima Meteorological station. However, highest absolute maximum temperature of 40.8°C was recorded at Ngabu Meteorological station in Chikwawa during the period under review. Mean daily minimum temperatures had ranged from 15.5°C at Mzuzu Meteorological station to 24.7°C at Monkey Bay Meteorological station in Mangochi. Details in Table 2.

### 1.3 WIND SPEEDS

During the period 21 to 30 November 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 Bolero Meteorological station in Rumphu district to 12.2 km per hour at Chileka International Airport in Blantyre. More details in Table 2.

### 1.4 RELATIVE HUMIDITY

During the period 21 to 30 November 2021, air over Malawi was relatively humid. Daily average relative humidity values recorded from various weather stations had ranged from 44% at Chitedze Meteorological station in Lilongwe to 68% at Mimosa and Mzuzu Meteorological stations in Mulanje and Mzimba districts respectively. 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 30 November 2021. Daily average values had ranged from 6.2 hours per day at Mzuzu and Dedza Meteorological stations to 9.1 hours per day at Ngabu Meteorological station and consequently the amount of Solar Radiation had ranged from 8.6 to 10.5 cal/cm<sup>2</sup>/day. For details see Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, the main on-farm activities over Malawi remained land preparation and planting mainly over southern areas, with some crops reportedly already germinated. Farmers were also accessing farm inputs under the Malawi Government's Affordable Inputs Programme (AIP).

## 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 DECEMBER 2021

Models for short and medium range forecasts indicate less chance of rainfall activities over Malawi during the period 01 to 10 December 2021. The suppressed rainfall conditions are likely to lead to water stressing for the crops that have already germinated.

TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 30 NOVEMBER 2021

ADD	STATION NAME	ACTUAL DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL EXPECTED RAINFALL (mm)	ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED RAINFALL)	RAINY DAYS $\geq 3$ mm	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.	74.9	31.7	236	1	74.9	42.9	175
	Karonga Met.	95.5	28.7	333	1	95.5	49.5	193
MZUZU	Bolero Met	9.4	20.6	46	3	13.1	44.0	30
	Bwengu Agric.	33.5	22.2	151	2	36.8	57.3	64
	Chikangawa forest	53.7	32.2	167	2	86.3	87.9	98
	Chintheche Agric	318.3	40.0	796	2	318.3	131.7	242
	Emfeni Agric	0.0	22.8	0	0	0.0	44.9	0
	Ekwendeni Agric.	63.2	12.1	522	2	92.4	102.9	90
	Euthini Agric.	0.0	26.4	0	0	0.0	60.2	0
	Lupembe	0.0	22.2	0	0	0.0	39.4	0
	Mbawa Res. Stn	1.0	25.4	4	1	4.5	70.2	6
	Mzimba Met	27.5	24.2	114	2	30.8	63.3	49
	Mzuzu Met.	86.0	30.5	282	4	149.0	107.4	139
KASUNGU	NkhataBay Met.	15.9	31.7	50	3	15.9	95.6	17
	Dowa Agric	28.4	24.0	118	2	28.4	57.8	49
	Kaluluma DTC	0.0	12.3	0	0	0.0	40.3	0
	Kasungu Met	0.0	25.3	0	0	0.1	52.9	0
	Lisasadzi	11.0	22.6	49	1	11.0	45.4	24
	Malomo Agric	0.0	21.2	0	0	0.0	43.7	0
	Mchinji Boma	26.6	40.0	67	2	40.2	113.4	35
	Mkanda Met	19.2	30.0	64	4	31.2	85.9	36
LILONGWE	Mponela Agric	11.3	28.9	39	1	11.3	63.4	18
	Chileka Namitete	0.0	39.6	0	0	0.0	99.9	0
	Chitedze Met.	22.1	32.5	68	2	49.4	86.0	57
	Dedza Met	14.4	30.0	48	3	20.8	71.9	29
	Dzonzi Forest	30.7	34.3	90	3	31.5	93.9	34
	Mlangeni Njolomole	142.5	29.9	477	1	162.0	89.8	180
	Nathenje Agric	14.0	29.0	48	1	24.0	73.6	33
SALIMA	Ntcheu - Nkhande	3.1	34.1	9	2	3.1	92.0	3
	Dwangwa Sugar Corp.	4.8	39.8	12	2	7.3	92.2	8
	Nkhotakota Met	30.6	25.5	120	2	42.7	55.9	76
MACHINGA	Salima Met	45.1	16.8	268	2	45.7	42.7	107
	Balaka Township	87.8	34.3	256	2	109.7	100.7	109
	Chancellor College	67.8	48.0	141	3	117.4	123.5	95
	Chingale Agric	28.6	36.2	79	2	59.1	88.7	67
	Mpilipili (Makanjila)	25.9	20.6	126	2	25.9	64.1	40
	Makoka Met	28.7	35.0	82	2	78.3	92.9	84
	Mangochi Met.	0.0	16.9	0	0	6.3	45.4	14
	Monkey Bay Met.	11.1	8.1	137	2	11.1	22.0	50
	Namwera Agric	1.5	32.8	5	1	9.3	94.2	10
	Nankumba Agric	0.0	27.2	0	0	0.0	63.3	0
	Ntaja Met.	30.4	29.6	103	3	31.1	73.8	42
	Phalula Agric	35.5	40.7	87	1	43.4	114.1	38
	Toleza Farm	14.4	23.2	62	2	74.6	82.6	90
BLANTYRE	Zomba RTC	121.2	46.5	261	2	121.2	110.5	110
	Bvumbwe Met.	17.6	43.7	40	2	52.5	128.6	41
	Chichiri Met.	6.0	75.9	8	2	68.5	301.6	23
	Chileka Airport	68.0	43.9	155	2	110.1	123.0	90
	Chiradzulu Agric	18.4	42.1	44	2	91.9	122.9	75
	Lujeri Tea Estate	341.7	67.8	504	3	480.3	316.2	152
	Masambanjati Agric	19.2	45.4	42	3	94.5	150.4	63
	Mimosa Met.	109.4	58.6	187	4	203.3	203.7	100
	Mpemba Vet	4.1	49.3	8	1	78.8	145.9	54
	Mulanje Boma	174.1	81.8	213	3	218.0	293.9	74
	Mwanza Boma	17.8	52.5	34	2	52.9	143.7	37
	Neno Agric	0.0	40.7	0	0	12.1	117.5	10
	Satemwa Tea Est. No.1	47.9	43.5	110	3	82.6	134.4	61
	Thuchila Agric	13.2	28.4	46	1	99.5	95.1	105
	Thyolo Boma	14.0	30.2	46	1	14.0	122.3	11
	Thyolo Met	39.2	44.7	88	1	206.6	143.6	144
	Zoa Tea Est.	24.6	48.6	51	1	39.8	168.7	24
SHIRE VALLEY	Chikwawa Boma	14.0	42.2	33	1	62.0	97.7	63
	Kasinthula Res. Stn.	16.7	20.4	82	1	80.9	80.4	101
	Makhanga Met	38.0	28.5	133	2	46.8	92.7	50
	Ngabu Met.	43.3	32.8	132	1	53.5	88.3	61
	Nsanje Boma	49.0	35.1	140	3	51.5	154.3	33

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 30 NOVEMBER 2021

ADD/STATION NAME	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEED (Km/Hr)	RH (%)	SUN SHINE (Hrs)	Eo mm per day	Et mm per day	RADIATION cal cm <sup>-2</sup> p/day
KARONGA ADD										
KARONGA	34.5	22.7	38.6	19.7	6.8	51	7.8	9.8	8.2	9.6
MZUZU ADD										
BOLERO	32.3	20.9	36.7	18.9	2.2	48	7.3	8.5	6.8	9.3
MZIMBA	30.3	17.7	35.2	16.3	7.2	54	6.7	8.8	7.2	8.9
MZUZU	28.7	15.5	33.3	12.4	6.1	68	6.2	7.8	6.3	8.6
NKHATA BAY	34.5	20.6	39.4	19.0	4.3	49	6.5	8.2	6.7	8.7
KASUNGU ADD										
KASUNGU	29.4	20.1	36.6	16.5	9.4	52	7.3	9.5	8.8	9.3
LILONGWE ADD										
CHITEDZE	30.9	18.4	35.5	15.5	3.2	44	7.3	8.3	6.7	9.3
DEDZA	26.3	16.0	31.0	12.1	4.7	61	6.2	7.8	6.3	8.6
SALIMA ADD										
NKHOTAKOTA	33.3	22.5	37.5	21.1	3.6	52	8.5	9.3	7.7	10.1
SALIMA	35.5	24.1	38.9	21.6	11.2	55	8.7	9.5	9.3	10.2
MACHINGA ADD										
NTAJA	32.8	21.6	37.7	18.2	9.4	55	6.9	9.3	8.7	9.1
MAKOKA	29.0	18.7	34.7	14.3	5.8	61	6.9	8.2	6.7	9.1
MANGOCHI	34.7	24.0	39.3	20.6	4.7	54	8.7	9.5	8.8	10.2
MONKEY BAY	33.4	24.7	38.3	22.0	9.0	52	8.5	9.7	9.0	10.1
BLANTYRE ADD										
BVUMBWE	26.4	17.8	31.6	13.6	8.6	67	6.5	8.9	7.5	8.8
CHICHIRI	28.0	18.7	32.7	15.5	4.3	65	6.7	8.0	6.5	8.9
CHILEKA	30.9	21.2	34.6	15.5	12.2	56	7.9	9.3	8.1	9.7
MIMOSA	30.4	19.0	35.0	15.0	5.0	68	6.8	8.8	7.3	9.0
SHIRE VALLEY ADD										
NGABU	35.2	24.0	40.8	20.5	5.0	63	9.1	10.6	9.2	10.5

**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