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 – 31 January 2022 | Season: 2021/2022 | Issue No.12

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## HIGHLIGHTS

- **Extreme wet conditions experienced over southern Malawi …**
- **Major on-farm activities included weeding, fertilizer application and banking…**
- **Moderate to locally heavy rainfall expected during the dekad 01 to 10 February 2022…**

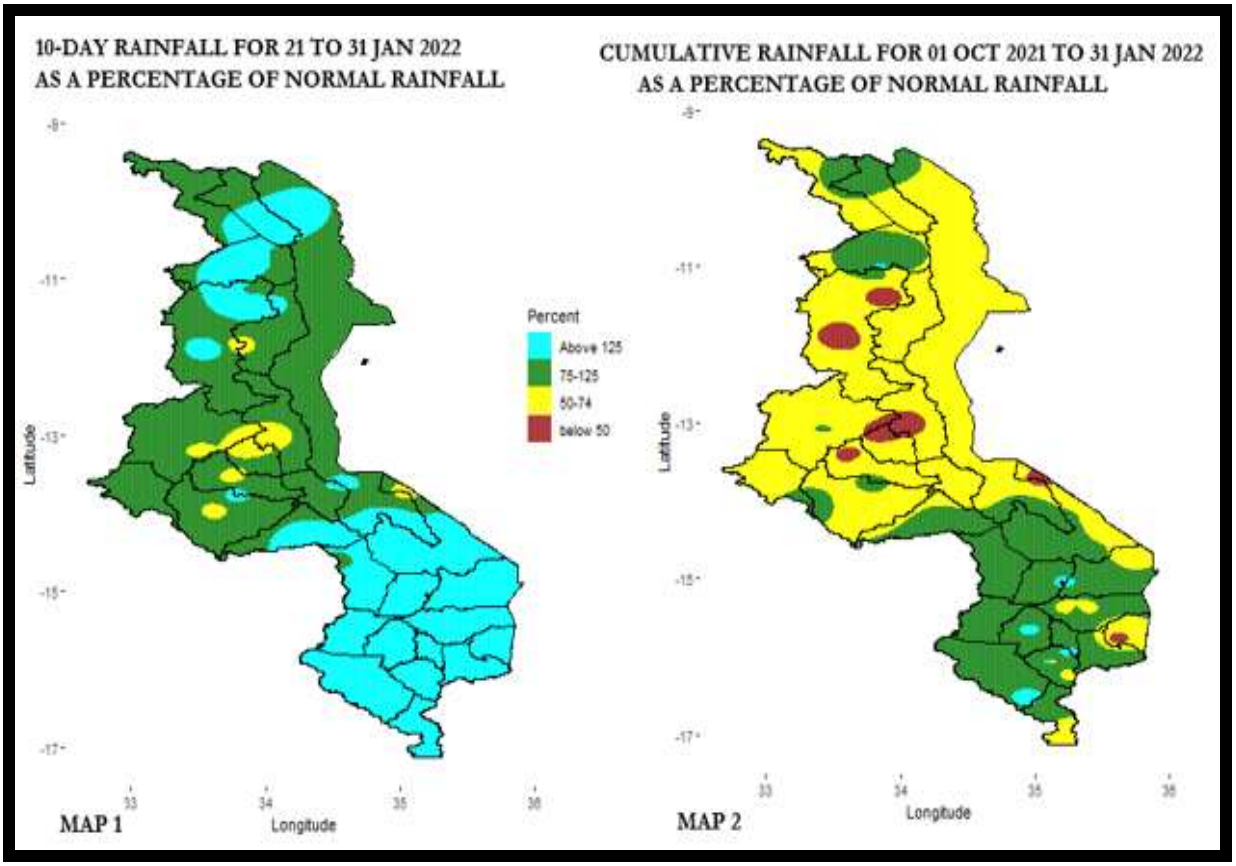


*Figure 1: Observed dekadal and seasonal rainfall as percentage of normal for Malawi*

## 1.0 WEATHER SUMMARY

During the period 21 to 31 January 2022, weather over Malawi was influenced by Tropical Cyclone ANA as well as Inter-Tropical Convergence Zone and Congo airmass. This resulted in extremely wet conditions over southern areas of the country while moderate to locally heavy rainfall amounts were received elsewhere.

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## 1.1 RAINFALL SITUATION

During the last dekad of January 2022, wet conditions prevailed over Malawi with extremely wet conditions over southern areas. The ten-day cumulative rainfall amounts were higher than the long-term average rainfall amounts for the period over some parts of northern and entire southern region of the country (represented by cyan colour in Map1) with near long-term dekadal average amounts over majority of northern and central areas (Green and yellow colours in Map1).

Cumulatively for the period under review, areas that recorded at least very high dekadal rainfall amounts included Mulanje Boma which recorded 552.5mm, Masambanati Agriculture in Thyolo recorded 479.4mm, Chileka International Airport recorded 418.7mm, Thyolo Boma recorded 397.7mm, Bvumbwe Meteorological station recorded 396.4mm, Mimosa Meteorological station recorded 388.9mm, Satemwa Tea estate recorded 344.7mm, Chikwawa Boma recorded 329.6mm and Chichiri Meteorological station recorded 321.2. 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 January 2022. The map indicates that most areas over central and northern Malawi have received normal to below rainfall amounts (yellow colour) with majority of southern areas having received normal to above normal rainfall amounts. (green colour)

## 1.2 AIR TEMPERATURE

Malawi experienced warm to hot conditions during the period 21 to 31 January 2022. Mean daily maximum temperatures had ranged from 23.2°C at Dedza Meteorological station to 32.0°C at Ngabu Meteorological station in Chikwawa. Mean daily minimum temperatures had ranged from 14.9°C at Dedza Meteorological station to 23.8°C at Ngabu Meteorological station. Details in Table 2.

## 1.3 WIND SPEEDS

During the period under review, most parts of Malawi experienced light to strong wind speeds. Daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 2.9 km per hour at Ngabu and Mangochi Meteorological stations to 14.0 km per hourt Chileka International Airport in Blantyre. More details in Table 2.

## 1.4 RELATIVE HUMIDITY

During the period 21 to 31 January 2022, air over Malawi was humid. Daily average Relative Humidity values recorded from various weather stations had ranged from 63% at Kasungu Meteorological station to 86% at Chileka, Bvumbwe and Monkey Bay Meteorological stations. 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 January 2022. Daily average values had ranged from 6.5 hours per day at Dedza, Bvumbwe and Mimosa Meteorological stations to 9.8 hours per day at Salima Meteorological station. Consequently, the amount of Solar Radiation had ranged from 8.8 to 9.8 cal/cm²/day. For details see Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the period under review, there was continued good spatial and temporal distribution of rainfall in most central and northern areas of the country with extremely wet conditions over southern areas of the country. The extreme wet conditions over southern areas resulted in flooding over majority of the southern districts with reported cases of crop wash-aways, destruction of property and death of livestock as well as human beings.

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 fertilizers as well as banking while majority of farmers in the north were reported to be weeding and applying basal fertilizer.

For proper utilization of rain water during the 2021/2022 rainfall season, farmers are encouraged to adhere to principles of good agricultural practices including use of moisture conservation, timely control of weeds, pests and diseases; and fertilizer/ manure application.

## 3. PROSPECTS FOR 2021/2022 RAINFALL SEASON

La Nina conditions still exist over eastern-central equatorial Pacific Ocean. Global models are projecting that these conditions are likely to persist up to end of the 2021/2022 rainfall season. The rainfall forecast for the sub season JFM is that:

**"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 FEBRUARY 2022

Models for short and medium range forecasts indicate a high chance of sustained rainfall activities over central and northern Malawi due to the continued influence of the Inter Tropical Convergence Zone, ITCZ and Congo airmass. 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.

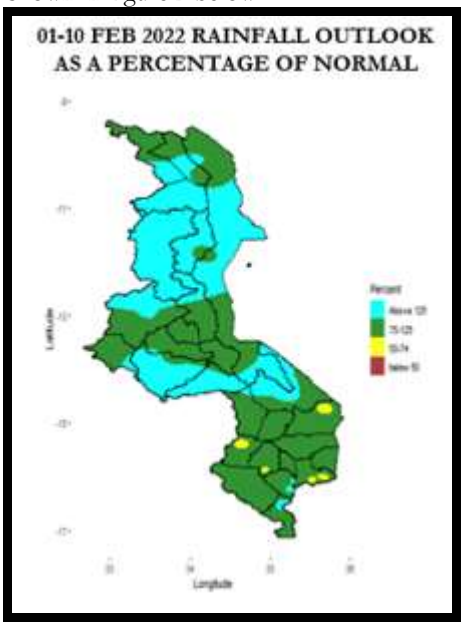


*Figure 2: Dekadal rainfall outlook for Malawi as percentage of normal rainfall*

**TABLE 1: 10-DAY RAINFALL TOTALS AT SELECTED STATIONS FOR 21 TO 31 JANUARY 2022**

| 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 | Karonga Met. | 46.8 | 56.0 | 84 | 9 | 323.5 | 387.7 | 83 |
| | Lupembe | 79.5 | 56.7 | 140 | 6 | 178.2 | 332.4 | 54 |
| MZUZU | Bwengu Agric. | 60.6 | 74.0 | 82 | 5 | 237.3 | 406.9 | 58 |
| | Chikangawa forest | 51.0 | 73.1 | 70 | 8 | 314.0 | 525.4 | 60 |
| | Ekwendeni Agric. | 65.9 | 41.2 | 160 | 4 | 198.9 | 444.9 | 45 |
| | Mzimba Met | 94.8 | 68.6 | 138 | 9 | 221.8 | 476.3 | 47 |
| | Rumphi Boma | 120.0 | 70.0 | 171 | 6 | 487.2 | 373.5 | 130 |
| KASUNGU | Kasungu Met | 74.9 | 70.0 | 107 | 8 | 298.3 | 414.2 | 72 |
| | Lisasadzi | 52.3 | 80.9 | 65 | 5 | 261.9 | 469.7 | 56 |
| | Malomo Agric | 32.6 | 55.1 | 59 | 3 | 105.6 | 434.8 | 24 |
| | Madisi Agric | 59.3 | 74.3 | 80 | 3 | 99.7 | 446.1 | 22 |
| | Mponela Agric | 42.2 | 77.2 | 55 | 6 | 266.7 | 427.4 | 62 |
| | Mwimba Research | 69.0 | 71.1 | 97 | 6 | 366.1 | 476.8 | 77 |
| | Ntchisi Boma | 55.8 | 103.3 | 54 | 7 | 225.9 | 636.0 | 36 |
| LILONGWE | Chileka Namitete | 100.4 | 86.9 | 116 | 2 | 423.0 | 532.8 | 79 |
| | Chitedze Met. | 57.1 | 79.2 | 72 | 5 | 331.2 | 479.7 | 69 |
| | Dedza Met | 155.4 | 102.1 | 152 | 9 | 437.1 | 507.6 | 86 |
| | K.I.A Met | 86.9 | 69.5 | 125 | 7 | 356.8 | 452.1 | 79 |
| | Mlangeni Njolomole | 76.6 | 73.6 | 104 | 5 | 424.1 | 512.1 | 83 |
| | Nathenje Agric | 97.0 | 90.8 | 107 | 6 | 298.4 | 459.7 | 65 |
| | Ntcheu - Nkhande | 245.0 | 84.6 | 290 | 3 | 450.6 | 587.7 | 77 |
| SALIMA | Dwangwa Sugar Corp. | 67.6 | 84.7 | 80 | 6 | 294.9 | 585.2 | 50 |
| | Lifuwu | 133.5 | 100.7 | 133 | 6 | 343.3 | 573.3 | 60 |
| | Salima Met | 95.2 | 99.2 | 96 | 7 | 383.0 | 580.7 | 66 |
| MACHINGA | Balaka Township | 224.6 | 102.2 | 220 | 5 | 508.3 | 505.9 | 100 |
| | Chancellor College | 229.3 | 103.4 | 222 | 5 | 386.0 | 704.9 | 55 |
| | Chikweo Agric. | 144.8 | 98.7 | 147 | 4 | 389.0 | 595.3 | 65 |
| | Chingale Agric | 186.9 | 90.7 | 206 | 5 | 373.2 | 517.7 | 72 |
| | Liwonde Township | 296.2 | 71.4 | 415 | 6 | 536.8 | 426.5 | 126 |
| | Mpilipili | 56.1 | 78.9 | 71 | 3 | 116.4 | 491.5 | 24 |
| | Mangochi Met. | 127.2 | 70.7 | 180 | 6 | 263.8 | 346.0 | 76 |
| | Monkey Bay Met. | 95.1 | 74.0 | 129 | 8 | 276.3 | 327.4 | 84 |
| | Naminjiwa Agric | 209.7 | 96.5 | 217 | 3 | 271.9 | 554.6 | 49 |
| | Namwera Agric | 149.6 | 100.3 | 149 | 6 | 390.8 | 572.1 | 68 |
| | Ntaja Met. | 177.5 | 91.4 | 194 | 5 | 445.1 | 496.0 | 90 |
| | Phalula Agric | 286.5 | 74.1 | 387 | 6 | 538.8 | 481.1 | 112 |
| | Toleza Farm | 218.0 | 90.3 | 241 | 4 | 458.0 | 499.4 | 92 |
| | Zomba RTC | 243.3 | 107.3 | 227 | 4 | 576.0 | 667.0 | 86 |
| BLANTYRE | Bvumbwe Met. | 396.4 | 106.7 | 372 | 9 | 677.5 | 607.2 | 112 |
| | Chichiri Met. | 321.2 | 53.8 | 597 | 8 | 727.0 | 794.8 | 91 |
| | Chileka Airport | 418.7 | 81.3 | 515 | 5 | 805.6 | 498.0 | 162 |
| | Masambanjati Agric | 479.4 | 93.9 | 511 | 6 | 831.7 | 690.0 | 121 |
| | Mimosa Met. | 388.9 | 117.1 | 332 | 8 | 824.1 | 772.6 | 107 |
| | Mulanje Boma | 552.5 | 145.4 | 380 | 7 | 910.4 | 957.5 | 95 |
| | Mwanza Boma | 238.2 | 94.4 | 252 | 5 | 550.8 | 565.9 | 97 |
| | Neno Agric | 253.8 | 103.0 | 246 | 4 | 765.4 | 613.9 | 125 |
| | Satemwa Tea Est. No.1 | 344.7 | 90.3 | 382 | 9 | 749.7 | 569.2 | 132 |
| | Thuchila Agric | 278.9 | 83.9 | 332 | 7 | 647.6 | 483.0 | 134 |
| | Thyolo Boma | 397.7 | 91.2 | 436 | 9 | 411.7 | 606.3 | 68 |
| | Zoa Tea Est. | 276.8 | 101.5 | 273 | 6 | 467.3 | 636.6 | 73 |
| SHIRE VALLEY | Chikwawa Boma | 329.6 | 74.5 | 442 | 7 | 560.0 | 462.4 | 121 |
| | Nchalo Sucoma | 166.3 | 50.7 | 328 | 6 | 317.0 | 364.7 | 87 |
| | Ngabu Met. | 256.4 | 61.2 | 419 | 5 | 623.3 | 429.3 | 145 |
| | Nsanje Boma | 172.1 | 84.8 | 203 | 4 | 415.5 | 613.5 | 68 |

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 31 JANUARY 2022**

| 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 | RADIA-TION cal $cm^{-2}$ p/day |
|---|---|---|---|---|---|---|---|---|---|---|
| KARONGA ADD | | | | | | | | | | |
| KARONGA | 30.2 | 20.8 | 33.0 | 19.4 | 4.7 | 79 | 7.5 | 6.5 | 5.2 | 9.5 |
| MZUZU ADD | | | | | | | | | | |
| MZIMBA | 25.5 | 17.0 | 27.5 | 16.1 | 3.6 | 83 | 6.8 | 5.7 | 4.5 | 9.0 |
| KASUNGU ADD | | | | | | | | | | |
| KASUNGU | 29.6 | 18.3 | 28.8 | 17.1 | 7.6 | 63 | 7.3 | 5.5 | 4.4 | 9.3 |
| LILONGWE ADD | | | | | | | | | | |
| CHITEDZE | 24.2 | 18.0 | 29.5 | 16.5 | 3.2 | 78 | 7.2 | 5.6 | 4.4 | 9.3 |
| DEDZA | 23.2 | 14.9 | 26.2 | 12.6 | 4.7 | 84 | 6.5 | 5.3 | 4.1 | 8.8 |
| K I A | 25.7 | 17.2 | 27.4 | 15.4 | 7.6 | 76 | 7.6 | 5.6 | 4.4 | 9.5 |
| SALIMA ADD | | | | | | | | | | |
| SALIMA | 28.4 | 22.1 | 30.5 | 20.8 | 9.0 | 77 | 8.1 | 6.2 | 5.0 | 9.8 |
| MACHINGA ADD | | | | | | | | | | |
| NTAJA | 28.0 | 22.6 | 30.8 | 18.9 | 6.8 | 77 | 6.8 | 6.1 | 4.9 | 9.0 |
| MANGOCHI | 29.8 | 23.1 | 32.1 | 21.3 | 2.9 | 78 | 7.7 | 7.7 | 6.4 | 9.6 |
| MONKEY BAY | 29.0 | 22.2 | 30.9 | 21.4 | 5.8 | 86 | 7.8 | 7.0 | 5.7 | 9.7 |
| BLANTYRE ADD | | | | | | | | | | |
| BVUMBWE | 23.7 | 17.7 | 26.1 | 15.1 | 6.8 | 86 | 6.5 | 5.0 | 4.0 | 8.8 |
| CHICHIRI | 24.6 | 17.7 | 24.6 | 17.7 | 4.3 | 81 | 6.6 | 5.3 | 4.2 | 8.9 |
| CHILEKA | 29.6 | 21.9 | 29.0 | 21.1 | 14.0 | 86 | 6.8 | 6.3 | 5.1 | 9.0 |
| MIMOSA | 28.4 | 19.2 | 30.5 | 17.4 | 4.3 | 78 | 6.5 | 5.7 | 4.5 | 8.8 |
| SHIRE VALLEY ADD | | | | | | | | | | |
| NGABU | 32.0 | 23.8 | 34.4 | 22.4 | 2.9 | 74 | 7.9 | 7.7 | 6.2 | 9.8 |

**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