Government of Malawi
Ministry of Natural Resources and Climate Change

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 2023 Season: 2023/2024 Issue No.09

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HIGHLIGHTS

- **Normal to above dekadal rainfall amounts experienced over Malawi…**
- **Weeding and basal dressing in progress …**
- **Wet conditions anticipated over most parts during the first dekad of January 2024…**

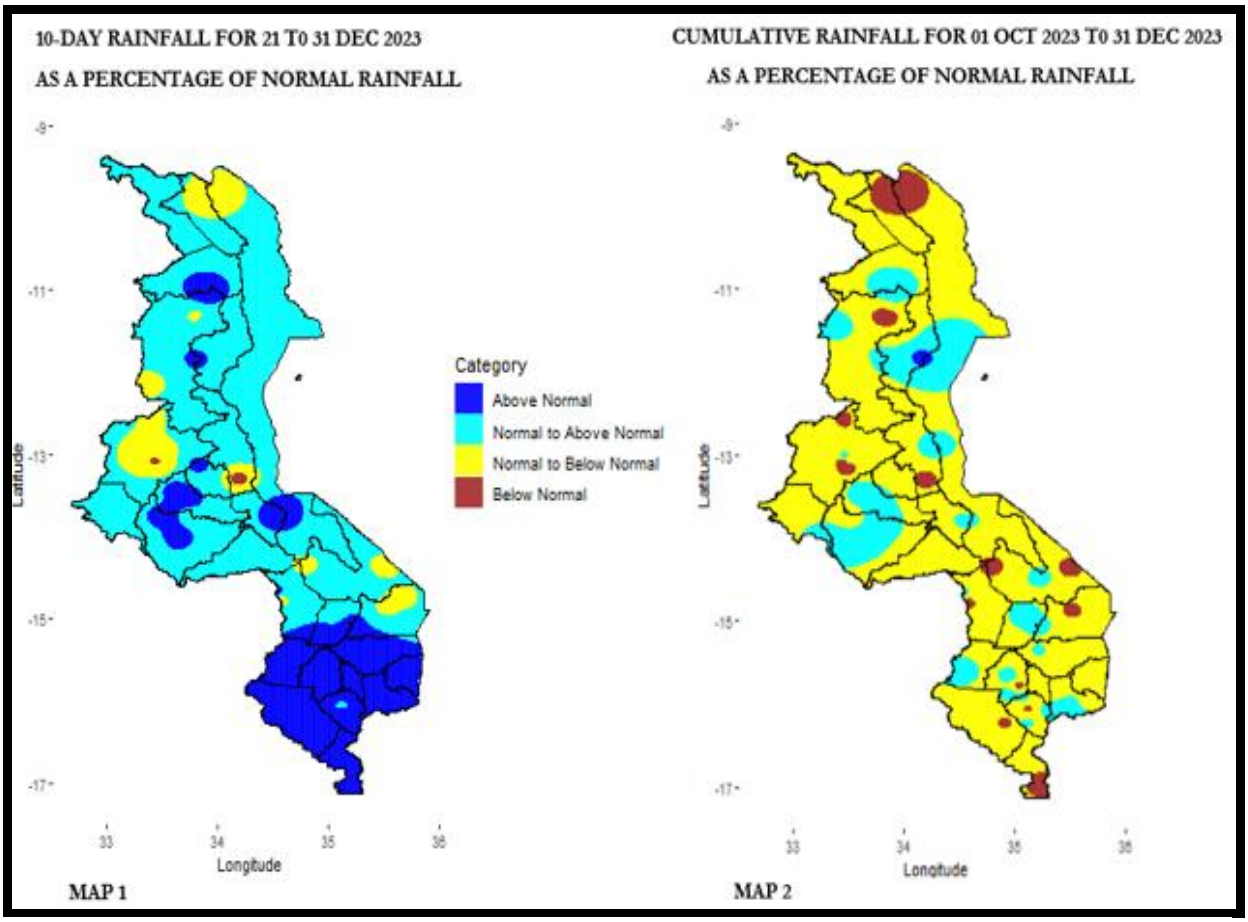

Figure 1: Observed dekadal and cumulative seasonal rainfall as percentage of normal for Malawi

1.0 WEATHER SUMMARY

During the period 21 to 31 December 2023, the Inter-Tropical Convergence Zone coupled with Congo Airmass influenced weather over Malawi resulting in scattered rainfall activities over the country.

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1.1 RAINFALL SITUATION

During the third dekad of December 2023, scattered rainfall activities were experienced over the country. The recorded rainfall amounts were generally outright above normal of historical dekadal amounts over majority of southern areas of the country with normal to above normal over much of central and northern areas and isolated cases of normal to below normal amounts experienced in all the three regions as depicted by blue, cyan and yellow to brown colours respectively in Map 1 from figure 1.

Some stations that recorded at least 100mm of rainfall during this dekad included Chiradzulu Agriculture which recorded 270.1mm in 8 rainy days, Lujeri Tea Estate in Mulanje recorded 237.5mm in 8 rainy days, Mulanje Boma recorded 213.0mm in 8 rainy days, Liwonde in Machinga recorded 195.0mm in 5 rainy days, Mwanza Boma recorded 191.8mm in 7 rainy days, Mlangeni in Ntcheu recorded 178.9mm in 6 rainy days, Chichiri Meteorological station in Blantyre recorded 178.5mm in 7 rainy days, Chancellor College in Zomba recorded 175.0mm in 10 rainy days, Mimosa Meteorological station in Mulanje recorded 165.2mm in 8 rainy days, Mpemba Veterinary in Blantyre recorded 161.9mm in 6 rainy days, Thyolo Boma recorded 160.0mm in 7 rainy days, Masambanjati Agriculture in Thyolo 156.9mm in 5 rainy days ,Zomba Agriculture recorded 150.9mm in 8 rainy days, Chitedze Meteorological station in Lilongwe recorded 149.2mm in 8 rainy days, Kasinthula Research station in Chikwawa recorded 146.0mm in 6 rainy days, Makhanga recorded 145.8mm in 5 rainy days, Lifuwu in Salima recorded 140.5mm in 7 rainy days, Chingale Agriculture in Zomba recorded 138.8mm in 6 rainy days, Rumphi Boma recorded 138.0mm in 7 rainy days, Salima Meteorological station recorded 137.6mm in 5 rainy days, Chikwawa Boma recorded 124.6 in 3 rainy days, Chileka International Airport in Blantyre recorded 123.1mm in 7 rainy days, Mponela Agriculture in Dowa recorded 121.1mm in 8 rainy days, Madisi Agriculture in Dowa recorded 118.7 mm in 5 rainy days, Makoka Meteorological station in Zomba recorded 117.3mm in 8 rainy days, Phalula Agriculture in Ntcheu recorded 114.1mm in 4 rainy days, Chikangawa Forest in Mzimba recorded 114.0mm in 6 rainy days, Nkhotakota Meteorological station recorded 113.8mm in 4 rainy days, Nsanje Boma recorded 102.8mm in 5 rainy days and Kasiya Agriculture in Lilongwe recorded 102.5mm in 5 rainy days. .

Spatial distribution of the actual recorded rainfall amounts shows majority of districts in Blantyre and Shire Valley Agricultural Development Divisions received higher rainfall amounts as shown in figure 2 below.

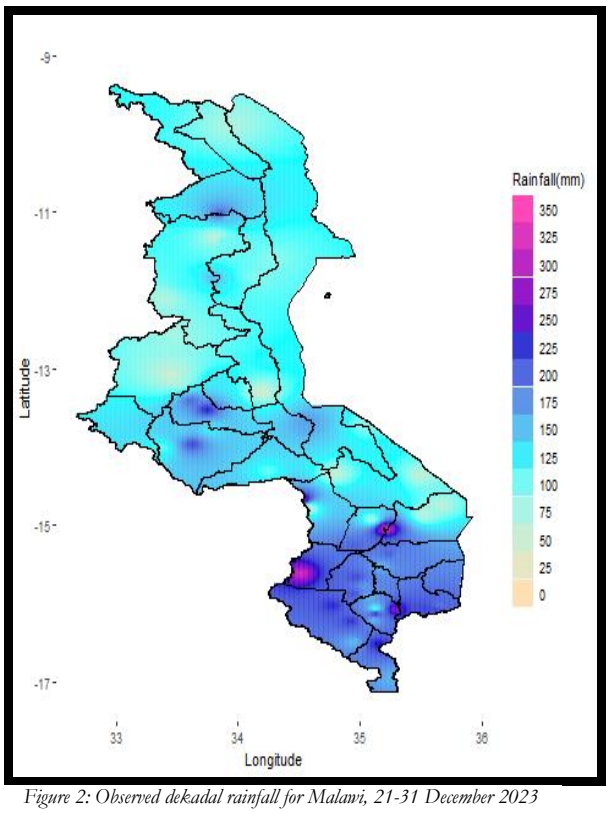

Figure 2: Observed dekadal rainfall for Malawi, 21-31 December 2023

The overall rainy days distribution from 21 to 31 December 2023 is shown in figure 3 below. The highest number of 10 rainy days was registered at Chancellor College seconded by Mzimba Meteorological station at 9 rainy days, despite the station recording 78.7mm of rainfall. Majority of stations registered rainy days ranging from 3 to 7 during the period under review.

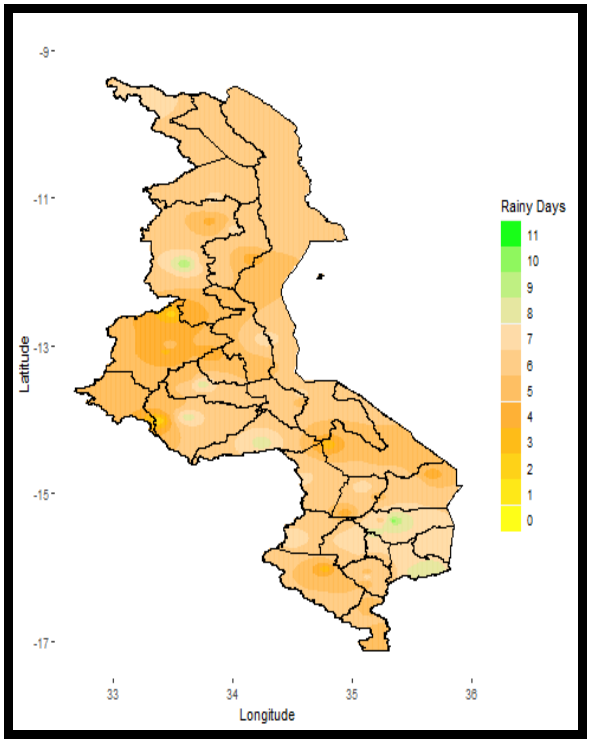

Figure 3: dekadal rainy days for Malawi, during 21-31 December 2023

For the season this far, from 01 October 2023 to 31 December 2023, normal to below normal rainfall amounts over majority of areas with pockets of normal to above normal rainfall amounts experienced over parts of some districts in all the eight Agricultural Development Divisions, as shown in Map 2 in figure 1 above. However, the distribution of the rains in most areas had been very erratic until the last two reporting dekads.

1.2 AIR TEMPERATURE

Malawi experienced hot to locally very hot conditions during the period 11 to 20 December 2023. Mean daily maximum temperatures had ranged from 26.7°C at Bvumbwe Meteorological station in Thyolo to 32.5°C at Chileka Meteorological station in Blantyre, with absolute maximum of 40.4°C recorded at Ngabu Meteorological station on 28th December 2023. Mean daily minimum temperatures had ranged from 17.6°C at Mzimba Meteorological station to 24.5°C at Chileka Meteorological station.

1.3 RELATIVE HUMIDITY

During the period under review, air over Malawi was moist. Daily average Relative Humidity values recorded from various meteorological stations had ranged from 68% at Mangochi Meteorological station to 84% at Bvumbwe Meteorological station.

1.4 WIND SPEEDS

During the period under review, 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 1.1 km per hour at Chitedze Meteorological station in Lilongwe to 11.7 km per hour at Chileka Meteorological station.

1.5 SUNSHINE HOURS/ SOLAR RADIATION

Generally medium to long hours of bright sunshine were observed over Malawi during the period 21 to 31 December 2023. The daily values of sunshine hours had ranged from 6.6 hours per day at Bvumbwe Meteorological station to 8.3 hours per day at Ngabu Meteorological station and consequently the amount of Solar Radiation had ranged from 8.6 to 11.7 cal/cm²/day.

2. AGROMETEOROLOGICAL ASSESSMENT

During the third dekad of December 2023, the main on-farm activities have been weeding and application of basal fertilizer for majority of farmers across Malawi. Some farmers over northern and central region have just planted while some over southern areas are reported to be banking and top dressing. However, there are reported cases of replanting in some areas of the southern region.

The rainfall experienced during the dekad under review supported vegetative growth and development of maize. The level of growth of maize is varied as the seasonal onset was erratic even in same Extension Planning Areas as depicted in figure 4 and figure 5 below. Other cash crops such as tobacco are also reportedly doing well particularly where fertilizer has been applied. Refer to figure 6 below.

Figure 4: Basal dressed maize, Chigonthi Extension Planning Area, central Malawi

Figure 5: Top dressed maize, Chigonthi Extension Planning Area, central Malawi

Figure 6: Tobacco field, Lilongwe West Agricultural district, central Malawi

Furthermore, the rainfall experienced during the period 21 to 31 December 2023, necessitated rice growing farmers to transplant over northern and central lakeshore areas of the country as well as planting of tubers such as potatoes in majority of potato growing districts as captures in figure 7 below.

Figure 7: Relieved maize from water stress, Kanengo, central Malawi

For livestock, majority of livestock in the country were under Temperature Humidity Index ranges of mild heat stress as the country experienced generally warm and moist conditions. The rains also ensured continued pasture growth and water availability to various stock as captured in figure 8 below.

Figure 8: Grazing in progress, southern Malawi

For proper utilization of rain water, farmers should adhere to principles of good agricultural practices including moisture conservation, timely control of weeds, pests and diseases; and fertilizer/ manure application. Water harvesting technologies should also be practiced for future use during periods of suppressed rainfall.

3. PROSPECTS FOR 2023/2024 SEASON

The 2023-2024 rainfall season is being influenced by moderate to strong El Niño conditions that are prevalent over eastern-central equatorial Pacific Ocean. Global models project that these conditions are likely to persist throughout the season.

The rainfall forecast for the sub-season January-February-March (JFM) of the 2023/2024 season is that:

"During January to March 2024, expect normal to below-normal total rainfall amounts over most areas with possibility of above normal rainfall in January. The chance of prolonged dry spells is high during the month of February."

There are higher chances of normal cumulative rainfall amounts over most parts of the country.

For the month of January 2023, normal to above normal rainfall amounts are anticipated over majority of areas with isolated cases of normal to below normal particularly over central and southern areas of the country. Refer to figure 9 below.

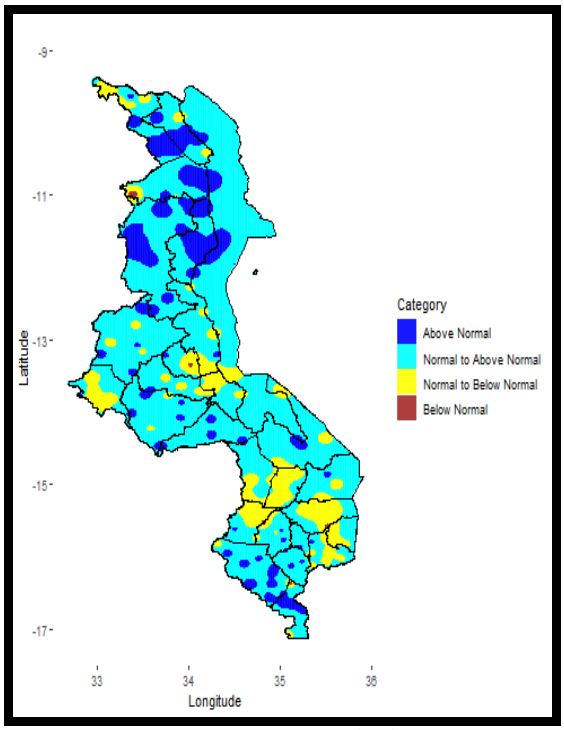

Figure 9: January 2023 rainfall forecast

In terms of temperature, generally normal conditions are anticipated during this month of January over the country as shown in figure 10 below.

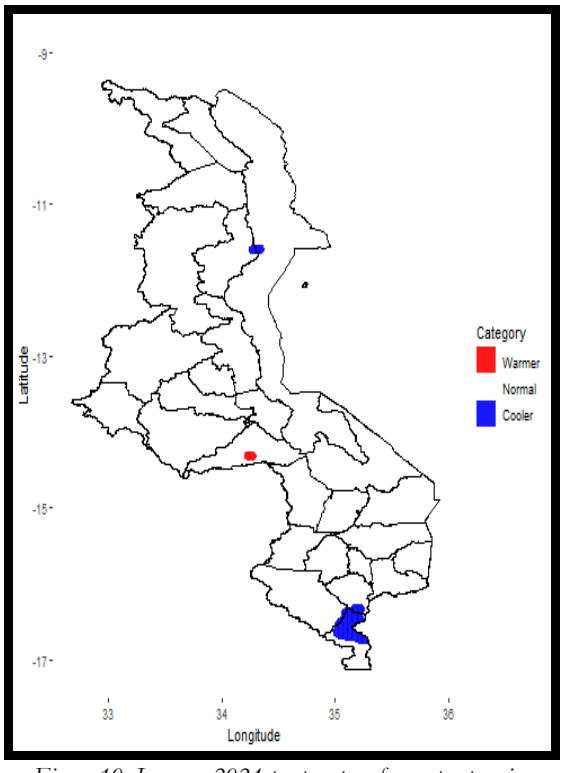

Figure 10: January 2024 temperature forecast categories

4. OUTLOOK FOR 01-10 JANUARY 2024

During the period 01 - 10 January 2024, as the Inter-Tropical Convergence Zone (ITCZ) and pulses of Congo Airmass continue to influence weather over Malawi, generally normal to above normal rainfall amounts are anticipated over Malawi. This is represented by the map in Figure 11.

Farmers are advised to continue accessing certified farm inputs as well as seek advise in as far as carrying farm activities like fertilizer application to avoid fertilizer nutrient wash down.

Furthermore, farmers are advised to employ some water harvesting techniques wherever possible.

Livestock farmers, are encouraged to take proactive measures in ensuring their stock is guarded against worms, parasites as the anticipated wet conditions may provide suitable environment for breeding of the same.

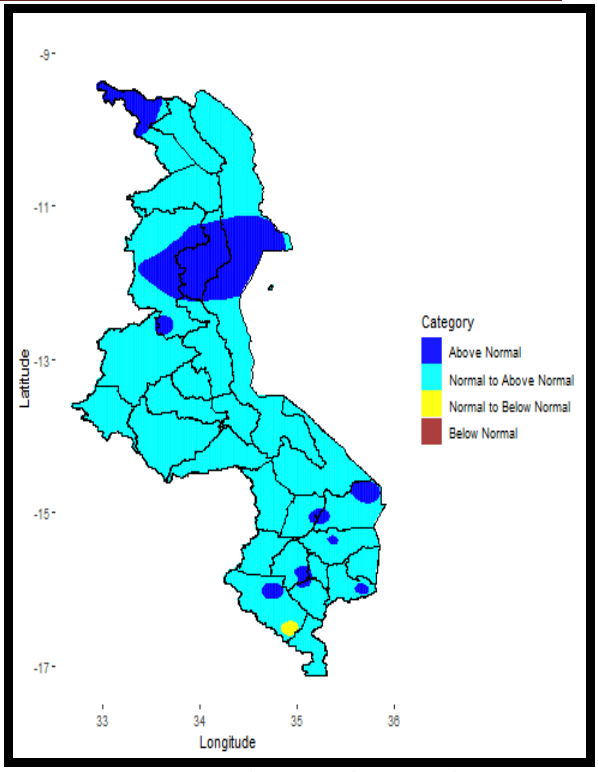

Figure 11: Dekadal rainfall outlook for Malawi for 01-10 January 2024 as percentage of normal rainfall