REPUBLIC OF MALAWI

Department of Climate Change and Meteorological Services

# 10-day Weather and Agrometeorological Bulletin

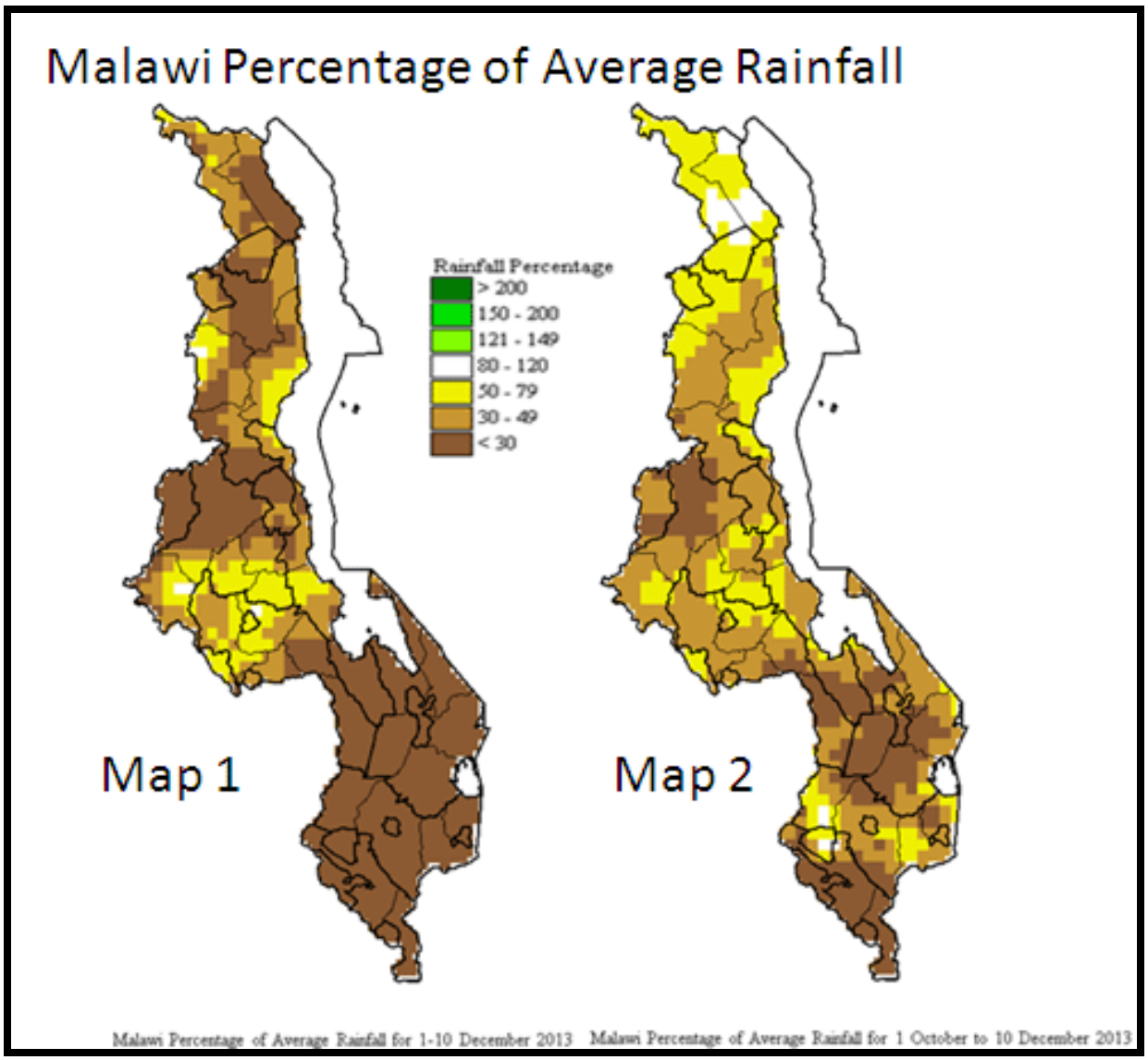
*Produced in support of national early warning systems*

Period: 01 – 10 December 2013 | Cropping Season: 2013/14 | Issue No.7

Release date: 13 December 2013

## HIGHLIGHTS

- **Mostly below average rainfall performance experienced …**
- **Land preparation and mobilization of farm inputs were still major activities…**
- **Widespread locally heavy rainfall expected during 11 to 20th December 2013…**

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# 1.0 WEATHER SUMMARY AND IMPACTS

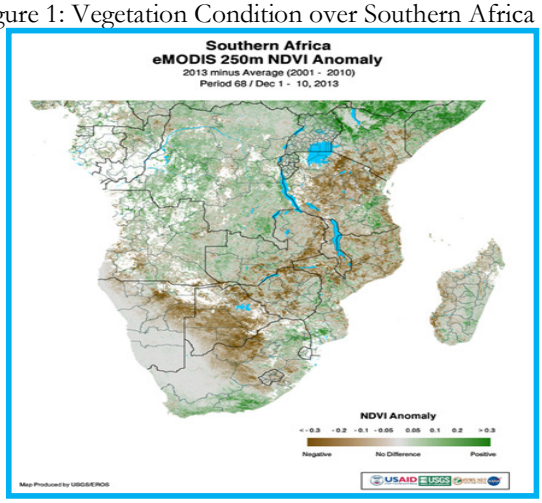
## 1.1 RAINFALL SITUATION

The first ten days of December 2013 were generally drier than the last ten days of November 2013. Good rainfall amounts in were mostly confined to some parts of the lakeshore and central Malawi (Map 1 and Table 1). However, the cumulative rainfall amounts at most of the stations were below the 30-year average rainfall amounts. During the period under discussion the notable ten day total rainfall amounts in excess of 40mm included Chintheche Agric 203mm, Nkhotakota 122mm, Lujeri 80mm Ntchisi Boma and Nkhata Bay Met 46mm and Kamuzu International Airport(KIA) 43mm. More details are in Table 1.

Map 2 indicates cumulative rainfall performance from 1st to 10th December 2013. Generally the map shows that most areas in Malawi were still very dry (brown colour on map 2)

## 1.2 VEGETATION CONDITION

Figure 1: Vegetation Condition over Southern Africa




The vegetation difference from long term average map for Southern Africa for the period 1 to 10th December 2013 shows that most parts of the region including Malawi were still experiencing below average vegetation conditions (Figure 1). As such, pastures are still in poor condition, particularly in areas where low rainfall was received during the 2012/2013 season. The poor vegetation have been due to poor rainfall performance that affected several parts of the region in the last two seasons, especially those in the southern half of the region.

## 1.3 AIR TEMPERATURE

Generally warm to hot temperatures were experienced over Malawi during the period 1 to 10th December 2013. Very hot temperatures were still observed in Shire Valley. For instance Ngabu Met in Chikwawa had reported a daily average maximum temperature of 36.8°C. Mean maximum temperatures over Malawi had ranged from 25.7°C at Chichiri in Blantrye to 36.8°C at Ngabu in Chikwawa while mean minimum temperatures had ranged from 14.4°C at Bvumbwe in Thyolo to 24.5°C at Monkey Bay (Table 2). The highest (absolute) maximum temperature was still recorded at Ngabu (40.2°C) in Chikwawa while the lowest was 12.0°C recorded at Bvumbwe in Thyolo district. For more details see Table 2.

## 1.4 WIND SPEEDS

Mean wind speeds at a height of two metres above the ground level had ranged from 0.9 m/s at Nkhata Bay Met to 4.8 m/s at Chitipa Met. For more details refer to Table 2. Higher wind speeds coupled with drier conditions lead to enhanced prospects for occurrences of wind erosion and higher evaporation rates.

## 1.5 RELATIVE HUMIDITY

During the period under review, air over Malawi was relatively drier than in the previous ten day period. Daily average relative humidity values had ranged from 47% at Kasungu Met to 70% at Mzuzu Met while in the previous ten days the values had ranged from 53% at Ntaja Met and Ngabu Met to 72% at Dedza Met. The details are on the Table 2. High relative humidity values apart from promoting fungal diseases also cause discomfort to communities

# 2. AGROMETEOROLOGICAL ASSESSMENT

The major on-farm agricultural activities over Malawi included land preparation, procurement of farm inputs and equipment planting of crops particularly in areas where significant rainfall amounts have been received. For proper utilization of the rains, farmers are encouraged to adhere to principles of good husbandry including early land preparation, use of appropriate seeds, timely planting, implementation of proper plant population and spacing, control of weeds, pests and diseases and fertilizer application. Farmers are advised to seek further advice and guidance from Agricultural Extension Officers.

# 3. PROSPECTS FOR 2013/14 RAINFALL SEASON

Reports indicate that by 30th November 2013 most parts of Malawi were still dry. However, the bottom line of the 2013/14 rainfall outlook suggests that ***Malawi is likely to experience normal total rainfall amounts during both October to December (OND) 2013 and January, February and March (JFM) 2014. Since October and November have been mostly dry so this means that most of the rains during OND are likely to come within December 2013.*** *A copy of t*he seasonal forecast can be accessed and downloaded ***at the Department of Climate Change and Meteorological Services website using the link below: http://www.metmalawi.com/forecasts/SEASONAL_FORECAST_2013_2014_Press_release.pdf***

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# 4. OUTLOOK FOR 11 – 20 DECEMBER 2013

Models for short and medium range rainfall forecasts indicate that both rain bearing systems namely; Congo air mass and the Inter Tropical Convergence Zone are likely to get established and become active during the second ten days of December 2013. Hence widespread locally heavy rains are expected over Malawi during the period 11 to 20th December 2013 2013.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR DEKAD 1 OF DECEMBER 2013**

| STATION NAME | ACTUAL DEKADAL TOTAL RAINFALL mm | DEKADAL NORMAL (EXPECTED) RAINFALL mm | ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL | TOTAL ACTUAL RAINFALL TO DATE mm | NORMAL (EXPECTED) RAINFALL TO DATE mm | ACTUAL TODATE AS PERCENTAGE OF NORMAL | RAINY DAYS ≥ 0.3 mm |
|---|---|---|---|---|---|---|---|
| **SOUTHERN REGION** | | | | | | | |
| Balaka Township | 0.0 | 38.1 | 0 | 5.7 | 138.8 | 4 | 0 |
| Bvumbwe Met. | 8.8 | 79.2 | 11 | 55.5 | 207.8 | 27 | 1 |
| Chancellor College | 0.0 | 99.5 | 0 | 12.7 | 223.0 | 6 | 0 |
| Chichiri Met. | 18.7 | 82.1 | 23 | 117.9 | 383.7 | 31 | 1 |
| Chikweo Agric. | 1.9 | 60.6 | 3 | 1.9 | 145.3 | 1 | 1 |
| Chileka Airport | 0.1 | 53.4 | 0 | 81.6 | 176.4 | 46 | 0 |
| Chingale Agric | 3.0 | 61.4 | 5 | 44.8 | 150.1 | 30 | 1 |
| Chiradzulu Agric | 8.0 | 60.4 | 13 | 31.2 | 183.3 | 17 | 1 |
| Kasinthula | 0.0 | 48.9 | 0 | 0.0 | 129.3 | 0 | 0 |
| Lujeri | 80.2 | 109.9 | 73 | 421.6 | 426.1 | 99 | 1 |
| Mpilipili (Makanjila) | 18.1 | 55.8 | 32 | 18.1 | 119.9 | 15 | 1 |
| Makhanga Met | 0.0 | 52.0 | 0 | 10.8 | 144.7 | 7 | 0 |
| Makoka Met | 0.0 | 71.7 | 0 | 33.1 | 164.6 | 20 | 0 |
| Mangochi Met. | 2.0 | 30.7 | 7 | 65.7 | 76.1 | 86 | 2 |
| Mimosa Met. | 32.4 | 101.3 | 32 | 134.9 | 305.0 | 44 | 2 |
| Monkey Bay Met. | 0.0 | 28.6 | 0 | 49.7 | 50.6 | 98 | 0 |
| Mpemba Vet | 0.0 | 71.7 | 0 | 45.8 | 217.6 | 21 | 0 |
| Mulanje Boma | 0.0 | 110.7 | 0 | 334.1 | 404.6 | 83 | 0 |
| Namiasi Agric | 0.0 | 50.0 | 0 | 35.1 | 89.6 | 39 | 0 |
| Namwera Agric | 12.0 | 67.2 | 18 | 41.7 | 161.4 | 26 | 2 |
| Nchalo Sucoma | 0.0 | 38.2 | 0 | 27.3 | 116.3 | 23 | 0 |
| Ngabu Met. | 0.0 | 48.9 | 0 | 25.4 | 137.2 | 19 | 0 |
| Ntaja Met. | 5.6 | 52.0 | 11 | 88.1 | 125.8 | 70 | 2 |
| Satemwa | 0.0 | 65.6 | 0 | 4.1 | 200.0 | 2 | 0 |
| Thuchila Agric | 0.0 | 51.3 | 0 | 14.0 | 146.4 | 10 | 0 |
| Thyolo Boma | 11.0 | 76.0 | 14 | 93.9 | 198.3 | 47 | 1 |
| Thyolo Met | 6.1 | 66.9 | 9 | 60.7 | 210.5 | 29 | 1 |
| Zoa Tea Est. | 0.0 | 88.6 | 0 | 0.0 | 257.3 | 0 | 0 |
| Zomba RTC | 0.0 | 92.9 | 0 | 43.2 | 203.4 | 21 | 0 |
| **CENTRAL REGION** | | | | | | | |
| Chitedze Met. | 5.6 | 44.0 | 13 | 34.2 | 130.0 | 26 | 1 |
| Dedza Met | 1.8 | 48.0 | 4 | 55.9 | 119.9 | 47 | 2 |
| Dowa Agric | 11.8 | 45.7 | 26 | 38.5 | 103.5 | 37 | 2 |
| Dwangwa | 3.4 | 76.6 | 4 | 134.8 | 168.8 | 80 | 2 |
| K.I.A Met | 43.3 | 32.7 | 132 | 67.2 | 98.4 | 68 | 2 |
| Kasiya Agric | 0.0 | 53.3 | 0 | 92.5 | 163.0 | 57 | 0 |
| Kasungu Met | 1.2 | 46.1 | 3 | 29.7 | 99.0 | 30 | 1 |
| Malomo Agric | 32.3 | 22.9 | 141 | 32.8 | 66.6 | 49 | 3 |
| Madisi Agric | 16.0 | 42.3 | 38 | 43.9 | 91.6 | 48 | 1 |
| Mchinji Boma | 22.2 | 69.3 | 32 | 22.2 | 182.7 | 12 | 2 |
| Mlangeni Njolomole | 0.0 | 56.5 | 0 | 58.4 | 146.3 | 40 | 0 |
| Mponela Agric | 0.0 | 54.2 | 0 | 29.3 | 117.6 | 25 | 0 |
| Mtakataka Airwing | 0.0 | 62.9 | 0 | 0.0 | 115.3 | 0 | 0 |
| Nathenje Agric | 5.2 | 38.9 | 13 | 41.3 | 112.5 | 37 | 1 |
| Nkhotakota Met | 122.3 | 76.2 | 160 | 322.1 | 132.1 | 244 | 4 |
| Ntchisi Boma | 46.4 | 78.3 | 59 | 46.4 | 140.5 | 33 | 2 |
| Salima Met | 2.9 | 62.0 | 5 | 7.4 | 104.7 | 7 | 2 |
| **NORTHERN REGION** | | | | | | | |
| Bolero Met | 17.2 | 27.5 | 63 | 24.4 | 71.5 | 34 | 4 |
| Bwengu Agric. | 1.6 | 29.8 | 5 | 1.6 | 87.1 | 2 | 1 |
| Chikangawa forest | 22.4 | 54.7 | 41 | 62.8 | 142.6 | 44 | 4 |
| Chitipa Met | 1.6 | 42.5 | 4 | 47.8 | 118.4 | 40 | 1 |
| Chintheche Agric | 202.8 | 73.1 | 277 | 342.6 | 204.8 | 167 | 2 |
| Emfeni Agric | 10.0 | 70.1 | 14 | 10.0 | 115.0 | 9 | 1 |
| Euthini Agric. | 0.0 | 45.1 | 0 | 48.2 | 105.3 | 46 | 0 |
| Karonga Met. | 3.2 | 37.6 | 9 | 43.5 | 87.1 | 50 | 1 |
| Lupembe | 0.0 | 26.1 | 0 | 46.0 | 65.5 | 70 | 0 |
| Mbawa Res. Stn | 9.0 | 29.3 | 31 | 18.7 | 99.5 | 19 | 1 |
| Mzimba Met | 6.4 | 47.9 | 13 | 29.2 | 111.2 | 26 | 1 |
| Mzuzu Met. | 7.2 | 45.6 | 16 | 83.8 | 153.0 | 55 | 2 |
| NkhataBay Met. | 46.4 | 79.8 | 58 | 206.9 | 175.4 | 118 | 4 |
| Rumphi Boma | 0.0 | 26.5 | 0 | 0.0 | 69.9 | 0 | 0 |
| Vinthukutu Agric | 4.0 | 44.7 | 9 | 120.2 | 110.4 | 109 | 1 |

## TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 DECEMBER 2013

| STATION | MAX TEMP (ºC) | MIN TEMP (ºC) | ABS MAX (ºC) | ABS MIN (ºC) | WIND SPEED (m/s) | RH (%) | EVAP (mm) |
|---|---|---|---|---|---|---|---|
| **KARONGA ADD** | | | | | | | |
| Chitipa | 30.5 | 19.2 | 31.3 | 17.1 | 4.8 | 60 | N/A |
| Karonga | 32.6 | 23.4 | 34.4 | 21.0 | 2.3 | 58 | N/A |
| **MZUZU ADD** | | | | | | | |
| Bolero | 32.6 | 20.4 | 34.3 | 18.4 | N/A | 53 | N/A |
| Mzuzu | 27.0 | 16.6 | 29.6 | 14.1 | 1.7 | 70 | N/A |
| Mzimba | 30.1 | 18.5 | 20.4 | 17.2 | 1.5 | 57 | N/A |
| Nkhata Bay | 32.2 | 20.8 | 34.1 | 19.3 | 0.9 | 69 | N/A |
| **KASUNGU ADD** | | | | | | | |
| Kasungu | 31.3 | N/A | 33.5 | N/A | 1.1 | 47 | N/A |
| **LILONGWE ADD** | | | | | | | |
| KIA | 30.0 | 18.0 | 32.0 | 16.1 | 2.1 | 60 | 8.3 |
| Chitedze | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dedza | 26.3 | 15.9 | 27.7 | 13.4 | 2.2 | 64 | N/A |
| **SALIMA ADD** | | | | | | | |
| Salima | 33.2 | 24.1 | 34.6 | 23.0 | 3.0 | 54 | N/A |
| Nkhotakota | 30.6 | 22.4 | 31.9 | 19.4 | 2.3 | 61 | N/A |
| **MACHINGA ADD** | | | | | | | |
| Makoka | 30.3 | 17.8 | 33.2 | 15.1 | 1.2 | 63 | N/A |
| Ntaja | 32.4 | 21.3 | 35.2 | 19.2 | 3.0 | 50 | N/A |
| Mangochi | 34.5 | 23.4 | 37.2 | 21.5 | 2.1 | 54 | N/A |
| Monkey Bay | 32.7 | 24.5 | 34.4 | 23.5 | 2.9 | 51 | N/A |
| **BLANTYRE ADD** | | | | | | | |
| Chileka | 31.4 | 20.5 | 33.6 | 19.4 | 3.7 | 53 | N/A |
| Chichiri | 25.7 | 17.1 | 30.1 | 15.4 | 2.5 | 58 | N/A |
| Bvumbwe | 27.3 | 14.4 | 30.6 | 12.0 | 3.2 | 60 | N/A |
| Mimosa | 31.1 | 18.1 | 33.9 | 15.0 | 1.5 | 64 | 6.4 |
| **SHIRE VALLEY ADD** | | | | | | | |
| Ngabu | 36.8 | 23.9 | 40.2 | 21.7 | 4.4 | 46 | N/A |

**Glossary of some terms on this table**

- 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 Kilometers per hour (Km/hr) = mpsx3.6