



Government of Malawi
Ministry of Natural Resources, Energy and Mining

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: 11 – 20 March 2018

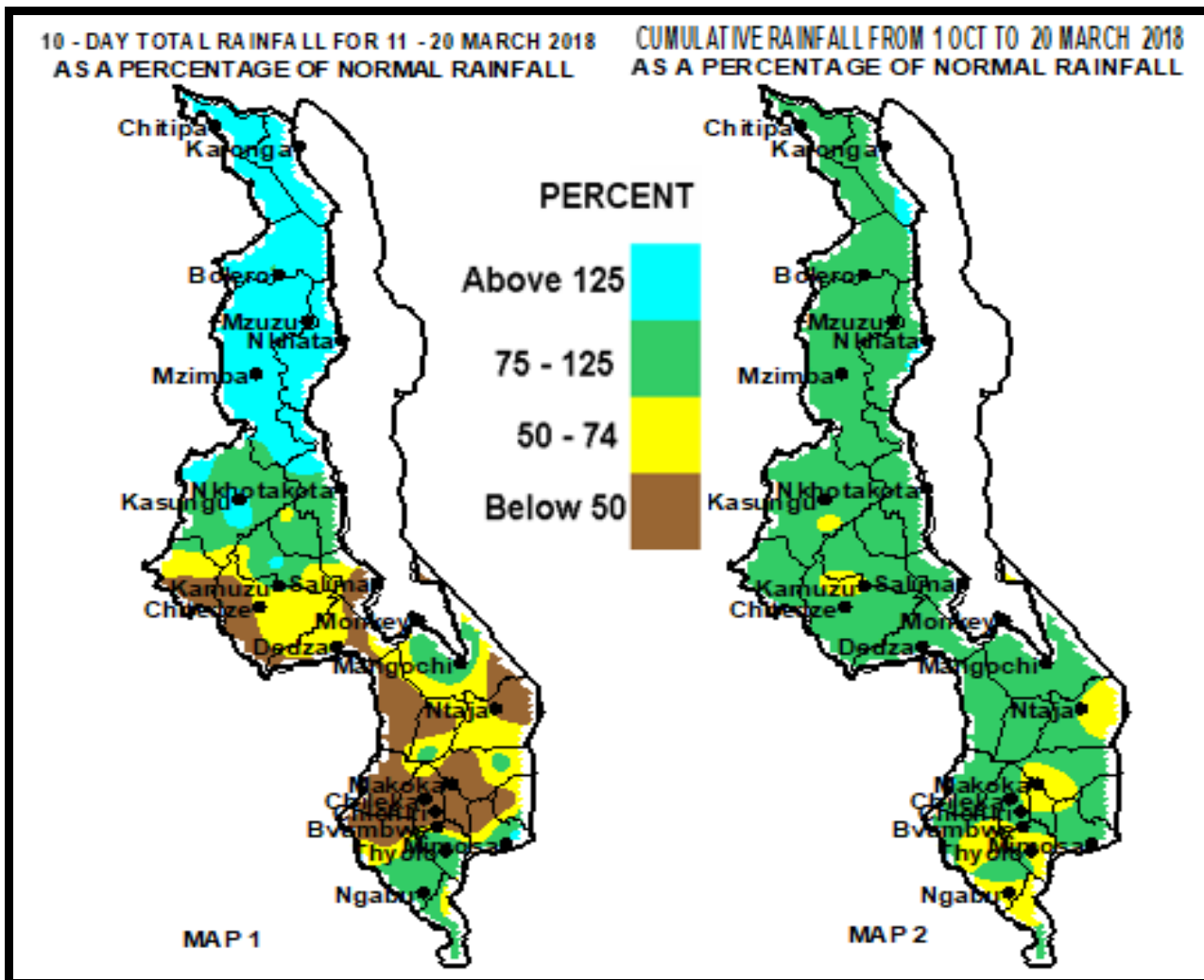
Season: 2017/2018

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HIGHLIGHTS

- Heavy rains experienced over most areas in northern Malawi...
- Average cumulative rainfall amounts experienced in Malawi...
- More rainfall expected over Malawi during the period 21 to 31 March 2018...



Rainfall Maps by 20 March 2018

1.0 WEATHER SUMMARY

During the period 11 to 20 March 2018, moist and unstable Congo Air mass was more active over northern Malawi while central and southern Malawi was under a weak rain belt. As a result, widespread locally heavy and above average cumulative rainfall amounts were experienced particularly over northern Malawi (Light Blue Colour on Map 1) and sporadic light and below average rainfall was experienced in central and southern Malawi. (Yellow and Brown Colours on Map 1)

1.1 RAINFALL SITUATION

Good rainfall performance was maintained over northern and Lakeshore areas of Malawi as several places had reported above average cumulative rainfall amounts during the second ten days of March 2018. Heavy cumulative rainfall amounts in excess of 120mm were recorded over several places especially in northern and lakeshore areas including the following stations: Baka Research Station had 238mm, Chinthече Agric reported 221mm, Chelinda(Nyika) received 199mm, Vinthukutu Agric 195mm, Nkhotakota Met had 194mm, Namiasi Agric in Mangochi had 129mm and Lupembe Agric in Karonga 128mm, Otherwise several places in northern and lakeshore areas had reported wet weather conditions with an average of 4 to 5 rainy days. More details are in Table 1 and Map 1.

The spatial distribution of cumulative rainfall since the 2017/18 rainfall season started in October 2017 up to 20 March 2018 is shown in Map 2. The map shows that average cumulative rainfall amounts (Green colour) have been attained over the larger part of Malawi. However, pockets of below average rainfall amounts still existed particularly over southern Malawi (Yellow colour on Map 2) due to low rainfall and prolonged dry spells that were experienced particularly in January 2018.

1.3 AIR TEMPERATURE

Warm to hot temperatures had prevailed over Malawi during the period 11 to 20 March 2018. Mean daily maximum temperatures ranged from 25°C at Dedza to 34°C at Ngabu while daily average minimum temperatures had ranged from 16°C to 24°C. During the same period the highest temperature was 35°C reported at Ngabu in Chikwawa. On the otherhand the lowest temperature was 13°C recorded at Dedza. Details are in Table 2.

1.4 WIND SPEEDS

During the second ten days of March 2018 most parts of Malawi continued to experience light to moderate wind speeds. The daily average wind speeds measured at a height of two metres above the ground level across the Malawi had ranged from 1.1km per hour at Bolero to 10.4km per hour at Chileka. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the period 11 to 20 March 2018, air over Malawi was generally moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 65% at Monkey Bay to 82% at Mzuzu and Nkhata Bay. Details are on the Table 2.

1.6 SUNSHINE HOURS

During the period 11 to 20 March 2018, Malawi had experienced more sunshine hours. The daily average values of sunshine hours were generally between 5 and 9 hours per day. Consequently, the amount of solar radiation received over most areas was between 5 and 10 calories per square centimeter per day. More details are in Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the second ten days of March 2018 moderate to heavy rainfall fell over northern and lakeshore areas of Malawi. Most areas had recorded rainfall amounts of above 75mm which was sufficient to satisfy daily crop water requirements for most crop varieties. These rains have continued to improve water resources, soil moisture reserves and pasture availability for grazing of livestock and also in drought affected areas these rains supported planting of early maturing crop varieties like sweet potatoes and cassava. Otherwise the crop situation in most fields in the south was reported in poor state while in most of the north and some parts of the Central Malawi the crop situation was reported good. Maize crop had ranged between maturity and drying stages and need more sunshine for proper drying.

3. PROSPECTS FOR 2017/2018 RAINFALL SEASON

The Sea Surface Temperatures which drive the rainfall patterns of the world including Malawi indicate that weak La Niña conditions are likely to persist up to April 2018. Based on weak La Niña conditions, the updated rainfall forecast for March to May 2018 is that most parts of Malawi are likely to experience normal cumulative rainfall amounts.

4. OUTLOOK FOR 21 TO 31 MARCH 2018

Models for short and medium range forecasts suggest that Easterly waves are likely to remain dominant over Malawi during the last ten days of March 2018. Therefore, scattered rainfall is expected over Malawi and farmers with irrigable land are encouraged to start preparing for winter cropping and planting early maturing crop varieties like sweet potatoes and cassava and are also advised to practice infield rainwater harvesting technologies.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 TO 20 MARCH 2018

| ADD | RAINFALL STATION | ACTUAL DEKADAL TOTAL RAINFALL (mm) | DEKADAL NORMAL (EXPECTED) RAINFALL (mm) | ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL | ACTUAL TOTAL RAINFALL TODATE (mm) | NORMAL (EXPECTED) RAINFALL TODATE (mm) | ACTUAL TODATE AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL | RAINY DAYS ≥ 0.3 mm |
|----------------------|-----------------------|------------------------------------|---|--|-----------------------------------|--|---|---------------------|
| KARONGA | Baka Res. Stn. | 237.9 | 140.0 | 170 | 927.3 | 871.3 | 106 | 7 |
| | Chitipa Met | 40.7 | 66.1 | 62 | 771.2 | 827.7 | 93 | 6 |
| | Karonga Met. | 129.0 | 78.9 | 163 | 724.1 | 693.7 | 104 | 9 |
| | Lupembe | 128.0 | 62.8 | 204 | 712.9 | 621.4 | 115 | 5 |
| | Vinthukutu Agric | 195.2 | 79.5 | 246 | 1113.1 | 758.5 | 147 | 7 |
| MZUZU | Bolero Met | 35.2 | 27.9 | 126 | 530.6 | 566.3 | 94 | 3 |
| | Bwengu Agric. | 14.8 | 47.5 | 31 | 335.9 | 662.9 | 51 | 4 |
| | Chikangawa forest | 39.6 | 63.1 | 63 | 673.6 | 873.5 | 77 | 5 |
| | Chelinda (Nyika) | 199.3 | 85.1 | 234 | 960.5 | 982.6 | 98 | 9 |
| | Chintheche Agric | 221.2 | 124.2 | 178 | 1520.1 | 1135.6 | 134 | 3 |
| | Emfeni Agric | 20.2 | 38.2 | 53 | 101.5 | 717.9 | 14 | 2 |
| | Ekwendeni Agric. | 27.4 | 31.9 | 86 | 442.8 | 692.3 | 64 | 4 |
| | Mbawa Res. Stn | 42.9 | 40.4 | 106 | 809.6 | 729.3 | 111 | 4 |
| | Mzimba Met | 29.5 | 41.7 | 71 | 787.3 | 790.6 | 100 | 7 |
| | Mzuzu Met. | 26.9 | 58.2 | 46 | 823.4 | 775.3 | 106 | 5 |
| | NkhataBay Met. | 93.7 | 96.7 | 97 | 1168.7 | 915.9 | 128 | 7 |
| | Rumpho Boma | 9.5 | 37.7 | 25 | 657.4 | 638.4 | 103 | 3 |
| | Zombwe Agric | 23.2 | 35.5 | 65 | 580.9 | 624.2 | 93 | 2 |
| | KASUNGU | Dowa Agric | 53.7 | 45.4 | 118 | 725.7 | 794.1 | 91 |
| Kaluluma DTC | | 13.7 | 50.3 | 27 | 317.4 | 736.9 | 43 | 2 |
| Kasungu Met | | 10.0 | 38.7 | 26 | 643.1 | 712.1 | 90 | 3 |
| Lisasadzi | | 13.6 | 33.7 | 40 | 434.2 | 752.8 | 58 | 2 |
| Malomo Agric | | 19.9 | 46.7 | 43 | 659.7 | 761.3 | 87 | 3 |
| Madisi Agric | | 40.3 | 33.6 | 120 | 843.3 | 768.9 | 110 | 4 |
| Mchinji Boma | | 112.9 | 46.7 | 242 | 1021.8 | 898 | 114 | 5 |
| Mponela Agric | | 36.4 | 35.1 | 104 | 503.8 | 739.5 | 68 | 4 |
| Ntchisi Boma | | 62.5 | 82.4 | 76 | 840.3 | 1074.1 | 78 | 3 |
| SALIMA | Lifuwu | 94.2 | 78.7 | 120 | 1017.1 | 1057.2 | 96 | 6 |
| | Nkhotakota Met | 194.3 | 113.7 | 171 | 1229.6 | 1102.1 | 112 | 6 |
| | Salima Met | 50.8 | 85.6 | 59 | 984.5 | 1051.8 | 94 | 6 |
| LILONGWE | Chileka Namitete | 81.3 | 44.6 | 182 | 1012.1 | 827 | 122 | 4 |
| | Dzonzi Forest | 37.0 | 57.0 | 65 | 687.7 | 893.3 | 77 | 2 |
| | K.I.A Met | 14.6 | 41.8 | 35 | 534.3 | 763.5 | 70 | 3 |
| | Kasiya Agric | 25.1 | 38.9 | 65 | 526.8 | 873 | 60 | 3 |
| | Mlangeni Njolomole | 29.8 | 54.0 | 55 | 623.7 | 870.9 | 72 | 5 |
| | Nathenje Agric | 38.6 | 39.1 | 99 | 863 | 757.8 | 114 | 3 |
| | Ntcheu - Nkhande | 91.1 | 50.4 | 181 | 849.3 | 947 | 90 | 5 |
| | Dedza RTC | 91.7 | 49.2 | 186 | 675.8 | 900.7 | 75 | 7 |
| MACHINGA | Balaka Township | 28.1 | 40.2 | 70 | 567.4 | 776.7 | 73 | 3 |
| | Chikweo Agric. | 88.9 | 67.3 | 132 | 604.8 | 945.3 | 64 | 2 |
| | Chingale Agric | 0.0 | 52.0 | 0 | 337.8 | 833.1 | 41 | 0 |
| | Mpilipili (Makanjila) | 77.2 | 39.6 | 195 | 466.8 | 810.5 | 58 | 4 |
| | Makoka Met | 10.4 | 46.7 | 22 | 479.3 | 871.8 | 55 | 2 |
| | Mangochi Met. | 66.7 | 44.1 | 151 | 732.3 | 630.1 | 116 | 5 |
| | Monkey Bay Met. | 103.4 | 16.3 | 634 | 683.5 | 538.2 | 127 | 5 |
| | Namiasi Agric | 129.0 | 49.7 | 260 | 619.2 | 709.5 | 87 | 4 |
| | Namwera Agric | 68.0 | 69.3 | 98 | 885.4 | 920.5 | 96 | 5 |
| | Ntaja Met. | 13.0 | 44.6 | 29 | 545.8 | 778.6 | 70 | 4 |
| | Phalula Agric | 0.0 | 37.0 | 0 | 595.5 | 757.6 | 79 | 0 |
| | Toleza Farm | 32.0 | 45.4 | 70 | 933 | 776.8 | 120 | 3 |
| Zomba RTC | 9.1 | 73.9 | 12 | 718.2 | 1053.6 | 68 | 1 | |
| BLANTYRE | Bvumbwe Met. | 25.2 | 54.2 | 46 | 870.6 | 958.2 | 91 | 4 |
| | Chichiri Met. | 43.4 | 16.1 | 270 | 752.7 | 1013.2 | 74 | 7 |
| | Chileka Airport | 12.4 | 45.8 | 27 | 701.5 | 782.4 | 90 | 4 |
| | Chiradzulu Agric | 50.5 | 38.1 | 133 | 497.7 | 875 | 57 | 2 |
| | Chizunga Factory | 7.4 | 84.5 | 9 | 700 | 1131.8 | 62 | 2 |
| | Lujeri Tea Estate | 75.2 | 146.5 | 51 | 1967.4 | 1612.8 | 122 | 6 |
| | Masambanjati Agric | 25.8 | 74.7 | 35 | 857.7 | 1123.7 | 76 | 4 |
| | Mimosa Met. | 54.6 | 89.0 | 61 | 1175.9 | 1186.7 | 99 | 5 |
| | Mpemba Vet | 10.2 | 61.9 | 16 | 703.4 | 988.4 | 71 | 1 |
| | Mulanje Boma | 83.3 | 70.2 | 119 | 1595 | 1399.1 | 114 | 4 |
| | Naminjiwa Agric | 7.1 | 44.3 | 16 | 539.9 | 873.6 | 62 | 1 |
| | Satemwa Tea Est | 12.2 | 63.1 | 19 | 455.4 | 917.2 | 50 | 4 |
| | Thuchila Agric | 14.9 | 37.9 | 39 | 698.1 | 774.9 | 90 | 3 |
| | SHIRE VALLEY | Chikwawa Boma | 1.6 | 32.9 | 5 | 322.6 | 680.1 | 47 |
| Kasinthula Res. Stn. | | 7.7 | 29.6 | 26 | 306.2 | 646 | 47 | 4 |
| Makhanga Met | | 10.3 | 38.0 | 27 | 411.8 | 650.5 | 63 | 1 |
| Nchalo Sucoma | | 37.5 | 19.3 | 194 | 622.3 | 578.8 | 108 | 4 |
| Ngabu Met. | | 24.5 | 37.3 | 66 | 362.1 | 669.7 | 54 | 4 |
| Nsanje Boma | | 15.3 | 49.9 | 31 | 820.8 | 942.8 | 87 | 5 |

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 MARCH 2018

| ADD/ STATION | MAX TEMP (°C) | MIN TEMP (°C) | ABS MAX (°C) | ABS MIN (°C) | WIND SPEED Km/hour | RH % | SUN SHINE HOURS | Eo mm per day | Et mm per day | RAD- TION calcm ⁻² p/day |
|-------------------------|---------------------|---------------------|--------------------|--------------------|--------------------------|---------|-----------------------|------------------------|------------------------|--|
| KARONGA ADD | | | | | | | | | | |
| Chitipa | 26.7 | 17.0 | 28.3 | 16.5 | 5.0 | 77 | 5.1 | 5.3 | 4.2 | 7.6 |
| Karonga | 29.8 | 21.1 | 30.5 | 20.5 | 3.6 | 78 | 6.0 | 6.1 | 4.8 | 8.2 |
| MZUZU ADD | | | | | | | | | | |
| Bolero | 28.3 | 17.9 | 29.9 | 16.0 | 1.1 | 73 | 6.2 | 5.7 | 4.5 | 8.3 |
| Mzimba | 27.4 | 16.7 | 29.2 | 14.1 | 2.5 | 79 | 6.0 | 5.5 | 4.3 | 8.2 |
| Mzuzu | 25.1 | 16.8 | 27.0 | 15.2 | 4.7 | 82 | 5.3 | 5.2 | 4.0 | 7.8 |
| Nkhata Bay | 29.8 | 21.2 | 32.4 | 20.0 | 2.9 | 82 | 6.4 | 6.1 | 4.8 | 8.5 |
| KASUNGU ADD | | | | | | | | | | |
| Kasungu | 26.5 | 17.9 | 28.5 | 16.5 | 3.2 | 74 | 6.6 | 5.8 | 4.6 | 8.6 |
| LILONGWE ADD | | | | | | | | | | |
| Chitedze | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dedza | 24.5 | 15.6 | 25.2 | 12.8 | 4.3 | 80 | 7.5 | 5.8 | 4.5 | 9.2 |
| KIA | 26.4 | 17.7 | 27.8 | 15.3 | 4.7 | 76 | 7.7 | 6.3 | 4.9 | 9.3 |
| SALIMA ADD | | | | | | | | | | |
| Nkhotakota | 28.8 | 21.7 | 30.9 | 19.7 | 2.9 | 76 | 7.4 | 6.7 | 5.3 | 9.2 |
| Salima | 30.0 | 22.1 | 31.5 | 20.0 | 6.5 | 75 | 7.4 | 6.8 | 5.4 | 9.2 |
| MACHINGA ADD | | | | | | | | | | |
| Makoka | 28.0 | 18.1 | 30.4 | 16.9 | 2.5 | 77 | 6.9 | 6.0 | 4.7 | 8.8 |
| Mangochi | 32.4 | 22.4 | 34.0 | 20.5 | 3.2 | 72 | 9.2 | 7.7 | 6.1 | 10.3 |
| Monkey Bay | 30.5 | 22.7 | 31.1 | 21.3 | 6.5 | 65 | 9.2 | 7.8 | 6.3 | 10.3 |
| Ntaja | 30.2 | 20.6 | 31.4 | 17.6 | 5.0 | 72 | 9.1 | 7.4 | 5.8 | 10.3 |
| BLANTYRE ADD | | | | | | | | | | |
| Bvumbwe | 25.0 | 16.1 | 26.4 | 14.6 | 5.8 | 82 | 6.4 | 5.5 | 4.3 | 8.5 |
| Chichiri | 26.1 | 18.4 | 27.4 | 17.2 | 5.4 | 78 | 6.5 | 5.9 | 4.6 | 8.6 |
| Chileka | 29.2 | 19.7 | 30.5 | 18.9 | 10.4 | 70 | 7.1 | 6.9 | 5.5 | 9.0 |
| Mimosa | 29.5 | 19.9 | 31.0 | 17.4 | 3.6 | 68 | 6.4 | 6.3 | 5.0 | 8.5 |
| SHIRE VALLEY ADD | | | | | | | | | | |
| Ngabu | 33.5 | 23.7 | 35.3 | 22.9 | 2.2 | 72 | 9.2 | 7.9 | 6.3 | 10.4 |

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
- kWh = 3.6 MJ