



REPUBLIC OF MALAWI

Department of Climate Change and Meteorological Services

# 10-day Weather and Agrometeorological Bulletin

*In support of national early warning systems*



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## HIGHLIGHTS

- Dry weather experienced in the south and centre; fairly wet in the north...
- Harvesting and drying of matured crops were major agricultural activities....
- A further reduction in rainfall expected over Malawi during 21 to 30<sup>th</sup> April 2012...

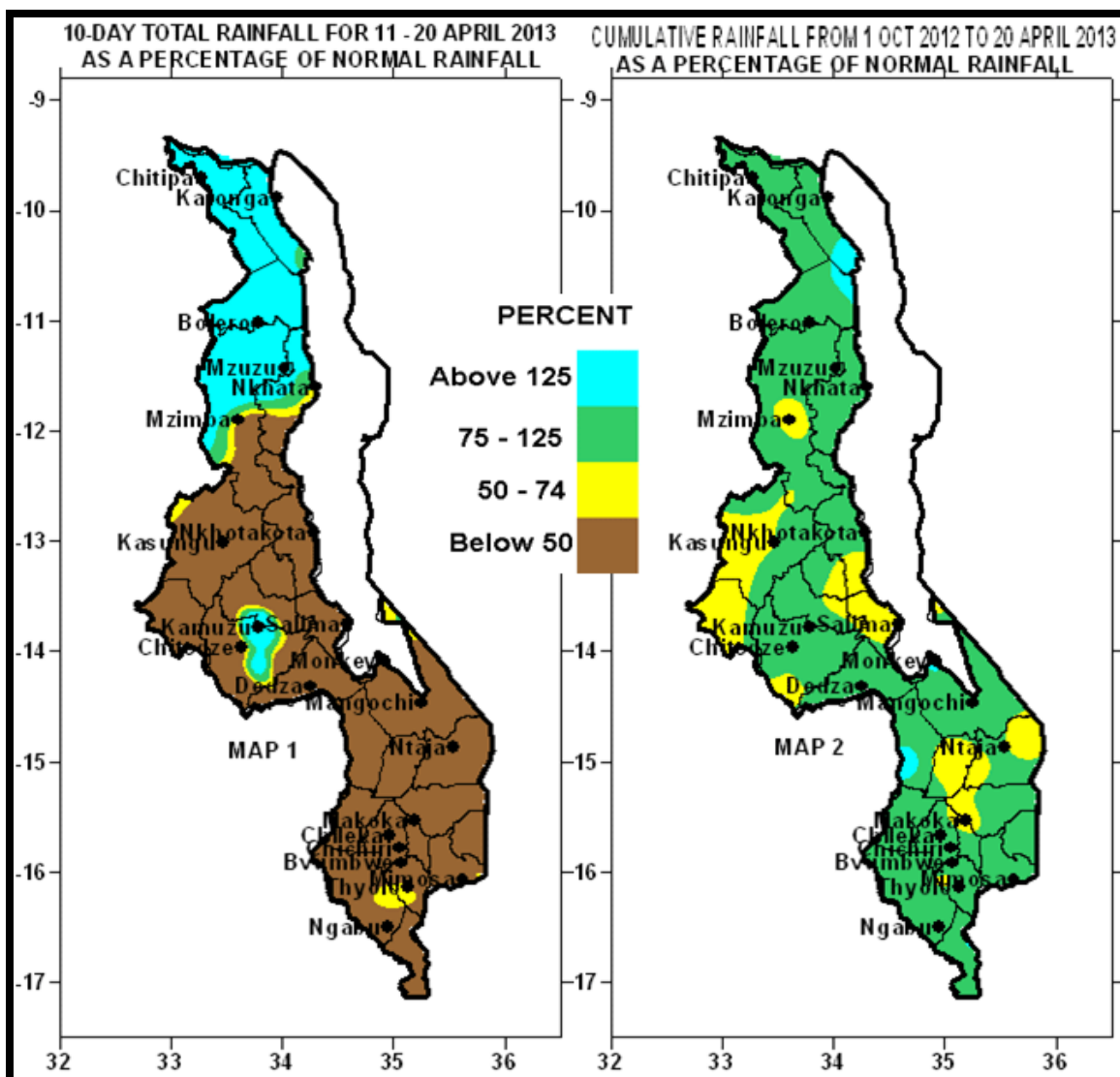


Figure 1: Rainfall Maps for Malawi for 11 – 20 April 2013

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## 1.0 WEATHER SUMMARY AND IMPACTS

### 1.1 RAINFALL SITUATION

During the period 11 to 20 April 2013 the main rain belt was active over northern Malawi while below average cumulative rainfall and dry weather conditions were experienced over southern and central Malawi. The north had recorded relatively above average rainfall amounts and floods occurred in the lakeshore district of Nkhata Bay. During the period under review most areas in the south and central Malawi had recorded little or nil rainfall as the main rainfall season comes to an end. Significant cumulative rainfall amounts in excess of 75mm were only registered in northern Malawi where Mzuzu Met had recorded 134.8mm; Ekwendeni Agric 126.2mm, Baka Research station in Karonga had 108mm, Lupembe Agric 96.1mm and Karonga Met 75.2mm. See more details in Table 1 and Map 1.

Map 2 shows the cumulative rainfall performance in Malawi since the rainfall season started on 1<sup>st</sup> October 2012 up to 20<sup>th</sup> April 2013. The map shows that most areas in Malawi have achieved their expected long term average cumulative rainfall amounts (green colour on Map 2) with a few pockets of below average rainfall (yellow colour) and above average rainfall (light blue colour). For more details refer to Table 1 and Map 2.

### 1.2 VEGETATION CONDITION

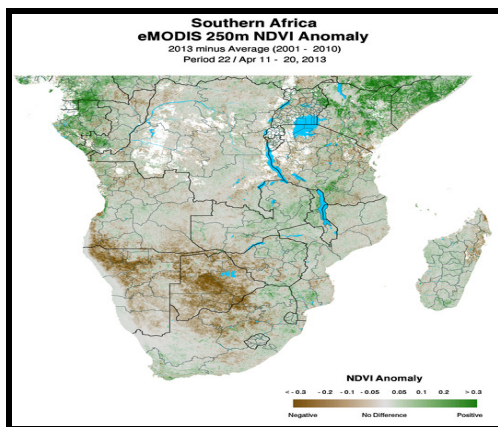


Figure 2: Vegetation Condition over Southern Africa

The vegetation difference from long term average map for Southern Africa for the period 11 to 20<sup>th</sup> in

shown in Figure 2. Positive anomalies still existed in most areas in the east africa while the southern africa had mostly negative anomalies as the main rainfall season comes to an end.

### 1.3 AIR TEMPERATURE

During the second ten days of April 2013, warm to hot tempratures were experienced over Malawi. The daily mean maximum temperatures ranged from 23.2°C at Dedza to 32.8°C at Ngabu. Mean absolute minimum temperatures ranged from around 9.6°C at Kamuzu International Airport to 17.8°C at Nkhotakota (Table 2). The highest absolute maximum temperature for the period was 34.6°C, observed at Ngabu in Shire Valley on 17 April 2013.

### 1.4 WIND SPEEDS

Daily mean wind speeds at a height of two metres above the ground level ranged from 0.8 to 3.1 meters per second. The lowest mean wind speed was reported at Chitedze Met and Nkhata Bay while the highest mean wind speed was recorded at Chitipa Met. Refer to Table 2.

### 1.5 RELATIVE HUMIDITY

During the period under review, air over Malawi generally continued drying up. Mean daily relative humidity values ranged from 49% to 83%. The lowest mean relative humidity value was reported at Makoka in Zomba district while the highest relative humidity was registered at Mzuzu Airport. See more details in Table 2.

## 2.0 AGROMETEOROLOGICAL ASSESSMENT

Dry conditions persisted in most areas in Malawi except for some parts of the north during the period under review as the main rainfall season comes to an end. The prevailing dry weather had facilitated harvesting and drying of matured crops. At the same time moderate to heavy rains that fell in the north had resulted in floods that had damaged road infrastructure between Mzuzu and Nkhata Bay rendering the road impassable for some days and the wet weather had also hampered harvesting of matured crops. On a positive note, the rains had supported growth and development of roots and tuber

crops. Maize crop was reported to be mostly at drying and harvesting stages where a lot of sunshine hours are required. The following is an assessment by Agriculture Development Divisions (ADDs):

### 2.1 SHIRE VALLEY ADD

Dry weather prevailed in Shire Valley ADD during the period under review. The dry weather that existed in the ADD had facilitated harvesting and drying of crops matured crops. Water and pasture for livestock were reported readily available and this continued to improve livestock condition in the ADD. Maize crop was reported to be at drying stage and harvesting of crops was the main agricultural activity the ADD. Harvesting of matured crops has improved household food security in the ADD.

### 2.2 BLANTYRE ADD

Dry weather was experienced in most parts of the ADD during the period under review as the main rainfall season comes to an end. The dry weather continued to facilitate harvesting and drying of matured crops. Maize was mostly at drying stage. Harvesting of matured crops was in progress in the ADD. This has greatly improved household food security in the ADD.

### 2.3 MACHINGA ADD

Dry conditions persisted in Machinga ADD during the period under review as the main rainfall season comes to an end. Most areas had registered either nil rainfall or below average rainfall situation during the entire period. The dry weather continued to facilitate harvesting and drying of matured crops. The Maize crop was reported to be at drying stage. Harvesting of various crops was in progress in the ADD. This has improved household food security in the ADD

### 2.4 LILONGWE ADD

Most Extension Planning Areas (EPAs) in Lilongwe ADD had reported either nil rainfall or below average rainfall situation during the entire period as the main rains are tailing off. The dry weather continued to facilitate harvesting and drying of matured crops. The Maize crop was reported to be between maturity and harvesting stages. Harvesting of matured crops was in progress in the ADD. This continued to improve household food security in Lilongwe ADD.

### 2.5 SALIMA ADD

Salima ADD continued to experience dry weather conditions during the period under review as the main rainfall season concludes. Most areas had either registered nil rainfall or far below average rainfall amounts. The Maize crop was reported to be between drying and harvesting stages. Harvesting of matured crops was in progress in the ADD and this had continued to improving household food security in the ADD.

### 2.6 KASUNGU ADD

Kasung ADD had experienced dry weather conditions during the period under review as the main rainfall season tails off. Most areas had either registered below average rainfall amounts. The Maize crop was reported to be between drying and harvesting stages. Harvesting of matured crops was in progress in the ADD and this had positively impacted on household food security.

### 2.7 MZUZU ADD

Most parts of Mzuzu ADD had received moderate to heavy rains during the period under review. The rains had resulted in floods that had damaged road infrastructure between Mzuzu and Nkhata Bay and also had hampered harvesting of matured crops in the ADD. The Maize crop was reported to be mostly between drying and harvesting stages. Harvesting of matured crops was in progress in the ADD and this had positively impacted on household food security.

### 2.8 KARONGA ADD

Most parts of Karonga ADD had received moderate to heavy rains during the period under review. The rains had hampered harvesting of matured crops in the ADD. The Maize crop was reported to be mostly between drying and harvesting stages. Harvesting of matured crops was in progress in the ADD and this had positively impacted on household food security.

## 3. PROSPECTS FOR 2012/13 RAINFALL SEASON

Updated climate prediction models suggest that neutral conditions (neither El Niño nor La Niña) have been established in the tropical Pacific and model forecasts and expert opinion suggest that neutral conditions are likely to persist into the first quarter of 2013. As the main rainfall season is tailing off, most of the rains will be confined to lakeshore and over highlands during most of the period between April to June 2013.

## 4. OUTLOOK FOR 21 – 30 APRIL 2013

Short to medium weather forecast products indicate that Malawi will experience incursions of cool and moist air from the Indian Ocean. As a result locally cloudy and cold weather with patches of rain and drizzle over the lakeshore and some highlands are expected during the last days of April 2013 as the main summer rainfall season comes to an end.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR DEKAD 2 OF APRIL 2013: PERIOD 11 – 20TH**

STATION NAME	DEKADAL TOTAL RAINFALL mm	DEKADAL NORMAL mm	DEKADAL TOTAL AS PERCENTAGE OF NORMAL	TOTAL TO DATE mm	NORMAL TO DATE mm	NORMAL TODATE AS PERCENTAGE OF NORMAL	RAINY DAYS ≥ 0.3 mm
<b>SOUTHERN REGION</b>							
Balaka Township	0.0	11.8	0	397.7	842.7	47	0
Bvumbwe Met.	3.9	19.6	20	974.7	1066.4	91	2
Chancellor College	0.0	21.2	0	1084.2	1257.8	86	0
Chichiri Met.	2.0	21.1	9	1272.4	1078.6	118	2
Chikwawa Boma	2.2	8.1	27	746.3	743.3	100	1
Chikweo Agric.	0.0	7.9	0	638.7	1036.1	62	0
Chileka Airport	0.0	16.7	0	828.0	863.6	96	0
Chingale Agric	0.0	15.5	0	638.0	904.6	71	0
Chiradzulu Agric	1.8	11.9	15	764.8	953.8	80	1
Chizunga Factory	0.0	32.9	0	935.3	1290.7	72	0
Lujeri Tea Estate	49.3	70.2	70	2266.1	1920.7	118	2
Mpilipili (Makanjila)	7.2	8.3	87	671.6	872.3	77	1
Makhanga Met	0.0	10.5	0	890.4	702.9	127	0
Makoka Met	0.0	14.1	0	569.6	949.1	60	0
Mangochi Met.	1.1	9.4	12	776.2	692.9	112	1
Mimosa Met.	11.5	43.6	26	1426.3	1375.4	104	1
Monkey Bay Met.	0.0	3.3	0	761.6	561.4	136	0
Mpemba Vet	4.7	18.5	25	1132.2	1091.1	104	1
Mulanje Boma	18.4	52.8	35	1614.0	1659.1	97	2
Mwanza Boma	3.5	16.7	21	821.4	988.5	83	1
Namiasi Agric	0.0	3.2	0	652.7	740.8	88	0
Naminjiwa Agric	0.0	9.6	0	903.9	938.3	96	0
Nchalo	7.5	10.2	74	602.1	634.5	95	1
Neno Agric	0.0	21.2	0	1142.0	1068.6	107	0
Ngabu Met.	0.0	13.6	0	737.9	736.3	100	0
Ntaia Met.	0.0	14.0	0	699.1	872.4	80	0
Phalula Agric	0.0	12.7	0	651.0	811.8	80	0
Satemwa Tea Est.	17.5	24.4	72	616.2	1049.3	59	2
Thyolo Boma	10.3	32.3	32	1032.2	1123.7	92	2
Thyolo Met	14.2	19.6	72	825.3	1157.4	71	2
Zomba RTC.	0.0	19.7	0	944.1	1173.5	80	0
<b>CENTRAL REGION</b>							
Bunda College	18.0	7.4	243	876.3	871.7	101	1
Chileka Namitete	0.0	17.8	0	764.2	907.3	84	0
Chitedze Met.	0.7	9.0	8	864.6	868.0	100	1
Dedza Met	0.3	10.3	3	725.3	915.1	79	1
Dowa Agric	0.0	9.6	0	663.6	869.5	76	0
Dwangwa	10.5	58.2	18	1133.5	1287.1	88	1
Dzonzi Forest	0.0	21.1	0	1467.6	973.4	151	0
Kaluluma DTC	0.0	16.8	0	612.6	806.1	76	0
K.I.A Met	5.4	1.6	338	886.2	832.0	107	1
Kasiya Agric	0.0	7.3	0	830.6	935.5	89	0
Kasungu Met	1.0	5.6	18	565.3	766.4	74	1
Lifuwu	0.0	41.4	0	727.5	1216.6	60	0
Lisasadzi	6.2	13.4	46	625.0	805.5	78	1
Malomo Agric	0.0	2.5	0	730.4	810.9	90	0
Madisi Agric	1.4	11.6	12	675.5	824.3	82	1
Mchinji Boma	0.0	15.3	0	610.1	993.2	61	0
Mkanda Met	0.0	3.4	0	576.4	856.7	67	0
Mponela Agric	0.0	5.3	0	658.2	784.3	84	0
Mtakataka Airwing	0.0	10.5	0	555.5	803.9	69	0
Nathenje Agric	0.0	11.5	0	961.6	851.8	113	0
Natural Res. College	8.8	15.6	56	765.8	837.3	91	1
Nkhotakota Met	4.8	56.1	9	1259.6	1397.8	90	2
Ntcheu - Nkhande	2.7	16.8	16	1109.6	1027.8	108	1
Ntchisi Boma	0.0	24.8	0	690.2	1213.8	57	0
Salima Met	1.2	27.6	4	658.0	1195.8	55	1
Dedza RTC	0.0	6.4	0	817.0	973.9	84	0
<b>NORTHERN REGION</b>							
Baka Res. Stn.	108.0	76.4	141	1050.1	1276.8	82	3
Bolero Met	32.5	10.8	301	718.3	624.9	115	2
Bwengu Agric.	58.2	17.5	333	760.4	751.4	101	3
Chikangawa forest	11.1	29.5	38	836.8	1068.5	78	3
Chitipa Met	40.4	17.4	232	848.8	935.8	91	3
Chintheche Agric	70.8	128.5	55	1450.4	1600.8	91	2
Emfeni Agric	0.0	25.8	0	580.1	801.6	72	0
Ekwendeni Agric.	126.2	18.0	701	655.4	797.8	82	4
Euthini Agric.	53.7	13.3	404	679.5	761.4	89	2
Karonga Met.	75.2	59.2	127	1087.2	954.9	114	3
Lupembe	96.1	36.0	267	819.9	809.9	101	3
Mbawa Res. Stn	16.5	12.3	134	750.7	793.9	95	2
Mzimba Met	4.3	13.9	31	553.4	876.2	63	1
Mzuzu Met.	134.8	65.6	205	1066.5	1031.0	103	4
NkhataBay Met.	66.7	96.0	69	1691.2	1311.9	129	3
Rumpho Boma	50.6	13.2	383	641.2	720.0	89	2
Vinthukutu Agric	53.5	73.5	73	1594.7	1067.2	149	4
Zombwe Agric	58.1	19.0	306	763.1	735.9	104	3

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 11 TO 20 APRIL 2013**

STATION	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEED (m/s)	RH (%)	EVAP (mm)
<b>KARONGA ADD</b>							
Chitipa	25.8	16.9	29.1	12.5	3.1	76	N/A
Karonga	29.1	20.3	32.4	17.3	1.1	76	N/A
<b>MZUZU ADD</b>							
Bolero	27.3	15.9	29.3	12.0	N/A	74	N/A
Mzuzu	23.8	14.8	26.8	12.2	1.3	83	N/A
Mzimba	27.6	15.6	30.6	12.2	1.5	66	N/A
Nkhata Bay	29.3	18.8	32.2	16.0	0.8	76	N/A
<b>KASUNGU ADD</b>							
Kasungu	29.7	14.3	32.4	9.7	1.0	63	N/A
<b>LILONGWE ADD</b>							
KIA	26.0	13.7	29.3	9.6	1.4	68	5.3
Chitedze	26.9	14.5	28.9	10.7	0.8	71	N/A
Dedza	23.2	13.4	27.4	9.8	1.9	72	N/A
<b>SALIMA ADD</b>							
Salima	30.4	20.1	32.8	16.0	2.6	63	N/A
Nkhotakota	28.1	20.0	30.6	17.8	2.3	65	N/A
<b>MACHINGA ADD</b>							
Makoka	27.0	15.2	31.0	12.0	1.6	49	N/A
Ntaja	28.4	18.1	31.8	15.1	1.7	61	N/A
Mangochi	30.8	18.8	33.6	16.8	1.6	65	N/A
Monkey Bay	30.3	20.3	33.0	16.9	2.0	58	N/A
<b>BLANTYRE ADD</b>							
Chileka	27.7	18.2	31.5	15.5	2.9	64	N/A
Chichiri	25.4	15.8	29.4	13.5	1.5	60	N/A
Bvumbwe	24.2	13.1	27.9	9.9	1.9	74	N/A
Mimosa	29.4	16.8	33.3	14.2	1.0	71	4.4
<b>SHIRE VALLEY ADD</b>							
Ngabu	30.8	N/A	34.6	N/A	1.3	53	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).
- convert Meters Per Second (mps) to Kilometers per hour (Km/hr) = mps x 3.6