



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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Season: 2012/2013

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## HIGHLIGHTS

- Moderate to heavy rains persist over most parts of Malawi ...
- Maize crop doing well between vegetative and maturity stages...
- More rains expected during 11 – 20 February 2013...

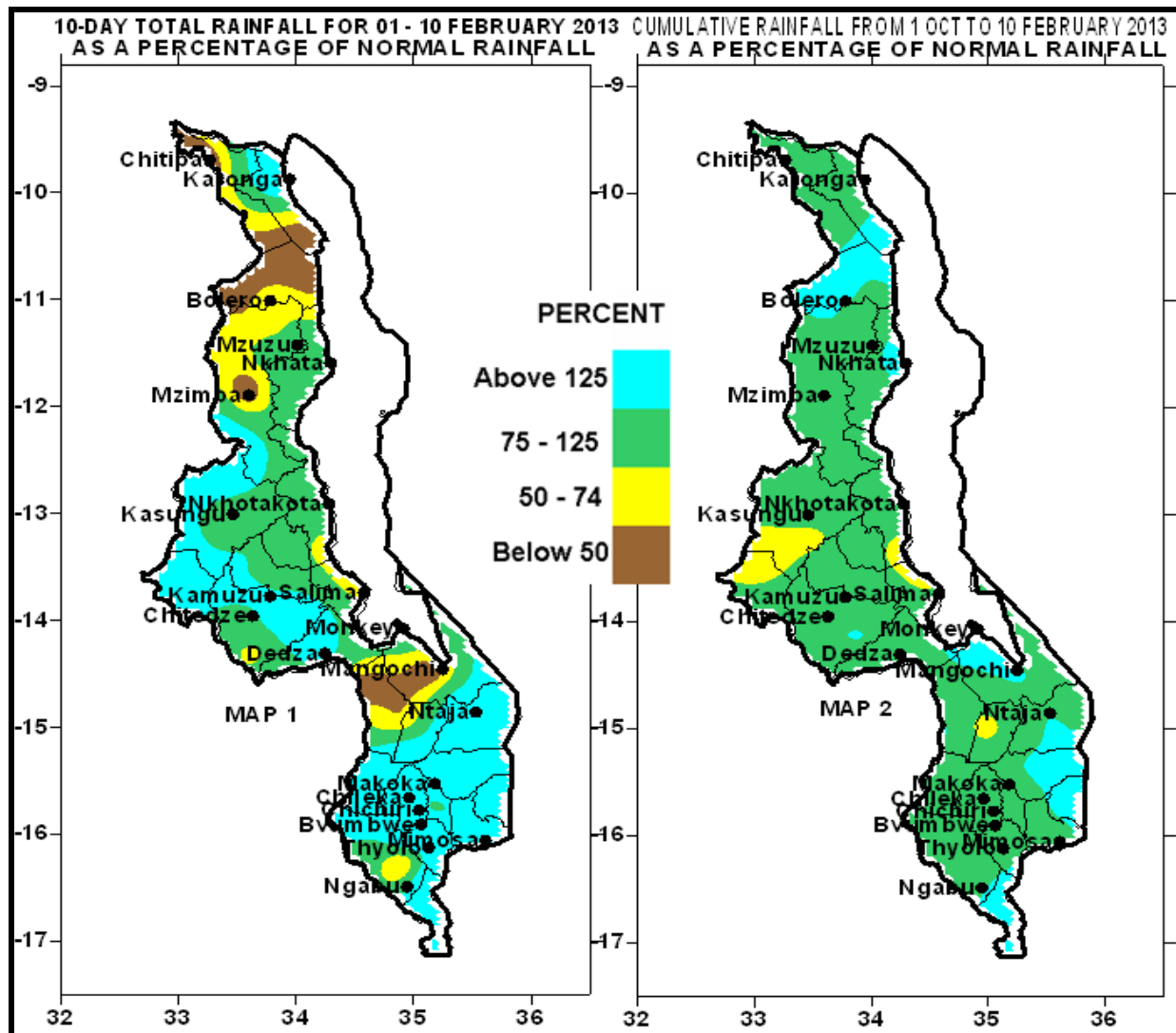


Figure 1: Rainfall Maps for Malawi for 01 – 10 February 2013

**1.0 WEATHER SUMMARY AND IMPACTS**

**1.1 RAINFALL SITUATION**

During the first ten days of February 2013 the active rain belt caused by moist and unstable Congo air mass had shifted southwards from northern half to southern half of Malawi. As a result widespread locally heavy rains were mostly confined to southern and some parts of central Malawi while the north had generally experienced reduced rainfall in terms of distribution and amounts. Most areas in the north had accumulated rainfall amounts of not more than 75mm during the entire period under review. Very high rainfall amounts exceeding 180mm were mostly confined to southern Malawi where places like Zomba Agric had reported 313mm. Chancellor College 255mm, Neno Agric 193mm, Chizunga factory 190mm, Makoka 188mm, Mpemba Agric in Blantyre 186mm, Bvumbwe met 184mm, Thyolo Agric 183mm and Ntaja Met 182mm See more details in Table 1. This represented above normal rainfall situation (represented by light blue colours on Map 1).

Map 2 indicates the situation of cumulative rainfall performance for the country since 1 October 2012. From the map, most areas in Malawi have achieved normal to above normal cumulative rainfall (green and light blue colours on Map 2) with a few pockets of below average rainfall (less than 75% of the expected cumulative rainfall amounts) by 10 February 2013. For more details refer to Table 1 and Map 2.

**1.2 VEGETATION CONDITION**

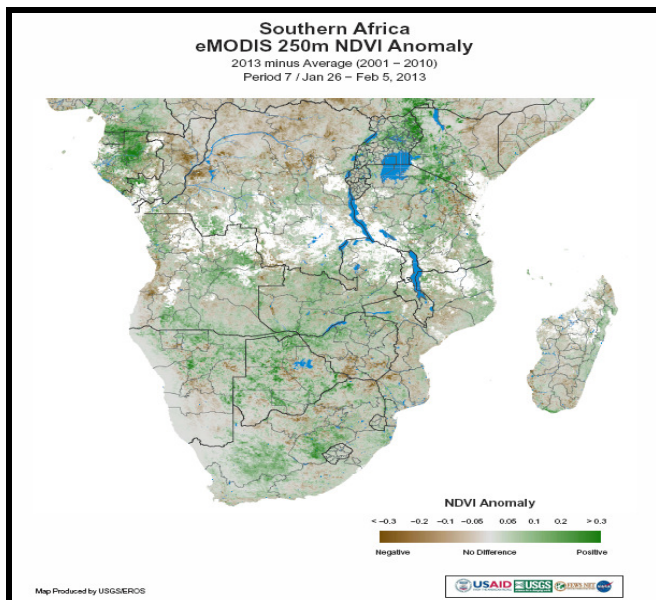


Figure 2: Vegetation Condition over Southern Africa

The vegetation difference from long term average map for Southern Africa for the period 26 January to 5 February 2013 showed continued improvement in most areas. (Figure2). Pockets of negative anomalies are closing up in the region. This has been attributed to normalization of the main rainfall season due to improvement in rainfall performance.

**1.3 AIR TEMPERATURE**

Generally warm to hot temperatures continued to be experienced over the country during the first ten days of February 2013. Mean maximum temperatures ranged from 22.8°C at Dedza to around 32.4°C at Ngabu. Compared to the previous dekad, maximum temperatures this time were still lower due to increased cloudiness and the rainfall that was being received. Mean minimum temperatures ranged from around 15.8°C at Dedza to 22.4°C at Monkey Bay (Table 2). The highest absolute maximum temperature for the period was about 35.5°C, observed at Ngabu in Shire Valley.

**1.4 WIND SPEEDS**

Mean wind speeds at a height of two metres above the ground level ranged from 0.6 to 1.9 metres per second. The lowest mean wind speed was reported at Nkhata Bay, Chitedze, Ntaja and Ngabu while the highest mean wind speed was recorded at Chitipa Refer to Table 2.

**1.5 RELATIVE HUMIDITY**

During the period under review, air over Malawi was generally humid. Mean daily relative humidity values ranged from 70% at Ngabu to 88% at Makoka See more details in Table 2.

**2.0 AGROMETEOROLOGICAL ASSESSMENT**

During the first ten days of February 2013 substantial amount rainfall was received over most parts of the country. Most areas in the south and centre had recorded rainfall amounts of above 100mm which was sufficient to satisfy daily water requirements of crops. The rains also continued to improve water resources and soil moisture reserves and pasture availability for communal grazing. The general crop stand in the fields was reported in good condition with Maize reported at various stages of development ranging from vegetative to maturity stages. On farm activities included weeding

and application of top dressing fertilizers. In most parts of the country, the maize crop was reported to be doing well particularly where fertilizer has been applied and if good rainfall performance continues up to March then bumper harvests are inevitable this season. Here are Agriculture Development Division (ADD) agrometeorological impact assessments:

### 2.1 SHIRE VALLEY ADD

Moderate to heavy rains persisted in the ADD causing above average rainfall situation. These rains facilitated crop and pasture development as well as regeneration of the natural vegetation for communal grazing of livestock. The main agricultural activities in the ADD included weeding and application of top dressing fertilizer. Maize crop ranged from vegetative to tasseling and cob formation stages

### 2.2 BLANTYRE ADD

Good rains for agricultural production continued falling in the ADD during the first ten days of February 2013. Most areas had registered high intensity rainfall. These rains continued to satisfy crop water requirements and facilitated crop growth and development. The Maize crop was reported doing well particularly where fertilizer has been applied. Reports from the districts indicated that the major agricultural activities during the period under review included weeding and application of top dressing fertilizer. Maize crop was reported to be at varying stages of development ranging from tasseling and cobbing to maturity for the early planted crops.

### 2.3 MACHINGA ADD

Good rains for agricultural production were received in most parts of the ADD during the first ten days of February 2013. Some farmers were still applying top dressing fertilizer particularly for late planted crops. The major agricultural activities in the ADD included weeding. Maize crop was reported in good condition and ranged from flowering to maturity stages.

### 2.4 LILONGWE ADD

Most parts of the Lilongwe ADD had recorded moderate rains during the first ten days of February 2013. These rains had facilitated crop growth and development as well as application of top dressing fertilizer. The major agricultural activities in the ADD included weeding and banding. Maize crop was reported doing well and had ranged mostly from tasseling to cob formation stages.

### 2.5 SALIMA ADD

During the period under review Salima ADD had recorded moderate rainfall with good distribution. Reports from the districts in the ADD had indicated that weeding and application of basal dressing fertilizer were in progress. Maize crop was reported ranging from tasseling to cob formation stages.

### 2.6 KASUNGU ADD

Light to moderate rainfall was recorded in most parts of Kasungu ADD. These rains were sufficient to satisfy daily water requirements of crops. Maize crop ranged from tasseling to cob formation stages. On field Agricultural activities in the ADD included banking and application of top dressing fertilizer.

### 2.7 MZUZU ADD

Most areas in Mzuzu ADD had recorded reduced rainfall (Yellow and Brown colours on Map 1) during the period under review compared to the last ten days of January. Maize crop in the ADD ranged from vegetative to flowering and cob formation stages. Agricultural activities in Mzuzu ADD included weeding fertilizer application and banding.

### 2.8 KARONGA ADD

Karonga ADD had a mixed rainfall pattern. Chitipa district had received light to moderate rainfall was Karonga had locally heavy rains during the period under review. Weeding and application of fertilizer were in progress in most EPAs. The maize crop in Karonga ADD had ranged from vegetative to cob formation stages.

## 3. PROSPECTS FOR 2012/13 RAINFALL SEASON

The summary of the 2012/2013 rainfall outlook is that ***“Normal total rainfall amounts are expected over most parts of Malawi during the 2012/2013 rainfall season”***. The updated rainfall outlook indicates that despite the poor start of 2012/2013 rainfall season the greater part of the country will still experience normal to above normal total rainfall amounts by end of March 2013.

This forecast covers the rainfall season from October 2012 to March 2013 and is relevant only to seasonal time-scales and relatively large areas. It does not fully account for local and month to month variations in distribution of rainfall such as localised dry spells and flash floods.

The seasonal forecast is issued to users as a planning tool. For day to day operations, users are advised to make use of the available short to medium range forecasts and the 10-day Rainfall and Agrometeorological bulletin issued by the Department.

## 4. OUTLOOK FOR 11 – 20 FEBRUARY 2013

Models for short and medium term weather forecasts suggest that both main rain-bearing systems namely Congo Air mass and Inter Tropical Convergence Zone will be very active over Malawi. Therefore, widespread locally heavy rains are expected to persist over Malawi during the second ten days of February 2013.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR DEKAD 1 OF FEBRUARY 2013: PERIOD 01 – 10<sup>TH</sup>**

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	48.5	79.3	61	304.5	585.2	52	6
Bvumbwe Met.	184.1	90.3	204	720.2	697.5	103	5
Chancellor College	254.6	106.2	240	1063.9	811.1	131	8
Chikwawa Boma	92.3	66.7	138	582.7	529.1	110	6
Chikweo Agric.	155.4	78.5	198	675.9	673.8	100	7
Chileka Airport	170.5	88.5	193	691.2	586.5	118	5
Chingale Agric	169.5	83.6	203	740.3	601.3	123	7
Chiradzulu Agric	93.2	98.9	94	543.2	644.3	84	4
Chizunga Factory	190.0	74.2	256	652.3	811.1	80	4
Kasinthula Res. Stn.	100.6	54.2	186	512.9	441.5	116	4
Makhangwa Met	165.0	58.5	282	783.0	478.7	164	5
Makoka Met	187.5	91.7	204	583.0	640.1	91	6
Mangochi Met.	16.9	72.4	23	579.5	418.4	139	7
Masambanjati Agric	132.9	87.8	151	831.7	777.8	107	5
Mimosa Met.	172.3	95.2	181	1032.9	867.8	119	8
Monkey Bay Met.	89.7	71.7	125	691.1	399.1	173	6
Mpemba Vet	185.6	84.8	219	828.5	725.9	114	4
Mulanje Boma	156.0	109.5	142	946.1	1067.0	89	5
Mwanza Boma	175.2	91.2	192	642.2	657.1	98	8
Namiasi Agric	47.9	92.2	52	573.0	515.2	111	3
Naminiwa Agric	133.5	83.6	160	869.4	638.2	136	7
Namwera Agric	110.3	83.2	133	690.5	655.3	105	5
Nchalo	37.0	70.2	53	357.4	434.9	82	5
Neno Agric	192.5	107.8	179	926.3	721.7	128	6
Ngabu Met.	70.4	69.1	102	566.9	498.4	114	7
Ntaja Met.	181.5	65.8	276	742.0	561.8	132	9
Phalula Agric	128.0	67.3	190	557.8	548.4	102	7
Thuchila Agric	123.5	80.2	154	492.4	563.2	87	6
Thyolo Boma	183.3	96.3	190	756.7	702.6	108	5
Thyolo Met	91.2	90.3	101	544.4	711.9	76	4
Zomba RTC	313.0	100.2	312	1063.8	767.2	139	8
<b>CENTRAL REGION</b>							
Bunda College	44.3	62.9	70	723.7	561.6	129	4
Chileka Namitete	74.5	76.2	98	591.7	609.0	97	3
Chitedze Met.	56.2	65.2	86	610.9	544.9	112	6
Dedza Met	103.0	74.9	138	649.4	582.5	111	6
Dowa Agric	71.4	66.2	108	522.9	552.6	95	6
Dwangwa.	85.5	76.7	111	512.1	661.9	77	5
Dzonzi Forest	56.7	84.4	67	793.6	636.5	125	7
Kaluluma DTC	124.6	57.6	216	483.0	517.3	93	5
K.I.A Met	105.5	72.1	146	666.8	524.2	127	8
Kasiya Agric	103.1	64.5	160	578.1	605.2	96	7
Kasungu Met	52.1	72.0	72	449.2	486.2	92	5
Lifuwu	46.2	129.0	36	373.8	702.3	53	6
Malomo Agric	84.9	81.0	105	503.5	515.8	98	3
Madisi Agric	90.2	72.9	124	464.2	519.0	89	6
Mchinji Boma	106.3	62.1	171	582.5	648.8	90	6
Mlangeni Njolomole	13.5	81.5	17	585.7	593.6	99	5
Mponela Agric	65.6	83.0	79	476.6	510.4	93	5
Nathenje Agric	121.0	56.4	215	638.4	516.1	124	4
Natural Res. College	95.2	57.8	165	533.9	547.7	97	5
Nkhotakota Met	83.4	84.2	99	687.6	710.9	97	5
Ntcheu - Nkhanda	52.6	84.6	62	730.5	672.3	109	7
Ntchisi Boma	69.2	103.8	67	499.4	739.8	68	6
Salima Met	68.6	102.3	67	615.6	683.0	90	6
Dedza RTC	106.3	103.2	103	650.2	653.6	99	6
<b>NORTHERN REGION</b>							
Baka Res. Stn.	106.2	51.0	208	335.5	497.5	67	5
Bolero Met	27.4	51.2	54	551.2	394.7	140	3
Bwengu Agric.	27.5	58.8	47	448.6	465.7	96	3
Chikangawa forest	58.4	69.4	84	512.8	594.8	86	7
Chitipa Met	21.4	87.6	24	559.6	561.1	100	5
Chinthchehe Agric	84.0	76.0	111	741.4	731.7	101	2
Ermfeni Agric	89.3	65.3	137	503.6	513.7	98	3
Ekwendeni Agric.	76.4	43.2	177	316.4	488.1	65	4
Euthini Agric.	41.0	62.7	65	507.5	470.8	108	3
Karonga Met.	129.4	48.7	266	454.4	436.4	104	5
Lupembe	47.3	49.8	95	442.2	382.2	116	4
Mbawa Res. Stn	94.0	66.5	141	581.2	507.3	115	4
Mzimba Met	11.6	67.2	17	463.0	543.5	85	5
Mzuzu Met.	41.8	51.9	81	598.8	527.9	113	4
NkhataBay Met.	64.8	65.3	99	984.7	604.3	163	7
Rumphu Boma	46.9	56.1	84	451.7	429.6	105	3
Vinthukutu Agric	9.2	53.6	17	730.9	494.8	148	2
Zombwe Agric	31.8	48.8	65	480.4	422.2	114	5

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 01 TO 10 FEBRUARY 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	27.5	17.9	27.5	15.9	1.9	78	N/A
Karonga	30.8	21.8	32.2	20.0	1.0	72	N/A
<b>MZUZU ADD</b>							
Bolero	28.7	18.6	30.3	17.7	N/A	76	N/A
Mzuzu	26.9	17.7	29.4	15.4	1.3	78	N/A
Mzimba	26.7	17.5	29.5	15.5	1.1	78	N/A
Nkhata Bay	31.0	21.4	32.3	19.6	0.6	79	N/A
<b>KASUNGU ADD</b>							
Kasungu	28.5	18.7	30.4	17.3	1.3	76	N/A
<b>LILONGWE ADD</b>							
KIA	26.6	18.0	28.3	17.2	1.2	78	4.5
Chitedze	28.2	18.5	28.9	17.9	0.6	80	N/A
Dedza	22.8	15.8	25.2	14.4	1.4	82	N/A
<b>SALIMA ADD</b>							
Salima	30.2	22.3	31.3	21.0	1.4	79	N/A
Nkhotakota	28.5	21.7	30.4	19.5	1.6	78	N/A
<b>MACHINGA ADD</b>							
Makoka	27.6	18.5	29.1	14.4	1.4	88	N/A
Ntaja	28.6	20.8	30.6	19.6	0.6	76	N/A
Mangochi	31.0	22.3	32.4	20.5	0.9	78	N/A
Monkey Bay	29.6	22.4	31.2	19.5	1.4	79	N/A
<b>BLANTYRE ADD</b>							
Chileka	28.5	20.4	31.0	19.5	1.8	74	N/A
Chichiri	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bvumbwe	25.6	16.1	27.3	14.6	1.1	79	N/A
Mimosa	30.9	19.9	33.8	18.3	0.9	81	4.5
<b>SHIRE VALLEY ADD</b>							
Ngabu	32.4	N/A	35.5	N/A	0.6	70	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) = mpsx3.6