



REPUBLIC OF MALAWI

Ministry of Natural Resources, Energy and Mining
Department of Climate Change and Meteorological Services

10-day Weather and Agrometeorological Bulletin

In support of national early warning systems and food security



Be wise be weather-wise

Period: 01 – 10 March 2016

Season: 2015/2016

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HIGHLIGHTS

- Mostly below average rainfall experienced over Malawi ...
- Prolonged dry spells cause low Maize production during 2015/16 season...
- Fairly scattered rainfall expected over Malawi during 11 to 20 March 2016 ...

10 - DAY TOTAL RAINFALL FOR 01 - 10 MARCH 2016 AS A PERCENTAGE OF NORMAL RAINFALL

CUMULATIVE RAINFALL FROM 1 OCT TO 10 MARCH 2016 AS A PERCENTAGE OF NORMAL RAINFALL

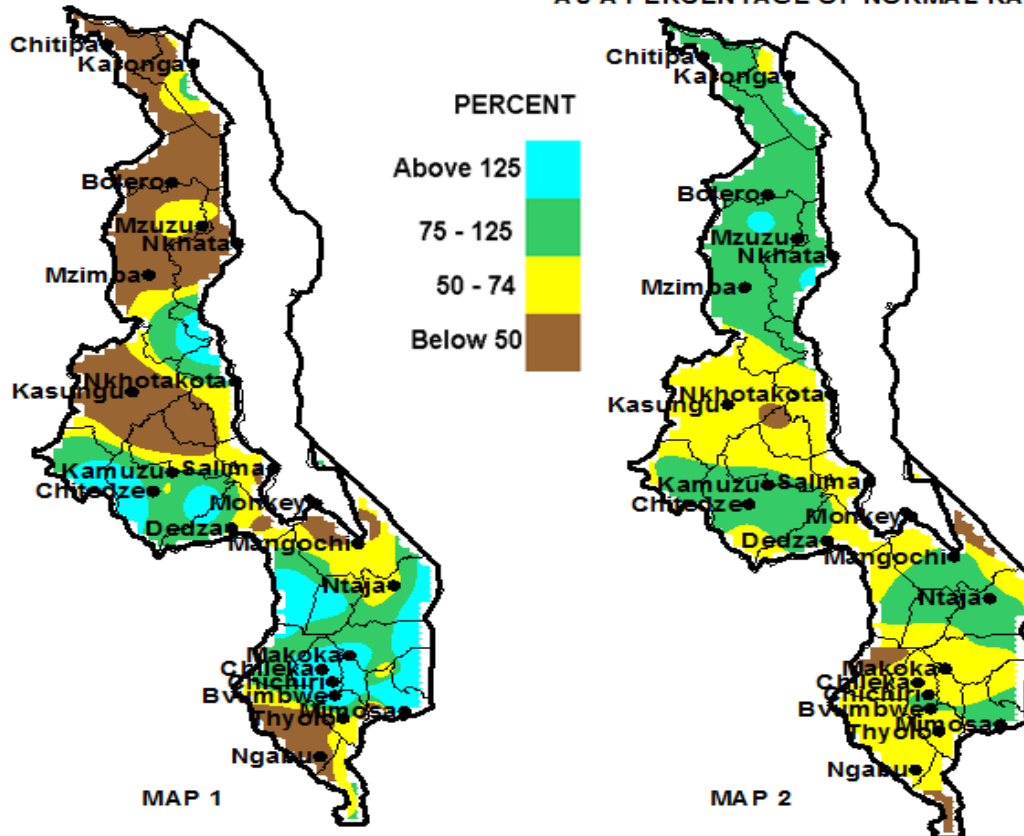


Figure 1: Rainfall Maps for 01 to 10 March 2016

1.0 WEATHER SUMMARY

During the period 01 to 10 March 2016 especially during the first five to six days, the Inter Tropical Convergence Zone was located over southern and central Malawi. As a result average to above average cumulative rainfall amounts were registered over some parts of southern and central Malawi while the rest of the country had received generally below average rainfall amounts.

1.1 RAINFALL SITUATION

During the period 01 to 10 March 2016, moderate to heavy and well distributed rainfall was confined to some parts of southern and central Malawi while most areas in northern Malawi had experienced below average cumulative rainfall amounts and two to three rainfall days. In southern Malawi rainfall stations that had reported high cumulative rainfall amounts of at least 120mm had included Lujeri Tea Estate in Mulanje which had reported 294mm, Mimosa Met 210mm, Mulanje Agric 176mm, Bvumbwe Met in Thyolo district had 160mm, Mpemba Agric 159mm, Balaka Agric had registered 139mm. Makoka Met 127mm and Chiradzulu Agric had 120mm while in central Malawi significant rainfall amounts were reported at Dwangwa 238mm, Dzonzi Forest 160mm, Chileka-Namitete 143mm and Nathenje Agric had reported 134mm. Most of these stations had registered between five and six rainfall days. However, in southern Malawi low rainfall and prolonged dry spells had persisted in lower Shire districts of Nsanje and Chikwawa and some parts of Mangochi district. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 10 March 2016. The map indicates that seasonal rainfall deficits (yellow to brown colour) still existed in most parts of southern and central Malawi while northern Malawi has generally received average seasonal rainfall amounts. Refer to Map 2 and Table 1 for more details.

1.3 AIR TEMPERATURE

During the period 01 to 10 March 2016 hot to very weather had continued over Malawi. The average daily maximum temperatures had ranged from 26°C at Dedza to 36°C at Ngabu in Chikwawa district. The average minimum temperatures were between 17°C and 25°C at Dedza and Ngabu respectively. The highest maximum temperature was 37°C recorded at Ngabu in Chikwawa while the lowest temperature was 16°C reported at Dedza. For more details refer to Table 2.

1.4 WIND SPEEDS

During the first ten days of March 2016 daily average wind speeds measured at a height of two metres above the ground level across Malawi had ranged from 0.7Km per hour at Mangochi to 9.7km per hour at Chitipa. High wind speeds have a good for wind energy. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the period 01 to 10 March 2016, air over Malawi was fairly moist. The daily average relative humidity values had ranged from 64% at Bolero in Rumphu district to 79% at Dedza. High relative humidity values are conducive for fungal diseases. Details are on the Table 2.

1.6 SUNSHINE HOURS

The mean durations of bright sunshine hours in Malawi were between 6 and 9 hours. The highest mean sunshine hours was observed at Chileka Airport registered 9.2 hours. Details are on the Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

Following relatively good rainfall performance during the months of December and January, some parts of northern Malawi started experiencing low rainfall and dry spells in February 2016 and these conditions had persisted into the first ten days of March 2016. As a result crops in most areas were reported to have survived on residual soil moisture while in Karonga central crops were reported wilting. Otherwise good rainfall for agricultural production was confined to some parts of central and southern Malawi except for the lower Shire districts of Nsanje and Chikwawa where below average rainfall situation had continued. The good rainfall amounts apart from supporting growth and development of late planted crops had also improved water resources, soil moisture reserves and natural pasture availability.

The general crop stand in the fields was reported in good condition in the northern Malawi while in central and southern Malawi prolonged dry spells have negatively impacted on crop production. The first round of 2015/16 Agriculture Production Estimates Survey from Ministry of Agriculture, Irrigation and Water Development (MoAIWD) has projected the national maize production at **2,719,425** metric tons which is 2.0 percent lower than the 2014/15 final round estimate of **2,776,277** metric tons. The reduction has been attributed to negative impacts of low rainfall and prolonged dry spells.

3. PROSPECTS FOR 2015-2016 RAINFALL SEASON

Most climate models predict that strong El Nino conditions are weakening and may reach neutral levels by winter and La Nina conditions during 2016/17 rainfall season. However, rainfall outlook for the 2015-2016 season suggest that higher than usual chances that Malawi is likely to receive below average rainfall amounts during the period March to May (MAM) 2016.

4. OUTLOOK FOR 11 – 20 MARCH 2016

Models for short and medium range rainfall forecasts suggest that the Inter Tropical Convergence Zone is likely to affect some parts of Malawi with the period 11 to 20 March 2016. Therefore expect fairly scattered and locally heavy rainfall over Malawi during the second ten days of March 2016.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 01 TO 10 MARCH 2016

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.	41.5	115.8	36	439.3	731.3	60	3
	Chitipa Met	23.5	64.3	37	759.9	761.6	100	2
	Karonga Met.	45.3	73.4	62	405.2	614.8	66	4
	Lupembe	78.0	65.6	119	738.5	558.6	132	3
MZUZU	Vinthukutu Agric	9.7	76.7	13	808.6	679.0	119	3
	Bolero Met	6.2	47.9	13	612.6	538.4	114	2
	Bwengu Agric.	11.2	38.1	29	657.0	615.4	107	1
	Chikangawa forest	0.0	76.1	0	785.5	810.4	97	0
	Chintheche Agric	43.2	136.1	32	1488.5	1011.4	147	3
	Ekwendeni Agric.	47.0	46.3	102	536.3	660.4	81	2
	Euthini Agric.	0.0	52.0	0	654.6	639.7	102	0
	Mbawa Res. Stn	27.4	68.8	40	552.4	688.9	80	5
	Mzimba Met	36.0	71.7	50	780.5	748.9	104	4
	Mzuzu Met.	31.9	81.0	39	817.7	717.1	114	6
	NkhataBay Met.	51.4	97.5	53	916.1	819.2	112	6
	Rumphu Boma	6.0	61.4	10	729.7	600.7	121	1
Zombwe Agric	51.6	56.5	91	817.9	588.7	139	2	
KASUNGU	Dowa Agric	34.2	74.8	46	490.5	748.7	66	4
	Kasungu Met	4.4	64.3	7	428.4	673.4	64	4
	Lisasadzi	0.0	52.9	0	437.1	719.1	61	0
	Malomo Agric	18.1	84.3	21	302.5	714.6	42	2
	Madisi Agric	0.0	66.7	0	444.9	735.3	61	0
	Mchinji Boma	57.5	57.8	99	623.5	851.3	73	5
	Mkanda Met	51.8	60.2	86	565.8	742.4	76	3
	Mponela Agric	25.6	61.2	42	479.0	704.4	68	3
	Mwimba Research	24.8	76.5	32	427.0	771.2	55	2
	Ntchisi Boma	50.9	86.3	59	592.7	991.7	60	3
SALIMA	Dwangwa	238.4	108.4	220	779.4	900.5	87	6
	Lifuwu	54.8	98.7	56	473.3	978.5	48	4
	Nkhotakota Met	92.4	118.2	78	673.3	988.4	68	5
	Salima Met	31.8	98.7	32	456.6	966.2	47	5
LILONGWE	Chileka Namitete	142.5	44.7	319	716.3	782.4	92	3
	Chitedze Met.	10.6	67.5	16	550.4	737.0	75	4
	Dzonzi Forest	159.9	82.9	193	740.8	836.3	89	4
	K.I.A Met	59.0	69.1	85	692.1	721.7	96	4
	Mtakataka Airwing	32.7	63.7	51	161.7	675.1	24	6
	Nathenje Agric	134.2	62.7	214	887.0	718.7	123	4
	Ntcheu - Nkhande	116.4	79.3	147	515.5	896.6	57	3
	Dedza Met	31.9	86.8	37	534.0	851.5	63	4
MACHINGA	Balaka Township	139.2	57.5	242	651.3	736.5	88	2
	Chingale Agric	66.6	57.6	116	537.2	781.1	69	4
	Mpilipili (Makanjila)	68.3	61.5	111	424.2	770.9	55	4
	Makoka Met	127.3	65.1	196	487.2	825.1	59	3
	Mangochi Met.	32.0	55.1	58	598.5	586.0	102	3
	Monkey Bay Met.	24.1	42.4	57	265.3	521.9	51	3
	Namiasi Agric	0.0	44.0	0	386.3	659.8	59	0
	Namwera Agric	47.4	71.1	67	302.8	851.2	36	4
	Ntaja Met.	33.3	58.0	57	556.5	734.0	76	2
	Phalula Agric	39.0	57.2	68	363.7	720.6	50	3
	Toleza Farm	68.0	64.0	106	602.0	731.4	82	5
	Zomba Agric	83.9	76.0	110	732.2	979.7	75	6
BLANTYRE	Bvumbwe Met.	160.1	70.3	228	831.8	904.0	92	4
	Chichiri Met.	49.0	24.6	199	718.7	997.1	72	4
	Chileka Airport	88.8	51.8	171	535.6	736.6	73	4
	Chiradzulu Agric	120.0	73.1	164	424.3	836.9	51	3
	Chizunga Factory	58.1	89.1	65	438.1	1047.3	42	5
	Lujeri Tea Estate	294.4	14.8	1989	1746.5	1466.3	119	6
	Mimosa Met.	210.1	95.1	221	1011.8	1097.7	92	5
	Mpemba Vet	158.6	77.9	204	717.5	926.5	77	6
	Mulanje Boma	175.7	119.1	148	1277.1	1328.9	96	4
	Naminjiwa Agric	65.0	66.3	98	559.2	829.3	67	3
	Satemwa Tea Estate	37.0	73.0	51	606.8	854.1	71	4
	Thyolo Boma	25.0	84.4	30	303.9	918.3	33	3
	Thyolo Met	61.3	70.3	87	657.5	992.2	66	3
	SHIRE VALLEY	Chikwawa Boma	20.0	43.8	46	417.9	647.2	65
Ngabu Met.		19.3	41.8	46	366.2	632.4	58	2
Nsanje Boma		62.9	81.5	77	311.5	892.9	35	2

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 01 TO 10 MARCH 2016

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	29.2	19.1	30.3	17.4	9.7	73	7.8	7.0	5.5	9.4
Karonga	31.7	22.5	33.0	21.0	4.3	71	7.8	7.2	5.7	9.4
MZUZU ADD										
Bolero	30.3	19.0	30.7	17.9	3.6	64	7.0	6.6	5.2	9.0
Mzimba	29.0	18.7	30.2	17.0	2.5	71	6.5	6.2	4.8	8.6
Mzuzu	27.2	18.8	28.4	17.0	4.7	78	7.2	6.3	4.9	9.1
Nkhata Bay	32.1	22.5	33.2	21.5	2.2	78	8.1	7.2	5.7	9.7
KASUNGU ADD										
Kasungu	30.5	19.5	31.6	18.5	5.0	70	7.0	6.7	5.3	9.0
LILONGWE ADD										
Chitedze	28.5	19.5	30.4	18.4	2.5	76	7.0	6.3	4.9	9.0
Dedza	26.3	17.4	28.2	15.6	8.6	79	7.5	6.4	5.0	9.3
K I A	27.2	18.9	28.6	18.2	5.0	76	7.9	6.6	5.2	9.6
SALIMA ADD										
Nkhotakota	30.8	22.5	32.5	21.0	2.9	74	7.5	7.1	5.6	9.3
Salima	31.6	23.2	33.1	22.0	2.9	74	7.9	7.2	5.7	9.6
MACHINGA ADD										
Makoka	28.7	20.1	30.2	19.4	3.6	76	8.0	6.8	5.3	9.6
Mangochi	32.7	23.9	34.5	23.4	0.7	73	8.0	7.3	5.8	9.6
Monkey Bay	32.6	24.2	34.2	22.8	5.0	70	8.3	7.8	6.3	9.8
Ntaja	31.3	27.3	33.8	21.6	5.0	75	8.0	7.8	6.3	9.6
BLANTYRE ADD										
Bvumbwe	27.1	19.3	28.8	18.2	4.7	78	7.2	6.3	4.9	9.1
Chichiri	29.4	19.9	31.2	18.7	3.6	66	7.0	6.6	5.2	9.0
Chileka	30.4	21.6	32.5	20.1	8.6	73	9.2	7.8	6.2	10.4
Mimosa	27.9	21.0	34.0	19.4	3.2	70	8.0	6.8	5.3	9.6
SHIRE VALLEY ADD										
Ngabu	36.2	25.0	37.0	23.9	6.8	66	8.5	8.5	6.9	9.9

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 Kilometers per hour (Km/hr) to meters per second (mps) = (Km/Hr)/3.6