



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: 21 – 31 March 2016

Season: 2015/2016

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## HIGHLIGHTS

- Mostly below average rainfall amounts experienced over Malawi...
- Maize crop ranged from maturity to drying and harvesting stages...
- Scattered locally heavy rains expected over Malawi during 01 to 10 April 2016...

10 - DAY TOTAL RAINFALL FOR 21 - 31 MARCH 2016  
AS A PERCENTAGE OF NORMAL RAINFALL

CUMULATIVE RAINFALL FROM 1 OCTOBER TO 31 MARCH 2016  
AS A PERCENTAGE OF NORMAL RAINFALL

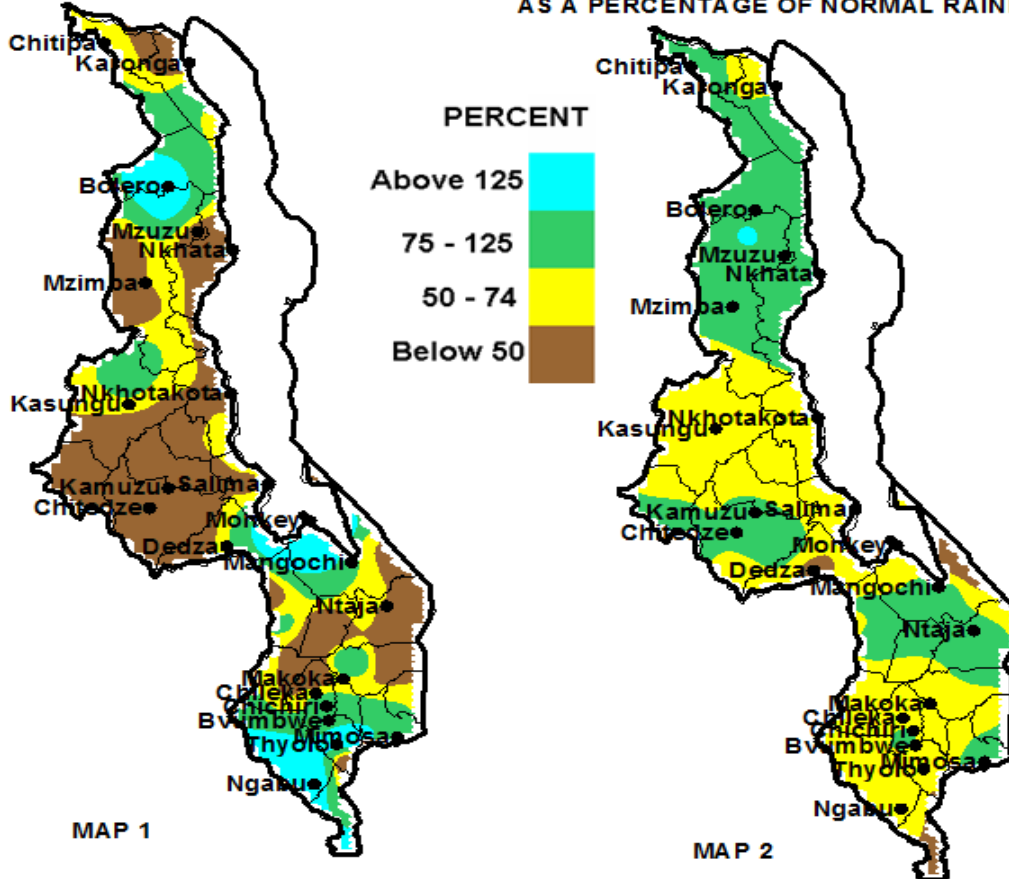


Figure 1: Rainfall Maps for 21 to 31 March 2016

## 1.0 WEATHER SUMMARY

During the last ten days of March 2016 the main rain belt had moved to north of Malawi. As a result very few areas in Malawi had received average to above average rainfall amounts.

### 1.1 RAINFALL SITUATION

During the period 21 to 31 March 2016, moderate to heavy rainfall with better distribution was confined to very few areas in the south and north while most areas in Malawi had experienced average to far below average cumulative rainfall amounts with an average of one to two rainfall days. In the southern Malawi rainfall stations that had registered significant cumulative rainfall amounts of at least 75mm were mostly from Nsanje, Chikwawa and southern highlands and included Lujeri Tea Estate which had registered 110mm, Chizunga factory had recorded 99mm, Mulanje Boma had 98mm, 95mm was recorded at Satemwa Tea Estate, Ngabu Met and Nsanje Agric had 75mm each and in the north Lupembe Agric and Chelinda at Nyika plateau had reported 88mm. Most areas in Malawi had experienced low rainfall and long dry spells. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 31 March 2016. The map indicates that seasonal rainfall deficits (yellow to brown colour) still existed in most parts of southern and central Malawi while generally northern Malawi has received average cumulative rainfall amounts. Refer to Map 2 and Table 1 for more details.

### 1.3 AIR TEMPERATURE

During the period 21 to 31 March 2016 warm to hot weather had covered most parts of Malawi. The average daily maximum temperatures had ranged from 25.3°C at Bvumbwe to 32.7°C at Ngabu in Chikwawa district. The average minimum temperatures were between 15°C and 22.9°C at Dedza and Ngabu respectively. The highest maximum temperature was 35.4°C still recorded at Ngabu in Chikwawa while the lowest temperature was 12.3°C reported at Dedza. For more details refer to Table 2.

### 1.4 WIND SPEEDS

During the 21 to 31 March 2016 daily average wind speeds measured at a height of two metres above the ground level across Malawi had ranged from 1.1Km per hour at Mangochi to 8.6km per hour at Chileka. High wind speeds have a good for generation of wind energy. More details are in Table 2.

### 1.5 RELATIVE HUMIDITY

During the period 21 to 31 March 2016, air over Malawi was fairly moist and unstable. The daily average relative humidity values had ranged from 62% at Mangochi Met to 80% at Mzuzu and Nkhata Bay. 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 5 and 8.7 hours. The highest mean sunshine hours was observed at Makoka in southern Malawi. Details are on the Table 2. More sunshine hours are required for drying crops which are at maturity and drying stages.

## 2. AGROMETEOROLOGICAL ASSESSMENT

The moderate to heavy rains that continued to fall during the period 21 to 31 March 2016 were supportive to growth and development of roots and tubers as well as the late planted crops while sunny and dry conditions were favourable for harvesting and drying of matured crops. The rains had also assisted in replenishing soil moisture reserves and water bodies. On the negative note the wet weather had hampered harvesting and drying of matured crops.

Maize crop had ranged from maturity and drying and harvesting stages. Reports have indicated that the food security situation has improved slightly because some farm families have started harvesting matured crops. However, the relief is temporally as most farm families particularly in southern Malawi will not harvest enough maize this season due to the negative effects of erratic rainfall and prolonged dry spells. Crops that had reached physiological maturity required more sunshine hours for harvesting and drying.

Based on the rainfall performance during the 2015-2016 and hectareage figures from 2<sup>nd</sup> round 2016 Agricultural Production Estimates, the national maize production estimates from the Water Requirement Satisfaction Index model is projected at **2,627,560MTs**. This is the first season since 2007/08 that total maize production in Malawi is far below national requirement of around **3.0** million metric tons.

## 3. PROSPECTS FOR 2015-2016 RAINFALL SEASON

Most climate models predict that strong El Nino conditions are weakening and expected to reach neutral levels by May, June, July (MJJ) 2016 and possibly La Nina conditions during 2016/17 agriculture season. However, rainfall outlook for April to June (AMJ) 2016 suggest that Malawi is likely to experience below average rainfall amounts during the period.

## 4. OUTLOOK FOR 01 TO 10 APRIL 2016

Models for short and medium range rainfall forecasts suggest that most parts of Malawi will be under the influence of easterly waves. Therefore fairly scattered rainfall associated with locally heavy downpours is expected over the Malawi during the first ten days of April 2016.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 21 TO 31 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.	5.8	188.6	3	452.4	1059.9	43	1	
	Chitipa Met	36.7	52.8	70	839.8	880.5	95	7	
	Karonga Met.	11.0	114	10	420.6	807.7	52	3	
	Lupembe Agric	87.5	89.4	98	831	710.8	117	3	
	Vinthukutu Agric	61.4	122.5	50	889.6	881	101	3	
MZUZU	Bolero Met	57.0	29.6	193	706.6	595.9	119	2	
	Bwengu Agric.	66.9	49.3	136	736	712.2	103	3	
	Chikangawa forest	55.7	95.2	59	883.1	968.7	91	2	
	Chelinda ( Nyika)	88.0	89.1	99	1089.9	1071.7	102	10	
	Chintheche Agric	60.5	190	32	1600.4	1325.6	121	2	
	Euthini Agric.	13.8	44.6	31	668.4	725.5	92	2	
	Mbawa Res. Stn	5.3	35.8	15	583.3	765.1	76	3	
	Mzimba Met	24.4	48.2	51	836	838.8	100	4	
	Mzuzu Met.	5.7	100.9	6	849.3	876.2	97	4	
	NkhataBay Met.	25.0	167	15	952.9	1082.9	88	3	
	Rumphu Boma	41.2	38.4	107	790.4	676.8	117	1	
	Zombwe Agric	73.0	56.7	129	910.9	680.9	134	2	
KASUNGU	Dowa Agric	10.8	41.3	26	538.7	835.4	64	3	
	Kaluluma DTC	28.6	27.8	103	448.2	764.7	59	1	
	Kasungu Met	23.3	31.1	75	590.3	743.2	79	4	
	Lisasadzi	3.4	23.5	14	474.7	776.3	61	1	
	Malomo Agric	7.4	30.8	24	361.2	792.1	46	1	
	Madisi Agric	11.0	27.5	40	481.9	796.4	61	2	
	Mchinji Boma	23.8	50.6	47	759.9	948.6	80	2	
	Mkanda Met	12.7	43.7	29	595	827.4	72	2	
	Mponela Agric	11.2	27.9	40	510.1	767.4	66	2	
	Ntchisi Boma	46.2	67.5	68	664.8	1141.6	58	1	
SALIMA	Dowa Agric	10.8	41.3	26	538.7	835.4	64	3	
	Dwangwa	60.7	143.8	42	853.7	1136.1	75	2	
	Lifuwu	50.8	71.7	71	562.6	1128.9	50	3	
LILONGWE	Salima Met	17.1	71.6	24	508.8	1123.4	45	2	
	Chileka Namitete	5.0	34.6	14	743.9	861.6	86	1	
	Chitedze Met.	3.2	41.6	8	612.2	829.7	74	1	
	Dzonzi Forest	43.0	38.5	112	861.4	931.8	92	2	
	K.L.A Met	11.9	47.3	25	773.8	810.8	95	2	
	Kasiya Agric	0.0	36.2	0	686.9	909.2	76	0	
	Mlangeni Njolomole	2.0	44.3	5	691	915.2	76	1	
	Mtakataka Airwing	13.9	36	39	213.9	763.5	28	3	
	Nathenje Agric	0.0	38.5	0	928	796.3	117	0	
	Ntcheu - Nkhande	0.0	45	0	585.7	992	59	0	
	Dedza Met	36.9	44.3	83	604.6	945	64	3	
	MACHINGA	Balaka Township	0.0	32.8	0	701.9	809.5	87	0
		Chancellor College	10.0	75.3	13	411.4	1200.1	34	1
Chikweo Agric.		27.2	55.8	49	574.7	1001.1	57	3	
Chingale Agric		37.1	30.1	123	598.5	863.2	69	4	
Mpilipili (Makanjila)		1.5	35	4	430.6	845.5	51	1	
Makoka Met		22.1	32.5	68	559.6	904.3	62	2	
Mangochi Met.		29.3	33.2	88	686.3	663.3	103	2	
Monkey Bay Met.		59.7	13.4	446	341	551.6	62	3	
Namiasi Agric		18.4	23.5	78	413.9	733	56	2	
Namwera Agric		20.4	51.7	39	323.2	972.2	33	3	
Ntaja Met.		22.6	48.6	47	654.4	827.2	79	3	
Phalula Agric		2.7	27.2	10	425	784.8	54	1	
Toleza Farm		16.0	29.3	55	660	806.1	82	1	
Zomba Agric		16.4	58.2	28	833.5	1111.8	75	1	
BLANTYRE	Bvumbwe Met.	34.9	57.9	60	891.2	1016.1	88	2	
	Chichiri Met.	28.2	15.3	184	775.2	1028.5	75	2	
	Chileka Airport	8.1	44.5	18	589.3	826.9	71	1	
	Chiradzulu Agric	36.3	44.5	82	582.6	919.5	63	2	
	Chizunga Factory	98.7	71.5	138	550	1203.3	46	2	
	Lujeri Tea Estate	110.4	131.2	84	1960.4	1744	112	3	
	Masambanjati Agric	38.7	64.9	60	566.1	1188.6	48	2	
	Mimosa Met.	67.4	81.3	83	1134.7	1268	89	3	
	Mpemba Vet	38.2	52.1	73	796.8	1040.5	77	2	
	Mulanje Boma	97.6	125	78	1437.6	1524.1	94	2	
	Naminjiwa Agric	29.5	36.5	81	603.7	910.1	66	2	
	Neno Agric	22.0	42.6	52	479.8	1011.1	47	1	
	Satemwa Tea Est.	95.1	61.2	155	781.6	978.4	80	2	
	Thuchila Agric	42.6	40.2	106	413.6	815.1	51	3	
	Thyolo Met	42.3	56.3	75	732.6	1107.1	66	2	
	SHIRE VALLEY	Chikwawa Boma	40.9	33.9	121	477.9	714	67	2
		Kasinthula Res. Stn.	47.4	21.2	224	125.1	667.2	19	2
Makhanga Met		0.0	25.5	0	260.7	676	39	0	
Nchalo		47.8	26.6	180	347.9	605.4	57	2	
Ngabu Met.		76.1	35.1	217	528.2	704.8	75	2	
Nsanje Boma	74.9	57.7	130	418.4	1000.5	42	2		

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 31 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 <sup>-2</sup> p/day
<b>KARONGA ADD</b>										
Chitipa	31.6	18.5	30.6	18.0	5.8	79	6.1	6.2	4.9	8.3
Karonga	31.8	22.3	33.5	21.5	4.0	72	6.1	6.5	5.2	8.3
<b>MZUZU ADD</b>										
Bolero	29.4	19.0	31.0	17.8	3.6	75	6.0	5.8	4.6	8.1
Mzimba	28.3	17.7	29.9	16.6	3.6	76	5.7	5.6	4.4	7.9
Mzuzu	27.3	17.3	30.0	14.1	4.3	80	5.0	5.2	4.1	7.4
Nkhata Bay	30.7	22.0	34.5	20.5	2.2	80	5.2	5.7	4.5	7.6
<b>KASUNGU ADD</b>										
Kasungu	30.7	18.3	32.7	18.3	2.2	73	6.8	6.2	4.8	8.6
<b>LILONGWE ADD</b>										
Chitedze	29.5	18.3	32.2	15.4	2.5	72	7.5	6.4	5.0	9.1
Dedza	26.3	15.0	29.7	12.3	5.8	76	6.5	5.6	4.4	8.5
K I A	28.3	17.3	30.6	13.6+	4.0	71	7.9	6.4	5.0	9.4
<b>SALIMA ADD</b>										
Salima	31.1	22.3	33.5	20.0	5.4	69	8.4	4.7	3.5	9.7
<b>MACHINGA ADD</b>										
Makoka	27.8	18.3	30.8	16.1	5.0	71	8.7	6.8	5.3	9.9
Mangochi	31.3	22.2	35.0	20.5	1.1	62	7.1	6.6	5.3	8.9
Monkey Bay	31.1	22.9	33.0	20.2	5.8	71	7.7	7.2	5.7	9.3
Ntaja	30.0	20.9	32.2	18.6	4.0	75	7.3	6.6	5.2	9.1
<b>BLANTYRE ADD</b>										
Bvumbwe	25.3	17.7	28.6	16.9	4.7	75	7.0	5.9	4.6	8.8
Chichiri	27.3	18.3	30.9	16.2	4.0	73	7.5	6.3	4.9	9.2
Chileka	26.5	20.0	32.5	18.2	8.6	71	8.4	6.9	5.5	9.8
Mimosa	29.3	19.2	32.8	15.6	3.2	63	7.0	6.4	5.1	8.9
<b>SHIRE VALLEY ADD</b>										
Ngabu	32.7	22.9	35.4	21.6	4.0	79	8.5	7.5	6.0	9.8

**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