



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: 11 – 20 April 2016

Season: 2015/2016

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## HIGHLIGHTS

- Locally heavy rains persisted over some parts of the north...
- Harvesting and drying of matured crops were major agricultural activities ...
- More rains to persist over the extreme north during 21 to 30 April 2016...

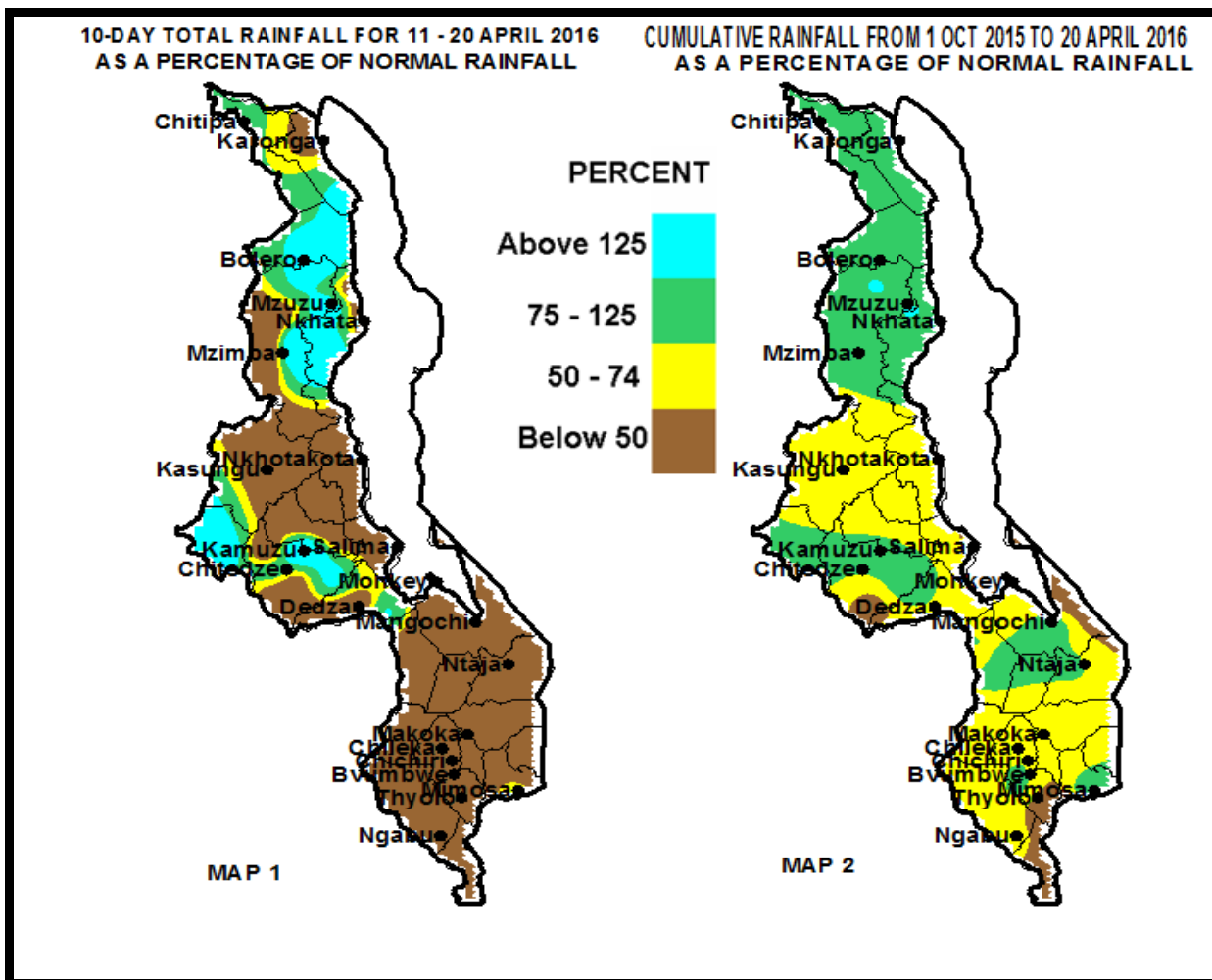


Figure 1: Rainfall Maps for 11 to 20 April 2016

## 1.0 WEATHER SUMMARY

During the period 11 to 20 April 2016 Easterly waves were active over some parts of northern Malawi while fairly dry air mass had covered most parts of Malawi. As a result heavy rainfall had persisted over some parts of northern Malawi while light rainfall and dryness had returned to southern and some parts of central Malawi as the 2015-2016 summer rainfall season comes to an end.

### 1.1 RAINFALL SITUATION

During the second ten days of April 2016, high intensity rainfall and above average rainfall situation were confined to a few places in northern Malawi. High rainfall amounts exceeding 100mm were maintained in a few areas. For instance in Karonga district during the ten day period 134mm of rainfall was deposited at Vinthukutu Agric and in Mzimba district Mzuzu Met had collected 160mm while Chikangawa Forest had registered 135mm. At the same most parts of southern and central Malawi had experienced low rainfall and dry conditions. More details are in Map 1 and Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 20 April 2016. The map show that most parts of northern Malawi have received between 75 and 125% (green colour) of long term average rainfall amounts and seasonal rainfall deficits (yellow and brown colours) still existed over most areas in southern and central Malawi. For more details refer to Map 2 and Table 1.

### 1.3 AIR TEMPERATURE

During the second ten days of April 2016 generally warm to hot temperatures had persisted over Malawi. The average daily maximum temperatures had ranged from 23°C at Mzuzu to 32°C at Ngabu in Chikwawa district. The daily average minimum temperatures were between 14°C and 23°C at Dedza and Mangochi respectively. The highest maximum temperature was 35°C still recorded at Ngabu in Chikwawa while the lowest temperature was 11°C reported at Dedza. For more details refer to Table 2.

### 1.4 WIND SPEEDS

During the period 11 to 20 April 2016 daily average wind speeds measured at a height of two metres above the ground level across Malawi had ranged from 2.2Km per hour at Mangochi to 10.1km per hour at Chitipa. High wind speeds have high potential for generation of wind energy. More details are in Table 2.

### 1.5 RELATIVE HUMIDITY

During the period 11 to 20 April 2016, air over Malawi had become relatively dry. The daily average relative humidity values had ranged from 65% at Salima Met to 90% at Mzuzu Airport. More details are in Table 2.

### 1.6 SUNSHINE HOURS

During the period 11 to 20 April 2016, the mean durations of bright sunshine hours in Malawi had improved due to reduced cloudiness. The mean values had ranged from 4.0 hours at Mzuzu to 9.0 hours at Salima and Nkhotakota. More sunshine hours are

required for drying and harvesting crops. Details are in Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the second ten days of April 2016, dryness had covered most areas in Malawi except for a few areas in Karonga, Rumphi, Mzimba and Nkhata Bay districts in northern Malawi. The prevailing dryness had facilitated harvesting and drying of matured crops. At the same time high intensity rainfall that persisted in some parts of northern Malawi had hampered harvesting and drying of matured crops. On a positive note, the rainfall that was received had supported growth and development of roots and tuber crops as well as the late planted crops. The rains had also increased prospects for residual moisture and irrigated farming.

Maize crop was reported to be mostly at drying and harvesting stages where a lot of sunshine is required to facilitate the drying process. Field reports had indicated that harvesting matured crops had contributed to improvement in food security at household level. However, most households particularly in southern Malawi will not harvest enough food this season due to the negative impacts of the strong El Nino that has resulted in lower yields and production. Based on the agrometeorological model the national maize production estimates for 2015/16 season is projected at **2,627,560MTs** which is 8% lower than 2014/15 model estimates of **2,846,840MTs**

## 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 to July 2016 and La Nina conditions during 2016/17 agriculture season. However, updated rainfall outlook for April to June (AMJ) 2016 suggest that Malawi is likely to experience above average rainfall amounts during the period with April 2016 contributing most of the rainfall.

## 4. OUTLOOK FOR 21 TO 30 APRIL 2016

Models for short and medium range rainfall forecasts suggest that northern half of Malawi will still be affected by the passage of the easterly waves while cool and fairly moist south easterly air mass with affect southern half. Therefore fairly scattered light to moderate rainfall is expected over northern areas and few rain showers are expected particularly over southern and central highlands during the period 21 to 30 April 2016.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 TO 20 APRIL 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.	8.2	76.4	11	809.2	1276.8	63	3
	Chitipa Met	17.3	17.4	99	982.0	935.8	105	5
	Karonga Met.	11.5	59.2	19	704.2	954.9	74	4
	Lupembe	26.5	36.0	74	1019.0	809.9	126	2
	Vinthukutu Agric	133.6	73.5	182	1244.5	1067.2	117	6
MZUZU	Bolero Met	17.4	10.8	161	732.5	624.9	117	5
	Bwengu Agric.	40.3	17.5	230	830.4	751.4	111	7
	Chikangawa forest	135.1	29.5	458	1099.1	1068.5	103	7
	Chelinda ( Nyika)	44.0	41.6	106	1045.9	1165.6	90	8
	Chinthече Agric	91.1	128.5	71	2081.6	1600.8	130	5
	Euthini Agric.	2.7	13.3	20	780.2	761.4	102	1
	Mbawa Res. Stn	0.0	12.3	0	623.0	793.9	78	0
	Mzimba Met	2.9	13.9	21	886.5	876.2	101	3
	Mzuzu Met.	160.0	65.6	244	1347.0	1031.0	131	8
	NkhataBay Met.	17.4	96.0	18	1489.8	1311.9	114	8
	Rumpho Boma	36.7	13.2	278	853.1	720.0	118	7
Zombwe Agric	25.3	19.0	133	967.8	735.9	132	5	
KASUNGU	Dowa Agric	0.0	9.6	0	572.0	869.5	66	0
	Kaluluma Agric	0.0	16.8	0	473.2	806.1	59	0
	Kasungu Met	0.0	5.6	0	583.7	766.4	76	0
	Lisasadzi Agric	0.0	13.4	0	478.7	805.5	59	0
	Malomo Agric	0.0	2.5	0	402.2	810.9	50	0
	Madisi Agric	0.0	11.6	0	492.8	824.3	60	0
	Mchinji Boma	58.9	15.3	385	847.0	993.2	85	3
	Mkanda Met	7.2	3.4	212	644.1	856.7	75	2
	Mponela Agric	0.0	5.3	0	498.9	784.3	64	0
	Mwimba Research	0.0	6.8	0	459.0	863.0	53	0
	Ntchisi Boma	0.0	24.8	0	683.5	1213.8	56	0
SALIMA	Dwangwa	13.5	58.2	23	887.8	1287.1	69	2
	Lifuwu	0.0	41.4	0	519.5	1216.6	43	0
	Nkhotakota Met	0.0	56.1	0	728.8	1397.8	52	0
	Salima Met	0.0	27.6	0	555.6	1195.8	46	0
LILONGWE	Chiieka Namitete	4.5	17.8	25	790.7	907.3	87	1
	Chitedze Met.	20.6	9.0	229	644.2	868.0	74	3
	Dzonzi Forest	0.0	21.1	0	837.4	973.4	86	0
	K.I.A Met	4.5	1.6	281	786.0	832.0	94	1
	Kasiya Agric	0.0	7.3	0	764.0	935.5	82	0
	Mlangeni Njolomole	0.0	14.0	0	734.8	953.5	77	0
	Mtakataka Airwing	0.0	10.5	0	N/A	803.9	N/A	0
	Nathenje Agric	22.0	11.5	191	954.5	851.8	112	1
	Ntcheu - Nkhande	0.0	16.8	0	614.0	1027.8	60	0
	Dedza Met	16.6	6.4	259	625.9	973.9	64	1
	MACHINGA	Balaka Agric	0.0	11.8	0	701.9	842.7	83
Chancellor College		0.0	21.2	0	N/A	1257.8	N/A	0
Chingale Agric		0.0	15.5	0	561.4	904.6	62	0
Mpilipili (Makanjila)		0.0	8.3	0	432.6	872.3	50	0
Makoka Met		1.7	14.1	12	546.8	949.1	58	1
Mangochi Met.		0.0	9.4	0	661.3	692.9	95	0
Monkey Bay Met.		0.0	3.3	0	286.9	561.4	51	0
Namiasi Agric		0.0	3.2	0	395.5	740.8	53	0
Namwera Agric		0.0	20.4	0	N/A	1027.1	N/A	0
Ntaja Met.		0.0	14.0	0	670.9	872.4	77	0
Phalula Agric		0.0	12.7	0	434.8	811.8	54	0
Toleza Farm		0.0	16.6	0	657.0	850.4	77	0
Zomba Agric		0.0	19.7	0	846.0	1173.5	72	0
BLANTYRE		Bvumbwe Met.	1.5	19.6	8	892.9	1066.4	84
	Chichiri Met.	0.7	21.1	3	761.1	1078.6	71	1
	Chileka Airport	4.7	16.7	28	589.7	863.6	68	1
	Chiradzulu Agric	0.5	11.9	4	556.8	953.8	58	1
	Lujeri Tea Estate	40.2	70.2	57	2144.7	1920.7	112	3
	Masambanjati Agric	3.0	36.4	8	626.2	1276.7	49	1
	Mimosa Met.	16.1	43.6	37	1221.6	1375.4	89	1
	Mpemba Vet	0.0	18.5	0	797.5	1091.1	73	0
	Mulanje Boma	37.0	52.8	70	1618.0	1659.1	98	2
	Mwanza Boma	0.0	16.7	0	536.8	988.5	54	0
	Naminjiwa Agric	0.0	9.6	0	574.2	938.3	61	0
	Neno Agric	12.4	21.2	58	561.6	1068.6	53	2
	Satemwa Tea Est	4.5	24.4	18	783.2	1049.3	75	2
	Thuchila Agric	0.0	15.6	0	402.1	856.2	47	0
	Thyolo Met	3.6	19.6	18	730.1	1157.4	63	2
SHIRE VALLEY	Chikwawa Boma	0.0	8.1	0	494.2	743.3	66	0
	Makhanga Met	0.0	10.5	0	260.7	702.9	37	0
	Nchalo	0.0	10.2	0	341.7	634.5	54	0
	Ngabu Met.	0.0	13.6	0	468.4	736.3	64	0
	Nsanje Boma	7.2	26.2	27	359.6	1048.4	34	1

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 APRIL 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	26.2	17.9	28.4	17.1	10.1	81	6.1	6.0	4.8	8.6
Karonga	30.1	21.7	30.5	20.9	7.2	72	6.2	6.8	5.4	8.7
<b>MZUZU ADD</b>										
Bolero	26.7	17.7	29.2	17.7	5.4	78	5.0	5.0	3.9	7.1
Mzimba	25.7	16.6	28.9	14.7	5.0	74	4.9	4.9	3.9	7.1
Mzuzu	22.7	17.8	25.0	16.4	6.5	90	4.0	4.2	3.3	6.5
Nkhata Bay	28.7	21.0	30.2	19.5	3.2	85	5.2	5.2	4.1	7.3
<b>KASUNGU ADD</b>										
Kasungu	28.4	17.1	31.1	14.4	4.3	70	7.2	5.9	4.7	8.6
<b>LILONGWE ADD</b>										
Chitedze	27.0	16.4	29.2	13.7	5.4	77	6.8	5.6	4.4	8.4
Dedza	24.3	14.2	25.8	10.5	7.2	82	6.0	5.0	3.9	7.9
K I A	26.6	15.7	28.0	12.0	6.1	71	8.2	6.1	4.7	9.3
<b>SALIMA ADD</b>										
Nkhotakota	29.5	21.9	30.6	20.1	4.0	70	9.0	6.9	5.5	9.8
Salima	30.0	22.7	31.0	18.1	4.7	65	9.0	7.2	5.7	9.8
<b>MACHINGA ADD</b>										
Makoka	26.2	16.9	28.1	15.0	2.9	73	7.9	5.9	4.6	9.2
Mangochi	30.9	23.3	32.5	20.0	2.2	73	8.6	7.1	5.6	9.6
Monkey Bay	31.0	22.8	32.0	21.1	8.3	66	8.3	7.4	6.0	9.4
Ntaja	28.3	20.1	30.1	19.1	7.2	72	7.3	6.6	5.2	9.1
<b>BLANTYRE ADD</b>										
Bvumbwe	23.2	16.0	25.4	14.9	7.2	79	7.4	5.6	4.3	9.0
Chichiri	25.4	17.0	28.1	15.3	6.8	75	7.5	6.0	4.7	9.0
Chileka	27.8	18.8	29.6	17.7	10.1	71	8.0	6.7	5.3	9.3
Mimosa	28.9	19.1	30.9	17.6	4.3	67	7.6	6.4	5.1	9.1
<b>SHIRE VALLEY ADD</b>										
Ngabu	31.9	21.3	34.7	20.3	5.4	70	8.5	7.3	5.8	9.7

**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