



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 – 29 February 2016

Season: 2015/2016

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## HIGHLIGHTS

- Rainfall improved in southern Malawi except in Nsanje and Chikwawa ...
- Prolonged dry spells reduce prospects of good harvest in 2015/16 season...
- More rains expected over Malawi during 01 to 10 March 2016 ...

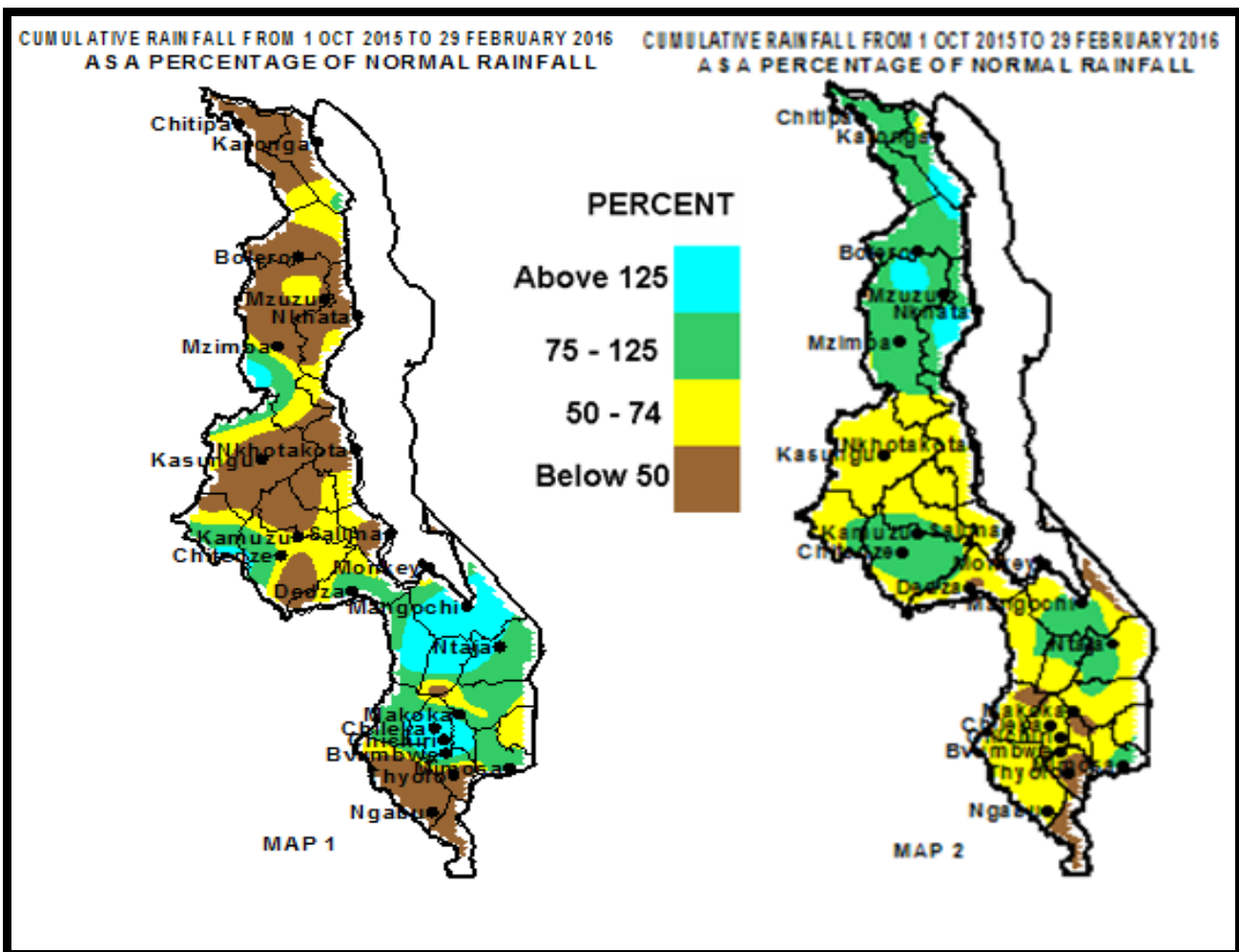


Figure 1: Rainfall Maps for 21 to 29 February 2016

### 1.0 WEATHER SUMMARY

During the period 21 to 29 February 2016, Malawi was mostly under a weak rain belt except towards the end of the period when the Inter Tropical Convergence Zone was established over southern Malawi. As a result high cumulative rainfall amounts were confined to parts of southern Malawi and the rest of the country registered light to moderate and generally below average cumulative rainfall amounts.

### 1.1 RAINFALL SITUATION

During the period 21 to 29th February 2016, high and well distributed cumulative rainfall amounts were confined to some parts of southern Malawi while northern and central Malawi had generally experienced light to moderate and generally below average cumulative rainfall amounts with fewer rainfall days. In southern Malawi rainfall stations that had reported high cumulative rainfall amounts of at least 100mm had included Chichiri Met in Blantyre which had recorded 165mm, Bvumbwe Met in Thyolo district had 121mm, Chileka Airport in Blantyre recorded 120mm, Lujeri Tea Estate in Mulanje had reported 118mm, Balaka Agric had registered 103mm. Most of these stations had registered between five and six rainfall days. However, prolonged dry spells had persisted along Shire Valley and some areas had registered little or nil rainfall. Such areas include most areas in Nsanje, Chikwawa, some parts of Mwanza and Balaka districts. Nsanje is one of the districts that have been worst hit by prolonged dry spells. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 29 February 2016. The map indicates that seasonal rainfall deficits (yellow to brown colour) still exist in most parts of southern and central Malawi with average to above average rainfall received in northern Malawi. Refer to Map 2 and Table 1 for more details.

### 1.3 AIR TEMPERATURE

During the period 21 to 29 February 2016 hot weather persisted over most areas in Malawi. The average daily maximum temperatures had ranged from 23.1°C at Dedza to 38.1°C at Ngabu in Chikwawa district. The average minimum temperatures were between 17.1°C and 25.9°C at Dedza and Ngabu respectively. The highest maximum temperature was 40.5°C recorded at Ngabu in Chikwawa while the lowest temperature was 16.2°C reported at Mzuzu. For more details refer to Table 2.

### 1.4 WIND SPEEDS

During the period 21 to 29 February 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 9.0km per hour at Ngabu in Chikwawa district. High wind speeds have a drying effect in most areas. More details are in Table 2.

### 1.5 RELATIVE HUMIDITY

During the period 21 to 29 February 2016, relatively moist air had covered most parts of Malawi. The daily average relative humidity values had ranged from 58% at Ngabu in Chikwawa district to 82% at Dedza. Details are on the Table 2.

### 1.6 SUNSHINE HOURS

The mean durations of bright sunshine hours in Malawi on average were between 6 and 9 hours. The highest mean sunshine hours was observed along the lakeshore where Karonga Airport registered 9.6 hours. Details are on the Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the period 21 to 29 February 2016 good and well distributed cumulative rainfall amounts were observed in some parts of southern Malawi while central and northern Malawi had experienced below average cumulative rainfall amounts. The good rainfall amounts apart from supporting growth and development of late planted crops like roots and tubers had improved water resources, soil moisture reserves and natural pasture availability. By end of February 2016 reports from Nsanje district suggested that the 2015/16 rainfall season to support agriculture production had not yet started in some parts of the district and farmers have failed to plant any rain fed crop.

Generally most crops were reported doing well in the northern half of Malawi and in a few high altitude areas due to lower evapotranspiration rates. The official crop production estimates from Ministry of Agriculture, Irrigation and Water Development (MoAIWD) has revealed that this season maize production will be lowered by 2.0 percent. The first round of 2015/16 Agriculture Production Estimates Survey has projected the national maize production at 2,719,425 metric tons, 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. However, rainfall outlook for the 2015-2016 season suggest higher than usual chances that northern half of Malawi is likely to receive average to above average rainfall amounts while the southern half of Malawi is expected to receive below average rainfall amounts during the period February and April (FMA) 2016.

## 4. OUTLOOK FOR 01 – 10 MARCH 2016

Models for short and medium range rainfall forecasts suggest that the Inter Tropical Convergence Zone is likely to oscillate over central and southern Malawi with Congo air covering areas north of it during the period 01 to 10 March 2016. Therefore expect scattered to widespread rainfall over Malawi during the first ten days of March 2016.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 21 TO 29 FEBRUARY 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	
<b>KARONGA</b>	Baka Res. Stn.	18.0	54.6	33	397.8	615.5	65	1	
	Chitipa Met	11.0	58.7	19	736.4	697.3	106	4	
	Karonga Met.	10.4	55.9	19	359.9	541.4	66	1	
	Lupembe Agric	12.0	52.4	23	660.5	493.0	134	1	
	Vinthukutu Agric	42.6	48.9	87	798.9	602.3	133	2	
<b>MZUZU</b>	Bolero Met	0.0	35.1	0	606.4	490.5	124	0	
	Bwengu Agric.	17.1	45.4	38	645.8	577.3	112	2	
	Chikangawa forest	15.9	63.9	25	785.5	734.3	107	2	
	Chelinda ( Nyika)	50.5	73.6	69	962.9	814.5	118	4	
	Chintheche Agric	48.0	66.2	73	1445.3	875.3	165	2	
	Ekwendeni Agric.	18.5	47.4	39	489.3	614.1	80	4	
	Euthini Agric.	0.0	53.5	0	654.6	587.7	111	0	
	Mbawa Res. Stn	85.3	46.8	182	525.0	620.1	85	3	
	Mzimba Met	3.8	54.4	7	744.5	677.2	110	1	
	Mzuzu Met.	18.4	42.9	43	785.8	636.1	124	3	
	NkhataBay Met.	12.5	55.3	23	864.7	721.7	120	2	
	Rumpho Boma	0.0	44.5	0	723.7	539.3	134	0	
	Zombwe Agric	47.1	47.4	99	766.3	532.2	144	3	
<b>KASUNGU</b>	Dowa Agric	38.2	64.9	59	456.3	673.9	68	3	
	Kasungu Met	2.6	59.6	4	424.0	609.1	70	1	
	Lisasadzi	17.3	54.8	32	437.1	666.2	66	1	
	Malomo Agric	17.4	48.8	36	284.4	630.3	45	1	
	Madisi Agric	7.2	73.7	10	444.9	668.6	67	1	
	Mchinji Boma	86.6	70.0	124	566.0	793.5	71	5	
	Mkanda Met	23.7	59.0	40	514.0	682.2	75	3	
	Mponela Agric	8.0	61.3	13	453.4	643.2	70	1	
	Mwimba Research	32.8	69.8	47	402.2	694.7	58	2	
	Ntchisi Boma	63.1	75.3	84	541.8	905.4	60	4	
<b>SALIMA</b>	Dwangwa	26.2	70.1	37	541.0	792.1	68	3	
	Lifuwu	23.2	86.4	27	418.5	879.8	48	3	
	Nkhotakota Met	8.0	85.7	9	580.9	870.2	67	2	
	Salima Met	5.8	92.8	6	424.8	867.5	49	3	
<b>LILONGWE</b>	Chileka Namitete	94.1	60.4	156	573.8	737.7	78	3	
	Chitedze Met.	35.1	66.9	52	539.8	669.5	81	3	
	Dzonzi Forest	63.6	46.0	138	580.9	753.4	77	4	
	Kasiya Agric	44.3	81.8	54	655.9	750.6	87	3	
	K.I.A Met	37.6	66.5	57	633.1	652.6	97	3	
	Mtakataka Airwing	2.6	59.3	4	129.0	611.4	21	1	
	Nathenje Agric	39.0	66.5	59	752.8	656.0	115	3	
	Ntcheu - Nkhande	56.0	69.3	81	399.1	817.3	49	5	
	Dedza Met	50.8	42.3	120	502.1	764.7	66	4	
	Balaka Agric	114.4	47.2	242	512.1	679.0	75	2	
<b>MACHINGA</b>	Chikweo Agric.	65.3	67.5	97	485.0	806.4	60	4	
	Makoka Met	39.7	56.8	70	359.9	760.0	47	3	
	Mangochi Met.	99.2	47.5	209	566.5	530.9	107	5	
	Monkey Bay Met.	1.6	33.7	5	241.2	479.5	50	1	
	Namiasi Agric	103.1	50.0	206	386.3	615.8	63	4	
	Ntaja Met.	67.7	57.5	118	523.2	676.0	77	5	
	Phalula Agric	0.8	57.6	1	324.7	663.4	49	1	
	Zomba Agric.	58.0	66.1	88	648.3	903.7	72	4	
	Bvumbwe Met.	121.3	62.4	194	671.7	833.7	81	4	
<b>BLANTYRE</b>	Chichiri Met.	164.5	52.5	313	669.7	972.5	69	5	
	Chileka Airport	119.6	47.9	250	446.8	684.8	65	6	
	Chiradzulu Agric	98.2	53.3	184	304.3	763.8	40	3	
	Chizunga Factory	6.6	60.7	11	380.0	958.2	40	2	
	Lujeri Tea Estate	118.4	110.3	107	1452.1	1451.5	100	5	
	Mimosa Met.	66.4	62.9	106	801.7	1002.6	80	4	
	Mpemba Vet	98.2	54.7	180	558.9	848.6	66	4	
	Mulanje Boma	63.8	55.9	114	1101.4	1209.8	91	3	
	Naminjiwa Agric	28.2	53.5	53	494.2	763.0	65	4	
	Neno Agric	53.8	51.2	105	373.8	841.7	44	5	
	Satemwa Tea Est	80.8	48.5	167	569.8	781.1	73	3	
	Thuchila Agric	43.0	47.4	91	347.5	668.4	52	2	
	Thyolo Boma	39.1	52.6	74	278.9	833.9	33	3	
	Thyolo Met	87.4	136.2	64	596.2	921.9	65	4	
	<b>SHIRE VALLEY</b>	Chikwawa Boma	2.9	32.8	9	397.9	603.4	66	1
		Kasinthula Res. Stn.	3.5	41.4	8	N/A	529.2	N/A	1
		Makhangwa Agric	4.1	33.4	12	226.9	564.1	40	2
Nchalo		11.8	37.2	32	297.0	518.5	57	2	
Ngabu Met.		7.2	40.9	18	346.9	590.6	59	1	
Nsanje Boma	0.0	43.6	0	248.6	811.4	31	0		

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 TO 29 FEBRUARY 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	29.7	18.7	30.5	17.7	7.2	71	9.0	7.4	5.9	10.4
Karonga	32.2	22.7	33.5	20.3	3.6	68	9.6	8.1	6.4	10.8
<b>MZUZU ADD</b>										
Bolero	30.1	18.3	31.4	17.6	4.3	68	7.5	6.7	5.3	9.4
Mzimba	29.4	18.3	31.5	17.0	2.5	72	6.5	6.2	4.9	8.7
Mzuzu	28.1	17.3	29.5	16.2	4.0	78	8.2	6.6	5.1	9.8
Nkhata Bay	32.9	21.8	34.1	21.1	2.2	76	7.4	7.0	5.6	9.3
<b>KASUNGU ADD</b>										
Kasungu	30.4	19.5	32.1	18.7	4.7	71	7.2	6.7	5.3	9.2
<b>LILONGWE ADD</b>										
Chitedze	28.9	20.4	30.0	18.8	2.2	79	7.1	6.4	5.0	9.1
Dedza	23.1	17.1	27.9	16.3	7.2	82	7.0	5.8	4.5	9.0
K I A	28.0	19.3	29.2	18.1	4.7	77	7.6	6.6	5.2	9.4
<b>SALIMA ADD</b>										
Nkhotakota	31.5	24.0	32.6	22.9	2.9	71	7.2	7.3	5.8	9.2
Salima	31.6	23.8	32.7	22.9	2.9	72	7.3	7.1	5.7	9.2
<b>MACHINGA ADD</b>										
Makoka	30.5	20.0	32.9	18.5	5.0	73	6.7	6.6	5.2	8.8
Mangochi	32.9	24.9	35.0	23.0	1.1	75	7.7	7.4	5.9	9.4
Monkey Bay	32.6	25.0	34.0	23.3	5.4	71	8.0	7.8	6.3	9.6
Ntaja	31.2	22.7	34.2	21.2	4.7	74	7.1	7.0	5.6	9.0
<b>BLANTYRE ADD</b>										
Bvumbwe	28.1	20.0	30.9	17.0	5.0	75	6.8	6.4	5.0	8.8
Chichiri	29.9	20.2	33.0	17.6	3.2	75	6.5	6.3	5.0	8.6
Chileka	31.6	20.4	34.7	16.2	7.9	71	7.0	7.0	5.6	9.0
Mimosa	33.0	24.0	35.5	20.0	3.6	62	6.5	7.1	5.7	8.6
<b>SHIRE VALLEY ADD</b>										
Ngabu	38.1	25.9	40.5	23.5	9.0	58	8.0	8.9	7.4	9.6

**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