



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 January 2015

Season: 2014/2015

Issue No.10

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## HIGHLIGHTS

- Heavy rains caused floods in southern districts...
- Maize crop ranged from emergence to vegetative stages...
- Widespread heavy rains to continue during 11 to 20 January 2015...

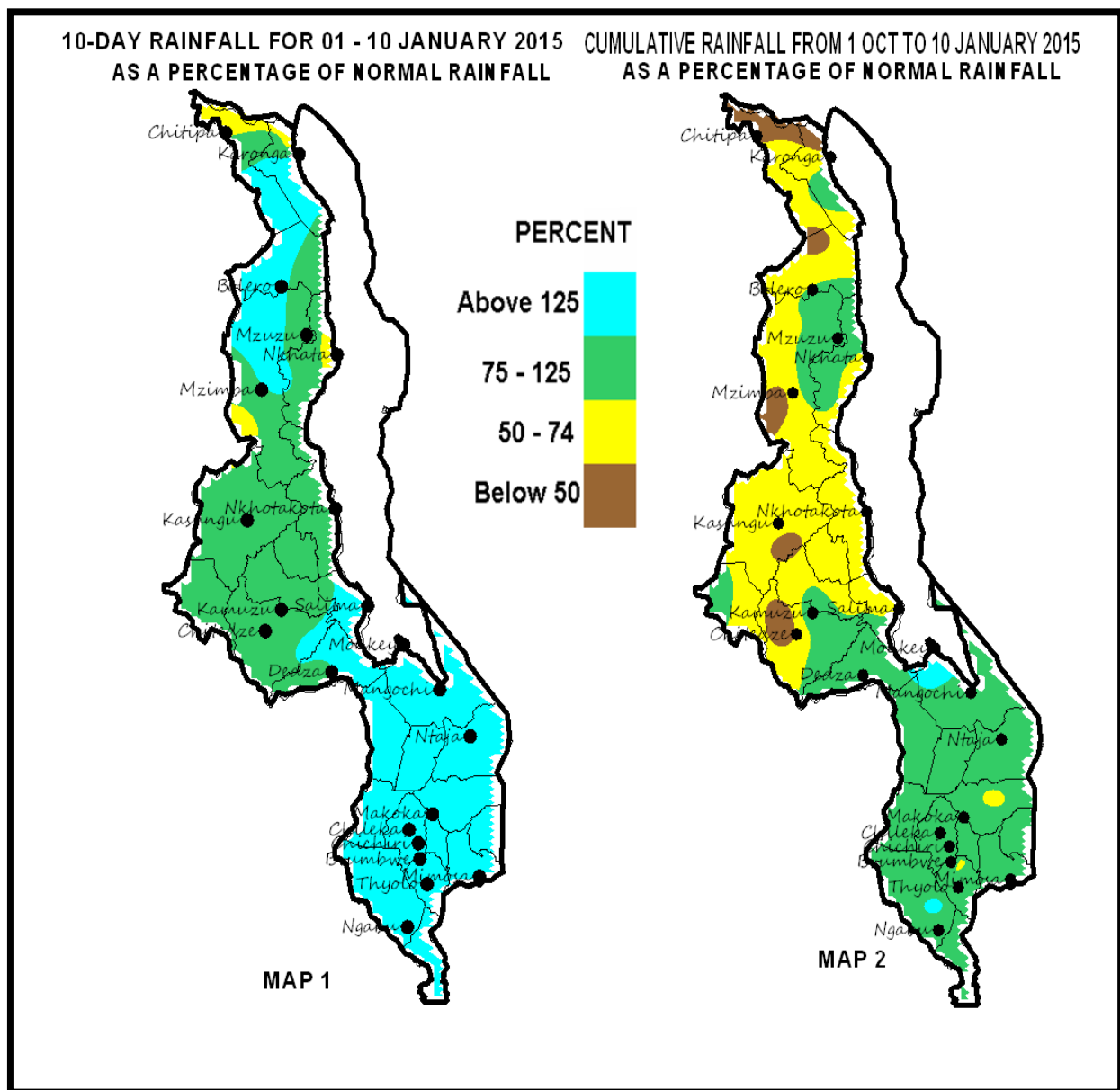


Figure 1: Rainfall Maps for 01 – 10 January 2015

## 1.0 WEATHER SUMMARY

Warm to hot weather conditions with widespread heavy rains were experienced over Malawi during the period 01 to 10 January 2015

### 1.1 RAINFALL SITUATION

Widespread rains were experienced over Malawi during the period 01 to 10 January 2015 due to the combined effect of the two main rain-bearing systems namely Congo Air mass and an air mass from Mozambique channel. Very high rainfall amounts exceeding 200mm during the ten day period were reported particularly in Machinga, Blantyre and Shire Valley Agricultural Development Divisions ( ADDs) in Southern Malawi where stations like Mulanje Agric reported 434mm, Lujeri Tea Estate recorded 325mm, Monkey Bay had 264mm, Balaka 260mm, Mimosa 242mm, Nchalo 237mm, Makanjira Agric 235mm, Masambanjati 222mm, Chancellor College 211mm and Naminjiwa Agric 201m. The high amounts had exceeded by far the rainfall amounts expected in most parts of the country (see Table 1) and this represented above normal rainfall situation in most areas (represented by greenish and light blue colours on Map 1). An average of eight rainy days was reported over the country. The high rainfall amounts resulted in flooding, destruction of property and life including washing away of crop fields in most districts. Reports on floods were therefore reported from Nsanje, Chikwawa, Blantyre, Phalombe, Mwanza, Zomba, Mulanje and Mangochi districts.

Cumulative rainfall performance over the country since 1 October 2014 to 10 January 2015 shows that most areas in southern Malawi had achieved normal to above normal cumulative rainfall amounts while most areas in central and northern Malawi had received slightly below normal cumulative rainfall amounts. For more details refer to Table 1 and Map2

### 1.2 AIR TEMPERATURE

Warm to hot temperatures were reported over most parts of Malawi during the period 01 to 10 January 2015. Mean maximum temperatures had ranged from 23°C at Dedza to 32°C at Karonga Compared to the previous ten day period, maximum temperatures continued to drop in response to high cloud cover and rainfall. Mean minimum temperatures had ranged from 14°C at Dedza to 22.4°C at Monkey Bay (Table 2). The highest absolute maximum temperature for the period was 36°C recorded at Karonga on 4<sup>th</sup> January 2015.

### 1.3 WIND SPEEDS

Mean wind speeds at a height of two metres above the ground level were light and variable and had ranged from 2.2 to 9.0 Kilometres per hour. The lowest mean wind speed was reported at Nkhata Bay while the highest mean wind speed was recorded at Chitipa. For more details refer to Table 2.

### 1.4 RELATIVE HUMIDITY

Humid conditions had continued to cover most parts of Malawi during the period 01 to 10 January 2015. Daily average relative humidity values had ranged from 67% at Karonga to 89% at Bvumbwe. Details are on the Table 2.

### 1.5 SUNSHINE HOURS

The mean durations of bright sunshine hours across Malawi had continued to drop in response to increased in cloudiness. Most areas had experienced daily average sunshine hours of less than five hours. The highest mean sunshine hours was observed over northern Malawi where Bolero reported a daily average of 4.8 hours. Details are on the Table 2.

### 1.6 VEGETATION CONDITION

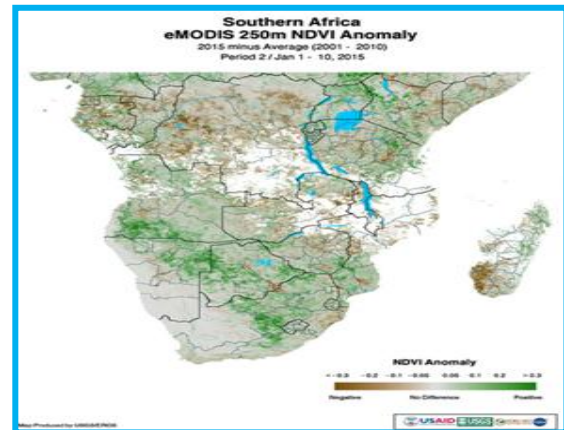


Figure 2: Vegetation Condition over Southern Africa

The vegetation condition map for Southern Africa up to 10 January 2015 showed despite a lot of cloudiness over northern Mozambique, Malawi and Zambia there was slight improvement in vegetation condition over most parts of the region including Malawi. (Figure 2). As such, there was an improvement in condition of natural pastures.

## 2.0 AGROMETEOROLOGICAL ASSESSMENT AND IMPACTS

During the first ten days of January 2015, there was a significant improvement in rainfall distribution and amounts across the country. These rains had supported crop and pasture growth and development, regeneration of the natural vegetation and replenishment of ground water levels. The main agricultural activities in the ADDs had included application of basal and top dressing fertilizer application. However, the continuous heavy rains had hampered some farm operations such as weeding and spraying of pesticides. The high rainfall amounts resulted in flooding which washed away of crops in most districts in the south. Crops had ranged from germination to vegetative stages. Maize crop was reported to be doing well and despite the delayed start of the main rains.

## 3. OUTLOOK FOR 11 – 20 JANUARY 2015

During the second ten day period of 11 to 20 January 015 models for short and medium term weather forecasts suggest that Congo Air will remain active over Malawi as a tropical depression located over south of Nampula moves into Mozambique Channel. Therefore expect

widespread locally heavy rainfall and floods especially in prone areas during the period. These rains will continue supporting on-farm agricultural activities and development of crops in most parts of Malawi.

#### 4 PROSPECTS FOR 2014/15 RAINFALL SEASON

The summary for the 2014/15 rainfall forecast is that most areas are likely to receive normal rainfall amounts

during the season. However, within the period January to March (JFM) 2015, possibilities of experiencing below normal rainfall amounts that are associated with prolonged dry spells and early cessation cannot be ruled out.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 01 to 10 JANUARY 2015**

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	Chitipa Met	48.6	71.2	68	161.2	332.3	49	6
	Karonga Met.	47.4	63.0	75	124.2	276.4	45	6
	Lupembe	175.0	62.6	280	257.5	226.4	114	7
	Vinthukutu Agric	60.9	72.5	84	108.3	313.4	35	5
MZUZU	Bolero Met	92.8	62.6	148	192.3	238.2	81	7
	Chikangawa forest	120.8	82.4	147	398.7	368.8	108	10
	Chintheche Agric	78.6	107.7	73	252.0	481.0	52	4
	Mbawa Res. Stn	45.0	76.3	59	144.8	318.2	46	6
	Mzimba Met	108.3	92.7	117	168.9	336.6	50	8
	Mzuzu Met.	60.0	66.6	90	299.2	337.8	89	5
	NkhataBay Met.	49.7	89.9	55	274.3	409.2	67	5
	Rumphu Boma	67.5	64.5	105	188.7	245.6	77	7
	Zombwe Agric	90.8	68.6	132	205.2	265.2	77	6
KASUNGU	Dowa Agric	45.9	70.6	65	181.1	312.0	58	7
	Madisi Agric	83.4	69.0	121	170.6	290.3	59	5
	Mponela Agric	69.6	68.0	102	235.9	282.1	84	8
	Ntchisi Boma	107.1	93.3	115	240.9	434.5	55	7
	Chitedze Met.	53.1	68.9	77	147.0	321.0	46	6
	Dedza Met	99.6	82.5	121	354.1	336.2	105	9
	K.I.A Met	75.3	72.7	104	308.3	295.4	104	9
	Nathenje Agric	96.9	72.1	134	306.7	311.2	99	4
	Dedza RTC	117.0	75.4	155	260.6	346.9	75	7
SALIMA	Dwangwa	73.0	85.8	85	246.1	418.9	59	8
	Lifuwu	175.6	85.3	206	241.2	344.6	70	9
	Nkhotakota Met	120.9	108.8	111	232.3	423.0	55	8
	Salima Met	158.5	94.8	167	238.5	364.3	65	9
MACHINGA	Balaka Township	259.6	84.1	309	361.1	333.5	108	8
	Chancellor College	211.4	100.5	210	370.5	512.1	72	10
	Chingale Agric	182.3	70.4	259	367.1	362.6	101	8
	Mpilipili (Makanjila)	235.3	91.9	256	305.8	346.7	88	8
	Makoka Met	158.7	76.4	208	338.1	379.4	89	10
	Monkey Bay Met.	263.8	49.1	537	396.3	199.4	199	9
	Namiasi Agric	182.5	59.0	309	257.1	269.6	95	7
	Namwera Agric	179.8	89.6	201	251.1	385.2	65	4
	Ntaja Met.	146.0	70.1	208	336.7	329.4	102	9
	Phalula Agric	163.0	72.7	224	351.8	345.1	102	9
	Zomba Agric	235.7	81.7	288	532.7	469.0	114	10
BLANTYRE	Chichiri Met.	138.0	88.2	156	358.9	666.2	54	8
	Chileka Airport	131.3	68.1	193	274.0	352.8	78	9
	Chiradzulu Agric	113.7	66.4	171	342.6	385.5	89	10
	Lujeri Tea Estate	325.4	135.4	240	740.7	813.6	91	6
	Masambanjati Agric	221.9	96.9	229	261.1	513.9	51	9
	Mimosa Met.	242.1	97.7	248	485.1	561.7	86	9
	Mpemba Vet	147.8	87.5	169	462.6	456.5	101	8
	Mulanje Boma	433.8	107.1	405	732.9	702.4	104	9
	Naminjiwa Agric	201.0	76.2	264	298.8	373.3	80	7
	Thyolo Boma	108.1	82.5	131	119.1	458.5	26	7
SHIRE VALLEY	Chikwawa Boma	119.1	66.8	178	184.3	326.7	56	9
	Makhanga Met	113.7	62.2	183	280.9	320.6	88	10
	Nchalo	237.1	53.1	447	343.7	255.9	134	9
	Ngabu Met.	188.2	61.3	307	304.7	312.3	98	9

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 01 TO 10 JANUARY 2015**

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	26.9	18.0	29.0	14.6	9.0	74	1.6	4.6	3.8	5.6
Karonga	32.0	22.0	35.9	19.6	6.5	67	3.8	6.0	5.0	7.0
<b>MZUZU ADD</b>										
Bolero	28.9	19.7	N/A	N/A	N/A	77	4.8	N/A	N/A	7.7
Mzuzu	27.5	18.1	30.4	17.1	7.9	76	4.3	5.5	4.4	7.4
Mzimba	26.1	17.7	29.5	16.6	5.4	79	4.0	5.2	4.1	7.2
Nkhata Bay	30.9	22.2	33.9	20.9	2.2	79	4.0	5.5	4.4	7.2
<b>KASUNGU ADD</b>										
Kasungu	28.3	21.8	30.6	17.2	2.9	79	3.5	5.2	4.2	6.9
<b>LILONGWE ADD</b>										
KIA	26.0	16.5	28.5	12.1	6.5	78	3.8	5.1	4.1	7.1
Chitedze	26.4	19.1	29.9	18.7	3.2	81	3.8	5.1	4.0	7.1
Dedza	22.7	14.1	25.5	11.1	6.8	80	3.0	4.5	3.6	6.6
<b>SALIMA ADD</b>										
Nkhota kota	28.0	22.1	29.6	21.0	5.0	83	3.6	5.4	4.4	7.0
Salima	28.2	20.2	32.0	19.0	6.5	81	2.8	4.9	4.0	6.4
<b>MACHINGA ADD</b>										
Monkey Bay	28.3	22.4	30.0	21.3	7.6	80	4.2	5.7	4.6	7.3
Mangochi	29.5	N/A	30.1	N/A	5.4	82	2.5	3.8	3.0	6.2
Ntaja	26.9	20.7	28.8	19.6	5.0	69	1.4	4.7	3.9	5.5
Makoka	25.8	19.2	28.1	17.6	4.3	89	2.0	4.2	3.4	5.9
<b>BLANTYRE ADD</b>										
Bvumbwe	23.4	17.9	24.2	16.4	5.0	89	1.4	3.9	3.1	5.5
Chichiri	25.5	18.6	27.0	17.2	2.5	87	1.4	4.0	3.2	5.5
Chileka	26.7	20.3	28.0	19.0	7.2	85	2.6	4.7	3.8	6.3
Mimosa	27.6	20.4	30.1	19.1	3.2	78	2.0	4.6	3.7	5.9
<b>SHIRE VALLEY ADD</b>										
Ngabu	26.6	22.2	31.5	21.0	5.4	85	4.5	5.5	4.4	7.6

**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 Meters Per Second (mps) to Kilometers per hour (Km/hr) = mpsx3.6