REPUBLIC OF MALAWI

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

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In support of national early warning systems and food security

Be wise be weather-wise

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HIGHLIGHTS

- **Widespread locally heavy rains experienced…**
- **Maize crop ranged from planting and germination to vegetative stage. …**
- **Widespread locally heavy rains to persist during 01 to 10 January 2015...**

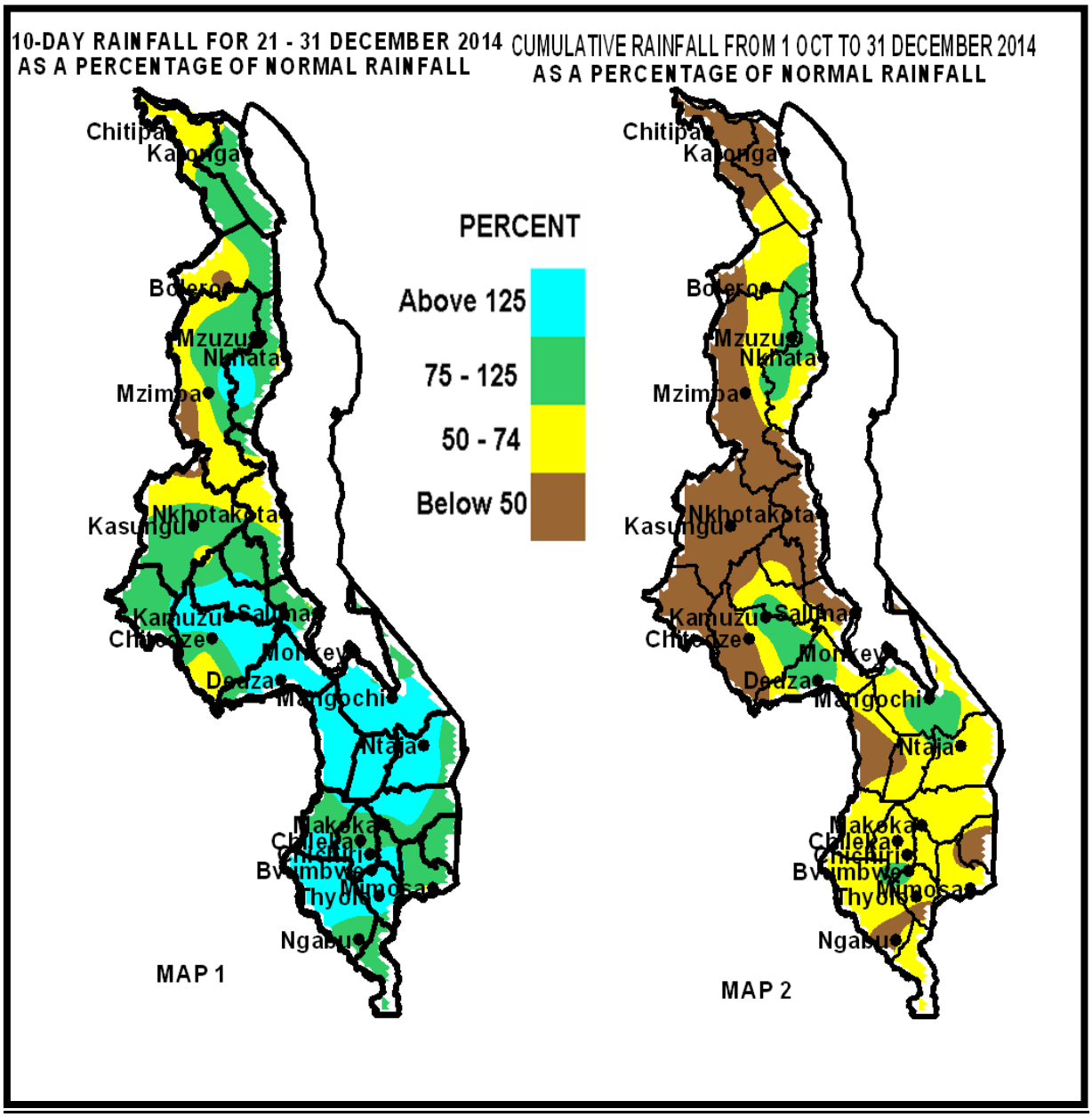

Figure 1: Rainfall Maps for 21 – 31 December 2014

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1.0 WEATHER SUMMARY

Warm to hot weather conditions with widespread locally heavy rains had covered Malawi during the period 21 to 31 December 2014

1.1 RAINFALL SITUATION

During the period 21 to 31 December 2014, widespread locally heavy rainfall was reported over the country. Most areas had experienced average to above average cumulative rainfall amounts (green and light blue Colours on Map 1). However, a few stations particularly over the centre and north still had recorded light rainfall amounts and this resulted in below average cumulative rainfall situation (yellow and brown colour on map 1). Stations that recorded significantly high cumulative rainfall amounts of at least 120mm in southern Malawi included Mpemba Agric which had recorded 237mm, Satemwa Tea Estate 179mm, Bvumbwe Met 175mm, Lujeri Tea Estate 147mm, Zomba RTC 144mm and Chancellor College reported 138mm while in central Malawi high rainfall was reported at Kamuzu International Airport 151mm, Kasiya Agric 142mm, Dedza – Chongoni 134mm, Nkhande Agric 126mm and Nathenje Agric 122mm and in the north heavy rains were recorded at Chikangawa Forest 140mm. More details are on Table 1 and Map 1.

Cumulative rainfall performance during the period October to December 2014 shows that the country has experienced a mixed rainfall situation with the following stations experiencing normal to above normal rainfall situation: Mangochi Met (117%), Kamuzu International Airport (105%), Dedza RTC (100%), Chikangawa Forest (97%). Bwengu Agric (91%), Mzuzu Met, Monkey Bay Met and Nathenje Agric (88%), Mpemba Agric (85%), Bvumbwe Met (84%) and Zomba RTC (77%). Refer to Map 2 and Table 1 for more details..

1.2 AIR TEMPERATURE

Warm to hot tempratures were reported over most parts of Malawi during the period 21 to 31 December 2014. Mean maximum temperatures had ranged from 25°C at Dedza to 35°C at Ngabu. Compared to the previous ten day period, maximum temperatures this time continued to drop due to increased cloud cover. Mean minimum temperatures had ranged from around 16°C at Dedza to 24°C at Monkey Bay and Ntaja (Table 2). The highest absolute maximum temperature for the period was 37.5°C, observed at Ngabu in Shire Valley on 25th December 2014.

1.3 WIND SPEEDS

Mean wind speeds at a height of two metres above the ground level ranged from 2.2 to 8.3 Kilometres per hour. The lowest mean wind speed was reported at Chitedze and Kasungu while the highest mean wind speed was recorded at Chitipa. Refer to Table 2.

1.4 RELATIVE HUMIDITY

During the period 21 to 31 December 2014, humid conditions were experienced over Malawi. Daily average relative humidity values had ranged from 63% at Karonga to 79% at Bvumbwe. Details are on the Table 2.

1.5 SUNSHINE HOURS

The mean durations of bright sunshine hours across Malawi had continued to decrease due to increase in cloudiness. Most areas had experienced daily average sunshine hours of less than six hours. The highest mean sunshine hours were still observed in Shire Valley and along the lakeshore. Details are on the Table 2.

1.6 VEGETATION CONDITION

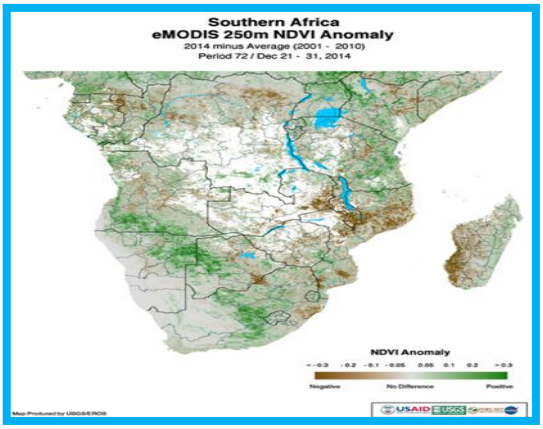

Figure 2: Vegetation Condition over Southern Africa

The vegetation condition map for Southern Africa up to end of December 2014 showed that most parts of the region including Malawi were experiencing below average vegetation conditions (Figure 2). As such, natural pastures were still in poor condition.

2.0 AGROMETEOROLOGICAL ASSESSMENT AND IMPACTS

Good rains for agricultural production fell over most parts of the Malawi during the last ten days of December 2014, thereby allowing growth and development of most crops. These rains have also improved water resources, soil moisture reserves and pasture availability for communal grazing. The major field activities in all Agriculture Development Divisions (ADDs) in Malawi included planting, weeding and basal fertiliser application. In a normal season planting of crops in southern Malawi and some parts of the centre get finalized by December while for north planting of crops can continue into January. Due to delay in onset of effective planting rains, planting of crops was in progress in all ADDs in the country by December end.

The general crop stand in the fields was reported in good condition. Maize crop had ranged from planting and germination to vegetative stage.

3. OUTLOOK FOR 01 – 10 JANUARY 2015

The rain bearing systems will be very active over Malawi. Therefore expect widespread locally heavy rainfall with a

possibility of floods especially in prone areas during the period 01 to 10 January 2015.

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, there is a possibility that some areas may experience normal to below normal rainfall amounts that are associated with prolonged dry spells.

The main rain bearing systems got established over Malawi during mid-December 2014 and since then most areas have been experiencing good rainfall amounts with high intensities in some areas.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 21 to 31 DECEMBER 2014

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	46.6	80.4	58	112.6	261.1	43	5
	Karonga Met.	53.9	63.0	86	76.8	213.4	36	7
	Lupembe	59.0	47.0	126	82.5	163.8	50	2
MZUZU	Bolero Met	26.5	58.4	45	99.5	175.6	57	6
	Bwengu Agric.	72.0	62.9	114	190.1	209.9	91	4
	Chikangawa Forest	139.8	77.2	181	277.9	286.4	97	7
	Chintheche Agric	74.8	86.8	86	173.4	373.3	46	5
	Mbawa Res. Stn	27.3	71.0	38	99.8	241.9	41	8
	Mzimba Met	45.9	69.6	66	60.6	243.9	25	9
	Mzuzu Met.	66.3	63.1	105	239.2	271.2	88	9
	NkhataBay Met.	39.6	76.0	52	224.6	319.3	70	5
	Rumphi Boma	32.1	67.2	48	121.2	181.1	67	6
	Zombwe Agric	60.7	56.8	107	114.4	196.6	58	8
KASUNGU	Dowa Agric	103.9	71.2	146	135.2	241.4	56	7
	Kaluluma DTC	30.8	72.3	43	71.4	248.0	29	5
	Lisasadzi Agric	43.0	66.8	64	127.4	243.9	52	2
	Kasungu Met	55.5	54.0	103	64.6	211.8	31	6
	Madisi Agric	51.5	61.2	84	87.2	221.3	39	5
	Mchinji Boma	68.6	89.8	76	169.3	344.8	49	9
	Mkanda Met	82.6	78.8	105	N/A	281.6	N/A	4
	Mponela Agric	92.3	53.0	174	166.3	214.1	78	9
	Ntchisi Boma	99.4	109.8	91	133.8	341.2	39	5
LILONGWE	Chileka Namitete	65.9	61.0	108	107.9	298.5	36	3
	Chitedze Met.	60.7	70.5	86	93.9	252.1	37	5
	Dedza Met	133.9	68.6	195	254.5	253.7	100	8
	K.I.A Met	151.4	72.1	210	233.0	222.7	105	8
	Kasiya Agric	142.2	73.5	193	167.2	332.2	50	4
	Mtakataka	30.9	57.2	54	83.4	233.7	36	4
	Nathenje Agric	121.6	63.6	191	209.8	239.1	88	5
	Ntcheu - Nkhande	125.5	87.6	143	127.8	319.2	40	5
	Dedza RTC	109.2	72.5	151	143.6	271.5	53	10
SALIMA	Lifuwu	40.1	82.2	49	65.6	259.3	25	5
	Nkhotakota Met	58.9	94.1	63	111.4	314.2	35	6
	Salima Met	60.9	84.0	73	80.0	269.5	30	7
MACHINGA	Balaka	69.0	52.4	132	96.5	249.4	39	4
	Chancellor College	138.0	94.3	146	N/A	411.6	N/A	7
	Chikweo Agric.	85.6	74.6	115	159.5	303.2	53	6
	Chingale Agric	118.0	68.6	172	184.8	292.2	63	9
	Makoka Met	70.1	77.9	90	179.4	303.0	59	10
	Mangochi Met.	118.9	39.2	303	183.1	156.5	117	7
	Monkey Bay Met.	96.7	53.4	181	132.5	150.3	88	6
	Namiasi Agric	48.6	69.5	70	74.6	210.6	35	4
	Ntaja Met.	106.8	69.4	154	190.7	259.3	74	6
	Phalula Agric	99.3	56.9	175	188.8	272.4	69	8
	Zomba RTC	143.7	83.4	172	297.0	387.3	77	7
BLANTYRE	Bvumbwe Met.	174.5	61.9	282	281.6	336.3	84	10
	Chichiri Met.	107.4	104.4	103	220.9	578.0	38	10
	Chileka Airport	33.8	57.7	59	142.7	284.7	50	8
	Chiradzulu Agric	100.1	72.7	138	228.9	319.1	72	10
	Lujeri Tea Estate	147.0	125.3	117	292.8	678.2	43	8
	Mimosa Met.	64.4	76.5	84	243.0	464.0	52	6
	Mpemba Vet	236.9	77.0	308	314.8	369.0	85	8
	Mulanje Boma	38.9	98.4	40	299.1	595.3	50	5
	Naminjiwa Agric	50.8	72.3	70	97.8	297.1	33	8
	Neno Agric	76.3	71.9	106	170.6	319.2	53	4
	Satemwa Tea Estate	178.7	68.0	263	252.3	341.8	74	7
	Thyolo Met	110.6	71.4	155	149.2	353.5	42	5
SHIRE VALLEY	Makhanga Agric	81.1	62.2	130	167.2	258.4	65	4
	Nchalo Illovo	61.8	43.0	144	106.6	202.8	53	3
	Ngabu Met.	54.5	61.0	89	116.5	251.0	46	3

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 21 TO 31 DECEMBER 2014

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	31.1	21.9	33.5	20.5	8.3	69	5.7	6.8	5.5	8.3
Karonga	32.9	23.1	35.4	19.8	5.8	63	5.9	7.5	6.2	8.3
MZUZU ADD										
Bolero	29.6	19.7	32.0	19.0	3.6	70	5.5	6.1	4.9	8.1
Mzuzu	27.3	17.2	30.4	14.9	5.4	76	4.9	5.5	4.4	7.7
Mzimba	27.7	18.0	30.2	17.0	3.2	75	5.0	5.6	4.4	7.8
Nkhata Bay	32.2	21.8	34.0	20.2	2.5	76	6.0	6.5	5.2	8.4
KASUNGU ADD										
Kasungu	30.3	18.9	33.2	17.7	2.2	72	5.0	5.8	4.6	7.8
LILONGWE ADD										
KIA	27.6	18.8	29.6	14.7	4.7	77	3.2	5.0	4.0	6.7
Chitedze	28.2	20.1	30.3	18.9	2.2	75	2.2	4.7	3.8	6.0
Dedza	25.1	16.2	28.5	14.4	6.1	74	2.0	4.5	3.7	5.9
SALIMA ADD										
Nkhota kota	26.9	23.0	31.5	21.1	5.0	76	5.7	6.6	5.3	8.3
Salima	30.8	22.4	33.1	20.9	6.5	66	5.0	6.2	5.0	7.8
MACHINGA ADD										
Monkey Bay	30.7	24.2	34.2	22.4	7.6	76	5.4	6.6	5.4	8.1
Mangochi	32.3	23.0	35.0	22.0	5.8	64	5.3	6.8	5.5	8.0
Ntaja	34.0	24.2	33.3	19.4	6.5	77	5.0	6.7	5.4	7.9
Makoka	31.6	21.5	31.2	18.1	4.3	81	3.7	5.5	4.5	7.0
BLANTYRE ADD										
Bvumbwe	26.8	19.4	29.3	17.8	4.3	79	4.2	5.4	4.3	7.3
Chichiri	29.0	19.3	30.5	15.0	2.5	76	4.5	5.6	4.4	7.5
Chileka	31.1	21.9	33.5	20.5	8.3	69	5.7	6.8	5.5	8.3
Mimosa	31.2	21.3	34.2	20.0	3.6	76	4.0	5.7	4.6	7.2
SHIRE VALLEY ADD										
Ngabu	34.6	23.5	37.5	22.5	7.6	64	6.0	7.5	6.1	8.5

Glossary of some terms on this table

- 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