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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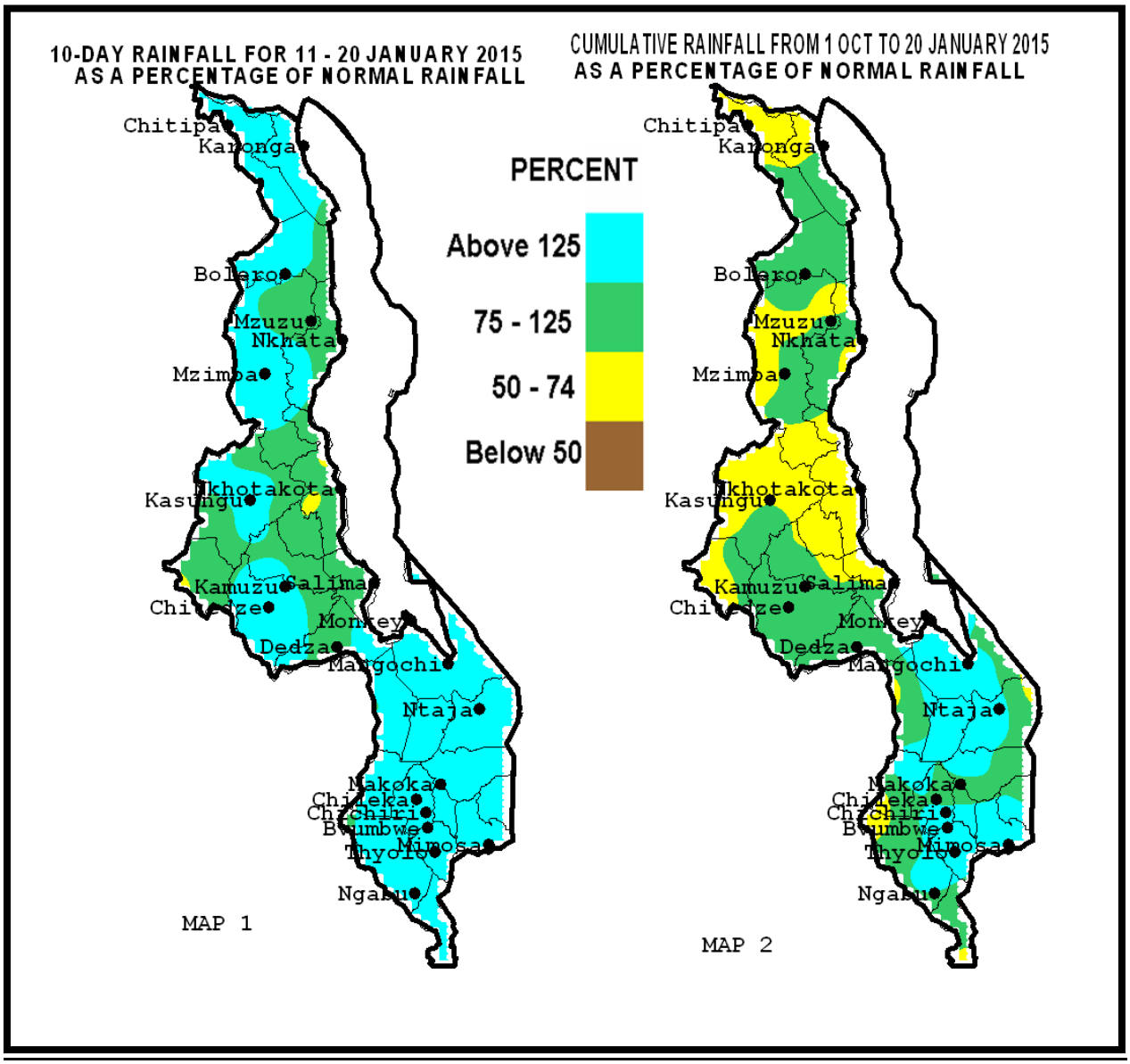
HIGHLIGHTS

- **Floods washed away homes, crops and livestock…**
- **Maize crop was mostly at vegetative stage across Malawi…**
- **Heavy rains to shift to northern Malawi during the period 21 to 31 January 2015...**



Rainfall Maps for 11 to 20 January 2015

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1.0 WEATHER SUMMARY

During the second ten day period of 11 to 20 January 2015 Congo Air mass and a tropical depression in Mozambique Channel had caused torrential rainfall and devastating floods in many districts of southern Malawi.

1.1 RAINFALL SITUATION

Widespread torrential rains that continued to be experienced over Malawi especially in the south during the period 11 to 20 January 2015 had been battered by tropical depression in Mozambique Channel and Congo Air mass. Very high rainfall amounts exceeding **500mm** during the ten day period were reported particularly in Southern Malawi where in Mulanje district stations like Lujeri Tea Estate had accumulated 766mm, Mulanje Agric 724mm, Masambanjati Agric 696mm, Mimosa Met 664mm, in Blantyre - Chichiri Met had 560mm and Mpemba Agric 547mm. The highest rainfall intensity for the period was registered on 12th January 2015 when in a single day some stations in southern Malawi had reported over 200mm of rainfall. For instance Chichiri Met had 398mm, Mpemba Agric 288mm, Mimosa Met 267mm, Masambanjati Agric 253mm, Lujeri Tea Estate 241mm, Thyolo Met 206mm and Bvumbwe 200mm. These high rainfall amounts had culminated into above normal rainfall situation (light blue colour on Map 1) and large areas in southern Malawi were under water, and homes, crops and livestock were washed away. Government has declared 15 of the 28 national districts disaster zone. The hardest-hit districts were in southern Malawi and had included Nsanje, Chikwawa, Phalombe, Zomba, Mulanje and Mangochi districts.

Figure 1: Floods

Cumulative rainfall performance over the country since 1 October 2014 up to 20 January 2015 shows great improvement particularly in southern Malawi. The south has received normal to above normal cumulative rainfall amounts while the centre and north has achieved normal to slightly below normal cumulative rainfall amounts. For more details refer to Table 1 and Map2

1.2 AIR TEMPERATURE

Warm to hot tempratures were experienced over most parts of Malawi during the period 11 to 20 January 2015. Mean maximum temperatures had ranged from 23°C at Dedza to 31°C at Karonga Mean minimum temperatures had ranged from 15°C at Dedza to 23°C at Ngabu. The highest absolute maximum temperature for the period was 35°C recorded at Karonga on 17th January 2015. For more details refer to Table 2.

1.3 WIND SPEEDS

Mean wind speeds at a height of two metres above the ground level were generally light and variable and had ranged from 1.1 to 11.5 Kilometres per hour. The lowest mean wind speed was reported at Mangochi while the highest mean wind speed was recorded at Chileka. For more details refer to Table 2.

1.4 RELATIVE HUMIDITY

Humid conditions had persisted over Malawi during the period 11 to 20 January 2015. Daily average relative humidity values had ranged from 71% at Karonga to 87% at Bvumbwe. Details are in Table 2.

1.5 SUNSHINE HOURS

The mean durations of bright sunshine hours across Malawi were still very low in response to high cloud cover. Most areas had experienced daily average sunshine hours of less than four hours. The highest mean sunshine hours was observed over the lakeshore and in Shire Valley. Details are on the Table 2.

1.6 VEGETATION CONDITION

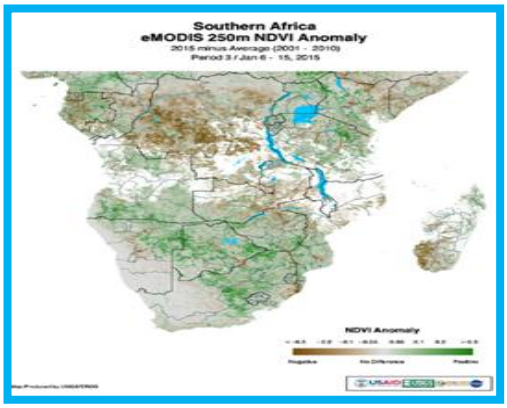

Figure 2: Vegetation Condition over Southern Africa

The vegetation condition map for Southern Africa up to 20 January 2015 showed that despite a lot of cloudiness over northern Mozambique and Malawi there was an improvement in vegetation condition over most parts of the region including Malawi. (Figure 2). As such, natural pastures were in good condition.

2.0 AGROMETEOROLOGICAL ASSESSMENT AND IMPACTS

During the second ten days of January 2015, torrential rains were experienced over Malawi particularly in the south. These rains had supported crop and pasture development, regeneration of the natural vegetation and replenishment of ground water levels. However, the incessant heavy rains had hampered farm operations such as weeding, banking and spraying of pesticides. The high rainfall amounts resulted in worst flooding which washed away cropped land, homes and livestock in most districts in southern Malawi. The main agricultural activities in the Agricultural Development Divisions (ADDs) had included banking and application of top dressing fertilizer. Crops were mostly at vegetative stage.

3. OUTLOOK FOR 21 TO 31 JANUARY 2015

The combined effects of the Inter-Tropical Convergence Zone (ITCZ) and Congo air mass will cause widespread local heavy rains over central and northern Malawi during the forecast period. The southern Malawi is expected to experience generally reduced rainfall during the first five days and more rains during the last six days.

4 UPDATED FORECAST FOR 2014/15 RAINFALL SEASON

During the period February to April (FMA) 2015, the northern half of Malawi is expected to receive normal total rainfall amounts while the southern half is expected to receive normal to above normal total rainfall amounts. The first half of January 2015 has experienced extremely above-normal rainfall across the country with excessive flooding occurring in many districts.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 to 20 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	Baka Res. Stn.	115.8	60.6	**191**	169.6	382.9	**44**	5
	Chitipa Met	110.7	65.9	**168**	271.9	398.2	**68**	7
	Karonga Met.	98.1	55.3	**177**	222.3	331.7	**67**	6
	Lupembe	90.0	49.3	**183**	347.5	275.7	**126**	3
	Vinthukutu Agric	72.2	69.0	**105**	180.5	382.4	**47**	7
MZUZU	Bolero Met	71.4	52.0	**137**	263.7	290.2	**91**	7
	Bwengu Agric.	62.5	59.2	**106**	252.6	332.9	**76**	8
	Chikangawa forest	168.1	83.5	**201**	566.8	452.3	**125**	10
	Chintheche Agric	64.6	83.1	**78**	316.6	564.1	**56**	5
	Embangweni Agric	119.0	53.0	**225**	210.0	390.5	**54**	6
	Ekwendeni Agric.	42.6	53.6	**79**	114.2	403.7	**28**	5
	Mbawa Res. Stn	160.3	59.4	**270**	305.1	377.6	**81**	7
	Mzimba Met	126.0	71.1	**177**	294.9	407.7	**72**	9
	Mzuzu Met.	67.2	69.3	**97**	366.4	407.1	**90**	7
	NkhataBay Met.	63.3	65.6	**96**	337.6	474.8	**71**	6
	Rumphi Boma	91.2	57.9	**158**	279.9	303.5	**92**	8
	Zombwe Agric	35.1	54.0	**65**	240.3	319.2	**75**	6
KASUNGU	Dowa Agric	84.2	82.0	**103**	265.3	394.0	**67**	7
	Kaluluma DTC	51.5	76.9	**67**	242.4	384.0	**63**	3
	Kasungu Met	137.4	62.3	**221**	278.4	344.2	**81**	9
	Lisasadzi	112.7	67.7	**166**	375.1	388.8	**96**	7
	Madisi Agric	90.1	81.5	**111**	260.7	371.8	**70**	7
	Mchinji Boma	50.1	79.7	**63**	293.9	507.5	**58**	7
	Mponela Agric	86.2	68.1	**127**	322.1	350.2	**92**	9
	Mwimba Research	52.8	82.4	**64**	248.5	405.7	**61**	5
	Ntchisi Boma	99.1	98.2	**101**	340.0	532.7	**64**	8
SALIMA	Dwangwa	61.2	81.6	**75**	307.3	500.5	**61**	6
	Lifuwu	104.5	128.0	**82**	345.7	472.6	**73**	7
	Nkhotakota Met	85.9	105.9	**81**	318.2	528.9	**60**	8
	Salima Met	102.5	117.2	**87**	341.0	481.5	**71**	7
LILONGWE	Chitedze Met.	143.4	79.5	**180**	290.4	400.5	**73**	6
	Dedza Met	70.1	69.3	**101**	424.2	405.5	**105**	7
	Dzonzi Forest	170.3	81.9	**208**	472.6	471.3	**100**	7
	K.I.A Met	121.5	87.2	**139**	429.8	382.6	**112**	7
	Mlangeni Njolomole	144.9	82.4	**176**	204.2	438.5	**47**	6
	Mtakataka Airwing	101.6	59.2	**172**	380.6	343.6	**111**	6
	Nathenje Agric	75.6	57.7	**131**	382.3	368.9	**104**	6
	Ntcheu - Nkhande	50.1	97.6	**51**	319.7	503.1	**64**	1
	Dedza RTC	120.2	87.2	**138**	380.8	434.1	**88**	6
MACHINGA	Balaka Township	171.2	70.2	**244**	532.3	403.7	**132**	6
	Chancellor College	285.3	89.4	**319**	655.8	601.5	**109**	5
	Chikweo Agric.	181.3	107.3	**169**	384.3	496.6	**77**	5
	Chingale Agric	293.2	64.4	**455**	660.3	427.0	**155**	5
	Mpilipili (Makanjila)	156.4	65.9	**237**	462.2	412.6	**112**	7
	Mangochi Met.	316.2	64.6	**489**	676.5	275.3	**246**	9
	Monkey Bay Met.	143.3	54.0	**265**	539.6	253.4	**213**	6
	Namiasi Agric	242.4	78.3	**310**	499.5	347.9	**144**	8
	Namwera Agric	159.3	86.6	**184**	410.4	471.8	**87**	6
	Ntaja Met.	274.8	75.2	**365**	611.5	404.6	**151**	5
	Phalula Agric	147.1	61.9	**238**	498.9	407.0	**123**	6
	Zomba RTC	343.1	90.7	**378**	875.8	559.7	**156**	5
BLANTYRE	Bvumbwe Met.	393.9	84.0	**469**	842.4	500.5	**168**	7
	Chichiri Met.	560.6	74.8	**749**	919.5	741.0	**124**	7
	Chileka Airport	255.8	63.9	**400**	529.8	416.7	**127**	7
	Chiradzulu Agric	232.6	60.3	**386**	575.2	445.8	**129**	6
	Lujeri Tea Estate	765.8	127.7	**600**	1506.5	941.3	**160**	7
	Masambanjati Agric	696.4	82.2	**847**	957.5	596.1	**161**	7
	Mimosa Met.	663.6	93.8	**707**	1148.7	655.5	**175**	7
	Mpemba Agric	547.1	88.8	**616**	1009.7	545.3	**185**	8
	Mulanje Boma	724.2	109.7	**660**	1457.1	812.1	**179**	6
	Mwanza Boma	94.6	69.9	**135**	302.8	471.5	**64**	6
	Naminjiwa Agric	306.5	84.8	**361**	605.3	458.1	**132**	6
	Neno Agric	277.9	95.7	**290**	844.3	510.9	**165**	7
	Satemwa Tea Estate	402.2	61.5	**654**	817.9	478.9	**171**	7
	Thyolo Met	433.9	84.0	**517**	583.1	517.7	**113**	6
SHIRE VALLEY	Chikwawa Boma	163.1	61.2	**267**	347.4	387.9	**90**	7
	Nchalo Sucoma	217.6	58.1	**375**	561.3	314.0	**179**	7
	Ngabu Met.	170.3	55.8	**305**	475.0	368.1	**129**	8
	Nsanje Boma	233.2	97.8	**238**	395.2	528.7	**75**	7

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 11 TO 20 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-² p/day
KARONGA ADD										
Chitipa	26.0	18.0	28.2	17.0	8.6	79	2.4	4.7	3.8	6.1
Karonga	30.6	21.7	34.6	20.3	6.1	71	2.6	5.3	4.4	6.2
MZUZU ADD										
Bolero	26.5	19.1	29.4	17.9	7.2	80	3.1	5.0	4.0	6.6
Mzuzu	25.3	18.0	27.5	17.1	7.2	81	3.2	4.8	3.9	6.6
Mzimba	25.2	17.4	27.0	16.5	5.0	82	3.5	4.8	3.8	6.9
Nkhata Bay	30.2	21.8	32.3	21.4	2.5	80	3.5	5.3	4.2	6.8
KASUNGU ADD										
Kasungu	26.8	18.0	29.4	16.6	2.2	79	3.0	4.7	3.8	6.5
LILONGWE ADD										
KIA	25.4	17.2	28.4	11.9	5.8	81	3.4	4.8	3.9	6.8
Chitedze	26.3	18.8	30.3	16.7	2.9	81	3.7	5.0	4.0	7.0
Dedza	22.6	14.6	25.9	12.8	6.8	81	2.0	4.2	3.3	5.9
SALIMA ADD										
Nkhota kota	28.0	22.0	30.0	20.3	5.0	78	4.5	5.9	4.7	7.5
Salima	27.8	20.8	30.3	19.5	7.6	81	3.9	5.4	4.4	7.1
MACHINGA ADD										
Monkey Bay	28.0	22.5	30.5	21.3	6.8	82	4.1	5.6	4.5	7.3
Mangochi	28.5	N/A	30.8	N/A	1.1	83	3.6	3.9	3.0	6.9
Ntaja	26.4	20.7	29.4	19.6	7.9	85	3.5	5.1	4.1	6.9
Makoka	24.6	18.6	28.7	16.4	8.3	84	3.0	4.7	3.8	6.6
BLANTYRE ADD										
Bvumbwe	27.8	17.6	26.5	15.1	8.3	87	3.0	4.8	3.8	6.6
Chichiri	24.5	18.1	28.5	16.0	5.0	82	2.5	4.5	3.6	6.2
Chileka	26.1	19.6	30.3	14.4	11.5	80	5.5	6.0	4.8	8.2
Mimosa	26.3	19.9	31.1	18.3	5.4	86	3.0	4.7	3.8	6.6
SHIRE VALLEY ADD										
Ngabu	29.9	23.2	33.8	21.3	5.8	78	4.2	5.9	4.7	7.4

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