Government of Malawi
Ministry of Natural Resources, Energy and Mining

Malawi 10-day Weather and Agrometeorological Bulletin

"In support of National Early Warning Systems and Food Security"

Be wise be weather-wise
Department of Climate Change and Meteorological Services

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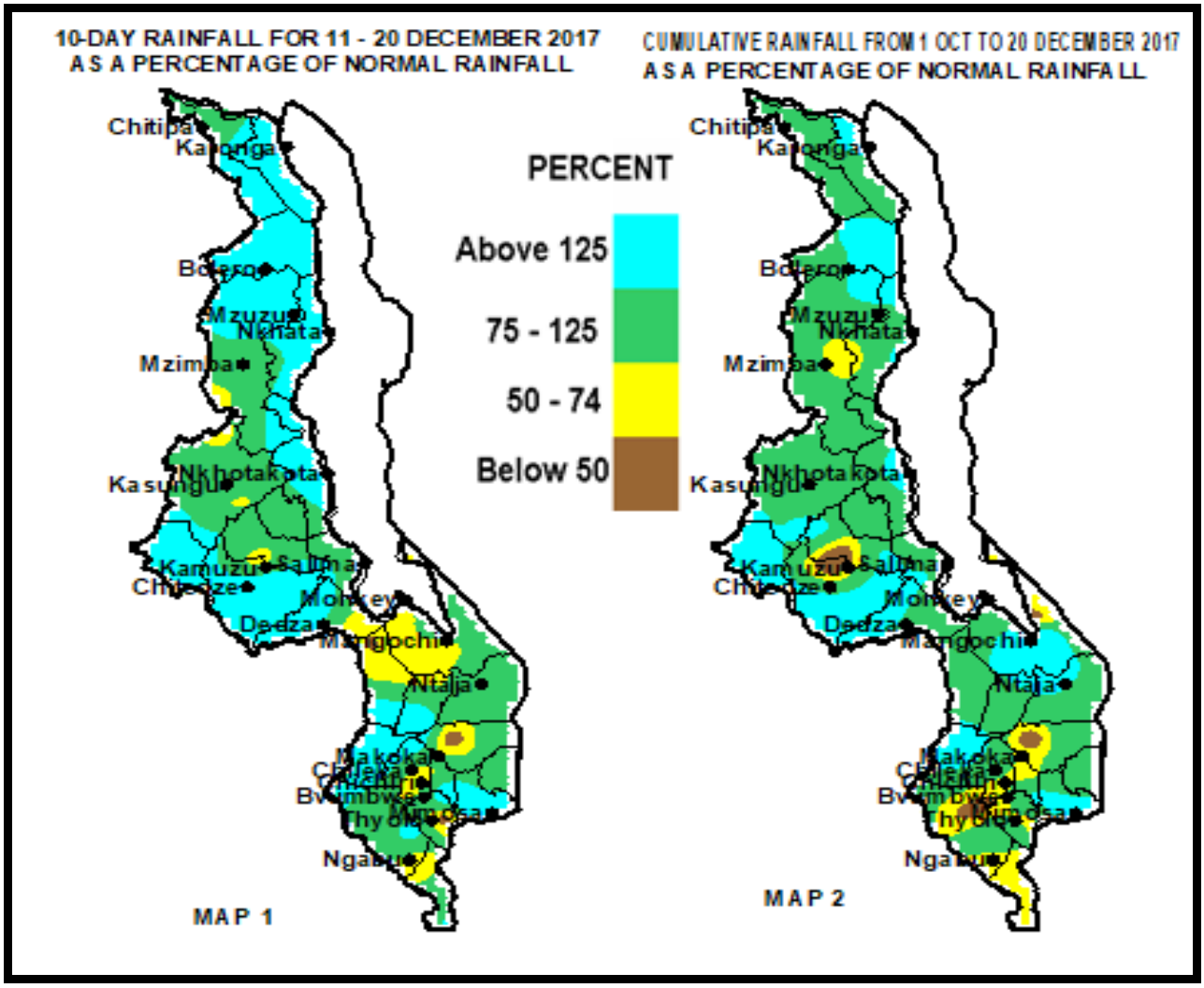
HIGHLIGHTS

- **Heavy rains caused flash floods in Rumphi and Lilongwe City…**
- **Crops reported encouraging between planting and vegetative stages …**
- **Widespread rainfall expected during the period 21 to 31 December 2017…**



Rainfall Maps by 20 December 2017

1.0 WEATHER SUMMARY

During the second ten days of December 2017, the Inter Tropical Convergence Zone (ITCZ) had remained active over southern Malawi while moist and unstable Congo air mass was active over central and northern Malawi. As a result most areas in Malawi had recorded average to above average cumulative rainfall amounts (Green and light Blue colours on Map 1).

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1.1 RAINFALL SITUATION

During the second ten days of December 2017, widespread moderate to locally heavy rainfall amounts were reported particularly over central and northern Malawi. As a result of heavy rains flash floods were reported to have caused loss of lives, destroyed houses and property around Phwezi in Rumphi and in Chipasula, Kaliyeka and Kawale1 in Lilongwe City where due to floods reports indicated that up to six people had lost their lives and some were missing. Very high cumulative rainfall amounts exceeding 150mm during the ten day period were reported in several places including Lujeri Tea Estate in Mulanje 226mm, Chelinda (Nyika) had 224mm, Nathenje Agric 219mm, Rumphi Agric 212mm, Mulanje Agric 206mm, Nkhotakota Met 194mm, Mchinji Agric 175mm, Chintheche Agric 168mm, Dwangwa 163mm, Neno Agric 156mm and NkhataBay Met 153mm.Most of the places had recorded above average rainfall amounts. More details are in Table 1 and Map 1.

Map 2 indicates the spatial cumulative rainfall distribution since the start of the 2017/18 rainfall season in October 2017 up to 20 December 2017. The map shows that most areas in Malawi have received average to above average rainfall amounts (Green to light Blue colours).

1.3 AIR TEMPERATURE

Warm to hot temperatures had persisted over most parts of Malawi during the second ten days of December 2017. Mean daily maximum temperatures had ranged from 24°C at Dedza to 33°C at Ngabu while the mean daily minimum temperatures had ranged from 16°C at Dedza to 24°C at Ngabu in Chikwawa district. During the same period the hottest temperature was 39°C recorded at Ngabu in Chikwawa. The lowest temperature was 14°C recorded at Kasungu Met. Details are in Table 2.

1.4 WIND SPEEDS

During the period 11 to 20 December 2017 most parts of Malawi had experienced light to moderate wind speeds. For instance, daily average wind speeds measured at a height of two metres above the ground level across the country had ranged from 2.2km per hour at Nkhotakota to 9.4km per hour at Chileka Airport. More details are in Table 2.

1.5 RELATIVE HUMIDITY

During the period 11 to 20 December 2017, air over Malawi was moist. Daily average relative humidity values recorded from various weather stations in Malawi had ranged from 60% at Ngabu in Chikwawa district to 83% at Makoka in Zomba. Details are on the Table 2.

1.6 SUNSHINE HOURS

High cloud cover was observed over most areas across Malawi during the period 11 to 20 December 2017. The daily values of sunshine hours had ranged between 3 and 7 hours. Consequently the amount of solar radiation received over most areas was between 6.5 and 9.1 calories per square centimeter per day. For details see Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the period 11 to 20 December 2017, widespread locally heavy rains caused flash floods and soil waterlogging conditions particularly in central and northern Malawi. These rains have supported planting, seed germination, growth and development of crops and application of basal and top dressing fertilizers. The rains have also improved pasture availability for livestock production, water resources and soil moisture reserves. The general crop stand in the fields was reported in good condition. However, fall armyworm outbreak has been reported affecting a total of 20 out of 28 districts and 133,083 farming households in Malawi. These districts have been declared as disaster areas. Maize crop was generally at vegetative stage.

For proper utilization of the rains, farmers are encouraged to adhere to principles of good crop husbandry including use of appropriate seeds, timely planting, implementation of proper plant population and spacing, control of weeds, pests and diseases and including timely fertilizer application.

3. PROSPECTS FOR 2017/2018 RAINFALL SEASON

The Sea Surface Temperatures which drive the rainfall patterns of the world including Malawi indicate that weak La Niña conditions have been established and are predicted to be short-lived. Based on weak La Niña conditions, the updated rainfall forecast for 2017/18 season in Malawi is that during the period January to March 2018 a greater part of the country would experience normal to above normal total rainfall amounts.

4. OUTLOOK FOR 21 TO 31 DECEMBER 2017

Models for short and medium range forecasts show that most parts of Malawi are likely to experience scattered to widespread locally heavy rainfall during the last ten days of December 2017. Farmers are therefore advised to among other activities to take advantage of the wet weather by intensify planting of various crops and basal and top dressing fertilizer application during the period 21 to 31 December 2017.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 TO 20 DECEMBER 2017

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.	135.2	85.0	159	261.9	182.3	144	8
	Chitipa Met	60.7	62.3	97	145.0	180.7	80	9
	Karonga Met.	100.5	63.3	159	246.8	150.4	164	5
	Lupembe	51.8	51.3	101	83.8	116.8	72	3
	Vinthukutu Agric	126.4	68	186	186.2	178.4	104	6
MZUZU	Bolero Met	125.4	45.7	274	126.1	117.2	108	8
	Chikangawa forest	53.9	66.6	81	98.4	209.2	47	8
	Chelinda (Nyika)	224.0	72.8	308	348.0	260.3	134	8
	Chintheche Agric	167.9	81.7	206	429.5	286.5	150	4
	Mbawa Res. Stn	43.8	71.4	61	166.1	170.9	97	6
	Mzimba Met	79.3	63.1	126	144.8	174.3	83	9
	Mzuzu Met.	109.6	55.1	199	208.6	208.1	100	6
	NkhataBay Met.	153.2	67.9	226	278.4	243.3	114	6
	Rumphi Boma	211.6	44.0	481	239.4	113.9	210	8
KASUNGU	Dowa Agric	61.7	66.7	93	218.1	170.2	128	6
	Kaluluma Agric	48.1	67.1	72	48.1	175.7	27	5
	Kasungu Met	57.4	58.8	98	137.5	157.8	87	6
	Lisasadzi Agric	44.3	76.4	58	45.3	177.1	26	4
	Malomo Agric	52.2	68.2	77	94.6	134.8	70	4
	Madisi Agric	94.5	68.5	138	282.4	160.1	176	6
	Mchinji Boma	175.4	72.3	243	472.4	255	185	8
	Mponela Agric	32.8	43.5	75	56.7	161.1	35	7
	Ntchisi Boma	95.8	90.9	105	177.5	231.4	77	6
SALIMA	Dwangwa	163.0	78.7	207	261.0	247.5	105	7
	Lifuwu	88.8	71.6	124	164.2	177.1	93	5
	Nkhotakota Met	194.0	88	220	376.5	220.1	171	7
	Salima Met	70.5	80.8	87	233.8	185.5	126	7
LILONGWE	Chileka Namitete	147.7	77.2	191	376.3	237.5	158	9
	Dzonzi Forest	88.7	78.8	113	195	240.7	81	6
	K.I.A Met	42.5	52.2	81	63.1	150.6	42	6
	Kasiya Agric	89.5	95.7	94	89.5	258.7	35	4
	Nathenje Agric	218.6	63	347	321.7	175.5	183	6
	Ntcheu - Nkhande	47.2	74.8	63	207.6	231.6	90	4
	Dedza RTC	41.6	66.5	63	180.0	199.0	90	8
MACHINGA	Chancellor College	75.1	94.3	80	282.0	317.3	89	6
	Chikweo Agric.	87.0	83.3	104	257.3	228.6	113	3
	Chingale Agric	30.8	73.5	42	80.2	223.6	36	6
	Mpilipili (Makanjila)	33.8	62.5	54	102.3	182.4	56	4
	Makoka Met	49.8	60.5	82	156.5	225.1	70	7
	Mangochi Met.	27.2	41.2	66	367.6	117.3	313	6
	Monkey Bay Met.	28	46.3	60	72.6	96.9	75	5
	Namiasi Agric	64.2	51.5	125	109.1	141.1	77	4
	Namwera Agric	72.3	61.5	118	223.9	222.9	100	6
	Phalula Agric	122.6	50.8	241	244.0	215.5	113	5
	Toleza Farm	47.5	59.4	80	162.5	202.4	80	6
	Zomba Agric.	67.4	100.5	67	208.9	303.9	69	4
BLANTYRE	Bvumbwe Met.	32.1	66.6	48	154.4	274.4	56	6
	Chichiri Met.	54.6	89.9	61	213.8	473.6	45	6
	Chileka Airport	28.3	50.6	56	238.0	227.0	105	6
	Chiradzulu Agric	55.6	63.1	88	130.4	246.4	53	6
	Chizunga Factory	95.4	113	84	168.8	376.4	45	5
	Lujeri Tea Estate	225.9	126.8	178	772.5	552.9	140	6
	Masambanjati Agric	80.5	88.4	91	240.0	316.2	76	6
	Mimosa Met.	99.1	82.5	120	392.7	387.5	101	7
	Mpemba Agric	76.9	74.4	103	207.8	292.0	71	4
	Mulanje Boma	206.1	92.3	223	736.7	496.9	148	6
	Naminjiwa Agric	53.0	61.6	86	241.7	224.8	108	3
	Neno Agric	155.8	66.1	236	425.8	247.3	172	5
	Satemwa Tea Est.	76.9	73.8	104	237.2	273.8	87	6
SHIRE VALLEY	Chikwawa Boma	34.2	51.2	67	53.1	205.2	26	4
	Kasinthula Res. Stn.	5.9	46.3	13	115.7	175.6	66	3
	Nchalo	70.7	43.5	163	236.9	159.8	148	6
	Ngabu Met.	25.9	52.8	49	96.8	190.0	51	2
	Nsanje Boma	96.4	76.6	126	212.2	290.2	73	4

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 DECEMBER 2017

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	27.6	17.8	31.2	16.2	7.9	75	4.7	5.6	4.5	7.5
Karonga	29.7	21.6	32.5	19.5	4.7	75	6.0	6.3	5.1	8.4
MZUZU ADD										
Bolero	28.8	19.1	34.0	18.0	5.4	74	3.7	5.4	4.3	6.9
Mzimba	27.1	17.5	30.6	16.6	3.2	74	3.7	5.1	4.1	6.9
Mzuzu	25.7	17.2	29.7	15.9	3.6	79	3.5	4.8	3.8	6.8
Nkhata Bay	29.9	21.4	34.0	20.3	2.5	82	4.6	5.6	4.4	7.5
KASUNGU ADD										
Kasungu	26.4	18.7	28.6	14.2	5.8	71	4.8	5.7	4.5	7.7
LILONGWE ADD										
Chitedze	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dedza	24.1	15.9	27.6	15.4	6.8	82	4.4	5.1	4.0	7.5
KIA	25.4	18.1	28.5	17.2	6.5	78	4.4	5.3	4.2	7.4
SALIMA ADD										
Nkhotakota	28.7	22.0	32.0	20.3	2.2	81	4.6	5.7	4.5	7.6
Salima	29.7	22.4	32.5	21.0	7.6	75	6.4	6.7	5.4	8.7
MACHINGA ADD										
Makoka	26.5	19.1	31.1	17.6	3.6	83	2.9	4.7	3.7	6.5
Mangochi	33.0	23.2	35.5	21.4	4.3	71	7.0	7.3	5.9	9.1
Monkey Bay	30.4	23.6	34.5	21.9	7.9	70	6.8	7.3	5.9	9.0
Ntaja	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BLANTYRE ADD										
Bvumbwe	25.3	16.7	30.4	15.1	6.1	81	4.3	5.1	4.1	7.4
Chichiri	26.5	19.0	31.7	17.1	4.7	81	4.3	5.3	4.2	7.4
Chileka	28.4	20.7	33.7	19.4	9.4	75	4.6	6.0	4.9	7.6
Mimosa	28.3	20.3	34.0	19.0	3.2	79	5.0	5.7	4.5	7.9
SHIRE VALLEY ADD										
Ngabu	33.0	24.4	38.5	22.3	2.9	60	4.7	6.6	5.4	7.7

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