Malawi 10-Day Rainfall & Agrometeorological Bulletin

Department of Climate Change and Meteorological Services

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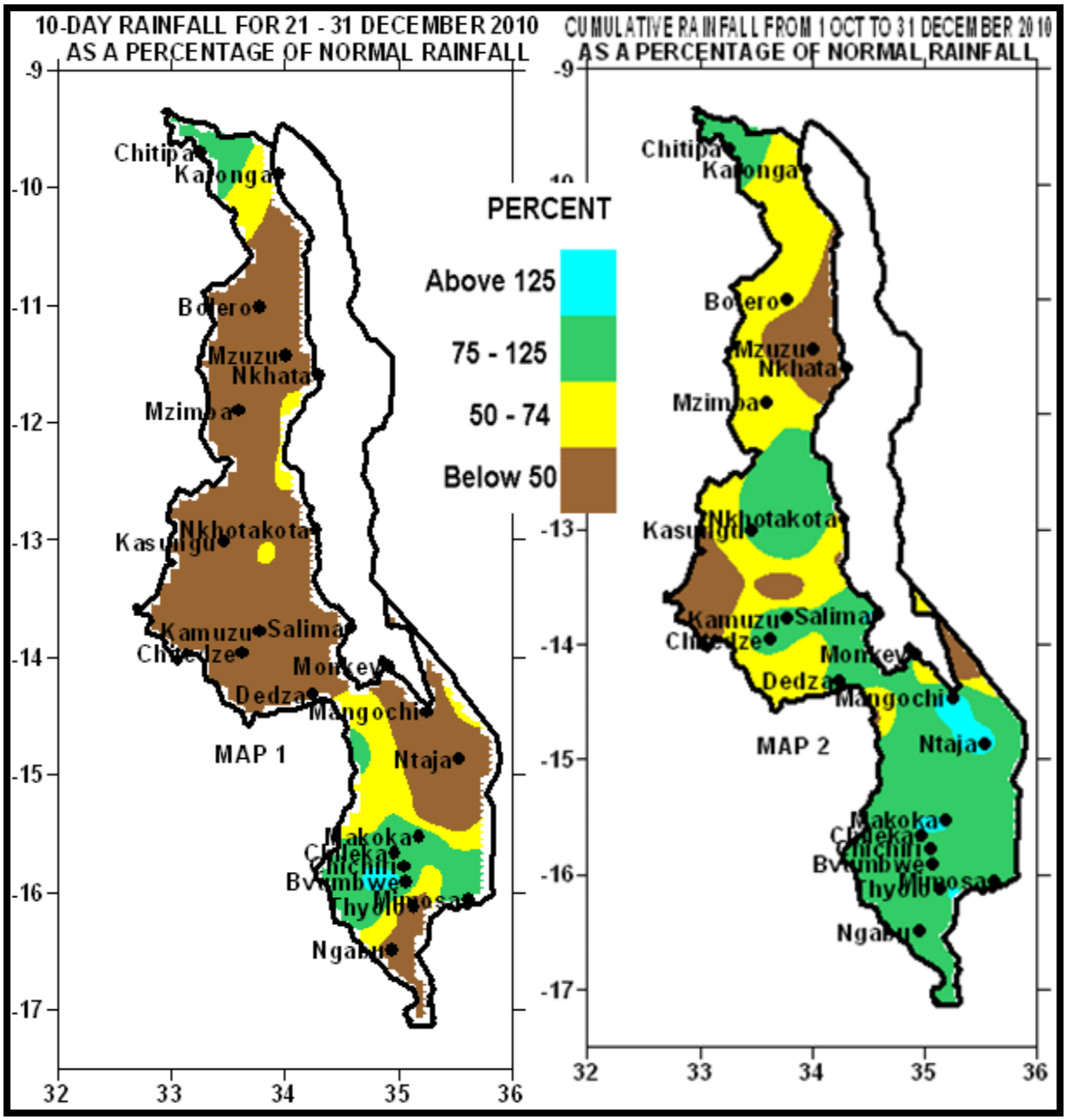
HIGHLIGHTS

- Mostly dry conditions experienced over Malawi …
- Crops mostly survived on residual soil moisture…
- Improvement in rainfall distribution expected during first ten days of 2011…



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1. WEATHER SUMMARY

1.1 RAINFALL SITUATION

During the period 21 to 31 December 2010, Malawi was under a broad equatorial trough. The broadness caused the main rain bearing systems to become less active and most areas experienced suppressed rainfall amounts with very few rainy days. Many areas particularly in the centre and north continued to experience far below average cumulative rainfall amounts (brown *Colour on Map 1*). During the entire period under review the few places that recorded significant cumulative rainfall above 100mm were confined to the south and included Mpemba in Blantyre 140mm, Mulanje Boma (136mm) and Lujeri Tea Estate (102mm). Most of Central and northern Malawi had received light rainfall amounts. More details are in Table 1 and Map 1. Map 2 indicates cumulative rainfall performance half way through the 2010/2011 rainfall season. Generally the map showed below average rainfall performance in the north, a mixed pattern for the centre and average to above average cumulative rainfall amounts for the south.

1.2 MEAN AIR TEMPERATURE

Increased sunshine hours caused high day time temperatures that resulted into hot to very hot average daily maximum temperatures over Malawi during the last ten days of December 2010. The highest absolute daytime temperature was again reported at Ngabu (37°C) and the lowest absolute night temperature was 14°C reported at Chongoni in Dedza See more details in Table 2.

1.4 MEAN WIND SPEEDS

Average wind speeds at a height of two metres above the ground ranged from 0.5 m/s (1.8 Km/h) at Chichiri to 2.4 m/s (8.6 Km/h) at Chileka. See more details in Table 2.

1.5 MEAN RELATIVE HUMIDITY

During the period 21 to 31 December 2010, air over Malawi was still fairly moist. Almost all areas reported daily average relative humidity values of above 65% except at Chitedze. The highest daily average relative humidity value was 90% reported at Dedza and the lowest was 64% registered at Chitedze. More details are in the Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the last ten days of December 2010, there was decline in rainfall distribution and intensity particularly over central and northern Malawi. Reports indicated that as a result of soil moisture stress crops started wilting farmers were forced farmers particularly in the centre and north to suspend planting and basal and top dressing fertiliser applications. On the other hand dry conditions facilitated weeding. The seasonal rainfall performance so far has been better than last season. The onset in most areas has been timely with good distribution and intensity. The good rainfall performance has improved pasture availability for animal production and supported water resources.

The general crop stand in the fields particularly for maize was reported encouraging and good harvests are expected this season if the good rains will continue up to February and March 2011. Maize crop was mostly at vegetative stage. So far no major outbreaks of pests and diseases have been reported over the country.

3. PROSPECTS OF 2010/11 RAINFALL SEASON

Climate model forecast still suggests that during 2010/2011 rainfall season, a greater part of Malawi is likely to experience normal to above normal total rainfall amounts as *La Nina* conditions have become fully established over the eastern equatorial Pacific Ocean. By 31st December 2010 the rainfall performance in Malawi has supported crop germination and establishment as well as crop growth and development. In simple terms the seasonal rainfall so far has been adequate to support both water resources and agricultural production.

4. OUTLOOK 01 – 10 JANUARY 2011

Medium range forecast suggest that most areas in Malawi will experience good rainfall distribution and intensity during the first ten days of January 2011. The rains will be due to the presence of active main rain belts namely the Inter Tropical Convergence Zone and Congo Air mass. These rains will support most farm operations including growth and development of most crops.

TABLE 1: DEKADAL RAINFALL SUMMARY FOR 21 – 31 DECEMBER 2010 AT SELECTED STATIONS

STATION NAME	DEKADAL TOTAL RAINFALL	DEKADAL NORMAL	DEKADAL TOTAL AS %	TOTAL TO DATE	NORMAL TO DATE	TOTAL TODATE AS %	RAINY DAYS
SOUTHERN REGION	mm	mm	NORMAL	mm	mm	NORMAL	≥ 0.3 mm
Bvumbwe Met.	45.9	61.9	74	499.4	336.3	148	6
Chichiri Met.	66.4	104.4	64	479.7	578.0	83	7
Chileka Airport	52.2	57.7	90	416.2	284.7	146	4
Lujeri Tea Estate	102.2	125.3	82	603.9	678.2	89	7
Makhanga Met	13.9	62.2	22	165.3	258.4	64	3
Makoka Met	99.0	77.9	127	407.5	303.0	134	8
Mangochi Met.	4.9	39.2	13	230.8	156.5	147	3
Mimosa Met.	66.9	76.5	87	454.7	464.0	98	6
Monkey Bay Met.	27.0	53.4	51	111.1	150.3	74	6
Mpemba Vet	140.2	77.0	182	411.8	369.0	112	5
Mulanje Boma	111.1	98.4	113	517.9	595.3	87	6
Naminjiwa Agric	68.6	72.3	95	234.0	297.1	79	6
Namwera Agric	44.5	72.7	61	169.6	295.6	57	5
Nchalo Illovo	28.0	43.0	65	158.7	202.8	78	2
Ngabu Met.	22.3	61.0	37	273.9	251.0	109	3
Nsanje Boma	16.4	65.0	25	320.7	355.2	90	3
Ntaja Met.	26.1	69.4	38	354.7	259.3	137	2
Satemwa Tea Est. No.1	13.0	68.0	19	233.2	341.8	68	4
Thyolo Met	17.3	71.4	24	543.8	353.5	154	4
Zomba RTC.	12.9	83.4	15	397.0	387.3	103	2
CENTRAL REGION							
Chitedze Met.	6.8	70.5	10	248.3	252.1	98	2
Dedza Met	28.9	68.6	42	231.8	253.7	91	5
Dwangwa Illovo	50.0	85.6	58	363.5	333.1	109	7
K.I.A Met	20.6	72.1	29	237.2	222.7	107	7
Kasungu Met	4.8	54.0	9	177.0	211.8	84	2
Malomo Agric	33.0	53.2	62	201.7	188.0	107	5
Nathenje Agric	28.3	63.6	44	96.3	239.1	40	4
Nkhotakota Met	15.4	94.1	16	202.4	314.2	64	3
Ntcheu - Nkhande	83.7	87.6	96	266.0	319.2	83	6
Salima Met	10.5	84.0	13	378.7	269.5	141	3
NORTHERN REGION							
Bolero Met	17.9	58.4	31	96.7	175.6	55	6
Chitipa Met	91.3	80.4	114	227.3	261.1	87	8
Chintheche Agric	57.9	86.8	67	140.4	373.3	38	4
Karonga Met.	29.8	63.0	47	130.0	213.4	61	1
Mbawa Res. Stn	17.7	71.0	25	129.5	241.9	54	5
Mzimba Met	9.8	69.6	14	189.8	243.9	78	4
Mzuzu Met.	23.7	63.1	38	140.4	271.2	52	8
NkhataBay Met.	19.0	76.0	25	93.8	319.3	29	7

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 – 31 December 2010

STATION	MAX TEMP (℃)	MIN TEMP (℃)	ABS MAX (℃)	ABS MIN (℃)	WIND SPEED m/s	RH %
BVUMBWE	26.3	17.4	28.2	15.8	1.3	78
CHICHIRI	27.1	18.4	29.2	17.1	0.5	72
CHILEKA	28.9	20.5	31.8	18.4	2.4	72
CHITEDZE	29.0	19.1	32.2	17.8	0.9	64
CHITIPA	29.7	19.4	29.4	17.0	1.5	68
DEDZA	23.9	15.7	27.7	14.4	1.2	90
KASUNGU	27.6	18.9	29.5	17.4	2.1	71
K I A	29.1	17.3	29.9	16.2	1.4	73
KARONGA	30.7	22.8	32.0	20.7	1.6	71
MANGOCHI	N/A	22.2	N/A	20.4	1.3	76
MIMOSA	31.5	19.1	33.7	17.6	1.0	73
MONKEY BAY	30.4	23.8	31.5	23.0	1.8	70
MZIMBA	26.7	17.4	29.5	16.0	0.9	73
MZUZU	25.9	17.0	28.1	15.5	1.6	78
NGABU	34.6	20.2	37.4	16.2	1.8	66
NKHATA BAY	31.1	21.1	33.2	20.3	0.7	79
NKHOTAKOTA	29.4	22.2	31.2	21.1	1.8	71
NTAJA	29.5	21.1	32.2	20.0	1.5	75
SALIMA	29.4	22.2	31.3	20.5	1.9	72

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