REPUBLIC OF MALAWI

Department of Climate Change and Meteorological Services

10-day Weather and Agrometeorological Bulletin

In support of national early warning systems

Period: 21 – 31 December 2012 Season: 2012/2013 Issue No.9

Release date: 7 January 2012

HIGHLIGHTS

- **Moderate rainfall experienced over Malawi…**
- **Major agricultural activities included planting of crops and weeding…**
- **Good rains expected to persist during 1 to 10 January 2013…**

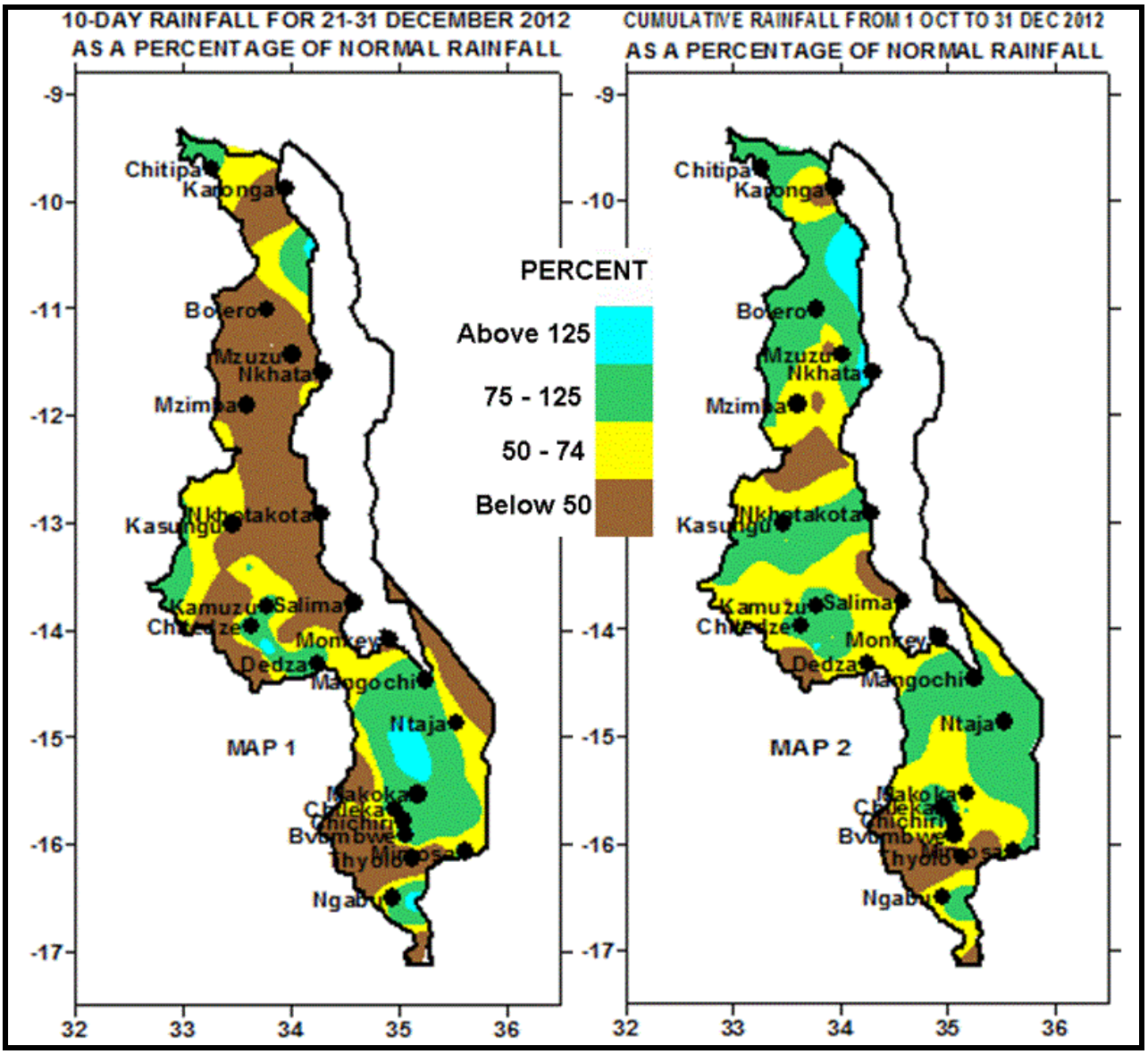


Figure 1: Rainfall Maps for Malawi for 21-31 December 2012

All inquiries should be addressed to: The Director of Climate Change and Meteorological Services, P.O. Box 1808, Blantyre, MALAWI
Tel: (265) 1 822 014/106 Fax: (265) 1 822 215 E-mail: metdept@metmalawi.com Homepage: www.metmalawi.com

1.0 WEATHER SUMMARY AND IMPACTS

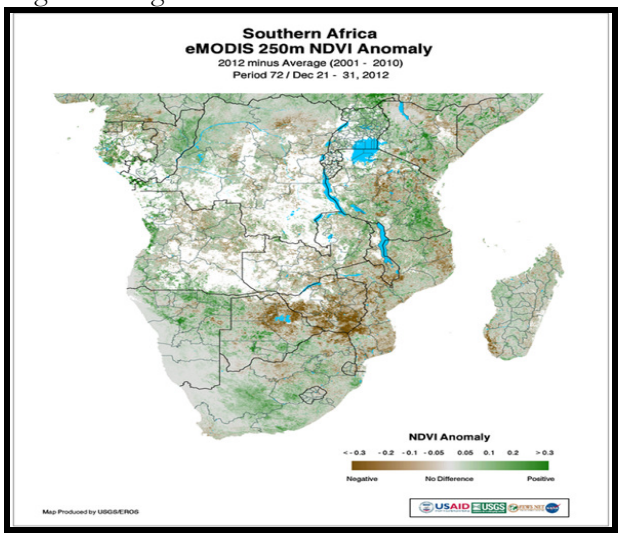
1.1 RAINFALL SITUATION

During the last ten days of December 2012, the two rainfall bearing systems (Congo Air mass and Inter Tropical Convergence Zone) weakened compared to the previous dekad, thereby resulting in reduced rainfall activities compared the previous dekad. As such, most areas especially of the central and northern areas experienced below expected amounts for the period under review (brown colour on Map 1). Average number of rainy days was also reduced to about four from six previously. Stations that recorded more than 100mm of rainfall amounts included Chingale Agriculture and Makhanga Met in southern Malawi and Bunda College in central Malawi.

Map 2 gives an idea of cumulative rainfall performance for the country since 1 October 2012. From the map, over half of the country has achieved above normal cumulative rainfall up to 31 December 2012 (green and light blue colours on Map 2) except for a few pockets where rainfall performance is still below average (less than 75% of the expected cumulative rainfall amounts). For more details refer to Table 1.

1.2 VEGETATION CONDITION

Figure 2: Vegetation Condition over Southern Africa



The vegetation diference from long term average map for Southern Africa for the period 21 to 31 December 2012 showed improvement in most areas. (Figure2). Negative anomalies still exist in some parts of the region. This has been attributed to low rainfall received as a result of slow and delayed onset of the rainy season. Vegetation condition anomaly over Malawi showed no major differences over most areas except for the extreme southern parts of Malawi where negative vegetation anomaly have persisted as a result of delayed onset of the rainy season compared to climatology.

1.3 AIR TEMPERATURE

Generally hot temperatures were experienced over the country during the last ten days of December 2012. Mean maximum temperatures had ranged from around 24.5°C at Dedza to around 35°C at Ngabu while mean minimum temperatures ranged from around 16°C at Dedza to 24°C at Monkey Bay Met (Table 2). The highest absolute maximum temperature for the period was around 37°C which was observed at Ngabu in Shire Valley on 23 December 2012.

1.4 WIND SPEEDS

Mean wind speeds at a height of two metres above the ground level ranged from 0.6 to 2.3 metres per second. The lowest mean wind speed was reported at Nkhata Bay while the highest mean wind speed was recorded at Chileka. Refer to Table 2.

1.5 RELATIVE HUMIDITY

During the last ten days of December 2012, air over Malawi was still fairly moist. Mean daily relative humidity values ranged from 52% at Kasungu to 86% at Mzuzu Airport. For more details refer to Table 2.

2. AGROMETEOROLOGICAL ASSESSMENT

During the last ten days of December 2012, there was a decline in rainfall distribution and amounts especially over central and northern Malawi. Good rains for agricultural production were confined to a few areas in southern Malawi. The relatively dry weather had facilitated weeding and growth and development of crops which were at varying stages of development while the available moisture supported planting, replanting and germination of various crops and as well as basal fertilizer application. The Maize crop was reported doing well. The crop generally ranged from planting to vegetative stages.The rains had also supported growth and development of pasture and regeneration of the natural vegetation. The following is an agrometeorological assessment by Agriculture Development Division (ADD):

2.1 SHIRE VALLEY ADD

Light to moderate rains covered most parts of the ADD. These rains crop establishment, growth and development, planting, replanting and germination of various crops and as well as basal fertilizer application. The main agricultural activities in the ADD included land preparation and planting of rain-fed crops.

2.2 BLANTYRE ADD

Good rains for agricultural production were experienced in the entire ADD. These rains satisfied crop water requirements, supported crop establishment, growth and development, planting, replanting and germination of various crops and as well as basal fertilizer application. The Maize crop was reported doing well. Reports from the districts indicated that the major agricultural activities during the period under review included planting of crops, weeding and top dressing fertilizer application. Maize crop was reported ranging from planting and germination to advanced vegetative stages

2.3 MACHINGA ADD

Significant rainfall has been received in most parts of Machinga ADD. Farmers in most EPAs were reported applying top dressing fertilizer to their crops. The major agricultural activities in the ADD included weeding and application of basal and top dressing fertilizer. Maize crop was reported ranging from germination to advanced vegetative stages

2.4 LILONGWE ADD

Most parts of the ADD had recorded good rainfall for agriculture production. These rains had supported crop establishment, growth and development, planting, replanting and germination of various crops and as well as basal and top dressing fertilizer application. The major agricultural activities in the ADD included weeding, banking, planting of crops, fertilizer acquisition and basal and top dressing fertilizer application. Maize crop was reported between planting and vegetative stages.

2.5 SALIMA ADD

During the period under review light rains were received in Salima ADD. Reports indicated that planting of various crops was in progress in most areas of the ADD. The major agricultural activities included land preparation and planting of crops. Maize crop was reported between planting and vegetative stages.

2.6 KASUNGU ADD

Light to moderate rainfall was recorded in most parts of Kasungu ADD. These rains had maintained soil moisture and facilitated planting of crops. Maize crop ranged from planting to vegetative stages. The main agricultural activities in the ADD included land preparation and planting of rain-fed crop.

2.7 MZUZU ADD

Most areas in the Mzuzu ADD had received good rains for agricultural production during the last ten days of December 2012. Maize crop in the ADD had ranged from planting and germination to vegetative stages. The main agricultural activities in Mzuzu ADD had included land preparation, planting of crops, acquisition of farm inputs and weeding.

2.8 KARONGA ADD

Most areas in the ADD continued receiving good rains for agricultural production during the period under review. Planting of rain-fed crops was in progress in most EPAs in the ADD. The main agricultural activities in Karonga ADD included land preparation, planting of crops, weeding and application of basal dressing fertilizer as well as acquisition of farm inputs

3. PROSPECTS FOR 2012/13 RAINFALL SEASON

The summary of the 2012/2013 rainfall outlook is that ***"Normal total rainfall amounts are expected over most parts of Malawi during the 2012/2013 rainfall season***". The updated rainfall outlook indicates that despite the poor start of 2012/2013 rainfall season the greater part of the country will still experience normal to above normal total rainfall amounts by end of March 2013.

This forecast covers the rainfall season from October 2012 to March 2013 and is relevant only to seasonal time-scales and relatively large areas. It does not fully account for local and month to month variations in distribution of rainfall such as localised dry spells and flash floods.

The seasonal forecast is issued to users as a planning tool. For day to day operations, users are advised to make use of the available short to medium range forecasts and the 10-day Rainfall and Agrometeorological bulletin issued by the Department.

4. OUTLOOK FOR 01 – 10 JANUARY 2013

During the first ten days of January 2013 models for short and medium term weather forecasts suggest that Congo Air will remain active over Malawi.. Therefore, widespread rains and occasional thunderstorms which will be locally heavy are expected to over Malawi. These rains will continue supporting growth and development of crops in most parts of Malawi.

TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR DEKAD 3 OF DECEMBER 2012: PERIOD 21 – 31ST

STATION NAME	DEKADAL TOTAL RAINFALL mm	DEKADAL NORMAL mm	DEKADAL TOTAL AS PERCENTAGE OF NORMAL	TOTAL TO DATE mm	NORMAL TO DATE mm	NORMAL TODATE AS PERCENTAGE OF NORMAL	RAINY DAYS ≥ 0.3 mm
SOUTHERN REGION							
Balaka Township	73.5	52.4	**140**	124.5	249.4	**50**	5
Bvumbwe Met.	95.5	61.9	**154**	250.2	336.3	**74**	6
Chancellor College	77.8	94.3	**83**	397.6	411.6	**97**	4
Chichiri Met.	65.1	104.4	**62**	357.7	578.0	**62**	6
Chikwawa Boma	11.3	54.7	**21**	108.4	259.9	**42**	3
Chileka Airport	59.9	57.7	**104**	306.8	284.7	**108**	5
Chingale Agric	110.9	68.6	**162**	233.1	292.2	**80**	4
Chiradzulu Agric	88.5	72.7	**122**	245.5	319.1	**77**	8
Lujeri Tea Estate	65.4	125.3	**52**	506.7	678.2	**75**	8
Mpilipili (Makanjila)	15.8	72.4	**22**	106.4	254.8	**42**	1
Makhanga Met	104.2	62.2	**168**	259.4	258.4	**100**	2
Makoka Met	44.0	77.9	**56**	127.2	303.0	**42**	5
Mangochi Met.	40.8	39.2	**104**	175.3	156.5	**112**	4
Masambanjati Agric	8.1	100.8	**8**	191.1	417 .0	**46**	1
Mimosa Met.	90.6	76.5	**118**	427.5	464.0	**92**	9
Monkey Bay Met.	13.6	53.4	**25**	92.7	150.3	**62**	3
Mpemba Vet	34.5	77.0	**45**	274.9	369.0	**74**	3
Mulanje Boma	69.3	98.4	**70**	324.0	595.3	**54**	4
Mwanza Boma	36.2	61.2	**59**	169.0	328.1	**52**	2
Namiasi Agric	76.7	69.5	**110**	207.8	210.6	**99**	3
Naminjiwa Agric	66.5	72.3	**92**	197.1	297.1	**66**	2
Nchalo Sucoma	9.5	43.0	**22**	48.1	202.8	**24**	3
Ngabu Met.	47.7	61.0	**78**	179.0	251.0	**71**	3
Ntaja Met.	44.2	69.4	**64**	293.5	259.3	**113**	6
Phalula Agric	68.1	56.9	**120**	162.1	272.4	**60**	3
Thuchila Agric	64.0	64.2	**100**	129.0	263.8	**49**	3
Thyolo Boma	53.0	96.5	**55**	254.7	376.0	**68**	4
Zomba RTC	92.7	83.4	**111**	371.6	387.3	**96**	4
CENTRAL REGION							
Bunda College	154.0	70.5	**218**	396.7	272.0	**146**	0
Chileka Namitete	16.9	61.0	**28**	205.2	298.5	**69**	3
Chitedze Met.	98.1	70.5	**139**	302.4	252.1	**120**	5
Dedza Met	85.3	68.6	**124**	186.1	253.7	**73**	6
Dowa Agric	47.7	71.2	**67**	173.2	241.4	**72**	4
Dwangwa Sugar Corp.	15	85.6	**18**	164.3	333.1	**49**	4
Dzonzi Forest	52.4	77.8	**67**	338.7	318.5	**106**	5
Kaluluma DTC	37.4	72.3	**52**	68.3	248.0	**28**	4
K.I.A Met	68.3	72.1	**95**	287.3	222.7	**129**	6
Kasungu Met	37.7	54.0	**70**	186.8	211.8	**88**	4
Malomo Agric	5.7	53.2	**11**	181.1	188.0	**96**	2
Madisi Agric	50.8	61.2	**83**	198.3	221.3	**90**	3
Mchinji Boma	76.4	89.8	**85**	231.0	344.8	**67**	5
Mkanda Met	76.4	78.8	**97**	222.5	281.6	**79**	5
Mlangeni Njolomole	42.6	64.3	**66**	212.8	285.3	**75**	1
Mponela Agric	30	53	**57**	122.9	214.1	**57**	4
Nathenje Agric	10	63.6	**16**	178.1	239.1	**74**	1
Natural Res. College	47.2	66.5	**71**	178.2	256.4	**70**	4
Nkhotakota Met	39.1	94.1	**42**	329.4	314.2	**105**	5
Ntcheu - Nkhande	66.7	87.6	**76**	283.1	319.2	**89**	4
Salima Met	15.5	84.0	**18**	210.1	269.5	**78**	2
Dedza RTC	30.5	72.5	**42**	152.5	271.5	**56**	3
NORTHERN REGION							
Baka Res. Stn.	25.7	73.9	**35**	33.7	256.2	**13**	5
Bolero Met	18.4	58.4	**32**	154.9	175.6	**88**	4
Chikangawa forest	22.0	77.2	**28**	129.2	286.4	**45**	5
Chitipa Met	66.1	80.4	**82**	281.7	261.1	**108**	6
Chintheche Agric	50.8	86.8	**59**	362.8	373.3	**97**	4
Euthini Agric.	9.0	68.1	**13**	223.6	223.7	**100**	2
Karonga Met.	22.8	63.0	**36**	165.0	213.4	**77**	6
Mbawa Res. Stn	36.5	71.0	**51**	184.9	241.9	**76**	5
Mzimba Met	30.7	69.6	**44**	149.0	243.9	**61**	5
Mzuzu Met.	27.3	63.1	**43**	200.2	271.2	**74**	7
NkhataBay Met.	33.7	76.0	**44**	575.91	319.3	**180**	4
Rumphi Boma	16.8	67.2	**25**	135.5	181.1	**75**	4
Vinthukutu Agric	91.0	62.5	**146**	509.7	240.9	**212**	4
Zombwe Agric	0.0	56.8	**0**	150.5	196.6	**77**	0

TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR THE PERIOD 21 TO 31 DECEMBER 2012

STATION	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (ºC)	ABS MIN (°C)	WIND SPEED (m/s)	RH (%)	EVAP (mm)
KARONGA ADD							
Chitipa	27.4	18.1	29.6	17.3	2.1	77	N/A
Karonga	30.0	22.3	31.5	20.4	1.2	71	N/A
MZUZU ADD							
Bolero	29.9	18.2	31.2	17.3	N/A	68	N/A
Mzuzu	29.1	18.4	28.9	14.3	1.2	86	N/A
Mzimba	27.9	17.5	29.4	15.9	0.7	70	N/A
Nkhata Bay	31.5	20.9	33.1	20.1	0.6	82	N/A
Kasungu	30.1	19.1	31.9	18.0	1.9	52	N/A
LILONGWE ADD							
KIA	30.2	20.2	28.8	17.3	1.3	79	5.5
Chitedze	28.4	18.5	29.7	16.6	0.7	76	N/A
Dedza	24.5	16.0	26.7	13.8	1.5	75	N/A
SALIMA ADD							
Salima	31.6	23.3	33.0	22.0	1.7	71	N/A
Nkhotakota	29.8	22.2	30.9	21.0	1.7	79	N/A
MACHINGA ADD							
Makoka	29.1	18.4	29.9	16.9	2.1	76	N/A
Ntaja	30.2	21.3	32.1	20.1	1.6	60	N/A
Mangochi	33.3	23.1	35.0	21.4	1.2	72	N/A
Monkey Bay	31.4	23.8	33.8	22.7	1.9	68	N/A
BLANTYRE ADD							
Chileka	29.7	20.5	31.4	18.4	23	70	N/A
Chichiri	29.7	19.6	29.4	13.1	1.1	71	N/A
Bvumbwe	26.5	16.1	28.5	14.0	1.4	70	N/A
Mimosa	31.5	19.5	32.9	17.3	1.0	74	5.9
SHIRE VALLEY ADD							
Ngabu	35.0	N/A	37.0	N/A	1.2	59	N/A

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 bserved for a given number of days (calendar month) of a specified period of months (years).
- convert Meters Per Second (mps) to Kilometers per hour (Km/hr) = mpsx3.6