



# Malawi 10-Day Rainfall & Agrometeorological Bulletin

Department of Climate Change and Meteorological Services



Period: 21 – 28 February 2010

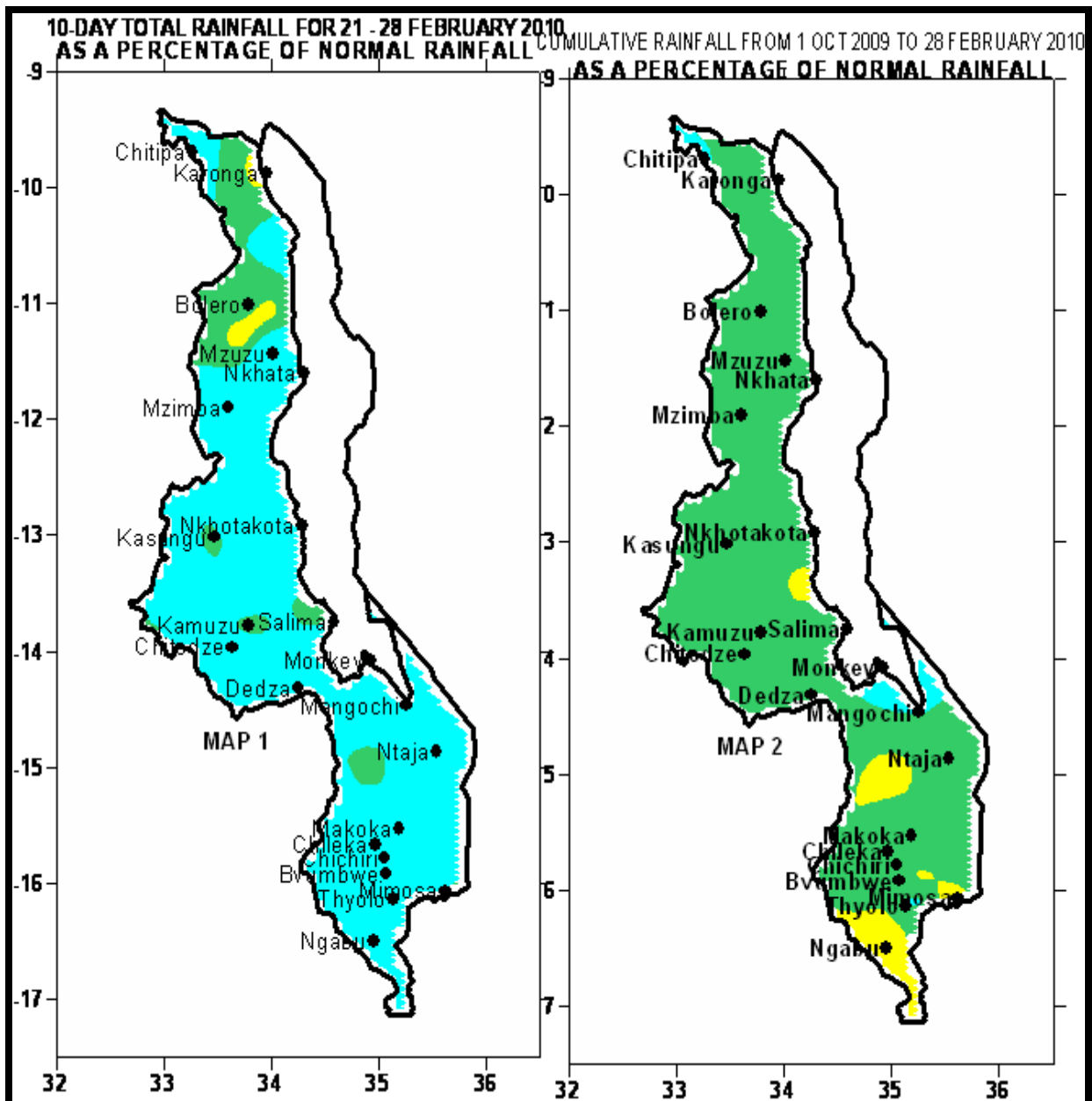
Season: 2009/2010

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## HIGHLIGHTS

- Moderate to heavy rainfall received over Malawi...
- Floods reported in Nkhotakota, Salima and Mangochi districts ...
- Moderate to heavy rains to persist during 1 to 10 March 2010 ...



## 1. WEATHER SUMMARY

### 1.1 RAINFALL SITUATION

During the last days of February 2010, Congo Air mass brought moderate to heavy rainfall with very good distribution in most parts of Malawi. Several places recorded between seven and eight rainfall days. However, heavier rainfall amounts were confined to central and southern Malawi. Rainfall amounts in excess of 175mm were reported at several places in southern Malawi including Nsanje Boma 180mm, Chikweo Agric 189mm, Chancellor Collage 192mm, Mpemba Agric 205mm, Zomba RTC 221mm, Chichiri Met 222mm and Monkey Bay in Mangochi 249mm while in the centre such high rainfall amounts were reported at Chitedze Research Station 176mm and Nkhotakota Met 224mm. As results of the heavy rains floods were reported in lakeshore districts of Nkhotakota, Salima and Mangochi. The north registered lighter rainfall amounts ranging from 14mm at Bwengu to 121mm at Mzuzu Airport.

Cumulative rainfall performance by end of February 2010 indicated that most areas in Malawi had received substantial rainfall amounts with reference to the long term average rainfall amounts the same period (depicted by green colour on Map 2). On the other hand, seasonal rainfall shortages persisted in some parts of southern Malawi (yellow and brown colours on Map 2).

### 1.2 MEAN AIR TEMPERATURE

Cloudy conditions moderated the average maximum air temperatures during the last days of February 2010. Daily average maximum temperatures observed in the country were mostly in the warm categories. Hot conditions ( $\geq 28^{\circ}\text{C}$ ) were observed in shire valley and along the lakeshore areas while warm weather ( $< 28^{\circ}\text{C}$ ) was experienced over the highlands. The highest absolute maximum temperature was recorded at Ngabu Met ( $34^{\circ}\text{C}$ ) in Chikhwawa district and the lowest absolute minimum temperature was  $16^{\circ}\text{C}$  reported at Mzuzu and Dedza (For more details see Table 2).

### 1.4 MEAN WIND SPEEDS

Malawi continued to register low average wind speeds during the last days of February 2010 such that the lowest wind speed was  $0.4\text{m/s}$  ( $1.4$

$\text{Km/h}$ ) while the highest wind speed was  $2.1\text{ m/s}$  ( $7.6\text{ Km/h}$ ) recorded at Chileka (For more details refer to Table 2).

### 1.5 MEAN RELATIVE HUMIDITY

Because of the wet weather, most areas reported high average daily relative humidity values. The highest relative humidity value was 93% reported at Salima while Karonga with 76% was the lowest. For more details refer to Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

Incessant, moderate to heavy rains that covered most parts of Malawi during the last days of February brought relief to areas that were negatively impacted by prolonged dry spells particularly in southern Malawi. Moderate to severe moisture deficits that were centered lower Shire Valley districts of Chikhwawa and Nsanje have been eradicated with the return of heavy rainfall. However, the cumulative rainfall situation (Map 2) still indicates that below-average rainfall condition has persisted in lower Shire Valley (Yellow colour on Map 2). The improvement in rainfall performance is expected to support growth and development of crops, planting of root and tuber crops as well as replenish water resources.

Indications from the Crop Water Requirement Satisfaction Index (WRSI) model suggest failure of the rain fed crop growing season in Shire Valley Agricultural Development Division and farmers will likely not to harvest anything from the rain fed crop.

### 3. RAINFALL PROSPECTS FOR JANUARY TO MARCH 2010

Most dynamical and statistical model forecasts continue to project that Malawi will receive normal to above normal rainfall amounts during January to March 2010.

### 4. OUTLOOK FOR 1 – 10 MARCH 2010

Medium range model projections suggest a continuation of moderate to locally heavy rainfall over most parts of Malawi during the first ten days of March 2010.

TABLE 1: DEKADAL RAINFALL SUMMARY FOR 21 – 28 FEBRUARY 2010 AT SELECTED STATIONS

STATION NAME	DEKADAL TOTAL RAINFALL (mm)	DEKADAL NORMAL RAINFALL (mm)	RAINFALL DEKADAL TOTAL (%)	TOTAL TO DATE (mm)	NORMAL TO DATE (mm)	RAINFALL TOTAL TODATE (%)	RAINY DAYS ≥ 0.3 mm
<b>SOUTHERN REGION</b>							
Balaka Township	32.5	47.2	69	341.0	679.0	50	4
Bvumbwe Met.	134.1	62.4	215	782.4	833.7	94	8
Chancellor College	192.3	68.0	283	916.3	953.8	96	7
Chichiri Met.	222.2	52.5	423	896.0	972.5	92	8
Chikweo Agric.	189.5	67.5	281	742.7	806.4	92	6
Chileka Airport	91.0	47.9	190	637.6	684.8	93	8
Chingale Agric	78.6	54.0	146	640.6	723.5	89	5
Chiradzulu Agric	158.0	53.3	296	710.3	763.8	93	7
Kasinthula Res. Stn.	228.6	41.4	552	783.7	529.2	148	8
Liwonde Township	142.8	55.9	255	508.2	624.4	81	5
Lujeri Tea Estate	81.3	110.3	74	1177.9	1451.5	81	8
Makoka Met	113.0	56.8	199	760.0	760.0	100	6
Mangochi Met.	73.2	47.5	154	671.8	530.9	127	7
Mimosa Met.	59.3	62.9	94	721.1	1002.6	72	7
Monkey Bay Met.	249.2	33.7	739	802.2	479.5	167	8
Mpemba Vet	205.6	54.7	376	951.4	848.6	112	8
Mulanje Boma	101.1	55.9	181	604.1	1209.8	50	6
Naminjiwa Agric	126.8	53.5	237	659.4	763.0	86	8
Nchalo Sucoma	88.7	37.2	238	348.3	518.5	67	5
Neno Agric	131.8	51.2	257	631.0	841.7	75	6
Ngabu Met.	61.0	40.9	149	347.3	590.6	59	7
Nsanje Boma	180.4	43.6	414	556.8	811.4	69	7
Ntaja Met.	111.0	57.5	193	505.4	676.0	75	7
Phalula Agric	84.5	57.6	147	539.5	663.4	81	6
Satemwa Tea Est. No.1	121.7	48.5	251	846.2	781.1	108	8
Thuchila Agric	80.0	47.4	169	496.4	668.4	74	8
Thyolo Met	129.0	136.2	95	812.4	921.9	88	8
Zomba RTC	221.2	66.1	335	1025.1	903.7	113	8
<b>CENTRAL REGION</b>							
Chitedze Met.	175.5	66.9	262	641.4	669.5	96	8
Dedza Met	132.1	74.1	178	737.8	731.3	101	8
Dwangwa Sugar Corp.	129.2	70.1	184	646.3	792.1	82	7
Kaluluma DTC	55.0	40.8	135	589.3	617.1	95	5
K.I.A Met	53.4	66.5	80	550.4	652.6	84	7
Kasungu Met	71.2	59.6	119	616.4	609.1	101	7
Lifuwu	64.2	86.4	74	227.7	879.8	N/A	5
Madisi Agric	88.3	73.7	120	724.3	668.6	108	7
Mchinji Boma	63.1	70.0	90	849.2	793.5	107	7
Mkanda Met	114.8	59.0	195	766.1	682.2	112	6
Mponela Agric	133.0	61.3	217	611.0	643.2	95	6
Nathenje Agric	137.0	66.5	206	875.0	656.0	133	7
Nkhotakota Met	224.0	85.7	261	1047.2	870.2	120	7
Ntcheu - Nkhande	99.5	69.3	144	811.2	817.3	99	7
Ntchisi Boma	124.4	75.3	165	561.7	905.4	62	6
Salima Met	123.9	92.8	134	856.0	867.5	99	8
Dedza RTC	149.8	42.3	354	681.5	764.7	89	8
<b>NORTHERN REGION</b>							
Baka Res. Stn.	30.5	54.6	56	497.6	615.5	81	3
Bolero Met	37.3	35.1	106	454.9	490.5	93	5
Bwengu Agric.	14.2	45.4	31	414.2	577.3	72	5
Chitipa Met	102.8	58.7	175	899.4	697.3	129	5
Karonga Met.	16.7	55.9	30	383.5	541.4	71	4
Mzimba Met	94.4	54.4	174	472.0	677.2	70	6
Mzuzu Met.	120.8	42.9	282	823.8	636.1	130	8
NkhataBay Met.	59.9	55.3	108	597.8	721.7	83	6
Vinthukutu Agric	89.1	48.9	182	550.8	602.3	91	3
Zombwe Agric	25.5	47.4	54	523.4	532.2	98	5

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 21 – 28 FEBRUARY 2010**

STATION	MAX TEMP (°C)	MIN TEMP (°C)	ABS MAX (°C)	ABS MIN (°C)	WIND SPEED (m/s)	RELATIVE HUMIDITY (%)
BOLERO	28.1	19.6	30.3	18.5	N/A	80
BVUMBWE	24.9	18.5	27.0	17.5	1.3	89
CHILEKA	27.0	21.4	28.4	20.5	2.1	89
CHITEDZE	23.0	19.2	27.3	18.8	0.4	87
CHITIPA	26.9	18.2	28.0	17.2	0.5	79
DEDZA	21.9	16.8	23.0	16.4	0.9	90
K I A	30.9	23.1	31.9	21.7	0.6	76
KARONGA	30.9	23.1	31.9	21.7	0.6	76
KASUNGU	25.4	19.8	27.6	19.1	0.9	90
MAKOKA	27.3	19.5	26.9	19.1	1.1	82
MANGOCHI	N/A	22.6	N/A	22.0	0.7	88
MIMOSA	28.8	20.7	31.0	19.8	0.7	86
MONKEY BAY	27.5	22.0	28.3	21.0	0.9	90
MZIMBA	25.7	18.0	27.5	16.7	0.7	87
MZUZU	26.3	18.4	28.0	16.0	1.0	84
NGABU	32.1	23.7	34.0	22.5	1.2	84
NKHOTAKOTA	27.1	22.1	29.2	21.5	N/A	89
NTAJA	27.4	21.6	29.6	21.0	1.2	86
SALIMA	26.8	21.8	28.0	21.2	1.0	93

**Glossary of some terms on this table**

- 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 (m/s) to Kilometers per hour (Km/h) = m/s x 3.6