



Government of Malawi

DEPARTMENT OF METEOROLOGICAL SERVICES

FIRST ROUND 2006/07 AGRICULTURAL ESTIMATES

**AGROMETEOROLOGICAL UPDATE**

Released Lilongwe 08 February 2007

## **SEASONAL HIGHLIGHTS**

- Sufficient rains to support planting of various crops started countrywide from mid November 2006. This scenario represents an early to normal start of the rainfall season in Malawi, earlier than last season...
- In the north and some parts of the centre the rains came a bit too early, hence were perceived by many as part of the first rains (Chizimalupsya) that normally precede the onset of the main rains...
- Sufficient rains continued in December and in some areas high intensity rainfall was experienced particularly in the last days of December. Cumulative rainfall performance by December 31, indicated average to above-average rainfall throughout most of Malawi with just pockets of below-average rainfall confined mainly to southern Malawi particularly in Chikwawa, Nsanje, Thyolo and Zomba...
- Updated forecast still indicates likelihood of normal rains over Malawi during the remainder of the season. However, the presence of El Nino conditions is still a cause of concern and uncertainty on the performance of the rains during the remaining months of the growing season particularly in southern Malawi since any prolonged dryness can have adverse effects on crop production...
- **First round National Maize production estimates from the agrometeorological model is estimated at 3,235,371 million metric Tones**

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## 2006/07 SEASONAL FORECAST

The Department of Meteorological Services released the 2006/07 Seasonal Forecast on 15 September 2006. The forecast was based on statistical models that use scientifically established relationship between rainfall over Southern Africa and Sea Surface Temperatures over oceans. At that time, Sea Surface Temperature observations indicated a slight warming in eastern central Pacific Ocean implying that there was a chance of an El Niño episode developing over the Pacific Ocean during the 2006/07 rainfall season. However, most models projected neutral conditions for the entire season. So based on **the models, a greater part of Malawi was expected to experience normal total rainfall amounts with localized dry spells and flash floods during 2006/07 rainfall season.**

This forecast was presented to Ministry of Agriculture and Food Security and other key stakeholders. A seasonal forecast is required for agricultural planning and decision making in the pre-season and during the growing season. For instance, timing delivery of farm inputs to various districts depends on knowledge of when the rains are likely to start, deciding area to plant depends on whether the season will be good or bad, choice of planting either early or late maturing crop varieties, choice of agricultural extension messages depends on the seasonal forecast.

An El Niño condition was detected in September 2006 and currently most statistical and coupled model forecasts indicate El Niño conditions are weakening and ENSO-neutral conditions are expected during March-May 2007. Over Malawi, El Niño conditions have **sometimes** caused an extended dry spell in the January to March following good rainfall early in the season, even though specific impacts vary from year to year and area to area. Although the updated forecast still indicates likelihood of normal rains over Malawi during the remainder of the season, there is need to closely monitor rainfall performance particularly over southern Malawi since any prolonged dryness can have adverse effects on crop production. Research has shown that the greatest impacts of the El Niño are often between January and March, the critical period for crop production, and the part of the season that is currently unfolding.

## PROGRESS OF 2006/07 RAINFALL SEASON

Sufficient rains to support planting, germination and establishment of various crops started countrywide from mid November 2006. This scenario represents an early to normal start of the rainfall season in Malawi, earlier than last season and a normal season. However, in some areas particularly in the north and some parts of the centre the rains came a bit too early for most farmers had not finished land preparations. As such these rains were perceived by many as part of the first rains (Chizimalupsya) that normally precede the onset of the main rains. Good rains continued into December and in some areas high intensity rainfall was experienced. In the last dekad of December the existence of Tropical Cyclone Bondo in the Mozambique Channel, enhanced incessant rainfall in central and northern Malawi.

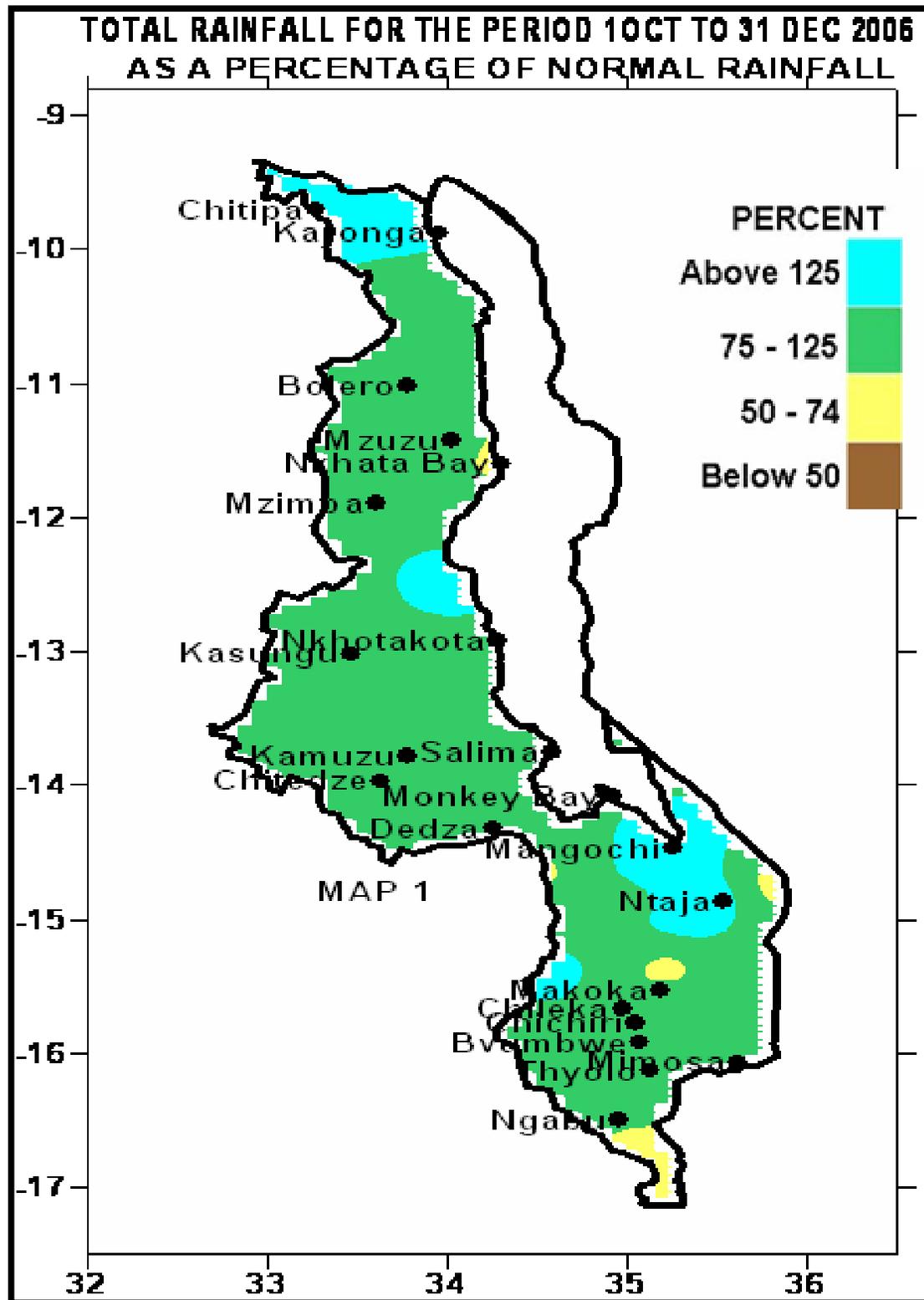
At the same time some parts of southern Malawi experienced reduced rainfall especially in parts of Nsanje, Balaka and Mulanje districts. However, this decrease in rainfall did not have a significant impact on crop development, as favourable rainfall in the previous dekads deposited adequate moisture in the soil for crop development. In fact the reduced rainfall activity allowed farmers to weed their fields, which is not possible with continuously heavy rainfall. The heavy rains caused flash floods in some areas, particularly in Chikwawa district.

Cumulative rainfall performance (**Map1**) from 1<sup>st</sup> October 2006 through December 31, mid-way through the 2006/07 planting season, had been normal to above-normal throughout most of Malawi. Isolated areas that experienced below-normal rainfall during the first half of the season included some parts in Chikwawa, Nsanje, Thyolo and Zomba districts in the south, Ntcheu in the centre and Nkhata Bay in the north. In parts of Nsanje reports indicated that a dry spell caused permanent wilting of the early planted crops, and in many affected areas some farmers had to replant. Heavy rains from the last dekad of December to January caused localized flooding in some parts of the country. Areas affected by flash floods included Chikwawa and Nsanje in the south, Salima and Nkhota Kota in the centre and some parts of Nkhata Bay, Mzimba and Karonga districts in the north.

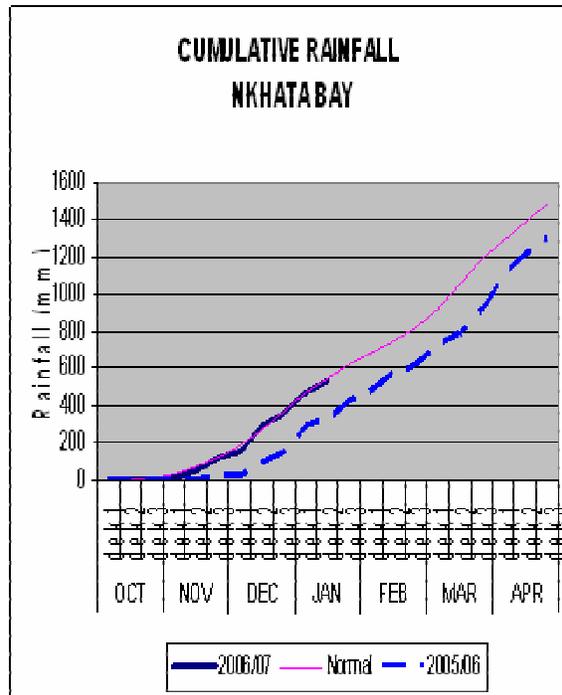
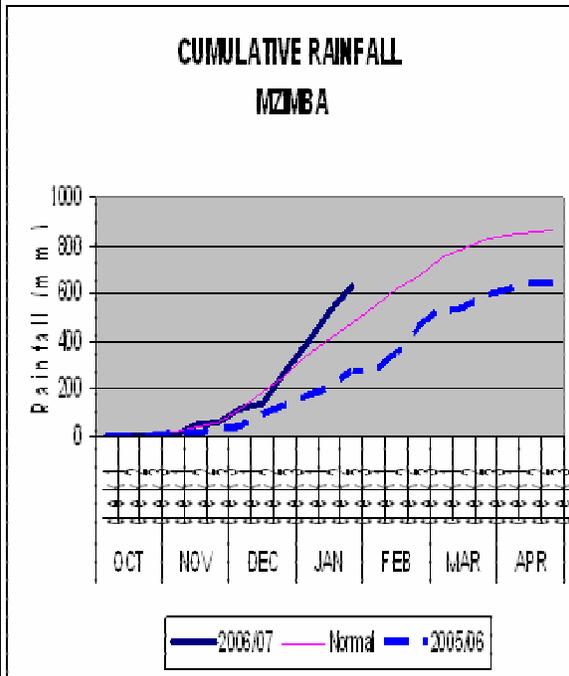
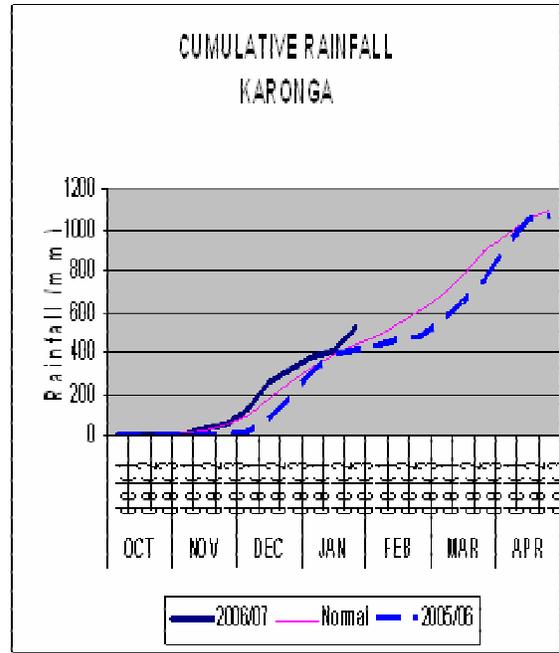
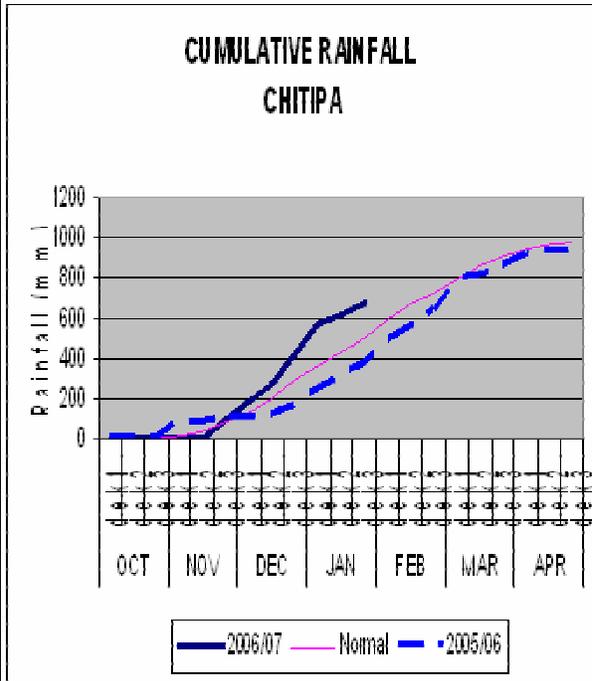
The good rains received over the season have not only benefited crop production, but also the development of pastures as well. Pasture and drinking water for livestock have been readily available.

Attached rainfall graphs **Fig.1(a – c)** indicate cumulative rainfall performance at selected stations in northern, central and southern Malawi. The graphs in:

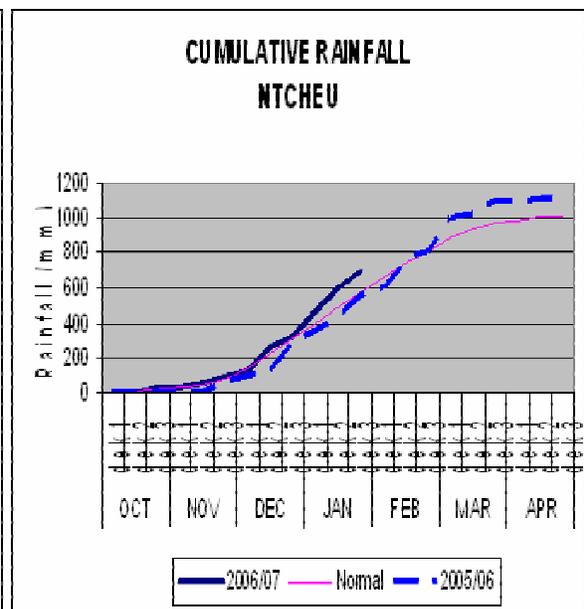
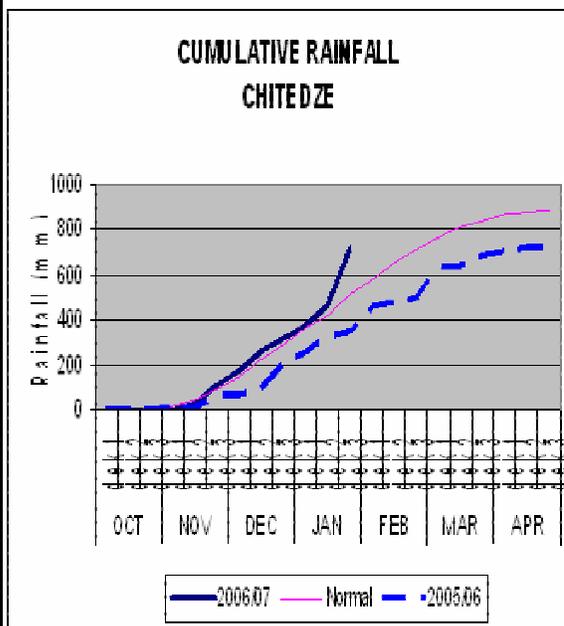
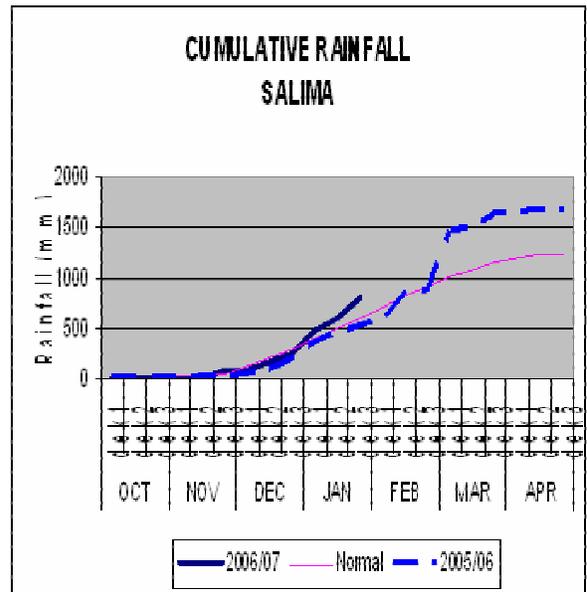
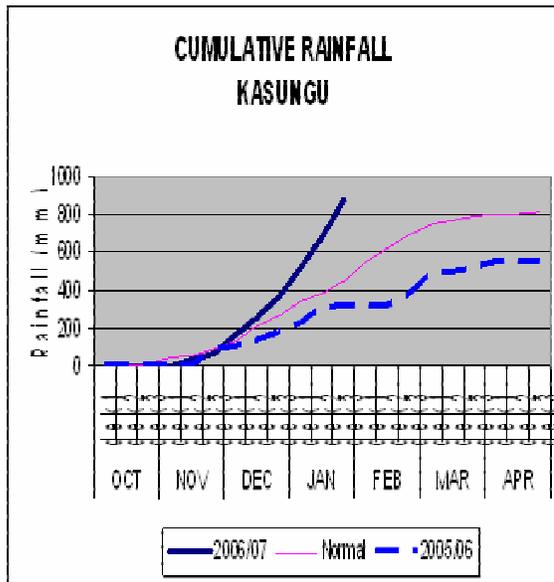
- **Fig.1a** suggest that at Chitipa, Karonga and Mzimba more rains been received so far this season than last season and a normal season while normal rains have been received at Mkondezi in Nkhata Bay.
- **Fig.1b** demonstrate that above average rains have been received over central Malawi, more than last season and a normal season.
- **Fig.1c** indicate a mixed pattern in southern Malawi with above average rains experienced at Mangochi more than last season and a normal season while Makoka and Bvumbwe depict normal rainfall pattern, less rainfall this season compared to the same period last season. Nsanje shows below average rains in December, the period when dry spells were experienced and above average rains in January 2007.



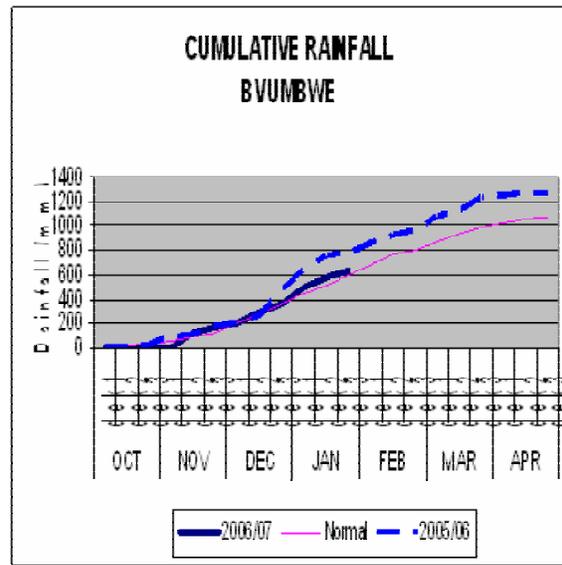
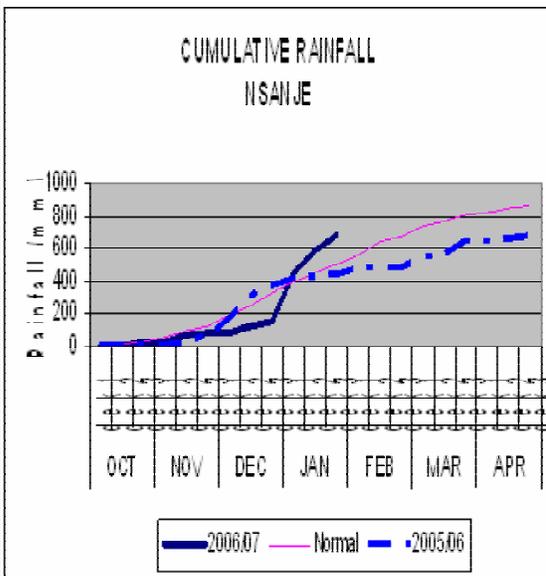
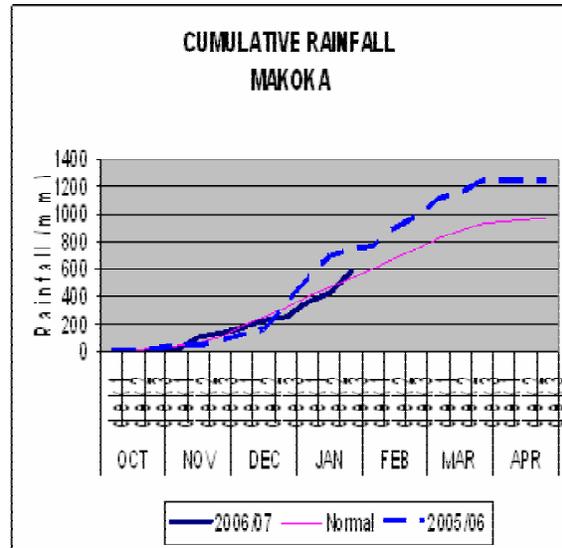
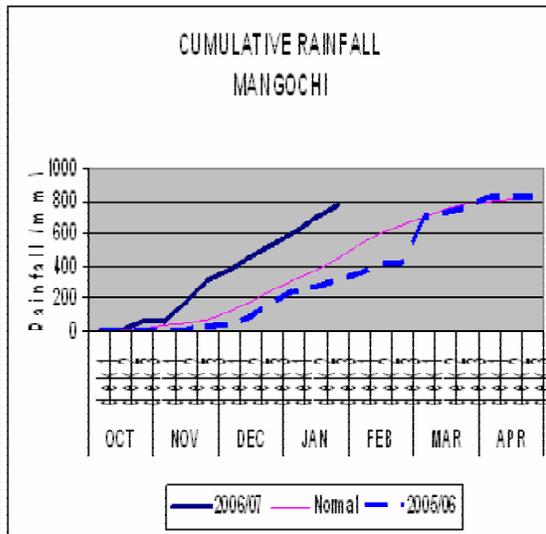
# Fig.1a: Rainfall Graphs - North



**Fig. 1b: Rainfall Graphs - Centre**



# Fig. 1c: Rainfall Graphs - South



## 2006/07 MAIZE YIELD ASSESSMENT BASED ON THE FAO CROP SPECIFIC WATER BALANCE MODEL

### HIGHLIGHTS

- 2006/07 Local and Composite Maize production based on the model is estimated at **1,737,704 million tonnes** (Table 1).
- 2006/07 Hybrid Maize production based on the model is estimated at **1,497,667 million tonnes** (Table 2).
- Therefore, 2006/07 first round Total National maize production is estimated at **3,235,371 million tonnes**.
- The official first round national maize production figures released on Friday 9<sup>th</sup> February, 2007 by Ministry of Agriculture and Food Security estimated total national Maize production at **3,146,398 million Metric Tonnes**

**TABLE 1: 2006/07 FIRST ROUND LOCAL & COMPOSITE MAIZE PRODUCTION ESTIMATES**

CROP: Local & Composite Maize						
YIELD: kg/ha WRSI: % AREA: Hectares PRODUCTION: Tonnes						
AREA BASED ON 2006/07 1ST ROUND CROP ESTIMATES						
ADD	06/07 WRSI	06/07 YIELD	YIELD LOW	YIELD HIGH	05/06 AREA	06/07 PRODUCTION
SHIRE VALLEY	92	1379	993	1765	40842	56337
BLANTYRE	95	1806	1334	2279	171211	309265
MACHINGA	97	1898	1432	2363	219504	416515
SALIMA	97	1760	1382	2137	46582	81979
LILONGWE	98	1396	1170	1622	251737	351345
KASUNGU	96	1602	1296	1909	221035	354194
MZUZU	98	1136	939	1333	106564	121045
KARONGA	99	1556	1237	1876	30215	47023
<b>NATIONAL</b>	97	1598	1256	1939	1,087,690	1,737,704

**TABLE 2: 2006/07 FIRST ROUND HYBRID MAIZE PRODUCTION ESTIMATES**

CROP: Hybrid Maize						
AREA BASED ON 2006/07 1ST ROUND CROP ESTIMATES						
ADD	06/07 WRSI	06/07 YIELD	YIELD LOW	YIELD HIGH	05/06 AREA	06/07 PRODUCTION
SHIRE VALLEY	89	1995	1012	2978	10719	21382
BLANTYRE	95	2642	2034	3250	73087	193091
MACHINGA	98	3700	2542	4859	81040	299872
SALIMA	98	3665	2905	4425	16210	59417
LILONGWE	99	2934	2524	3344	88533	259744
KASUNGU	97	4026	2944	5108	111889	450485
MZUZU	99	3739	3281	4197	50566	189088
KARONGA	99	2470	962	3979	9953	24588
<b>NATIONAL</b>	97	3388	2581	4195	441,997	1,497,667