



# REGIONAL FOOD SECURITY PROGRAMME

## GROWING SEASON STATUS

### Rainfall, Vegetation and Crop Monitoring



2006/2007 Issue 2

December 2006

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### Highlights

- Analysis of rainfall performance shows that the northern half of the SADC region received good rains by the end of December 2006
- Field reports indicate that land preparation was in progress and sowing of maize continued in many parts of the region.
- Vegetation Index images suggest a normal vegetation development, except for most areas in the DRC, south central Mozambique, parts of South Africa and Swaziland
- Good Vuli (short) rains were received resulting in high crop prospects in the bimodal areas of Tanzania.

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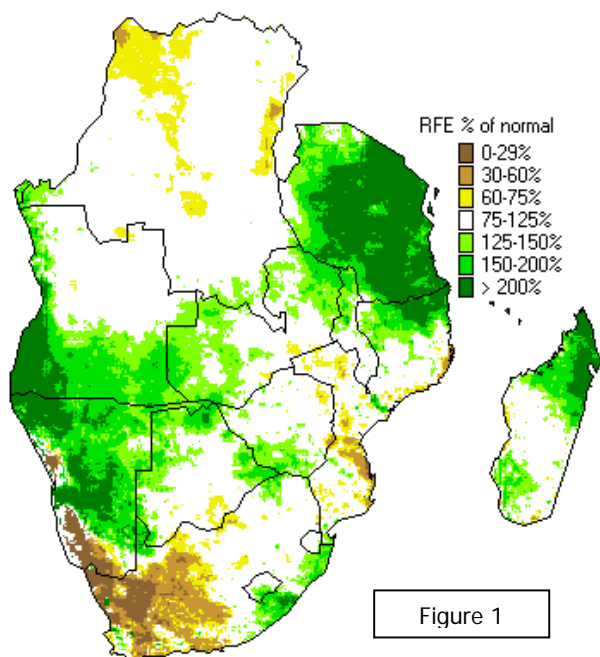


Figure 1

### Rainfall Performance

Rainfall estimates (RFE) (page 3) and ground reports suggest that good rains were received in most parts of the SADC region in December 2006. During the first dekad, widespread substantial amounts of rain were received over most of Tanzania, with the exception of the north-eastern parts, north eastern Zambia and extreme northern Mozambique. Most of Angola, DRC, Swaziland received light to heavy showers while the rest of the region was almost dry. Rainfall performance improved significantly during the second dekad, however, there were parts of the region that received very low rainfall which include coastal areas of Angola, most of Namibia, parts of Botswana, Zimbabwe, Mozambique, Lesotho and South Africa. The last dekad was characterised by wide spread rainfall covering the entire sub-region except for parts of Angola, Namibia, South Africa and Mozambique. Heavy rainfall was observed in northern Madagascar. Cumulative analysis of received rains so far (from 1<sup>st</sup> September to December 31) as a percentage of average (figure 1)

indicates that parts of Botswana, the Democratic Republic of Congo, most of Mozambique and western half of South Africa had poor seasonal rainfall. Good rainfall totals were received in the rest of the region and excessive rains were received in Tanzania.

### SADC Member States:

Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.

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**EDITORIAL**

*The Regional Remote Sensing Unit (RRSU) is pleased to present the second issue of the Growing Season Status Report for the 2006/2007 rainy season, covering the month of December 2006. The RRSU acknowledges financial support from Member States (through FANR) and from the EC through an EC-funded FAO project. FAO and USGS/FEWSNET provide technical support and data inputs.*

*The analysis presented in this bulletin is based on METEOSAT derived Cold Cloud Duration images, which are received through the Botswana Meteorological Department, Rainfall Estimates (RFE) and NOAA-NDVI from the FEWSNET Project. Ground data and interpretation are provided by collaborating national meteorological services and early warning units of the SADC Member States.*

*The RRSU also provides regular updates on the progress of the 2006/2007 rainy season through 10-day Agromet Updates, which are distributed by the SADC Regional Early Warning System, and posted on the SADC web-site ([www.sadc.int](http://www.sadc.int)) and the Southern Africa Flood and Drought Network site ([www.sadc-hazards.net](http://www.sadc-hazards.net)), which is maintained in collaboration with FEWS NET.*

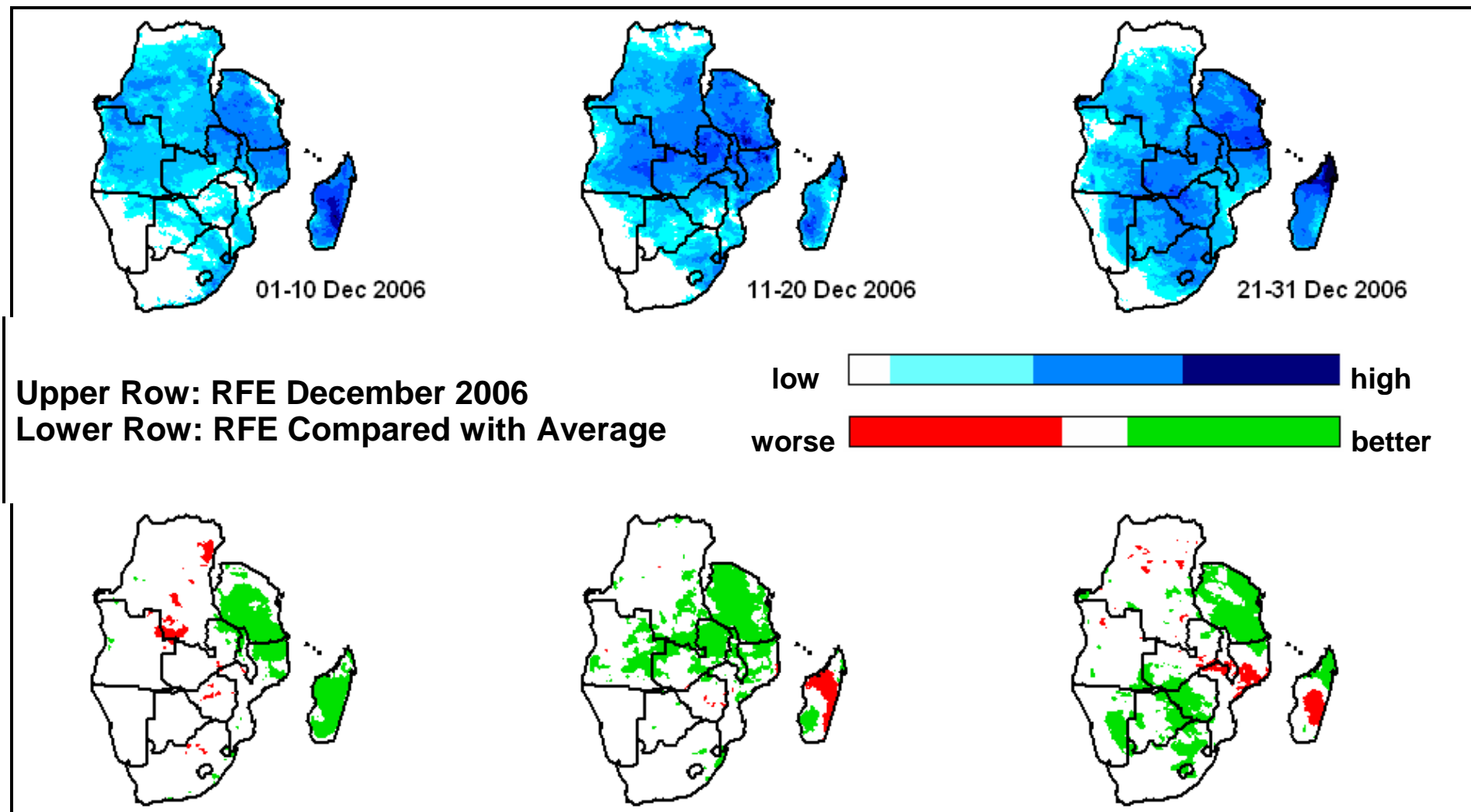
*Land preparation and sowing continued in most parts of the region in the month of December as farmers sought to take advantage of the good rains that have been received so far. Substantial amounts of rain covering southern Angola, parts of Zimbabwe, the Democratic Republic of Congo, Tanzania, northern Mozambique, and Namibia were received during the period under review. While this brought hope of a good season to most farmers in these areas, some farmers found themselves incurring significant losses when heavy rains led to floods that destroyed crops and infrastructure. The bi-modal areas of Tanzania experienced widespread significant / heavy rains during the month. Parts of the Maize Triangle of South Africa, a big grain producer for the region, had good rains in the month. Lesotho and Swaziland also experienced moderate rains in the first half of the season.*

*Parts of the central and southern Mozambique, southern Botswana, extreme southern Zimbabwe, Swaziland and South Africa experienced erratic rains since the beginning of the season, however, some of the parts that experienced the erratic rains do not grow much cereal crops.*

*The focus of this bulletin is primarily at the regional level. However, any information available has been included in this report. For more detailed sub-national analysis, readers should consult the national meteorological agencies and food security early warning units.*

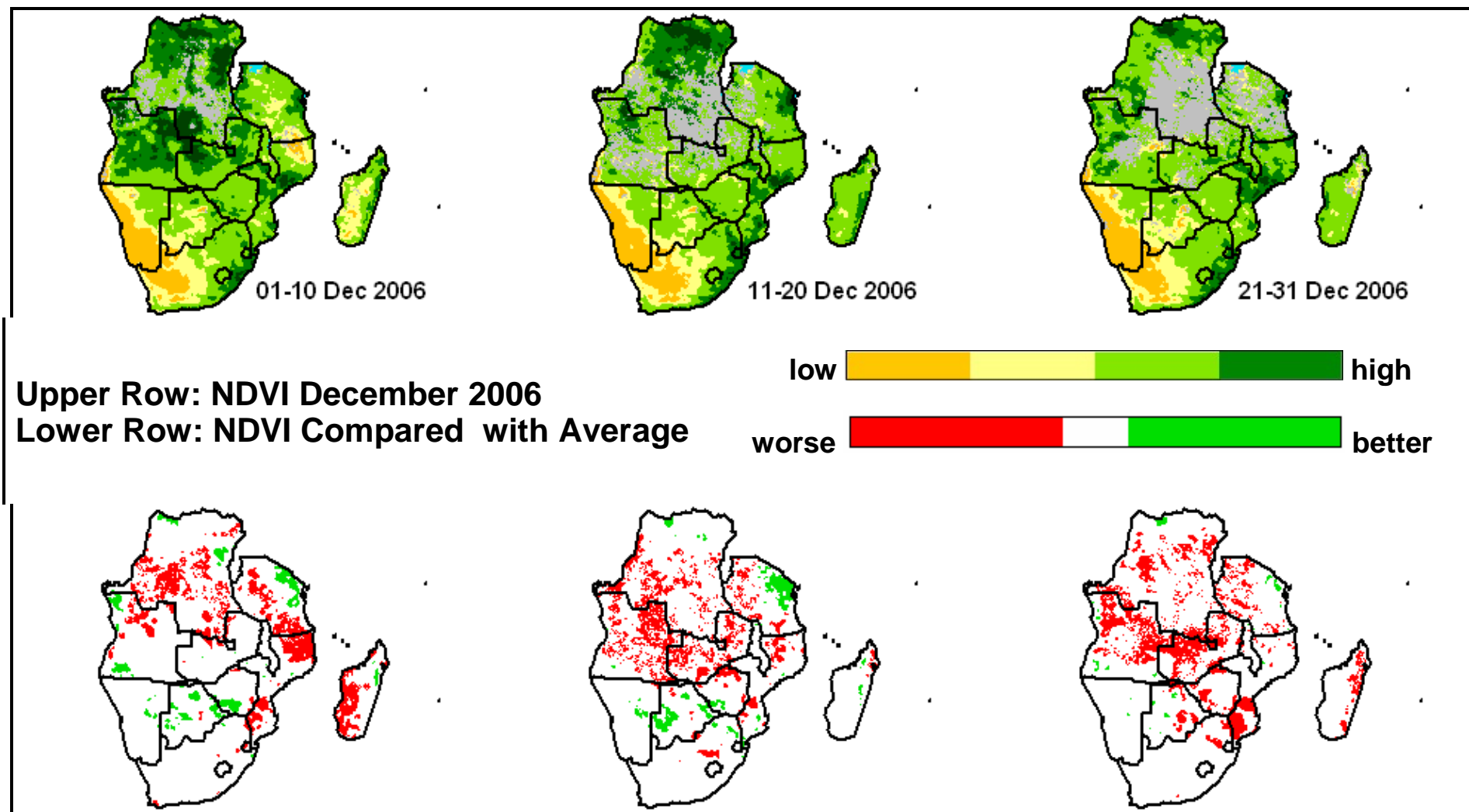
**Vegetation condition**

Normalized Difference Vegetation Index (NDVI) images (page 4) for December indicate that vegetation conditions improved significantly in most parts of the region from the end of November to the end of December. There was an improvement in the vegetation conditions as the vegetation responded to the good rains in different parts of the SADC in December. While vegetation conditions in most parts of the region were near or below average, the central and northern parts of parts of the region enjoyed above average vegetation conditions during the first two dekads which suggests that there were good pasture conditions. Vegetation conditions should generally improve in the region owing to the good rains received in most parts of the region. Tanzania continued to experience very wet conditions in the month and by the end of the month, NDVI images suggested well above average vegetation conditions. Areas where vegetation conditions were below average include parts of Angola, Botswana, western South Africa, most of Mozambique and the DRC, where rains were erratic in November and December. Persistent cloud cover over western Zambia, central Democratic Republic of Congo, Angola and Tanzania especially during the second and third dekads of December make it difficult to judge the full extent of vegetation development in these areas.



**Figure 2.**

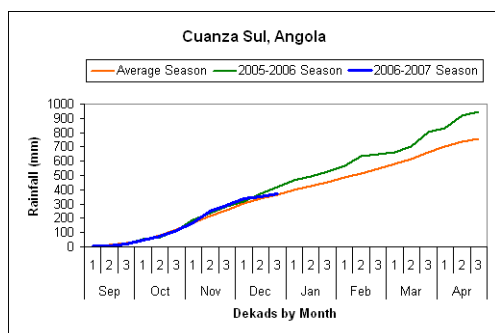
Rainfall Estimates (RFE) images, December 2006 and difference from average  
From left to right are Dekads 1 (1-10 Dec), 2 (11-20 Dec) and 3 (21-31 Dec)  
Differences from average, lower row, are based on a 10-year average of 1995-2000



**Figure 3.** Normalized Difference Vegetation Index (NDVI) images, December 2006 and difference from average  
From left to right are Dekads 1 (1-10 Dec), 2 (11-20 Dec) and 3 (21-31 Dec)  
Differences from average, lower row, are based on a long term average of 1982-2005

### Time series and country updates

A number of rainfall graphs are here presented with updates for SADC countries for which satellite and/or field information (provided by collaborating NEWUs) is available. The graphs are based on rainfall estimates (RFE) data and show a comparison with a 11-year (1995-2005) average for selected sub-regions of SADC, which can be administrative boundaries, watersheds, or agricultural areas.

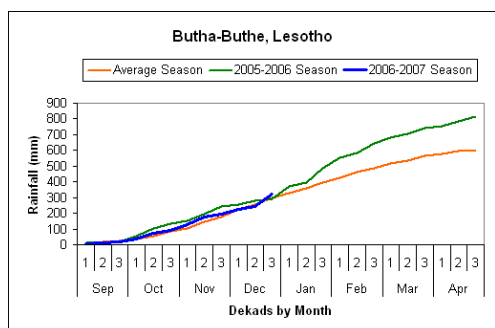
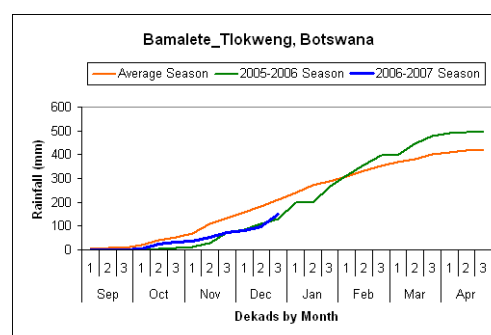


#### Angola

Satellite imagery suggested that the country received widespread good rains throughout the month of December. Analysis of cumulative rainfall received shows that slightly above average rains have been received since September in most parts of the country, suggesting a good first half of the season in terms of rainfall performance. Cumulative rainfall graphs suggest that the Cuanza Sul province received slightly above normal rains at the beginning of the month but the situation normalized by the end of December.

#### Botswana

Below average rains were received in most parts during December while some isolated areas received near normal to above normal rains. The southern half experienced erratic rains during the first two dekads. In some areas, the season had a poor start such that planting has not yet been initiated. However, widespread rains were received over most parts of the country during the last dekad. For the northern areas where planting was implemented, the crops are now at vegetative stage and pastures and livestock condition in these areas are improving. Cumulative rainfall graph for Botswana's Bamalete\_Tlokweng district suggest that well below average rainfall was received in December.



#### Lesotho

Rainfall received during the month of December 2006 was variable in space ranging from normal to above normal rainfall. The lowest monthly rainfall was recorded was at Quthing while the highest was at Butha-Buthe. The foothills, northern lowlands and the highlands had cumulative rainfall exceeding 290mm. Crops in Mafeteng and parts of Maseru were showing symptoms of water deficiency due to the low rainfall. In most parts of the country, crops (maize and sorghum crops) ranged from early vegetative to tasseling stages. Weeding in the lowlands was in progress. Some of the summer crops in the highlands and parts of

the foothills were at flowering stage and few had started grain filling. The dry spells that prevailed from November retarded summer crop growth and development. Summer wheat had reached maturity and ready for harvest. Cumulative rainfall (September to December) suggested an erratic, but near-normal season for Butha Buthe district.

#### Madagascar

Satellite imagery suggested widespread heavy rains were received over the entire island of Madagascar with the central parts having experienced amounts of up to 200mm in the first dekad of December. The south-western parts and extreme northern parts were wetter than the rest of the country during the second dekad while heaviest rains for the month were received during the last dekad. Vegetation conditions were generally near average, with a few areas of the east having above average conditions.

#### Malawi

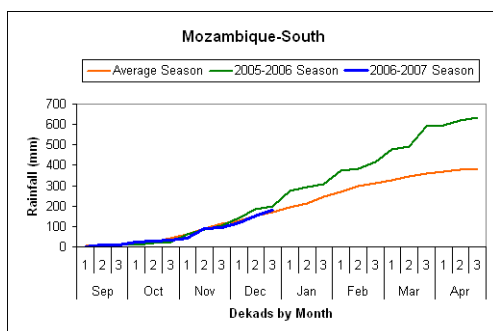
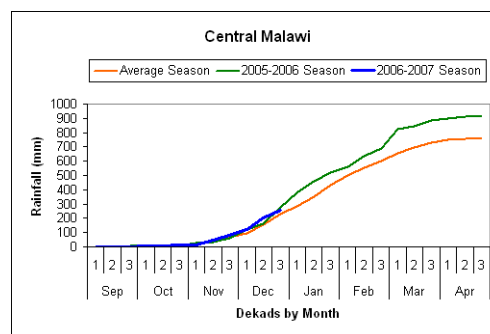
The country witnessed a significant increase in rainfall activity in the month of December. Most areas received good rains conducive for agricultural production up to the end of the month. Agricultural activities over Malawi ranged from planting of crops to weeding and basal fertilizer application. The good rains improved water resources and supported seed germination, growth and development of crops. The maize



crop was in good condition and at various stages of development ranging from germination to early vegetative stage. However, overall crop performance during 2006/07 growing season could be negatively affected by lack of fertilizer or poor timing of fertilizer application. Cumulative rainfall estimates graph suggested a normal season for most parts of southern and central Malawi.

### Mauritius

December was dry, though a few light showers were recorded during the second fortnight. While the main agricultural activity, weeding, was in progress, application of fertilizer was considerably slowed down because of the lack of rain. By the end of December, cane height was 0.6 cm taller compared to the normal especially in the north and the west where the crop is irrigated.



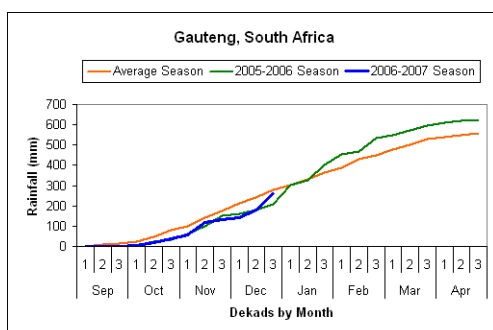
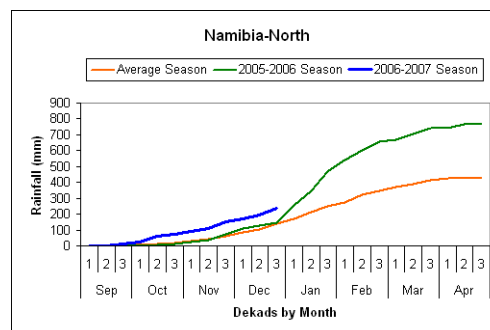
### Mozambique

Significant and effective rains, generally expected as from mid-December, were received in the northern parts of the country during the month of December. Erratic rains were experienced in southern and central Mozambique and hence seasonal planting, which normally occurs between October and November at the onset of rains, was delayed resulting in late planting and replantings. Planting and land preparation continued in the north. The coastal zone of Cabo Delgado province received substantial rains (more than 200 percent of average with the

heaviest rains in Mocimboa da Praia and Muidumbe), associated with tropical storm Anita that passed through the Mozambique Channel parallel to the coast. Cumulative rainfall received indicated a normal season for the south. The early crop was at vegetative stages and was in good condition.

### Namibia

The northern parts of the country received some good showers throughout the month, especially the Caprivi Strip. Cumulative rainfall totals (September to December) show that above normal rainfall was received. Vegetation conditions were slightly better than average at the end of the month and pastures benefited from the good rains received in the eastern and northern parts of the country in the month of November and December. The cumulative rainfall graphs for Namibia North shows that above average rainfall was received halfway through the season.



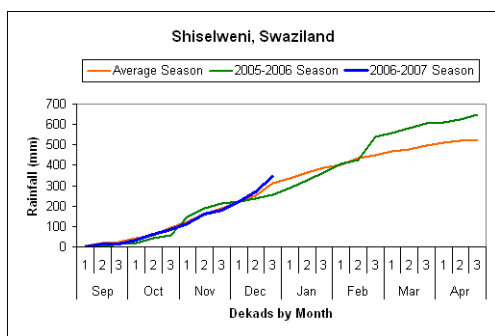
### South Africa

The first ten days of the month were generally dry, with rainfall activity confined to the north eastern parts of the country. The heaviest rains fell over the north eastern half during the second and third dekads of December benefiting crops in the maize growing areas. The western half was dry, however, some rain showers were received in the Eastern Cape province. Normal rainfall was received in the Gauteng, Free State and Mpumalanga provinces. Analysis of cumulative rainfall total

received since September shows that most parts of the country have received average rains, including the highly productive maize triangle area.

### Swaziland

Satellite imagery for December suggests that normal rainfall was received during the month. Above normal rainfall was recorded in Shiselweni during the second and third dekads. Accumulated rains received since the beginning of the season are average. Most crops countrywide were at early to mid vegetative stages and in

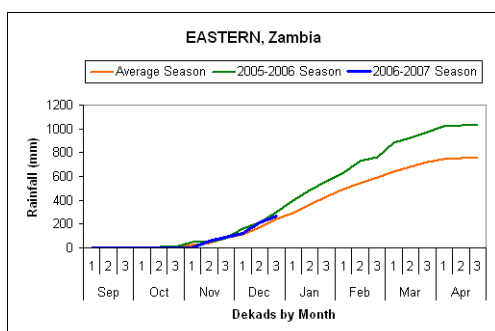
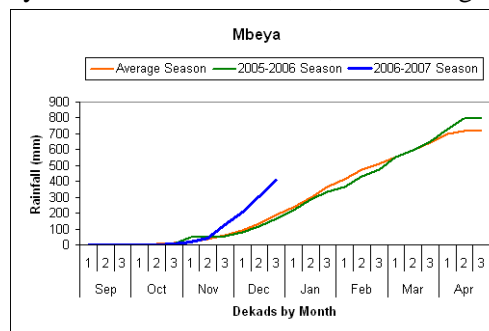


good condition. Crop condition was good except in some parts in the Lowveld where the continued dry conditions coupled with high temperatures caused some moisture stress. Land Preparation and sowing were the major activities in the month.

### Tanzania

Widespread significant rains were received over most of Tanzania except the north-east coastal plains during the month of December. The rains continued across most bimodal regions increasing moisture available to crops in or approaching reproductive stages. Most parts of the country experienced near

normal to above average amounts of rainfall. The improved soil moisture conditions favoured planting activities, crop growth and development nearly throughout the country. Over the bimodal areas, maize ranged from tasseling to blister stages and beans ranged between vegetative and pod filling and in good condition. Paddy was transplanted. Over unimodal areas, crops and other field activities such as land preparation and planting were in progress, however, a few areas across the country experienced excessive rains which hindered some field activities to be carried out normally. Floods disrupted scheduled field work as well as spoilt growing crops (beans and maize) in Nzega and Igunga districts in Tabora region, Magu district in Mwanza region and Kishapu and Meatu districts in Shinyanga region. Pasture conditions and water availability for livestock across the country was very good. Cumulative rainfall graph for Mbeya suggests well above-average rainfall totals for the first half of the season.



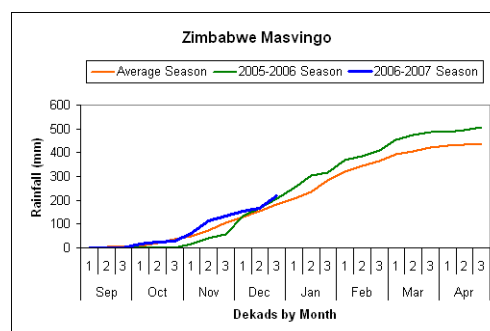
### Zambia

Most rainfall stations in Zambia recorded normal to above-normal rainfall (a station in the northern half recorded cumulative rainfall above 600mm). On the other hand Lusaka and Southern provinces recorded below normal rainfall. Planting (in Southern Province and Lusaka provinces), weeding and basal dressing fertilizer application were the main agriculture activity. Maize was at vegetative stage in the northern half, planting of cassava, sweet potato and bean planting was underway. There were reports of a corridor disease that claimed 30 herds of cattle in Mazabuka District (Southern Province) however, the

vaccination is still underway. Adequate water was available for both domestic and commercial use. Excessive rainfall in the northern half might result in leaching of plant nutrients while the prolonged dry spell in Lusaka and Southern province might negatively impact on the final production. Cumulative rainfall graphs for the Eastern, Central, Southern and Lusaka province show that above average rainfall totals have been received halfway through the season. Crops were reportedly at the emergence to early vegetative stages. Land preparation and sowing were still the dominant activities by the end of the month.

### Zimbabwe

Extreme southern Zimbabwe was dry during the first and second dekads while elsewhere light to heavy showers were received. Widespread significant and well distributed showers were received during the third dekad of December with the heaviest falls being received over the western districts. Seed was readily available but there was concern on availability of fertilizers (basal and top dressing). Land preparation was complete and planting was the main activity throughout the month. Maize condition ranged from fair to good in most communal areas. In larger and commercial areas, it was good but most land had been left fallow. The cumulative rainfall graph for Masvingo province suggests a season just above normal.



# SITUATION MAP

