



# 2009/2010 Season Progress Update; Rainfall & Agrometeorological Update

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# Monitoring overview

- Seasonal rainfall monitoring process
  - Rainfall forecast (SARCOF)
  - Monitoring timeliness of start of rains
  - Monitoring rainfall distribution
    - Dry spells
    - Floods
  - \* Impact on Agriculture
- At a regional level, monitoring is done through a combination of ground reports received from national partners (Met Depts, NEWUs, Partner organizations etc), remote sensing imagery, and rainfall/crop water balance modeled products

# Introduction

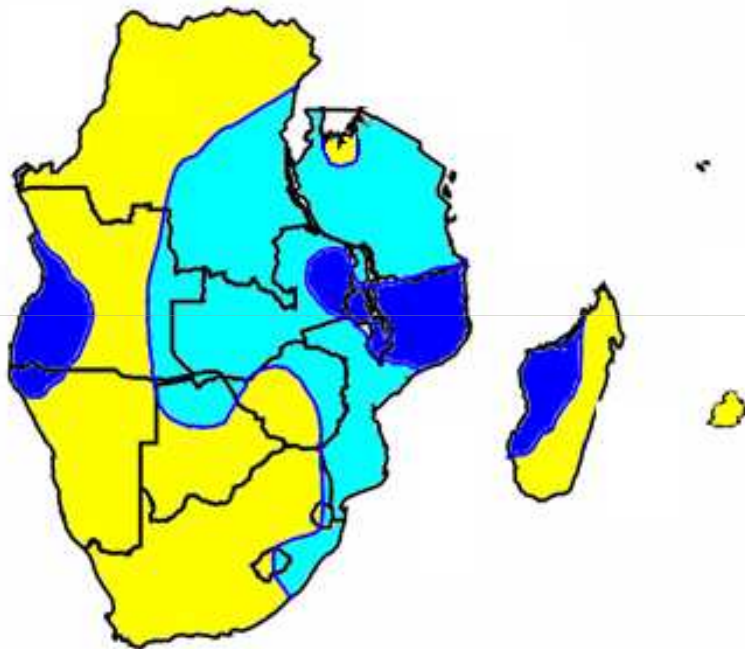
- In the sub-region, 90% of agricultural production is dependent on rainfall, hence failure in rainfall has serious implication on availability, access and utilization of food.
- However, other factors affect agricultural production
- These include:
  - Rainfall (on-set, distribution, amount, etc.) Input availability (seed, fertilizers, chemicals etc.)
  - Farm management (time of planting, fertilizer application, weeding, etc.)
  - Labour (cultivation, planting etc.)
  - State of health (HIV/AIDS etc.)
  - Socio-economic status (poverty etc, wealth (assets etc.)
  - Climate change - shift in the climatic patterns (resulting in drought /flood conditions)

# SARCOF 2009-10

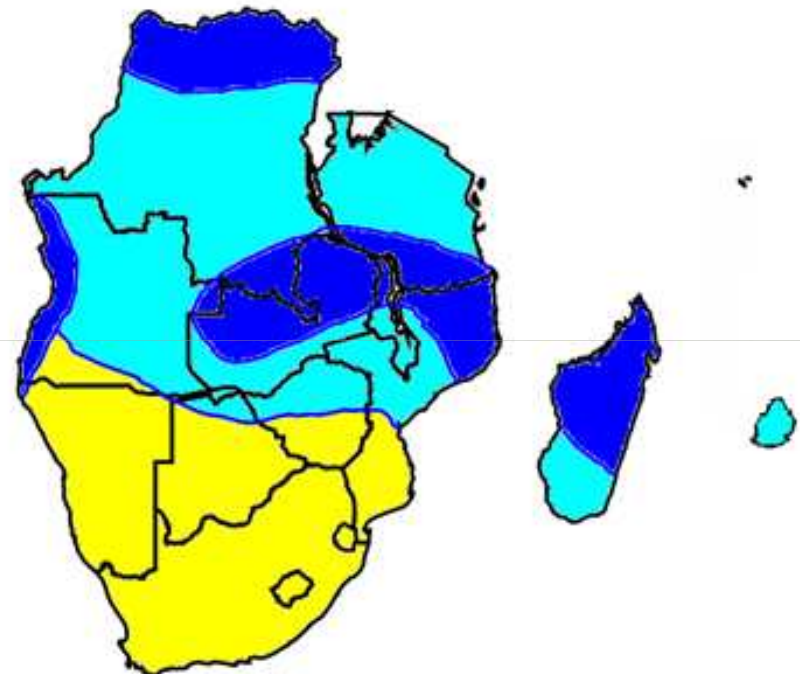
- The Southern Africa Regional Climate Outlook Forum (SARCOF) gave a forecast of probabilities of different rainfall outcomes – above/normal/below normal
- **Notes**
  - SARCOF is a consensus product of meteorologists which involves training and standardizing for improved forecasting techniques; Resource constraints
  - El Nino: normally associated with below normal rains in some areas (but 1997): comprehensive forecast still required

# SARCOF 2000-10 outputs (modified)

**Oct-Dec 2009 Rainfall Forecast**



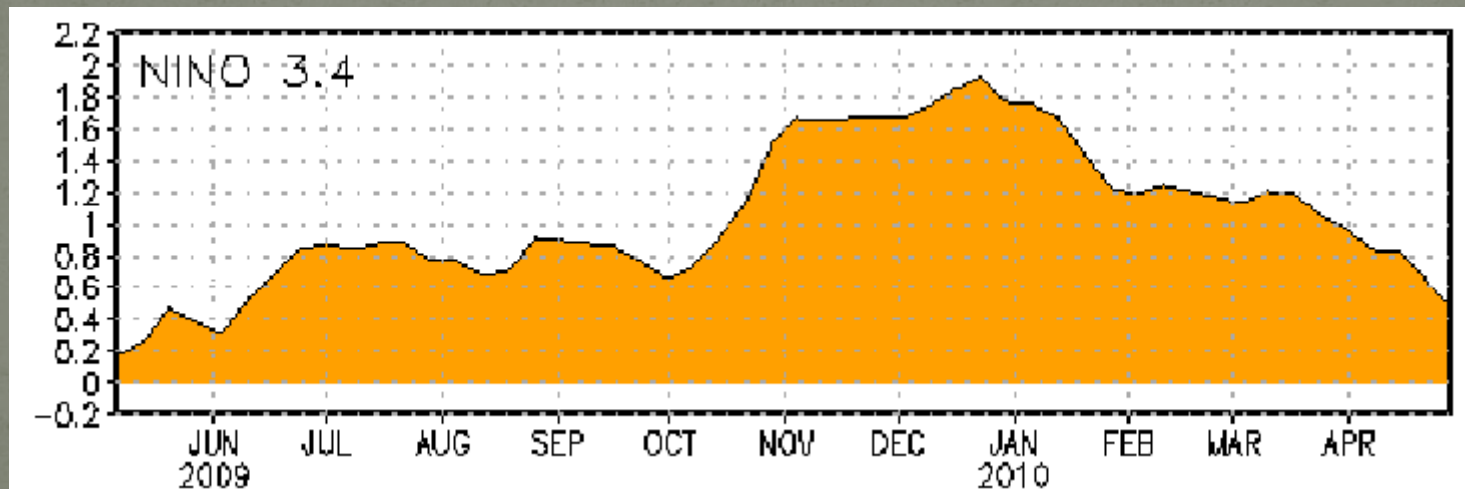
**Jan-Mar 2010 Rainfall Forecast**



- Blue** Most Likely: Above normal rainfall, with a bias to normal rainfall; Less likely: below-normal
- Cyan** Most Likely: Normal rainfall, with a bias to above-normal rainfall; Less likely: below-normal
- Yellow** Most Likely: Normal rainfall, with a bias to below-normal rainfall; Less likely: above-normal

# El Nino

- The 2009-2010 season was an El Nino season
- Initial indications of El Nino were for a weak El Nino, which was expected to strengthen.
- This was what happened as SSTs in the Nino 3.4 region strengthened from around Nov to Jan



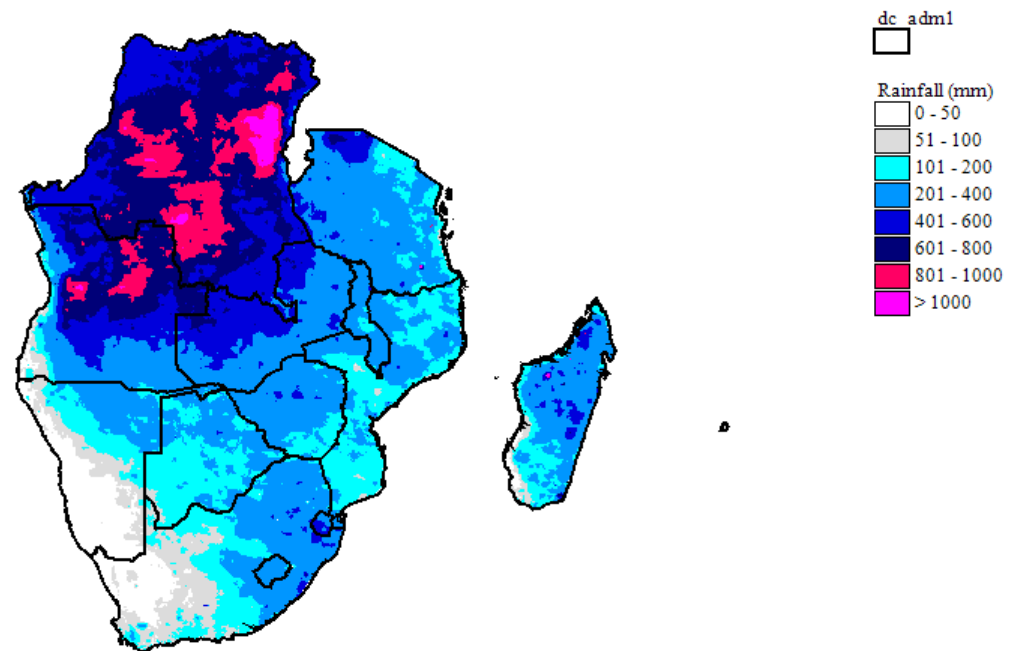
# Rainfall monitoring

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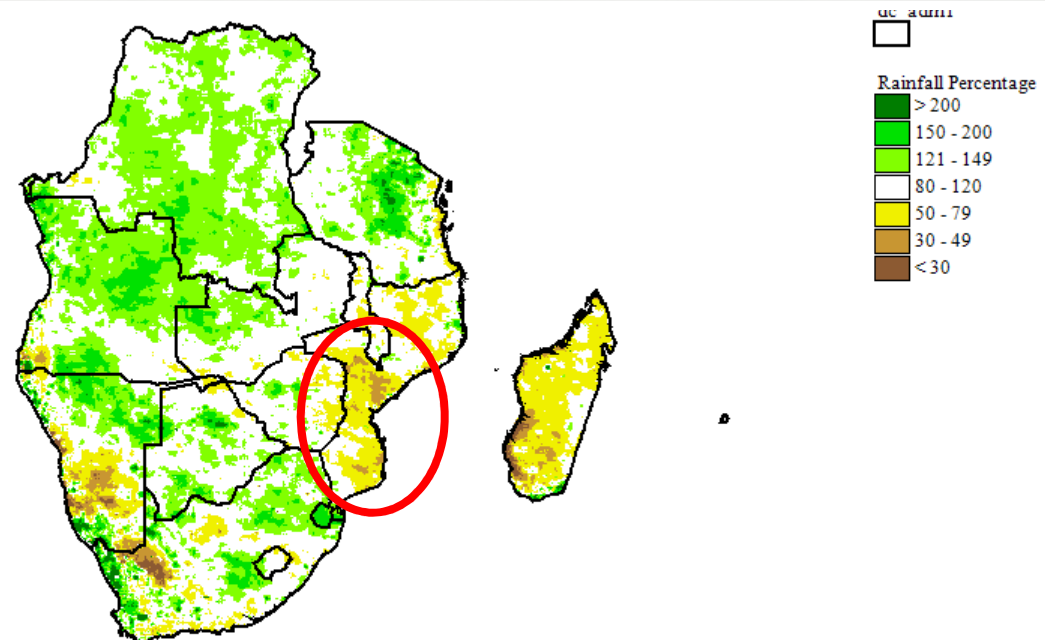


First half of season (Sep-Dec)

- Above normal rains in central parts of the region
- Below-normal rains in eastern/central parts, particularly Mozambique and Madagascar
- This was synonymous with a late start of the season, as well as a mid-season dry spell, especially in Mozambique and eastern Zimbabwe



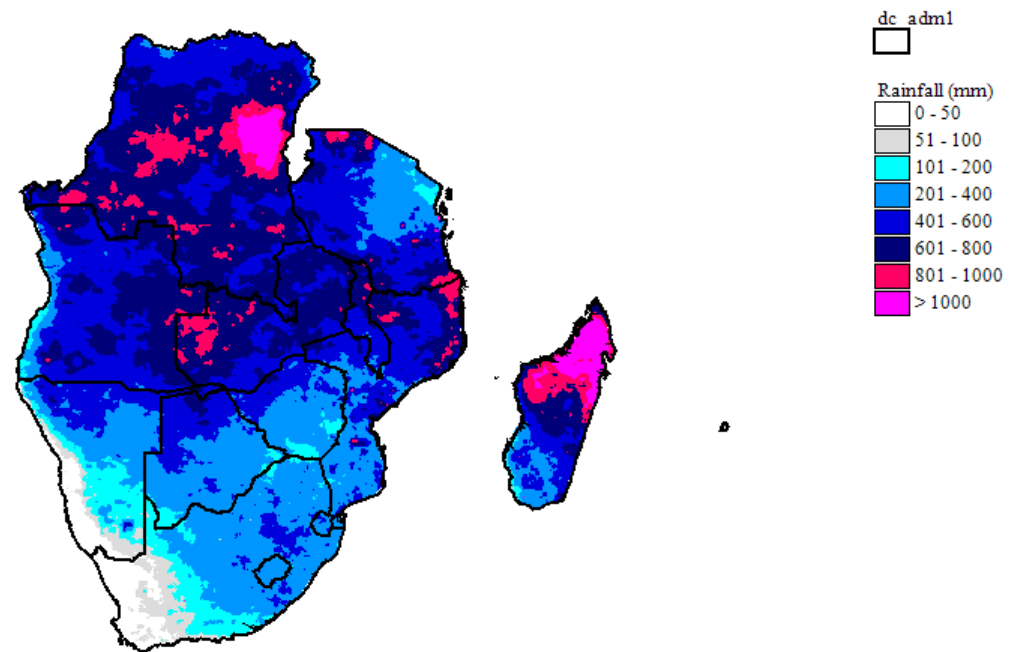
Sadc Total Rainfall for 1 September to 31 December 2009



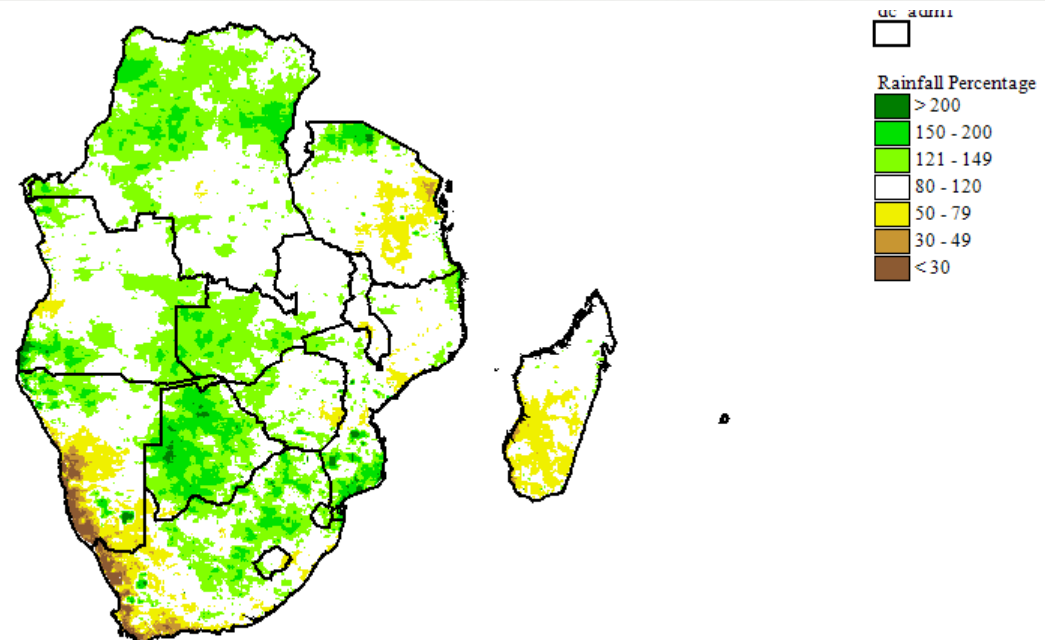
Sadc Percentage of Average Rainfall for 1 September to 31 December 2009

## Second half of season (Jan-Apr)

- Above-normal rains in most parts of the region excluding Madagascar, Tanzania, southern Namibia and Western South Africa



Sadc Total Rainfall for 1 January to 30 April 2010

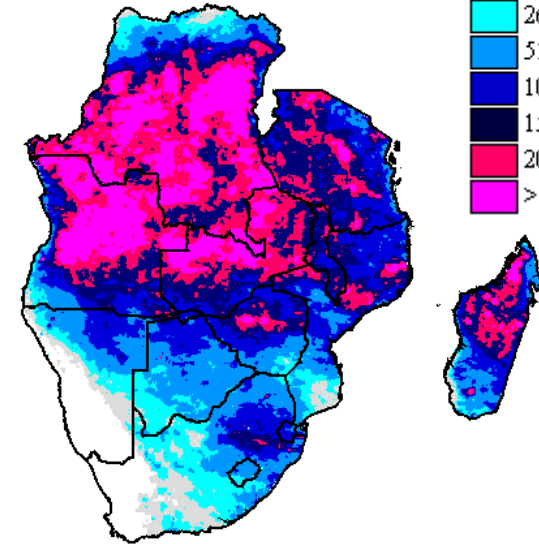
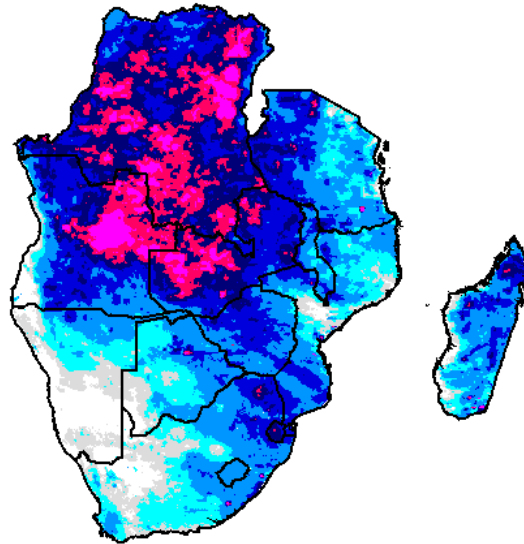
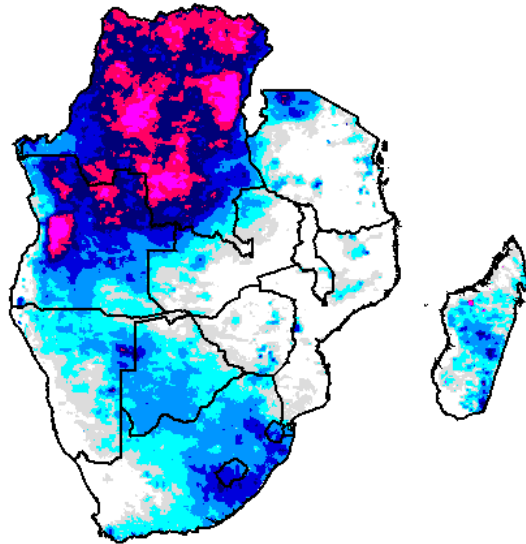
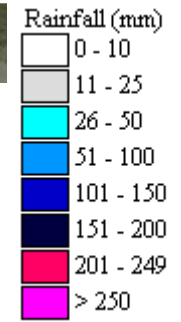


Sadc Percentage of Average Rainfall for 1 January to 30 April 2010

October 2009

November 2009

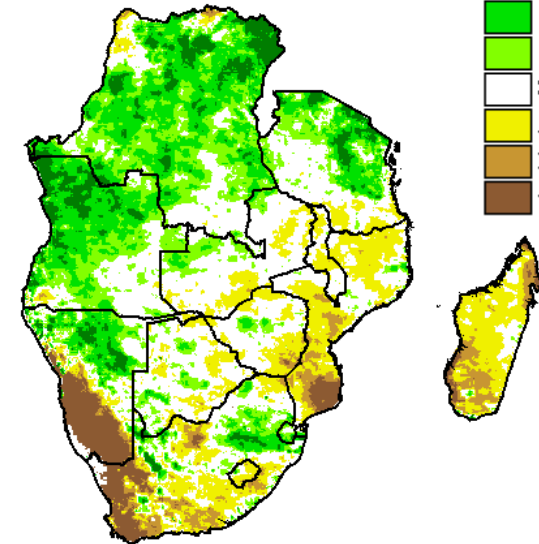
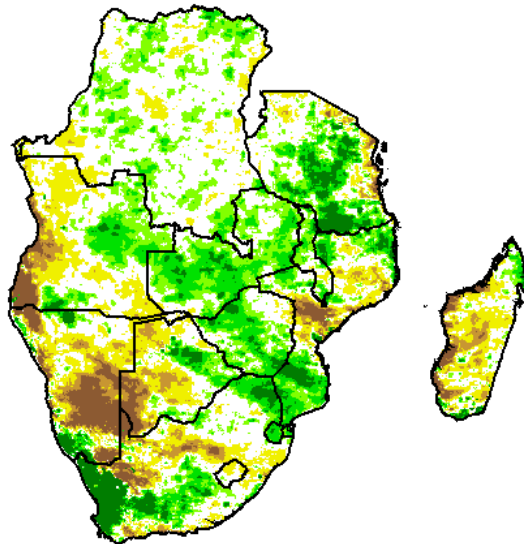
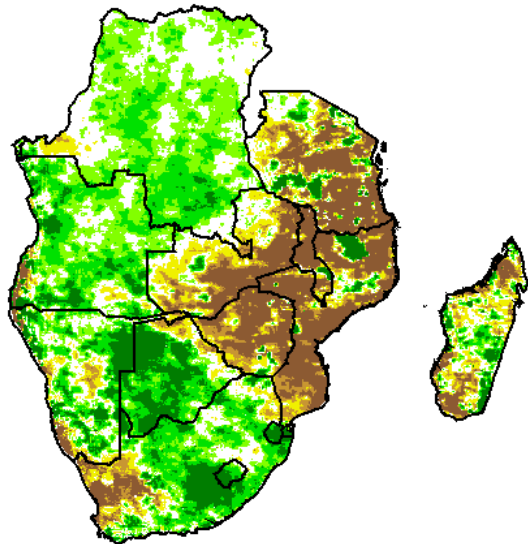
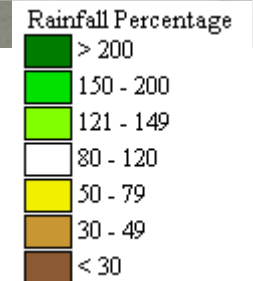
December 2009



Sadc Total Rainfall for 1-31 October 2009

Sadc Total Rainfall for 1-30 November 2009

Sadc Total Rainfall for 1-31 December 2009



Sadc Percentage of Average Rainfall for 1-31 October 2009

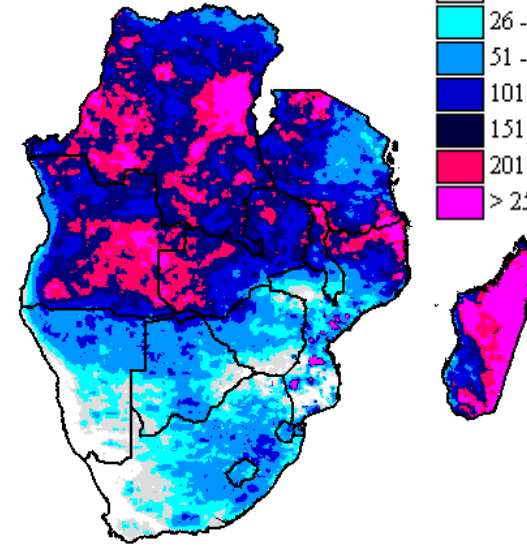
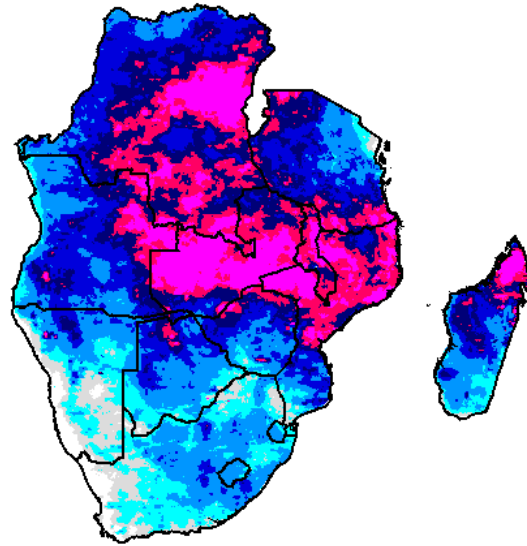
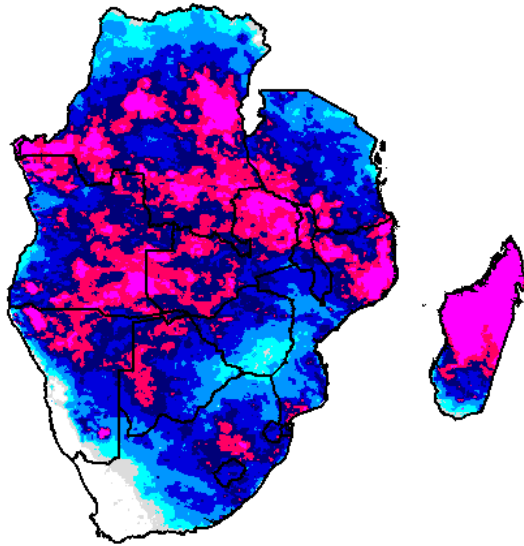
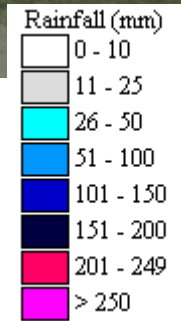
Sadc Percentage of Average Rainfall for 1-30 November 2009

Sadc Percentage of Average Rainfall for 1-31 December 2009

January 2010

February 2010

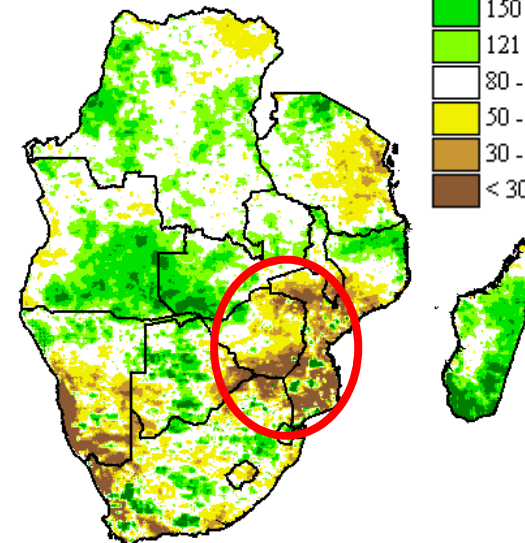
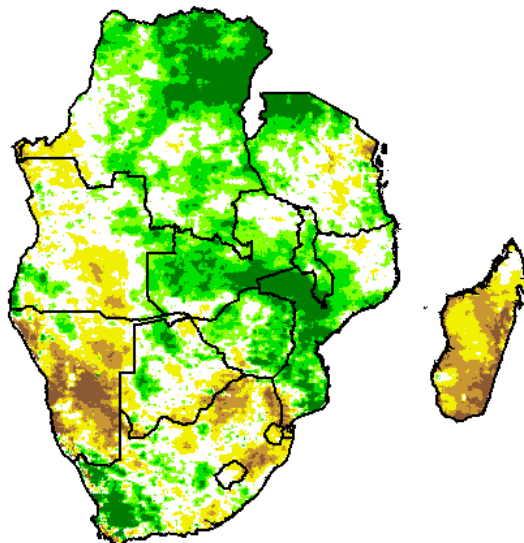
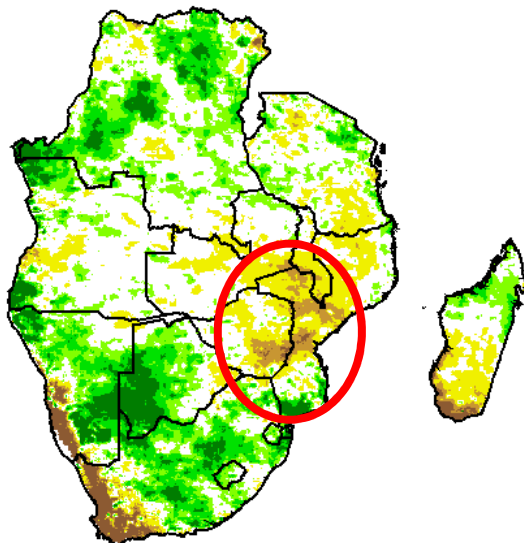
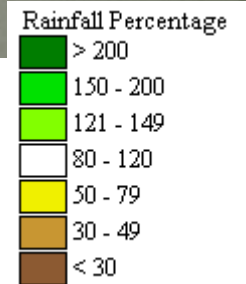
March 2010



Sadc Total Rainfall for 1-31 January 2010

Sadc Total Rainfall for 1-28 February 2010

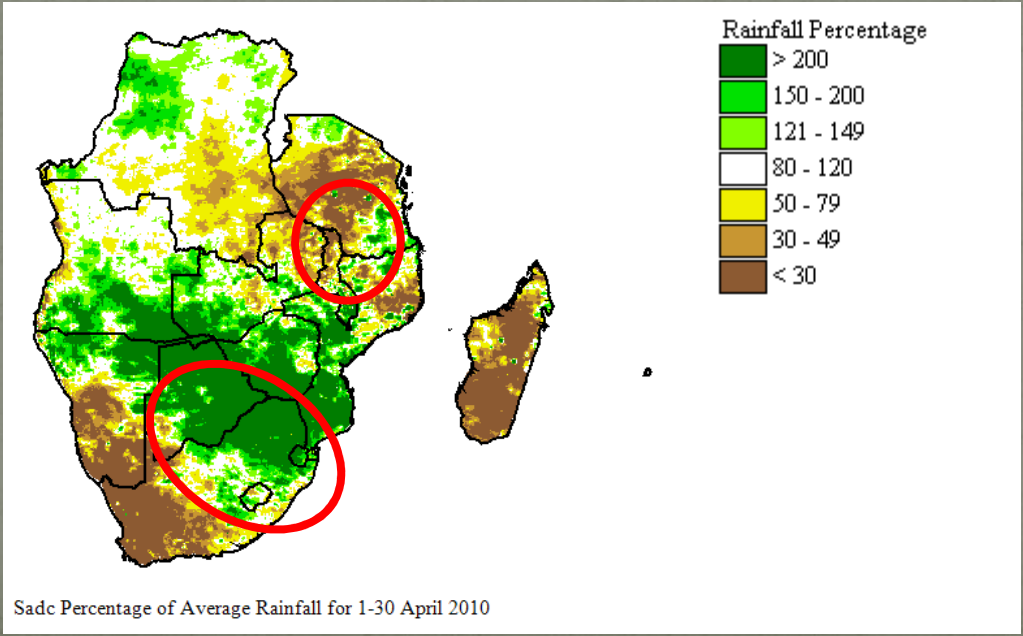
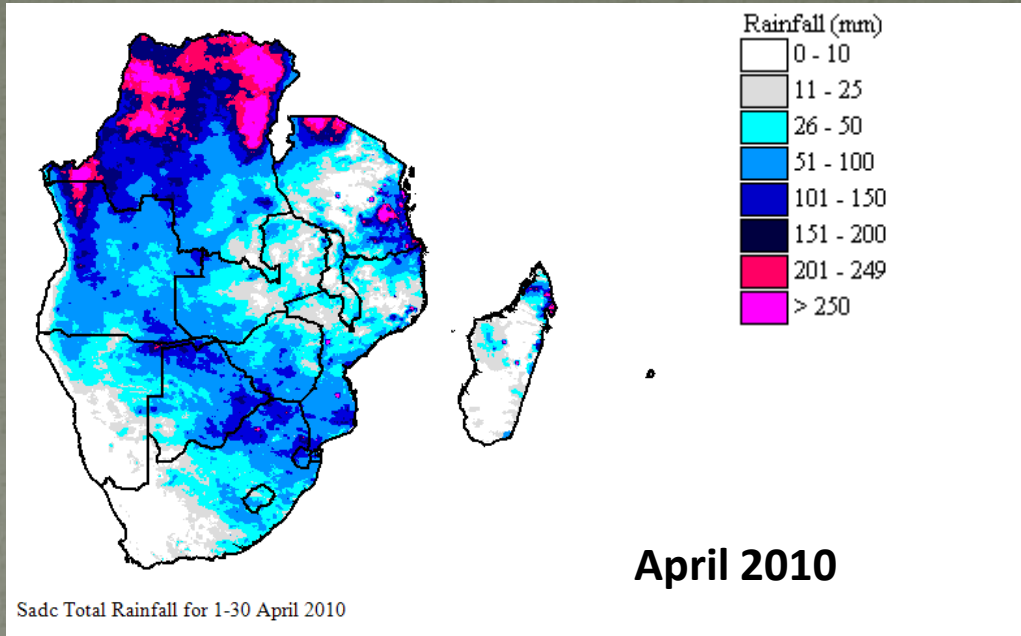
Sadc Total Rainfall for 1-31 March 2010



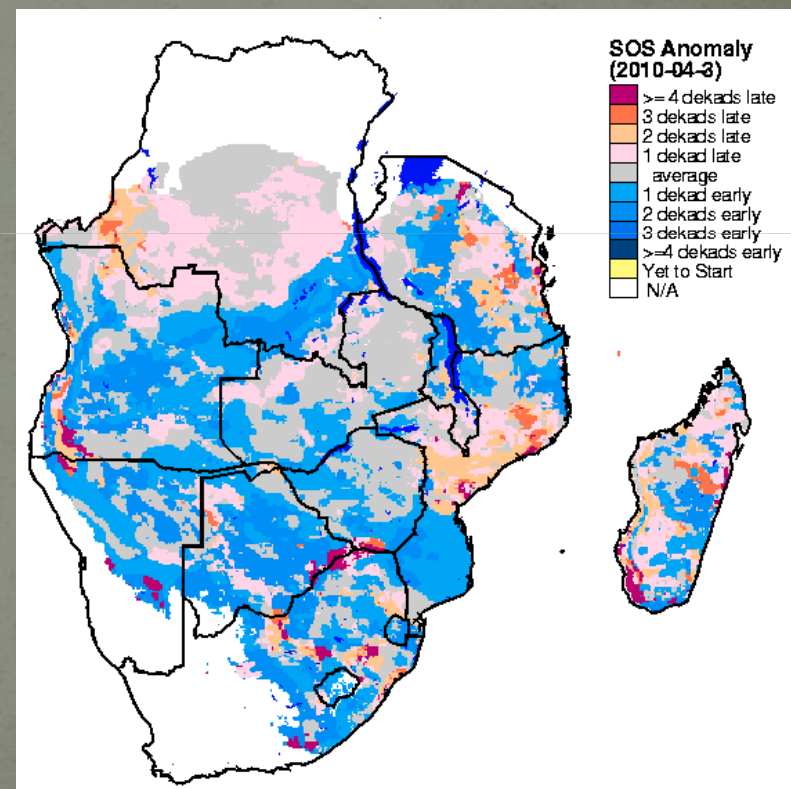
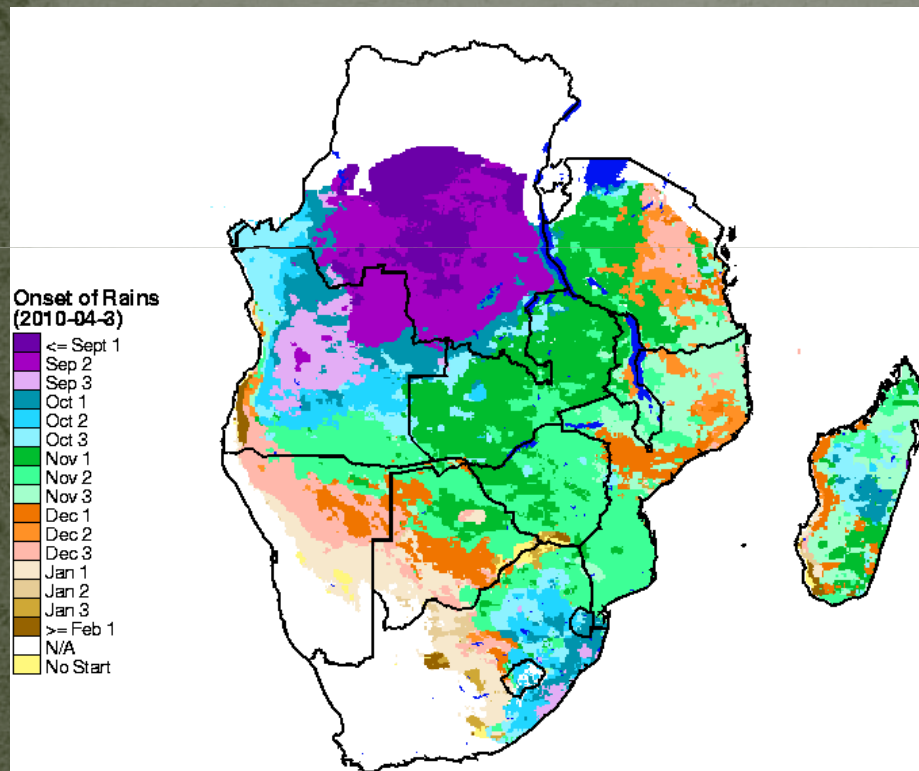
Sadc Percentage of Average Rainfall for 1-31 January 2010

Sadc Percentage of Average Rainfall for 1-28 February 2010

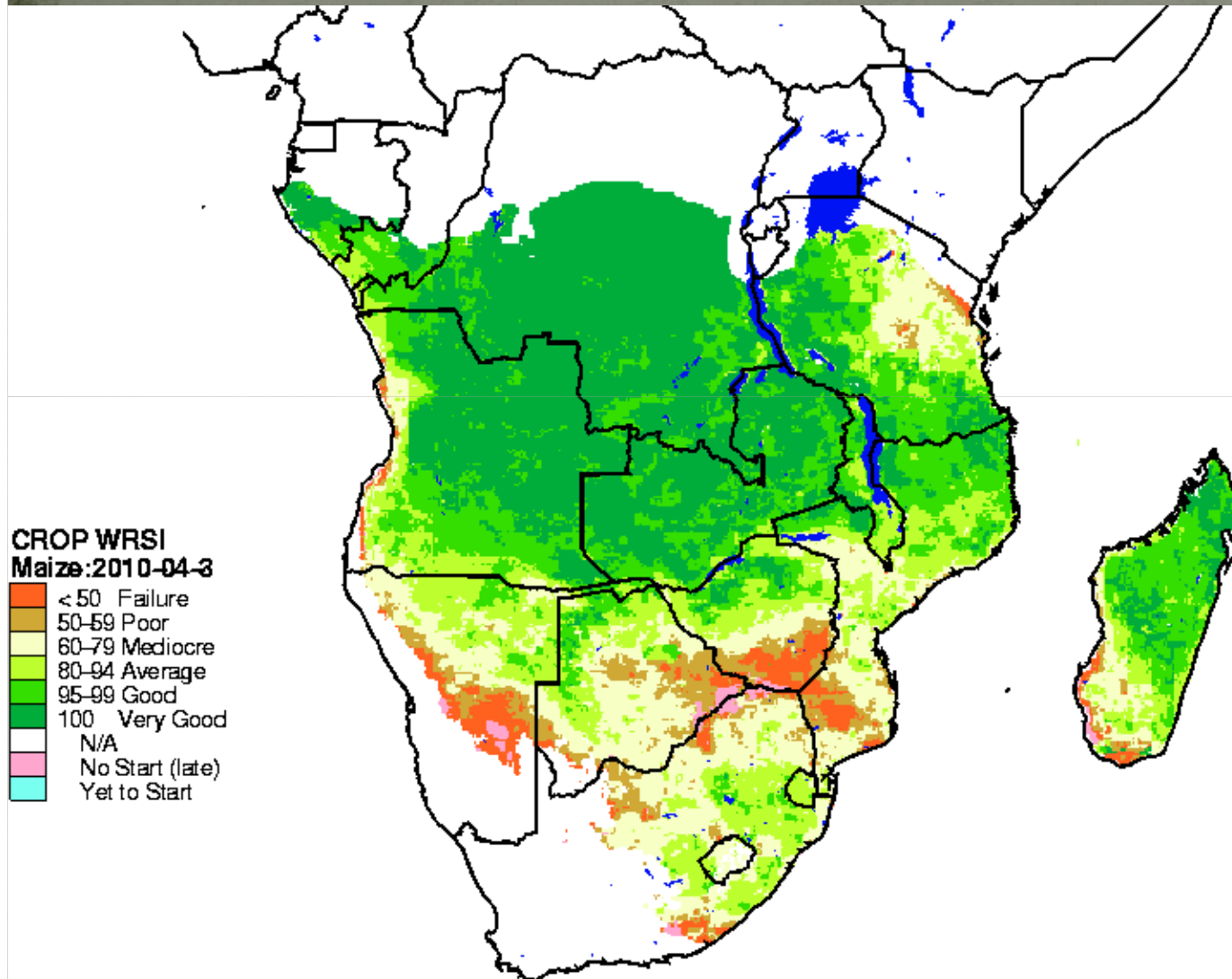
Sadc Percentage of Average Rainfall for 1-31 March 2010



# Start of season



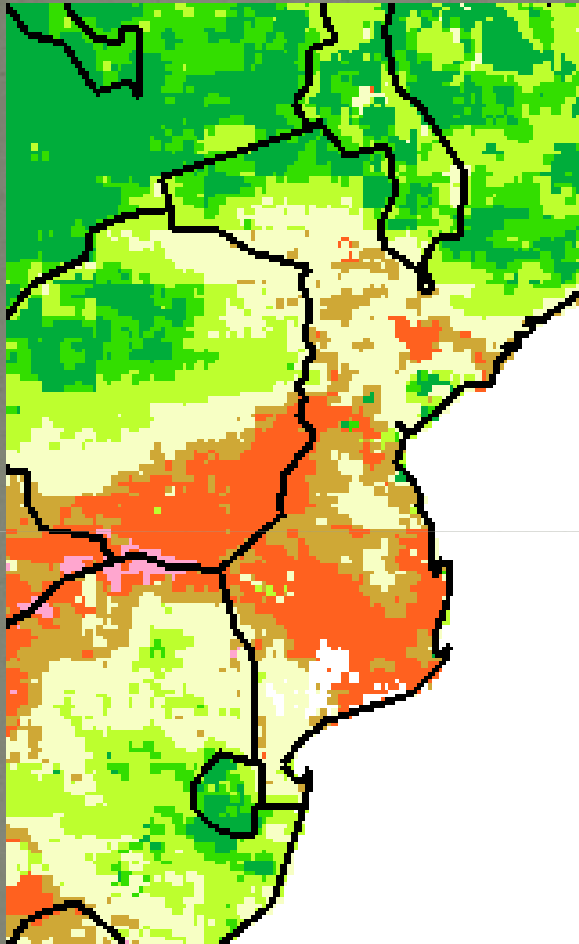
# Meeting crop water needs



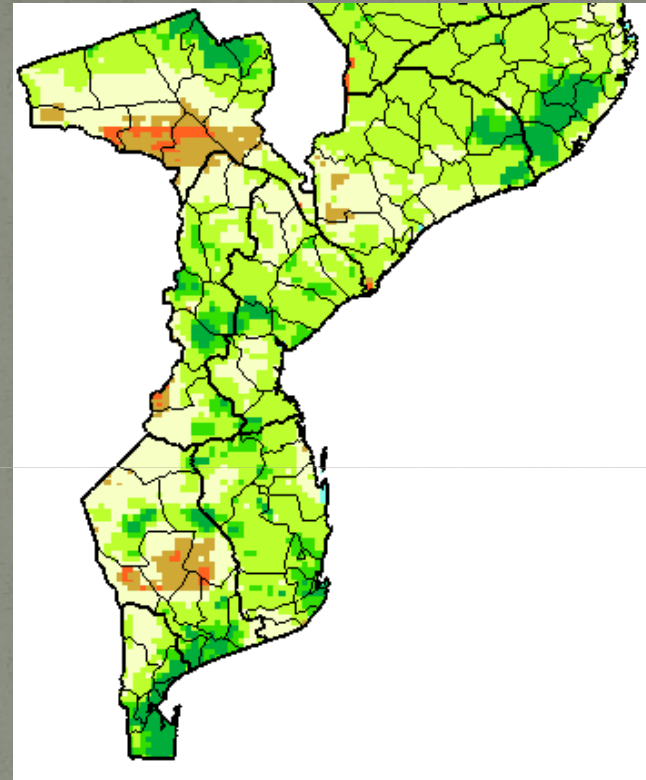
- Water requirements satisfaction index

- Compares crop's water needs with the available (rain) water

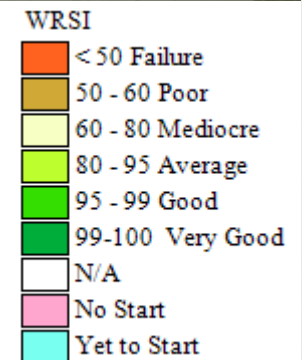
# Modified WRSI



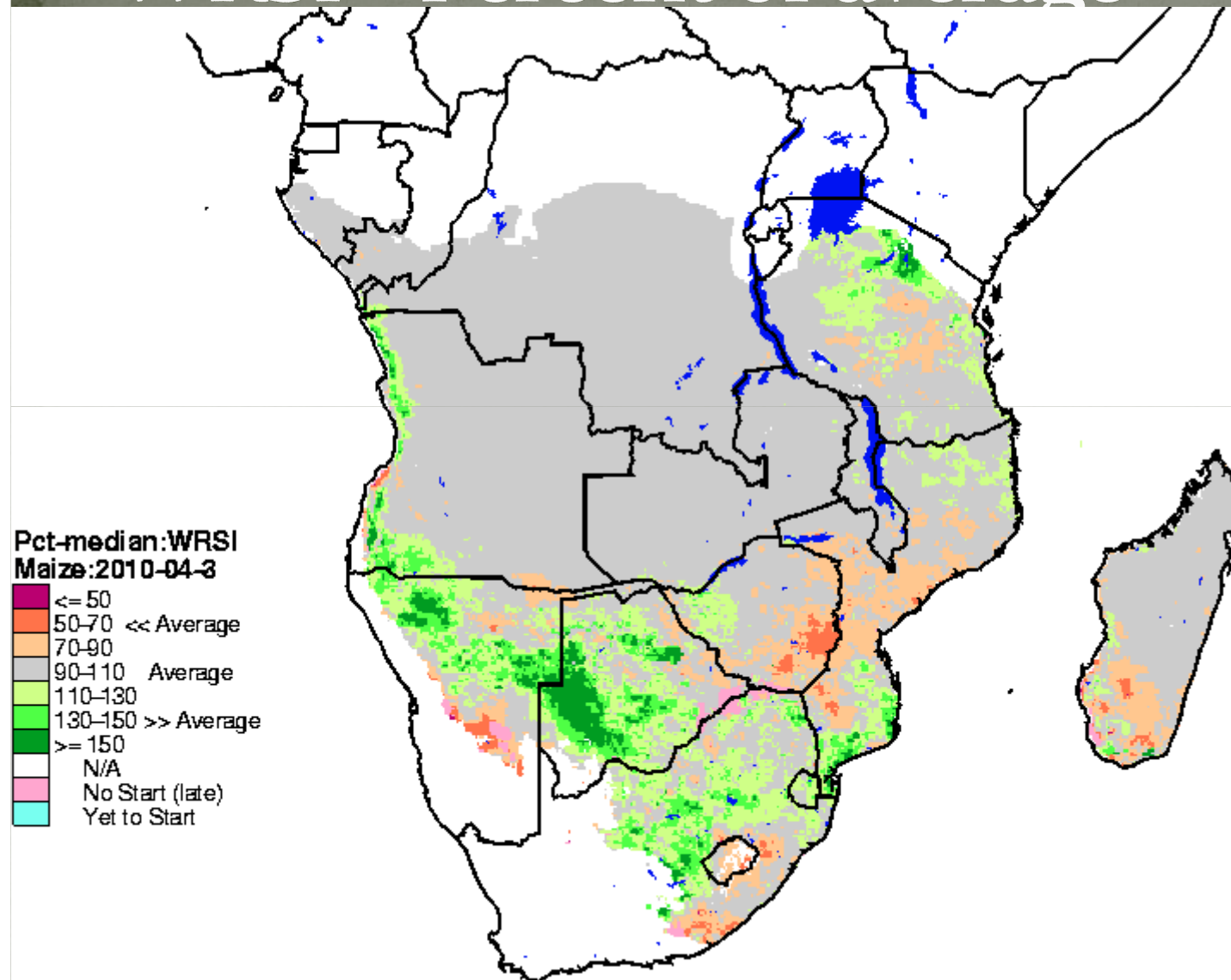
WRSI run assuming  
**100 day crop and normal  
planting** shows failure over  
most parts of southern  
Mozambique



WRSI run assuming  
**100 day crop and planting in Feb  
Dek 2 shows** avg to good WRSI  
over many areas in southern  
Mozambique, as at Apr Dek 3



# WRSI - Percent of average



Many areas in central Mozambique and southern/eastern Zimbabwe rated as having performed below average

# Summary of Crop Growing Season

- Season generally performed well in most parts of the region
- Most cereal crops have now reached maturity stage
- December to January dry spell caused crop failure in
  - southern and central Mozambique,
  - southern Malawi,
  - southern and eastern Zimbabwe

# Summary of Crop Growing Season

- Extensive replanting in southern Mozambique after crop failure – extended season required, crops doing well
- Good season in most parts of Malawi, overall good crop expected. However, recent rains may lead to some crop losses
- Season still underway in Tanzania, reported to be in moderate to good state, though RFE reported below normal (RFE unreliable in parts of Tanzania)

# Summary of Crop Growing Season

- Zambia also experienced a good season except for moderate dryness in the Southern Province in December and January
- South Africa experienced good season and is expecting bumper crop