



## Summary



### SADC-THEMA Agricultural Bulletin

- Heavy rainfall observed in most parts of the region.
- Flash floods observed over Northeast of Botswana and southeastern parts of Zimbabwe
- Drought conditions over the far western parts of Angola, far southern parts of Botswana and the far eastern parts of Tanzania.

February 2014, Issue: 06

#### 1. Highlights

Season 2013- 2014

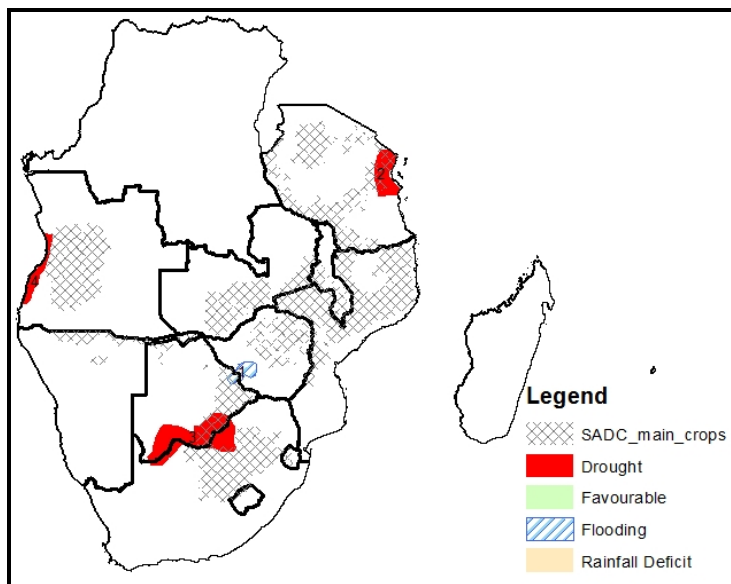


Figure 1: spatial distribution of the main events

## Contents:

1. Highlights.....1
2. Start of season and.....2  
Rainfall performance
3. Vegetation..... 3
4. MESA.....4
5. Contact Details.....4





## 2. Rainfall Performance

Generally, normal to above normal rainfall was observed over most parts of the SADC region during the month of February. The heavy rainfall received during the last dekad of January continued in the first dekad of February causing flash floods over many local areas of the SADC region especially in Botswana and Zimbabwe. The most notable rains (in excess of 150mm) were recorded over some parts of Botswana, Namibia and Zimbabwe during the first dekad of the month (Figure 2).

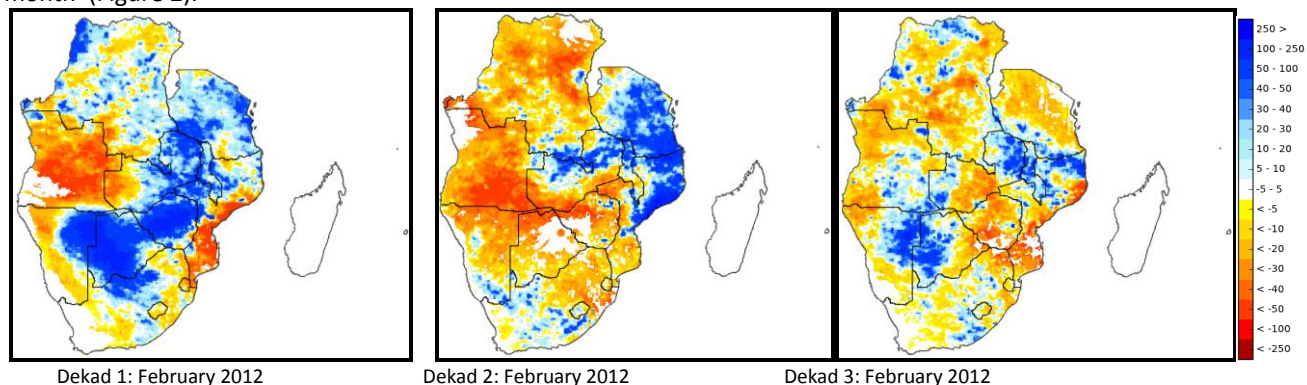


Figure 2: Rainfall Anomaly maps; there has been a general increase in rainfall performance in both intensity and distribution during the month of February.  
Note: Normal ranges between -10mm to 10mm, less than -10mm is below normal and greater than 10mm is above normal.

The heavy falls that continued to be received over most SADC region during the month caused small streams and rivers to over flow. In Botswana, an over flow of Serule river (Central District; Fig 3b) disrupted movement of people from the North to the South of the country and vice versa. Heavy rains in some parts of Zimbabwe early February 2014 resulted in displacement of people. The most affected areas are Masvingo province and Matabeleland North (Fig 3a).

### Zimbabwe

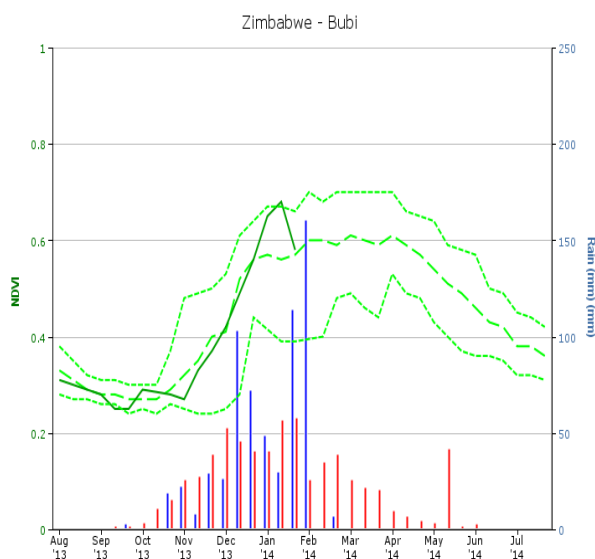


Figure 3a: NDVI and rainfall time series representative of Area 5 (Zimbabwe)

### Botswana

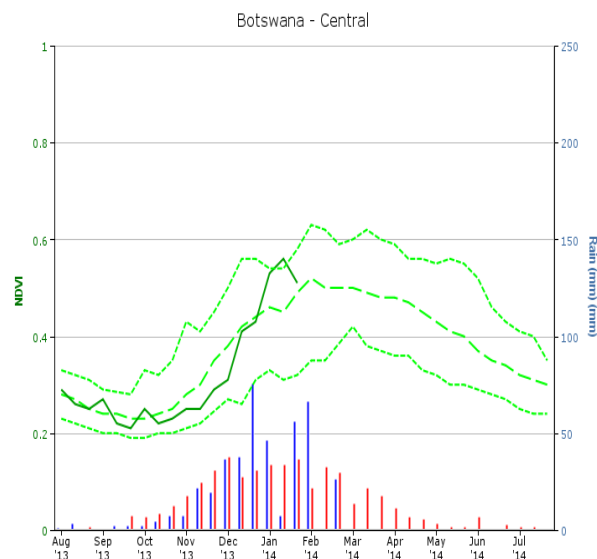


Figure 3b: NDVI and rainfall time series representative of Area 1 (Botswana)

■ Rain ■ Rain LT Avg — NDVI LT Avg Filtered — NDVI Filtered — NDVI LT Max Filtered - - NDVI LT Min Filtered





### 3. Vegetation Conditions

Satellite based analysis of the monthly average NDVI anomaly (Figure 4) for February indicates above normal vegetation conditions over most parts of the SADC region. The good vegetation growth resulted from the continued good rains that were received since the beginning of January. Poor vegetation growth is most notable in the far western parts of Angola, areas bordering South Africa and Botswana, and eastern parts of Tanzania.

The good rains observed during the months of January and February over most parts of the SADC region has improved soil moisture condition and hence significantly improved the vegetation growth in most parts of the SADC region (Fig.4).

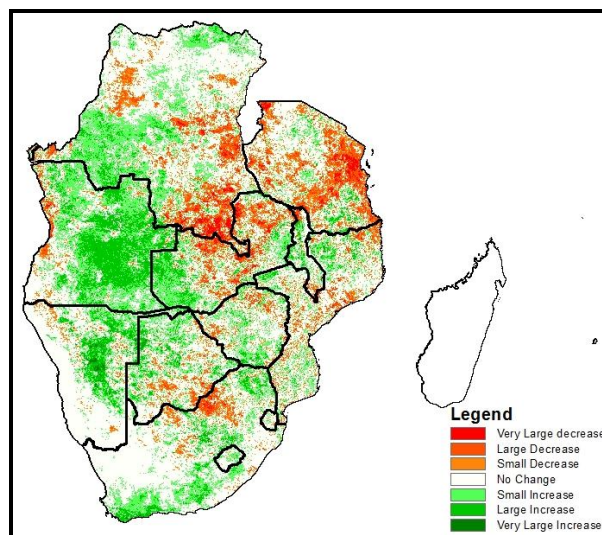


Figure 4: NDVI difference

The continued below normal rainfall over the far western parts of Angola (Fig 5a) has deteriorated vegetation growth over this areas. The eastern parts of Tanzania (Fig 5b) which has been experiencing below normal rains from the beginning of the rainfall season is now showing some signs of recovery, due to the above normal rains received during the first dekad of February..However, the vegetation performance in this area requires continuous monitoring since the vegetation is still below average.

#### Angola

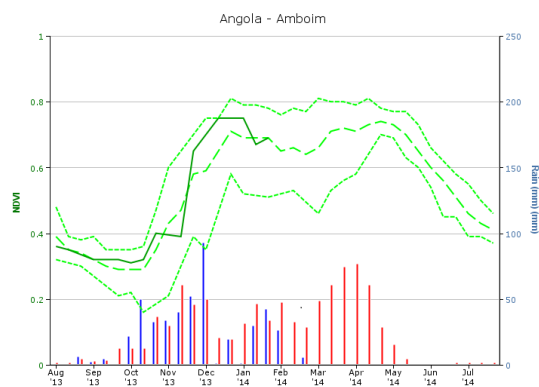


Figure 5a: NDVI and rainfall time series representative of Area 5 (Angola)

Rain Rain LT Avg NDVI LT Avg Filtered NDVI Filtered NDVI LT Max Filtered NDVI LT Min Filtered

#### Tanzania

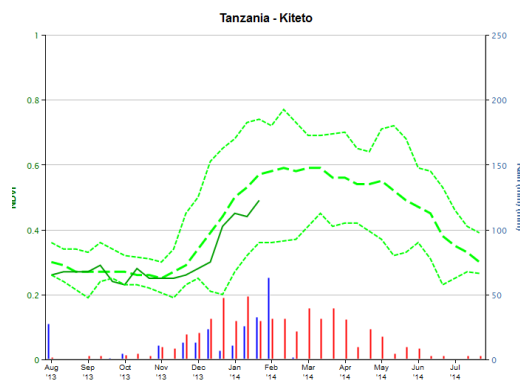


Figure 5b: NDVI and rainfall time series representative of Area 1 (Tanzania)

Given the rainfall outlook over the SADC region as normal to above normal for January, February and March, and the current heavy rains over most parts of the region, there is high chance of flash floods, damage to crops and property, and vegetation recovery to other areas where short term dryness has been experiences. Further monitoring of the situation is required.





#### 4. MESA

The **MESA** program addresses the need for improved environmental monitoring towards sustainable management of natural resources in Africa. Five Regional Thematic Actions (THEMA), one per Regional Economic Community (REC), are being established by the Regional Implementation Centres (RICs) to develop appropriate information services, in order to address the already prioritized decision needs of the RECs in the fields of (i) water resources management (CEMAC); (ii) crop and rangeland management (ECOWAS); (iii) agricultural and environmental resources management (SADC); (iv) mitigation of land degradation (including forest exploitation) and conservation of natural habitats (IGAD) and; (v) marine and coastal management (IOC).

The **SADC-THEMA** is developing three information services namely Agriculture, Drought and Fire in order to address the already prioritized decision needs for SADC region. The Agricultural Service will monitor the state of the crops and rangeland. The Drought Service will monitor drought during the whole year and deliver a decadal “Drought map” and a “Drought Outlook” in support of both agriculture and environmental issues. The Fire Service will provide a daily fire risk indication (before the fire), continuous active fire maps (in real time during the fire season, refreshed every 15 minutes) and monthly burnt area assessments (after the fire). A common “Long Range forecast” service will complement the three (3) core services and provide them a seasonal forecast outlook. The SADC-Thema is implemented under the leadership of Botswana Department of Meteorological Services (BDMS). The program is implemented under the coordination of the African Union Commission with the support of the European Union.

#### 5. Contacts

For further information, please visit:

- The MESA-SADC THEMA and its Products: <http://www.amesd.co.bw/>
- SADC FANR <http://www.sadc.int/fanr/>

To subscribe to this bulletin, simply send an email to [Info@amesd.co.bw](mailto:Info@amesd.co.bw) with “subscribe Agricultural-Bulletin” in the header.

The help-desk is available at [helpdesk@amesd.co.bw](mailto:helpdesk@amesd.co.bw) or phone to +267-3612205.

#### 6 Acknowledgements

*This agricultural bulletin is provided every month to provide an overall view of the agricultural season performance. It is the result of cooperation between MESA SADC-THEMA (represented by the Botswana Department of Meteorological Service as the Regional Implementation Centre), the SADC-FANR, JRC-MARS and FEWSNET. This bulletin is exclusively based on the analysis of remote sensing imagery and of derived environmental indicators. Despite of its intrinsic limitations, remote sensing is a cost effective approach allowing a quick monitoring of the environmental situation in the SADC area. The data is received in near real time from the EUMETCast system (courtesy from EUMETSAT), which routinely distributes Earth Observation data by satellites broadcasting.*

*The MESA project is funded by the 9th European Development Fund of the European Commission.*

The retrieving of Earth Observation data, the computation of the environmental indicators as well as the graphics used in this bulletin were automatically performed by the Environmental Station (eStation), developed by the Joint Research Centre of the European Commission (<http://estation.jrc.ec.europa.eu>).

**Disclaimer:** *The contents of this bulletin are the sole responsibility of MESA and can under no circumstances be regarded as reflecting the position of the European Union.*

**Reproduction** is authorized provided the source is acknowledged.

