



SADC-THEMA Agricultural Bulletin

January 2014, Issue: 05

1. Highlights

Season 2013- 2014

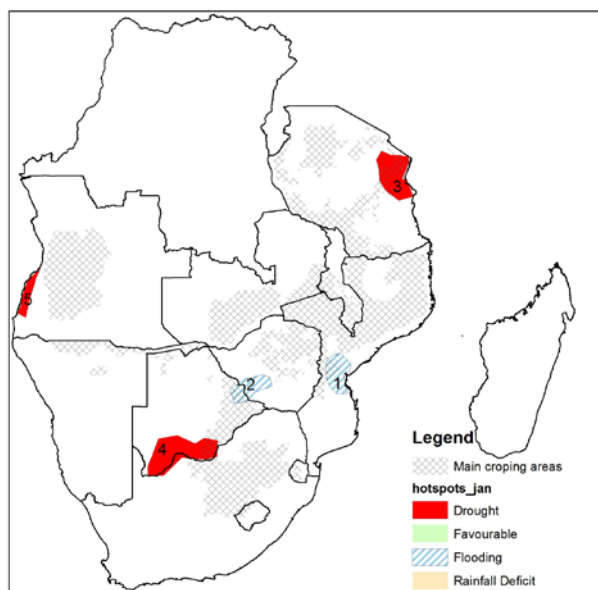


Figure 1: spatial distribution of the main events

Summary

- Improvement in rainfall over the region with flooding in and Southern Zimbabwe Central Parts of Mozambique (1 & 2).
- Drought conditions in the Eastern parts of Tanzania and Southern parts of Botswana (3 & 4)
- Normal to above normal rainfall for the bulk of the SADC region during January to March 2014
- Increased chances of above normal to normal rainfall in Northern Mozambique, greater part of Angola, Tanzania & Namibia and Western half of Botswana

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2. Rainfall Performance

Normal to above normal rainfall was observed over the SADC region during the month of January. The heavy rainfall received during the last dekad of January helped to compensate rainfall deficits over many local areas of the SADC region especially in Botswana and western parts of Angola. The most notable rains were recorded in the central parts of Mozambique and Southern Zimbabwe (Figure 2). However, lesser amounts were received in Southern Botswana, Eastern parts of Tanzania and Lesotho.

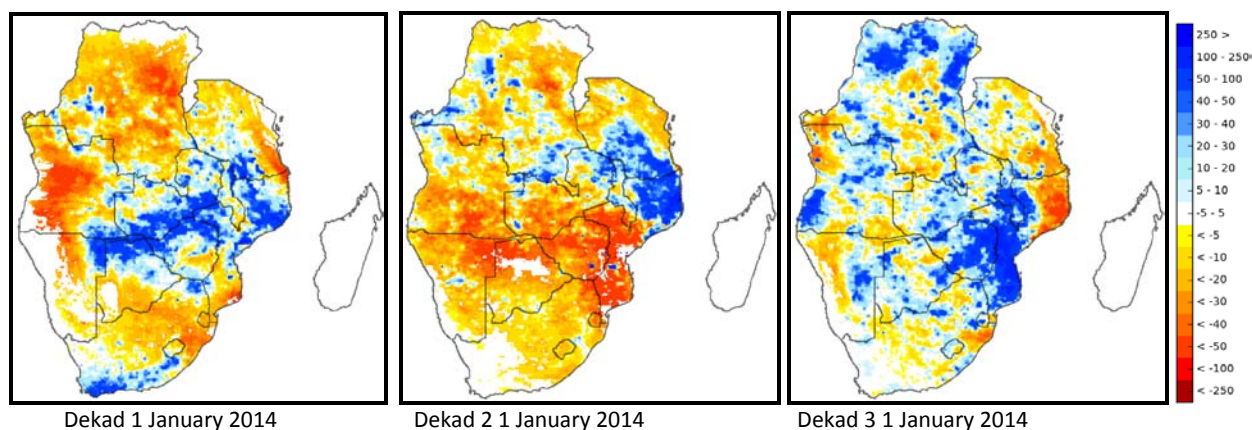


Figure 2: Rainfall Anomaly map: There has been a general improvement of rainfall during the last dekad of January.

The above normal rainfall during the last dekad of January led to saturated ground conditions throughout many local areas in central Mozambique, Northern parts of Botswana and Southern Zimbabwe. In Mozambique, Inhassoro district rainfall excess of 150mm triggered flooding (Figure 3a). Below normal rainfall conditions were observed in the portions of Southern Botswana and Western parts of Angola and the Eastern part of Tanzania. The most notable area with below normal rainfall is the Eastern Kisarwe district of Tanzania (figure 5b) where the rainfall has been consistently below the average for five consecutive dekads.

Zambia

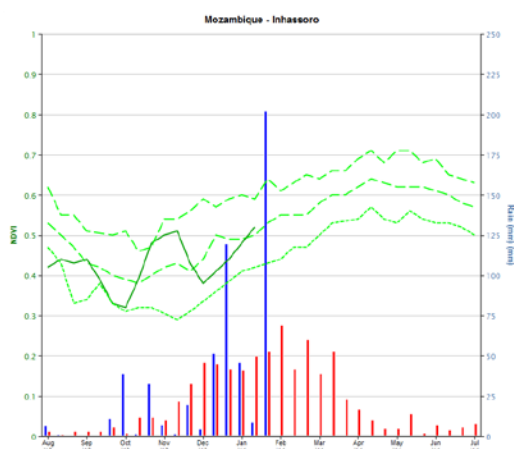


Figure 3a: NDVI and rainfall time series representative of Area 1 (Mozambique) with rainfall excess of 150 mm

Angola

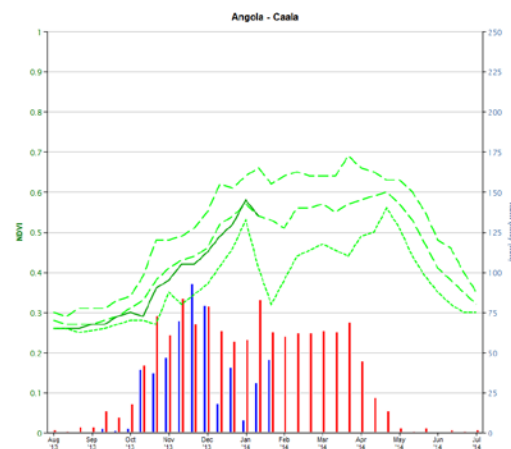


Figure 3b: NDVI and rainfall time series representative of Area 5 (Angola) with below normal rainfall for 5 consecutive dekads

■ 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 NDVI anomaly (Figure 4) for January indicates generally above average vegetation conditions especially over the central parts of the region. The good vegetation growing conditions is as a result of good rains that were received since the beginning of January. However, poor vegetation conditions are most notable in the Western parts of Angola, Southern parts of Botswana and Eastern parts of Tanzania.

After a delayed start of season in most parts of the region, the return of more frequent rains in January helped to offset soil moisture deficit. This has led to improvement of vegetation in most parts of the main agricultural areas of the region (green colour) (Figure 4). The Analysis of the Water Requirements Satisfaction Index (WRSI) for the last dekad shows that most of main crop growing areas have above average water requirements. Poor WRSI values are in the Southern parts of Botswana, western part of Angola and Eastern part of Tanzania

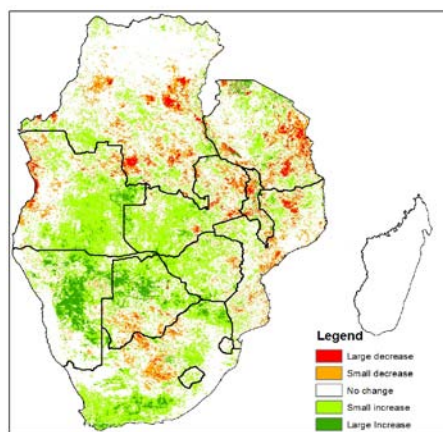


Figure 2: NDVI difference (%)

The Eastern parts Tanzania experienced below average rainfall for five consecutive dekads (Figure 5b). This anomalous dryness negatively impacted vegetation conditions with vegetation development in the Eastern Kisarawe district almost approaching the long-term minimum (Figure 5b). Further monitoring of the situation in this area is required. Very good vegetation development can be found in Central Mozambique, North Eastern parts of South Africa, central parts of Zambia and Northern Botswana (Figure 4). These areas, especially Central Mozambique received above average rainfall amounts since the beginning of the month (Figure 5a). However, flooding mainly in central parts of Mozambique and Southern Zimbabwe has affected crops.

Mozambique

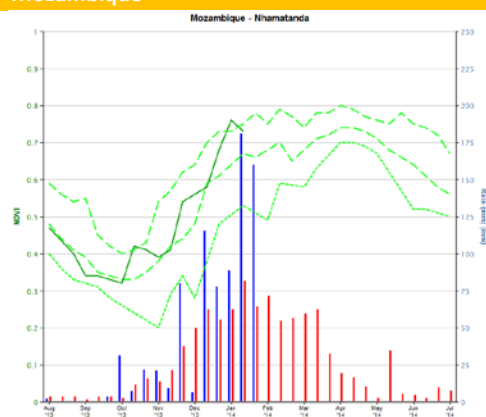


Figure 5a: NDVI and rainfall time series representative of (Area 1, Mozambique). Vegetation development above long-term maximum.

Tanzania

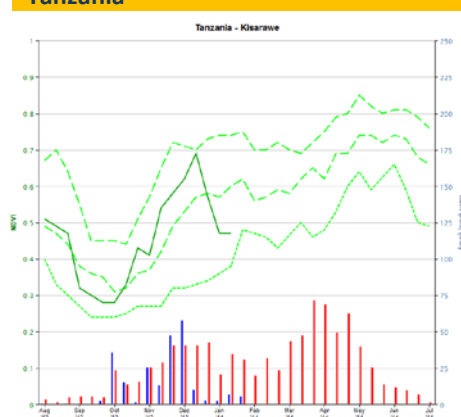


Figure 5b: NDVI and rainfall time series representative of Kisarawe, Tanzania with below normal vegetation development.

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

Given the expected normal to above normal rainfall (January -March 2014) for the bulk of the SADC region, there are still chances of vegetation recovery in the Eastern parts of Tanzania and western parts of Angola experiencing short term dryness.



4. MESA

The **MESA** program builds on the AMESD project and addresses the need for improved environmental monitoring towards sustainable management of natural resources in Africa. 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). In addition a Climate Change Monitoring service is being implemented by ACMAD for entire continent

The **SADC-THEMA** is developing four information services namely Agriculture, Drought, Fire and flood in order to address the already prioritized decision needs for SADC region. The Agricultural Service monitors the state of the crops and rangeland. The Drought Service monitors 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 provides 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). The flood service will provide a flood risk, monitoring and assessments. A common “Long Range forecast” service complements the three (3) core services and provides them a seasonal forecast outlook. The SADC-Thema is implemented under the leadership of Botswana Department of Meteorological Services (BDMS) and SADC Climate Services (SCS). 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/>

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The help-desk is available at 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>).

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