

An aerial photograph of a rural landscape in East Africa. The terrain is hilly and features terraced agricultural fields. The fields are a mix of green, yellow, and reddish-brown, indicating different stages of crop growth or soil types. Several traditional thatched huts are scattered across the landscape, particularly in the lower right and middle sections. The overall scene depicts a typical rural agricultural setting.

EAST AFRICA THE 2017 SEASON

Bulletin 2017 – 5, Eastern Africa

December 2017



vam
food security analysis

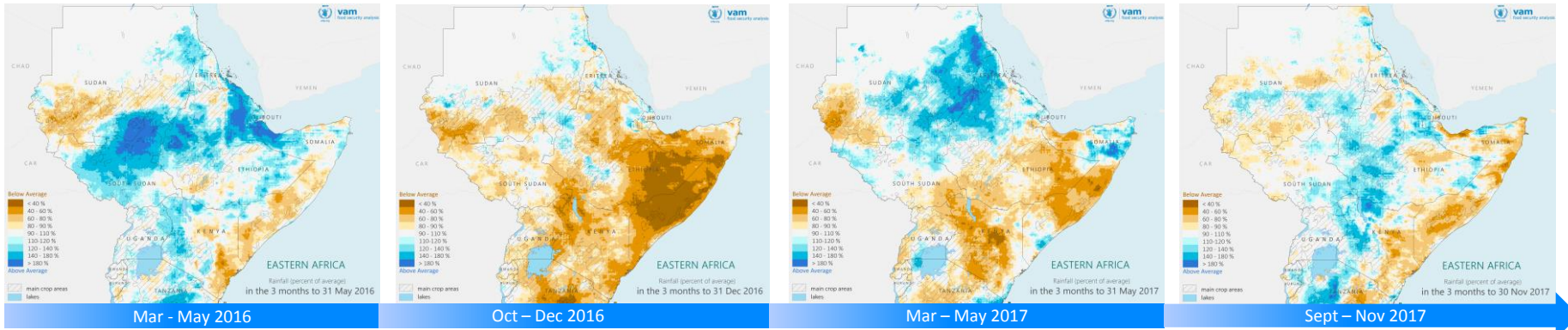
HIGHLIGHTS

Highlights.....	2
Context.....	3
Current Seasonal Status	4
La Nina and Seasonal Forecasts.....	5
Focus Areas.....	6
Hot Spots: Ethiopia	7
Hot Spots: Somalia	8

- Somalia has now experienced an unprecedented fourth consecutive drought. Dry conditions returned after only a small reprieve in early November. This will further worsen the already critical humanitarian situation.
- In Eastern Kenya, earlier than usual retreat of the seasonal rains will lead to a significant degradation in pasture and marginal crop conditions.
- The La Nina event currently underway is expected to end by Spring 2018. Despite forecasts of moderate intensity it could lead to significant rainfall deficits during the next season.
- The current seasonal forecasts are not consistent in their outlook. Alternative analysis for Somalia predicts a pessimistic outcome for the next season.

Context

A SUCCESSION OF DROUGHTS IN THE HORN OF AFRICA



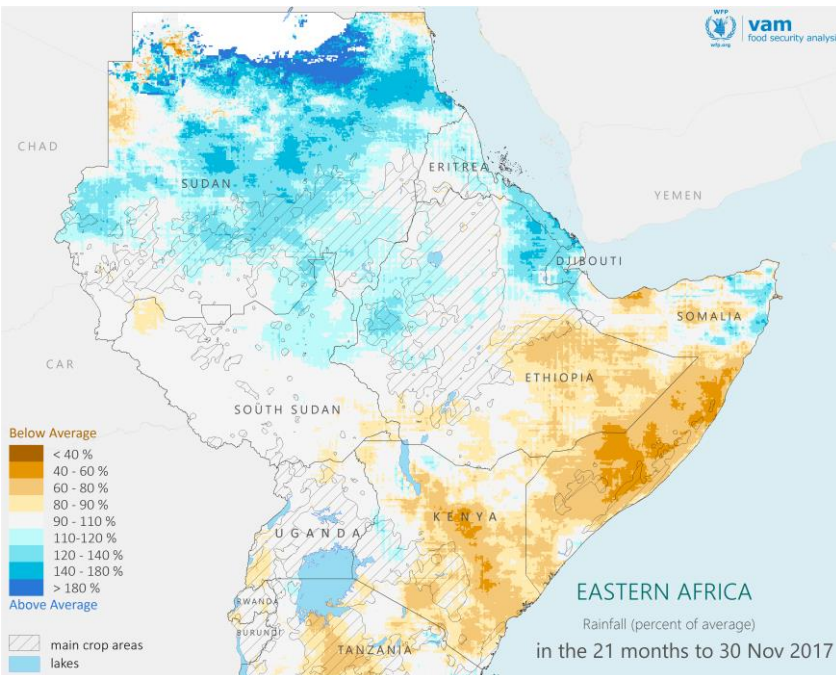
3 month rainfall as a percentage of the long term average. [from the left: March-May 2016 (first), 2017 (third), October-December 2016 (second) and the current season (fourth)], corresponding to the four last growing seasons in Somalia, Kenya and SE Ethiopia. Blues for wetter than average, orange and brown for below average conditions.

Horn of Africa in the grip of long term drought

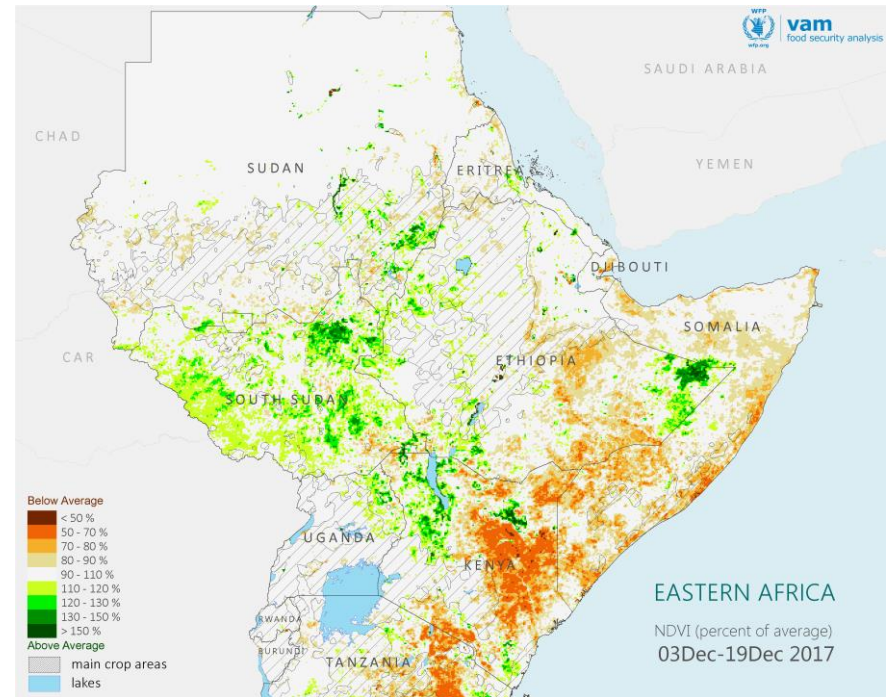
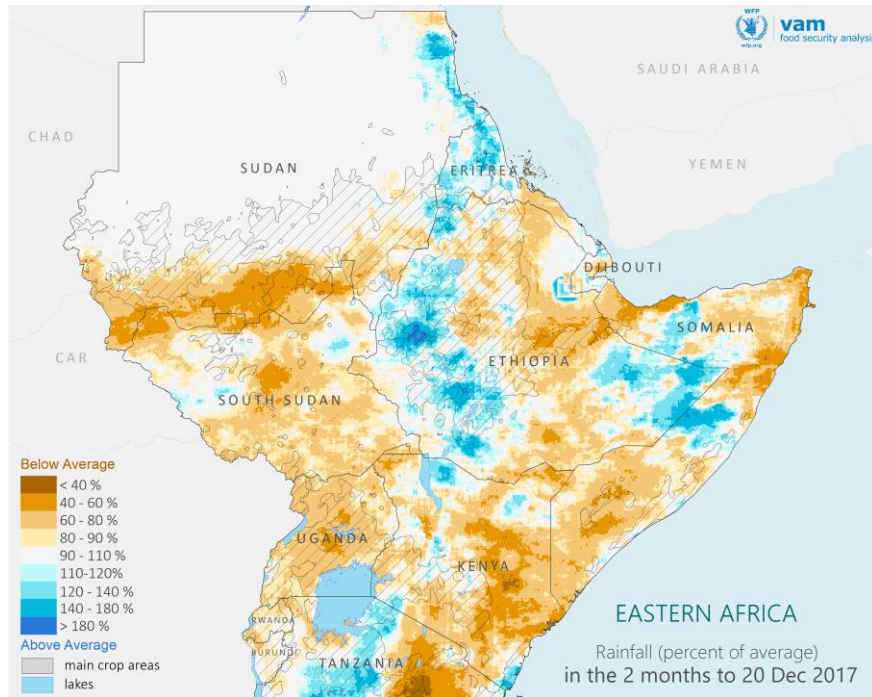
Successive droughts have affected the Horn of Africa since March 2016. The current season is the fourth consecutive time when severe rainfall deficits have resulted in poor crop and pasture production.

These droughts have been most intense in Somalia, but they have also severely affected eastern Kenya and SE Ethiopia. Since March 2016, parts of central Somalia have received about half the usual rainfall. The impact has been less intense but still significant in central and eastern Kenya and the Somali region of Ethiopia.

This relentless sequence of climatic shocks together with insecurity and high food prices is having a profound negative impact on vulnerable populations. Pastoralist communities have been particularly hard hit and the long term drought could lead to irreversible effects on pasture quality.



Current Seasonal Status



Rainfall in the two months ending 20 December as a percent of average (left). Vegetation cover in early December as a percent of average (right). Blues/greens for above average, browns/oranges for below average.

The Short Rains / Deyr season (October–December) is now over in Somalia and SE Ethiopia and in its final stages in Kenya, Uganda and southern Ethiopia.

After severely dry conditions in October, rainfall in early November improved significantly with most of Somalia recording above average rainfall. These improvements however were short-lived and therefore the seasonal performance will be very poor.

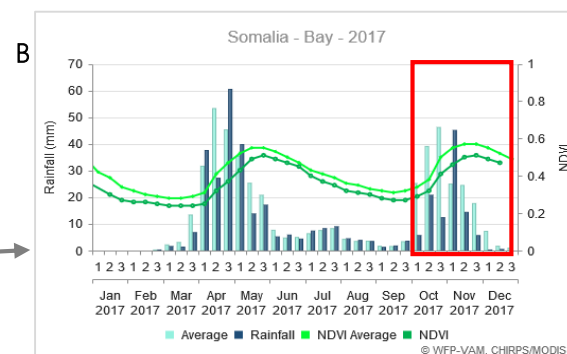
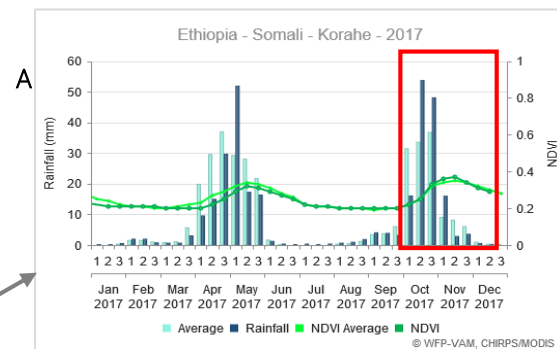
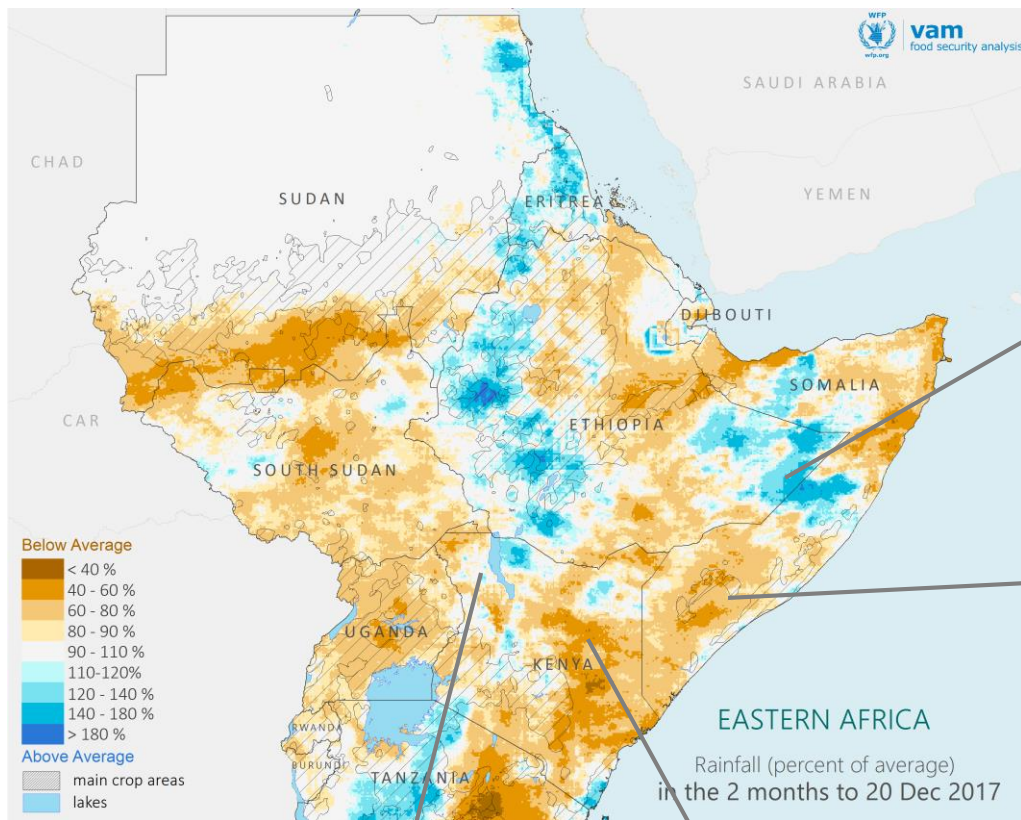
In Eastern Kenya, the rainfall season was performing better. However, an earlier than usual retreat of the rains resulted in virtually no rainfall through December. This is leading to major moisture deficits and will cause a significant degradation in pasture resources and marginal crop production.

Worst affected areas include the southern half of Somalia, Somaliland, and large areas of the Eastern and Northeastern provinces of Kenya. Elsewhere, rainfall deficits only affected very late stages of the season and hence have little impact.

In contrast, wetter than average conditions in the Lake Turkana region led to record pasture resources in SE South Sudan, Karamoja (NE Uganda), Marsabit, northern Rift Valley Kenya, and the SNPPR and Gambela provinces of Ethiopia. However, the early cessation of the rains may bring a premature end.

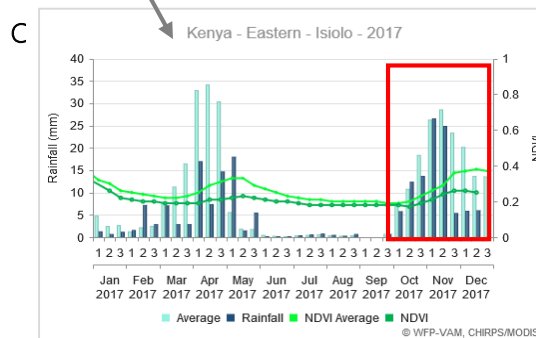
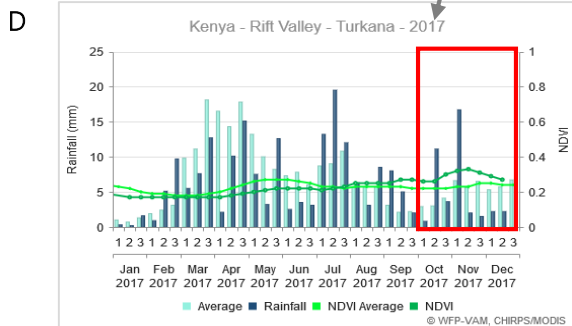
Prospects for agricultural production in Somalia, although poor, will be an improvement on 2016. More favourable rainfall in SE Ethiopia should provide enough river flow to allow the irrigated agriculture along the Shabelle and Juba rivers to partially compensate large losses in rainfed crop production.

Focus Areas

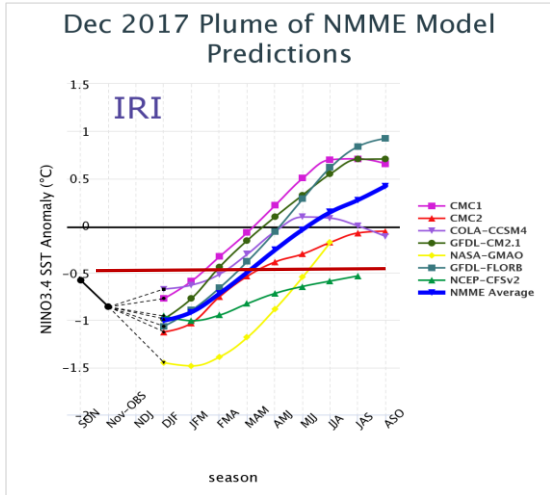


Seasonal charts show:

- SE Ethiopia: favourable rains through most of the season
- Somalia, Bay province: persistently below average rains, except for early November, lead once again to drought conditions.
- Kenya, Isiolo district: much earlier than usual end of the rainfall season leads to vegetation cover loss
- Kenya, Turkana district: wetter than average conditions since July lead to record vegetation cover, but early end of the rainfall season may reverse conditions



La Nina Outlook and Seasonal Forecasts



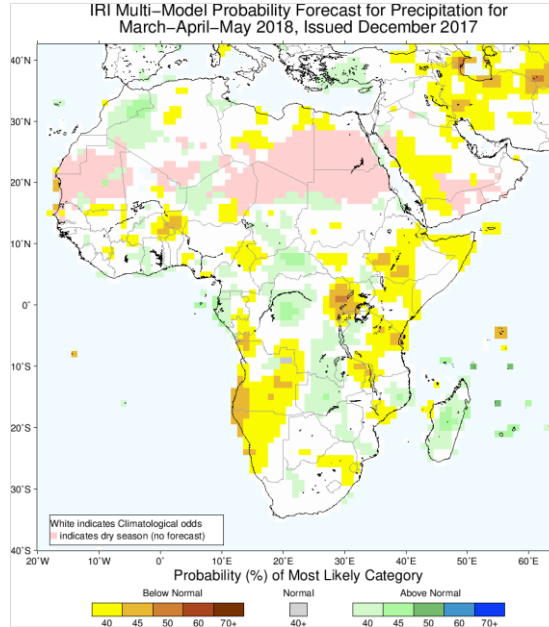
ENSO sea surface temperature forecasts until late 2018, from a range of models. The La Nina threshold is the dark red line at -0.5°C.

Most models point to the event ending by mid-Spring 2018

The current La Nina event is now fully developed. Forecasts of sea surface temperatures (plot above) from several sources indicate that La Nina conditions will remain in place until Spring 2018.

If these forecasts hold, this La Nina event will be short lived and of moderate intensity. However, weak events can still lead to significant impacts.

Historically, La Nina events are associated with below average rainfall in the Horn of Africa.



IRI precipitation forecast for March-May 2018. Warm tones for below average rainfall, cool tones for above average.

Seasonal rainfall forecasts for the next season (March-May 2018) does not present a consistent picture.

IRI forecast (above) indicates below average rainfall, but others (CPC, ECMWF) show neutral or moderately above average rainfall.

The Climate Hazards Group (University of California, Santa Barbara) have developed an alternative approach for Somalia and SE Ethiopia, based on a recalibration of the current forecasts with historical datasets (<http://blog.chg.ucsb.edu/> for technical details)

Unlike seasonal forecasts, they successfully predicted lower than average rainfall for the Oct-Dec 2017 season.

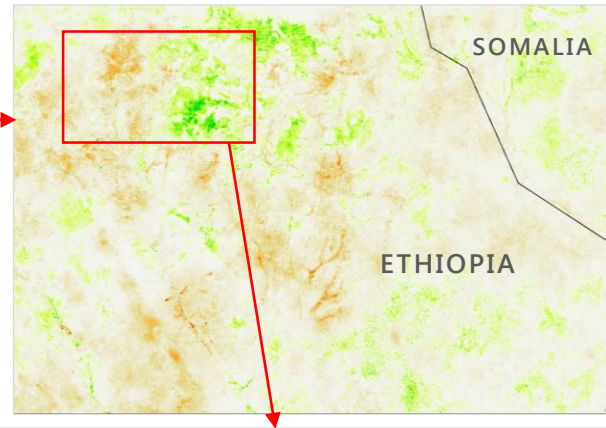
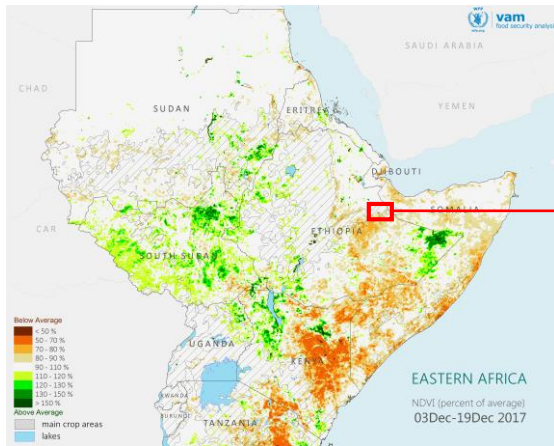
They also forecast lower than average rainfall for the coming March-May season.

On balance, the outlook is for below average rainfall during the coming season.

Although the evidence is variable, populations across much of the Horn of Africa are extremely vulnerable – even modest impacts may have serious consequences.

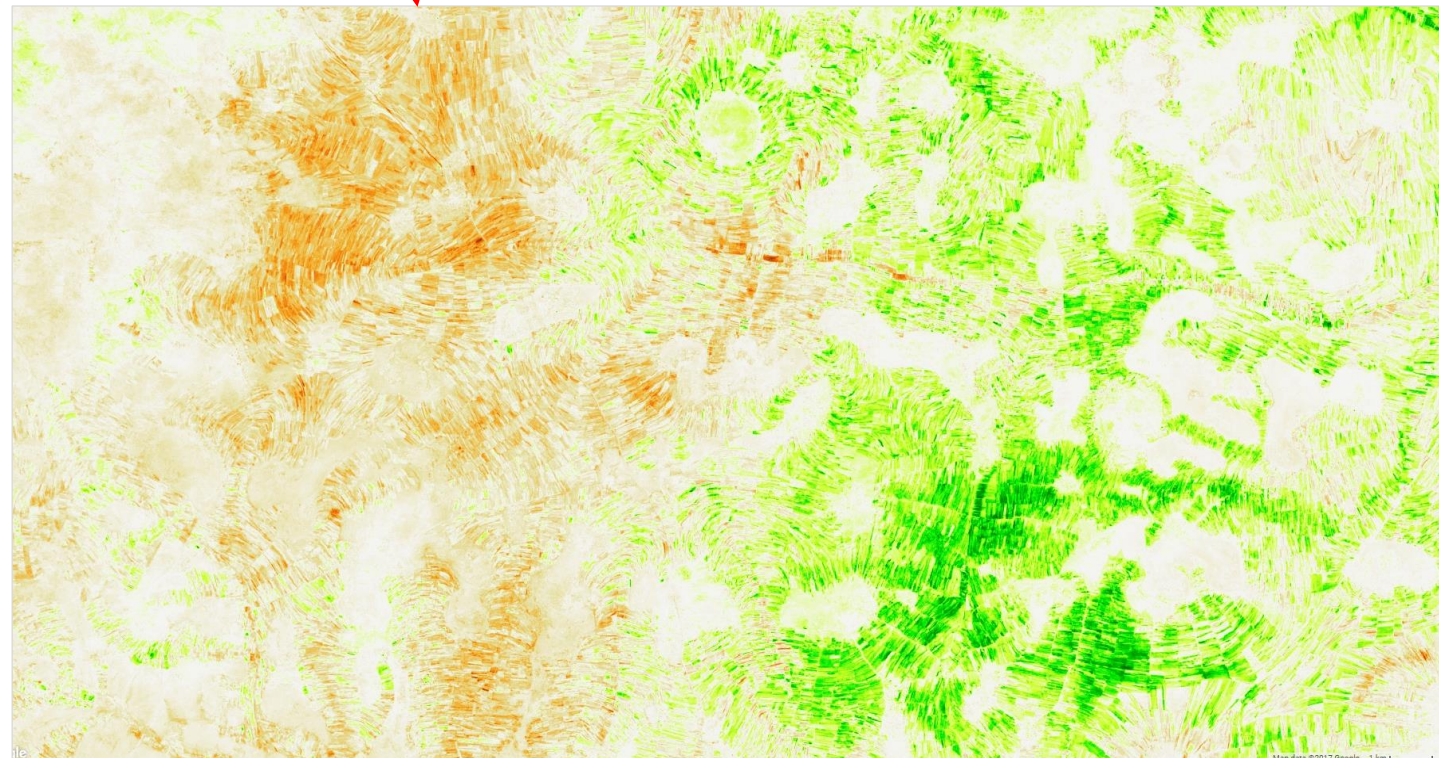
Hot Spots

ETHIOPIA: Somali Region



Rainfed croplands in NE Ethiopia, along the border with Somalia, generally performed worse than average.

High resolution data provides a comparison with the previous year. In general, performance is worse this year with some localized improvements relative to the same period (15 Oct – 15 Dec) in 2016.



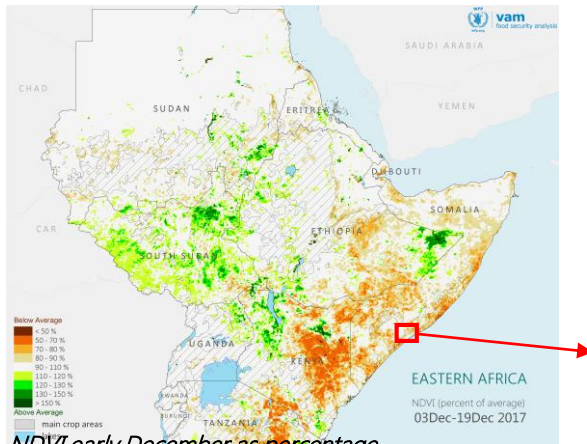
*NDVI difference:
15Oct – 15Dec 2017 against
2016*

Sentinel-2, 10m

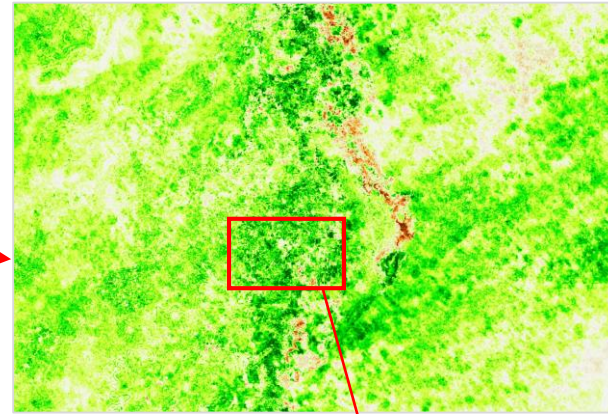
Lat: 9.517, Lon: 42.928

Hot Spots

SOMALIA: Shabelle Dhexe



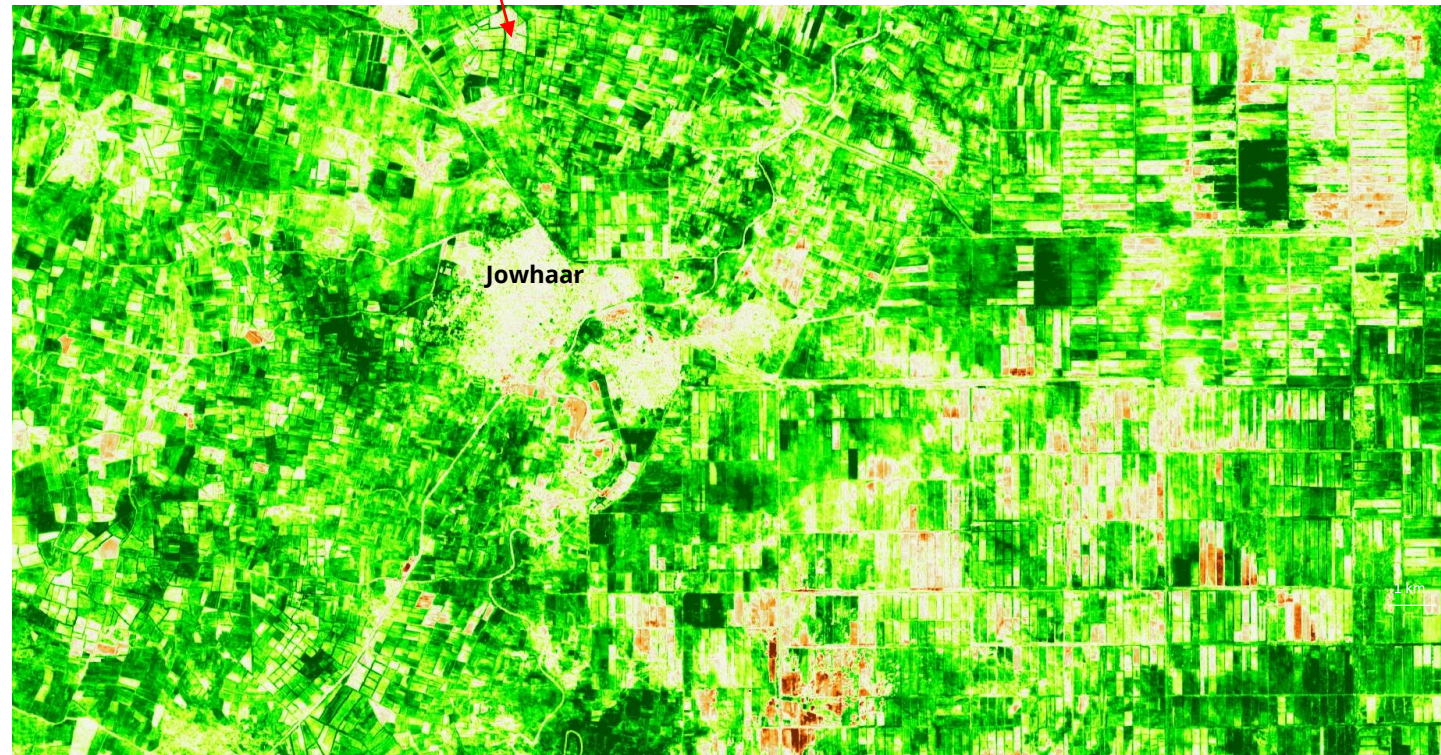
NDVI early December as percentage of average (2002-2015). MODIS 5Km



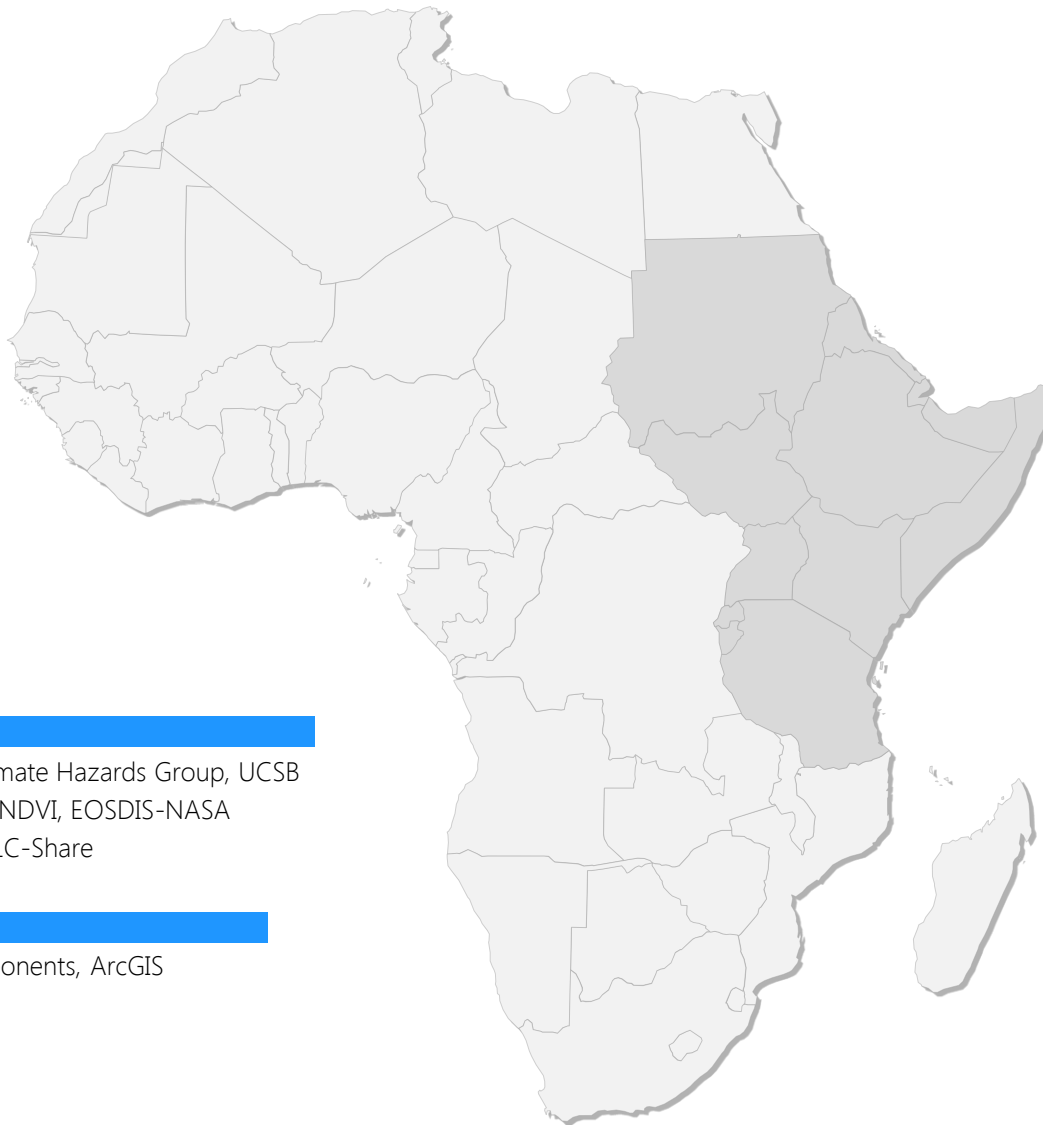
Crop conditions in Somalia are significantly below the long term average.

High resolution data shows that crop performance will be much better than the same period in 2016. This year, rainfall performance was comparatively better and a repeat of the late 2016 wipeout will not occur.

Since rainfall in SE Ethiopia was normal, the irrigated sector is likely to perform much better than in 2016.



NDVI difference:
15Oct - 15Dec 2017 against
2016
Sentinel-2, 10m
Lat: 2.768, Lon: 45.552



FOR FURTHER INFORMATION:

Rogério Bonifacio
rogerio.bonifacio@wfp.org
+39 06 6513 3917

DATA SOURCES:

Rainfall: CHIRPS, Climate Hazards Group, UCSB
Vegetation: MODIS NDVI, EOSDIS-NASA
Land Cover: FAO GLC-Share

PROCESSING:

VAM software components, ArcGIS



vam
food security analysis