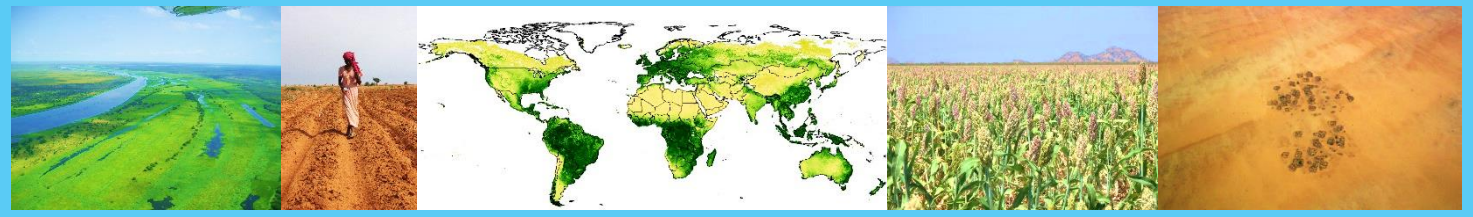

East Africa: The 2017 Season

Crisis Rather Than Disaster

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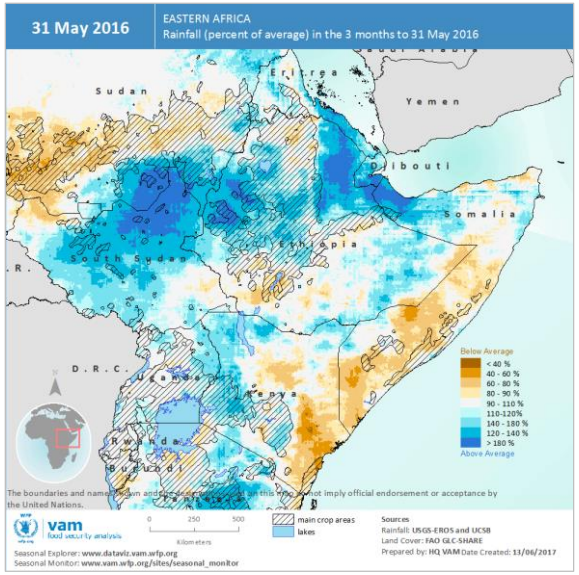
HIGHLIGHTS

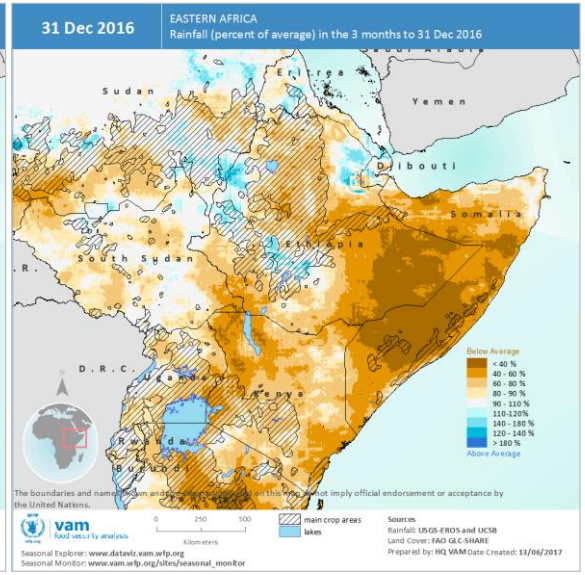
- **Despite improved rains since late** April, the delayed **start** of the season and **severe early dryness** will result in poor crop production, degraded pasture and low water availability for human and livestock consumption.
- The food security situation of the extremely vulnerable households is expected to further deteriorate. P**astoralists** in central Somalia, SE Ethiopia and western Kenya are of particular concern.
- **Somalia**, **Kenya** and **SE Ethiopia** have now endured three **consecutive droughts,** including one of the most **severe on record in** Oct-Dec 2016.
- **Central South Sudan**, S**udan, NW Ethiopia and Eritrea have experienced abundant rainfall resulting in robust** early vegetation growth and early start of the growing season.

CONTEXT: A Succession of Droughts in the Horn of Africa

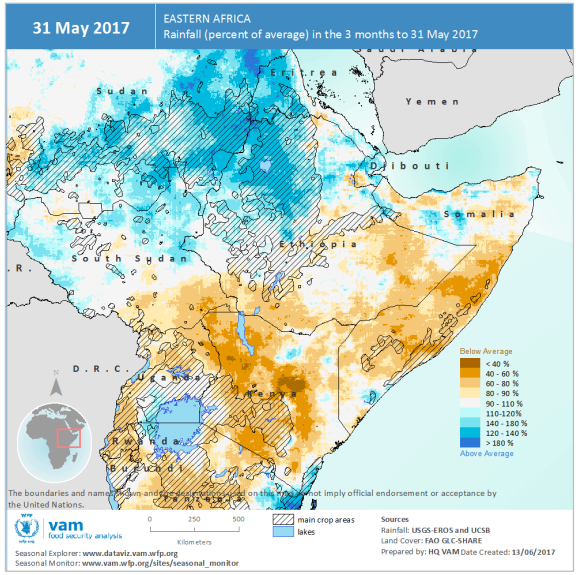
East Africa: The 2017 Season



March-May 2016



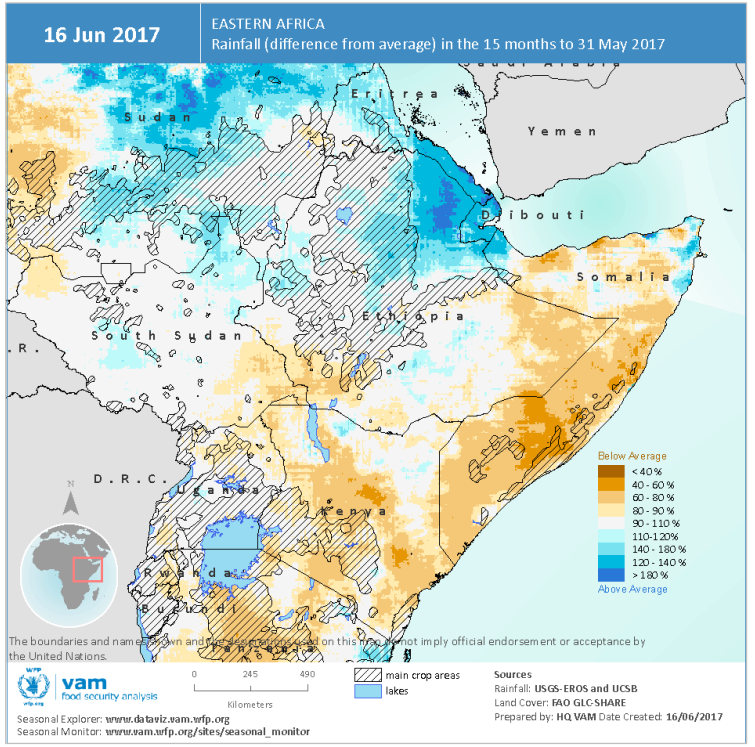
October-December 2016



March-May 2017

Left: 3 month rainfall as a percentage of the long term average for March-May 2016, October-December 2016 and March-May 2017, corresponding o the three last growing season in Somalia, Kenya and SE Ethiopia.
Blues for wetter than average, orange and browns for below average conditions

Below: 15 month rainfall March 2016 to May 2017 (covering all 3 growing seasons) as a percentage of the long term average.
Blues for wetter than average, orange and browns for below average conditions



Three Consecutive Growing Seasons Hit by Drought in Somalia, Kenya and SE Ethiopia

Droughts of varying intensity affected the past two growing seasons in Somalia, Kenya and SE Ethiopia. A poor March-May 2016 season was followed by a particularly severe drought during the last growing season of October to December 2016. This resulted in a large scale humanitarian crisis driven by sharp falls in crop and pasture production combined with insecurity and high market prices.

Drought has also affected the season that has ended now. Although much improved rainfall from late April onwards avoided a repeat of the 2010-2011 humanitarian disaster, this was not sufficient to overcome the combined effects of delayed rains and severe rainfall deficits during the first half of the season. These will lead to further deterioration in the food security situation of the extremely vulnerable populations.

Analysis of 15 month (since March 2016, including all three growing season) rainfall in the map right, shows clear patterns of longer term dryness (up to 50% deficit) in Somalia, but also Kenya and SE Ethiopia. which are particularly harmful to pastoral livelihoods, as they prevent regeneration of livestock assets.

Current Seasonal Status (March-May 2017)

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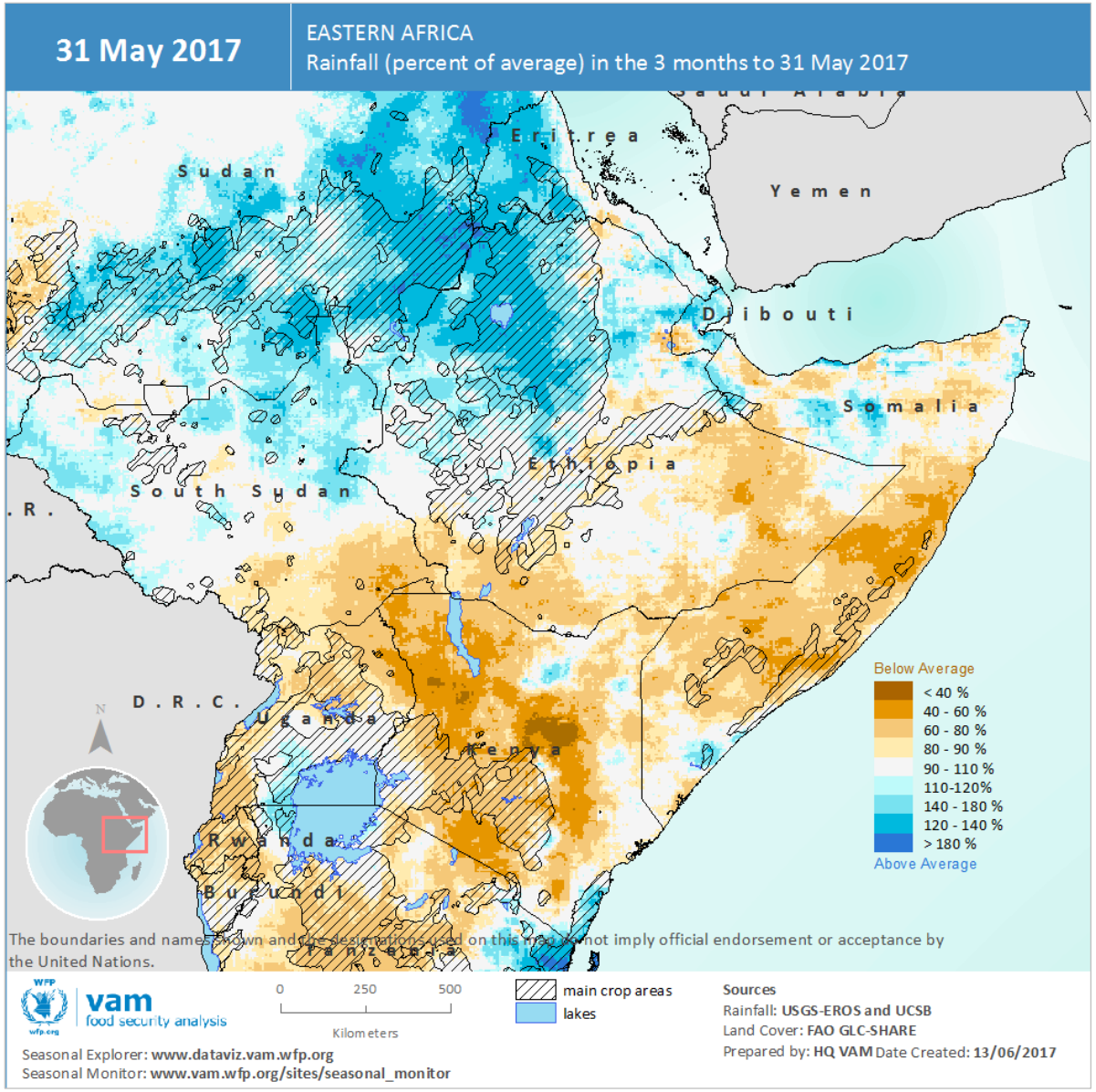
March-May Rainfall Season



Rainfall in the three months up to 31 May 2017, as a percentage of the long term average.
Blues for wetter than average, orange and browns for below average conditions

Extensive Drought Conditions in the Long Rains / Gu Season

March through May is the wettest period across most of East Africa and the main rainfall season in Somalia, SE Ethiopia and Kenya. During this period, rainfall was below average across most of the region with largest deficits in central Somalia, SE Ethiopia and central, western and north-western Kenya.

Even where rainfall seems average, it is due to late heavy rains which are less likely to result in good crop production. In places like coastal Kenya this led instead to localized flooding and destruction of crops. The rainfall season in these areas is now effectively over.

The combination of delayed and poorly distributed rains and severe early season dryness will cause significant deficits in crop production and severe degradation of pastoral resources across vast areas of East Africa.

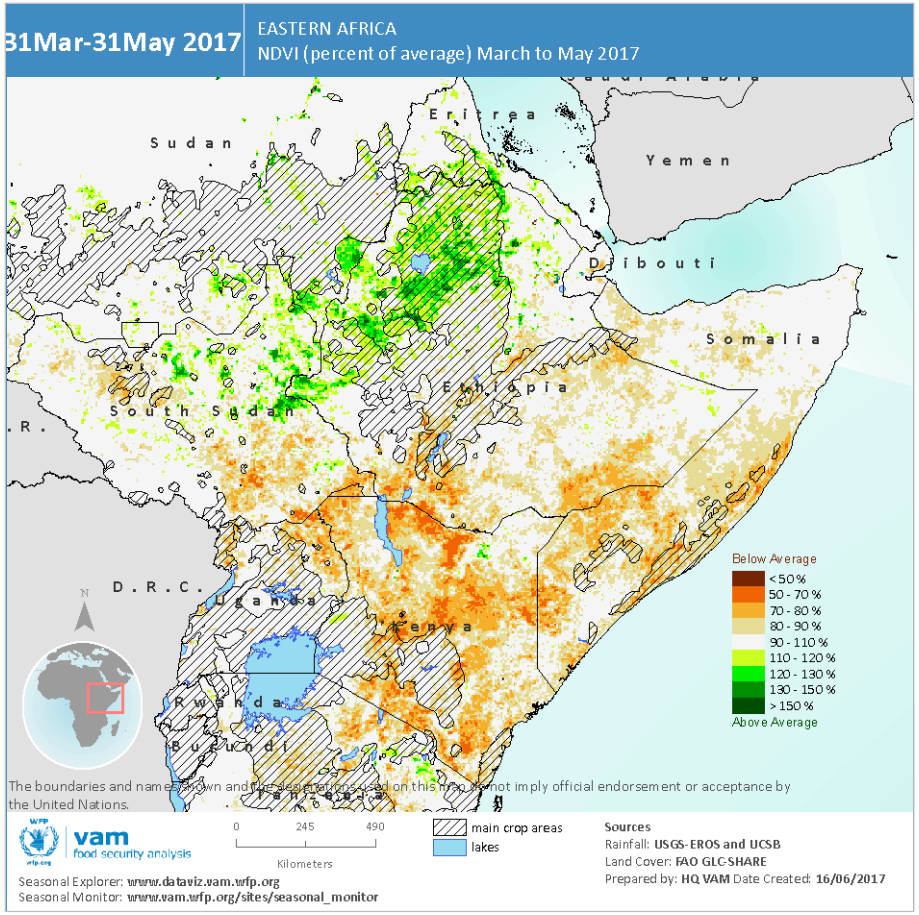
In Somalia, this will add further pressure to an already serious situation: the extreme drought of the last *Deyr* growing season (Oct-Dec 2016) led to a 75 percent drop in crop production compared to the last 5 years. The less severe drought in the (main) growing season of March-May 2016 resulted in a 20 percent drop in crop production. The aggregated drop in crop production over the past two seasons reached 39 percent (FAO).

In Kenya significant crop losses are expected across large parts of the more marginal agricultural regions of the country, in particular coastal, central and southern areas.

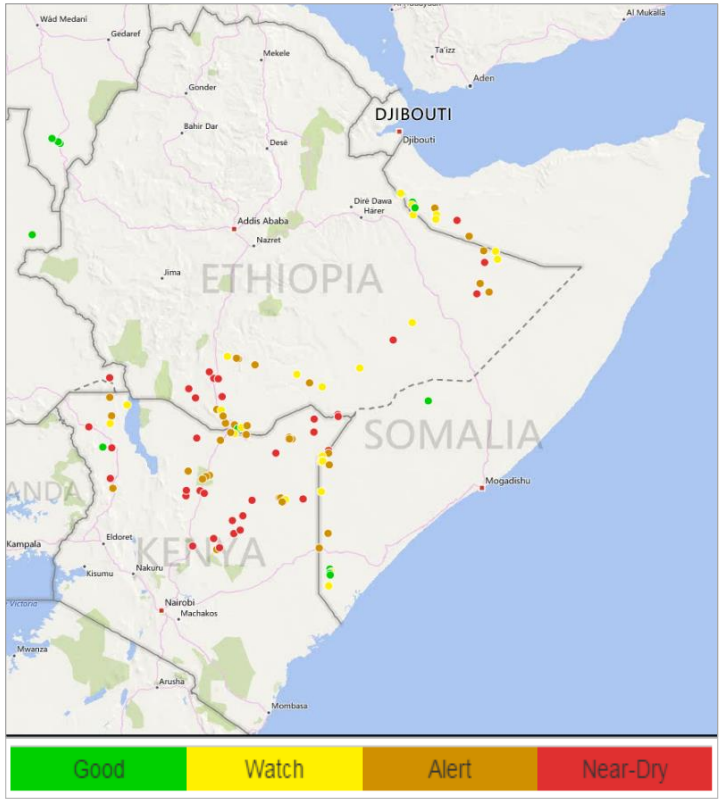
In Ethiopia, crop producing areas in the South and Southwest (SNNPR and southern Oromia) are also affected by poor rainfall. Although Eastern and Central Equatoria regions in South Sudan have had a very poor start, recent improvements in rainfall and a long growing season should see a good recovery.

Vegetation and Water Resources

East Africa: The 2017 Season



March-May 2017 NDVI as a percentage of the long term average. Greens for wetter than average, orange shades for below average conditions.



Map showing condition of water points across East Africa by early June 2017. The map does not contain an exhaustive list of water points in the region. Source: https://earlywarning.usgs.gov/fews/waterpoint/index.php

Crisis Conditions for Pastoralists

Vegetation cover during the March-May growing season was significantly below average due to poor rainfall and the cumulative effect of consecutive drier than average seasons.

Latest data shows vegetation cover is still below average at the onset of the long dry season. This indicates very poor conditions for pastoralist households in coming months. Although better rains in May improved livestock body condition and water availability, these were short lived and clearly insufficient.

Water resources are also at unusually low levels for the end of a rainfall season. The majority of monitored water points are either in Alert or in Near-Dry condition (see map left), confirming poor water availability for livestock and human consumption. No improvement is expected before the next rains in October.

Further degradation in pastoral resources and livestock condition is to be expected, with most severe impacts in SE Ethiopia, northwest Kenya and central regions of Somalia.

Other Areas:

Uganda, South Sudan, Sudan, Ethiopia

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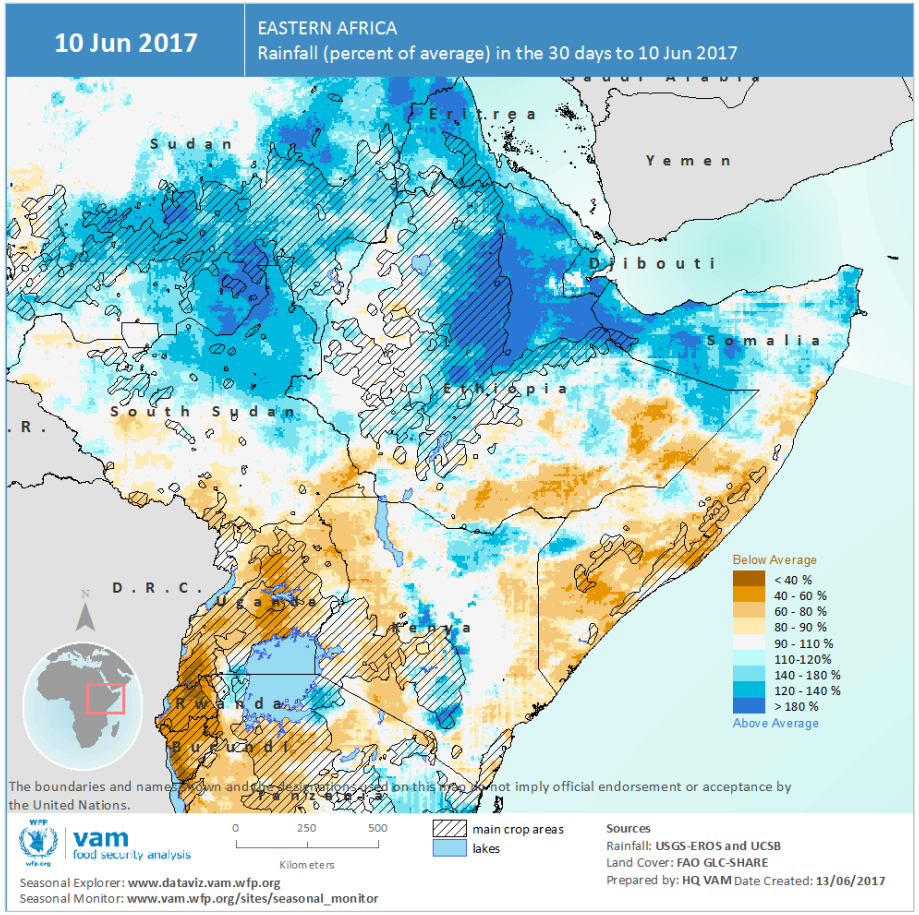
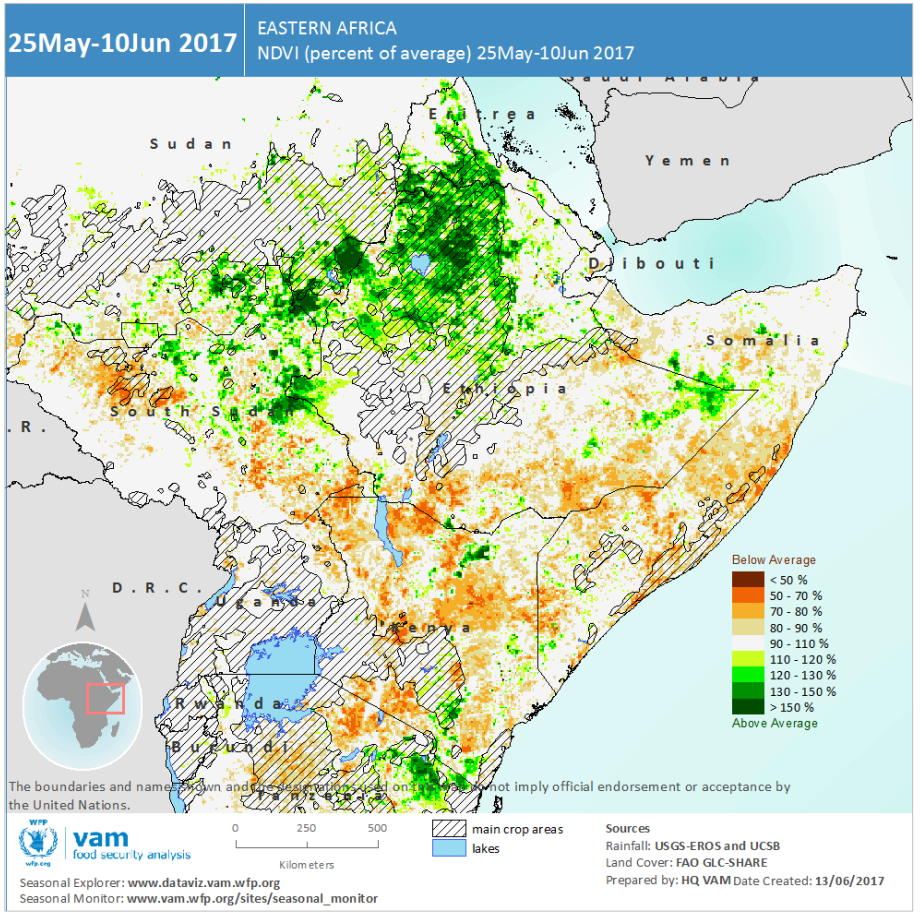
Other Regions: Uganda, Sudans, Ethiopia (mid May – early June)





Left: Rainfall in the thirty days ending June 10 2017, as a percentage of the long term average. Blues for wetter than average, orange and browns for below average conditions

Right: Late May – early June 2017 NDVI as a percentage of the long term average. Greens for wetter than average, orange shades for below average conditions.

Worsening Great Lakes, Wet conditions across Sudan and Eritrea/Afar

Away from Somalia, Kenya and SE Ethiopia, other regions of East Africa are either entering a second season (bimodal areas of Uganda, Rwanda and Burundi) or in the early stages of their long single season (South Sudan, Sudan, north and western Ethiopia).

These regions are under quite different circumstances – Uganda and the Great Lakes region in general have undergone a predominantly drier than average first season, in common with much of East Africa. This tendency has become more pronounced in the past month with very large deficits in central and western Uganda as well as Rwanda and Burundi.

In contrast, areas from central South Sudan up to northeastern desert areas of Sudan and eastwards to Eritrea, Tigray, Afar and Somaliland, have enjoyed regular and well above average rainfall al least throughout the last month.

Vegetation cover is now well above average for this time of the year, particularly in eastern Sudan and NW Ethiopia and Afar. This represents good conditions for pastoral household and a very likely early start to the crop growing season.

Somalia Hot Spots

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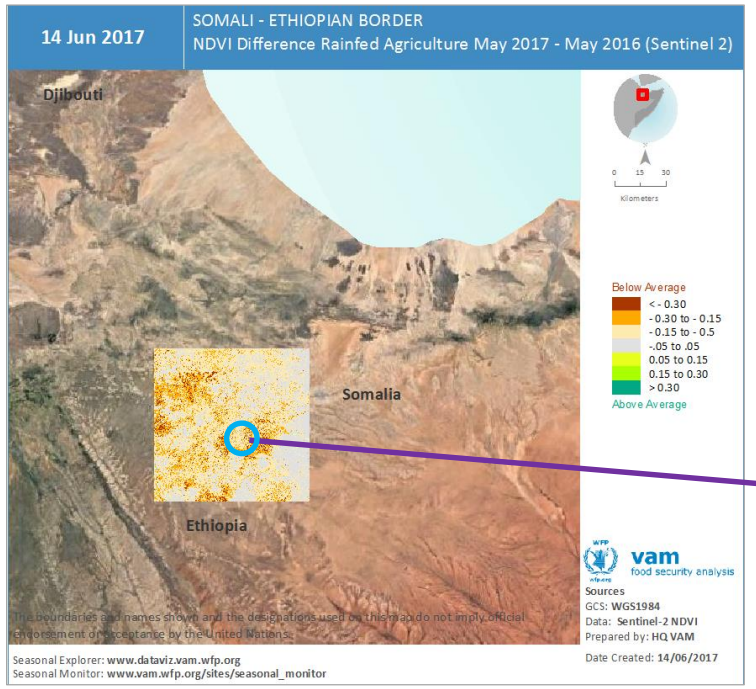
Somalia Hot-Spots: Somaliland border agriculture

The new Sentinel-2 satellite provides high-resolution, high-frequency data specially tailored to monitor vegetation and crops. This data is analyzed to evaluate conditions in some hot spots of agricultural production in Somalia by comparing May-June vegetation conditions between 2017 and 2016.



Vegetation performance in areas of rainfed agriculture along the border between Somalia and Ethiopia are noticeably lower in 2017 than 2016. This is partly due to a very good rainfall performance in 2016.

Current conditions should improve in the next few weeks, given that rainfall has lasted much longer than usual at above average levels.

Right: Vegetation cover difference between May 2017 and May 2016 in agricultural areas on the Somalia-Ethiopia border. Orange shades for 2017 worse than 2016, greens for the reverse.

14 Jun 2017

SOMALI - ETHIOPIAN BORDER
NDVI Difference Rainfed Agriculture May 2017 - May 2016 (Sentinel 2)

Somalia

Ethiopia

0 0.75 1.5
Kilometers

Below Average
< - 0.30
- 0.30 to - 0.15
- 0.15 to - 0.5
-.05 to .05
0.05 to 0.15
0.15 to 0.30
> 0.30
Above Average

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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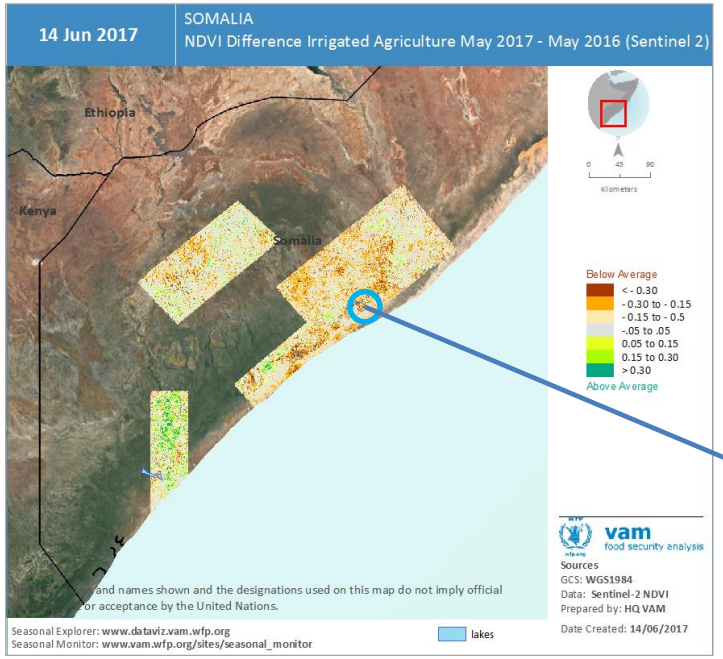
Sources
GCS: WGS1984
Data: Sentinel-2 NDVI
Prepared by: HQ VAM

Date Created: 14/06/2017

Seasonal Explorer: www.dataviz.vam.wfp.org
Seasonal Monitor: www.vam.wfp.org/sites/seasonal_monitor

East Africa: The 2017 Season

Somalia Hot-Spots: Analysis with High Resolution Data

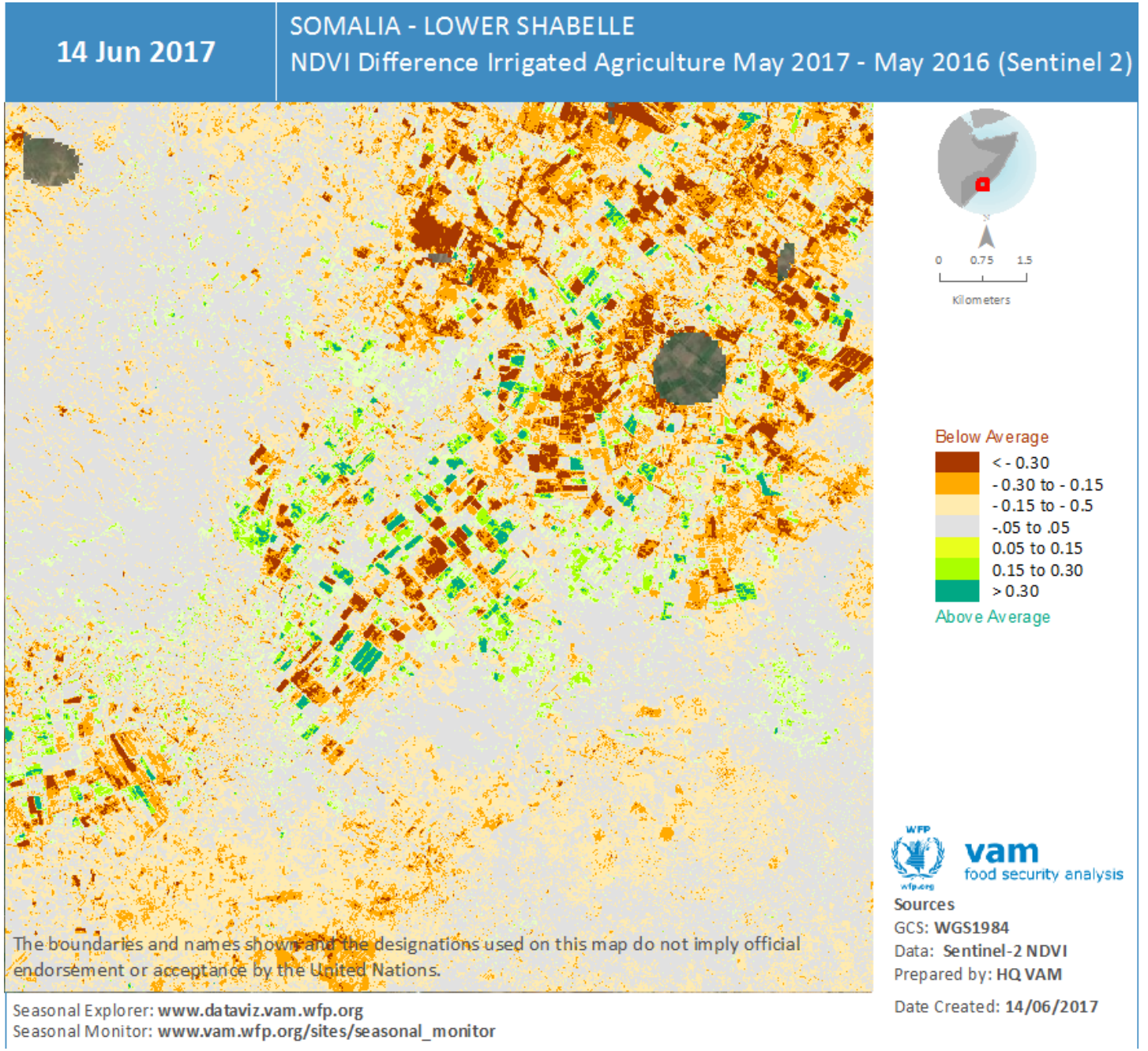


In the Lower Shabelle region, irrigated agriculture is dominant along the Shabelle river.

Analysis of Sentinel-2 reveals an overall poorer performance in 2017 compared to 2016 across most of the cropland areas – see map on the right showing areas NE of Afgoye. Overall the dominant patterns is of worse performance in 2017 barring a few locations.

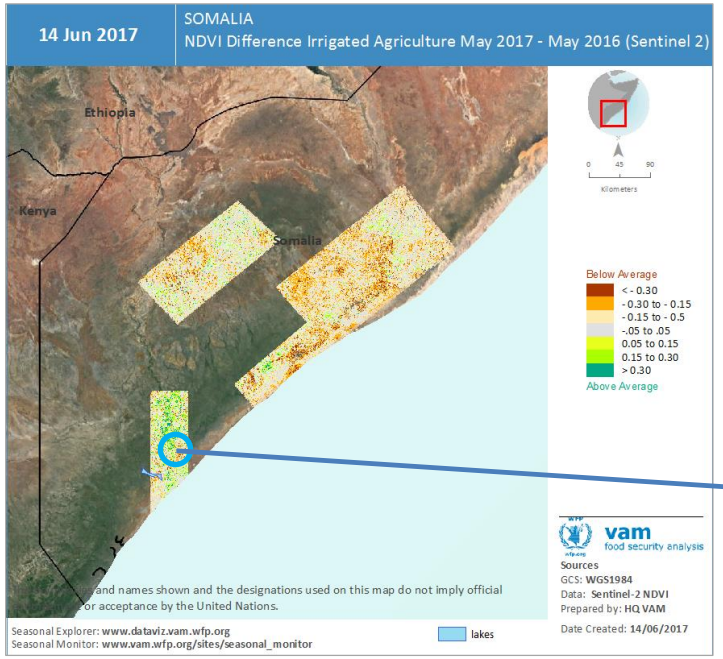
Although crop development will continue, the most likely outcome is lower crop production than in 2016.

Right: Vegetation cover difference between May 2017 and May 2016 near Afgoye town in Lower Shabelle. Orange shades for 2017 worse than 2016, greens for the reverse.



Somalia Hot-Spots

East Africa: The 2017 Season

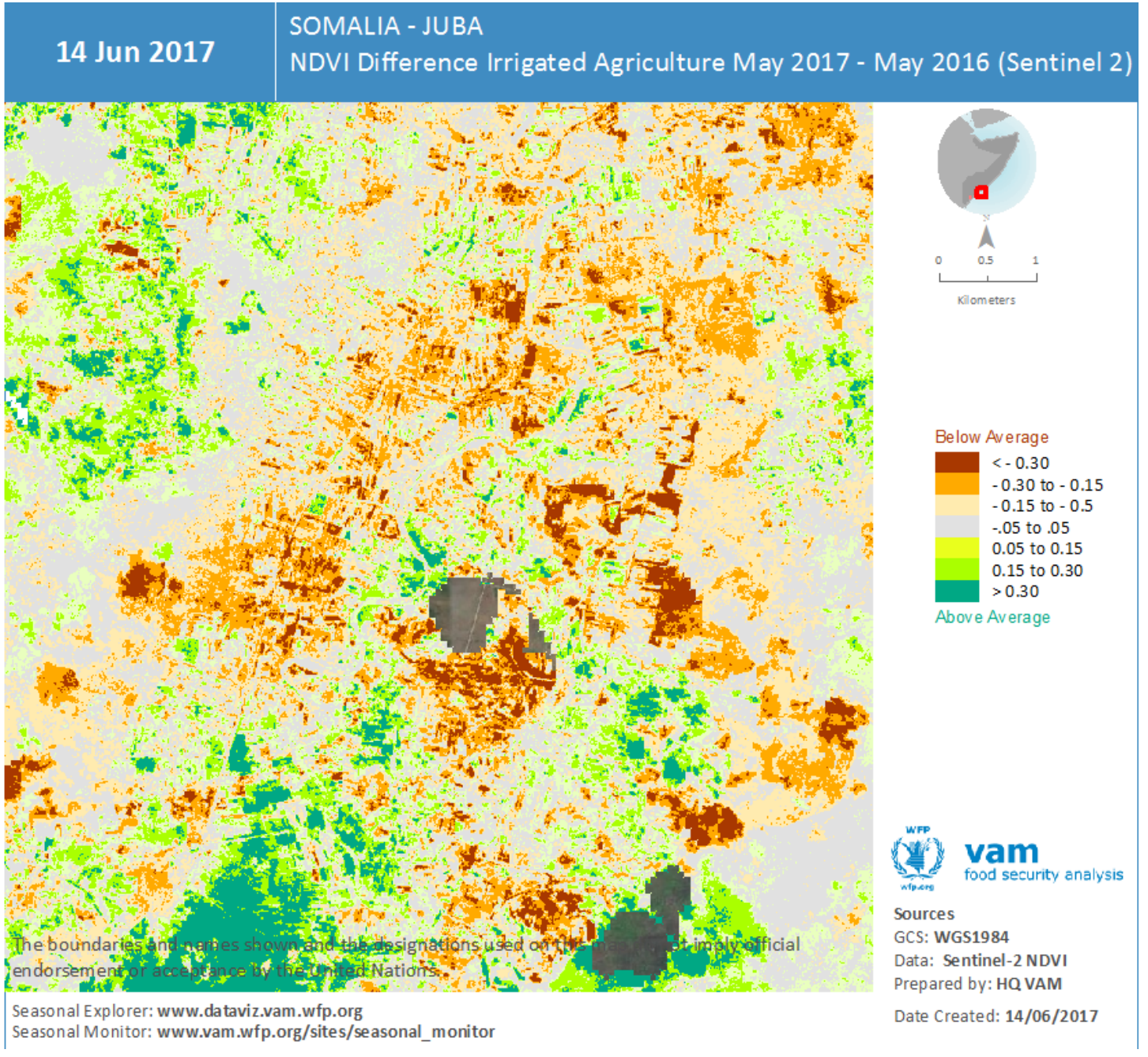


Another major irrigated crop production area is in the Middle Juba province.

Analysis of Sentinel-2 reveals an overall better performance in 2017 compared to 2016 across most of the irrigated cropland along the Juba river – see map on the right. Fields closer to the river however, seem to have fared worse.

In principle the most likely outcome is for the current production to be on a par or somewhat better than in 2016.

Right: Vegetation cover difference between May 2017 and May 2016 within the Juba irrigated perimeters. Orange shades for 2017 worse than 2016, greens for the reverse.



Data Sources:

Rainfall: CHIRPS, Climate Hazards Group, UCSB

Vegetation: MODIS NDVI, EOSDIS-NASA

Land Cover: FAO GLC-Share

Processing:

VAM software components, ArcGIS

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