

# East Africa: The 2017 Season

*A Humanitarian Crisis Looms*

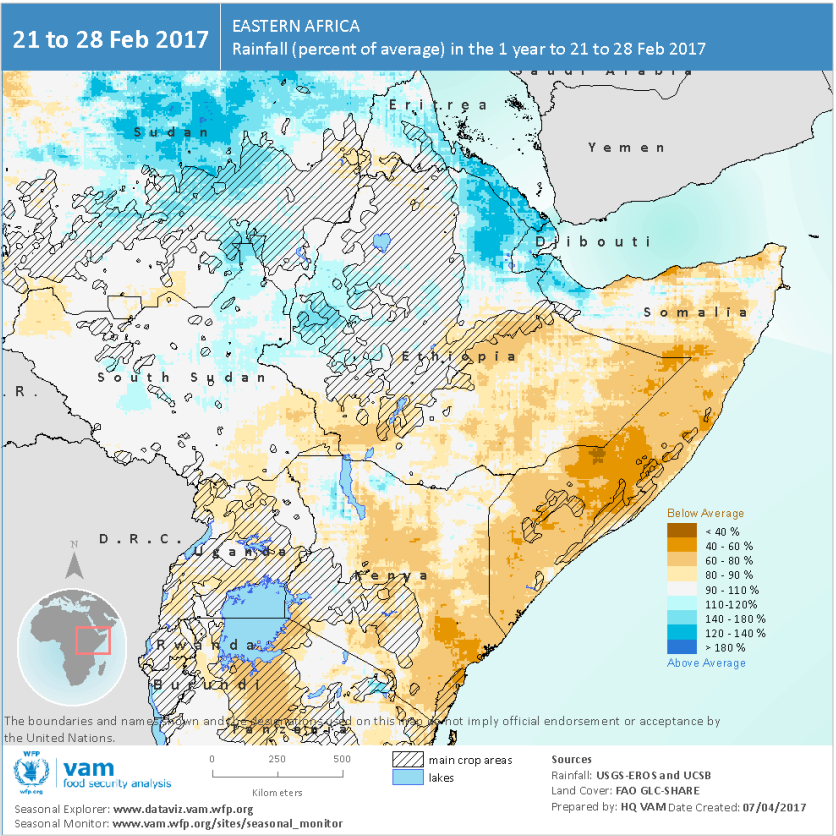


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# HIGHLIGHTS

- The **Horn of Africa** region is again under **drier than average** conditions after experiencing a **severe drought** during the **last growing season** of Oct-Dec 2016.
- **Severe rainfall deficits** are observed across **Somalia, Kenya** and **SE Ethiopia**, leading to **delayed starts** to the growing season, **poor vegetation** cover and **low water** resources. Significant **impacts on crop** production and pasture development are now very likely.
- The situation looks **increasingly similar** to the record droughts of **2010-2011** and potentially **worse** in **coastal Kenya. Somalia**, currently at risk of famine, will continue to experience **further deterioration**.
- **Drier than average** conditions in place since mid-2016 are continuing to affect **large areas across East Africa** including NE Uganda (Karamoja), SW Ethiopia and eastern South Sudan.
- The region as a whole badly **needs** widespread **above average rains** throughout **May and beyond** to avoid significant negative impacts at an even greater scale.

# CONTEXT: Recurrent Droughts in the Horn of Africa

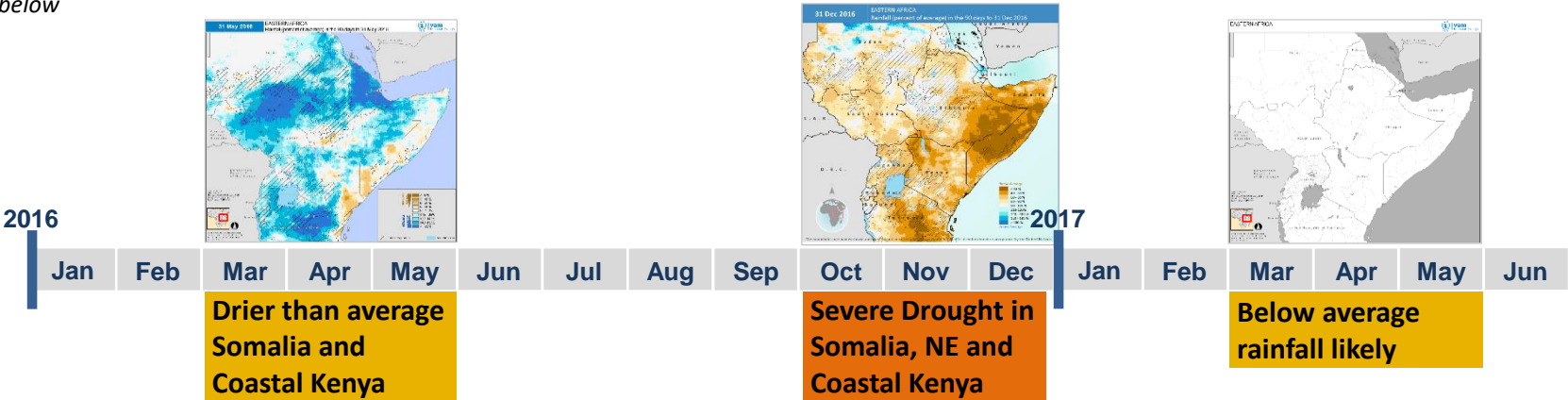


12 month rainfall (March 2016-February 2017), as a percentage of the long term average. Blues for wetter than average, orange and browns for below average conditions

## SOMALIA, SE ETHIOPIA AND PARTS OF KENYA SUBJECT TO RECURRENT DROUGHTS

A severe drought has affected Somalia, SE Ethiopia and Kenya in the last growing season of October-December 2016 (Deyr/Short Rains). In Somalia, this caused a 75 percent drop in crop production compared to the last 5 years. The previous (main) growing season of March-May 2016 also performed poorly, with a 20 percent drop in crop production. Hence the aggregated production drop for the past two seasons reached 39 percent (FAO). Pasture resources were also severely affected.

Food insecurity is now at its peak and any future improvements critically depend on the performance of the current growing season (Gu/Long Rains). However, this season has gotten off to a poor start whereby the outlook points to continuing drier than average conditions. A third consecutive drought affected season is now very likely leading to a situation potentially worse than the 2010-2011 humanitarian disaster.



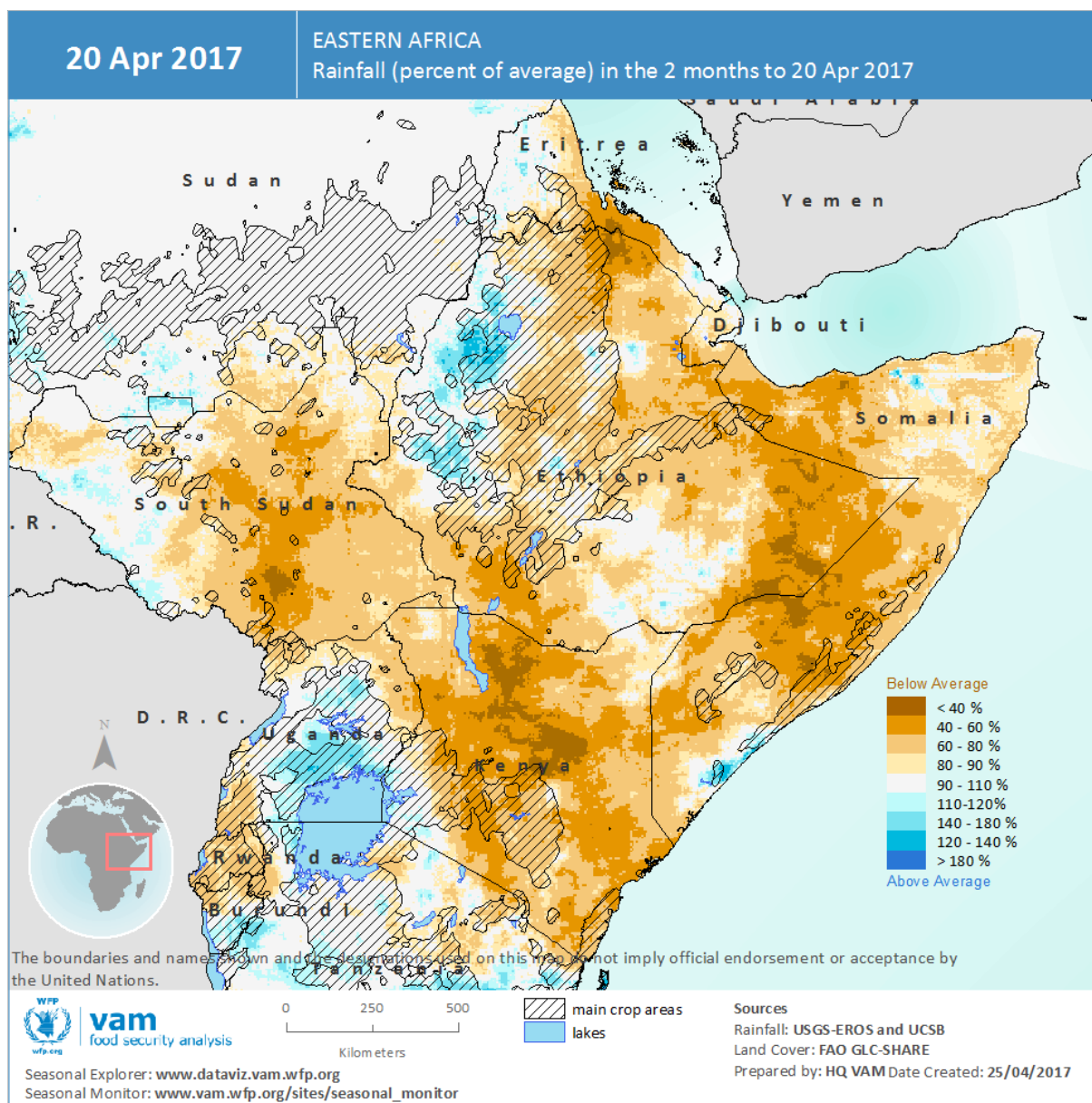
# Current Seasonal Status (March-May 2017)



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# March-May Rainfall Season



## A Poor Start to the Season

March through May is the wettest period across most of East Africa and it represents the main rainfall season in Somalia, SE Ethiopia and Kenya.

Drier than average conditions continue to dominate across the region since the second half of 2016: rainfall in the past two months has been mostly below average – this is particularly evident across a large area including most of Somalia, Kenya, eastern Uganda, eastern South Sudan and SW and SE Ethiopia.

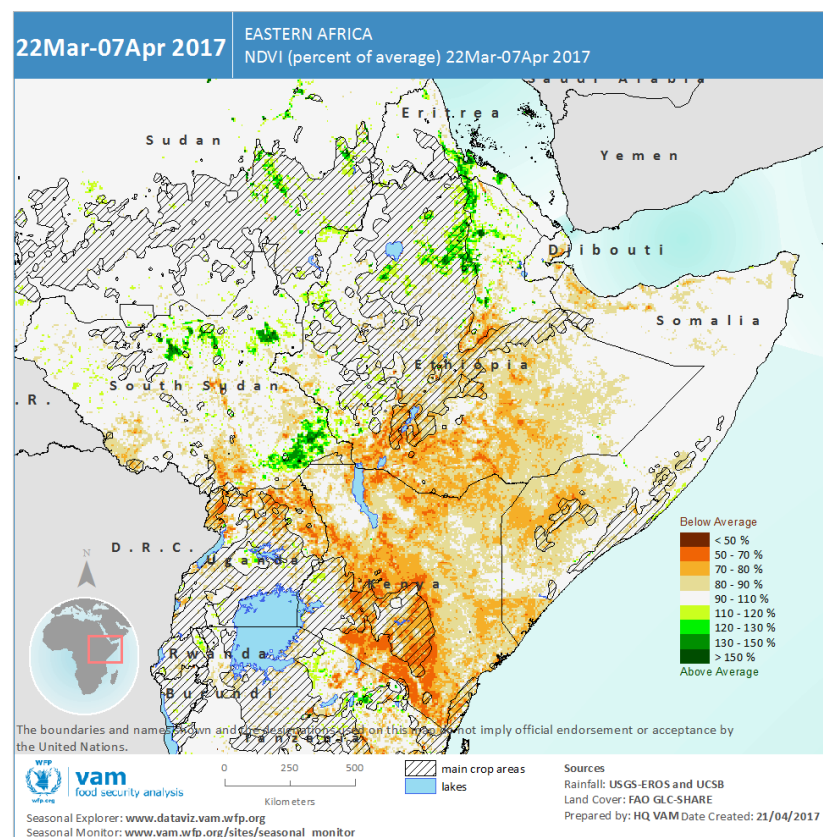
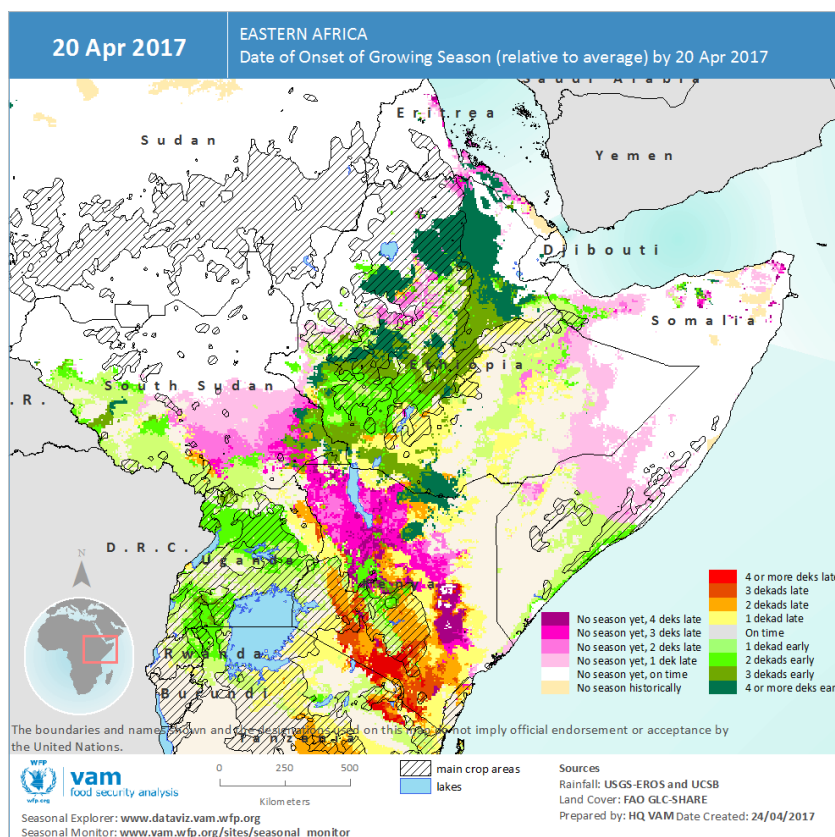
The situation is fairly serious in central and NW Kenya as the rainfall season will end soon. The outlook until mid May is for continuing dryness, leaving little or no time for meaningful recovery. Coastal areas are heading for a worse situation than 2010-11 unless rainfall in May (which provides the bulk of the rainfall) is well above average.

In Somalia and SE Ethiopia, drier than average conditions will remain in place until early May. This situation may improve afterwards, still significant negative impacts on crop production remain inevitable.

Eastern South Sudan and SW Ethiopia are also affected but a longer growing season can mitigate early dryness provided rains return to normal soon.

*Rainfall in the two months up to April 20 2017, as a percentage of the long term average.  
Blues for wetter than average, orange and browns for below average conditions*

# Growing Season Timings and Vegetation Development



Left: Variations in start of the season compared to normal by mid April 2017.

Purple/Pink shades for delays in areas where the season has not started yet. Reds/Oranges for delays where season has started, green shades for areas where season started ahead of time.

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

## Delays in the Start of the Season and Poor Vegetation Cover

There are noticeable delays in the start of the growing season across Kenya. This is of concern given the fairly short growing period (ending in early June at best) and a very poor previous season.

In Somalia, the season is at an earlier stage. So the delays in the start of the growing period are shorter but expected to worsen as the dryness continues.

Late starts are also observed in South Sudan and Karamoja (NE Uganda). In SW Ethiopia early starts are noticeable but conditions turned dry shortly afterwards.

Vegetation cover across the region is mostly below average. This results from a combination of factors: the severe drought of the previous season; and the impacts of the poor early rains.

Vegetation cover will worsen in the short term given the continuation of drier than average conditions. Only significantly above average rainfall in May and beyond can reverse this highly stressed situation.

# Impacts on Water Resources

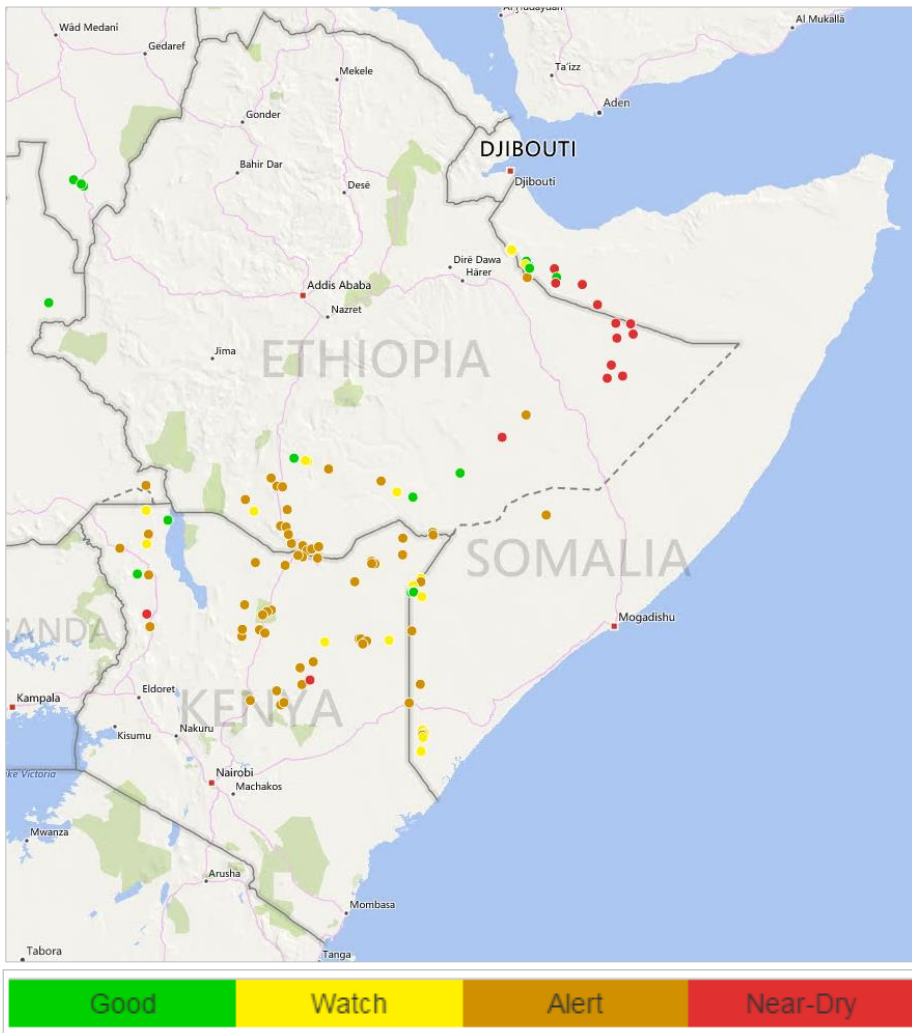
## Water Resources in the Balance

The severe recent drought has had a major impact on water availability for human and livestock consumption.

The majority of the water points in the region still remain in Alert or Near-Dry status despite the rainfall season being close to its peak. Improvements are urgently needed knowing that the long dry season for Somalia and semi arid Kenya will last from June to October.

The cumulative river basin rainfall remains below average in Kenya and thus far near average in Somalia.

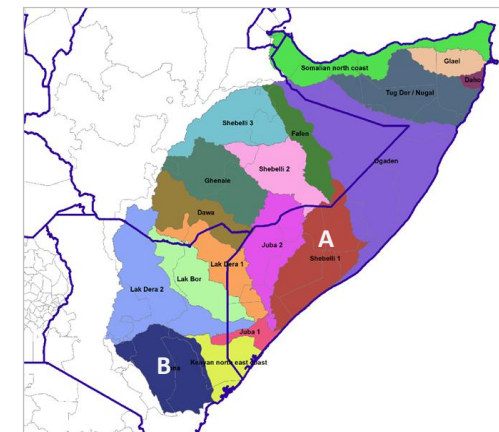
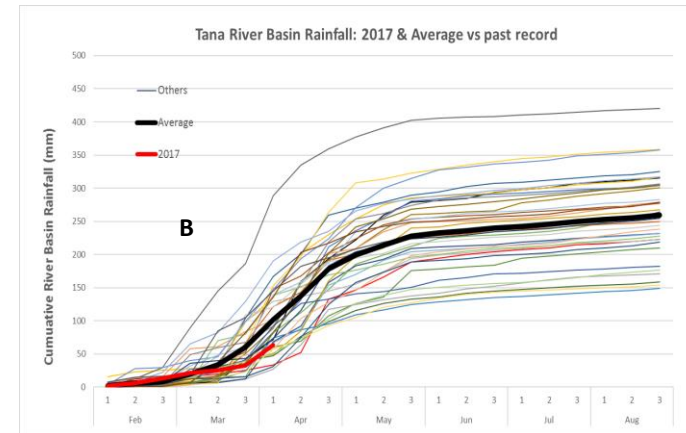
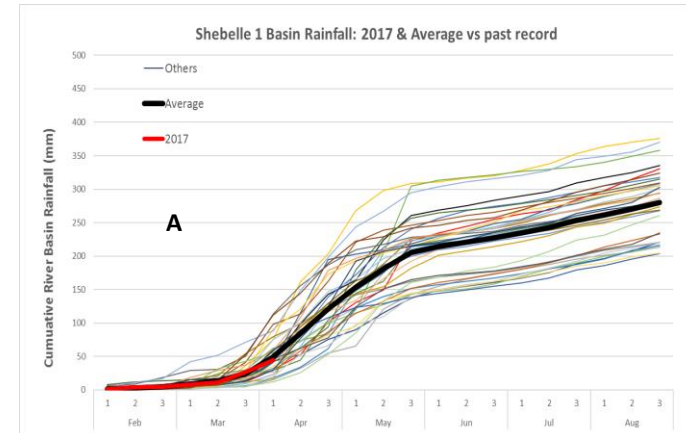
Good rainfall on the Shabelle river basin is essential for the irrigated crop production in Somalia.



Map showing condition of water points across East Africa by late March 2017. Note the majority of monitored water points in Near-Dry condition, showing poor water availability for livestock and human consumption.

The map does not contain an exhaustive list of water points in the region.

Source: <https://earlywarning.usgs.gov/fews/waterpoint/index.php>



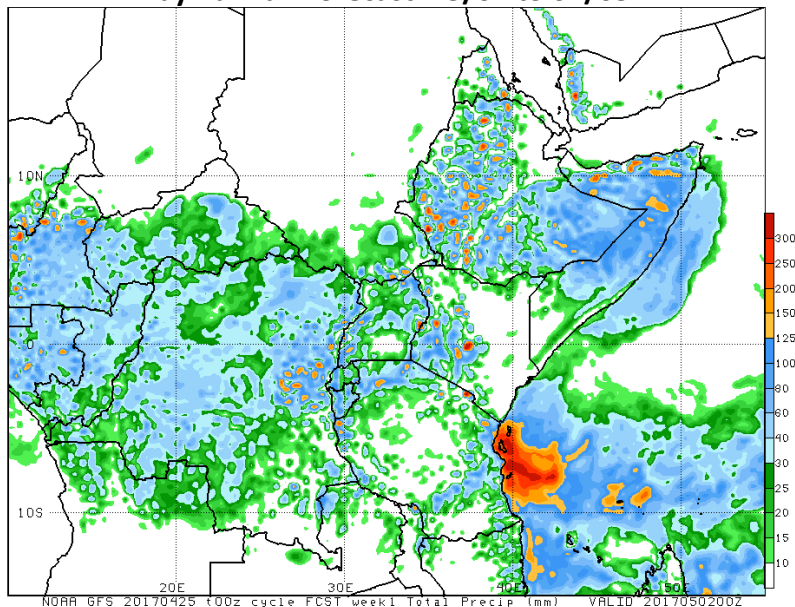
Cumulative rainfall over river basins (Shabelle 1 above, Tana River below) within the period February to August. Map shows location of basins.

Average curve in black, current 2017 in red. Other years as thin un-labelled lines.

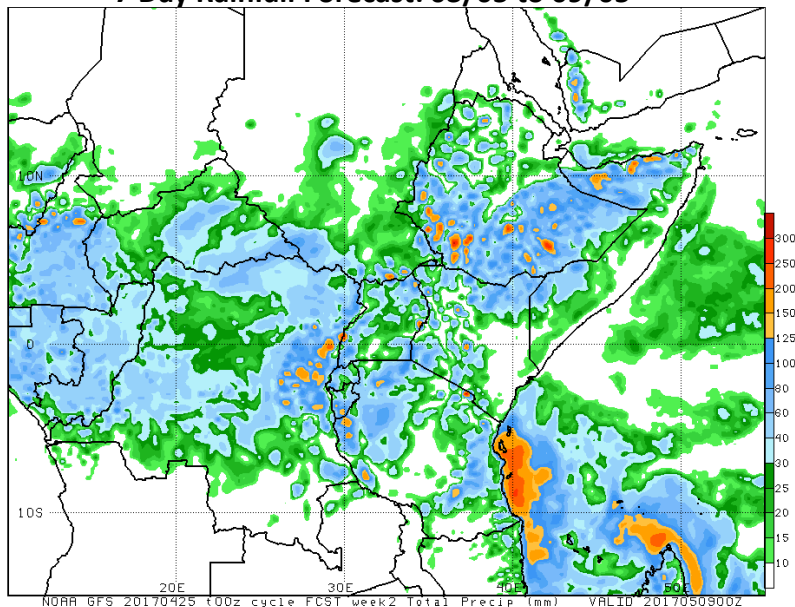


# Short Term Outlook

7 Day Rainfall Forecast: 25/04 to 02/05



7 Day Rainfall Forecast: 03/05 to 09/05



## Outlook for late April – early May 2017

A summary outlook for the next couple of weeks (early May) based on the analysis of several forecasts is as follows:

- Coastal and central Kenya should see fairly poor rainfall until early May and possibly until mid May in the southern areas.
- In southern Somalia, drier than average conditions should dominate until mid-May. Outlook for central areas is uncertain but still broadly drier than average. In contrast, Somaliland and northern areas may see significant rainfall.
- SE Ethiopia is likely to see significant rains possibly extending into the Afar regions. Southwest areas of the country should receive average rains.
- Southeastern areas of South Sudan should remain drier than average, in a continuation of recent patterns.

Overall, except for SE Ethiopia and Somaliland, most of the regions are likely to remain under predominantly drier than average conditions.



# **Focus Areas:**

**Somalia/SE Ethiopia, Kenya, Uganda/South Sudan/SW Ethiopia**



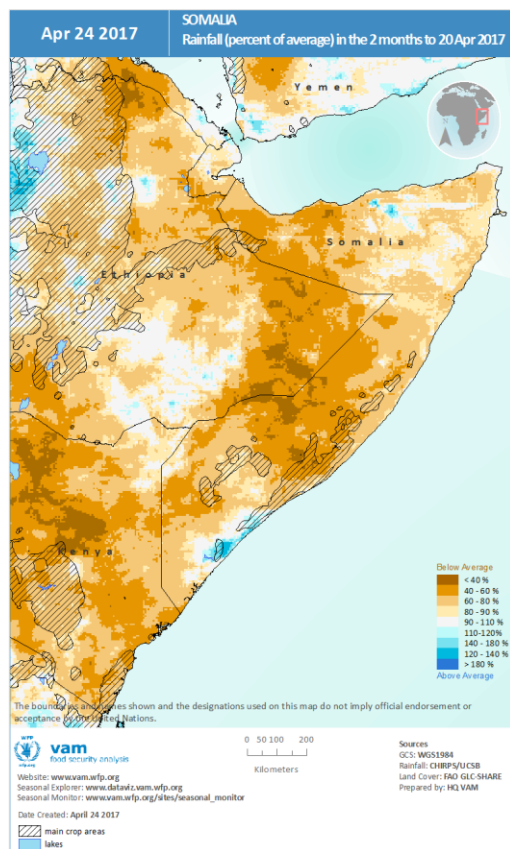
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# Somalia and SE Ethiopia: Shades of 2010-2011

Somalia was affected by two extreme droughts in Oct-Dec 2010 and Mar-May 2011, that led to a well known humanitarian disaster. The current situation raises inevitable comparisons: a severe drought affected the Oct-Dec 2016 season and the current Mar-May 2017 season is also developing under drier than average conditions.

Seasonal charts for 2010-11 and 2016-17 for Juba and Galgaduud in Somalia and Shabelle in Ethiopia provide a comparison between the two events.

All charts show marginally better seasonal performance in late 2016 than late 2010. With regards to the current season, central Somalia (Galgaduud) is showing worrying similarities to 2011.

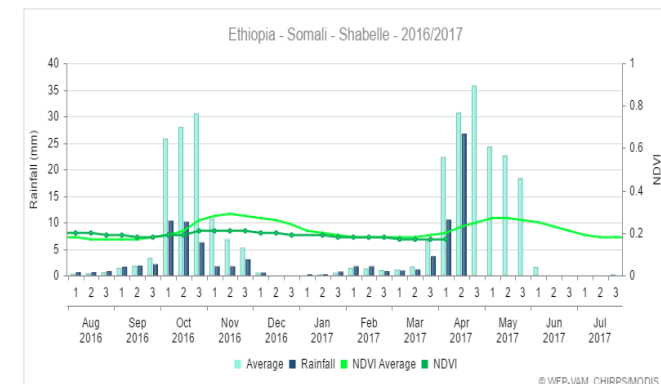
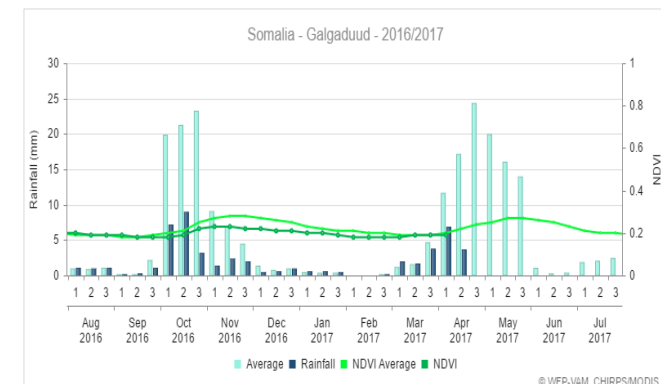
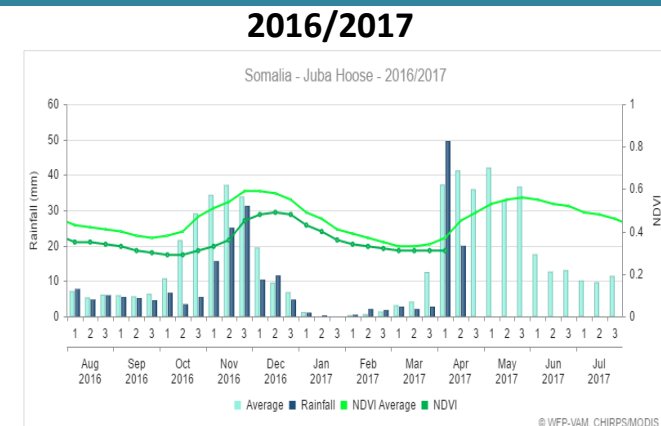
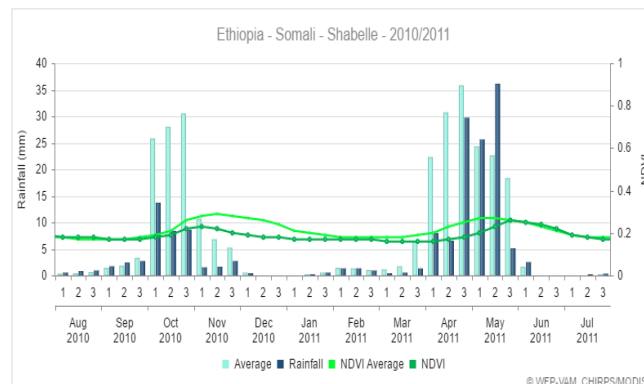
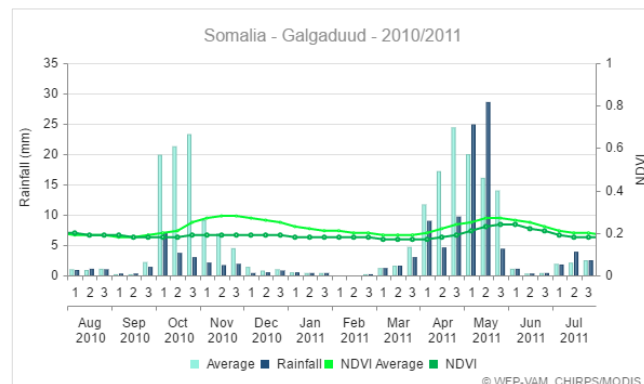
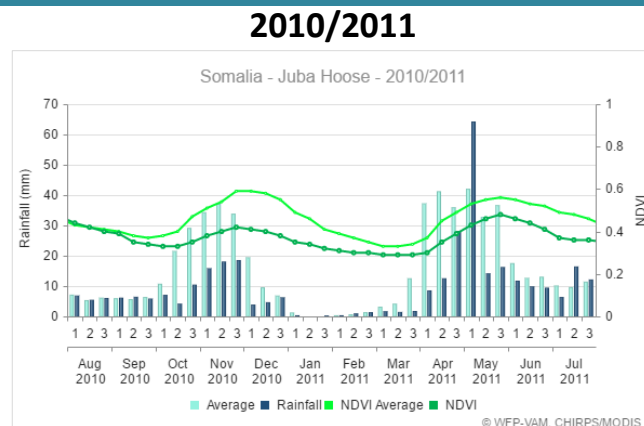


Early April rainfall in southern Somalia (Juba, top charts) was encouraging but the outlook for the remainder of the season is not as good and recent rainfall has been poor.

In SE Ethiopia, the rainfall situation has improved somewhat and the outlook is moderate – this could provide crucial input to irrigated agriculture in Somalia along the Shabelle River as well as essential resources for pastoralist livelihoods.

These comparisons are being made against an extreme case: even where the current situation is better than 2010-11, severe impacts can still be expected.

*Rainfall in the two months up to 20 April 2017 as a percentage of the long term average. Blues for wetter than average, orange and browns for below average conditions*



**Dark blue bars: current rainfall season**  
**Light blue bars: long term average (LTA) rainfall**

**Dark green line: current vegetation index**  
**Light green line: long term average (LTA) NDVI**

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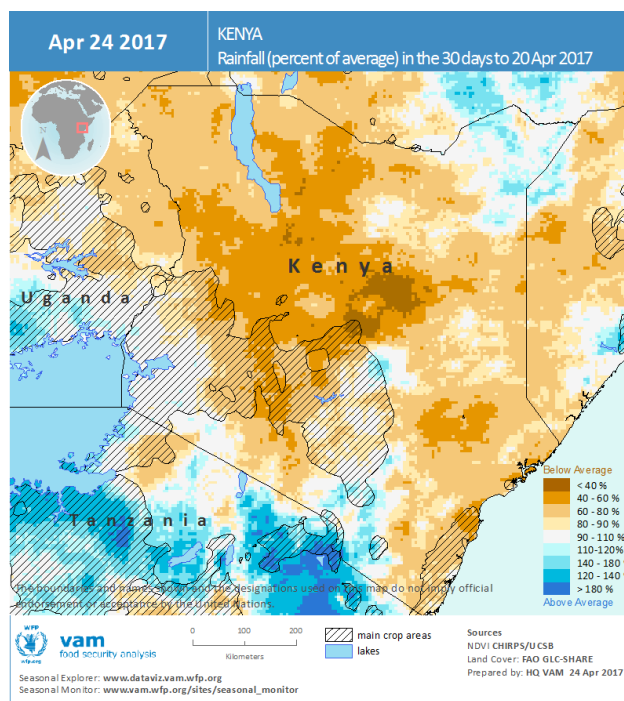
# Kenya: Drought in Central and NW Regions

Kenya was also affected by a severe drought in 2010-11, particularly in NW semi-arid regions. A comparison with current conditions is made based on charts for locations in Coastal, North Eastern and Samburu provinces.

In Kenya Coast (top), conditions in 2016-17 are worse than in 2010-11 and likely to remain so given the dry outlook till end of April. In NE areas, the current situation is somewhat better than in 2010-11.

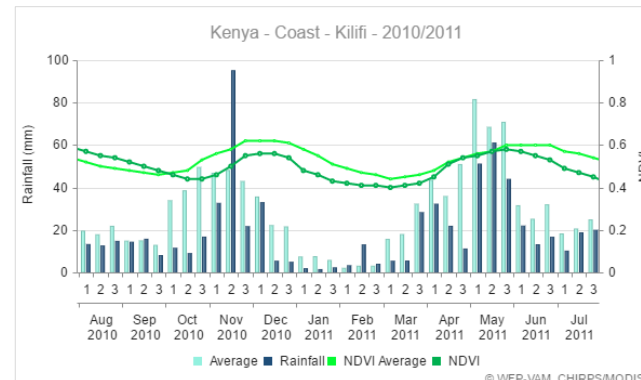
The worst affected area now is central Kenya (see chart for Meru). In late 2016, rainfall improved the situation but the current season is performing as bad as 2011 and the outlook until end of April will further exacerbate the situation.

In northern Rift Valley and Turkana area current conditions are worse than in 2011 after a very poor Short Rains in late 2016 (marginally better than 2010).

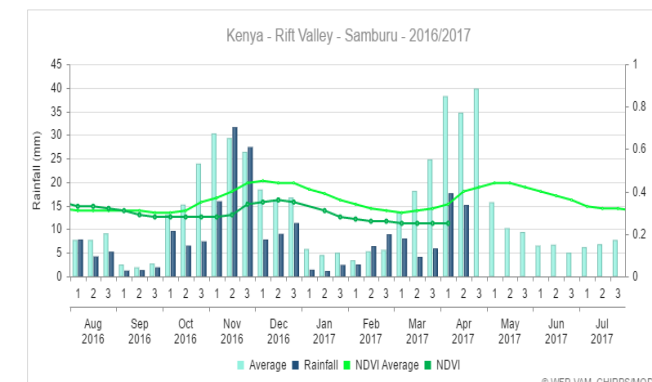
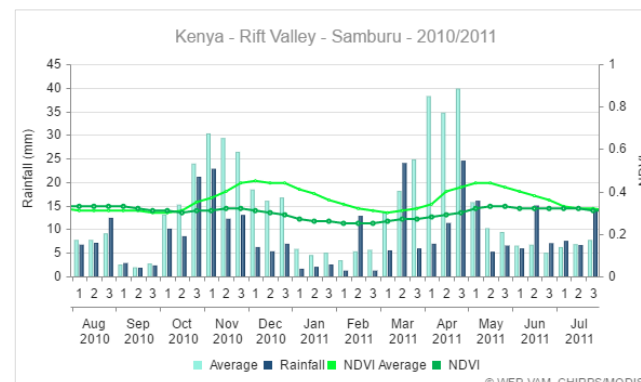
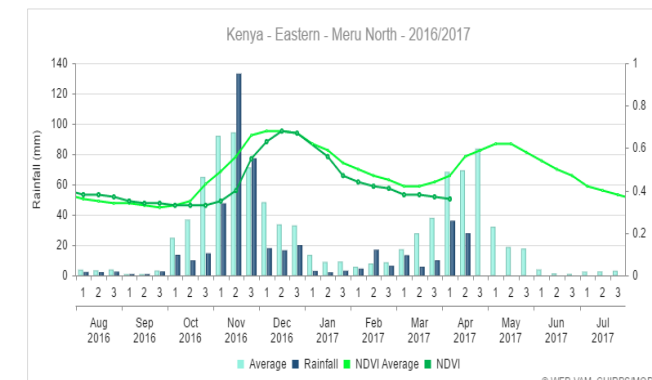
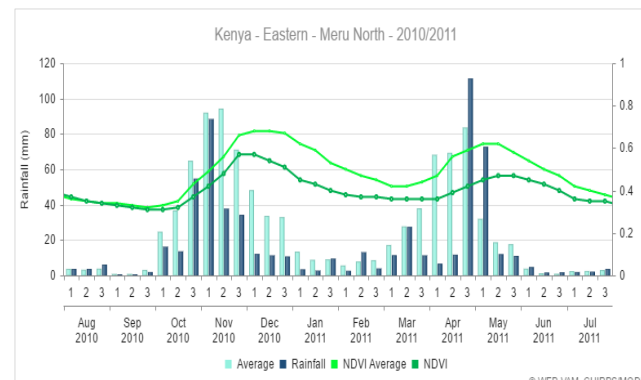
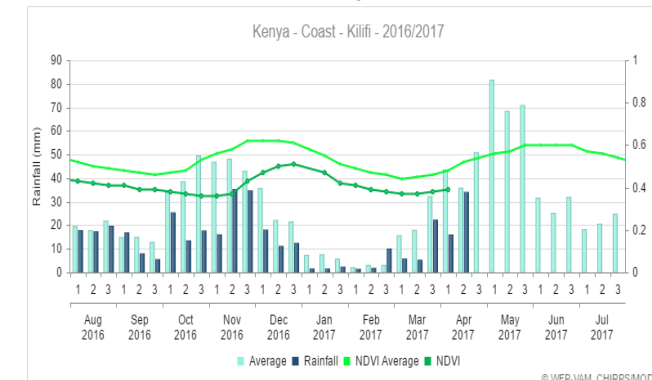


Rainfall in the 30 days to 20 April 2017 as a percentage of the long term average. Blues for wetter than average, orange-browns for below average conditions

## 2010/2011



## 2016/2017



Dark blue bars: current rainfall season  
Light blue bars: long term average (LTA) rainfall

Dark green line: current vegetation index  
Light green line: long term average (LTA) NDVI

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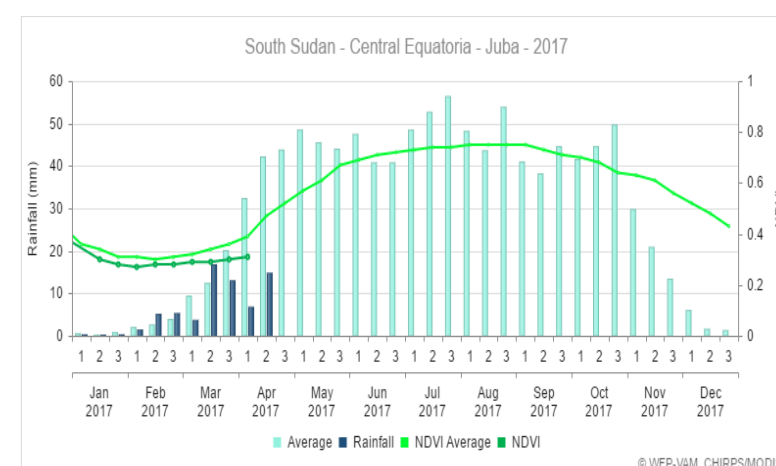
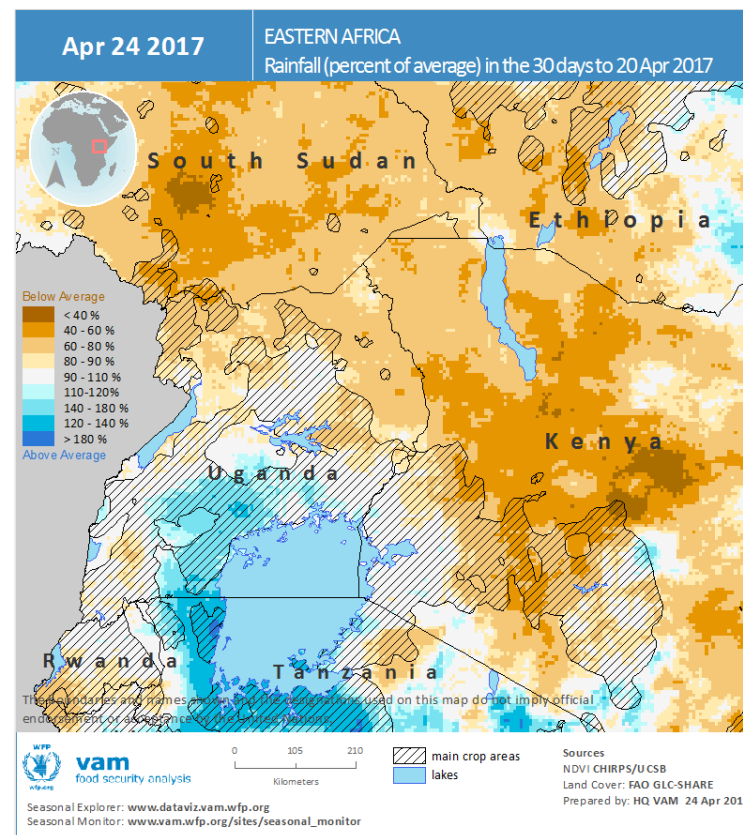
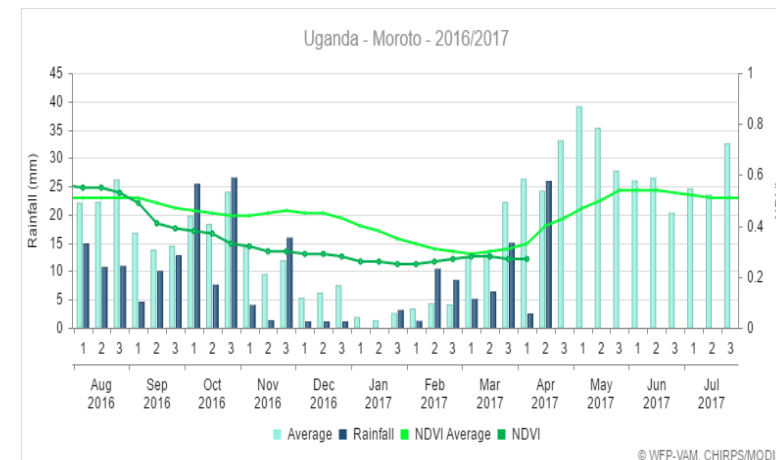
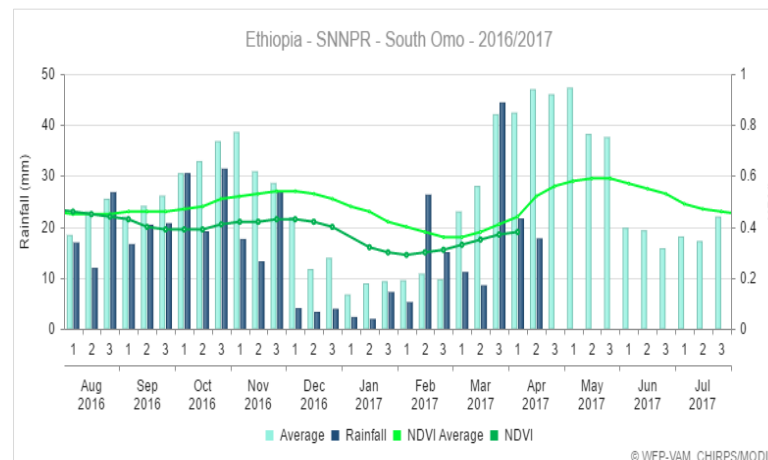


# Uganda - South Sudan – SW Ethiopia: Early Season Dryness

Drier than average conditions have affected the current season in SW Ethiopia, NW Kenya and the northern and NE regions of Uganda, in a continuation of the patterns affecting the region since the second half of 2016.

South Sudan's new season is also off to a drier than average start with only half of the average rainfall received so far in the Central Equatoria region. In these regions a long growing period extending until November allows plenty of time to absorb impacts of delayed start to the season.

However, dryness is also spreading north. Should it persist and extend into regions with shorter growing seasons, it could further complicate food access in conflict affected regions.



**Dark blue bars:** current rainfall season  
**Light blue bars:** long term average (LTA) rainfall  
**Dark green line:** current vegetation index  
**Light green line:** long term average (LTA) NDVI

Rainfall in the 30 days to 10 January 2017 as a percentage of the long term average. Blues for wetter than average, orange and browns for below average conditions

## 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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