

# Eastern Africa Growing Season 2016 (Long Rains)

*Recovering from El Niño?*



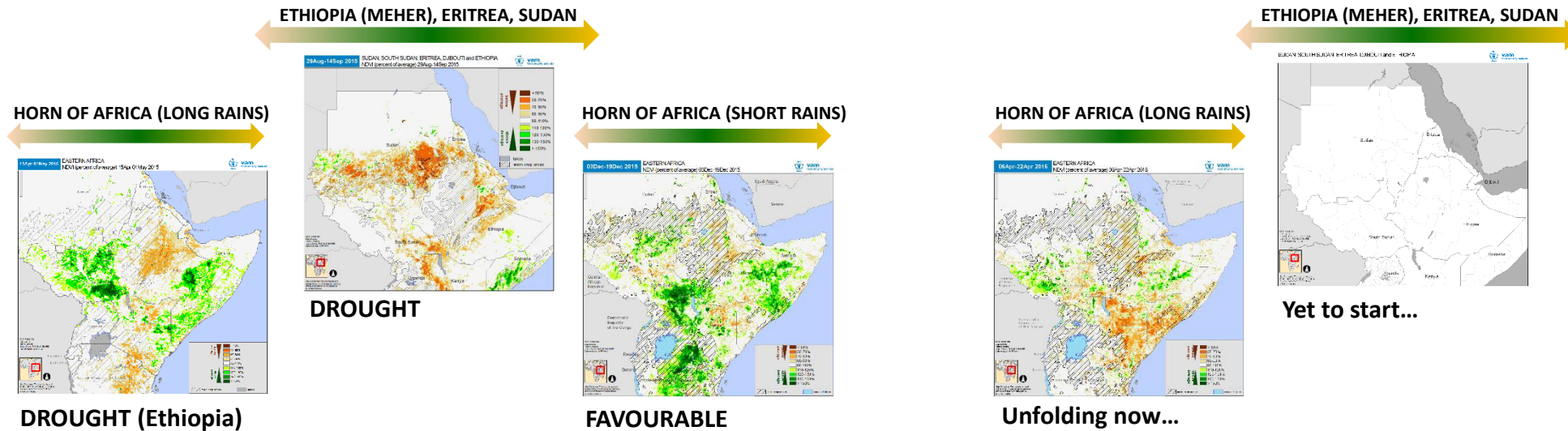
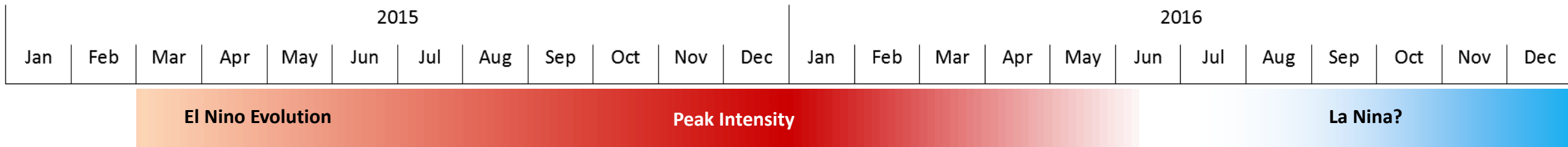
**vam**  
food security analysis

## HIGHLIGHTS

- In **2015**, one of the strongest El Ninos on record, led to **intense droughts** in Ethiopia, Sudan and Somaliland. The growing season(s) of **2016** have assumed **great importance**: their performance will determine much of the well being of the affected populations, as **further droughts** could bring **disastrous** consequences.
- The first growing season of 2016 (**Long Rains** in Kenya, **Belg** in Ethiopia) got off to a **poor start** with drier than average conditions across most of the region, particularly in the **hard hit Afar** region of Ethiopia. However, **heavy rains** from early April, brought **extensive relief** to this region, Somaliland and SE Ethiopia.
- In contrast, in **Somalia** and parts of **semi-arid Kenya** improvements have been more modest, with **drier than average conditions** still affecting pastoral and rainfed agricultural areas.
- **Vegetation cover** in pastoral areas of Ethiopia and Somaliland, **is now set to improve** allowing some recovery of pastoral livelihoods. Further **rainfall** is required for semi-arid **Kenya** and **Somalia** to **avoid further degradation** in vegetation resources and rainfed crop condition.
- **Forecasts** for the remainder of this season are **moderately optimistic** for **Ethiopian** regions, but **below average** seasonal rainfall is expected for most of **semi-arid Kenya** and **Somalia**. This may lead to **unfavourable conditions** for pastoralists and rainfed agriculture at the **outset of the long dry season**.
- **Forecasts** for the **main season** (June-October) in Ethiopia, Sudan and South Sudan, point to a high likelihood of **above average rainfall**. Good recovery prospects for pastoral and agricultural livelihoods are balanced by the possibility of large flood events, particularly for South Sudan.

# Long Rains 2016 Context: Aftermath of El Nino 2015 Impacts

Eastern Africa: Recovering from El Niño?



DEVELOPING OUTCOMES

## El Nino 2015-2016 and Eastern Africa Growing Seasons

The El Nino event that started in March 2015 had significant impacts on the growing season outcomes in Eastern Africa.

In particular, the main crop growing regions of Ethiopia were affected by a year long drought affecting both the Belg and Meher growing seasons. Other areas such as Sudan, Eritrea and Somaliland were also seriously affected during the main season of June-September.

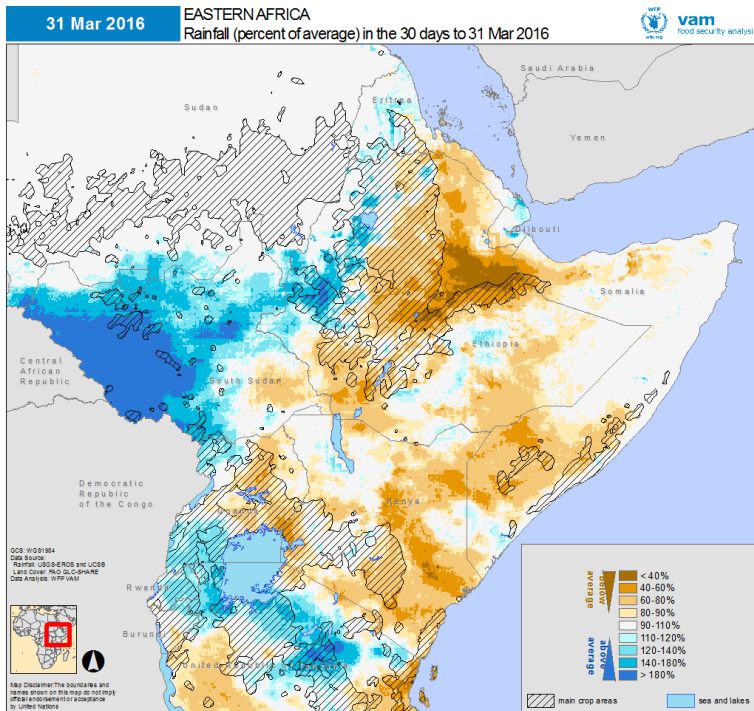
Given the situation in Ethiopia, it is important that the current Belg season develops favourably to allow households to recover from the severe impacts they have undergone recently.

Of greater importance are favourable conditions during the main season (Meher) of mid-2016; this also applies to Somaliland, Eritrea and Sudan.

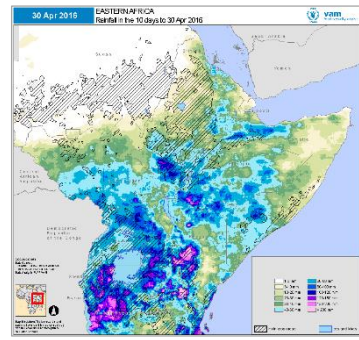


# Rainfall Season Development

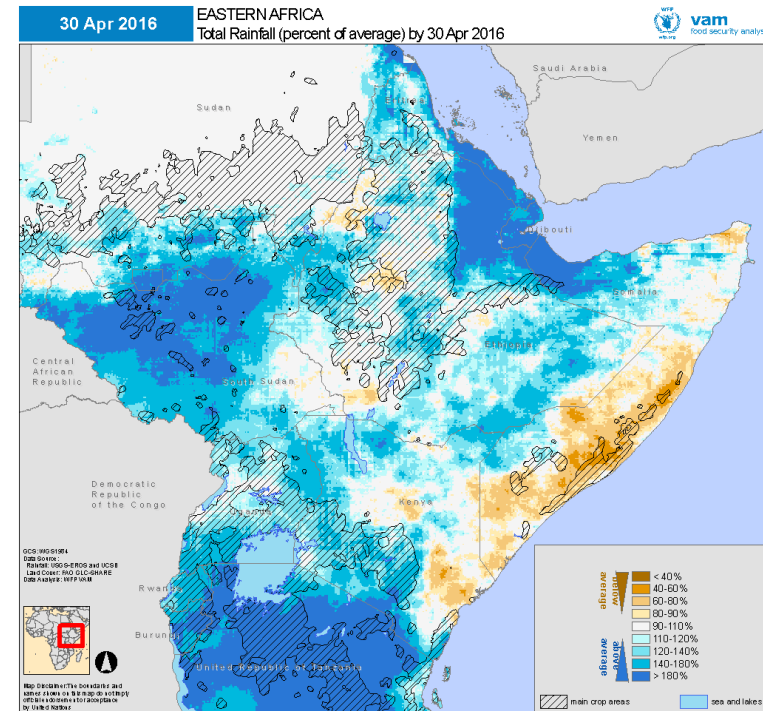
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**March rainfall:**  
Ethiopia, Kenya, Somalia - Drier than average conditions



**Throughout April:**  
Heavy rains in Ethiopia  
Good rains in Kenya/Somalia



**Cumulative by end of April:**  
Ethiopia, Eritrea, Somaliland, Kenya: Improved conditions  
Somalia: Rainfall deficits remain in place

Left: March 2016 rainfall, as a percentage of the 20-year average. Brown shades for below-average rainfall; blue shades for above-average rainfall.

Middle: Rainfall amounts during the first and second ten days of April

Right: Cumulative rainfall February to April, as a percentage of the 20-year average. Brown shades for below-average rainfall; blue shades for above-average rainfall.

Hashed pattern are main agricultural areas.

## After a poor start to the season, April rains bring hope to Ethiopia

The first stage of the Long Rains season (up to end of March) was characterized by drier than average conditions that extended across most of Belg growing areas of Ethiopia from Afar to SNNPR, parts of Somaliland as well as southern Somalia and Kenya. The areas affected in Ethiopia were precisely those hit by drought last year, leading to fears of a third consecutive drought event taking place in highly food insecure areas with heightened vulnerability.

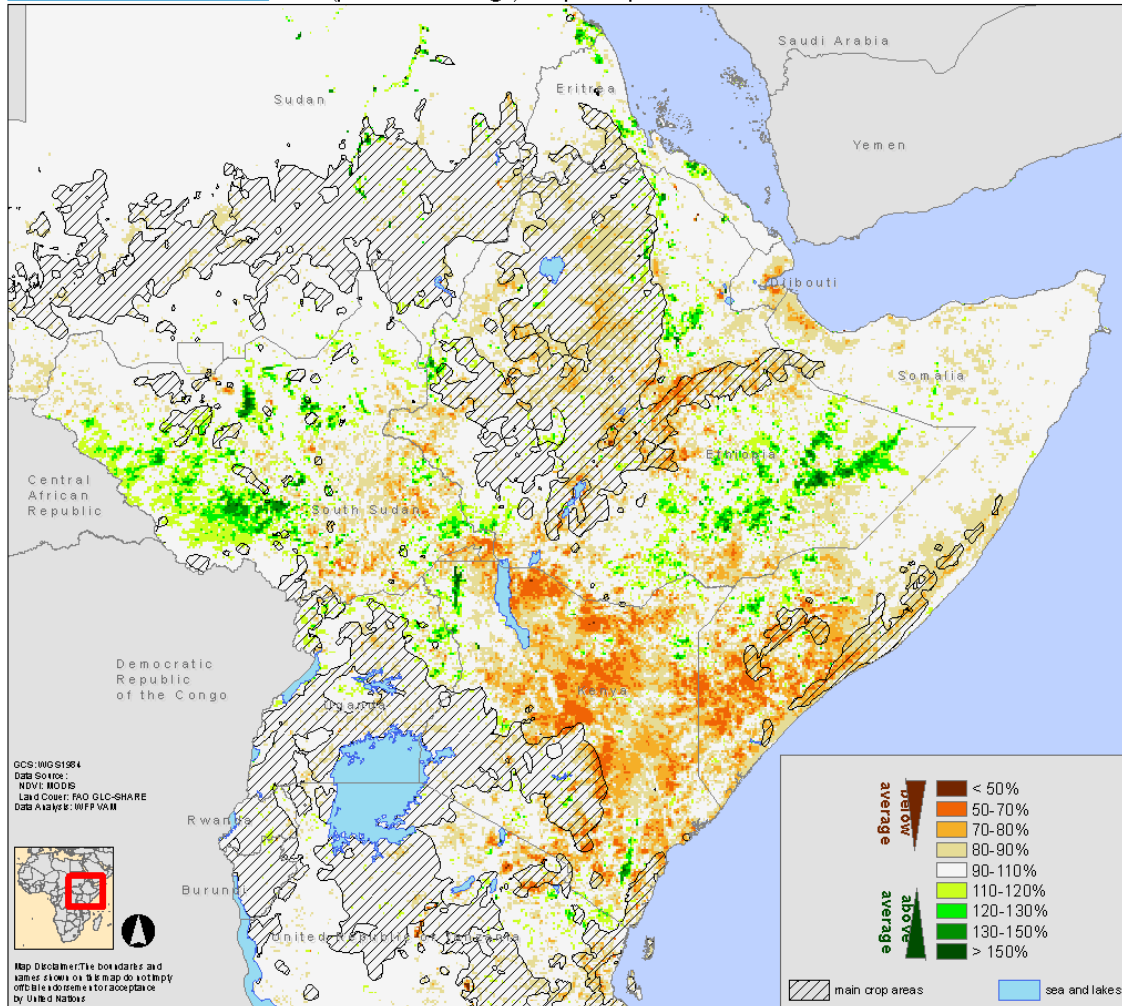
However, April rainfall was regular and abundant across the Afar, Somaliland and south eastern Ethiopia, resulting in February-April rainfall totals of more than double the historical average. Elsewhere (SNNPR, Oromia) improvements were more modest. In contrast, significantly drier than average conditions remained in most of semi-arid Kenya and Somalia until good heavy rains arrived in late April – while in Kenya this returned seasonal rainfall to average levels, in Somalia rain-fed agricultural areas remain affected by seasonal rainfall deficits; irrigated areas may benefit from heavy rains in SE Ethiopia increasing flow along main rivers systems in the country, if no flooding takes place.

In South Sudan, southeastern areas (Eastern Equatoria) were initially affected by the same dryness that spread across Kenya, before good rains in late April. In contrast, most of the rest of the country has been experiencing an early start to the rainy season and significantly wetter than average conditions throughout.

# Vegetation Status

06Apr-22Apr 2016

EASTERN AFRICA  
NDVI (percent of average) 06Apr-22Apr 2016



NDVI in mid April 2016, as a percentage of a 12-year average.  
Orange shades for below-average vegetation; green shades for above-average vegetation.

Forecast of 10 day (May 3-13) rainfall anomaly for East Africa  
Browns for below-average rainfall; purple for above-average rainfall.  
Source: WFP OSEP (Emergency Preparedness)

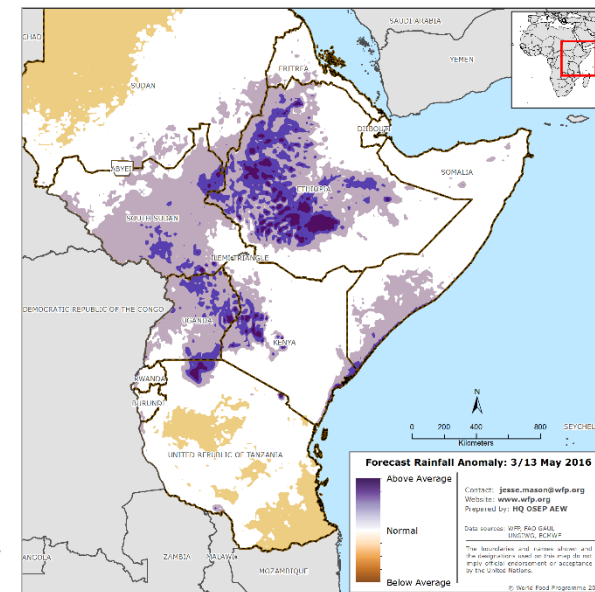
## Early season low vegetation cover expected to improve

The drier than average conditions across the region during the early stages of the season led to a generalized lower than average vegetation cover. This was more pronounced in areas that were affected by drought during the previous season (Afar region of Ethiopia in particular).

The effect of the recent April rains is now being felt, with above average vegetation cover noticeable in SE Ethiopia and parts of the Afar, as well as in western South Sudan. This is expected to improve further as soil moisture reserves are replenished. If favourable rainfall continues, a degree of recovery in pastoral livelihoods is likely. Improvements in other areas of central and SW Ethiopia where the Belg season is under way will also require continued rainfall.

Across southern Somalia, most of Kenya and SE areas of South Sudan, conditions have not yet recovered from earlier dryness, as rains arrived later than elsewhere. Further recovery from current conditions will depend on a continuation of favourable rainfall patterns.

This is particularly important for Somalia and Kenya where the bulk of the rains will end by late May and will not return until October. In other regions, April is a first stage in a longer rainfall season and there will be plenty of time for a full recovery.

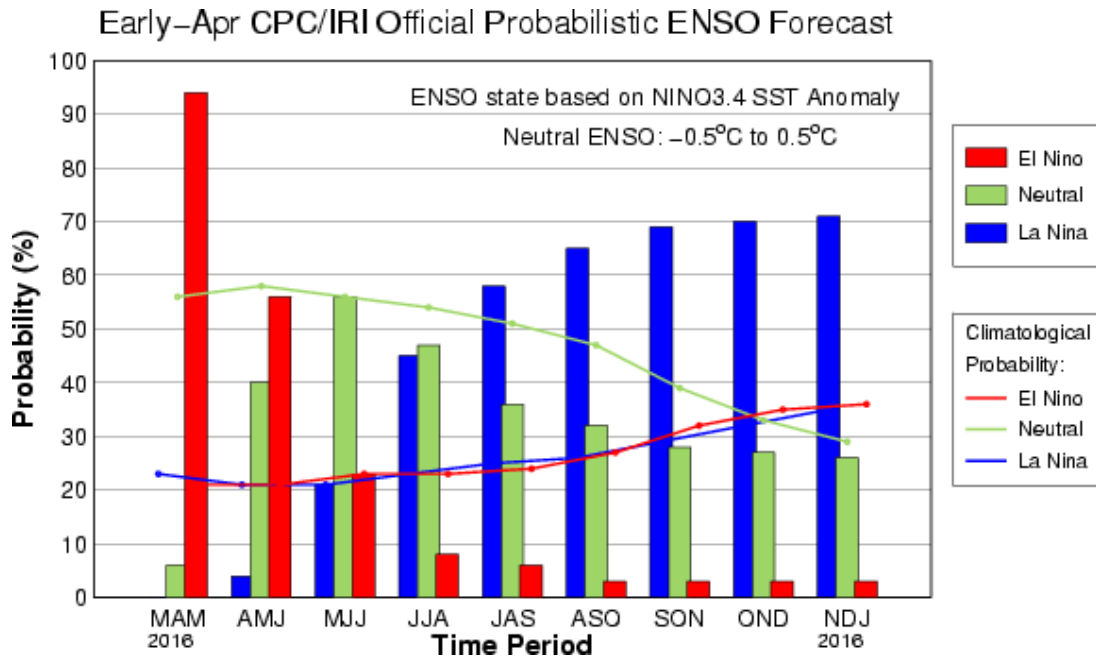


## Favourable rainfall ahead

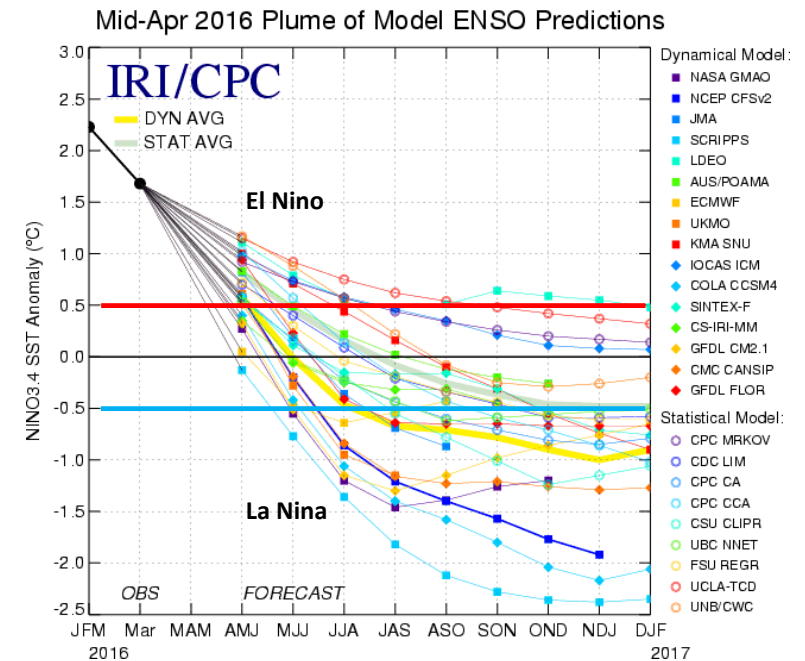
Rainfall forecasts until mid-May indicate the maintenance of on or above average rainfall across the region, in particular across central and NE Ethiopia, as well as South Sudan, Uganda and western Kenya and Southern Somalia.

This should help continue the ongoing recovery in soil moisture and vegetation cover.

# Is a La Nina event on the cards?



Probability of a La Niña developing (blue bars) vs neutral conditions (green) and El Niño (red). Note probability of La Niña occurrence flattening out from the last quarter of 2016.



Forecasts of El Niño / La Niña indicator (Pacific sea surface temperature). Red lines indicate range of neutral conditions

## Longer Term Perspectives

The current El Niño event is fast unwinding back to neutral conditions: the likelihood of an El Niño remaining active drops sharply after April-May (see red bars on plot left) while its intensity fast approaches neutral level; this maybe reached in May-June (intensity dropping below the red line, plot on right).

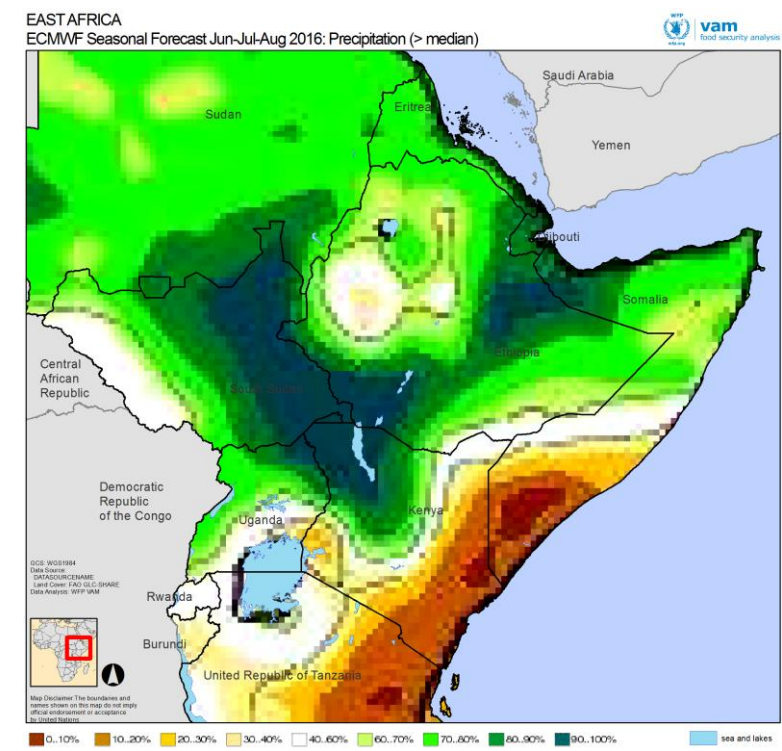
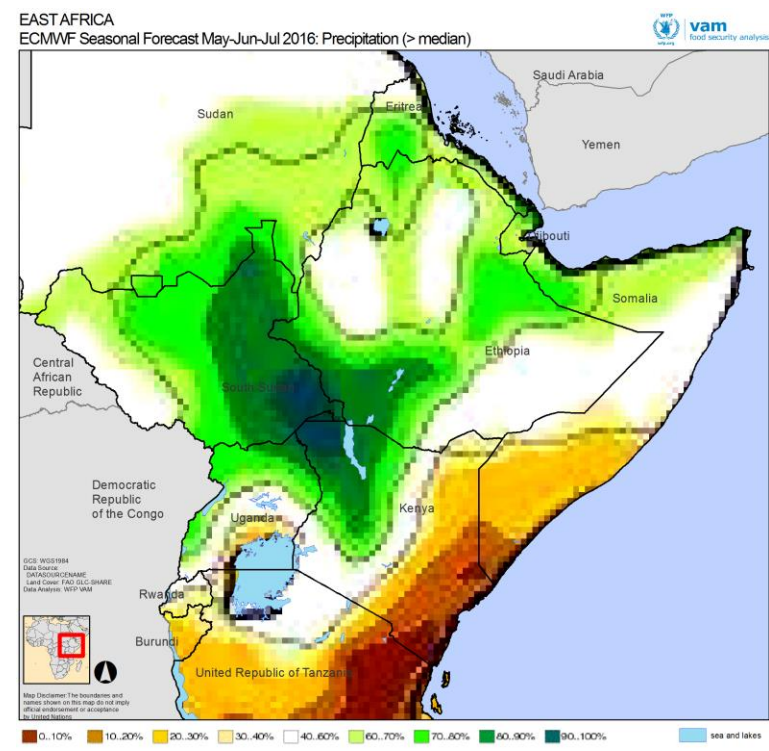
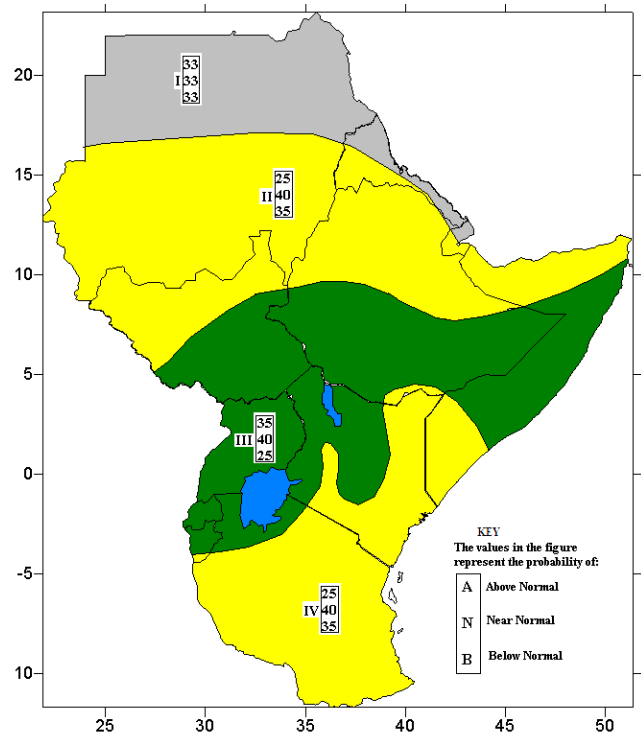
Neutral conditions should hold for a short while, with the likelihood of a La Niña event increasing from July onwards (blue bars, left plot), to about 70% in late 2016. Forecasts of ENSO evolution (plot on the right) indicate that a La Niña event is possible from August-September, but likely remaining at weak to moderate levels.

Typically, La Niña conditions have varied impacts in Eastern Africa, in general of the opposite nature to the El Niño: this implies wetter than average conditions across most of Ethiopia (except south-east), Somaliland, Sudan and South Sudan during the main growing season of June to October, and drier than average conditions for Kenya, SE Ethiopia and southern Somalia during the next Short Rains season of October-December 2016. Patterns of surface temperature in the Indian Ocean will also play a role in determining how these seasons will develop.



# Perspectives for mid-2016

Eastern Africa: Recovering from El Niño?



Left: Great Horn of Africa Climate Outlook Forum forecast for March to May rainfall – Yellow for below average rainfall, green for above average rainfall  
 Middle: ECMWF rainfall forecast, May-July 2016. Green shades = wetter than average conditions more likely; orange shades = drier than average conditions more likely. Darker shades imply higher likelihood.  
 Right: ECMWF rainfall forecast, June-August 2016. Green shades = wetter than average conditions more likely; orange shades = drier than average conditions more likely. Darker shades imply higher likelihood.

## A wetter than average season expected for Ethiopia in mid-2016, but heightened flood risk in South Sudan

Forecasts from the Regional Climate Outlook Forum for the March to May rainfall are favourable for the regions extending from Rwanda-Burundi, across Uganda and NW Kenya, South Sudan and southern half of Ethiopia and central Somalia. Elsewhere, the tendency is for drier than average conditions. Some areas are conforming to this pattern (eastern Kenya, southern Somalia) in contrast with others (northern Ethiopia, Somaliland).

Forecasts from international centres provide longer term perspectives, covering the periods of May to July and June to August. Current forecasts indicate wetter or much wetter than average conditions lasting throughout the season for Uganda, South Sudan, Sudan, Ethiopia, Eritrea, Djibouti and Somaliland. These patterns would imply a fairly favourable main cropping season in Ethiopia (Meher) and Sudan, as well as other areas that were also severely drought affected in 2015; this will contribute to a recovery in agricultural and pastoral livelihoods across these regions. However, for South Sudan, the possibility of significant flood events in mid 2016, needs to be considered, in particular considering it may affect very vulnerable populations in conflict affected regions of poor accessibility. Forecasts of rainfall deficits for eastern Kenya and southern Somalia indicate a likely poor late season rainfall.

## 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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