

# South Sudan: The 2015 Rainfall Seasonal Analysis

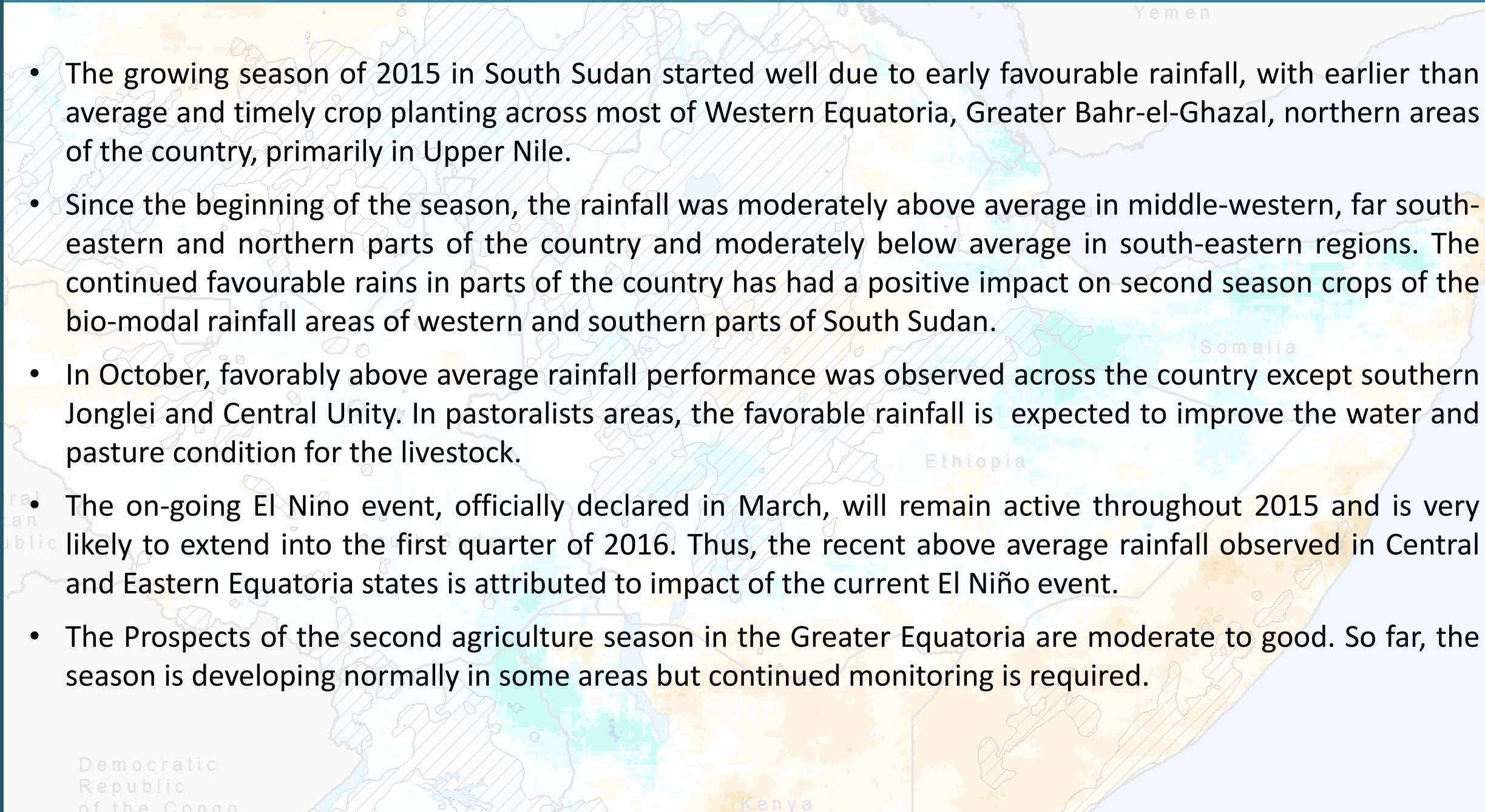
*November 2015*



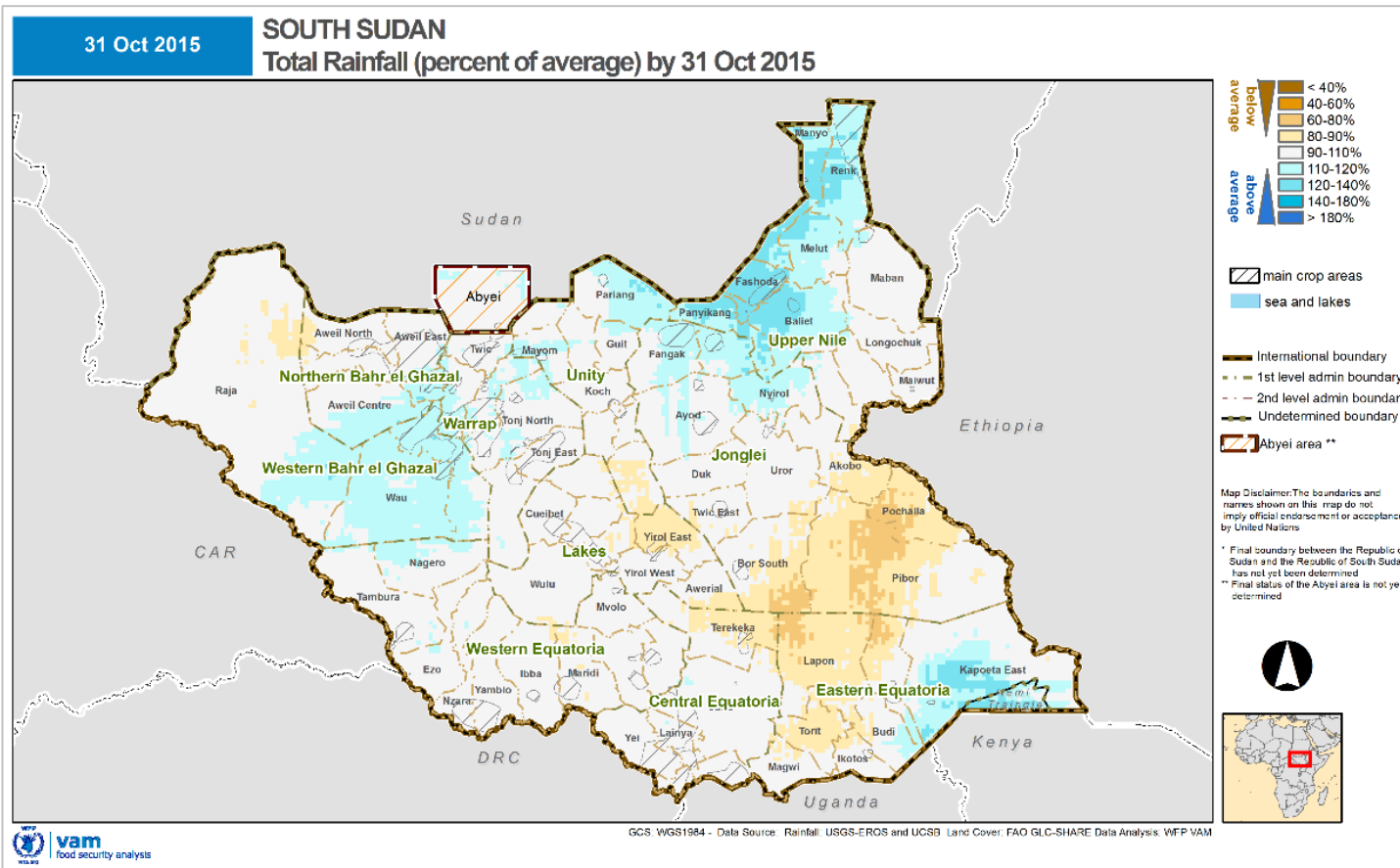
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# HIGHLIGHTS

- The growing season of 2015 in South Sudan started well due to early favourable rainfall, with earlier than average and timely crop planting across most of Western Equatoria, Greater Bahr-el-Ghazal, northern areas of the country, primarily in Upper Nile.
- Since the beginning of the season, the rainfall was moderately above average in middle-western, far south-eastern and northern parts of the country and moderately below average in south-eastern regions. The continued favourable rains in parts of the country has had a positive impact on second season crops of the bio-modal rainfall areas of western and southern parts of South Sudan.
- In October, favorably above average rainfall performance was observed across the country except southern Jonglei and Central Unity. In pastoralists areas, the favorable rainfall is expected to improve the water and pasture condition for the livestock.
- The on-going El Nino event, officially declared in March, will remain active throughout 2015 and is very likely to extend into the first quarter of 2016. Thus, the recent above average rainfall observed in Central and Eastern Equatoria states is attributed to impact of the current El Niño event.
- The Prospects of the second agriculture season in the Greater Equatoria are moderate to good. So far, the season is developing normally in some areas but continued monitoring is required.



# Seasonal Rainfall Performance

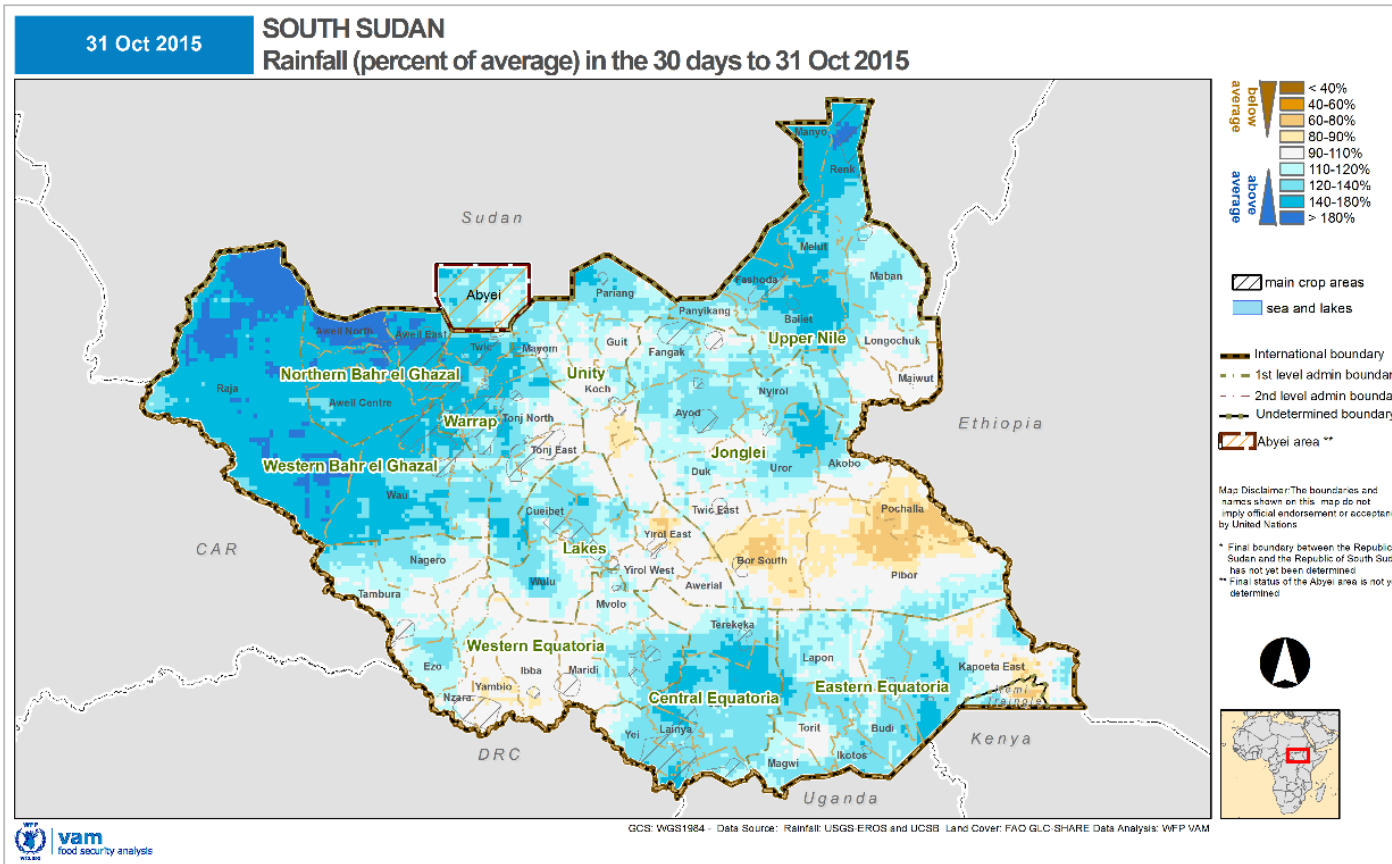


## Seasonal rainfall performance

Up to end of October, seasonal rainfall was moderately above average in middle-western, far south-eastern and northern parts of the country (Wau in Western Bahr el Ghazal, Kapoeta East in Eastern Equatoria, as well as Upper Nile state) and moderately below average in south-eastern regions (south and east of Jonglei and areas Eastern Equatoria States). The continued favourable rain are expected to have positive impact on the second season crops of the dual cropping areas of western and southern of South Sudan. This is in line with field reports information.

**Map 1:** Seasonal cumulative rainfall until end of October 2015, as a percentage of the 20-year average. Hashed pattern indicates main agricultural areas. Brown shades indicate below-average rainfall; blue shades indicate above-average seasonal rainfall.

# Seasonal Rainfall Performance

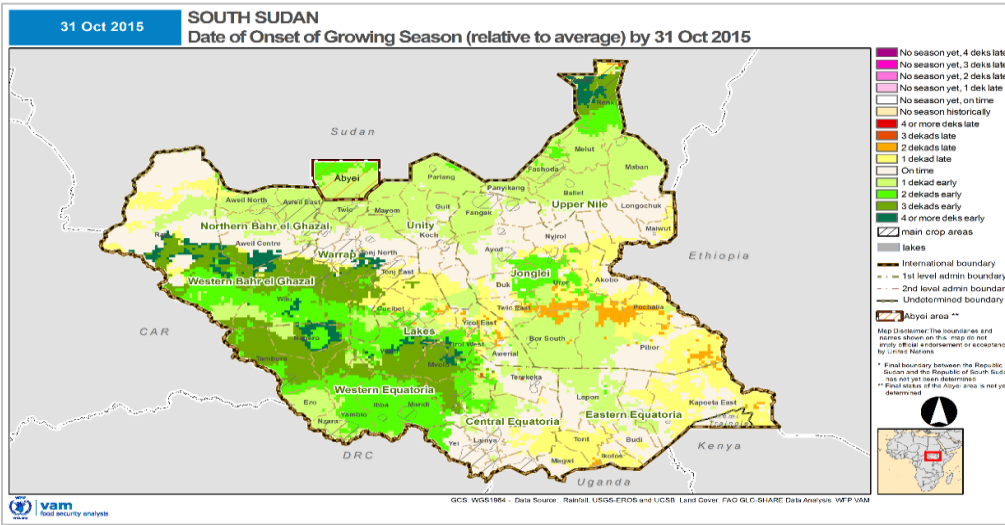


**Map 2:** 30 days cumulative rainfall until 31 of October 2015, as a percentage of the 20-year average. Hashed pattern indicates main agricultural areas. Brown shades indicate below-average rainfall; blue shades indicate above-average seasonal rainfall.

In addition, a closer look at the more recent rainfall performance during the month of October reveals widespread above average rainfall (see Map 2) across the country except for southern Jonglei. This corroborates field reports of increased rainfall pattern in Central, Western and Eastern Equatoria (Magwi, Budi, Western parts of Ikwoto). In line with above analysis, field report indicate that in Central and Western Equatoria (Greenbelt counties, mainly Yambio, Nzara, Ezo, Ibba, and Tambura) are actively involved in green harvest of second season short term crops (maize and groundnut). In pastoralists areas, the favorable rainfall are expected to improve the water and pasture condition for the livestock, after a fairly dry mid season.

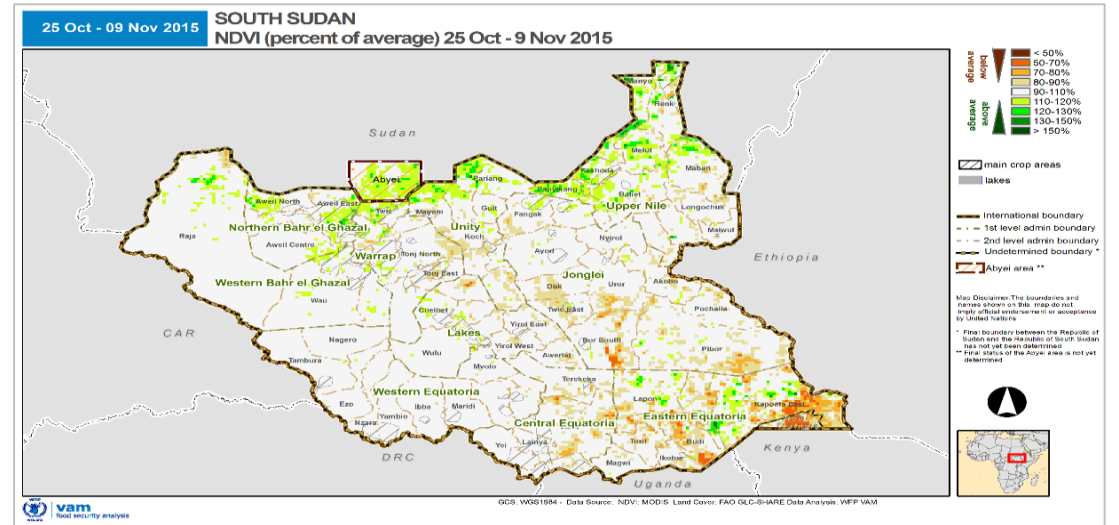
This recovery in rainfall is important considering the pronouncedly drier than average middle season rainfall (July to September), though some areas (southern Jonglei and NW East Equatoria) remain in overall seasonal deficit.

# Onset of Season and Vegetation Status



Left: Date of onset of the growing season compared to average. Pinks and yellows to reds for delayed growing seasons, green shades for earlier than average growing seasons.

Right: Late October 2015 Vegetation Index as a percentage of the 12-year average. Hashed pattern indicates main agricultural areas. Orange shades for below-average; green shades for above-average vegetation.



## Onset of Season and Vegetation Status

The growing season started earlier than usual in western areas (Western Equatoria and Greater Bahr-el-Ghazal) as well as along the border with Sudan and in Upper Nile state, due to good rains during the earlier stages of the season. In central and eastern areas (Central Equatoria, parts of Jonglei), the season started moderately later than usual due to drier than average conditions in April. Overall, no significant perturbations of the planting dates are noticeable in this season.

Although October rainfall was above average, improvements in vegetation are not immediately reflected. Hence, below average vegetation patterns seen mainly in Jonglei and Eastern Equatoria (and Central Equatoria to a lesser degree) are still in place but show a tendency to return to average levels. Field reports indicate an improvement in the conditions of the second crop mainly in Eastern Equatoria and Central Equatoria as a result of the October rainfall. In Warrap, the main harvest is completed and production is anticipated to be better than last year in some areas, as by and large it avoided the mid season dryness. In Western Equatoria, the green harvest of maize and groundnuts (second season crop) is underway. In addition, Central Equatoria report the availability of second season green harvests in most markets around the state (groundnut, maize and vegetables).

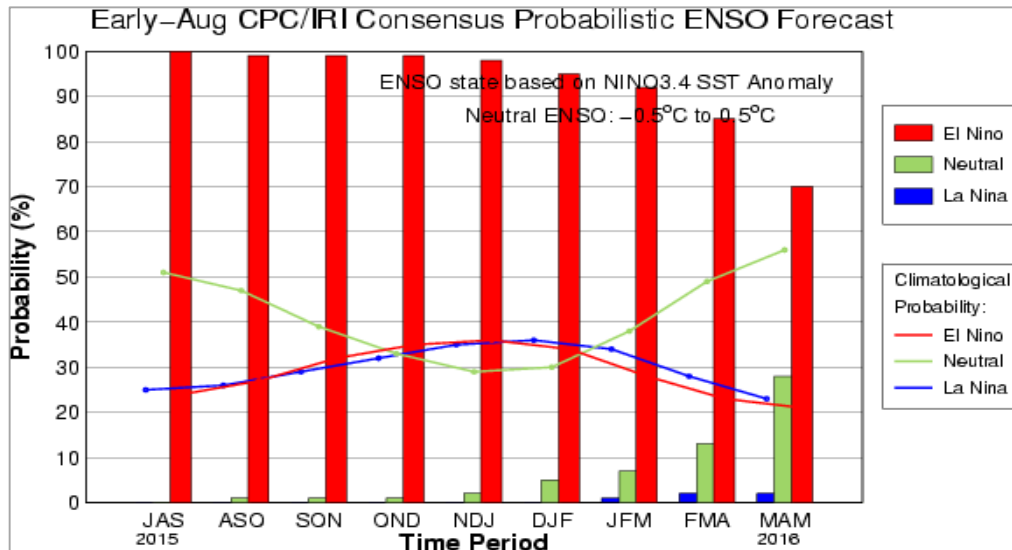
# El Nino Event and Seasonal Rainfall Forecast

## The El Nino Event of 2015-2016

An El Nino event is officially active since March 2015. After remaining at relatively weak levels until May 2015, it is now approaching its peak in December 2015 and start disappearing after the first quarter of 2016.

Historically, El Nino events impact South Sudan, leading to growing season rainfall deficits during the July-September period mostly in more South-East areas. These same areas may benefit from enhanced rainfall now (October-December) as a result of the spread of the typical El Nino enhanced rainfall in East Africa.

So far this season has conformed to this general patterns quite well.

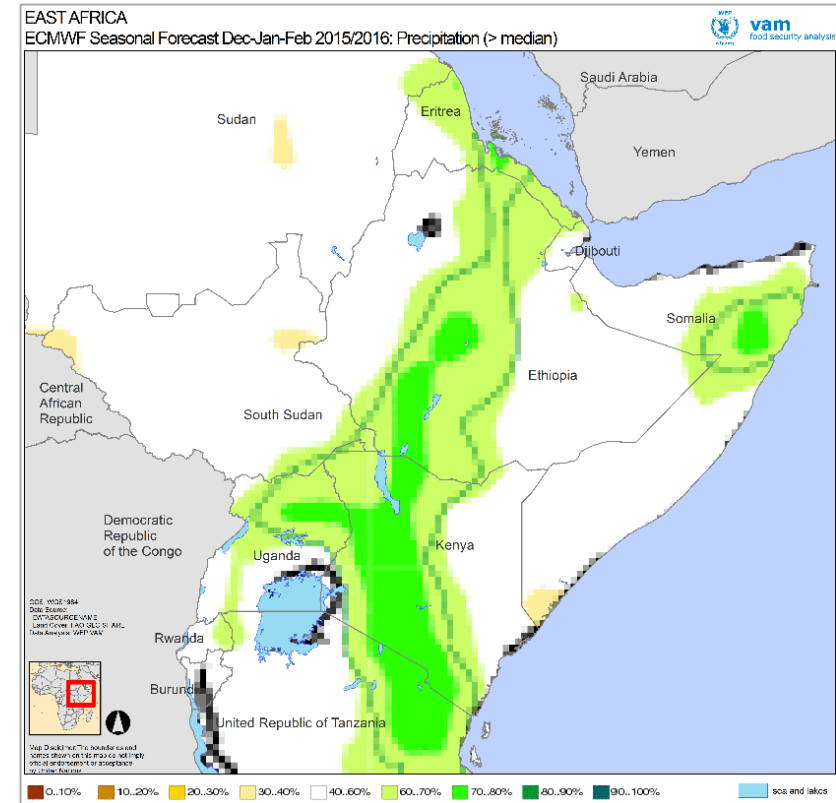


Probability of an El Nino event (red bars) vs neutral conditions (green) and La Nina (blue). El Nino probabilities remain above 90% throughout the rest of the growing season.

## Rainfall forecasts for December 2015 –February 2016

Forecasts from ECMWF (December 2015 to February 2016) indicate normal to above normal rainfall for South Sudan.

In practice, there will only be significant rainfall in Eastern Equatoria, specially in border areas with Kenya and Uganda as a result of the El Nino enhanced rainfall in East Africa. This will benefit late planted and second crop development in these regions.



ECMWF forecast for December 2015-February 2016 rainfall.

Green shades = wetter than average conditions more likely. Brown shades = drier than average conditions more likely

## 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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