

South Sudan: The 2016 Rainfall Seasonal Analysis

September 2016

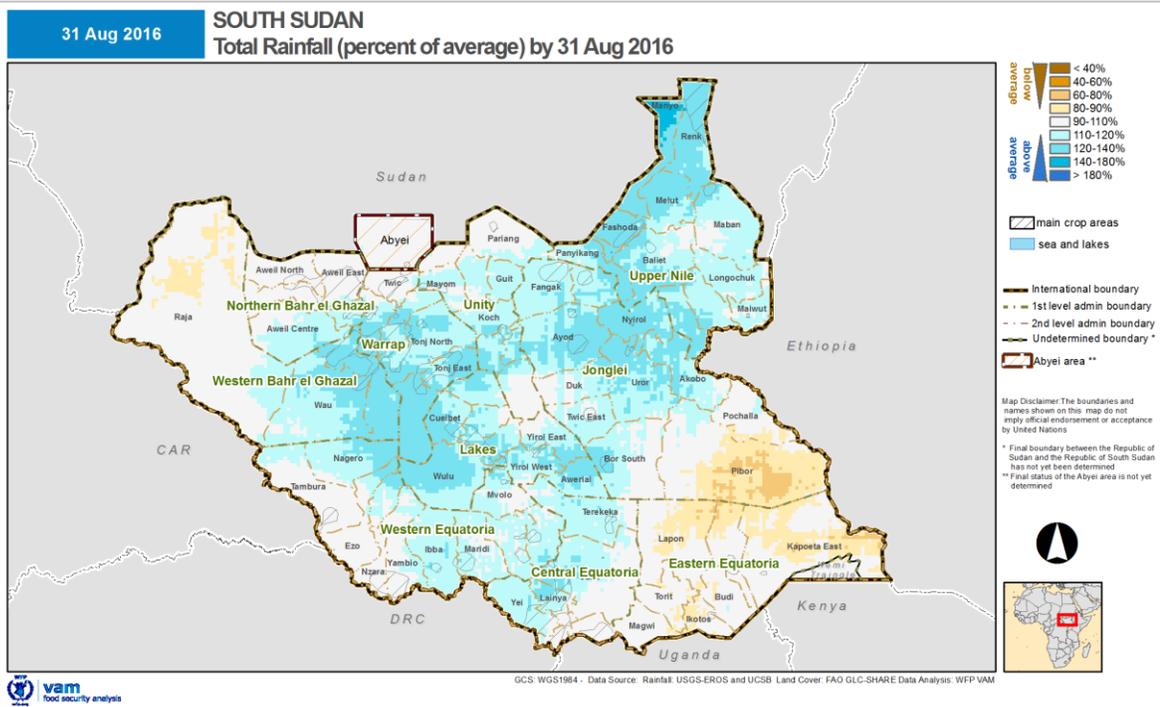


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HIGHLIGHTS

- The growing season of 2016 in South Sudan **started well due** to early and favourable rainfall, with earlier than average or timely planting across most of Western Equatoria, Greater Bahr-el-Ghazal, northern areas and Upper Nile. In Central Equatoria and some eastern areas of the country, moderate delays were noticed, but without much consequence.
- The rainfall season continued normally across the country until late July. However, **in August, significant rainfall deficits extended across** the country except Warrap and parts of Western Equatoria and parts of Western Bahr Ghazal. A continuation of these conditions may have serious impacts on crop performance in these regions.
- Field reports indicate that in bimodal areas (west and south west), first-season harvests have started, and second-season activities are underway, although with challenges related to insecurity. In other areas of the country, green harvest of most crops is ongoing.
- The **dry than average conditions in August**, led to average to below average vegetation developing in some parts of north and south-east of South Sudan. However, no significant perturbations of the crop development were reported from the field.
- Forecasts for the later stages of the rainfall season (October to December 2016) for South Sudan and neighbouring areas, point to a **high likelihood of above average rainfall**, in particular in the eastern half of the country.

Seasonal Rainfall Performance

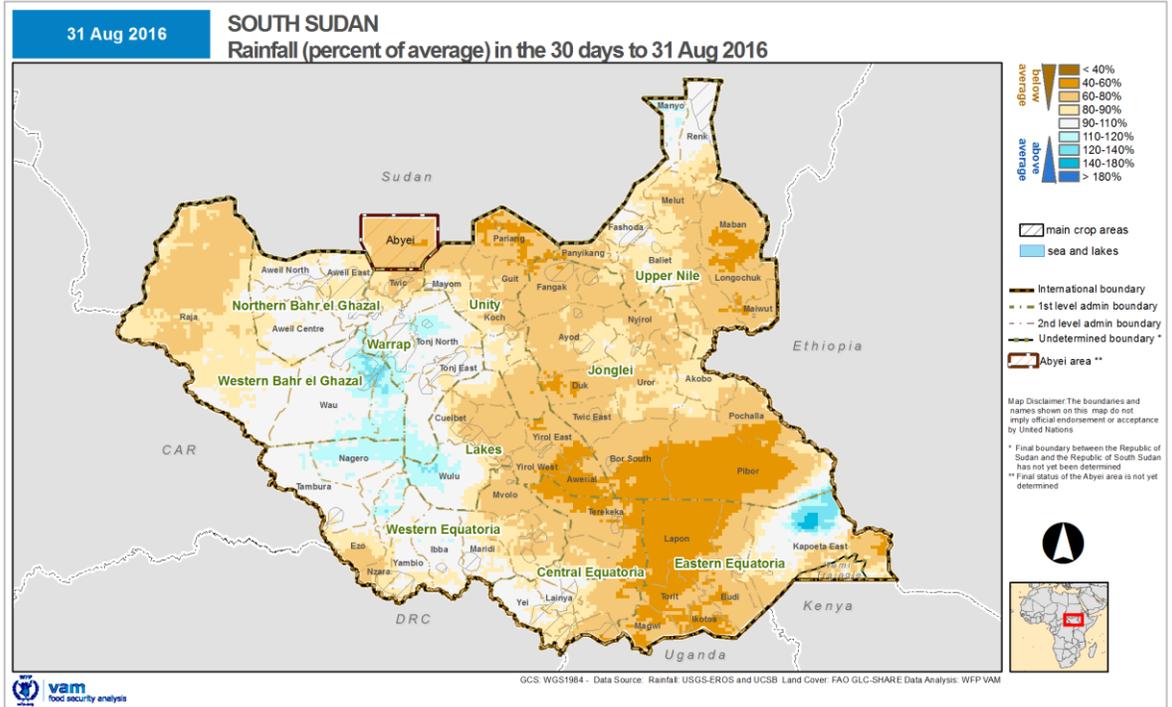


Map 1: Seasonal cumulative rainfall until 31 August 2016, as a percentage of the 20-year average. Hashed pattern indicates main agricultural areas. Brown shades indicate below-average rainfall; blue shades indicate above-average seasonal rainfall.

Seasonal rainfall performance

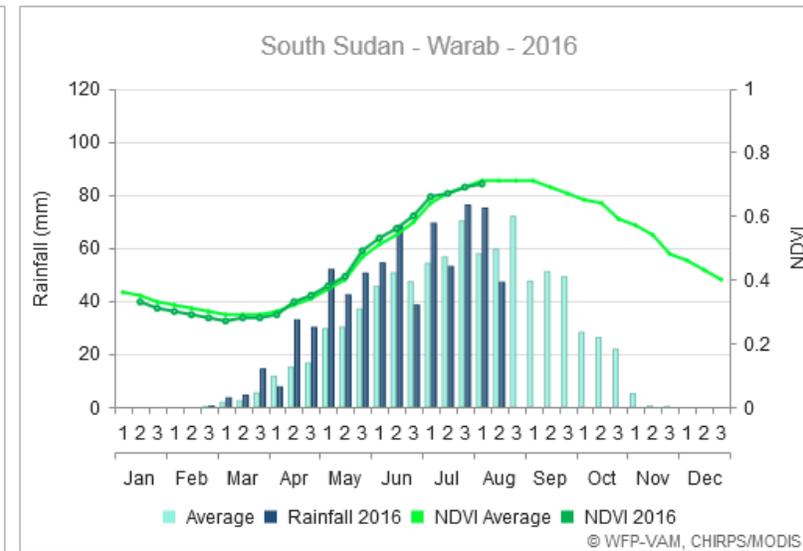
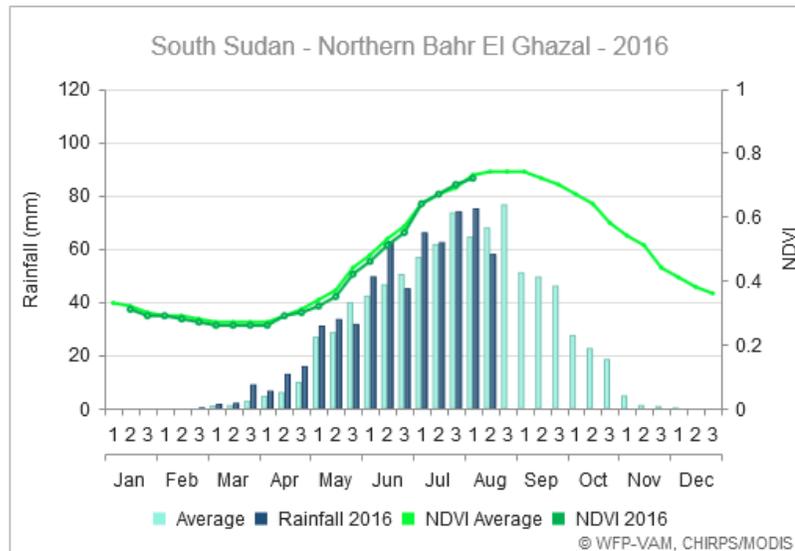
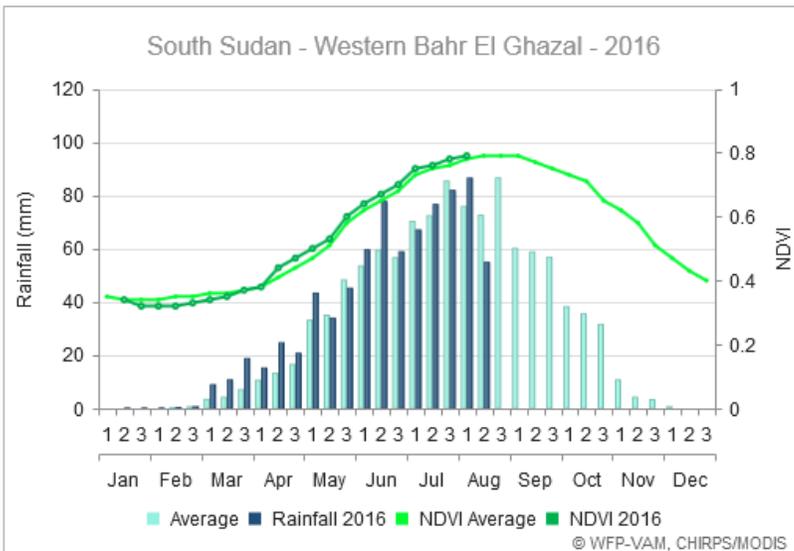
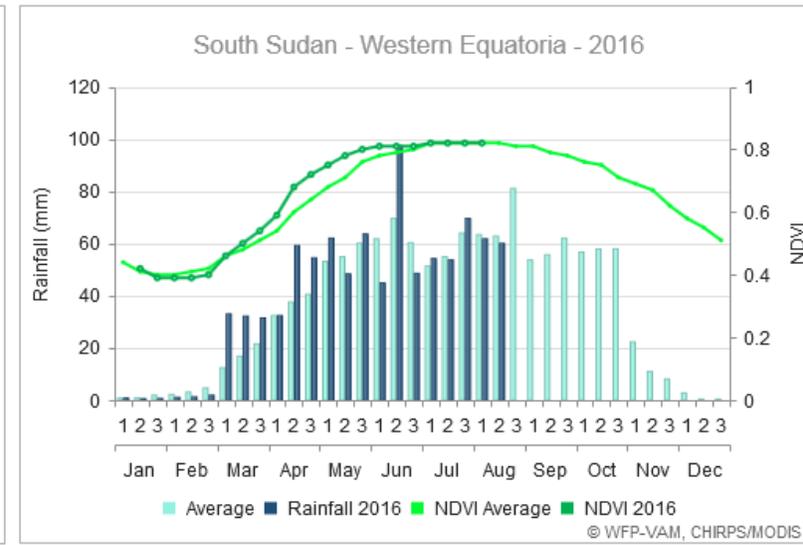
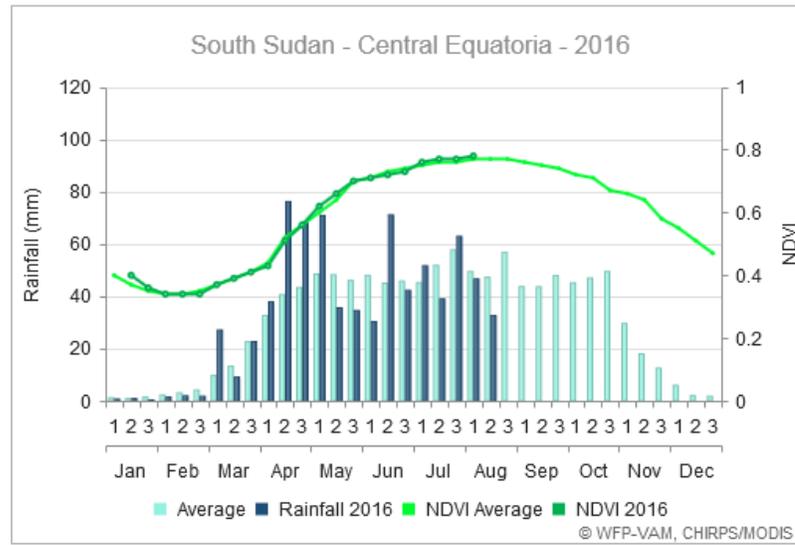
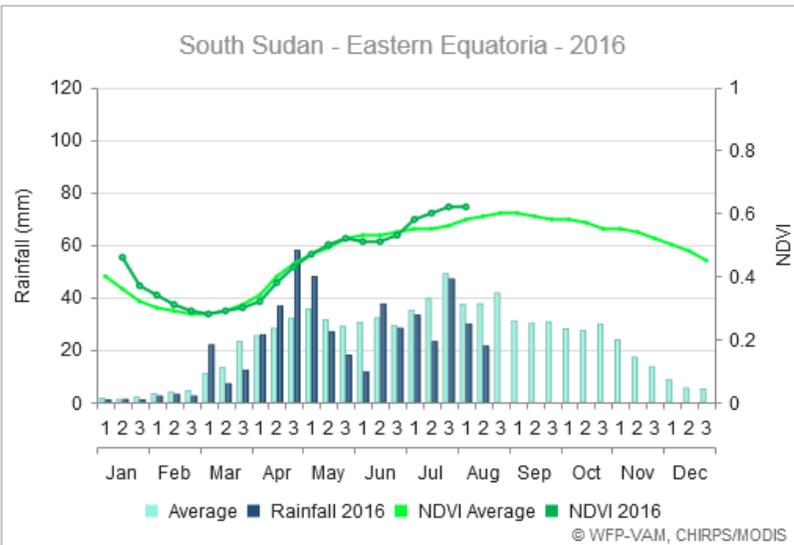
Until end of August, seasonal rainfall was above average in central and northern parts of the country (Warrap, Lakes, Unity, Northern Jonglei, Upper Nile, as well as Central Equatoria state) and moderately below average in south-eastern regions (south and east of Jonglei and Eastern Equatoria States) as well as parts of Western Bahr Ghazal. These broadly favourable rains are expected to have a positive impact on the agricultural season. This is in line with field information where Jonglei reported some floods in Fangak, Twic East and in Upper Nile with reported floods in eastern flood plain counties particularly greater Maiwut and greater Nasir as a result of abnormal rainfall and river overflows. Greater Bahr Ghazal and greater Equatoria states continues to report normal rainfall except greater kopoeta counties which reported poor rains.

However, a closer look at recent rainfall performance reveals strong rainfall deficits during the month of August (see Map 2) across Eastern and Central Equatoria, Jonglei, Unity, Upper Nile, as well as parts of Lakes and Western Bahr Ghazal. The impact of these deficits on the seasonal total rainfall (Map 1) is not so apparent since the early season rainfall (up to July) was quite favourable and above average.



Map 2: 30 days cumulative rainfall until 31 August 2016, 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.

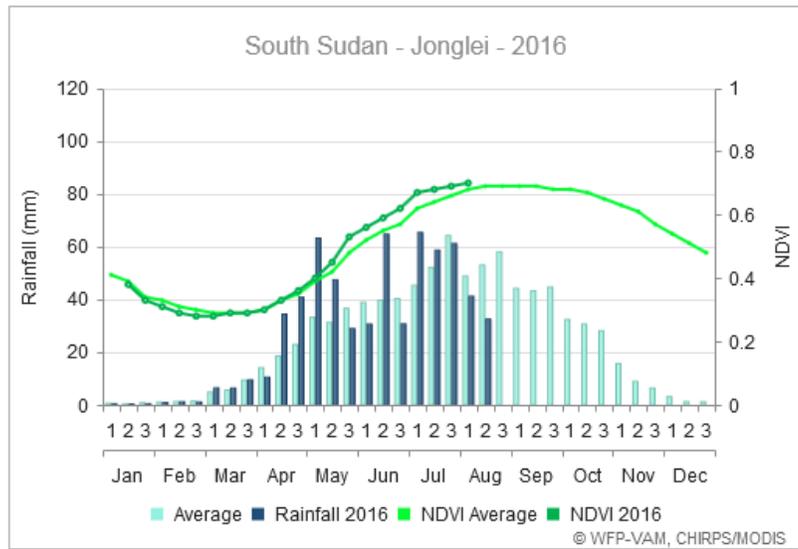
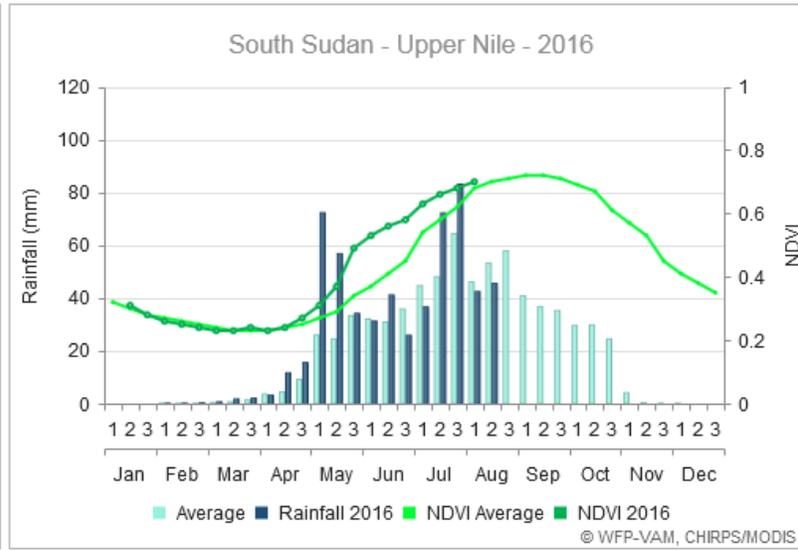
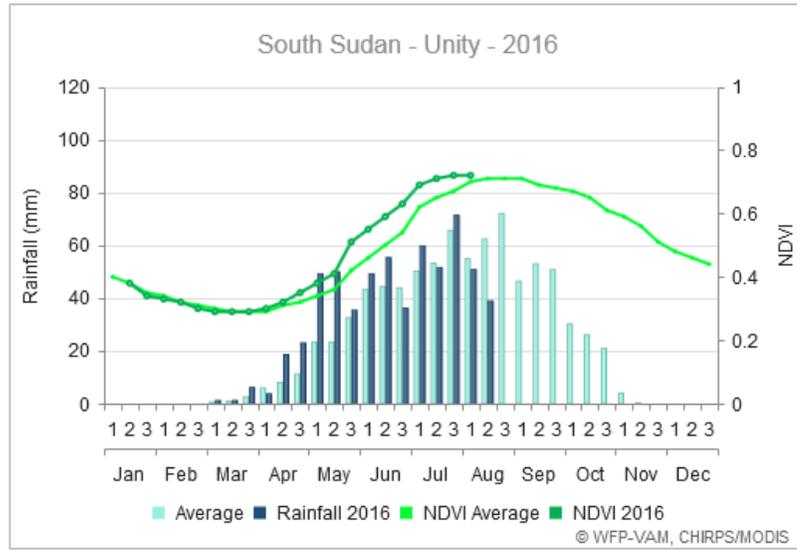
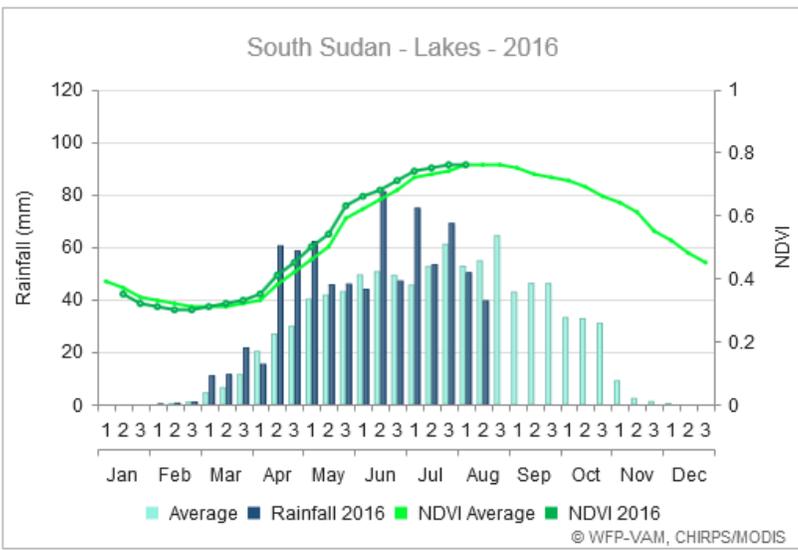
Seasonal Rainfall and Vegetation Performance



Plots indicating the rainfall and NDVI profiles from 1 dekad of January 2016 including the 20 year average for both rainfall and NDVI.

For more plots down to county level please visit: <http://dataviz.vam.wfp.org>

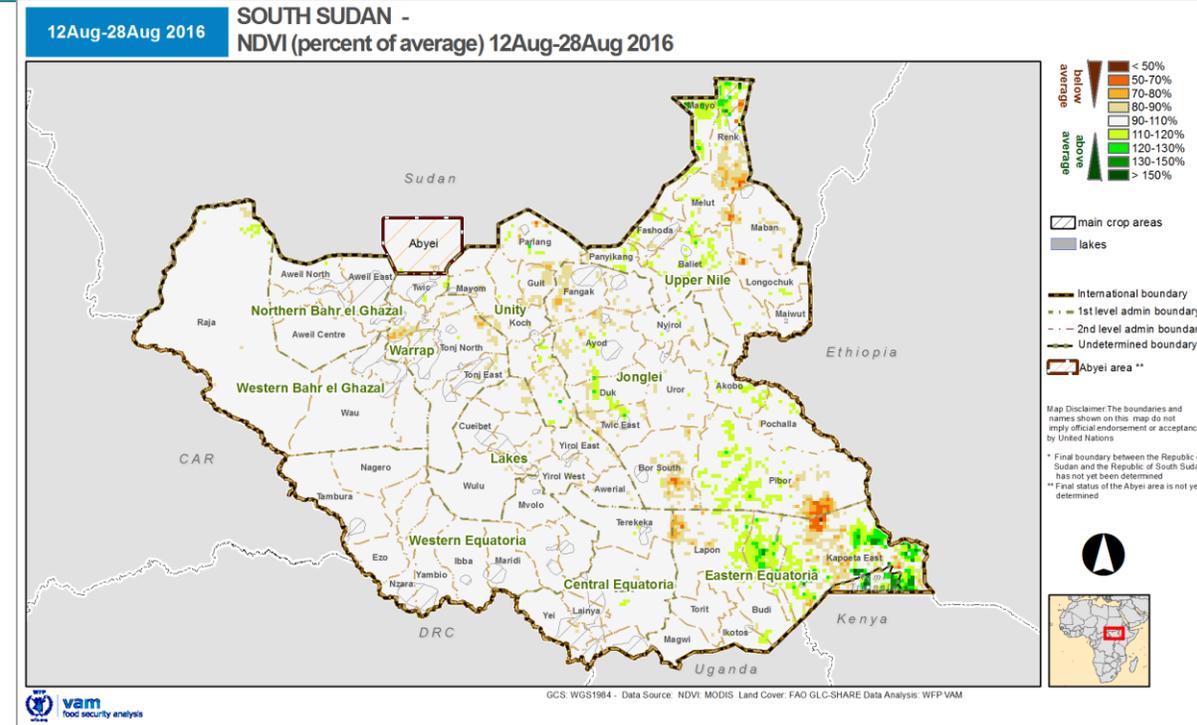
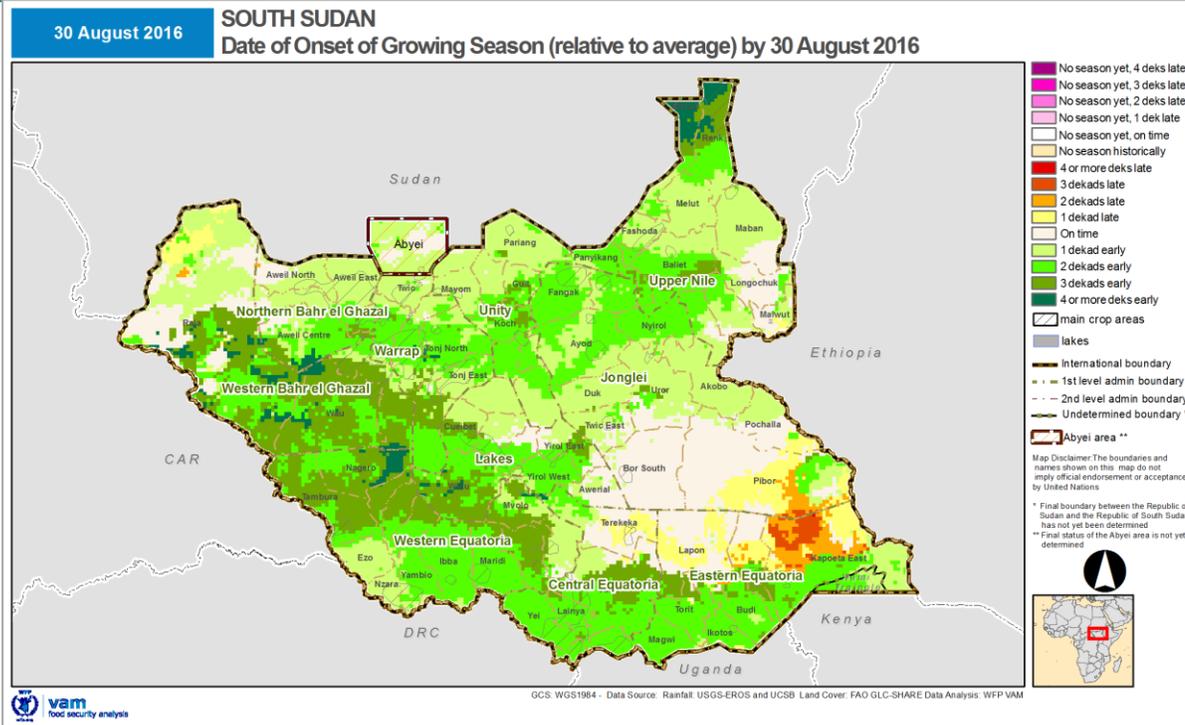
Seasonal Rainfall and Vegetation Performance



The illustrated plots show the arrival of the rains from March with vegetation development following soon after. Note better than average rainfall starting from April, that led to above average vegetation development.

Plots indicating the rainfall and NDVI (The normalized difference vegetation index) profiles from 1 dekad of January 2016 including the 20 year average for both rainfall and NDVI.

Onset of the Growing Season



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 August 2016 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 has started earlier than usual in southern and 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 some places growing season conditions are a month earlier than usual. In eastern areas (northern part of Eastern Equatoria and southern part 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 or expected.

The recent drier than average conditions in August, led to below average vegetation developing in some parts of north and south-east of South Sudan. However, no significant perturbations of the crop development were reported from the field except in areas where crops are flooded (Tonj South, Fangak and Twic East).

According to field reports, first crop season harvest are on going in the bimodal rainfall areas of western South Sudan and green harvest for most crops in the rest of the country. In addition, in biomadal rainfall areas, planting of the second season crop is ongoing with some challenges due to insecurity situation mainly in greater Mundri Counties, Tombura, Maridi (Western Equatoria State) and Yei, Lainya, Yei, Morobo and part of Kajo-Keji and Juba where farmers are displaced and cannot access their farm lands.

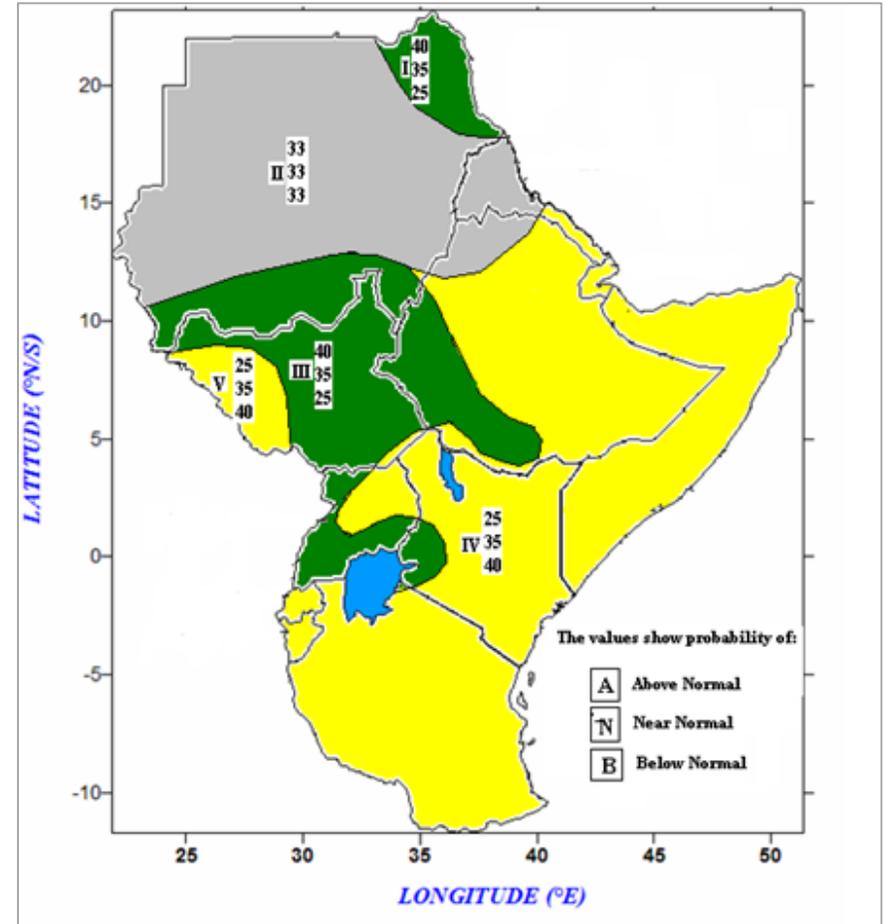
Near future perspectives

According to GHACOF 44, the regional consensus climate outlook for the October to December 2016 season indicates increased likelihood of below normal rainfall over most of the equatorial parts of the GHA. Increased likelihood of above normal rainfall is indicated over the western parts of the equatorial and northern sectors. There is also increased likelihood of warmer than average mean temperatures over much of the GHA.

For South Sudan, the forecasts indicate above average rainfall, in particular in the eastern half of the country – this translates into a wetter than average late stage of the rainfall season with a tendency for rainfall to last longer than usual. Westernmost areas of the country may undergo a drier than average later stages, but no significant impact is expected upon crop performance.

Although enhanced rainfall favours higher crop production and better water and pasture availability, it also increases the likelihood of continued significant flooding, particularly in the eastern areas of South Sudan (Eastern Equatoria, Jonglei and Upper Nile).

The tendencies are common to a number of forecasts from a variety of institutions.



GHACOF 44 forecast for October – December 2016 rainfall.

- Zone I: Increased likelihood of above normal rainfall
- Zone II: Usually dry
- Zone III: Increased likelihood of above normal rainfall
- Zone IV: Increased likelihood of below normal rainfall
- Zone V: Increased likelihood of below normal 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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