



# South Sudan

## Agrometeorology Update



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### HIGHLIGHT:

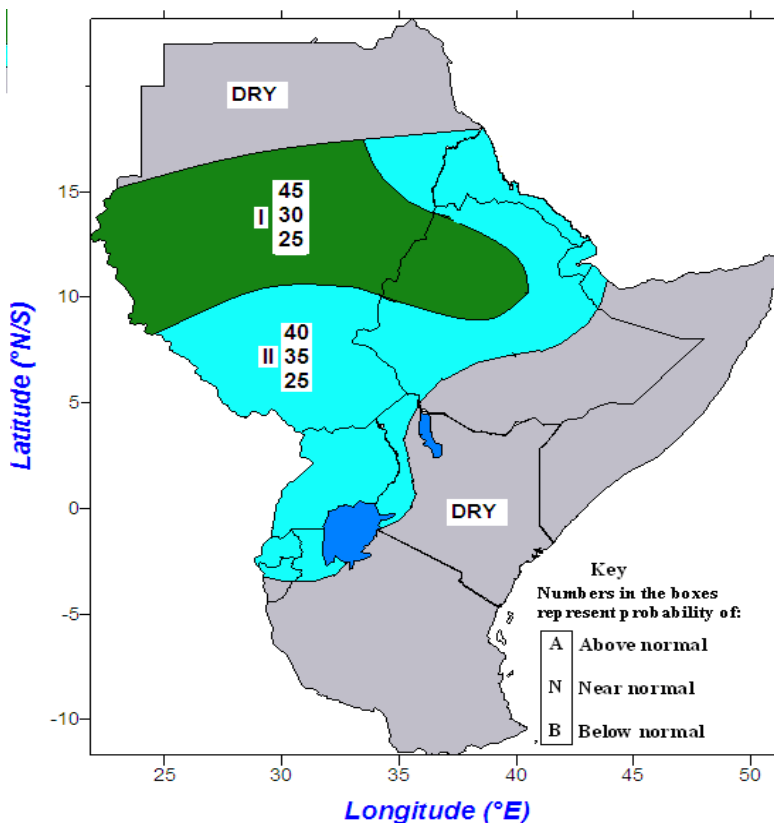
- Increased likelihood of near normal to above normal rainfall projected over South Sudan in July-September cropping season....
- Despite dry spells, cropping season has fully commenced with most crops at vegetative and flowering stage...
- Vegetation performance improved and ranges from average to above average except for some spots in eastern parts of the country with decrease.

### July to September 2011 Seasonal Rainfall Forecast for South Sudan

The Twenty Eighth Greater Horn of Africa Climate Outlook Forum (GHACOF 28) was convened on 17 June 2011 in Nairobi, Kenya by the IGAD Climate Prediction and Applications Centre (ICPAC) and partners to formulate a consensus climate outlook for the July to September 2011 rainfall season over the GHA region.

The regional consensus climate outlook for July, August and September (JAS) indicates that South Sudan has increased likelihood of near normal to above normal rainfall. Implying that the agriculture cropping season is likely to be favored and crop yields/production may be normal. According to the forum, this year 2011 JAS rainfall performance is similar to that of 1996 (Analogue year).

In 1996, Areas of Pochalla and Akobo in Jonglei state experienced localized flooding. This region is vulnerable because several tributary rivers and streams overflow, including Akobo, Obot, and bibor rivers and gini stream (Sudan - floods situation report no. 2, 20 august 1996). The fear is that similar incidences may occur hence threatening livelihood activities in those particular areas.



Produced by Food Security and Technical Secretariat (FSTS), South Sudan Center for Census, Statistics and Evaluation (SSCSE) in collaboration with Government of South Sudan Institutions  
1. Ministry of Agriculture and Forestry. 2. Ministry of Animal Resources and Fisheries 3. Ministry of Health. 4. South Sudan Relief and Rehabilitation Commission

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The cropping season is progressing normal except reports of below normal rainfall causing dry spells and hence causing localized wilting of crop in WES Yambio County, delayed planting in Mundri, Nagero and Tambura Counties in WES, Terekeka in CES among others. This may not seriously have an impact on crop production as these areas cultivate sorghum and may not necessarily need excessive water, given the forecast, the condition is expected to improve only that with late planting the harvesting will be delayed prolonging their hunger season.

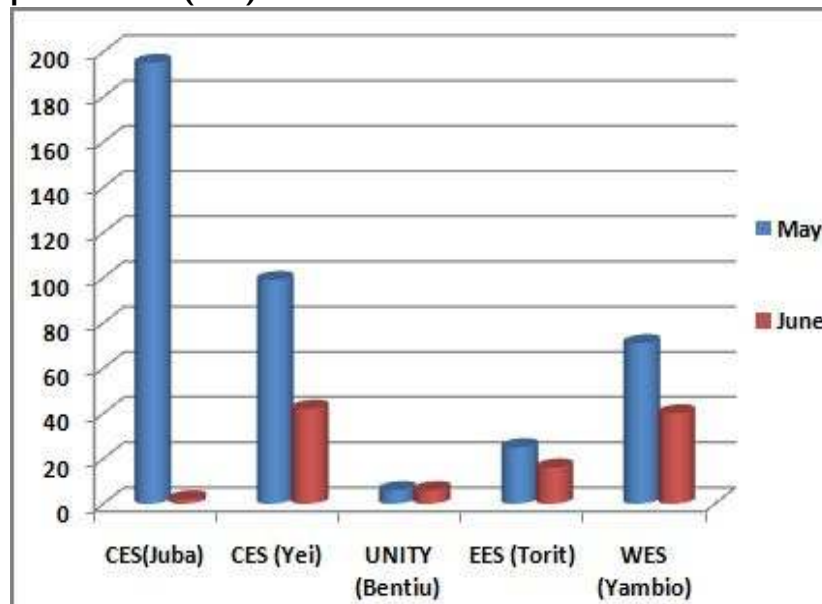
With reference to the rainfall estimate images, in the first dekad of June, rainfall performed well in Warrap, Lakes, WES, southern parts of NBG and WBG States. In the second dekad, most areas performed at average except eastern and north eastern states of the country that performed poorly with most areas below average. These include the following areas Upper Nile State (Melut, Renk, Maban, Longochuk, Baliet, Ulang, Manyo, Panyikang and in Jonglei state includes Akobo, Pibor and Ayod counties.

The situation improved in the last dekad with most areas receiving normal to above normal except for NBG (north, centre and west and in Jonglei State includes Pibor, south of Urur, Pochalla and Bor south that performed below average. These areas will be affected in terms of crops and pasture performance hence will be monitored accordingly.

With reference to the data from the automatic weather station, low rainfall performance has been observed when comparing the rainfall performance from the five automatic weather stations from the four states in South Sudan. Observations from each station show reduction in rainfall amount except for Unity state that did not observe any change in rainfall performance in May and June rainfall amount. Among the five stations, Juba for example in May received the highest amount but reduced drastically from 195mm in May to 2mm in June, CES (Yei) received 99mm in May to 42mm in June, WES (Yambio) 71mm in May which reduced to 40mm in June and lastly Torit in EES with 25mm in May to 16mm in June.

The reduced rainfall in June implies the onset of the dry spell that normally occurs in June-July especially in the equatorial region. Based on the forecast, conditions are expected to be favorable for agricultural cropping season and rainfall is expected to improve.

**Figure 2: A graph showing comparison of May and June rainfall performance (mm) in Four states in South Sudan**



Source : SSCCSE/FSTS 2011, [www.fieldclimate.com](http://www.fieldclimate.com)

## South Sudan Vegetation development analysis

**Satellite Imagery:** The satellite imagery Normalized Difference Vegetation Index (NDVI) is used to obtain an overall picture of the progress of the agricultural season.

Vegetation performance in the first dekad was very poor with mixed spots of vegetation decrease and increments especially in the equatorial region observed decrease except parts of Kapoeta in EES, Jonglei state the southern and northern parts, Upper Nile State in Renk and Manyo County. In the second dekad, the states to the western part of the state performed better with most areas performing at average to above average. The eastern parts

deteriorated further covering Jonglei, Upper Nile and EES.

In the last dekad, the vegetation performance improved significantly with most of the states on the western part of the country performing above normal while areas in eastern parts of the country performed below normal and central parts of Jonglei State and central and eastern parts of Upper Nile state.

**Figure 3. eMODIS Difference for the first and last dekad of June 2011**

**eMODIS Difference images for the first dekad 1-10 and the last dekad 21-31 June 2011**

Figure 3.a: first dekad 1-10 June

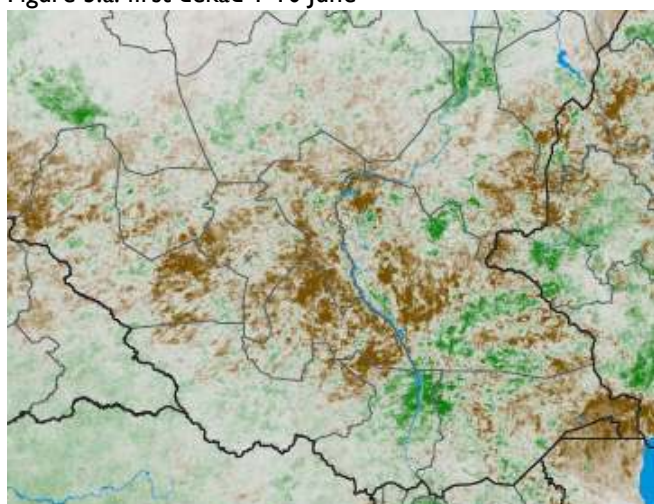


Figure 3.b: last dekad 21-31 June



### NDVI Anomaly

< -0.3   -0.2   -0.1   -0.05   0.05   0.1   0.2   > 0.3



Negative

No Difference

Positive

Source; USAID/FEWSNet, 2011

## SUMMARY OF AGRICULTURE SEASON BY STATE

**Eastern Equatoria State:** The cropping season has not been favourable with many locations having experienced long dry spells and yields are expected to be affected at harvest. Crops especially maize and g/nuts are at flowering and practices like weeding have taken place. Sorghum is also at flowering and vegetative stage in the greater Kapoeta Counties. Areas like Magwi, Lopa lafon & Torit received slightly better rainfall compared to the rest of the counties. Crops in these areas were however planted late in first season but towards the middle suffered from drought stress but have regained lately and are still at vegetative and others at flowering stage for main crops like maize and sorghum. Less maize has reached maturity as observed from market in Magwi. The worst affected areas are;

Greater Kapoeta, Ikotos (Iomohidang south & North, and Losite payam), whole of Budi county

**Warrap State:** Rainfall performance is mixed in the state varying from place to place. In the first dekad, rainfall was below normal, while it was normal to above normal in the second and last dekad. Vegetation performance ranges from below normal to normal in some locations (figure 3b). Reports indicate that there is a mixed situation where by crops have performed well in some locations while at the same time some locations experienced poor rainfall and crops are water stressed.

**Central Equatoria State:** Most of the crops are at flowering stage, however, in Morobo and Yei County harvesting of first season green maize and groundnuts has started. In Terekeka and some parts of Juba County, the dry spell has been hindering normal progress of the season although some farmers have managed to cultivate groundnuts, maize and sorghum. The situation is expected to improve with improved rainfall in July given the JAS forecast. In most of the counties, the crop yields are reported to be good in locations and poor in others given rainfall. The vegetation performance was below average, improved in the second and last dekad to above average. However, spots of small decrease are still significant.

**Upper Nile State:** Large decrease in vegetation observed in the first dekad of June but improved in the last dekad of June. Counties such as Renk, Manyo, Baliet, Panyikang and Khorfulus are not doing too badly as the rainy season is just picking up. Rainfall performed below average but improved in the last dekad. The rainfall in Upper Nile commences later than the southern parts of South Sudan. The crops are in their vegetative stages and no poor performance is reported.

**Northern Bahr el Ghazal State:** Normal rainfall performance was experienced. However, it reduced in the last dekad and is expected to improve with reference to the JAS seasonal forecast. The below normal rainfall performance had caused stress in the crops planted especially on highland especially Sorghum. Rice and other low land crops are in good condition and at vegetative stage. Livestock are grazing in the lowlands and the body condition is good. Vegetation performed below normal in first dekad but improved in the last dekad.

**Western Bahr el Ghazal State:** Planting has been delayed due to late onset of rainfall and has affected planting of long term varieties of sorghum, g/nuts and maize especially in Jur and some part of Wau County. Reports indicate that the majority of the farmers have cultivated short term variety of sorghum, Cassava sesame and vegetables. Vegetation performance ranges from average to above average. Rainfall is performing from normal to above. Based on the forecast the rainfall is expected to improve. In parts of Raga, sorghum is reported not to be doing well and is wilting in areas affected by dryness. It is expected to recover if rains improve before end of July

**Jonglei State:** Based on reports from the state, insecurity cases have minimized and some IDPs have

started returning to their areas for cultivation. Some areas like Bor county the crops are at vegetative stage however some areas have crops at seedling and germination stage especially those planted in late May and June. Rainfall performance ranges from normal to below normal and it improved in the last dekad with exception of the central parts that performed below normal. Vegetation performance is poor and improved in the last but the southern counties still observed large decrease due to below average rainfall performance. Livestock condition is good and has been vaccinated against diseases.

**Unity State:** Normal to above rainfall performance was experienced in the state. Vegetation performance improved in the last dekad. However, spots of below average exist in the most parts of the state in the first dekad. Reports from the state reveals that cropping season commenced late due to late onset of rainfall some famers are still planting and the crops are at germination stage while for those who cultivated early the crops are at vegetative and wilting of crops had been reported.

**Lakes State:** Recent intensified insecurity has been a major threat to the progress of the agricultural season coupled with unreliable rainfall. Some crops are at vegetative while others are at early germination stage due to late planting. Normal to above normal rainfall and vegetation performance was observed.

**Western Equatoria State:** Normal rainfall performance in most parts of the state. Poor vegetation performance below average in first dekad in the northern parts but improved in the second and last dekad to above normal with large increase. Despite the presence of dry spell in June, the moisture has been sufficient for the growth of the crops, most crops especially maize is at vegetative and flowering stage.