Southern Sudan Agrometeorology Update

Volume: 008/10 **Month: May, 2010** **Release date: 16th June, 2010**

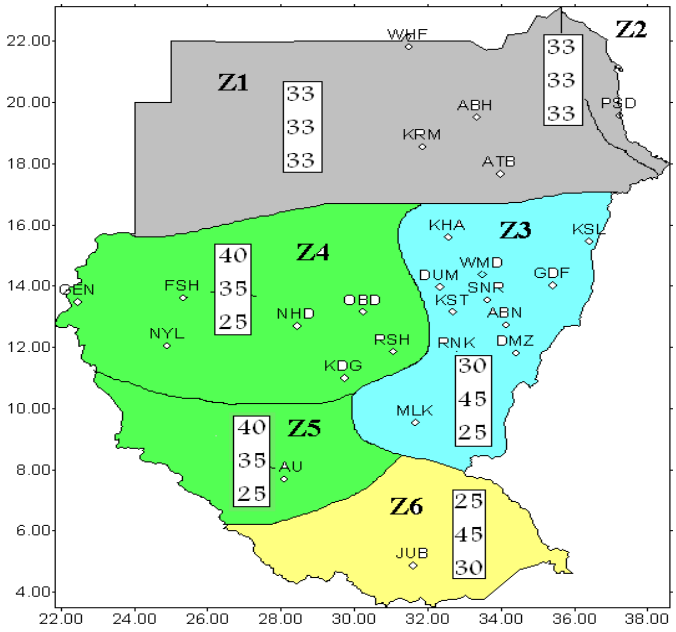
HIGHLIGHT

- **First season promising in Central Equatoria and Lakes State**
- **Floods threaten low lying areas of Central Equatorial, Jonglei, Lakes and NBG states**
- **Vegetation growth threatened by the dry spell in WBG, Unity, eastern part of Western Equatoria**

Seasonal Rainfall Forecast Forecast for June – September, 2010

Seasonal rainfall forecasts are important for planning agricultural and many other economic activities that are impacted by rainfall. The Sudan Meteorological Authority has released a rainfall forecast for the period June – September, 2010. The Sudan Meteorological Authority uses statistical models in making their predictions. Among the inputs used in the model for rainfall forecast Sea Surface Temperature (SST) of the previous month and in this case, it is the SSTs for the month of May 2010. Using the principle component analysis Sudan has been divided into six homogenous climatic zones. The zones that relate to Southern Sudan rainfall are zone 3, zone 5 and zone 6. The terciles are provided to indicate the probabilities of rainfall. For the areas that concern southern Sudan, zone 3 has a probability of 30% for rainfall being above normal while there is a probability of 45% being normal and a probability of 25% being below normal. There is a greater chance that the rainfall will be normal in Upper Nile state. Zone 5 covers Unity State, Northern Bahr el Ghazal and Western Bahr el Ghazal. The forecast indicates that there is a 40% chance of rainfall being above normal and 35% chance of rainfall being normal while there is a 25% chance of rainfall being below normal in the three states. This means there is a higher chance of rainfall being normal to above normal in the three states.

Figure 1. Seasonal forecast for June-September, 2010



A - Above normal probability
N – Normal probability
B – Below normal probability

Source: SMA Khartoum

The remaining states of Lakes, Jonglei, Western, Central and Eastern Equatoria are in zone 6 with a probability of 25% of rainfall being above normal, 45% chance of rainfall being normal and 30% chance of rainfall being below normal. This means that there is a higher chance in the 5 states of a normal to below normal rainfall. However, the Meteorological Office, FSTS and the SIFSIA PSU will continue monitoring the situation and report on the developments. The rainfall forecast is updated on a monthly basis.

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

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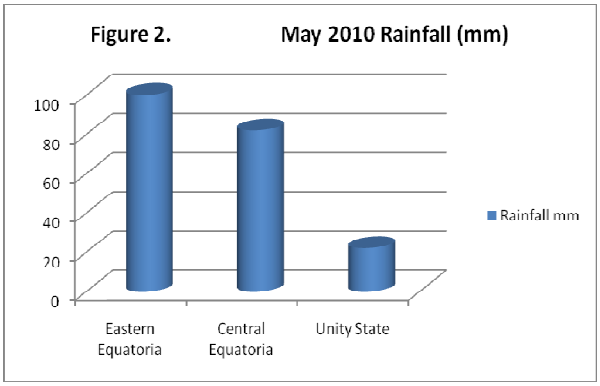
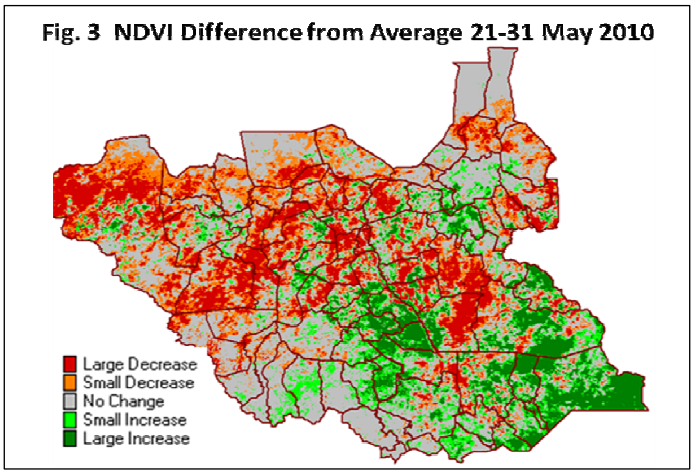
Data collected from the Automatic Weather Stations was used to analyze the performance of rainfall in selected States. In the last 31 days of May 2010, significant rainfall amounts were received in most parts of Southern Sudan. Figure 2, shows rainfall performance comparison in EES, CES and Unity State. In the month of May, 2010, the highest amount of rainfall was recorded in EEs with (100 mm) followed by CES with (83 mm) and Unity state with lowest amount of rainfall (22mm). The total accumulated satellite rainfall images indicate that most of the areas of Southern Sudan, have received some rainfall, however, the rainfall has been concentrated in the Greater Bahr el Ghazal parts of the country and decrease towards the north of Southern Sudan. Areas of Upper Nile State, Unity and Jonglei State had parts that recorded very low rainfall.



NDVI difference image from 01-10 May 2010 show that most parts of southern Sudan had large vegetation reduction. However, with the onset of rainfall there have been improvements in vegetation greenness especially in areas of Western, Eastern and Central Equatorial (Figure 3). Southern parts of Jonglei State have also witnessed large increases of vegetation development when compared to average. It is also observed that there is a large decrease in vegetation depicted in the central areas of Jonglei, most areas of Unity State, Northern and Western Bahr el Ghazal States. Areas in Upper Nile State had small increase in the central parts while some of the areas have normal vegetation. In the last dekad of May (21-31 May, 2010) there was a still some decrease in vegetation in Unity, Northern and Western Bahr el Ghazal and Warrap States. This is a reflection of poor rainfall in the previous dekad which ideally should be reflected in the next dekad through vegetation development. This implies that these areas had reduced rainfall amount hence continuing vegetation deterioration. Figure 3 shows that EES has had a large increase in vegetation and this may be attributed to a good rainfall performance with much of the vegetation concentrating to the border with Kenya. Western Equatoria has not had a significant change in the vegetation and this is depicting normal development.



SUMMARY OF AGRICULTURE SEASON BY STATE

Eastern Equatoria State: The state experiences two agricultural seasons in a year. The onset of rain this year in most part of EES was March 2010 and continues to date. This gives the implication that planting for the first season has started. And if the rainfall will be reliable, crops are likely to perform well and pasture improvement as well. Figure 3 shows good development of vegetation, this is an indication of good rainfall performance.

Warrap State: poor rainfall has contributed to poor crop performance (crop failure). As of the last dekad of May 2010, the vegetation development in Warrap was not developing well and this is an indication of poor rainfall. It is expected that the rainfall will improve soon.

Central Equatoria State: Local crop production during last season harvest was insignificant in some Counties (Terekeka, Juba and Lainya) due to dry spells causing the crop failure during last year harvest. Flooding and devastation of an area known as Hai Zuhura has been reported in Juba, the heavy rainfalls during the 2010 season after prolonged dry

spells caused the displacement of many households. Good rainfall at the start of this rainy season has made cultivation promising and will also increase the hope for a good season.

Upper Nile State: Rainfall has been low in the State, however, it is expected to pick up as the season progresses and there is no fear that it can easily affect the growing of the crops. Many areas have received rainfall in the range of 10-20mm and this is likely to improve as the season reaches its peak.

Northern Bahr el Ghazal State: The rains in the State started in March 2010 and so far only 123.2 mm has been received to date. The State is also prone to floods in low land areas and the forecast is indicating normal to above normal rainfall expected which raises the possibility of floods. Reports indicate that there was low rainfall from April to May that affected planting season. However, with these rains, the Aweil rice scheme commenced their cultivation of rice while others cultivated sorghum.

Western Bahr el Ghazal State: A delay in onset of rainfall has been reported in WBG State. The delayed rainfall from April to May has affected planting. Information from satellite imagery (figure 3) also shows that the State is not doing well in terms of vegetation development. Most of the State vegetation is actually performing below the average. This is obviously affecting the rangeland performance.

Jonglei State: The state has a mixed situation where some locations are performing poorly while others have received heavy rainfall that has caused flooding in some fields (figure 4).

Figure 4. Crop performance in Jonglei State, May 2010

Unity State: The state rainfall forecast is normal to above normal. However, the rainy season has not fully commenced. Currently, the vegetation is not performing well due to moisture deficits in the soils. However, this will improve as the season commences and planting of crops will commence as well.

Lakes State: The planting of crops in the state has commenced and reports indicate that the total area under cultivation so far is good. Reports also indicate that most of the households have planted groundnut in good quantities and if the rainfall continues to perform well, the production of groundnut will increase dramatically. Due to heavy rains, remote areas of Rumbek North and Aliap may experience great shortage in cereals due to bad roads. Low lying areas are threatened by floods, if heavy rains continued to fall next month. The NDVI satellite imagery is indicating large increase in vegetation development in Lakes State, a good indication for crop performance as well.

Western Equatoria State: The state experienced timely rainfall onset and agricultural activities have been progressing well. Reports indicate that crops are at different growing stages ranging from 50cm to about 1.6meters in case of maize and sorghum. The satellite imagery also shows normal development of the vegetation and this is also an indication of how crop are performing as it is used as a proxy.