

Sudan AgroMeteorological Bulletin

SUDAN METEOROLOGICAL AUTHORITY

21 -31 OCTOBER 2005



Highlights

- In seasonal terms (Fig 1b), the ITCZ is currently near 10.8 °N.
- Areas with heavier rainfall were found in West Equatoria.
- In relative terms, significant above average departures in most of Southern .
- Below average cumulative rainfall departure is seen in Greater Bahr-ElGhazal, lower of South Darfur, border of west and South Kordofan and in the South of Gedarif ,Sennar and Upper of Blue Nile .
- In relative terms, vegetation conditions are mostly above average across the country, particularly in Upper Nile regions, Jouley kassala and El Gezira.
- Below average vegetation conditions can be seen in small patches, particularly in White Nile,(south and west) Kordfan and Warab .

Rainfall Analysis – Seasonal Progress

Rainfall in Sudan and its seasonal distribution is mostly the result of the northwards movement of moist air masses, source of the rainfall. The Intertropical Convergence Zone (ITCZ) marks the northernmost extent of these humid air masses, where they meet with drier and warmer air. The rains follow some distance south of this border between air masses, so that tracking this ITCZ through the season provides a quick evaluation of the seasonal movement of the rains

Current vs Mean Position of the Africa ITCZ
As analyzed by the NOAA Climate Prediction Center
October 2005 Dekad 3

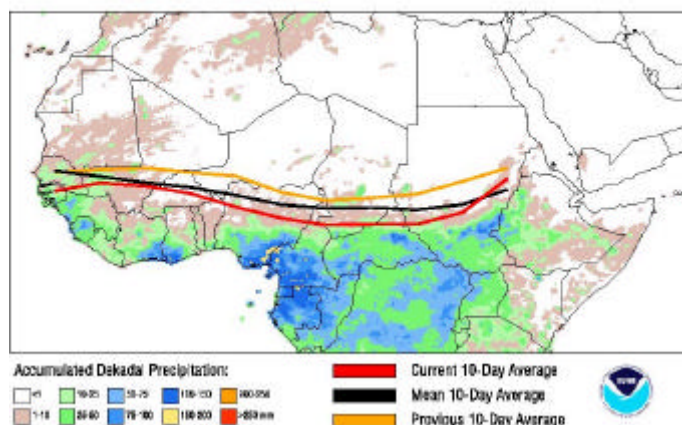


Fig 1a – Position of ITCZ over Africa in OCTOBER Dek 3 2005 (red) compared to previous dekad (orange) and average position (black). Background is a rainfall map (Source : CPC-FEWS Net)

Mean Position of the ITCZ
20-35 degrees east longitude

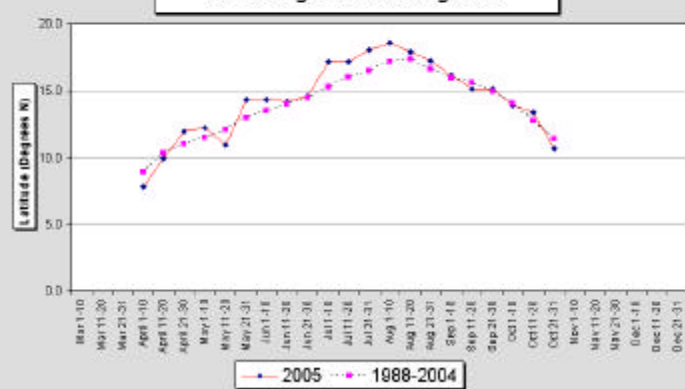


Fig 1b – Current latitude of the ITCZ position compared to the 15 year average. (Source : CPC-FEWS Net)

Note (fig 1a) how the ITCZ position marks the border between the (significantly) rainy and non-rainy rainfall areas. The way this position changes along the season can be described by the time series of its mean latitude (fig 1b). We can see :

- During this dekad the ITCZ over Sudan was south to the previous dekad and the average position .(see Fig 1a).
- In seasonal terms (Fig 1b), the ITCZ is currently near 10.8°N and is now south the average.

Rainfall Analysis – 10 Day Amounts

10 day rainfall amounts produced by SAMIS at SMA are based on a combination of METEOSAT satellite and synoptic gauge data. Rainfall climatology is similarly derived from a combination of historical data from the two sources.

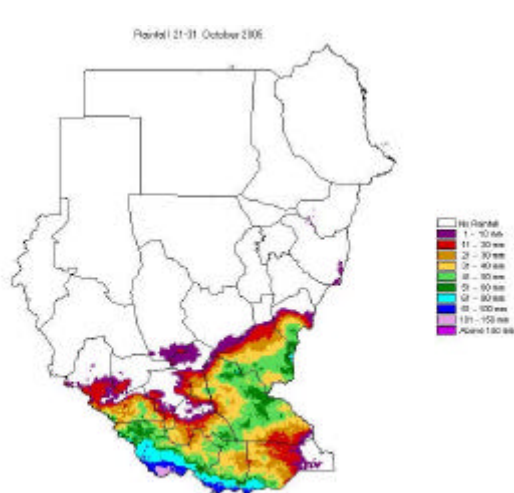
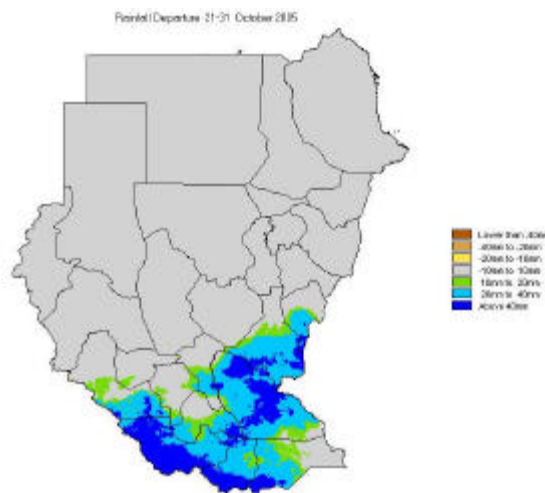


Fig 2a – Rainfall amounts (mm) 21– 31 October 2005



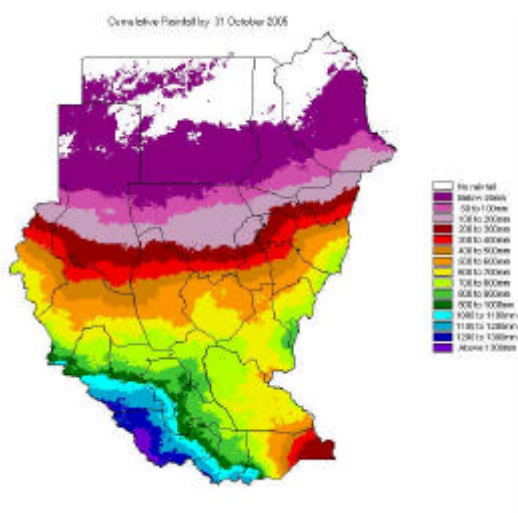


Fig 3a – Cumulative rainfall (Mar Dek1 – Current Dek)

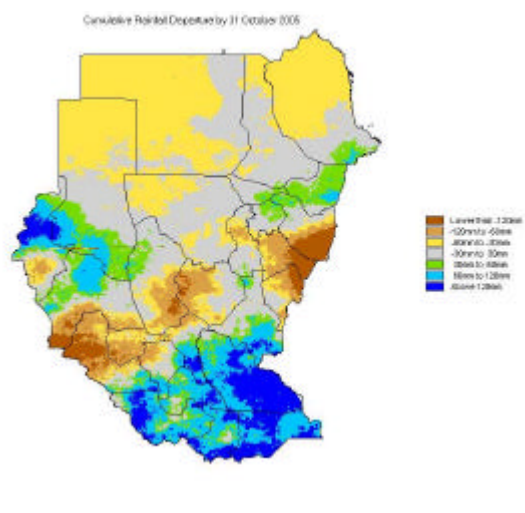


Fig 3b – Same as a difference from the average : yellows/ browns for rainfall deficit, greens/blues for rainfall surplus

Vegetation Analysis

The NDVI (Fig 4a) vegetation retreated southwards following the progress of the rains. Currently, season vegetation development is registered up to Gedaref, El Gezira, Upper Nile, south and west Kordofan , south and Lower of west Darfur.

In relative terms, vegetation conditions are mostly above average across the country, particularly in Upper Nile regions, Jouley, El Gezira ,kassala and East Equatoria.

Below average conditions can be seen in small patches, particularly in White Nile, south and west Kordofan, Warab.. Elsewhere there are small patches of lightly below average conditions of little significance.



Fig 4a – NDVI 21 – 31 OCTOBER 2005. Darker shades for denser vegetation, lightest shade for soil.

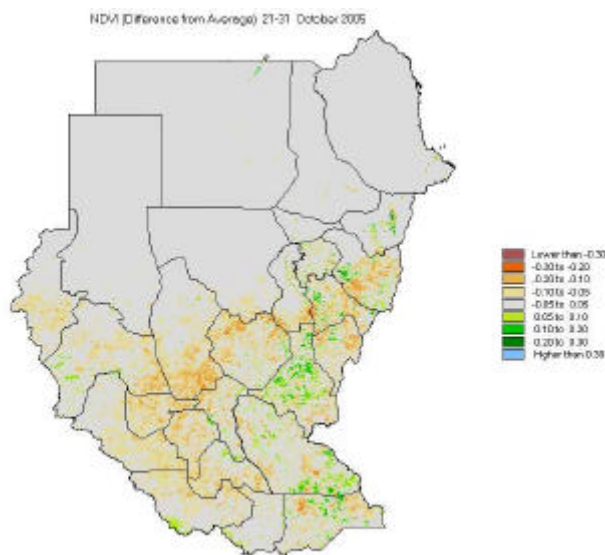


Fig 4b – NDVI difference from average at thrid of OCTOBER 2005. Yellows/reds for below average vegetation development, greens/blues for above average

ACKNOWLEDGEMENTS

This Bulletin is issued twice a month (after the first and second 10 day periods of the month) and complements/updates a larger monthly Bulletin prepared in cooperation with the Sudan Early Warning System and originates from a 2002 capacity building initiative of the World Food Programme (WFP) to improve the range and quality of the monitoring information available to the institutions involved in humanitarian assistance in Sudan.

This initiative led to the installation at the Sudan Meteorological Authority of a system to process meteorological station and satellite data into a range of rainfall, vegetation and crop related information products. This system – SAMIS (Satellite based Agro-Meteorological Information System) – developed by the TAMSAT group (Univ of Reading, UK), has been fully operational at SMA since 2003.

SMA expects to develop further the range and quality of the products available over the course of the next seasons.

SMA would like to thank the major providers of the satellite data, TAMSAT group, University of Reading , UK (METEOSAT) and FAO/ARTEMIS (SPOT-VGT).

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