

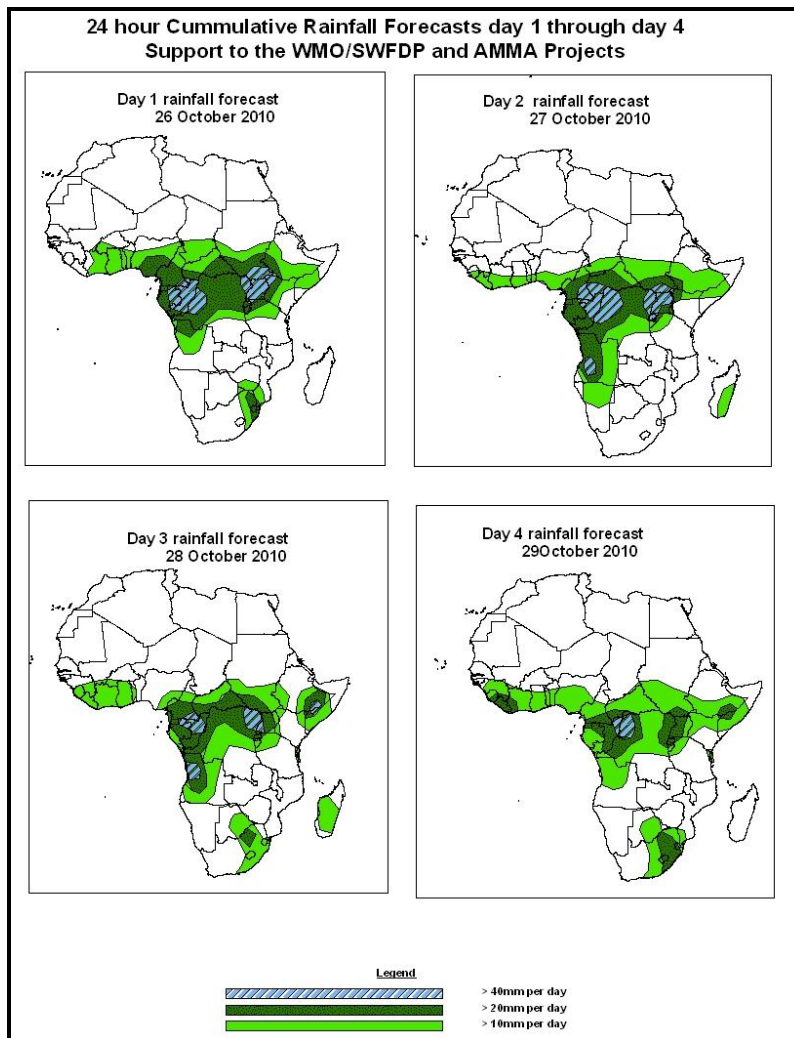


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 26 OCTOBER – 06Z of 29 OCTOBER 2010, (Issued at 14:00Z of 25 OCTOBER 2010)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceeded based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over the Congo Air Boundary region, eastern parts of the Gulf of Guinea countries and central African region, with chances of locally heavy rainfall over DRC, Congo, Gabon, Cameroon and Central Africa Republic. Also heavy rainfall is Likely over greater part of Uganda, Rwanda and western part of the Lake Victoria Basin. Also pockets of moderate to heavy rainfall are likely to occur over Angola and along the border of Ethiopia and Somalia.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 25 OCTOBER 2010**

According to the GFS and ECMWF models a broad area of a weak trough exists across West Africa countries to Sudan. The trough is expected to persist during the entire forecast period. UKMET model indicates a cut off low pressure over Chad and Sudan with central pressure of 1005hPa from the next 24hours. A Cut off low over Angola is expected to move slightly towards the Namibia/Angola border in the next 48 hours and it is likely to weaken beyond 72 hours. A low pressure is expected in the vicinity of the East Africa coast line in 72 to 96 hours.

According to GFS, UKMET and ECMWF models, the seasonal low pressure system (Meridional component of the ITCZ) over DRC is expected to be more active over the western DRC and Congo and persist during the next 24 to 96 hours. Over South Africa the influence of a ridge from the St Helena High pressure is likely to be the dominating system over the east coast.

The southern hemisphere High pressure system (St Helena) is at central pressure of 1028hPa and the models are indicating relatively strong ridge from St Helena towards southeast of South Africa in the next 24 hours with further extension of the ridge in 48 to 72hours . The previously weak East African ridge is likely to be strengthened by the ridge from St Helena according to the GFS, ECMWF and UKMET model predictions. The Mascarene high pressure is generally weak and remains displaced eastwards.

At 850hPa level, a convergence line over Ethiopia/Sudan border is expected to become stronger and move to southeast Sudan in the next 48 to 72 hours. A convergence line over northern Nigeria is expected to become stronger and move to the border of Niger and Mali during the next 48 hours. Another convergence line situated over Sudan and Chad is expected to become strong along the Sudan–Ethiopia border during the next 48 hours. The east coast of South Africa is expected to experience on shore wind flow according to the GFS, EMWF and UKMET Models.

At 700hPa level, Over Central Africa Republic a convergence line is expected to develop in the next 24 hours and extends to Cameroon during the next 48 hours. A cyclonic convergence over DRC is expected to move to Congo in the next 24 to 48hours. Over Somalia a cyclonic convergence is expected to develop in the next 48 to

96 hours. The Near Equatorial Trough (NET) over the East African coast is occasionally expected to be active in the vicinity of the East Africa coast line.

At 500hpa, the African Easterly Jet is expected to remain weak with its associated wind speeds remaining below 25Kts in many areas of western and central African regions.

At 200hPa, zone of strong wind (>50Kts) is inclined further north. The TEJ related strong winds are expected to remain weak (<25Kts) across much of the tropical African region during the forecast period. The Sub Tropical westerly Jet over the southern Hemisphere is expected to be stronger South Africa over the west coast of South Africa. The wind speed associated with the Jet is expected to reach 130Kts in the next 24 to 96 hours.

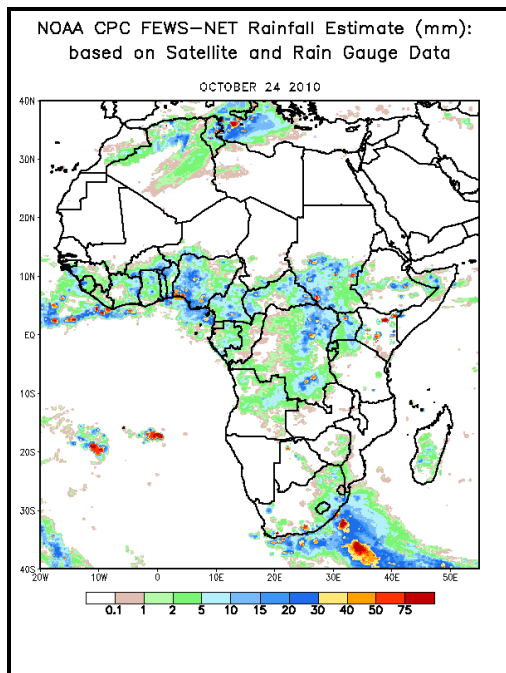
In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over the CAB region, eastern parts of the Gulf of Guinea countries and central African region, with chances of locally heavy rainfall over DRC, Congo, Gabon, Cameroon and Central Africa Republic. Also heavy rainfall is Likely over greater part of Uganda, Rwanda and western part of the Lake Victoria Basin. Also pockets of moderate to heavy rainfall are likely to occur over Angola and along the border of Ethiopia and Somalia.

## **2.0. Previous and Current Day Weather Discussion over Africa (24 – 25 October 2010)**

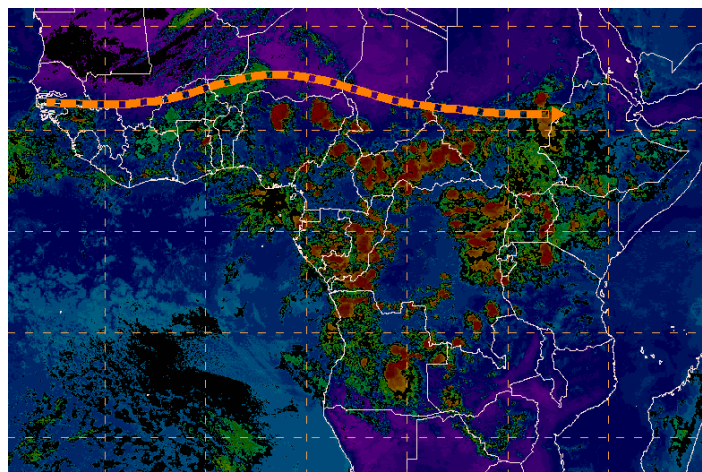
### **2.1. Weather assessment for the previous day (24 October 2010):**

During the previous day, locally heavy rainfall was observed over northeast DRC, Kenya, Southern Sudan, and southern Nigeria and locally over southeast coast of South Africa.

### **2.2. Weather assessment for the current day (25 October 2010):** Intense clouds are observed over eastern DRC, Tanzania (Lake Victoria basin), Uganda, and Central Africa Republic, northern Nigeria and over eastern Angola.



IR Satellite Image, Valid 1622Z, October 25, 2010 and  
position of ITD (based on 1200Z Surface Analysis)



*Previous day rainfall condition over Africa (Left)  
based on the NCEP CPCE/RFE and current day  
cloud cover (top) based on IR Satellite image*

**Author(s):** Samwel Mbuya (Tanzania Meteorological Agency) / CPC-African Desk  
Omar Gouled Allaleh (Djibouti Meteorological Office)

-----  
**Disclaimer: This bulletin is for training purposes only and should be used as guidance.  
NOAA does not make forecasts for areas outside of the United States.**