

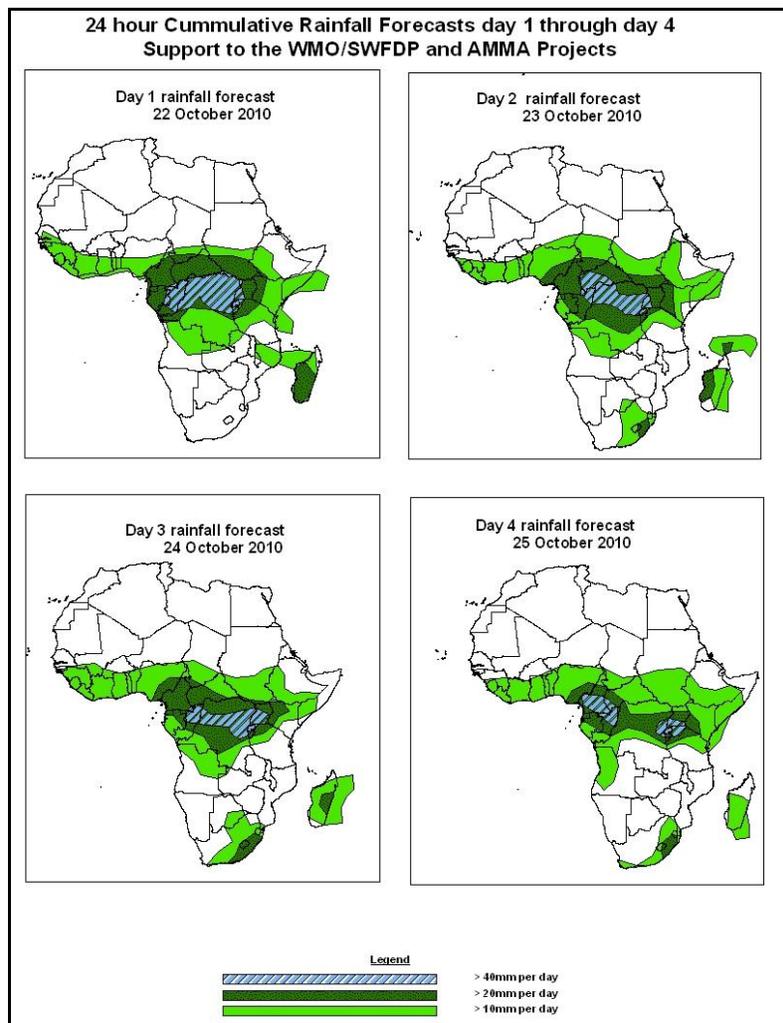


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 22 OCTOBER – 06Z of 25 OCTOBER 2010, (Issued at 14:00Z of 21 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 CAB region, central African region, and eastern parts of the Gulf of Guinea Countries with chances of locally heavy rainfall over northern DRC, Central Africa Republic, Congo, Rwanda, Uganda, Tanzania and Kenya. Also pockets of moderate rainfall are likely to continue over south eastern parts of South Africa and Madagascar.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 21 OCTOBER 2010**

A weak trough across Chad and Sudan is expected to become a cut off low and move over Senegal and Gambia in the next 48hours according to GFS and ECMWF models, while UKMET indicates a cut off low developing early during the next 24hours. On the part of Sudan the Models are indicating a slightly weakening of the cut off low system during 96hours. A cut off low pressure system over Southern Angola and Botswana has deepened slightly during the past 24 hours and is expected to persist over the region.

According to GFS, UKMET and ECMWF models, the seasonal low pressure system (Meridional component of the ITCZ) over DRC extends a trough across Botswana to northern parts of South Africa and is likely to interact with a frontal system over the southern tip of Africa.

The southern hemisphere High pressure system (St Helena) is at central pressure of 1028hPa and slightly strong compared to the past 24 hours. The models are indicating relatively a weak ridge from St Helena towards southwest of South Africa in the next 72 to 96 hours. The Mascarene high pressure is generally weak and remains displaced eastwards. The East African ridge remains weak along the east African coast with its north extent limited to southern Tanzania and occasionally extending to southern Kenya.

At 850hPa level, a convergence line from the Gulf of Aden across Eritrea to northeast Sudan is expected to persist during the next 24 to 96 hours. A new convergence line that developed over northern Nigeria during the past 24 hours is indicating a cyclonic convergence extending to southern Chad. Another convergence line situated over the southeast Sudan is expected to weaken from 48 to 72hours. A new convergence is expected to develop over Central African Republic in 48 to 72hours and move to Cameroon. Convergence line over northwest and northeast DRC is expected to remain over the region during the next 24 hours. A convergence line Over Lake Victoria basin extends from south western Kenya to Northwestern Zambia across eastern DRC during 24 to 72hours.

At 700hPa level, convergence line over Gulf of Guinea is expected to move to southern Congo in the next 48hours and then move to western parts of Central Africa Republic

and Gabon. The cyclonic convergence over DRC is expected to extend slightly towards western Tanzania in the next 24 to 72 hours. Another weak convergence line over South Africa expected to move eastwards and then disappear during 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 (<30Kts) across much of the tropical African region during the forecast period. The Sub Tropical westerly Jet over the southern Hemisphere is over the west coast of South Africa with wind speeds of 70 to 90Kts and likely to move eastwards with wind speed reaching 110Kts.

In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over CAB region, central African region, and eastern parts of the Gulf of Guinea Countries with chances of locally heavy rainfall over northern DRC, Central Africa Republic, Congo, Rwanda, Uganda, Tanzania and Kenya. Also pockets of moderate rainfall are likely to continue over south eastern parts of South Africa and Madagascar.

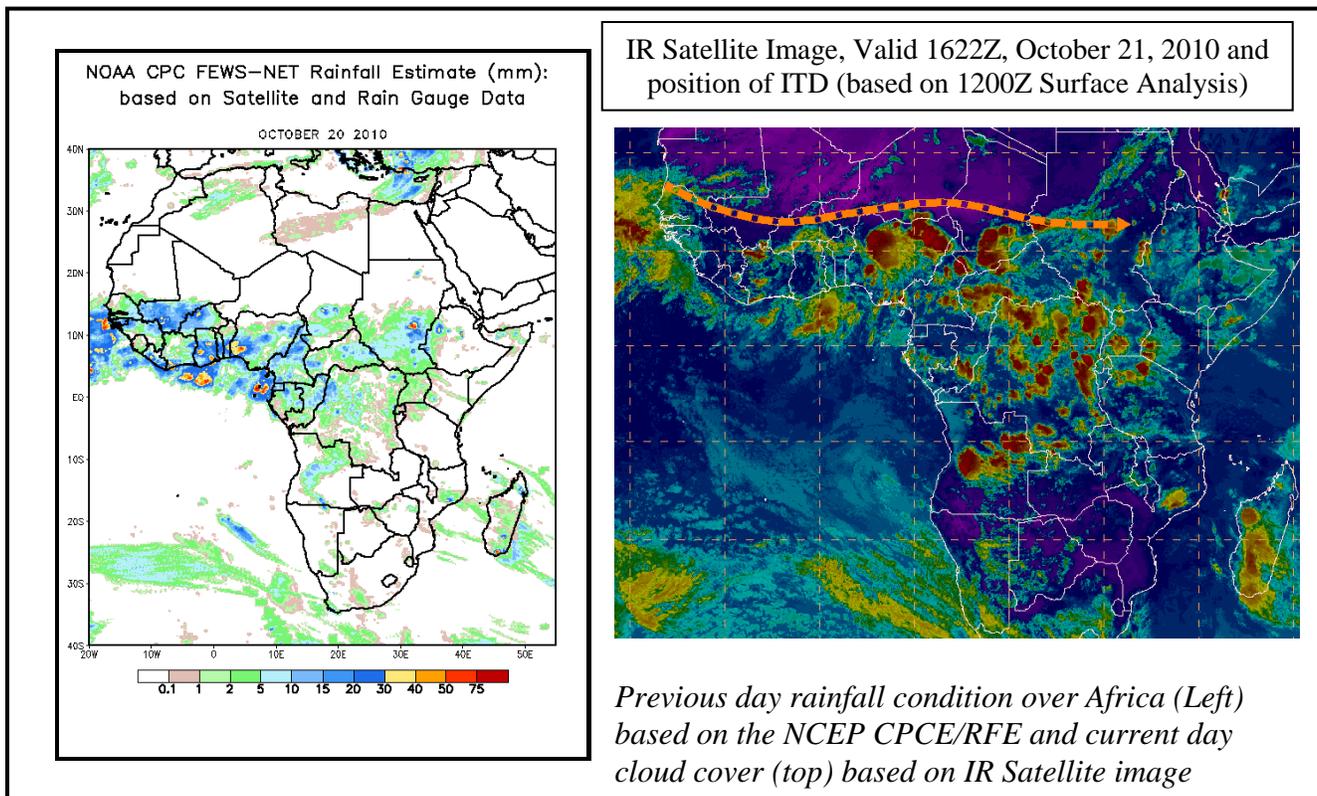
## 2.0. Previous and Current Day Weather Discussion over Africa (20 – 21 October 2010)

### 2.1. Weather assessment for the previous day (20 October 2010):

During the previous day, locally heavy rainfall was observed over the south coasts of Gulf of Guinea countries, eastern Sudan and south western Mali.

### 2.2. Weather assessment for the current day (21 October 2010):

Intense clouds are observed over Nigeria, southern Chad, Central Africa Republic, CAB region, Angola and locally around Lake Victoria basin.



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