

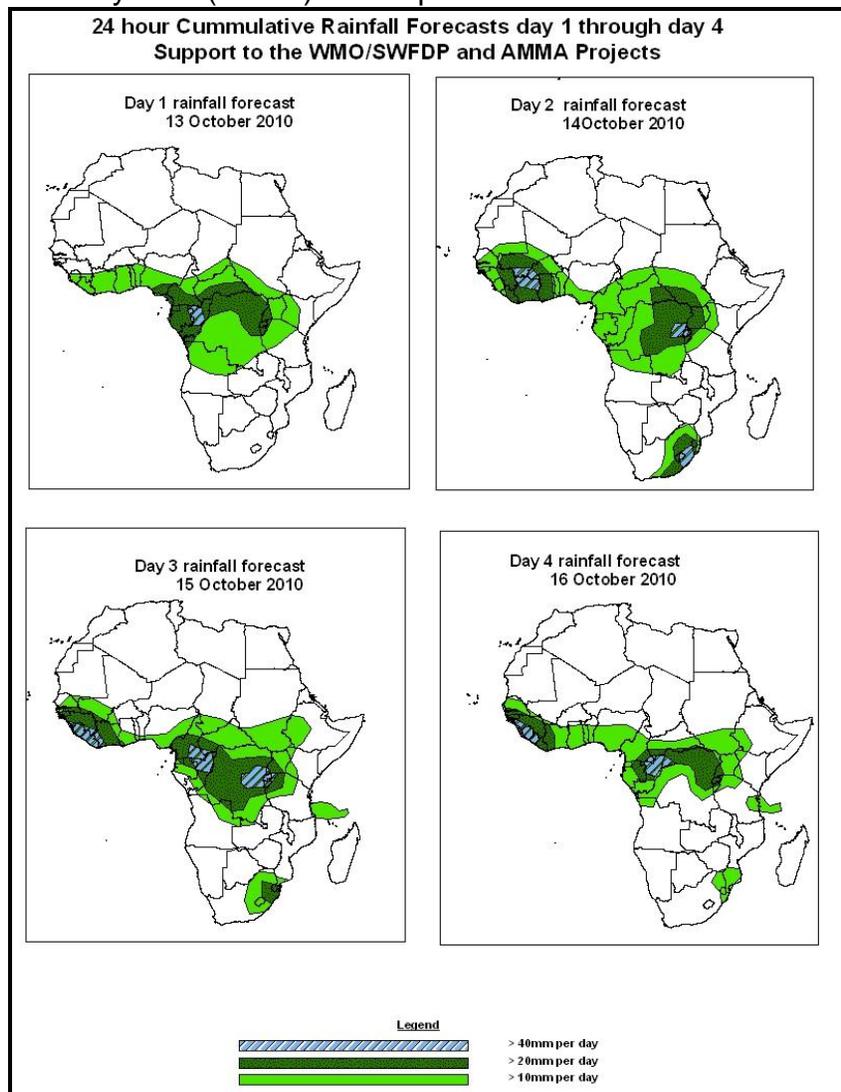


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 13 OCTOBER – 06Z of 16 OCTOBER 2010, (Issued at 14:00Z of 12 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 parts of West Africa coast and Central Africa countries with chances of locally heavy rainfall over Equatorial Guinea, Cameroon, northern Gabon and Congo. Also heavy rainfall is likely over the region bordering Cote D'Ivoire, Burkina Faso, Mali and Guinea due to persistent localized convergences and westward propagating meso-scale convection systems. Moderate to heavy rainfall is expected over parts of central to eastern DRC, Rwanda and western Uganda during 48 72hours.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 06 OCTOBER 2010**

A cut off low pressure system situated over southeast Sudan is expected to remain over the region during the forecast period. The central pressure for this system is 1005hPa according to GFS and UKMET models while the ECMWF indicates a central pressure of 1007hPa during the next 24hours. Another Cut off low is expected to develop over Chad and Niger in the next 48hours extending a trough towards Mali in 72 to 96hours. The seasonal low pressure system (Meridional component of the ITCZ) over DRC is extending a trough to western parts of Tanzania during the next 72hours. This system is likely to retreat westwards over DRC during the 96hours cycle.

The southern hemisphere High pressure system (St Helena) is expected to have a moderate strength during the next 48hours and thereafter the models indicate a generally weakening of the system from central pressure of 1032 to 1028hPa. Over the Indian Ocean, the Mascarene high pressure is generally weak and displaced eastwards. Therefore the East African Ridge is expected to remain relatively weak during the forecast period and its north extent will be limited to northern parts of Tanzania and occasionally up to southern parts of Kenya as predicted by GFS, ECMWF and UKMET modes.

At 850hPa, a convergence line in the vicinity of the border between Ghana and Togo is expected to move southwest in the next 48hours and start to weaken in 72hours. Another convergence line over Cameroon is expected to move slightly towards Congo in 24hours. The convergence line over eastern DRC is expected to move initially towards the Lake Victoria Region in 48 to 72hours and then start to retreat westwards over DRC.

At 700Hpa, a trough system associated with convergence is situated Ghana and Togo and it is expected to disappear within the next 24hours. Another trough is expected to develop over the west coast of Guinea in the next 72hours. A weak trough over Cameroon is expected to deepen slightly during 48hours. The Near Equatorial Trough (NET) over the East African coast is gradually getting organized allowing easterly wind flow pattern towards parts of coastal Tanzania in 72 to 96hours.

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.

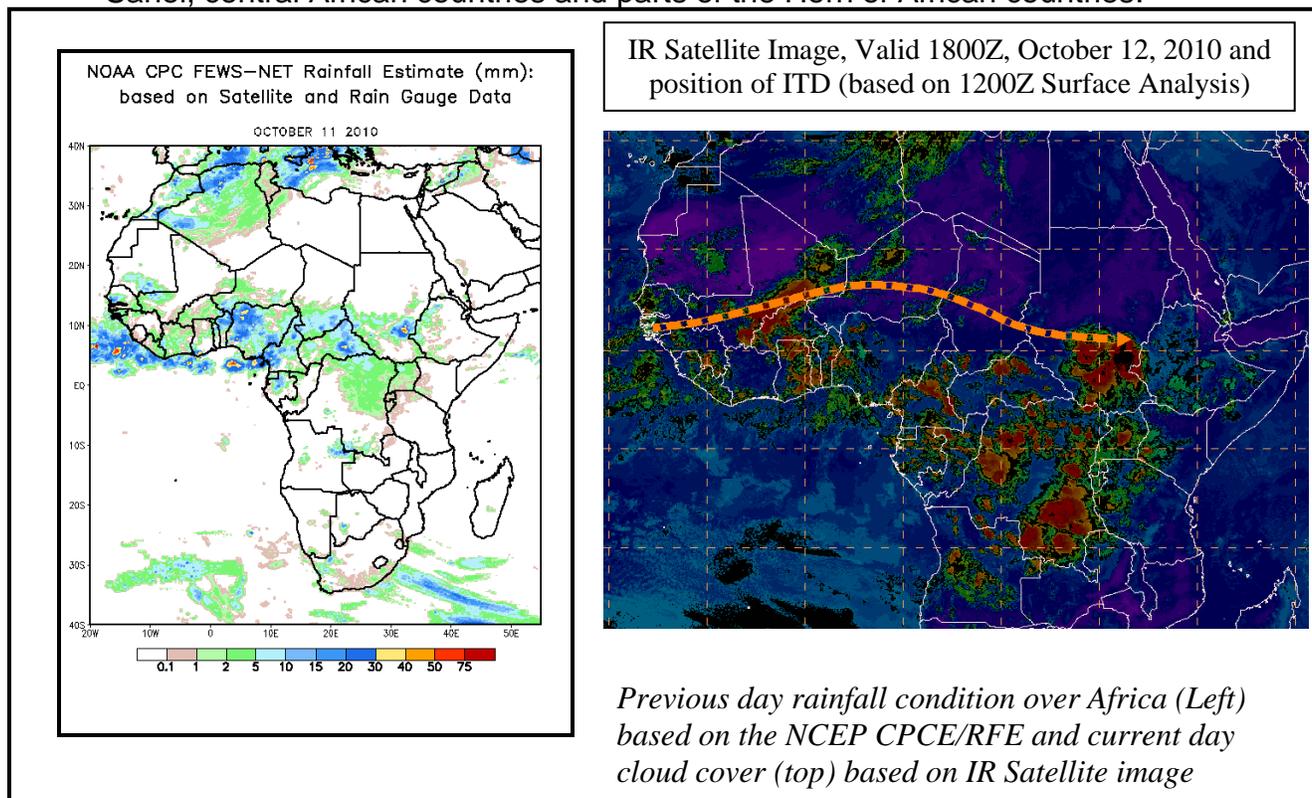
At 200hPa, zone of strong wind (>50Kts) is inclined further north. The strength of the Sub Tropical Jet is expected to be 70 to 90Kts during this period over Northern Mali. On the other hand, the TEJ related strong winds are expected to remain weak (25 to 30Kts) across much of the tropical African region during the forecast period.

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## 2.0. Previous and Current Day Weather Discussion over Africa (11 October – 12 October 2010)

**2.1. Weather assessment for the previous day (11 October 2010):** During the previous day, moderate to locally heavy rainfall was observed over western parts of Guinea Countries and Central Africa countries.

**2.2. Weather assessment for the current day (12 October 2010):** Intense clouds are observed over the western parts of the Gulf of Guinea countries, western Sahel, central African countries and parts of the Horn of African countries.



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

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