

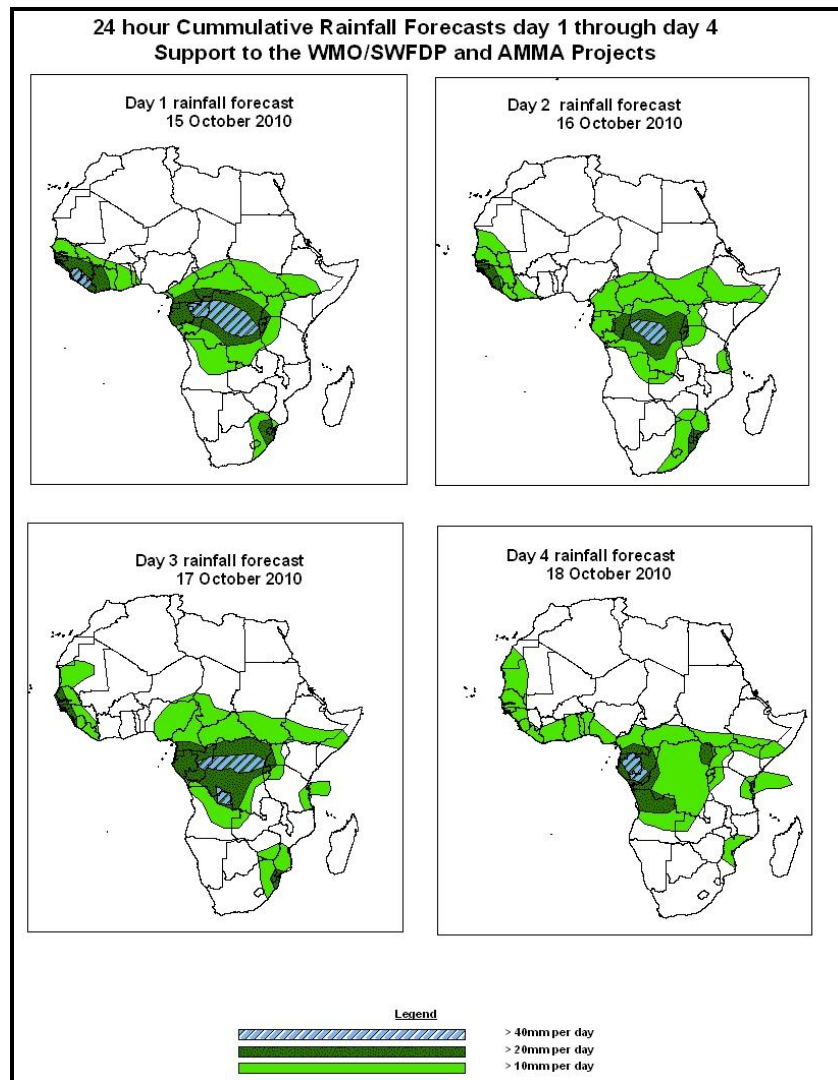


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 15 OCTOBER – 06Z of 18 OCTOBER 2010, (Issued at 14:00Z of 14 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 Central Africa, eastern and western parts of the Gulf of Guinea Countries, with chances of locally heavy rainfall over Sierra Leone, Liberia, northern Congo and parts of Cameroon. A greater part of DRC is also likely to experience moderate to heavy rainfall during the next 24 to 72hours. Pockets of moderate rainfall are likely to occur over parts of South Africa, Lesotho and Swaziland.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 14 OCTOBER 2010**

Two cut off low pressure systems that were situated over Sudan and across Chad and Niger respectively during the past 24hours have merged to form a broader trough extending from Mauritania to Sudan. This system is expected to break into two cut off low pressure systems along the Chad and Sudan border in 48 to 72hours. The GFS and ECMWF models are indicating central pressure of 1006 and 1007hPa respectively for this system during the next 24hours. Beyond 48 hours the system is unlikely to change significantly according to the two models.

The seasonal low pressure system (Meridional component of the ITCZ) over DRC is at 1009hPa and expected to move westwards in the next 48hours, weakening and become diffused over western parts of DRC. A cut off low situated over western parts of Zambia is expected to move slightly northwards during 48 hours and then disappear.

The southern hemisphere High pressure system (St Helena) is expected to weaken and move slightly to the west in the next 24 to 72 hours. The central pressure of the system is expected to change from 1030 to 1024hPa during the same period. The Mascarene high pressure is generally weak and remains displaced eastwards during the forecast period. Therefore, the East African Ridge is expected to remain very weak and its north extent will be limited to Tanzania and occasionally up to southern parts of Kenya as predicted by GFS, ECMWF and UKMET models.

At 850hPa level, a weak trough over Guinea, Sierra Leone and Liberia is expected to extend towards Mauritania during the next 48hours. Then this system moves to the coast of Senegal and disappear from the region. A convergence line over Lake Victoria extends towards western parts of Zambia across eastern DRC in 48hours. However; the system becomes weak and moves to the western parts of DRC in 72 to 96 hours.

At 700hPa level, a localized convergence line is expected to be active over Gabon, Cameroon and western DRC during the next 48 hours. The system is expected to weaken and mover westwards during the next 72 to 96 hours. Another convergence line is extending from northeast Namibia to Lesotho and Swaziland across northeastern parts of South Africa. The Near Equatorial Trough (NET) over the East African coast is still not well positioned for the region.

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.

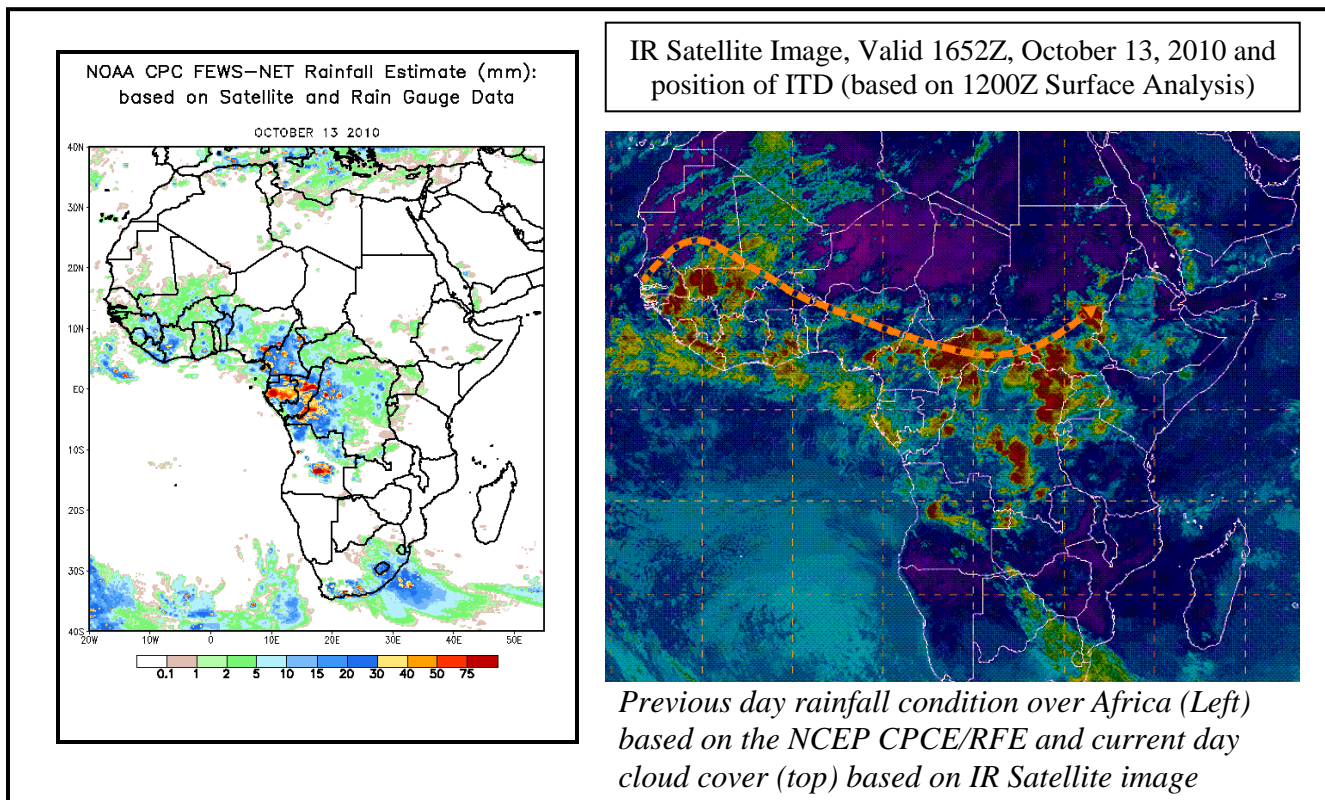
At 200hPa, zone of strong wind (>50Kts) is inclined further north. The strength of the Sub Tropical westerly Jet is expected to be 70 to 90Kts during this period in the vicinity of northern Mali. While the TEJ related strong winds are expected to remain weak (<25Kts) across much of the tropical African region during the forecast period.

In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over Central Africa, eastern and western parts of the Gulf of Guinea Countries, with chances of locally heavy rainfall over Sierra Leone, Liberia, northern Congo and parts of Cameroon. A greater part of DRC is also likely to experience moderate to heavy rainfall during the next 24 to 72hours. Pockets of moderate rainfall are likely to occur over parts of South Africa, Lesotho and Swaziland.

## 2.0. Previous and Current Day Weather Discussion over Africa (13 October – 14 October 2010)

**2.1. Weather assessment for the previous day (13 October 2010):** During the previous day locally heavy rainfall was observed over western areas of the eastern and western parts of the Gulf of Guinea countries and western DRC. Also moderate to heavy rainfall are indicated over Lesotho and eastern parts of South Africa.

**2.2. Weather assessment for the current day (14 October 2010):** Intense clouds are observed over the central African countries, the CAB region and Gulf of Guinea countries.



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