

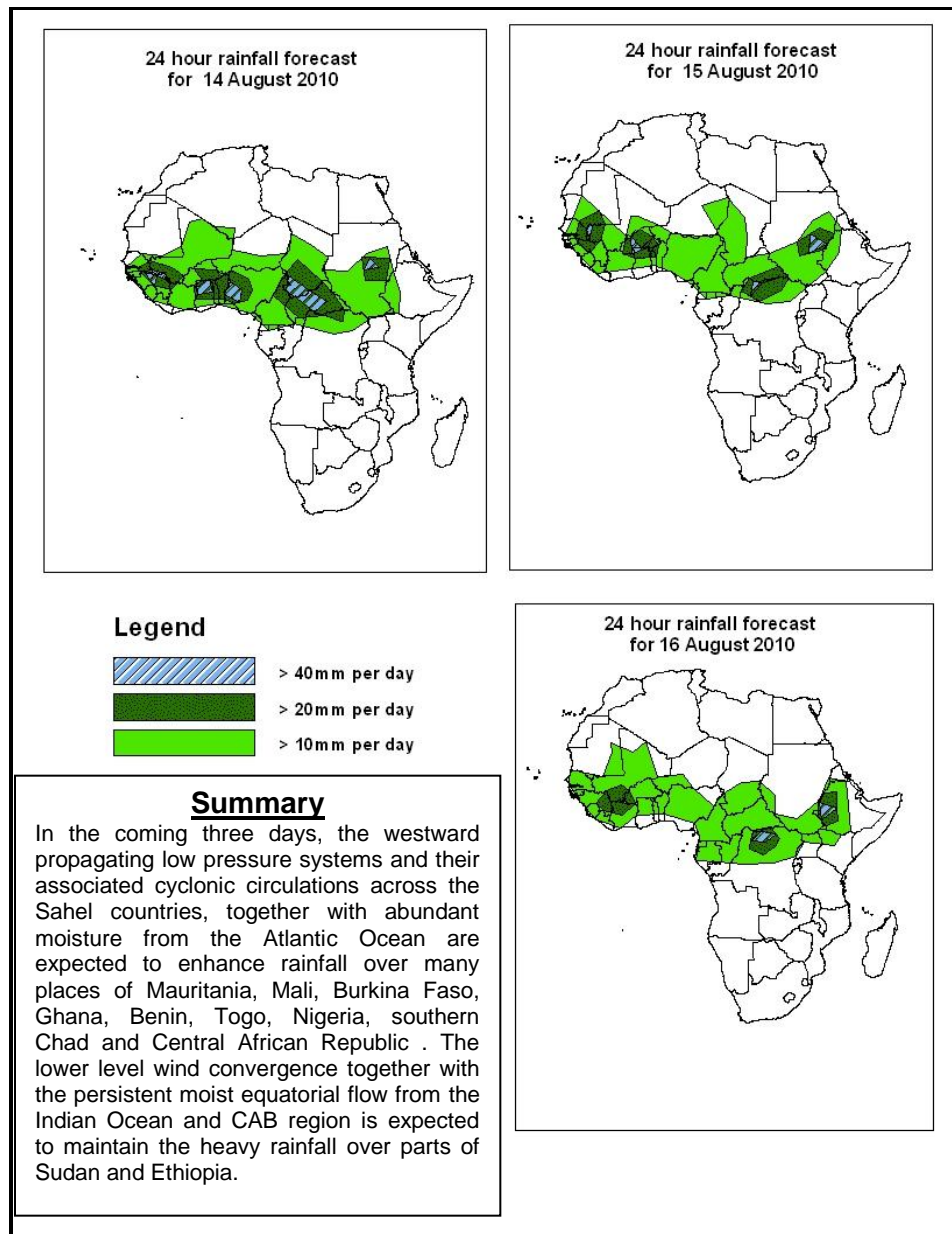


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 14 August – 06Z of 16 August 2010, (Issued at 14:00EST of 13 August 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.



## **1.2. Models Comparison and Discussion - Valid from 00Z of 13 August 2010**

A low pressure system over Mauritania is expected to fill up slightly from central pressure value of 1006mb to 1009mb through 24 to 48 hours on the GFS model, maintaining central pressure value of 1008mb on the ECMWF model and slightly filling up from central pressure value of 1005mb to 1006mb on the UKMET model. Another low pressure system located on western Niger is expected to move towards southern Mali in 48 hours, maintaining central pressure value of 1008mb on the GFS and UKMET models. A low pressure system located over central Chad, with its central pressure value of 1008mb is expected to move towards western Niger through 24 to 72 hours based on the GFS model. Meanwhile, this system is expected to deepen slightly, from central pressure value of 1008mb to 1006mb on the UKMET model, through 24 to 72 hours. Another weak low pressure located over southern DRC is expected to deepen from central pressure values of 1012mb to 1010mb on the UKMET model through 24 to 72 hours. The Azores high pressure system is expected to intensify from central pressure value of 1025mb in 24 hours to value of 1027mb in 72 hours, while its ridge expanding across the northern African countries. The St. Helena high maintains its central pressure value of 1027mb through 24 to 72 hours. The Mascarene high pressure system is expected to weaken from central values of 1026mb to 1020mb through 24 to 72 hours.

At 850mb, a cyclonic circulation over Mauritania is expected to move towards the west into the eastern Atlantic Ocean. Another cyclonic circulation situated in the area covering Togo and Benin is expected to move towards southern Burkina Faso through 24 to 72 hours. A cyclonic circulation located over southern Chad is expected to move towards southern Mali across Niger, Burkina Faso and Cote-d'Ivoire.

At 700hPa, a trough associated with the African Easterly wave is expected to move between the longitudinal positions of Mali and Senegal through 24 to 72 hours. Another trough is expected to move between Nigeria Guinea Conakry across Togo and Benin.

At 500hPa, strong winds in excess of 30Kts, which are associated with the African Easterly Jet, are expected in the vicinity of Mauritania, Mali, Niger and Chad through 24 to 72 hours.

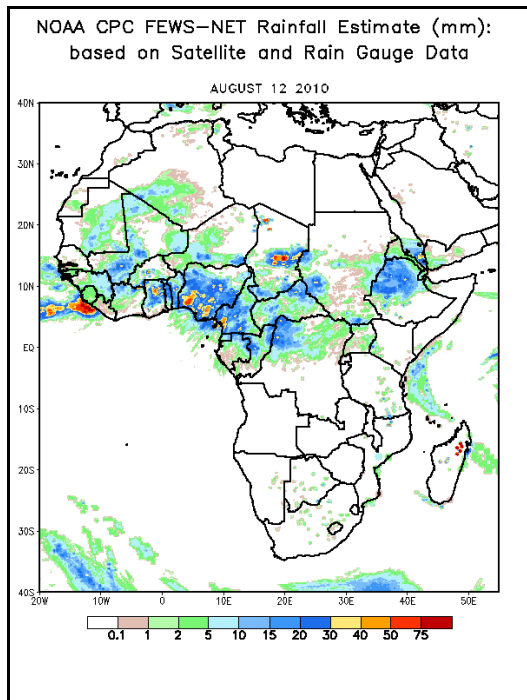
At 200hPa, a strong wind in excess of 50kts, which is associated with the subtropical westerly jet, is expected to dominate the flow over parts of northern Mali, Algeria, Tunisia and the adjoining areas of Mediterranean Sea.

In the coming three days, the westward propagating low pressure systems and their associated cyclonic circulations across the Sahel countries, together with abundant moisture from the Atlantic Ocean are expected to enhance rainfall over many places of Mauritania, Mali, Burkina Faso, Ghana, Benin, Togo, Nigeria, southern Chad and Central African Republic . The lower level wind convergence together with the persistent moist equatorial flow from the Indian Ocean and CAB region is expected to maintain the heavy rainfall over parts of Sudan and Ethiopia.

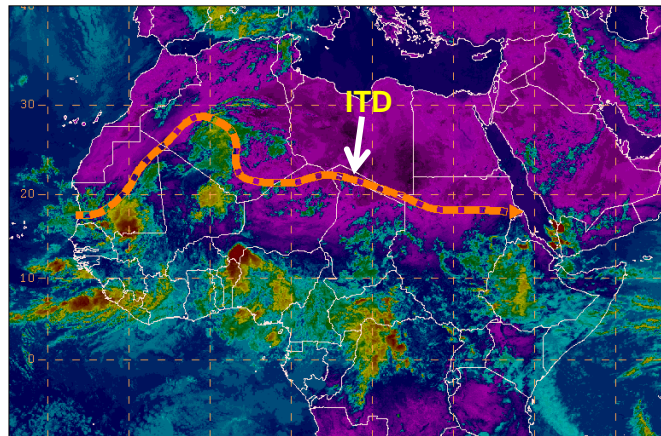
## 2.0. Previous and Current Day Weather Discussion over Africa (12 August 2010 – 13 August 2010)

**2.1. Weather assessment for the previous day (12 August 2010):** During the previous day, moderate to heavy rainfall was observed over parts of Mali, Nigeria, southeast Cameroon, southern Chad and northern Ethiopia.

**2.2. Weather assessment for the current day (13 August 2010):** Isolated intense clouds are observed over Ghana, Nigeria, Cameroon and Chad.



IR Satellite Image, Valid 1500Z, August 13, 2010



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

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