

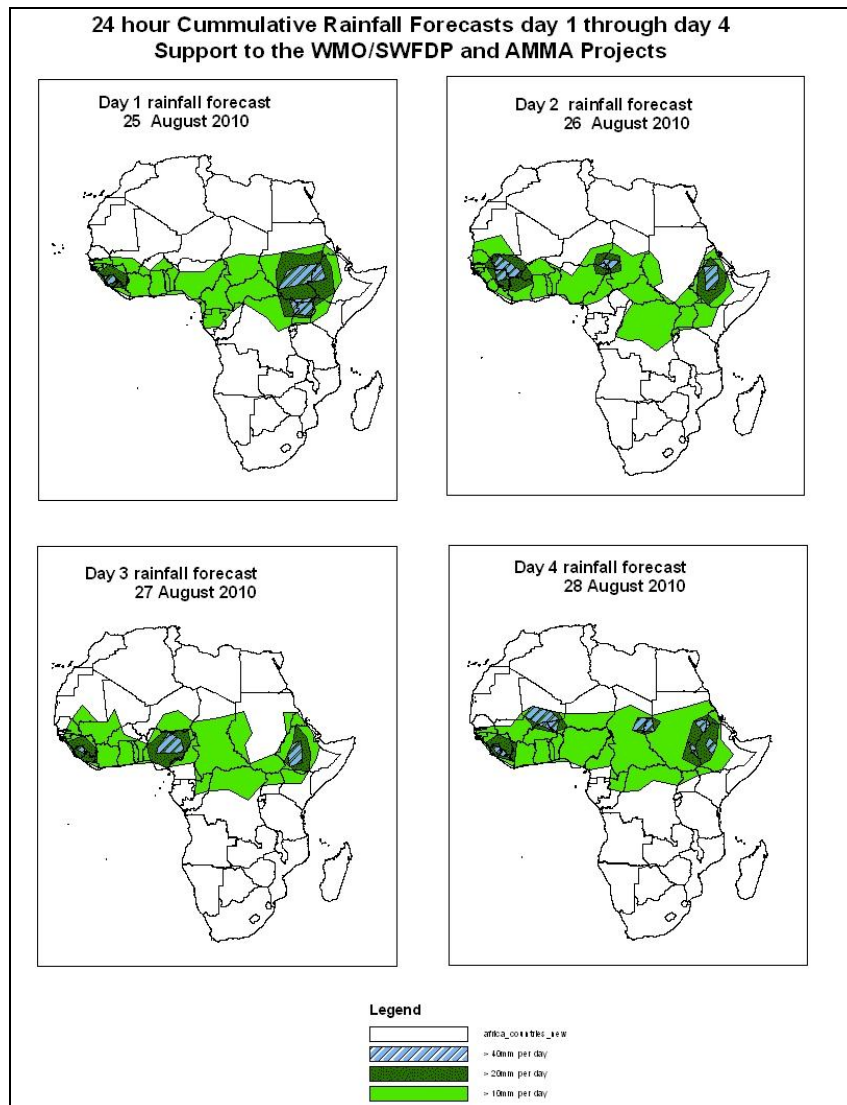


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 25 August – 06Z of 28 August 2010, (Issued at 14:00EST of 25 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.



### Summary

In the coming four days, the westward propagating meso-scale convective systems and the active West African Monsoon are expected to maintain the moderate to heavy rains across many parts of the western and central African countries. Especially, there is an increased chance for rainfall to exceed 20mm per day in the vicinity of Guinea Conakry, Sierra Leone, Liberia, and parts of Senegal, Mali, and parts of Niger, Chad and Central African Republic. The moderate to heavy rainfall activity is also expected to continue across Ethiopia and parts of southern Sudan

## **1.2. Models Comparison and Discussion - Valid from 00Z of 24 August 2010**

A system of low pressure situated over northern Mali is expected to move southwestward while deepening. Its central pressure value is expected to change from 1007mb to 1003mb on the GFS model, from 1008 to 1004mb on the ECMWF model and from 1006mb to 1002mb on the UKMET office model through 24 to 96 hours. Another low pressure system over Niger is expected to move westward. Its central pressure value is expected to change between 1007 to 1006mb through 24 to 48 hours on the GFS model, 1008 to 1005mb on the ECMWF, while its expected to maintain its central pressure value of 1006mb on the UKMET model. Another low pressure system situated over eastern Chad is expected to move westward while deepening. Its central pressure value is expected to change from 1006mb in 24 hours to 1004mb in 96hours on the GFS model and from 1006 to 1002mb on the UKMET model. The seasonal low pressure system over DRC is expected to deepen. Its central pressure value is expected to change from 1011mb to 1007mb on the GFS model, 1010 to 1008mb on the ECMWF model and 1009mb to 1008mb on the UKMET model through 24 to 96 hours. A low pressure system is also expected to form off the coast of Morocco. Its central pressure value is expected to change from 1009 to 992mb on the GFS and UKMET models through 24 to 96 hours.

The Azores high-pressure system is expected to relax through 24 to 48 hours, while its central pressure value changing from 1021 to 1019mb. With the weakening of this system, its associated ridge is also expected to retreat from northern African countries. The St. Helena high pressure system is expected to intensify, with its central pressure value increasing from 1024mb to 1020mb through 24 to 48 hours. Along with the intensification of this system, its associated ridge is expected to extend towards the Gulf of Guinea countries.

At 850hpa, a cyclonic situated over central Niger is expected to move towards Mali through 24 to 96 hours, followed by another cyclonic circulation over Sudan. The lower level convergence associated with Congo Air Boundary (CAB) is expected to remain active across Southwestern DRC, Uganda and Ethiopia through 24 to 72 hours. Localized zones of lower level wind convergence are expected over Angola, Namibia, Kenya, Somalia and Sudan through 24 to 96 hours.

AT 700hPa, axes of the troughs associated with the easterly wave are expected to dominate the flow over eastern Sudan, Central African Republic and Cameroon.

At 500hPa, zones of strong wind in excess of 30Kts, which are associated with the African Easterly Jet are expected in the vicinity of South Sudan, Chad, southern Niger Burkina Faso and southern Mali.

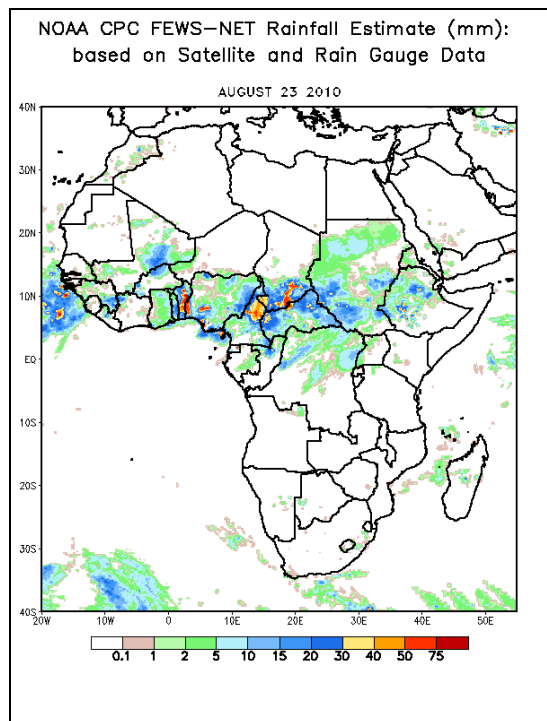
At 200hPa, zone of strong wind (>50Kts) is expected to dominate the flow in the vicinity of Tunisia and the adjoining areas of Mediterranean region. Strong easterly winds associated with the Tropical Easterly Jet are also expected across Ethiopia, Sudan, Chad, Niger, Mali and Guinea Conakry.

In the coming four days, the westward propagating meso-scale convective systems and the active West African Monsoon are expected to maintain the moderate to heavy rains across many parts of the western and central African countries. Especially, there is an increased chance for rainfall to exceed 20mm per day in the vicinity of Guinea Conakry, Sierra Leone, Liberia, and parts of Senegal, Mali, and parts of Niger, Chad and Central African Republic. The moderate to heavy rainfall activity is also expected to continue across Ethiopia and parts of southern Sudan

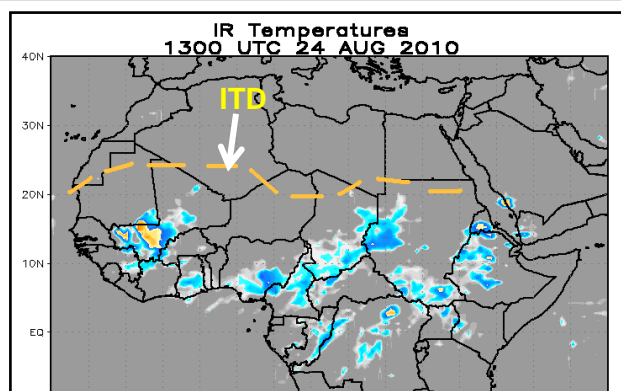
## 2.0. Previous and Current Day Weather Discussion over Africa (23 August 2010 – 24 August 2010)

**2.1. Weather assessment for the previous day (23 August 2010):** During the previous day, moderate to heavy rainfall was observed over parts of Ghana, southern Nigeria, northern Cameroun and southern Chad.

**2.2. Weather assessment for the current day (24 August 2010):** Convective clouds are observed over much of the Gulf of Guinea, central African and the Horn of Africa countries, with the intense clouds observed over Mali, southern Ghana, Nigeria, Cameroun, Chad, Sudan and Ethiopia.



IR Satellite Image, Valid 1300Z, August 24, 2010  
and position of ITD (based on 1200Z observation)



*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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