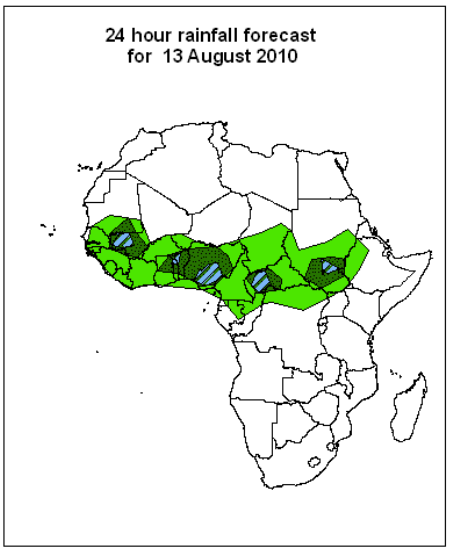
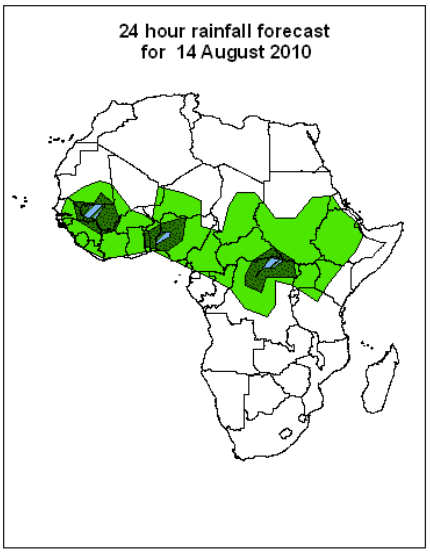
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

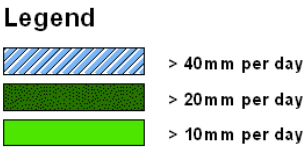
1.0. Rainfall Forecast: Valid, 06Z of 13 August – 06Z of 15 August 2010, (Issued at 14:00EST of 12 August 2010)

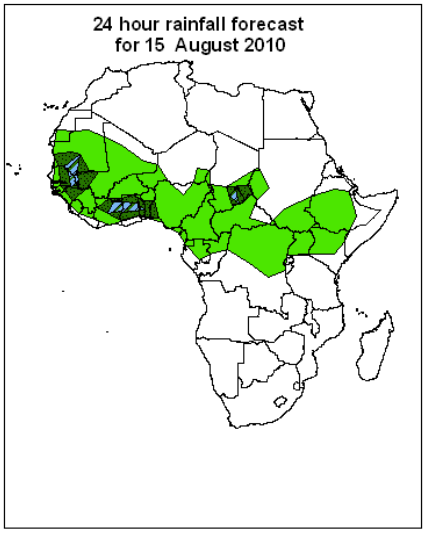
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 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, Benin, Togo, parts of Nigeria and Chad. 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.

1.2. Models Comparison and Discussion - Valid from 00Z of 12 August 2010

A low pressure system is expected to move between Mali and western Mauritania through 24 to 72 hours. During 24 to 72 hours, its central pressure value is expected to change from 1006mb to 1005mb, based on the GFS model. The UKMET model tends to maintain central mean sea level pressure value of 1008 through 24 to 72 hours, while mean sea level pressure is expected to remain 1010mb on the ECMWF model. A low pressure system located south of the DRC is expected to remain stationary, with central pressure value of 1012mb through 24 to 72 hours. The GFS and UKMET models expect deepening of a low pressure system in the vicinity of northern Algeria, with a central pressure value becoming 1010mb through 72hours. The Mascarene high pressure system located over South Africa is expected to weaken from central values oh 1040mb in 24 hours to values of 1036 in 72 hours. Meanwhile, the St. Helena anticyclone is expected to intensify from central pressure values of 1024mb in 24 hours to 1028mb in 72 hours.

At 850hPa, west ward moving cyclonic circulations situated over Burkina Faso, Mali and Senegal, forming zone of equatorial trough across the Sahel countries are expected to remain the prominent features in the coming three days as well. The western end of this system is expected to reach Mauritania through 72 hours, while the other centers approach central Niger and eastern Nigeria. Another cyclonic circulation located near the border between western Sudan and Central African Republic is expected to move towards the west, reaching eastern Nigeria through 72 hours. A lower level wind convergence zone is also expected to dominate the flow over Cameroon, Central African Republic and Sudan.

At 700hPa, a trough associated with an easterly wave is expected to move westward, from longitudinal position of Burkina Faso/Cote D'Ivoire to Mauritania across Benin and Togo through 24 to 72 hours.

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, Morocco, Algeria, Tunisia and the adjoining areas of Mediterranean Sea.

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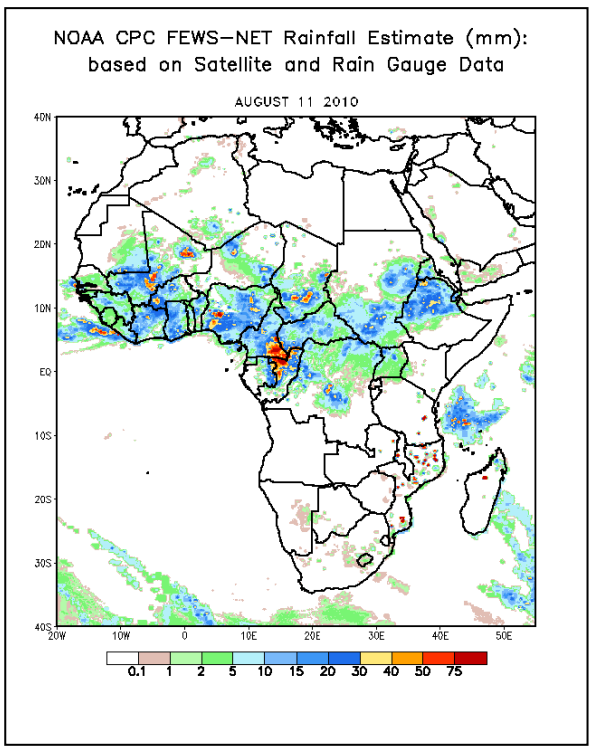
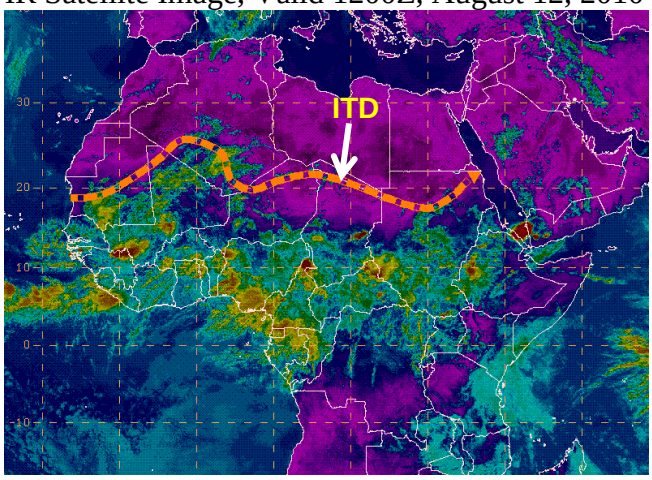
2.0. Previous and Current Day Weather Discussion over Africa (11 August 2010 – 12 August 2010)

2.1. Weather assessment for the previous day (11 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 (12 August 2010): Isolated intense clouds are observed over Mali, Cot D'Ivoire, Ghana, Togo, southern Nigeria, northern Cameroon, western Sudan and the neighboring areas of Chad and Central African Republic, and Ethiopia.





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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