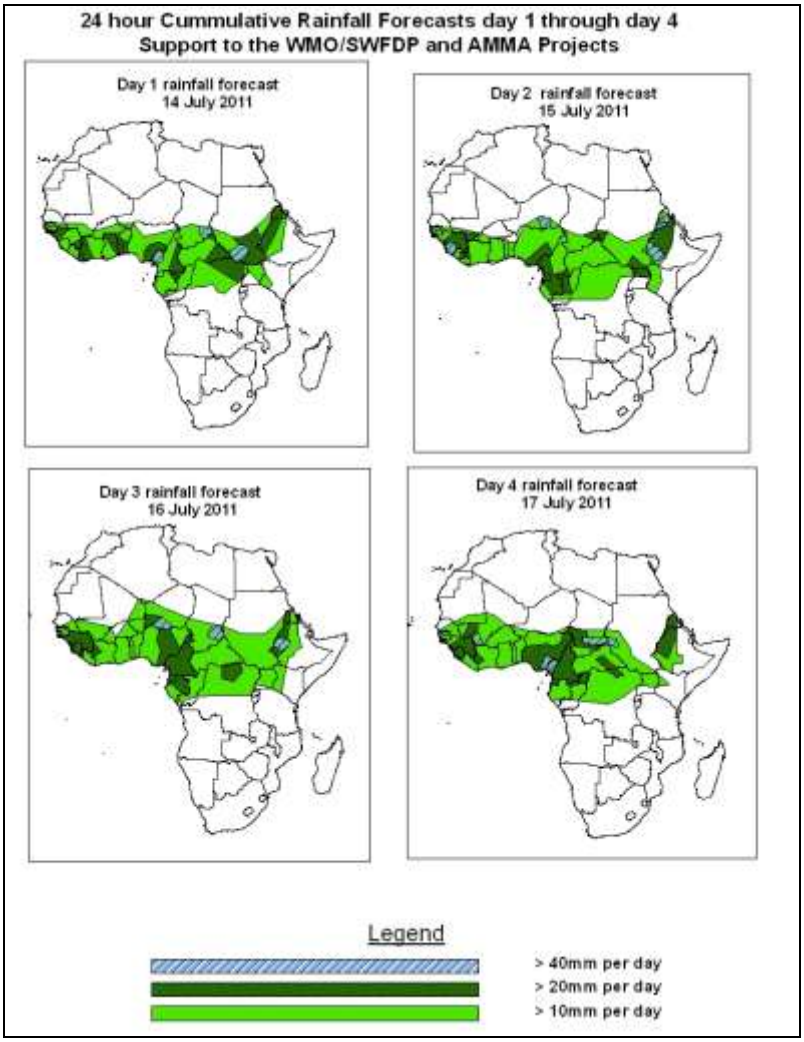
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 14 July– 06Z of 17 July 2011, (Issued at 11:15Z of 13July 2011)

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 next four days, easterly waves and their associated convective activity are expected to enhance rainfall across central and West Africa countries. Hence, there an increased chance for moderate to heavy rainfall over southern Senegal, Gambia, Guinea Bissau, Guinea, Liberia, Sierra Leone, southern Mali, parts of southern Niger, Ghana, Nigeria, Cameroon, southern Chad and parts of CAR. Western Eritrea, western Ethiopia, southern Sudan and northern DRC are also expected to receive moderate to heavy rainfall due to strong cross equatorial flow and its associated convergence in the Horn of Africa.

1.2. Models Comparison and Discussion-Valid from 00Z of 13 July 2011

According the NCEP/WRF, GFS, ECMWF and UKMET models, the monsoon trough with its associated heat lows across the Sahel region is expected to maintain its east-west orientation during the forecast period. The central pressure value along its western end (near Mauritania and Mali) varies from 1004mb to 1008mb during the forecast period. On the other hand, the central pressure value of the heat low over central African region and Sudan is expected to remain1003mb during the forecast period. The Iberian Peninsula is expected to have pressure values varying from 990 to 997hpa during the forecast period. The East African ridge across southeast and East Africa is expected to show strengthen through 48 to 72 hours and tends to weaken through 72 to 96 hours.

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The St. Helena High pressure system over southeast Atlantic Ocean is expected to have central pressure value of 1024hpa during the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to maintain central pressure value of 1030hpa through 24 and tends to intensify to 1032 through 48 to 72 hours and weaken to 1028hpa by 96 hours.

At the 850hpa level, the GFS model tends to maintain westerly to southwesterly flow across central and eastern parts of the Gulf of Guinea countries throughout the forecast period. A lower tropospheric cyclonic circulation is expected to move between western Northern Mali and the west coast of West Africa through 24 to 72 hours. The seasonal moist southeasterly flow from the Indian Ocean across East Africa, turning into southwesterly flow as it passes northern DRC and Sudan, is expected to converge over parts of Sudan and western Ethiopia during the forecast period. On the other hand, dry northeasterly winds are expected to continue dominating the flow over northern and portions of central Sudan.

At 700mb level, two easterly waves, one across the western end of West Africa, and the other one across central and eastern parts of the Gulf of Guinea are expected to dominate the flow over western and central African countries.

At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over western Sudan, central African and the Gulf of Guinea and southern Sahel region, with the stronger winds associated with the African easterly Jet

are expected over, Mali, Guinea-Bissau, Cote D'Ivoire, Burkina, Faso, Ghana, Togo, Benin, Nigeria, Sudan Chad.

A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected in the southern hemisphere across Atlantic and Indian Ocean during the forecast period.

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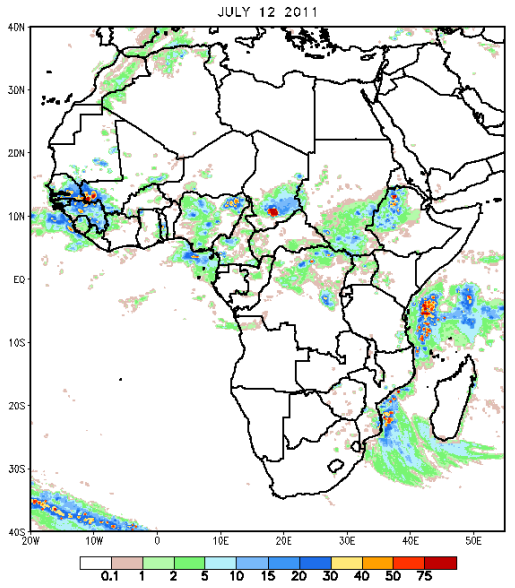
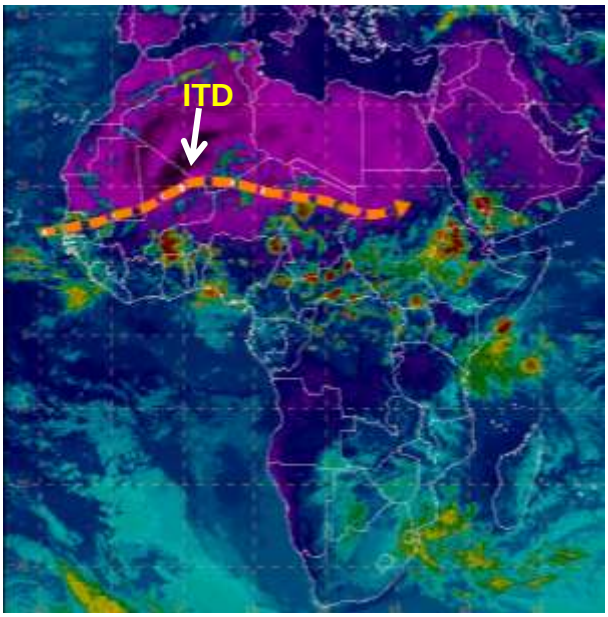
2.0. Previous and Current Day Weather Discussion over Africa (12July -14 July 2011)

2.1. Weather assessment for the previous day (12 July 2011): During the previous day, moderate to heavy rainfall was observed over Senegal, Guinea-Bissau, southern Mali, northwest Nigeria, southern Chad and western Ethiopia.

2.2. Weather assessment for the current day (13 July 2011): Intense clouds are observed over Burkina-Faso, Togo, Benin, parts of Nigeria, parts Central Africa Region and western Ethiopia.



IR Satellite Image (valid 1322Z) and position of ITD, based on 1200Z Surface Analysis; 12July 2011



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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