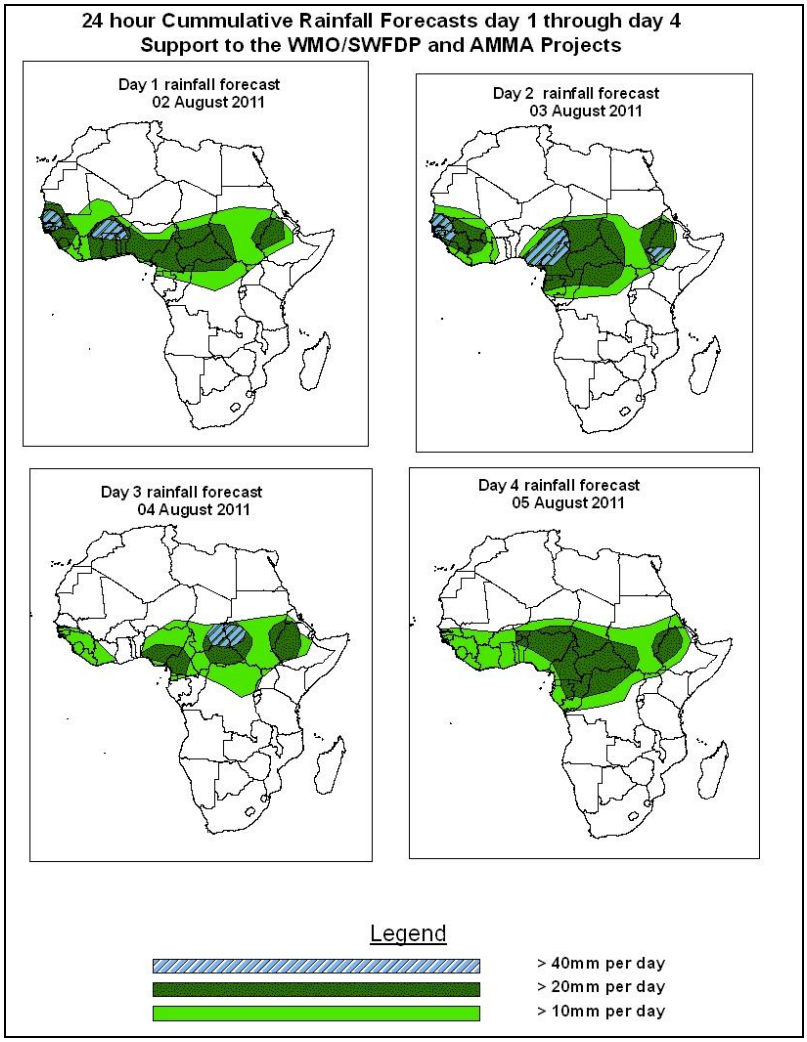
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 02 August – 06Z of 05 August 2011, (Issued at 10:15Z of 01 August 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, the westward propagating waves, with their associated convective activity are expected to enhance rainfall over portions of western and central African countries. Hence, there is an increased chance for heavy rainfall over southern Mauritania, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia, southern Mali, Burkina Faso, Nigeria, Cameroon, CAR, Chad and western Sudan. The active lower tropospheric convergence over northern GHA region and the seasonal monsoon flow is also expected to maintain moderate to heavy rains over parts of northern DRC, South Sudan and Ethiopia.

1.2. Models Comparison and Discussion-Valid from 00Z of 29 July 2011

According to 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 heat low along its western end tends to deepen slightly, with its central pressure value decreasing from 1008mb to 1006mb through 24 to 96 hours, according to the ECMWF model, while its central pressure value is expected to decrease from 1005mb to 1003mb according to the GFS and UKMET models. In contrast, the heat low over central African region tends to fill up, with its central pressure value increasing from 1004mb to 1008mb according to the ECMWF model, from 1005mb to 1007mb according to the GFS model and from 1003mb to 1004mb according to the UKMET model. On the other hand, the heat low near Sudan is expected to show little or no change during the forecast period, according to the three models. The East African ridge across southeast and East Africa is expected to strengthen gradually during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify, with its central pressure value increasing from 1018 in 24 hours to 1031mb in 96 hours. The Mascarene high pressure system over southwest Indian Ocean is also expected to intensify, from central pressure value of 1028mb in 24 hours to 1037mb in 96 hours, according to the GFS model.

At the 850hpa level, a cyclonic circulation over northern Cote D'Ivoire is expected to propagate westwards and leave the West Africa coast in 72 hours. Another cyclonic circulation over northern Mali is expected to deepen, while dominating the flow over Mali southern Mauritania, Burkina Faso and Senegal during the forecast period. A strong east-west oriented wind convergence is expected to dominate the flow across southern Niger, northern Nigeria, Chad and western Sudan during the forecast period. The seasonal monsoon flow across eastern Gulf of Guinea and central African countries is expected to remain strong through 24 to 96 hours. The cross equatorial flow and its associated convergence over the Horn of Africa are expected to enhance rainfall in the region during the forecast period.

At 700mb level, northeasterly to easterly flow is expected to dominate the flow over central and West African countries during the forecast period.

At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over the Gulf of Guinea, southern Sahel region and Sudan. Zone of strong easterlies is expected to propagate westwards between western Sudan and Senegal during the forecast period.

A zone of strong wind (>90Kts) at 200hpa level associated with the Sub Tropical westerly Jet in the southern hemisphere is expected to remain active across southern Atlantic Ocean, southern Africa and southern Indian Ocean.

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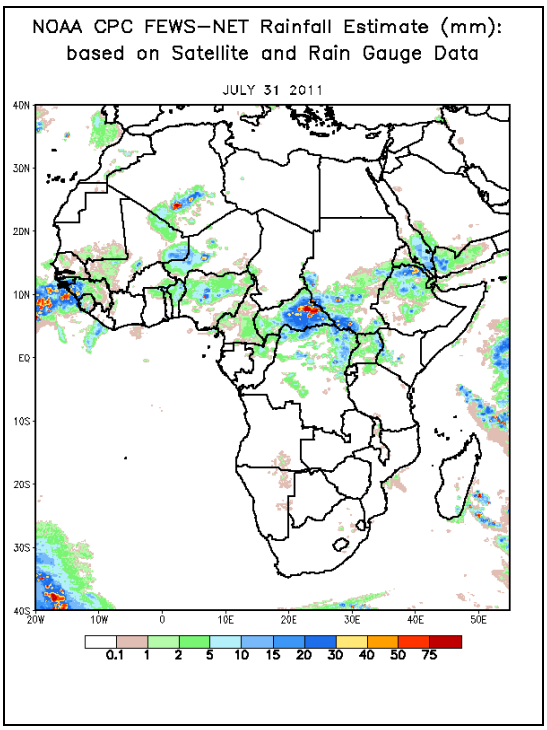
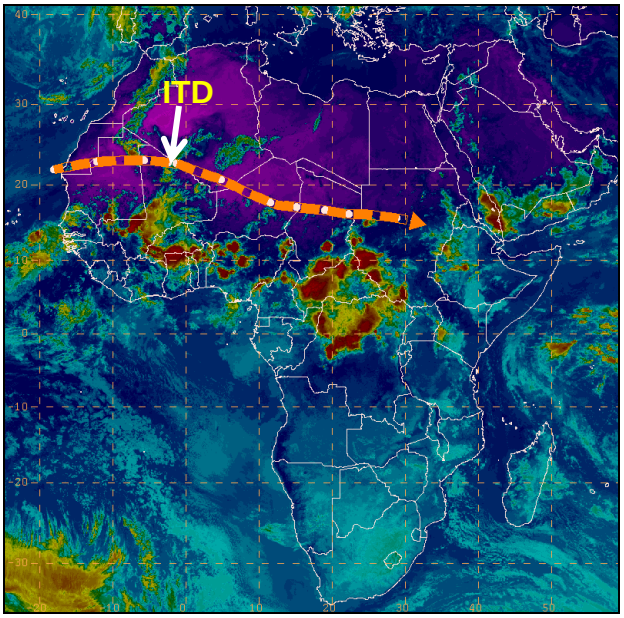
2.0. Previous and Current Day Weather Discussion over Africa (31 July – 01 August 2011)

2.1. Weather assessment for the previous day (31 July 2011): During the previous day, locally heavy rainfall was observed over Guinea, Nigeria, CAR, South Sudan and northern Ethiopia.

2.2. Weather assessment for the current day (01 August 2011): Intense clouds are observed over many places of West and central African countries..



IR Satellite Image (valid 1730Z) and position of ITD, based on 1200Z Surface Analysis; 01 August 2011



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