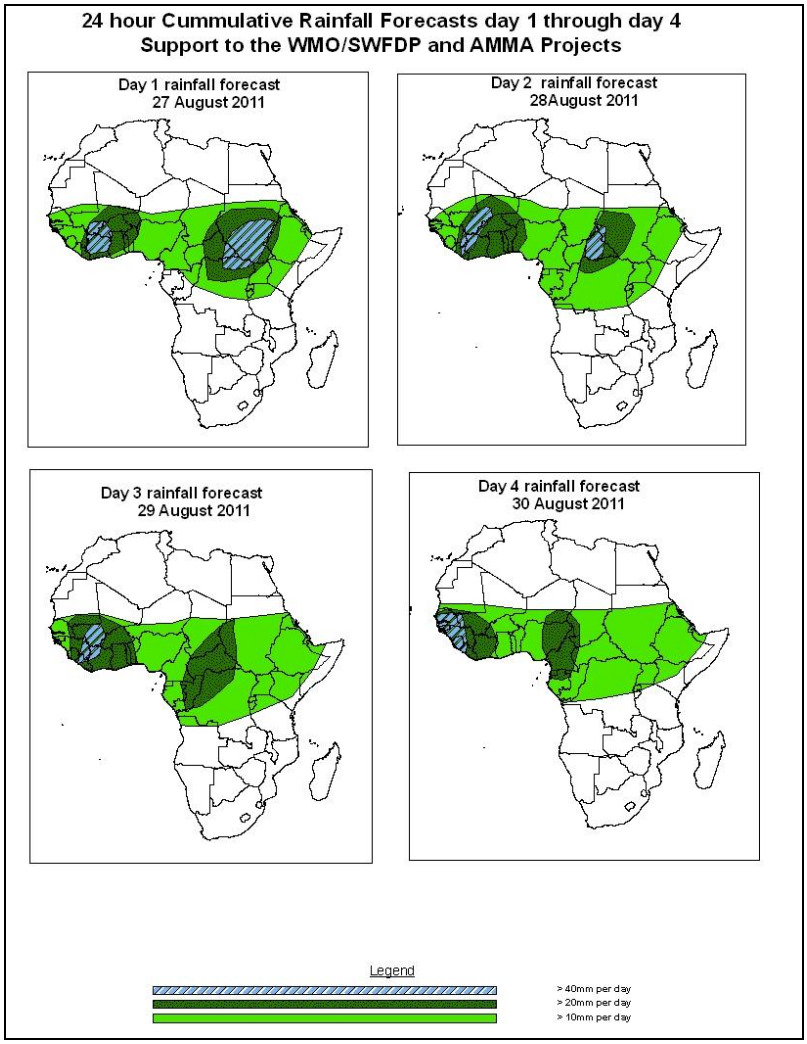
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 27 August – 06Z of 30 August 2011, (Issued at 10:15Z of 26 August 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high 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, westward propagating waves and their associated convective activities are expected to enhance rainfall over portions of central and western African countries. Hence, there is an increased chance for moderate to heavy rainfall over Senegal, northern Mauritania, Burkina Faso, Mali, Guinea, Gambia, Guinea Bissau, Liberia, Sierra Leone, Ghana, Togo, Benin, Nigeria, Cameroon, CAR, Gabon and western Niger. Seasonal convergences are expected to maintain moderate to heavy rainfall over parts of DRC, Sudan, portions of Chad and western Ethiopia.

1.2. Models Comparison and Discussion-Valid from 00Z of 26 August 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 (near Mali and Algeria borders) tends to fill up, with its central pressure value increasing from 1008mb to 1009mb, according to the ECMWF model, from 1007mb to 1009mb according to the GFS model and from 1006mb to 1007mb according to the UKMET model during the forecast period. The heat low over central Africa region tends to fill up, with its mean sea level pressure value increasing from 1008mb to 1009mb according to the ECMWF model and from 1007mb to 1008mb according to the GFS model during the forecast period. This low is expected to weaken from 1007mb to 1006mb according to the UKMET model and it tends to fill up to MSLP value of 1008mb by 96 hours. On the other hand, the heat low over eastern Arabian Peninsula is expected to weaken from 999mb to 997mb, from 999mb to 997mb and from 998mb to 996mb, according to ECMWF, GFS and UKMET models, respectively. This low is expected to fill up, with its central pressure value increasing to 999mb according to the ECMWF model, to 998mb according to the GFS model and to 998mb according to the UKMET model towards end of the period forecast. The East African ridge across southeast and East Africa is expected to strengthen during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken from 1036mb to 1022mb through 24 to 72 hours and it tends to intensify to mean sea level pressure value of 1027mb by 96 hours. The Mascarene high pressure system over southwest Indian Ocean is also expected to intensify from MSLP of 1020mb to 1032mb through 24 to 48 hours and its mean sea level pressure value tends to decrease to 1025mb towards end of the forecast period.

At the 850hpa level, a cyclonic circulation near the border between Sudan and Chad is expected to move westwards across Niger and Nigeria during the forecast period. Localized wind convergences are expected to prevail across Sudan, Ethiopia and Eritrea, extending towards DRC and CAR. The monsoon flow from the Atlantic Ocean and the moist equatorial flow from the Indian Ocean are expected to continue providing abundant moisture to the lower tropospheric convergences in western and central African region and the northern parts of the GHA region.

At 700mb level, an easterly wave across Nigeria and southern Niger is expected to propagate westwards across the West African countries. This wave, with its associated convective activity is expected to reach near the Senegal coast by 96 hours. A cyclonic circulation is expected to dominate the flow over Mali through 24 to 48 hours. East-west oriented winds convergences are expected to prevail over eastern Sudan, western Ethiopia, CAR and Cameroon through 48 to 72 hours.

At 500hpa, zone of strong easterly winds, which is associated with the African Easterly Jet (AEJ), is expected to dominate the flow near eastern Burkina Faso, northern Ghana and it tends to shift westwards across Mali, Senegal through 48 to 96 hours.

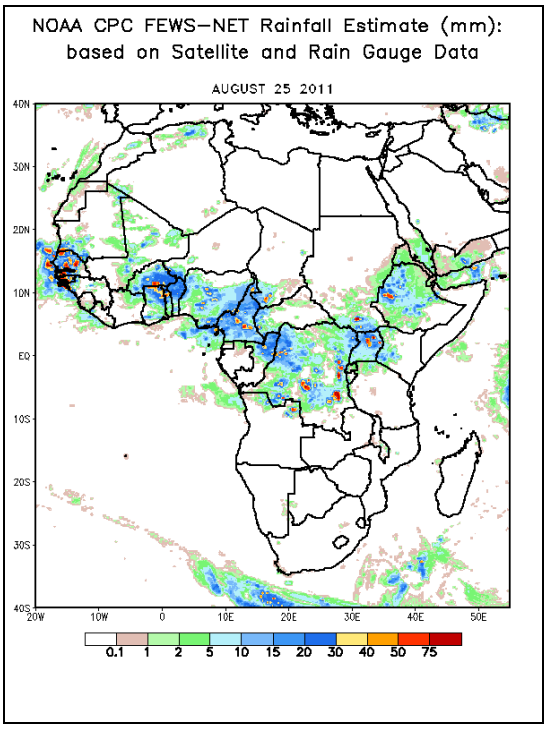
At 150mb, strong winds associated with Tropical Easterly Jet (TEJ) are expected to remain weak during the forecast period.

In the next four days, westward propagating waves and their associated convective activities are expected to enhance rainfall over portions of central and western African countries. Hence, there is an increased chance for moderate to heavy rainfall over Senegal, northern Mauritania, Burkina Faso, Mali, Guinea, Gambia, Guinea Bissau, Liberia, Sierra Leone, Ghana, Togo, Benin, Nigeria, Cameroon, CAR, Gabon and western Niger. Seasonal convergences are expected to maintain moderate to heavy rainfall over parts of DRC, Sudan, portions of Chad and western Ethiopia.

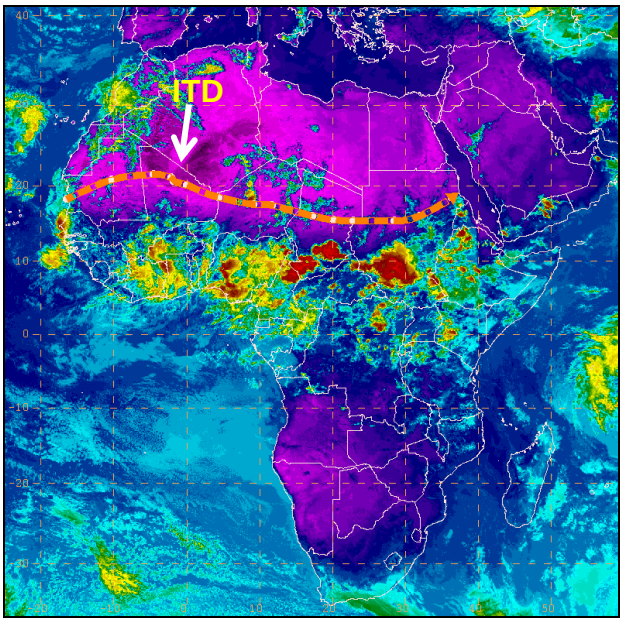
2.0. Previous and Current Day Weather Discussion over Africa (25 – 26 August 2011)

2.1. Weather assessment for the previous day (25 August 2011): During the previous day, moderate to heavy rainfall was observed over Senegal, Burkina Faso, northern Ghana, Cameroon, northern Congo, Uganda parts of Nigeria, DRC and Ethiopia.

2.2. Weather assessment for the current day (26 August 2011): Intense clouds are observed over western Senegal, northern Cote d'Ivoire, southern Chad, southern Sudan, Nigeria, Ethiopia, portions of Ethiopia and Uganda.



IR Satellite Image (valid 1500Z) and position of ITD, based on 1200Z Surface Analysis; 26 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

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