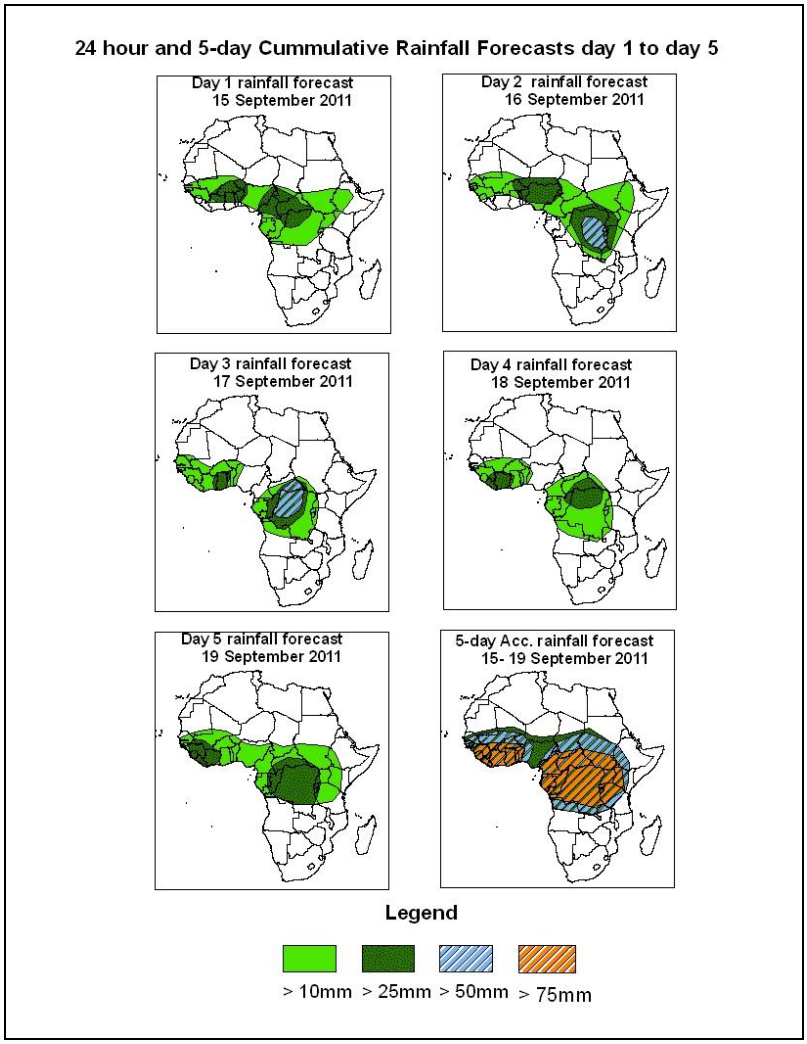
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 15 September – 06Z of 19 September 2011, (Issued at 10:15Z of 14 September 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 five days, seasonal wind convergences and westwards propagating wave with their associated convective activities are expected to enhance rainfall over portions of central and western African countries. In general, there is an increased chance for moderate to heavy rainfall over Senegal, Guinea, Gambia, southern Mali, Liberia, Sierra Leone, Cote d'Ivoire, Burkina Faso, Ghana, Benin, Togo, southern Niger, Nigeria, Cameroon, Gabon, Congo, CAR, South Sudan, southern Chad, western Ethiopia, Uganda, and DRC and parts of western Kenya and northern Angola.

1.2. Models Comparison and Discussion-Valid from 00Z of 14 September 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 Mauritania and Mali borders) tends to fill up, with its central pressure value increasing from 1006mb to 1010mb, according to the ECMWF model and from 1006mb to 1008mb, according to GFS model through 24 to 48 hours. This low tends to deepen to MSLP value of 1008mb, according to ECMWF model and 1005mb, according to the GFS model by 120 hours. This same low is expected to fill up from 1005mb to 1007mb, according to the UKMET model through 24 to 96 hours and it tends to deepen to MSLP value of 1006mb towards end of forecast period. The heat low over central Africa region tends to deepen from 1011mb to 1008mb, according to the ECMWF model, from 1008mb to 1007mb, according to the GFS model and from 1009mb to 1007mb, according to the UKMET model during the forecast period. On the other hand, the heat low over eastern Arabian Peninsula is expected to fill up from 1000mb to 1002mb, according to the ECMWF model and from 999mb to 1002mb, according to the GFS model through 24 to 120 hours. In contrast, this same low tends to deepen to MSLP value from 1000mb to 999mb through 24 to 72 hours and it tends to fill up to MSLP value of 1002mb by 120 hours. The East African ridge across southeast and East Africa is expected to weaken during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken from 1025mb to 1021mb through 24 to 96 hours and it tends to intensify to MSLP value of 10032mb by 120 hours. The Mascarene high pressure system over southwest Indian Ocean is expected also to weaken from 1028mb to 1020mb through 24 to 48 hours, then it tends to intensify to MSLP value of 1027mb by 72 hours and then it tends to weaken again, its mean sea level pressure value decreasing to 1020mb towards end of forecast period.

At the 850hpa level, a cyclonic circulation is expected to dominate the flow over Mauritania and Mali borders, while shifting westwards across Senegal through 24 to 72 hours. Localized wind convergences are expected to prevail over Burkina Faso and Niger through 24 to 48 hours. North-south oriented seasonal convergences are

expected to remain active near the Lake Victoria region during the forecast period. 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 near Nigeria, southern Chad and Cameroon borders is expected to propagate across western African countries during the forecast period. This wave with its associated convective activity is expected to reach near Sierra Leone by 120 hours.

At 500hpa, located strong winds associated with the African Easterly Jet (AEJ), are expected to prevail over Burkina Faso through 24 to 72 hours.

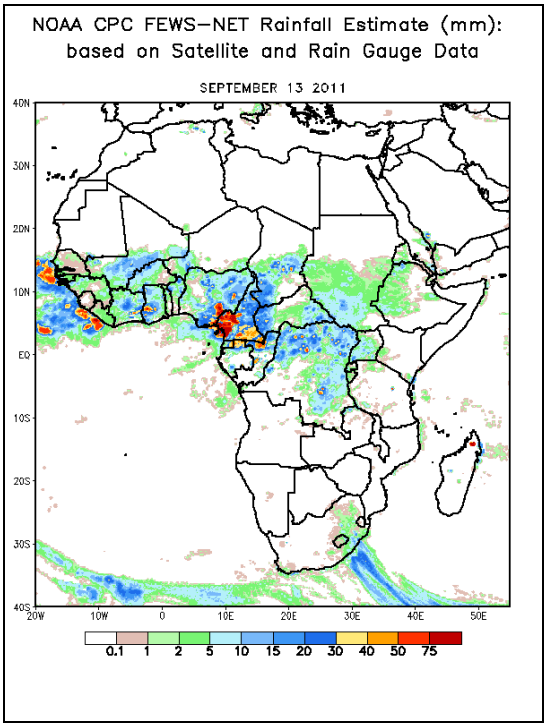
At 150mb, strong winds associated with Tropical Easterly Jet (TEJ) are expected to remain weak during the forecast period.

In the next five days, seasonal wind convergences and westwards propagating wave with their associated convective activities are expected to enhance rainfall over portions of central and western African countries. In general, there is an increased chance for moderate to heavy rainfall over Senegal, Guinea, Gambia, southern Mali, Liberia, Sierra Leone, Cote d'Ivoire, Burkina Faso, Ghana, Benin, Togo, southern Niger, Nigeria, Cameroon, Gabon, Congo, CAR, South Sudan, southern Chad, western Ethiopia, Uganda, and DRC and parts of western Kenya and northern Angola.

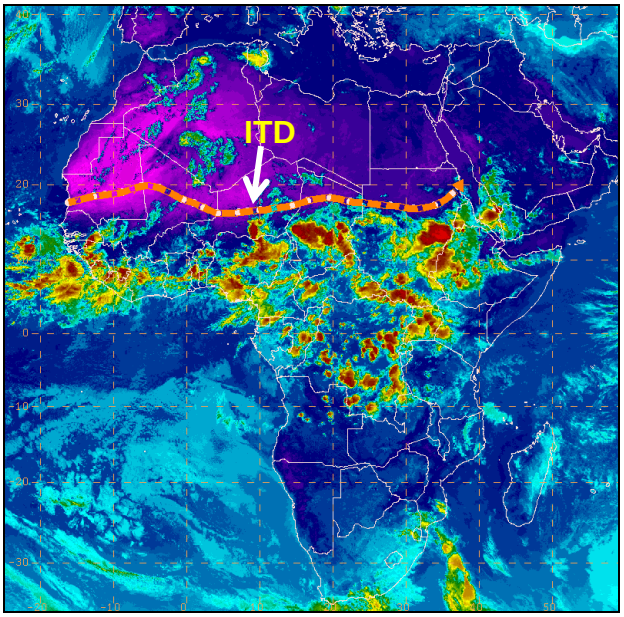
2.0. Previous and Current Day Weather Discussion over Africa (13 September – 14 September 2011)

2.1. Weather assessment for the previous day (13 September 2011): During the previous day, locally moderate to heavy rainfall was observed over southern central Mali, Costal Senegal, Cote d'Ivoire, Ghana, Nigeria, Cameroon, southern Chad, parts of CAR, northern Congo, DRC and southern Sudan.

2.2. Weather assessment for the current day (14 September 2011): Intense clouds are observed over Guinea, Liberia, Sierra Leone, central Nigeria, southern Chad, South Sudan, Cameroon, Ethiopia, CAR, Gabon, Uganda, Congo, DRC and western Kenya.



IR Satellite Image (valid 1652Z) and position of ITD, based on 1200Z Surface Analysis; 14 September 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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