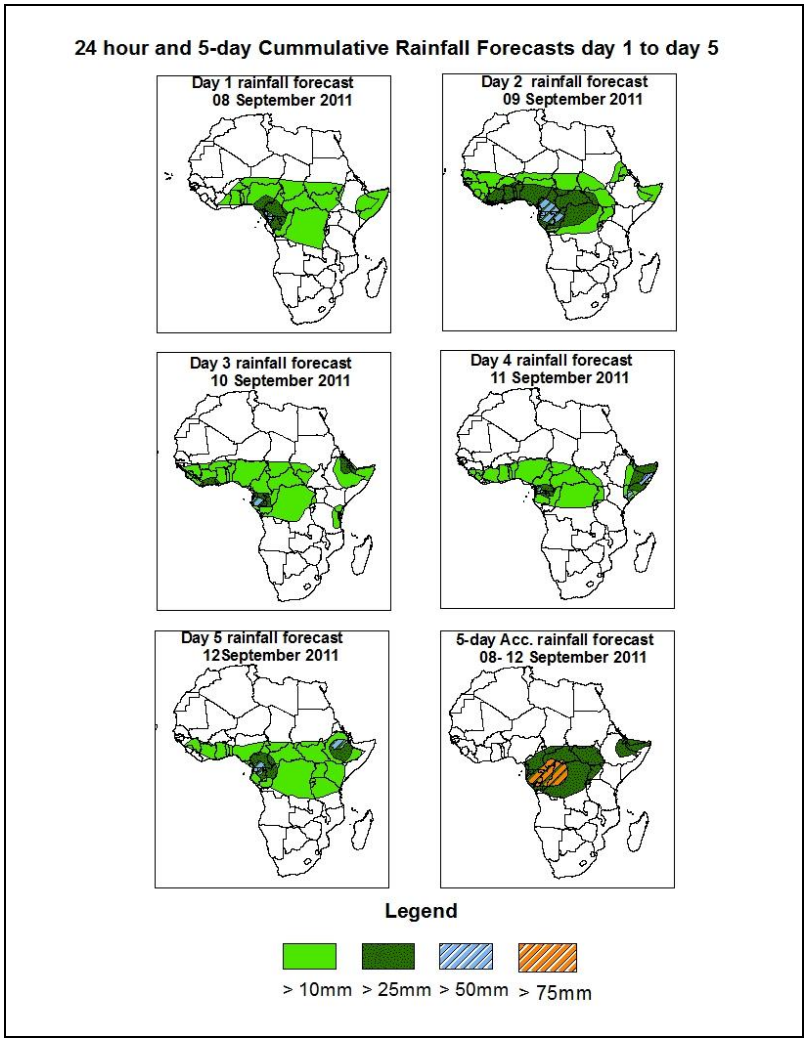
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 08 October – 06Z of 12 October 2011, (Issued at 18:00Z of 07 October 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, localized wind convergences and cyclonic circulations over central and eastern African countries, upper tropospheric divergence over southeast Africa and the persistent speed convergence along coastal East Africa are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall, western and central parts of equatorial Africa, southeast Ethiopia and northern Somalia.

1.2. Models Comparison and Discussion-Valid from 00Z of 08 October 2011

According to the 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 models also indicate series of heat lows and their associated trough across central African countries, extending partly to the South African countries. The heat low along its western end (near Mali and Senegal border) is expected to maintain central pressure value of 1009mb during the forecast period, according to the ECMWF. This low is expected to have mean sea level pressure values that vary between 1006 and 1009 during the forecast period, according to the GFS and UKMET models. The heat low over central Africa region (near Niger) expected to have MSLP values that vary from 1007mb to 1010mb during the forecast period, according to the ECMWF and UKMET models. The heat low over Arabian Peninsula is expected to maintain central pressure value 1010mb through 24 to 72 hours according to the ECMWF model then fill up, while for the values in the GFS model changes between 1011mb and 1012mb through 24 to 72 hours according to UKMET and it tends to maintain a value of 1009mb towards end of the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken with its central pressure value decreasing from 1020 to 1016 through 24 to 72, and it tends to intensify during the rest of the forecast period to MSLP value of 1028mb according to ECMWF model. According to GFS model, it is expected to maintain central pressure value of 1016 through 24 to 72 and then it tends to intensify to mean sea level pressure of 1032mb. According to the UKMET model, it is expected to have a value of 1020mb through 24 to 72 hours and then intensifies to 1032mb at the end of the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to intensify from 1028mb to 1032mb through 24 to 72 hours, according to the ECMWF model and then tend to weaken to MSLP value of 1028mb. According to the GFS model it intensifies to mean sea level pressure value of 1035 and then tends to weaken to 1028mb. According to the UKMET model, The MSLP tends to increase from 1028 to 1032mb through 24 to 96 hours.

At the 850hpa level, a cyclonic circulation is expected to dominate the flow over Mali and Senegal border through 24 to 72 hours. The low tends to weaken through 48 to 96 hours and become wind convergence. Another cyclonic circulation is expected to form

near the Niger/Nigeria border, while shifting towards to Chad during the forecast period. The seasonal lower tropospheric wind convergence is expected to remain active across DRC and parts of CAR during the forecast period.

At 500hpa, northeast-southwest oriented mid-latitude trough is expected to propagate eastwards across Mauritania/Mali/southern Algeria/Libya and Egypt, while weakening during the forecast period.

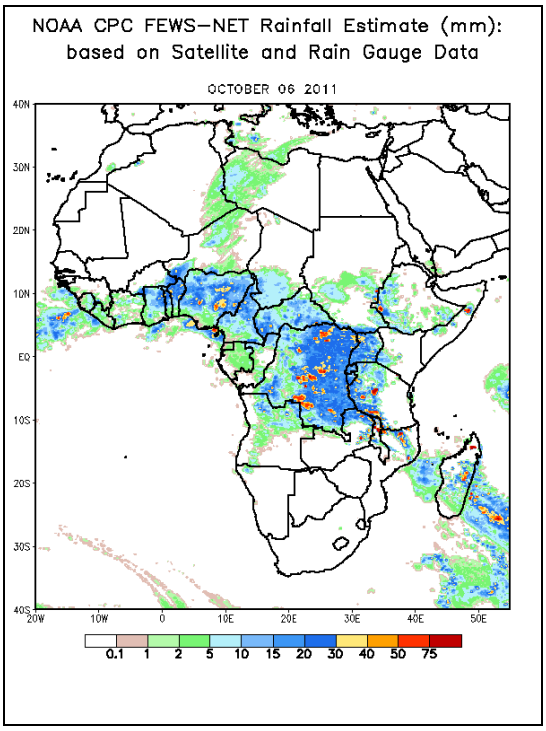
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, while weakening gradually during the forecast period.

In the next five days, localized wind convergences and cyclonic circulations over central and eastern African countries, upper tropospheric divergence over southeast Africa and the persistent speed convergence along coastal East Africa are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall, western and central parts of equatorial Africa, southeast Ethiopia and northern Somalia.

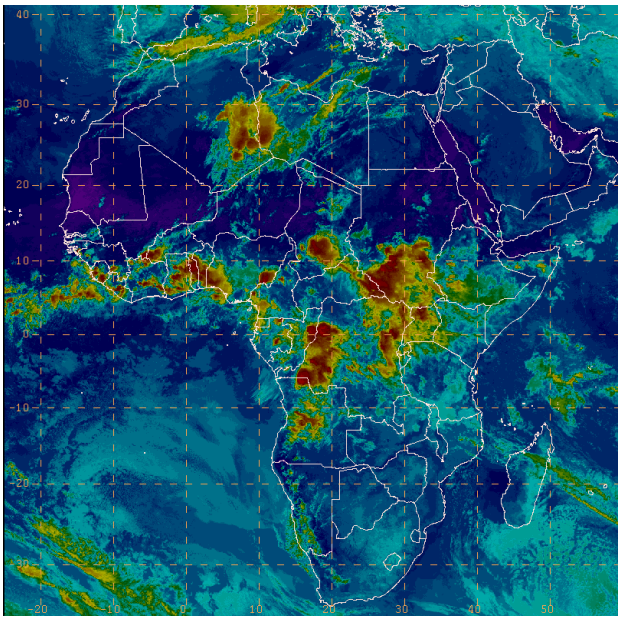
2.0. Previous and Current Day Weather Discussion over Africa (06 October - 07 October 2011)

2.1. Weather assessment for the previous day (06 October 2011): During the previous day, moderate to locally heavy rainfall was observed over parts of Ghana, Togo, Benin, Nigeria, northern Cameroon, parts of CAR, DRC, Uganda, western Tanzania, northern Mozambique and southwest Ethiopia.

2.2. Weather assessment for the current day (07October 2011): Intense clouds are observed over eastern Algeria, Niger, eastern Gulf of Guinea, much of central African region, parts of East Africa and Angola.



IR Satellite Image (valid 1900Z) and position of ITD, based on 1200Z Surface Analysis; 07 October 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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