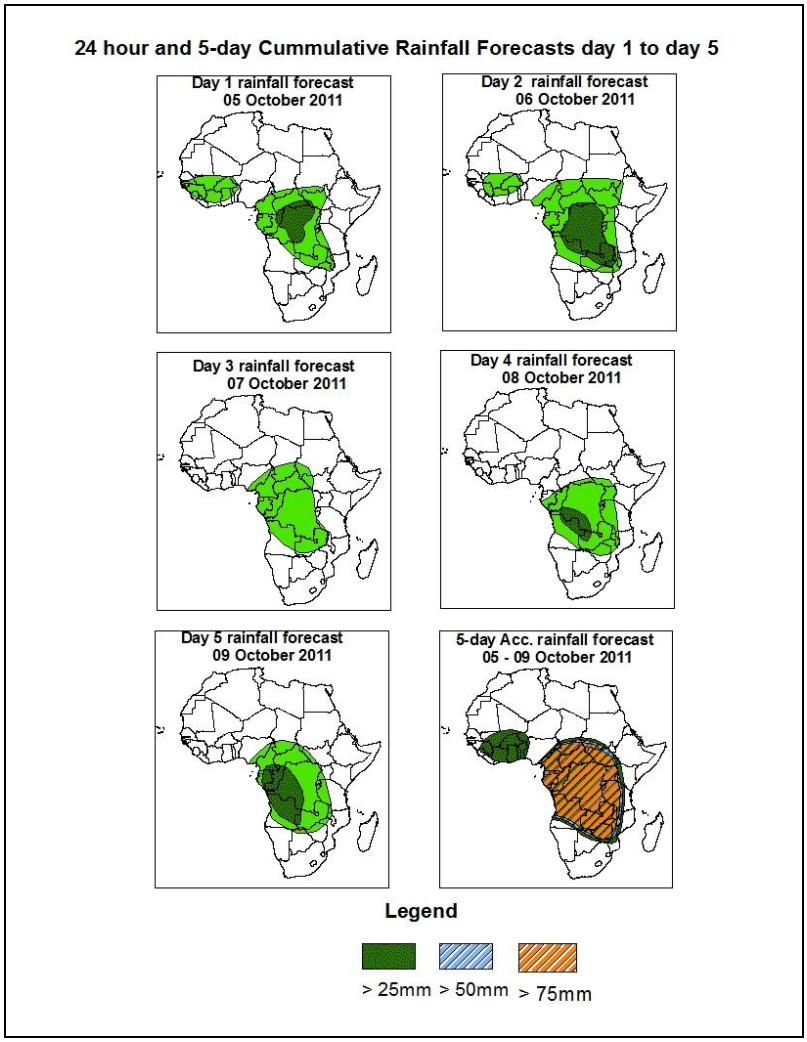
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 05 October – 06Z of 09 October 2011, (Issued at 10:15Z of 04 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, cyclonic circulation winds and seasonal wind convergences with their associated convective activities are expected to enhance rainfall over portions of western, central and eastern African countries. Hence, there is an increased chance for moderate to locally heavy rainfall over Cameroon, southern Chad, South Sudan, Gabon, CAR, Congo, DRC, Uganda, Rwanda, Burundi, Angola, Zambia, Malawi, and parts of Mozambique, Kenya and Tanzania.

1.2. Models Comparison and Discussion-Valid from 00Z of 04 October 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 Niger border) tends to fill up, with its central pressure value increasing from 1008mb to 1011mb, according to the ECMWF model through 24 to 72 hours, from 1007mb to 1009mb, according to the UKMET model through 24 to 96 hours, and it tends to deepen to MSLP value of 1009mb towards end of forecast period. This same low is expected to deepen to MSPL value from 1010mb to 1007mb, according to the GFS model during the forecast period. The heat low over central Africa region tends to deepen from MSLP value of 1007mb to 1005mb, according to the GFS model, from 1008mb to 1007mb, according to the GFS model through 24 to 120 hours. This same low is expected to show a little or no change, according to ECMWF and UKMET models during the forecast period. On the other hand, the heat low over eastern Arabian Peninsula is expected to fill up from MSLP of 1005mb to 1010mb, according to the ECMWF model, of 1003mb to 1009mb, according to the GFS model, and of 1004mb to 1009mb, according to the UKMET model during the forecast period. The East African ridge across southeast and East Africa is expected to slightly intensify during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken from MSLP value of 1028mb to 1025mb through 24 to 48 hours, and it is tends to intensify to MSLP value of 1027mb by 72 hours. This same high is expected to weaken to MSLP value of 1020mb by 96 hours, and it tends to intensify to MSLP value of 1024mb towards end of forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to intensify from 1028mb to 1030mb through 24 to 48 hours, and then it tends to weaken to MSLP value of 1026mb by 96 hours, and it tends to fill up again to MSLP value of 1032mb towards end of forecast period.

At the 850hpa level, a cyclonic circulation is expected to dominate the flow over Mali and Niger borders through 24 to 72 hours. Localized wind convergences are expected to prevail over Cameroon, CAR, southern Sudan, and DRC through 24 to 96 hours. 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 GHA region.

At 700mb level, localized wind convergences are expected to prevail over DRC, Malawi and Zambia through 24 to 72 hours. West-East oriented wind convergences are expected to dominate the flow over northern Angola and southern DRC through 72 to 120 hours.

At 500hpa, easterly winds associated with the African Easterly Jet (AEJ), are expected to remain weak during the forecast period.

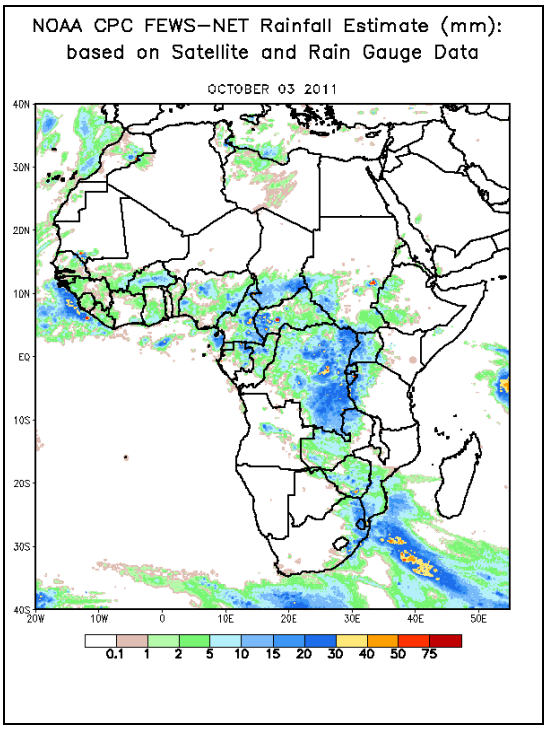
At 150mb, strong winds associated with Tropical Easterly Jet (TEJ) are expected to remain weak through 24 to 120 hours.

In the next five days, cyclonic circulation winds and seasonal wind convergences with their associated convective activities are expected to enhance rainfall over portions of western, central and eastern African countries. Hence, there is an increased chance for moderate to locally heavy rainfall over Cameroon, southern Chad, South Sudan, Gabon, CAR, Congo, DRC, Uganda, Rwanda, Burundi, Angola, Zambia, Malawi, and parts of Mozambique, Kenya and Tanzania.

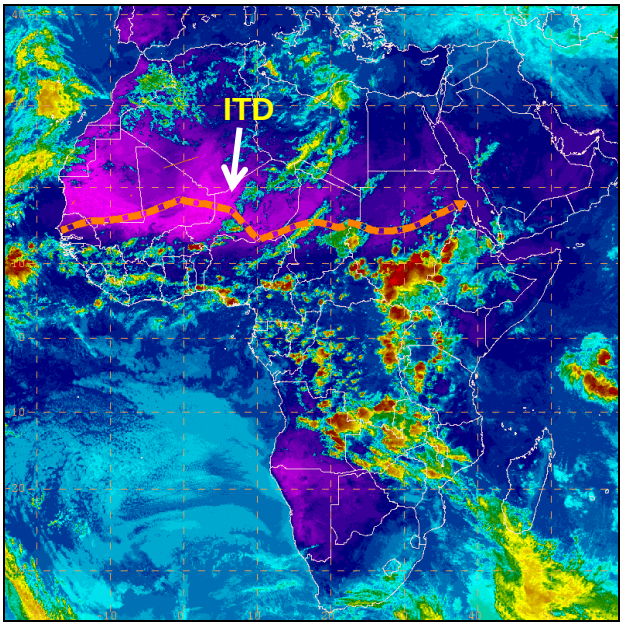
2.0. Previous and Current Day Weather Discussion over Africa (03 October - 04 October 2011)

2.1. Weather assessment for the previous day (03 October 2011): During the previous day, locally moderate to heavy rainfall was observed over southern Mauritania, southern Chad, Cameroon and CAR borders, western Gabon, northern Congo, DRC, portions of South Sudan, Burundi, Rwanda, western Tanzania, eastern South Africa, and Zimbabwe.

2.2. Weather assessment for the current day (04 October 2011): Intense clouds are observed over coastal Nigeria, eastern Burkina Faso, northern Cameroon, South Sudan, western Ethiopia, CAR, Congo, DRC, and parts of Uganda, Kenya, Burundi, Rwanda, northern Angola, Zambia and Tanzania.



IR Satellite Image (valid 1545Z) and position of ITD, based on 1200Z Surface Analysis; 04 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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