

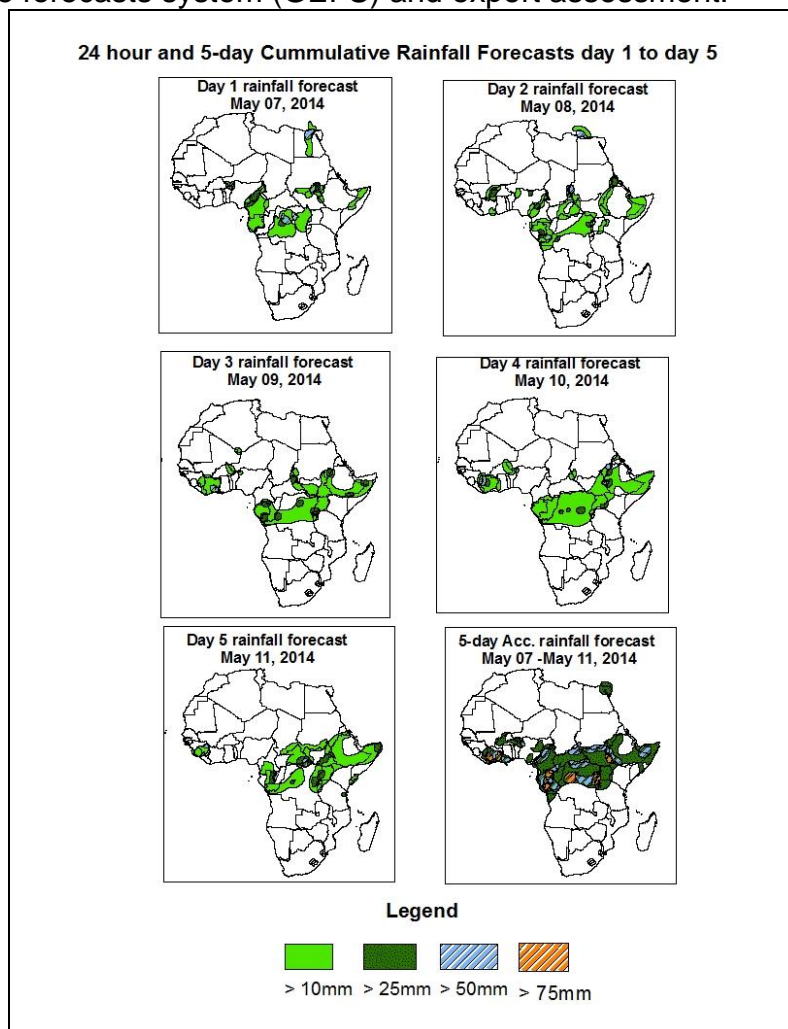


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of May 07 – 06Z of May 11, 2014. (Issued at 1600Z of May 05, 2014)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and UK Met Office NWP outputs, and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, westward propagating easterly waves across the Gulf of Guinea, seasonal wind convergences in East Africa region are expected to enhance rainfall in their respective regions.

Thus, there is an increased chance for moderate to heavy rainfall over portions of Liberia, Cote D'Ivoire, Ghana, Benin, Nigeria, Democratic Republic of Congo, Cameroun, Equatorial Guinea, Eritrea, Djibouti, Gabon, Congo Brazzaville, Uganda, Ethiopia, Somalia, Burundi, Rwanda and Kenya.

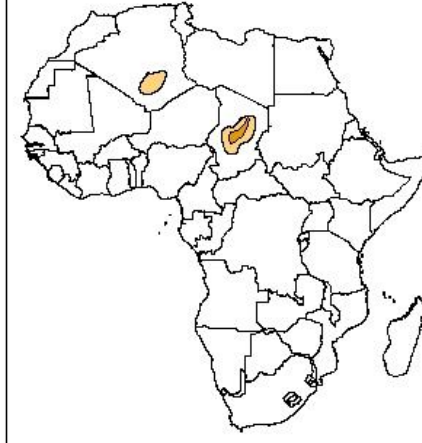
## 1.2. Atmospheric Dust Forecasts: Valid May 07– May 09 2014

**Atmospheric Dust Forecasts, day 1 to day 3,**  
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

**Day 1 Dust forecast**  
May 07, 2014



**Day 2 Dust forecast**  
May 08, 2014



**Day 3 Dust forecast**  
May 09, 2014



### Highlights

There is an increased  
chance for moderate  
dust concentration over  
Algeria and Chad

### Legend



MDC, Vis. < 5km



HDC, Vis. < 1km

### **1.3. Model Discussion: Valid from 00Z of May 07, 2014**

*Model comparison (GFS and UKMET Valid from 00Z: May 06, 2014) shows general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.*

According to the GFS and UKMET models, an east west oriented trough and its associated heat lows are expected to prevail in the region across the Sahel region.

A low pressure system situated over eastern Sudan is expected to maintain its central pressure value through 24 to 48 hours, fill in up through 72 hours and then deepen to 120 hours. South western Sudan, southern Chad and Nigeria are expected to deepen, through 24 to 72 hours and fill in through 72 to 120 hours. DRC, The coast of Congo and Angola are also expected to deepen from the next 24 hours through 96 whilst the coast of Congo deepens thereafter to 120hours.

The lowest central values are expected to vary between 1001 to 1010hpa for GFS and UKMET models.

The Azores high pressure system in Northeastern Atlantic Ocean is expected to intensify its central position value through 24 to 96 hours then relax its position through 120 hours while extending its ridge over Northern African countries according to GFS model. For the UKMET model, the central pressure value is expected to intensify through 24 to 120 hours. Its central position value is expected to be around 1026 to 1028hpa for both models.

The St. Helena High Pressure System over southern Atlantic Ocean is expected to weaken progressively through 24 to 120hours for both the GFS and the UKMET models. Its central pressure value is expected to decrease from about 1028hpa to 1021hpa according to GFS model and then 1028 to 1020hpa according to UKMET model.

The East African ridge associated with the Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken progressively its central pressure value for the 24 to 120hours for GFS UKMET models. Its central pressure value is

around 1022hpa to 1034hpa according to the GFS and 1020hpa to 1034hpa according to the UKMET models

At 925Hpa level, a zone of moderate and dry northerly and easterly winds is expected to prevail over Northern Gulf of Guinea region, Central Africa Region and East Africa region.

At 850Hpa level, zonal monsoon wind convergence is expected to dominate the flow across Gulf of Guinea coast, Central Sahel region, Central African Region and Eastern Africa region through 24hours to 120 hours .A low level cyclonic vortex is expected to propagate in the region around the Cote D'Ivoire coast and the western coast of Ghana

At 500Hpa level, a mid-latitude trough westerly flow is expected to prevail across Libya, Niger, Egypt and Chad leading to interactions between extra-tropical and tropical weather systems.

At 200hpa level, winds with strong speed (>70kts) associated with the Northern hemisphere sub-tropical Westerly Jet mainly is expected to propagate across the North Africa during the forecast period across the subtropical latitudes during the forecast period while winds (>90kts) is expected in the southern Hemisphere across South Africa, Atlantic Ocean, Namibia, Mozambique, Botswana and Madagascar

In the next five days, westward propagating easterly waves across the Gulf of Guinea, seasonal wind convergences in east Africa region are expected to enhance rainfall in their respective regions.

Thus, there is an increased chance for moderate to heavy rainfall over portions of Liberia, Cote D'Ivoire, Ghana, Benin, Nigeria, Democratic Republic of Congo, Cameroun, Equatorial Guinea, Eritrea, Djibouti, Gabon, Congo Brazzaville, Uganda, Ethiopia, Somalia, Burundi, Rwanda and Kenya.

## 2.0. Previous and Current Day Weather Discussion over Africa

(May 05, 2014 – May 06, 2014)

### 2.1. Weather assessment for the previous day (May 05, 2014)

During the previous day, moderate to heavy rainfall was observed over Burkina Faso, Ghana, Togo, Benin, Nigeria, Northern Niger, and Ethiopia

### 2.2. Weather assessment for the current day (May 06, 2014)

Intense clouds are observed over local areas in Cote D'Ivoire, Ghana, Togo, Benin, Nigeria, Congo Brazzaville, Democratic Republic of Congo , South Sudan , Ethiopia and Somalia

