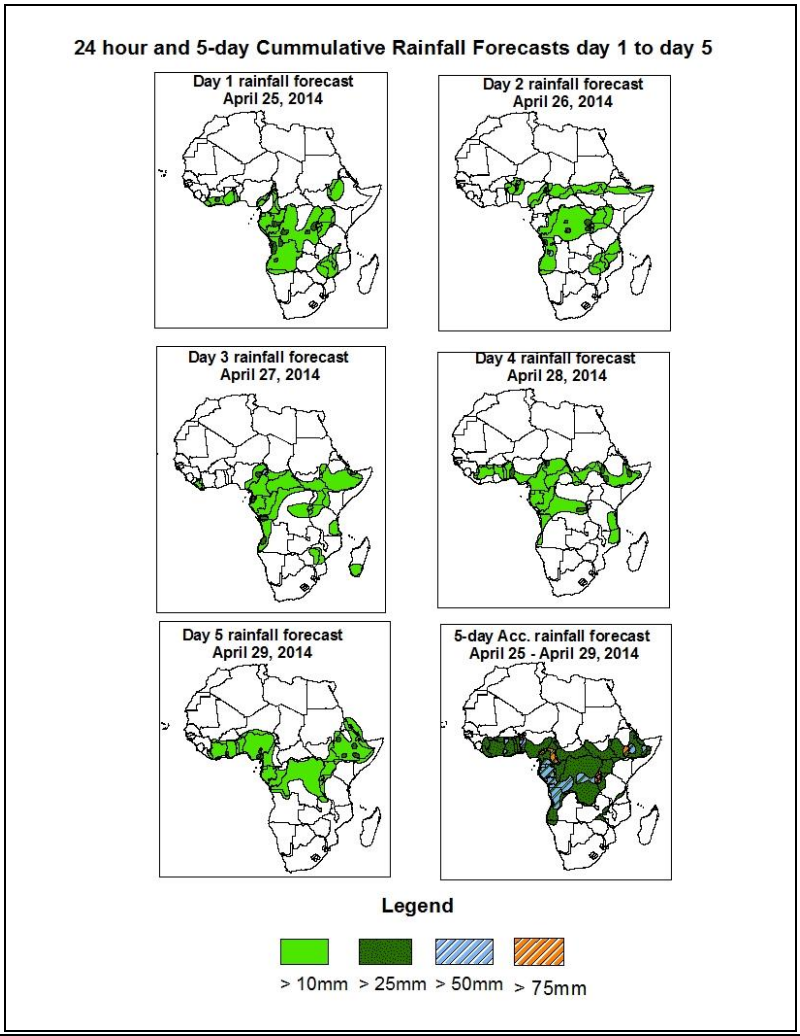
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## *1.0. Rainfall Forecast: Valid 06Z of April 25 – 06Z of April 29, 2014. (Issued at 1600Z of April 24, 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.



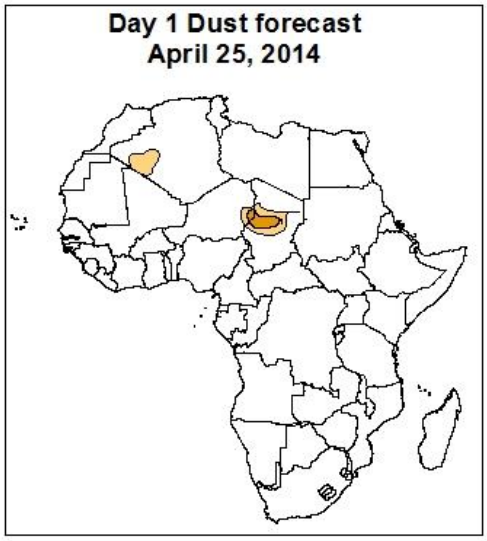


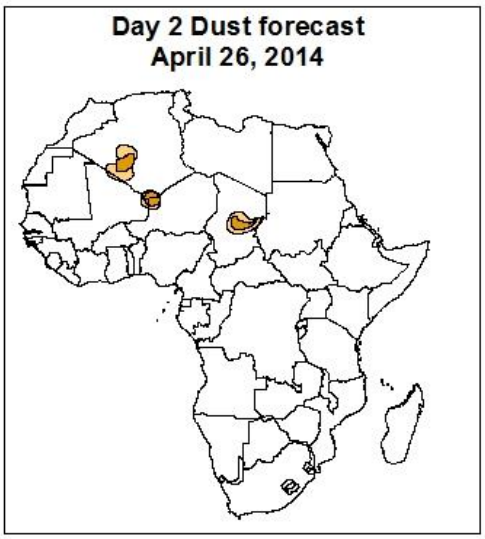
**Summary**

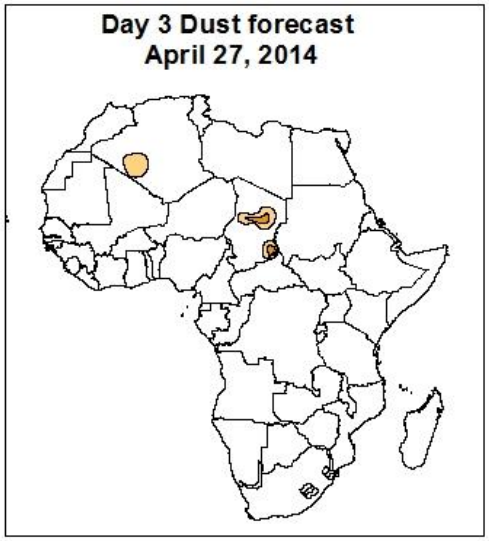
In the coming five days, lower tropospheric wind convergences across the Gulf of Guinea, the Congo coast, Central Africa Region and the northern part of East Africa are expected to persist and hence continued moderate rains are expected over Liberia, South of Burkina Faso, Ghana, Togo, Benin, Nigeria, Cameroun, Gabon, Central African Republic, Ethiopia, Congo Brazzaville, Angola, Tanzania and Democratic Republic of Africa.

## 1.2. Atmospheric Dust Forecasts: Valid April 25– April 27 2014

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




**Highlights**

**There is an increased chance for moderate dust concentration over Algeria, Mali, Niger and Chad**

**Legend**

MDC, Vis. < 5km

HDC, Vis. < 1km

## 1.3. Model Discussion: Valid from 00Z of April 24, 2014

*Model comparison (GFS and UKMET Valid from 00Z: April 24,* 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.*

The St. Helena High Pressure System, in southern Atlantic Ocean is expected to weaken through 24 to 48 hours and intensify through 48 to 120 hours while shifting eastwards. Its central pressure value is expected to decrease slightly from about 1022hpa to 1021hpa and then increase through 1027hpa to 1031hpa according to the GFS model, and from about 1022hpa to 1020hpa and then increase to 1026hpa according to the UKMET model.

The Mascarene high pressure system in southwestern Indian Ocean is expected to slightly intensify through 24 to 96 hours and then decrease whilst it intensifies through 24 to 72 hours and then maintains its central values for the rest of the forecast period for the UKMET model. Its central pressure value is expected to increase from about 1030hpa to 1034hpa and then decrease to 1032hpa through the rest of the forecast period according to the GFS and from about 1030 to 1034hpa according to the UKMET models.

The Azores high pressure system in Northeastern Atlantic Ocean is expected to relax while shifting eastwards through 24 to 120 hours for both GFS model and UKMET model. Its central pressure value is expected to increase from about 1028hpa to 1024hpa according to the GFS and 1029 to 1026hpa according to the UKMET models.

At 925Hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over the Sahel region, the Great Horn of Africa, Congo Coast and the Central African region.

At 850Hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over Sahel region, Central Africa region, Horn of Africa, Eastern Africa Region and South Eastern Africa

At 500Hpa level, troughs associated with mid-latitude frontal system persist and these interactions between the mid latitude and tropical systems across north eastern Africa is expected to enhance rainfall over the Ethiopia and Greater Horn of Africa for most part of the forecast period.

At 200hpa level, the sub-tropical Westerly Jet mainly (with wind speed >70 knots and <90 knots), are slightly weaker over North Africa during the forecast period. In the south, the sub-tropical westerly Jet (with speed >70 knots and <110 knots) is expected over South Africa, Namibia, Botswana, Zimbabwe, Zambia, Mozambique, Indian and Southern Atlantic Ocean.

In the coming five days, lower tropospheric wind convergences across the Gulf of Guinea, the Congo coast, Central Africa Region and the northern part of East Africa are expected to persist and hence continued moderate rains are expected over Liberia, South of Burkina Faso, Ghana, Togo, Benin, Nigeria, Cameroun, Gabon, Central African Republic, Ethiopia, Congo Brazzaville, Angola, Tanzania and Democratic Republic of Africa.

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

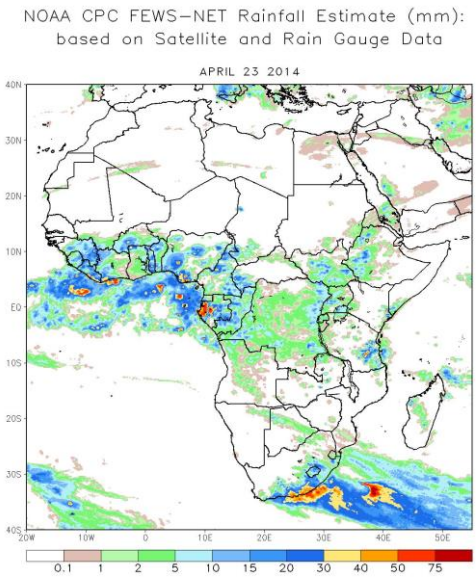
## (April 23, 2014 – April 24, 2014)

### 2.1. Weather assessment for the previous day (April 23, 2014)

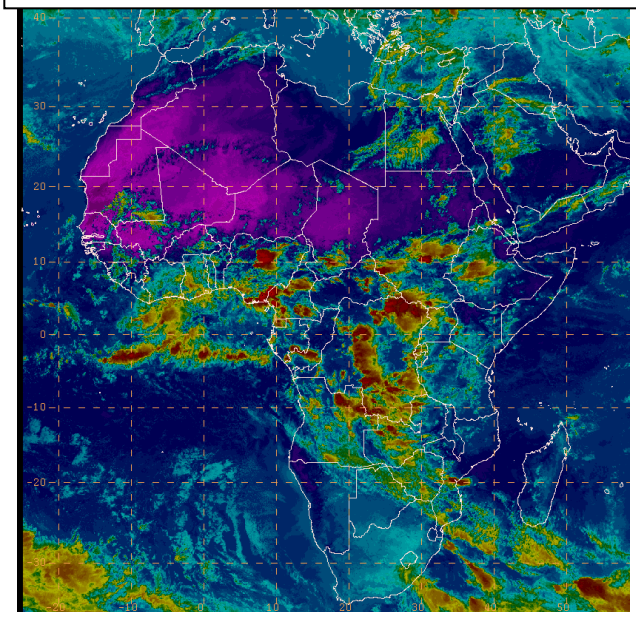
During the previous day, moderate to heavy rainfall was observed over parts of Liberia, Cote D'Ivoire, Ghana, Nigeria, Congo Coast, Cameroun, DRC, Ethiopia, South Sudan, Central African Republic, The Coast of Tanzania and south eastern coast of South Africa

### 2.2. Weather assessment for the current day (April 24, 2014)

Intense clouds are observed over local areas in the Liberia, Cote D'Ivoire, Burkina Faso, Mali, Benin, Nigeria, Cameroun, Southern Chad, Congo Brazzaville, Equatorial Guinea, Angola, Democratic Republic of Congo, Sudan, Ethiopia, Uganda, Tanzania, Botswana, Zimbabwe and Southeast of South Africa




**IR Satellite Image (valid 1200 Z of April 24, 2014)**



*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*

***Author: Francisca Martey*** (Ghana Meteorological Agency / CPC-African Desk); francisca.martey@noaa.gov