

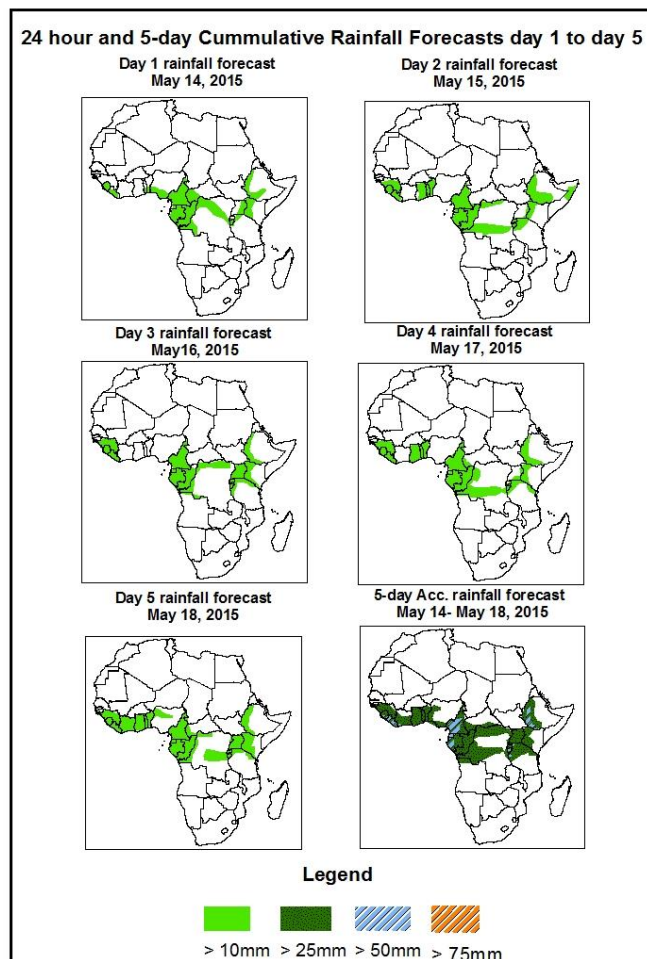


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of May 14 – 06Z of May 18, 2015. (Issued at 1530Z of May 13, 2015)

### 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 the NCEP global ensemble forecasts system (GEFS) and expert assessment.

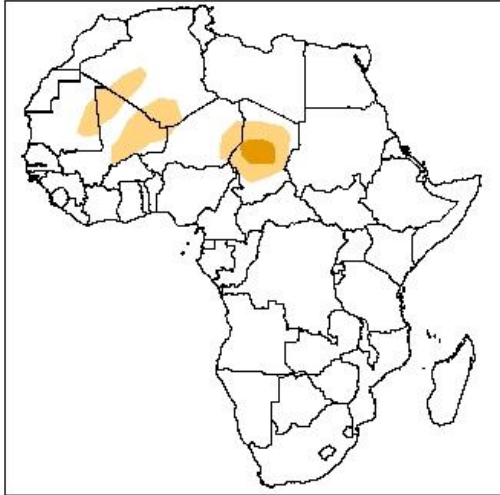


### Summary

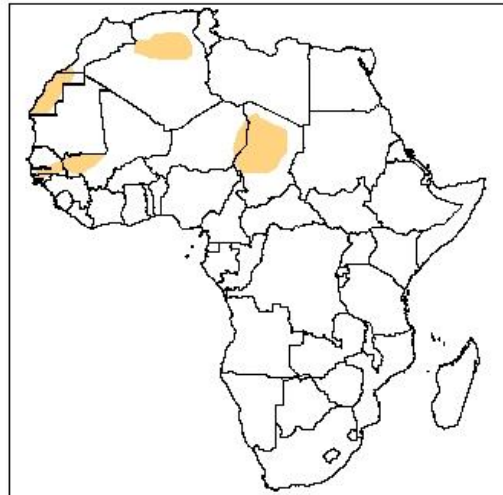
In the next five days, lower-level wind convergence over Mali, Nigeria, Cameroon, Sudan, and Ethiopia, is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Cameroon, Gabon, Equatorial Guinea, Rwanda, Liberia, Sierra Leon, Uganda, Burundi, and Ethiopia.

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

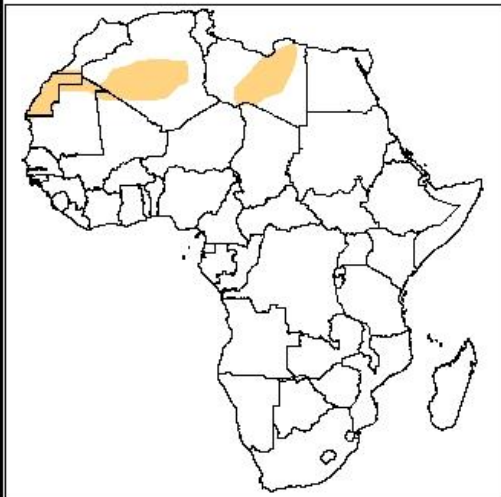
**Day 1 Dust forecast**  
May 14, 2015



**Day 2 Dust forecast**  
May 15, 2015



**Day 3 Dust forecast**  
May 16, 2015



**Highlights**

There is an increased chance for moderate to high dust concentration over some parts of the Sahel, and North Africa countries with highest dust concentration expected over some parts of Chad.

**Legend**



MDC, Vis. < 5km



HDC, Vis. < 1km

## **1.2. Model Discussion: Valid from 06Z of May 14, 2015**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to remain constant at central pressure value of 1028hpa, during the forecast period, according to the GFS model.

The Arabian High Pressure system is expected to remain constant at central pressure value of 1020hpa, during the forecast period, according to the GFS model.

The central pressure value of the Mascarene high pressure system over the Southwestern Indian Ocean is expected to weaken from central pressure value of 1040hpa in 24hours to 1036hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to remain constant at central pressure value of 1028hpa, during the forecast period, according to the GFS model.

At 925Hpa level, easterly and north-easterly wind (>20kts) is expected to prevail across much of the African countries through 24 to 120 hours while the intensity of the wind tends to weaken across the North, central, Northeastern regions of Africa, while remaining moderately strong across Northwestern Africa towards end of the forecast period, according to the GFS model.

At 850Hpa level, Easterly and North-Easterly wind over North and West African countries, Easterly and South Easterly wind over East, Central and southern African countries, is expected to prevail across in these Region, While wind convergence is expected to remain active in Mali, Nigeria, Cameroon, CAR, Sudan and Ethiopia during the forecast period, according to the GFS model.

At 700hpa level, a trough associated with mid-latitude frontal system is expected to prevail across North and Northeast African countries. Easterly wind over west, East and Central African countries, Southeasterly winds over Southern African countries, is

expected to prevail across in these Regions, during the forecast period, according to the GFS model.

At 500Hpa level, a trough associated with mid-latitude frontal system is expected to prevail across North and Northeast African countries. Easterly wind is expected to prevail across West, Central and East African countries. While Westerly wind over Southern African countries, is expected to prevail across in these regions, during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence over Mali, Nigeria, Cameroon, Sudan, and Ethiopia, is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Cameroon, Gabon, Equatorial Guinea, Rwanda, Liberia, Sierra Leon, Uganda, Burundi, and Ethiopia.

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

(May 12, 2015 – May 13, 2015)

### 2.1. Weather assessment for the previous day (May 12, 2015)

Moderate to heavy rainfall were observed across Guinea, Sierra Leon, Ivory Coast, Ghana, Equatorial Guinea, Southern Chad, CAR, Nigeria, Cameroon, DRC, few places of Kenya, South Sudan and Ethiopia.

### 2.2. Weather assessment for the current day (May 13, 2015)

Intense convective deep clouds are observed over Mali, Nigeria, DRC, Cameroon, CAR, Equatorial Guinea, Sudan and Ethiopia.

