

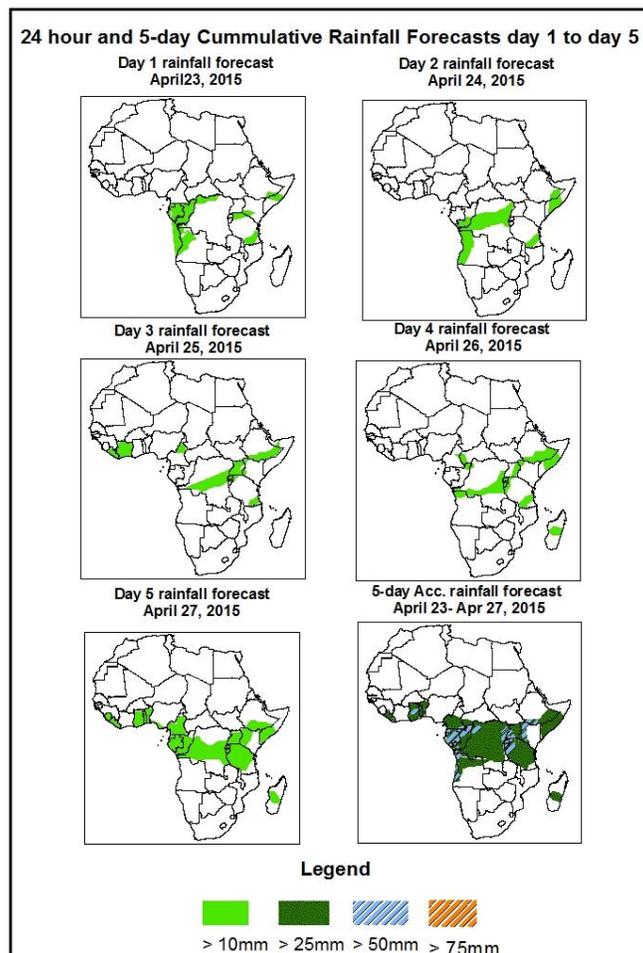


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of April 22 – 06Z of April 27, 2015. (Issued at 1530Z of April 22, 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.

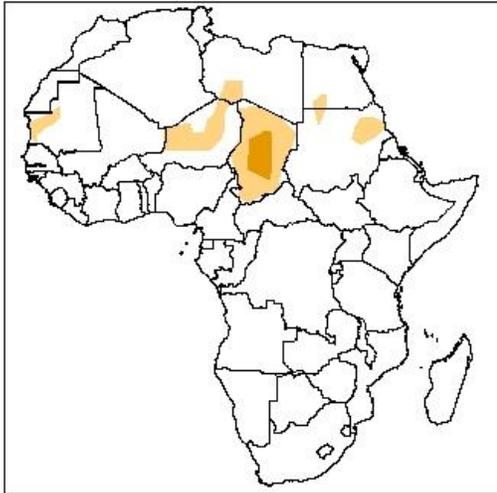


### Summary

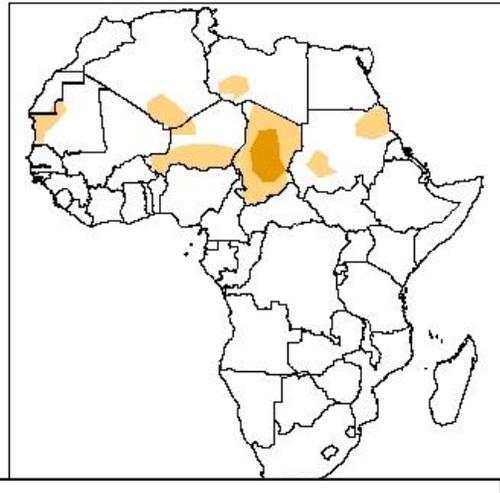
In the next five days, lower-level wind convergence over Mali, Nigeria, Cameroon, South Sudan, Ethiopia and CAR is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Kenya, Tanzania, Gabon, Congo Brazzaville, some parts of DRC, Rwanda, Burundi, Uganda, coastal area of Angola, and Southern Ethiopia.

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

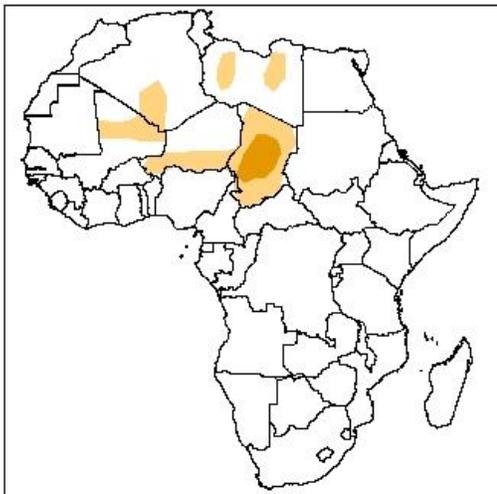
**Day 1 Dust forecast**  
April 23, 2015



**Day 2 Dust forecast**  
April 24, 2015



**Day 3 Dust forecast**  
April 25, 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 April 23, 2015**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from a central pressure value of 1020hpa in 24 hours to 1022hpa in 120hoursduring the forecast model, according to the GFS model.

The Arabian High Pressure system is expected to remain constant at value of 1019hpa 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 remain constant at value of 1028hpa during the forecast period, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from a central pressure value of 1025hpa in 24 hours to 1020hpa in 120 hours, 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 south-easterly wind is expected to prevail across much of African countries while wind convergence is expected to remain active in Nigeria, Cameroon, South Sudan, Mali, Ethiopia and CAR 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 Northeast Africa. Divergence is expected over North Africa and Southern African countries. Easterly wind flow over western, Eastern and central Africa is expected to prevail during the forecast period, according to the GFS model.

At 500Hpa, wind divergence over east and Central Africa, westerly Wind over North and Southern African countries will prevail in the region during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence over Mali, Nigeria, Cameroon, South Sudan, Ethiopia and CAR is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Kenya, Tanzania, Gabon, Congo Brazzaville, some parts of DRC, Rwanda, Burundi, Uganda, coastal area of Angola, and Southern Ethiopia.

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

(April 21, 2015 – April 22, 2015)

### 2.1. Weather assessment for the previous day (April 21, 2015)

Moderate to heavy rainfall were observed across DRC, Zimbabwe, Zambia, coastal area of Tanzania, southern Ethiopia, Somalia and Uganda.

### 2.2. Weather assessment for the current day (April 22, 2015)

Intense convective deep clouds are observed over DRC, Somalia, Angola, southern Ethiopia, Kenya and Rwanda.

