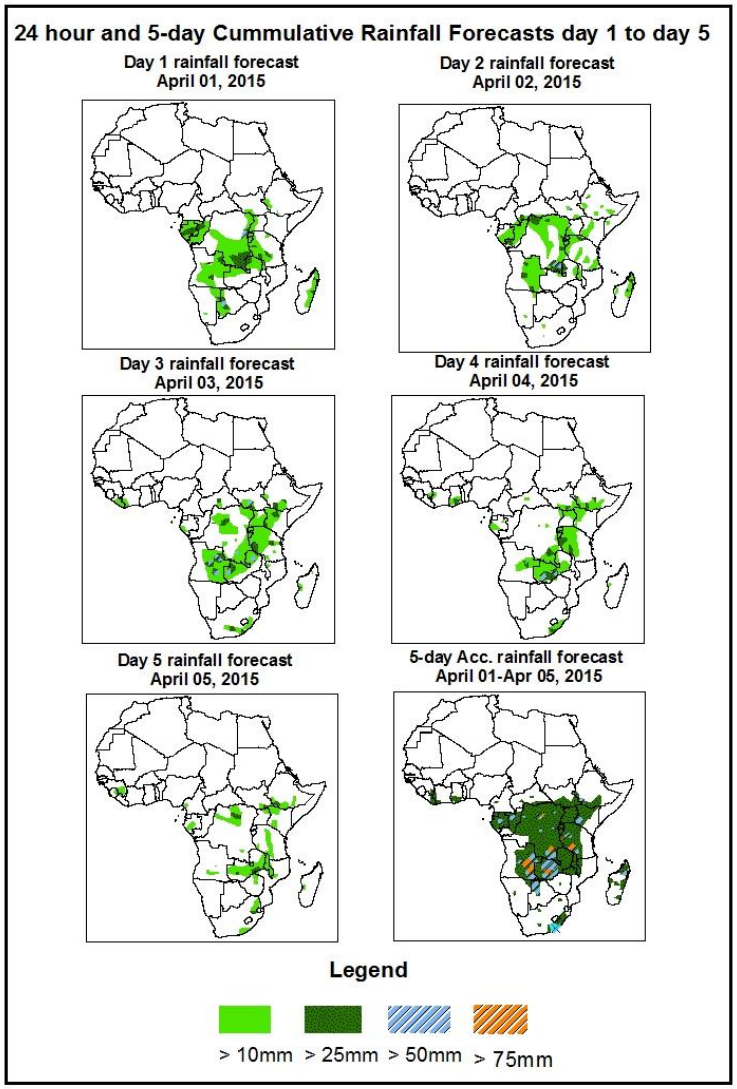
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## *1. Rainfall Forecast: Valid 06Z of April 01 – 06Z of April 05, 2015. (Issued at 1700Z of March 31, 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.





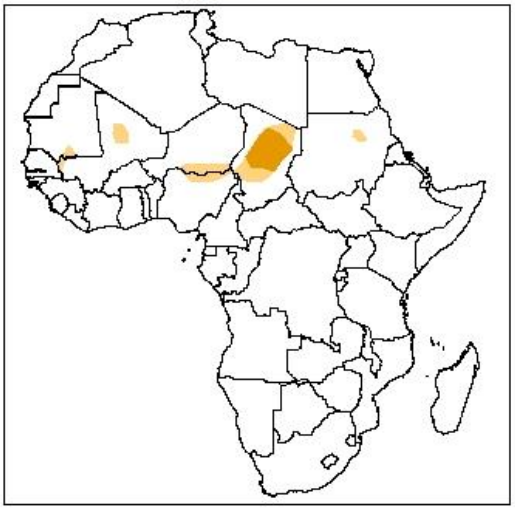
**Summary**

In the next five days, lower-level wind convergence in the region between CAR and Namibia is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Tanzania, DRC, Burundi, Zambia and Angola.

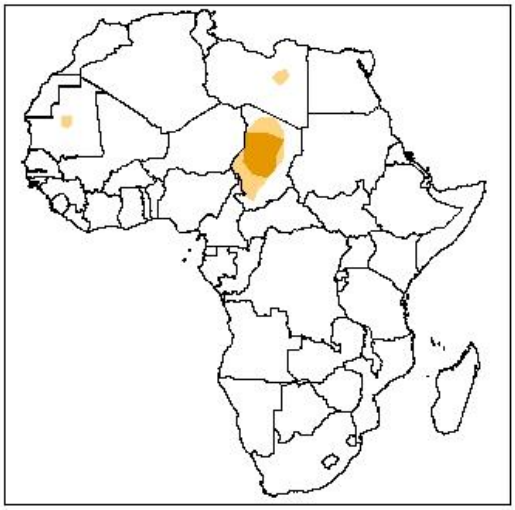
## Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

**Day 1 Dust forecast**
**April 01, 2015**



**Day 2 Dust forecast**
**April 02, 2015**



**Day 3 Dust forecast**
**April 03, 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 Mali, Mauritania, Chad and Niger.**

**Legend**

MDC, Vis. < 5km

HDC, Vis. < 1km

### 1.2. Model Discussion: Valid from 00Z of April 01, 2015

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from a central pressure value of 1036hpa in 24 hours to 1029hpa in 120hours, according to the GFS model.

The Arabian High Pressure system is expected to intensify from a central pressure value of 1020hpa in 24 hours to 1026hpa in 120 hours, 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 a value of 1031hpa in 24 hours to a value of 1028hpa in 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify slightly from a central pressure value of 1024hpa in 24 hours to a central pressure value of 1025hpa in 120 hours, according to the GFS model.

At 925Hpa level, dry northeasterly to easterly wind (>20kts) is expected to prevail across much of the Sahel countries through 24 to 72 hours, and the intensity of the wind tends to weaken across the Northcentral and Northeastern regions of Africa, while remaining moderately strong across Northwestern Africa towards end of the forecast period.

At 850Hpa level, northeasterly wind is expected to prevail across Central and East African countries during the forecast period. Wind convergences are expected to remain active in Namibia, South Sudan, Sudan, Liberia, DRC, CAR and Angola during the forecast period.

At 700hpa level, a trough associated with mid-latitude frontal system is expected to prevail across Northwest Africa. Divergence over West Africa and Southern African countries, North-easterly wind flow over east and central Africa is expected to prevail during the forecast period, according to the GFS model.

At 500Hpa, a trough associated with a mid-latitude frontal system is expected to prevail across eastern Mediterranean Sea. Divergence over West Africa, Greater Horn of Africa and Easterlies over east and central Africa will prevail in the region during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence in the region between CAR and Namibia is expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over Tanzania, DRC, Burundi, Zambia and Angola.

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

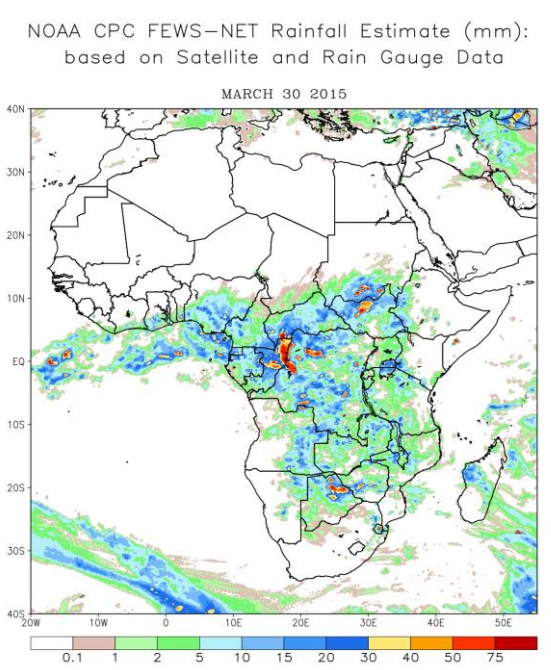
**(March 30, 2015 – March 31, 2015)**

### 2.1. Weather assessment for the previous day (March 30, 2015)

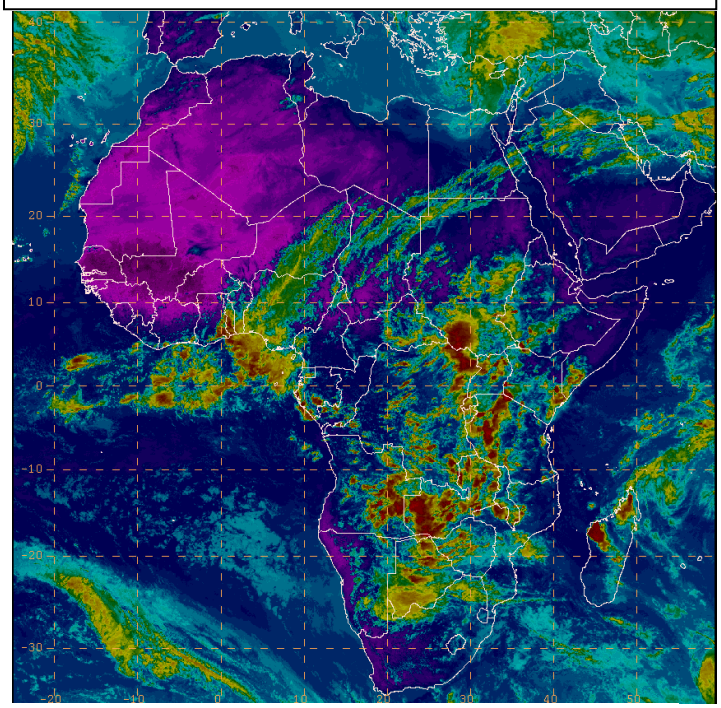
Moderate to heavy rainfall were observed across Ghana, Nigeria, Sudan, South Sudan, Malawi, Angola, Zambia, Zimbabwe, Botswana, Congo Brazzaville, DRC and CAR.

### 2.2. Weather assessment for the current day (March 31, 2015)

Intense convective deep clouds are observed over DRC, Ghana, Togo, Angola, South Sudan, CAR, Botswana, Zambia and Madagascar.




**IR Satellite Image (valid 1530Z of March 31, 2015)**



*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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