

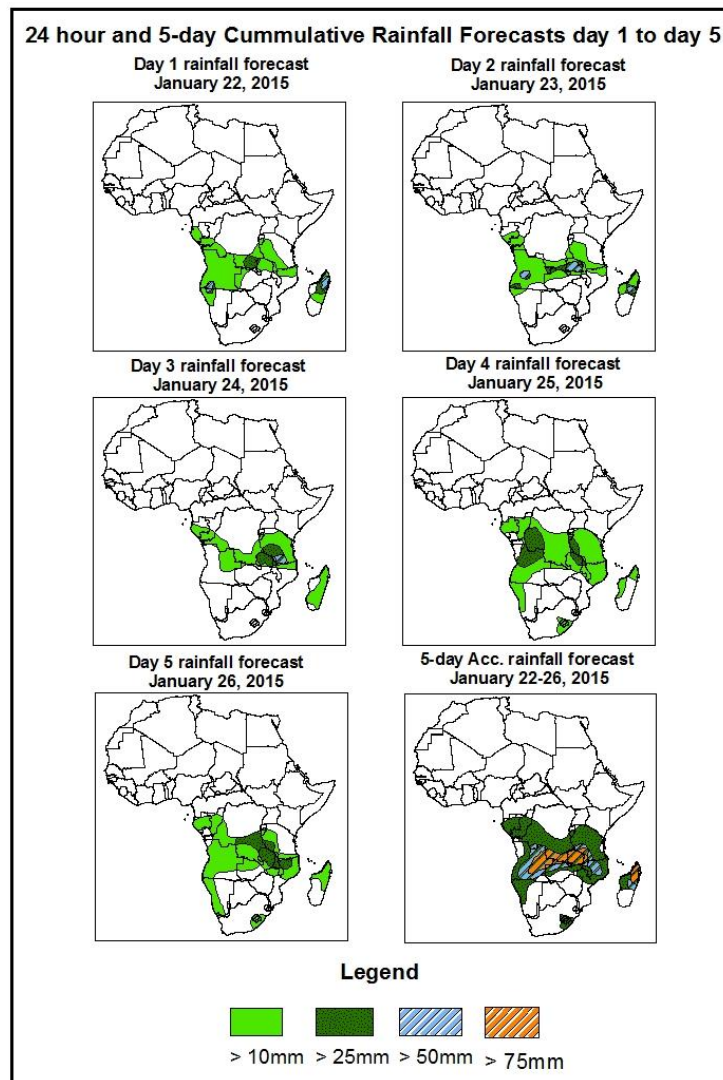


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of January 22 – 06Z of January 26, 2015. (Issued at 1725Z of January 21, 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.

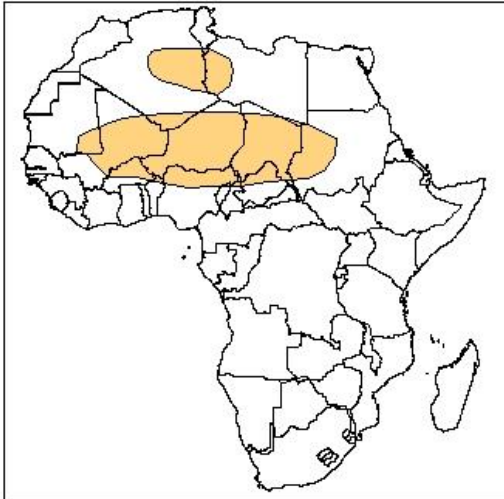


#### Summary

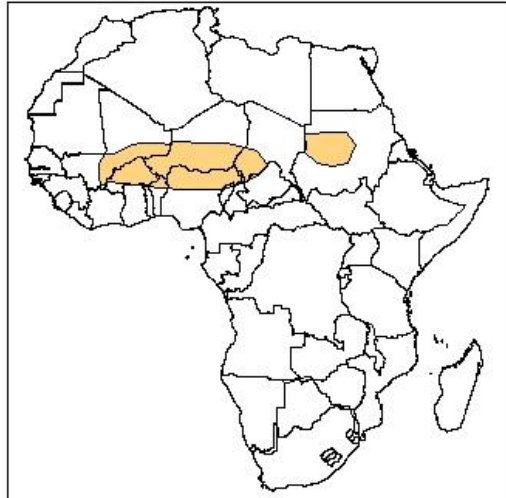
In the next five days, lower-level wind convergence in the region between DRC and Mozambique, are expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over some parts of Zambia, Congo Brazzaville, Tanzania, Burundi, Rwanda Malawi, Mozambique, DRC, and north, central Madagascar.

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

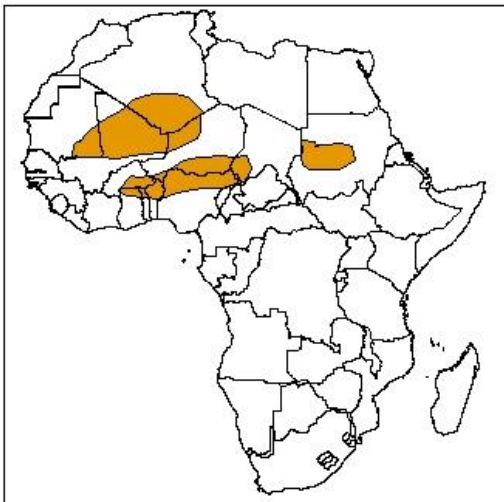
**Day 1 Dust forecast**  
January 22, 2015



**Day 2 Dust forecast**  
January 23, 2015



**Day 3 Dust forecast**  
January 24, 2014



**Highlights**

**There is an increased chance for moderate to high dust concentration over several parts of the Sahel, and North Africa countries, with highest dust concentration expected over Mali, Sudan, Nigeria, Algeria, Chad, Burkina Faso some parts of Ghana, Togo and Benin**

**Legend**



MDC, Vis. < 5km



HDC, Vis. < 1km

## **1.2. Model Discussion: Valid from 00Z of January 21, 2015**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to strengthen from a central pressure value of 1035hpa to a central pressure value of 1036hpa during the forecast period, according to the GFS model.

The Arabian High Pressure system is expected to weaken from a central pressure value of 1027hpa 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 1028hpa to 1022hpa in 72 hours and strengthen to 1028 in 120 hours, 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 1018hpa 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 strong across Northwestern Africa towards end of the forecast period.

At 850Hpa level, northeasterly winds are expected to prevail across Central Africa countries and the northern parts of the Greater Horn of Africa during the forecast period. Wind convergences are expected to remain active in Zambia, Congo Brazzaville, Tanzania, Burundi, Rwanda Malawi, Mozambique, DRC, and Madagascar, during the forecast period. Zonally oriented wind convergence is expected to prevail in the region.

At 700hpa level, a zonal ridge is expected to prevail over Southern Africa while a trough is expected between DRC and Mozambique, 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. Easterlies will prevail over east and Central African countries during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence in the region between DRC and Mozambique, are expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over some parts of Zambia, Congo Brazzaville, Tanzania, Burundi, Rwanda Malawi, Mozambique, DRC, and north, central Madagascar.

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

(January 20, 2015 – January 21, 2015)

### 2.1. Weather assessment for the previous day (January 20, 2015)

Intense convective deep clouds were observed across central Angola, portions of Tanzania, Zambia, northern Malawi, central and southern DRC, northern Mozambique, and central and northern Madagascar

### 2.2. Weather assessment for the current day (January 21, 2015)

Intense convective deep clouds are observed across southeast Angola, some parts of Tanzania, Zambia, northern Malawi, central and southern DRC, northern Mozambique, and central, Gabon, northern Botswana, western Zimbabwe and northern Madagascar.

