



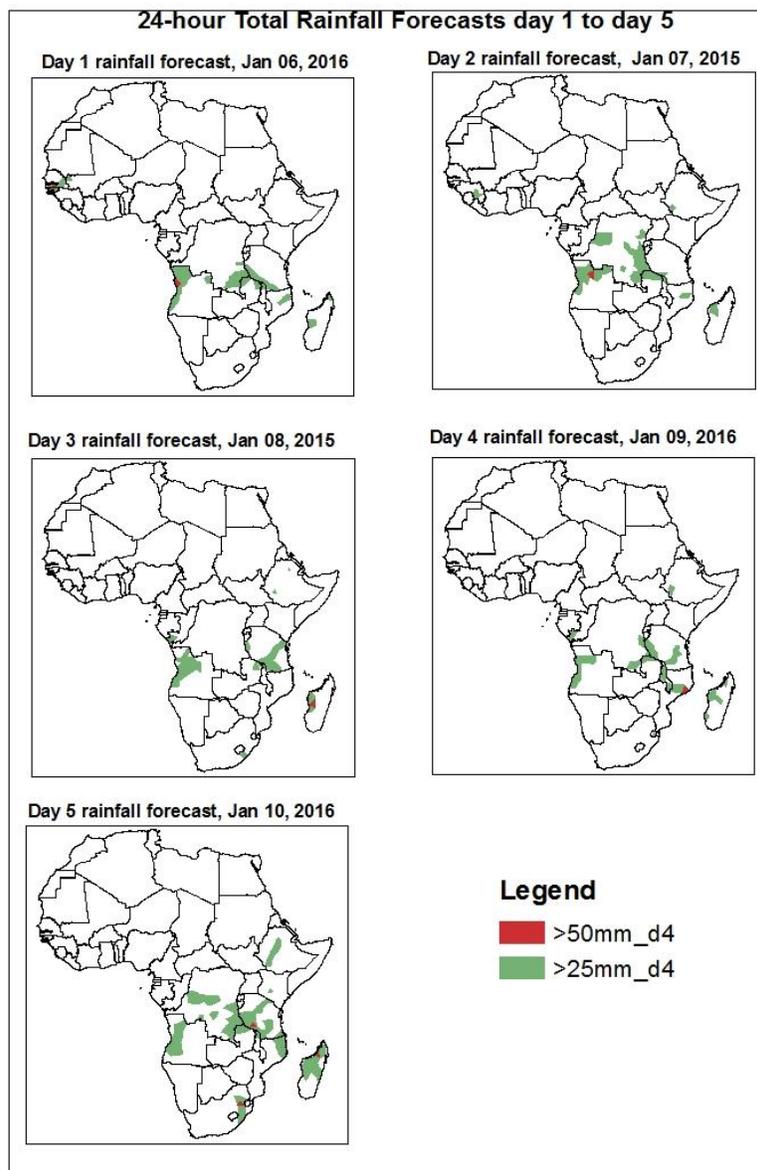
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

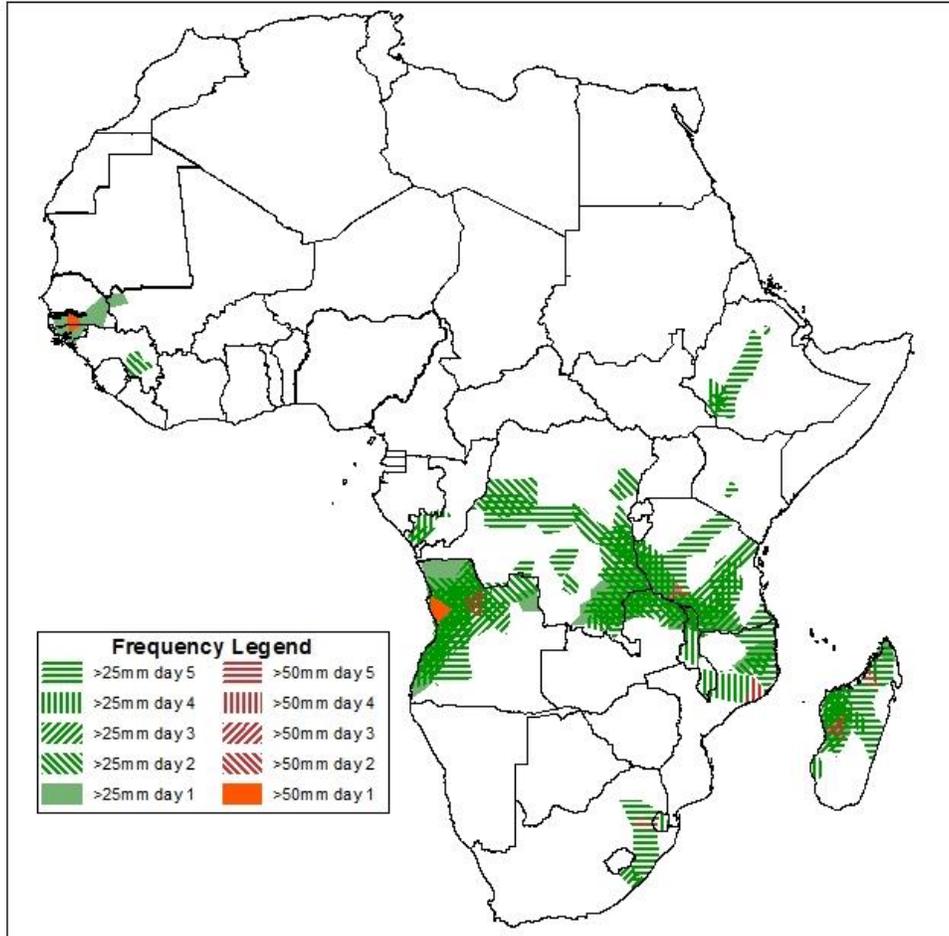
Valid: 06Z of Jan 06 - 06Z of Jan 10, 2016. (Issued on January 05, 2016)

### 1.1. 24-hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP), based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



**Five Days Rainfall Forecast Summary  
06 - 10 January, 2016**

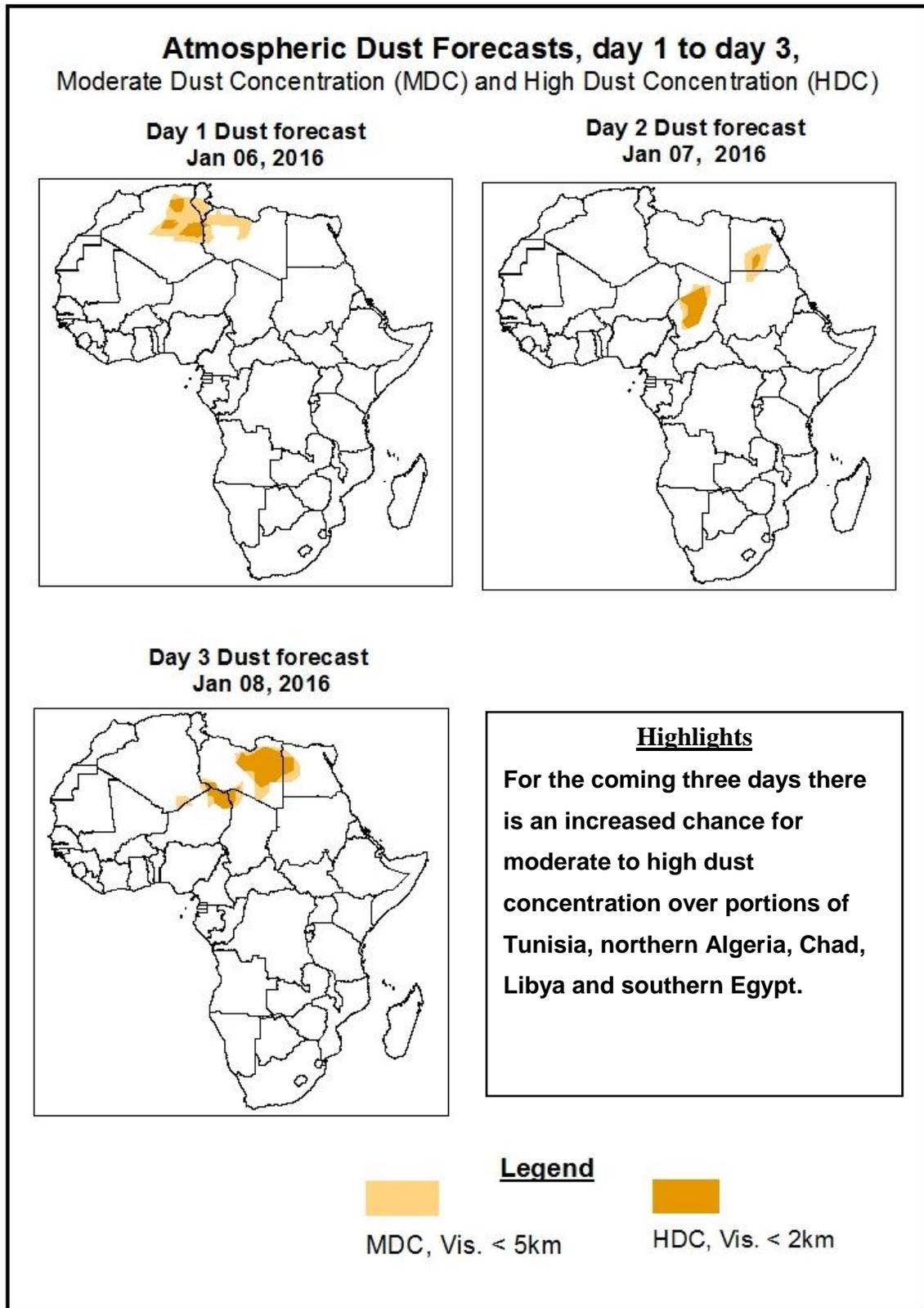


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over North east Mozambique, western Madagascar, western Angola, south eastern DRC, north western Zambia, western Tanzania, Gambia, Guinea Bissau and Swaziland, with high probability of heavy rainfall over parts of western Angola, western Madagascar, Gambia, and Guinea Bissau.

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Jan 06 – 12Z of Jan 08, 2016

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



### **1.3. Model Discussion, Valid: 06 - 10 January, 2016**

The Extension of Azores high pressure system over Sahara is expected to intensify in to 1031mb in 24 hours' time from its central value of 1030mb. This high pressure system is also expected to weaken in to 1029mb, in to 1026mb, into 1023mb and into 1022mb in 48, 72, 96 and 120 hours' time respectively. This continues weakening of the pressure system is expected to restrict further expansion of dust concentration over northern Africa. By the coming three days there is an increased chance for moderate to high dust concentration over portions of Tunisia, northern Algeria, Chad, Libya and southern Egypt with high probability of visibility to be less than 2km over parts of Chad and Libya.

The Arabian high pressure system is expected to weaken in to 1022mb in 24 hours' time from its central value of 1028mb and attain this value for about 24 hours before weakening in to 1021mb in 72 hours' time. This pressure system is also expected to weaken in to the relatively minimum value of 1019mb and attain this central value up to the end of the forecast period. The intensification of middle latitude low pressure system around this pressure system enhance the formation of low level convergence over Ethiopia which intern facilitate the moisture incursion from Indian Ocean. In association to this system the daily minimum temperature is expected to increase from the normally expected amount.

The St Helena high pressure system over South East Atlantic Ocean is expected to intensify in to 1035mb in 24 hours' time from its central value of 1019mb and attain this value for about 24 hours. This high pressure system is also expected to weaken into 1032mb in 72 hours' time and attain this central value for 24 hours and weaken back in to 1030mb in 120 hours' time.

The intensification of this high pressure system in to 1035mb from 1019mb in 24 hours' time and the interaction of middle latitude low pressure system facilitate conditions for the development middle level convergence over north western Africa.

The Mascarene high pressure system over Southwest Indian Ocean is expected to attain its central value of 1021mb for about 24 hours and weaken in to 1018mb in 48 hours' time. This high pressure system is also expected to intensify in to 1020mb and in to 1022mb in 72 and 96 hours' time respectively. By the end of the forecast period, this high pressure system is expected to weaken in to the relative minimum value of 1020mb. In addition to the weakening of this pressure system, the development of low pressure system over central Indian decrease is expected to depress the amount of moisture supposed to incur from south western Indian Ocean in to south eastern Africa and Madagascar.

925mb and 850mb level: The low level anticyclonic activity supposed to develop over northern Africa enhances the dust concentration over Tunisia, northern Algeria, Libya and southern Egypt. Low level convergence, observed over Ethiopia, is also expected to facilitate moisture incursion from Indian Ocean to Ethiopia.

In general the North-South oriented meridional component of ITCZ that have been vertically cross western DRC, Angola and Northern Namibia, will attain its previous day location. But the development of convergence zone observed at 700mb level, over the coastal area of north eastern Africa, is expected to bring sufficient moisture from northern Atlantic Ocean leading to rainfall over north western Africa. The low pressure systems developed over central Atlantic Ocean and south western Indian Ocean are expected to influence the moisture incursion towards south western and south eastern Africa. The low level convergence over Ethiopia is expected to bring moisture from Northern Indian Ocean leading to rainfall over parts of central and northern Ethiopia.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over North east Mozambique, western Madagascar, western Angola, south eastern DRC, north western Zambia, western Tanzania, Gambia, Guinea Bissau and Swaziland, with high probability of heavy rainfall over parts of western Angola, western Madagascar, Gambia, and Guinea Bissau.

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (January 04, 2016)

Moderate to heavy rainfall was observed over local areas in northern Madagascar, southern Tanzania, central Kenya, western DRC and western Angola.

### 2.2. Weather assessment for the current day (January 05 30, 2015)

Intense convective clouds are observed across many places over parts of western Angola, western Zambia, southern DRC, Gambia, and Guinea Bissau.

