



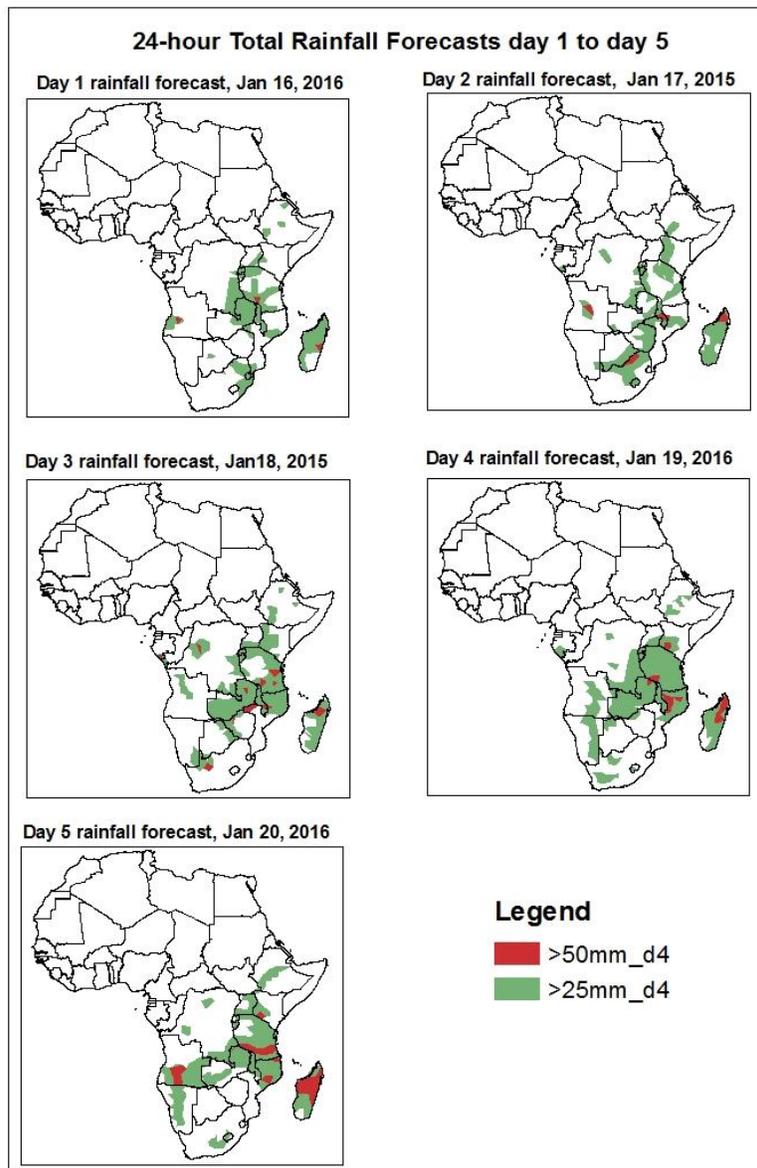
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

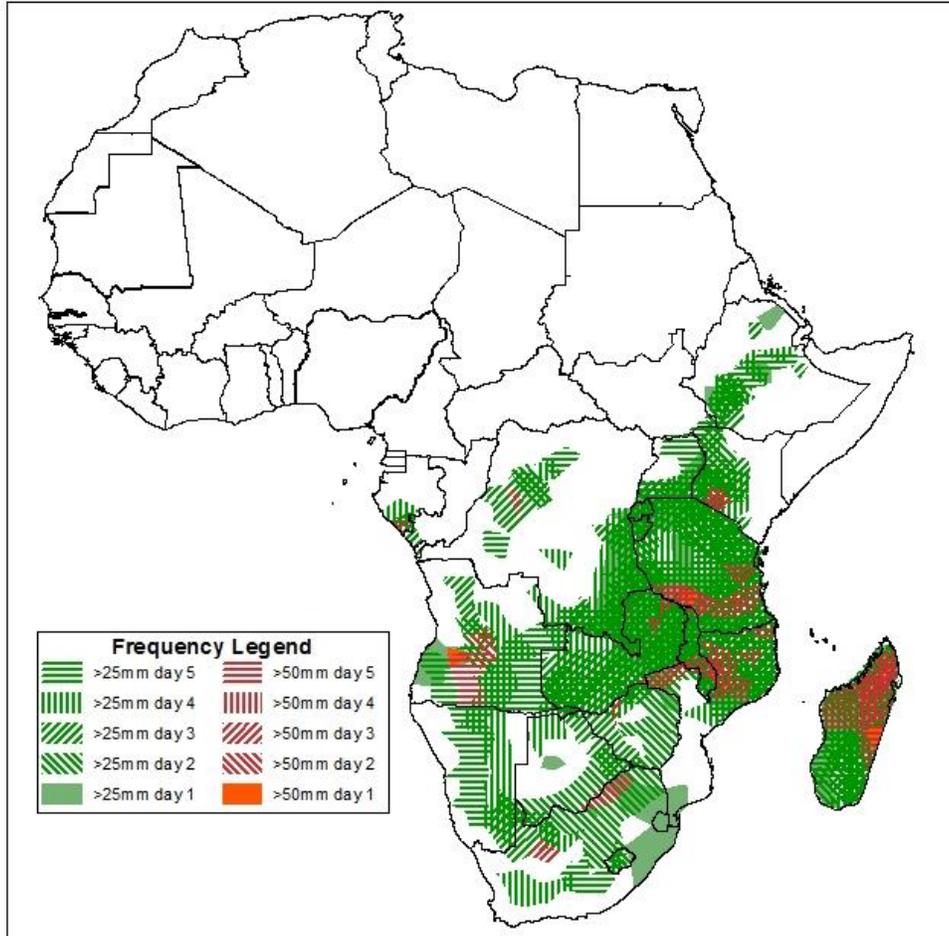
Valid: 06Z of Jan 16 - 06Z of Jan 20, 2016. (Issued on January 14, 2016)

### 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  
16 - 20 January, 2016**

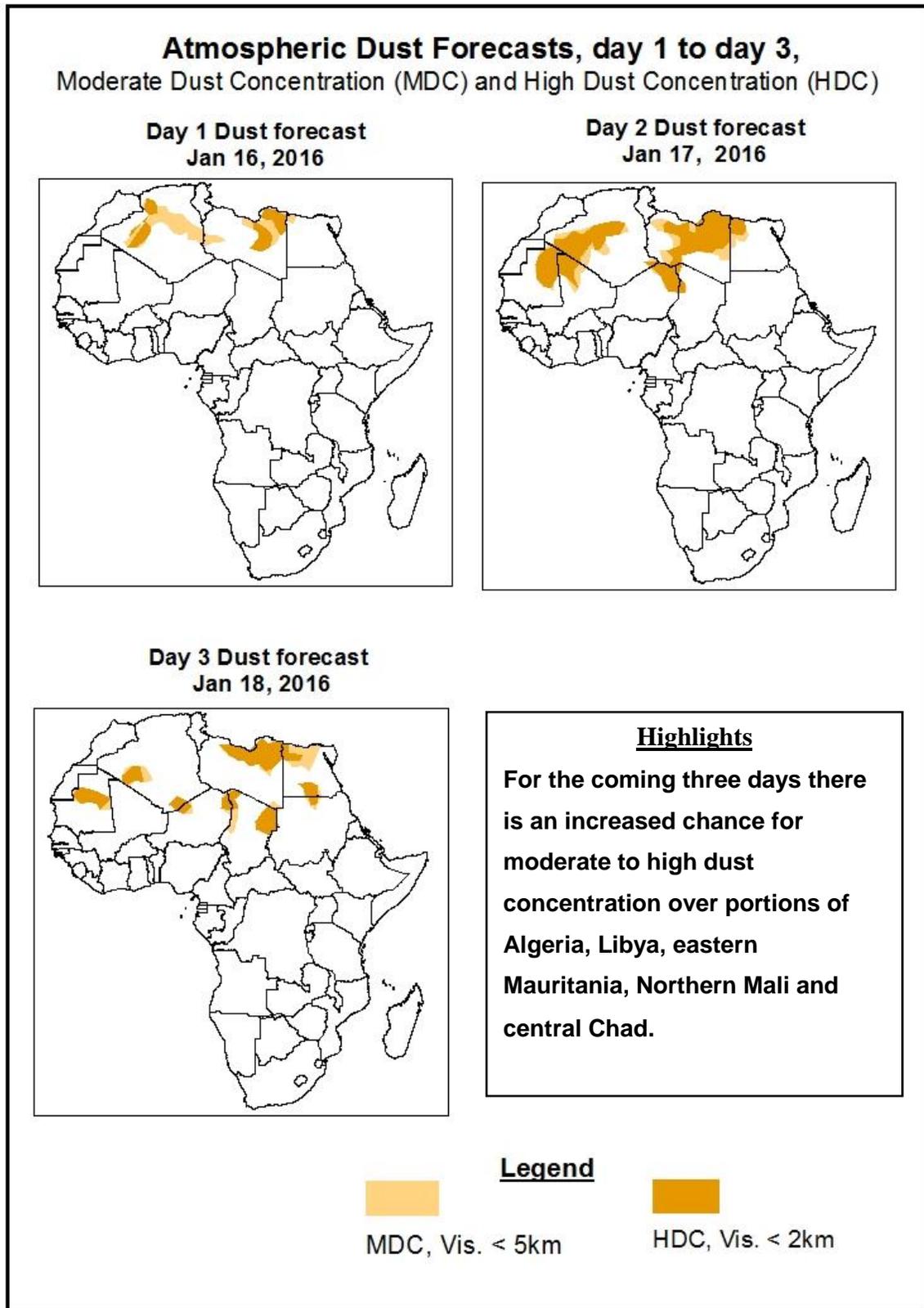


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over parts of south western & central Ethiopia, North eastern Mozambique, most parts of Madagascar, central Angola, southern DRC, most parts of Zambia, most parts of Tanzania, central Namibia, western Kenya, Malawi, Lesotho and north eastern south Africa with high probability of heavy rainfall over parts of southern Tanzania, central Angola and north eastern Madagascar.

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Jan 16 – 12Z of Jan 18, 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: 16 - 20 January, 2016**

Azores high pressure system over Sahara is expected to intensify in to 1035mb in 24 hours' time from its central value 1030mb and weaken back in to 1027mb, in to 1025mb and in to 1023mb in 48, 72 and 96 hours' time respectively. By the end of the forecast period, this high pressure system is expected to weaken in to the relatively minimum value of 1020mb. Due to the interaction of this high pressure system with the low pressure system developed over northern Atlantic Ocean, the dominant wind over northern western Africa is expected to be more of easterly hence the dust concentration is expected to spread over the coastal area of north eastern Africa in other hand strong low level anticyclone is also expected over central north Africa, hence the dust concentration is also expected to intensify over north eastern Africa(Libya and northern Egypt). Like previous days subtropical low pressure systems is expected to interact with the tropical systems, to continue pulling ITCZ to north direction.

The Arabian high pressure system is expected to intensify in to 1029mb and in to 1033mb in 24 and 48 hours' time from its central value of 1025mb respectively and weaken back to 1021mb in 72 hours' time and in to 1019mb in 96 hours' time and attain this value up to the end of the forecast period.

The interaction of the sub-tropical low pressure system with tropical systems along with the slight shift of the Arabian high pressure system towards the water body, are expected to bring rainfall over southern Kenya and parts of south western, central and northern Ethiopia. In association to the development of cloud daily minimum temperature is expected to increase from the normally expected amount over the high lands of Ethiopia.

The St Helena high pressure system over South East Atlantic Ocean is expected to intensify in to 1027mb in 24 hours' time from the central value of 1026mb and weaken back to 1026mb in 48 hours' time. This high pressure system is also expected to attain its central value up to the end of the forecast period. During the forecast period, this system is expected not to make significant change in terms of intensity and position.

Following the relative stability and the development of low pressure system over central Atlantic Ocean, the amount of moist air that has been incurring from south western Atlantic Ocean in to south western Africa is expected to decrease from what is climatically expected.

The Mascarene high pressure system over Southwest Indian Ocean is expected to intensify in to 1035mb in 24 hours' time from its central value of 1032mb and attain this central value for about 24 hours. This high pressure system is also expected to weaken in to 1033mb, in to 1032mb and into 1028mb in 72, 96 and 120 hours' time respectively.

The intensification of this high pressure system in to the relatively maximum value of 1035mb along with its stability is expected to intensify the moist south easterly wind flowing from southern Indian Ocean and hence normal to above normal rainfall is expected over south eastern Africa and Madagascar.

By the coming three days low level easterly wind is expected to be dominant over northern Africa, following this dominancy, the dust that have been concentrated over central Chad is expected to cover Algeria, Libya, eastern Mauritania, Northern Mali with high probability of visibility less than 2km over portions of Algeria and northern Libya.

North-South oriented meridional component of ITCZ is expected to extend from southern Kenya up to northern Mozambique and isolated low level convergences are also observed over central Madagascar and central Ethiopia. Hence north easterly wind coming from Indian Ocean is expected to bring isolated rainfall over eastern Africa.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over parts of south western & central Ethiopia, North eastern Mozambique, most parts of Madagascar, central Angola, southern DRC, most parts of Zambia, most parts of Tanzania, central Namibia, western Kenya, Malawi, Lesotho and north eastern south Africa with high probability of heavy rainfall over parts of southern Tanzania, central Angola and north eastern Madagascar.

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (January 14, 2016)

Moderate to heavy rainfall was observed over local areas in eastern Angola, central DRC, northern Madagascar, northern Tanzanian, north eastern Mozambique, western Gabon and Swaziland.

### 2.2. Weather assessment for the current day (January 15, 2016)

Intense convective clouds are observed across many places over central Madagascar, central Angola, central Namibia, Zambia, central Tanzania, central DRC, western Zimbabwe, Uganda, western Kenya and central South Africa.

