



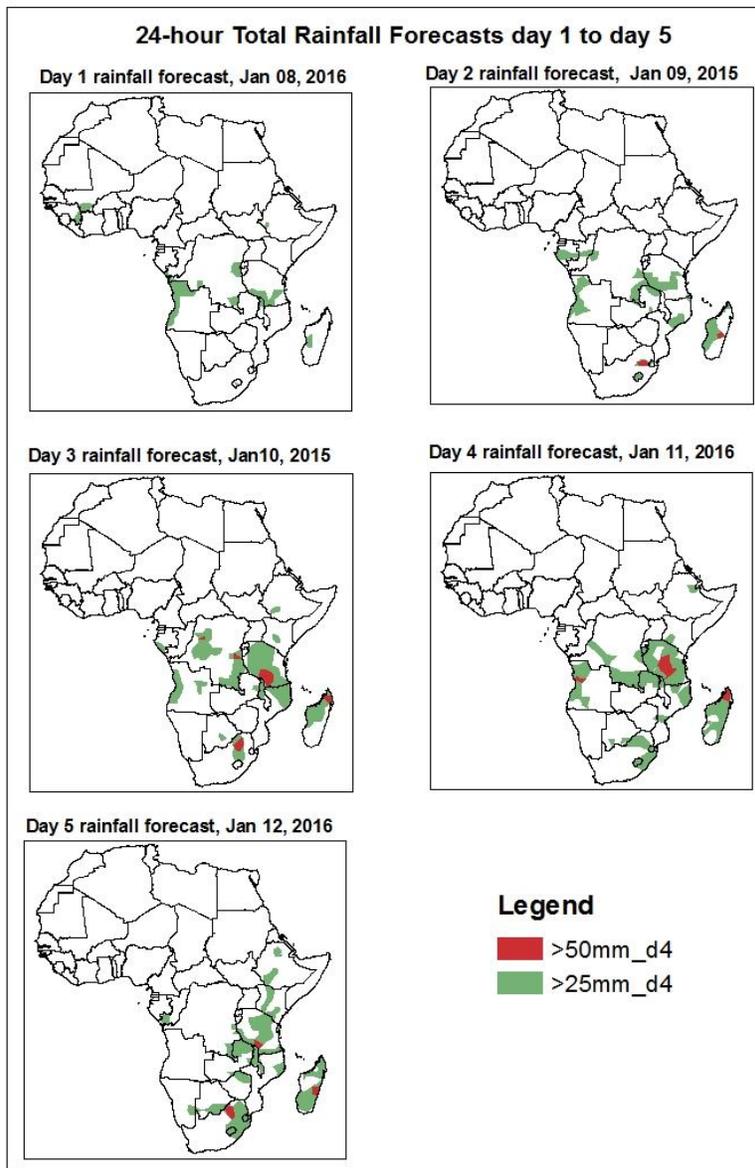
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

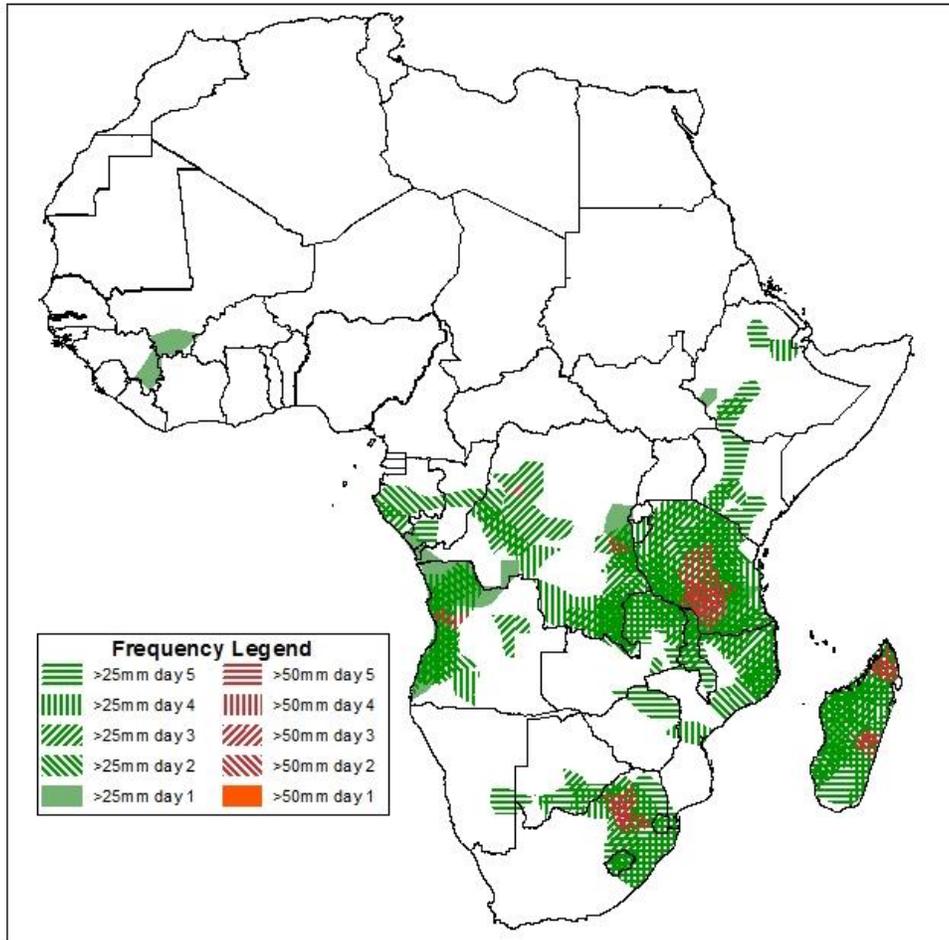
Valid: 06Z of Jan 08 - 06Z of Jan 12, 2016. (Issued on January 07, 2016)

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
08 - 12 January, 2016**

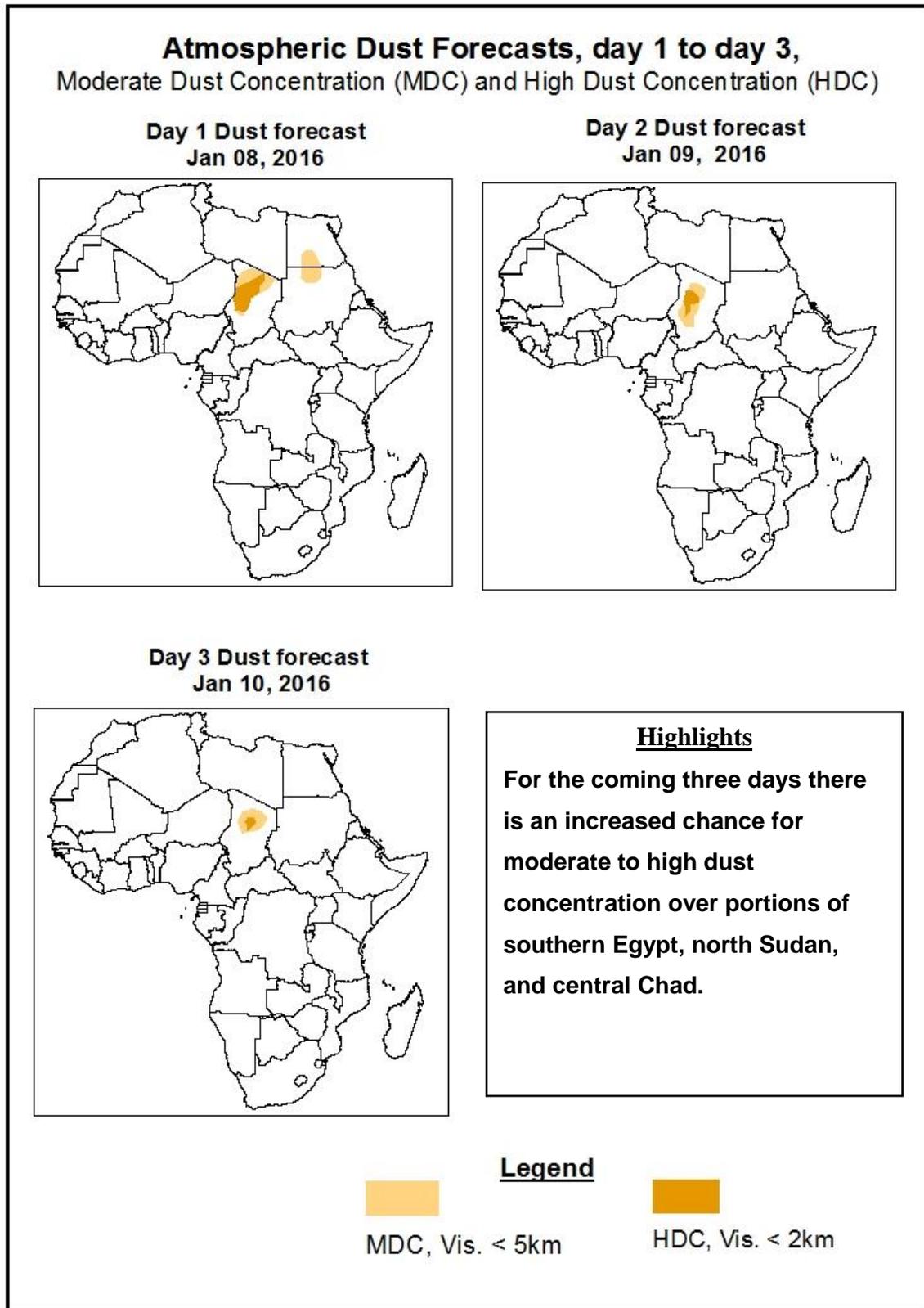


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over North east Mozambique, most parts of Madagascar, western Angola, south eastern DRC, eastern Zambia, most parts of Tanzania, Lesotho, Swaziland and north eastern south Africa with high probability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

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Jan 08 – 12Z of Jan 10, 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: 08 - 12 January, 2016

The Extension of Azores high pressure system over Sahara is expected to weaken into 1026mb, in to 1024mb and in to 1023bd in 24, 48 and 72 hours' time respectively. This high pressure system is also expected to intensify in to 1024mb and in to 1026mb in 96 and 120 hours' time. The low pressure system developed over north western coastal of Africa, is expected to reverse the direction of the dominant north easterly wind in to south westerly hence there is high probability of unseasonal moisture incursion towards north western Africa from northern Atlantic Ocean. Following the slight displacement of this system to ward north east direction, Dust concentration is also expected to expand in to the north east direction. By the coming three days there is an increased chance for moderate to high dust concentration over portions of southern Egypt, north Sudan, and central Chad, with high probability of visibility less than 2km over parts of Chad.

The Arabian high pressure system is expected to weaken in to 1023mb in 24 hours' time and attain this central value for about 24 hours and weaken in to 1021mb in 72 hours' time. This pressure system is also expected to intensify in to 1028mb in 96 hours' time and weaken back in to 1023mb in 120 hours' time. 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 attain 1023mb for about 24 hours and intensify in to 1031mb in 48 hours' time. This high pressure system is also expected to weaken into 1026mb and in to 1023 in 72 and 96 hours' time. By the end of the forecast period, this high pressure system is expected attain 1029mb.

The intensification of this high pressure system in to 1031mb from 1023mb in 48 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 intensify in to 1025mb in 24 hours' time from 1021mb and weaken in to 1024mb in 48 hours' time. This high pressure system is also expected to intensify in to 1028 in 72 hours' time and weaken in to 1025mb 96 hours' time. By the end of the forecast period, this high pressure system is expected to intensify in to 1029mb. The development of low pressure system over central Indian Ocean is expected to depress the amount of moisture supposed to incur from south western Indian Ocean in to south eastern Africa and Madagascar.

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

In general the low level south westerly wind, developed in relation to the development of low pressure system over the coastal area of north western Africa, is expected to intensify and facilitate conditions to bring rainfall towards north western Africa. North-South oriented meridional component of ITCZ that have been vertically cross western DRC Angola and Northern Namibia, will attain its previous day location. 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, most parts of Madagascar, western Angola, south eastern DRC, eastern Zambia, most parts of Tanzania, Lesotho, Swaziland and north eastern south Africa with high probability of heavy rainfall over parts of southern Tanzania, western Angola, eastern Madagascar, southern Tanzania and north eastern south Africa

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (January 06, 2016)

Moderate to heavy rainfall was observed over local areas in western Madagascar, southern South Africa, Ivory Coast, western Congo, central DRC, southern Mali and western Angola.

2.2. Weather assessment for the current day (January 07, 2016)

Intense convective clouds are observed across many places over parts of western Madagascar, western Angola, western Tanzania, central DRC and central Mali.

