



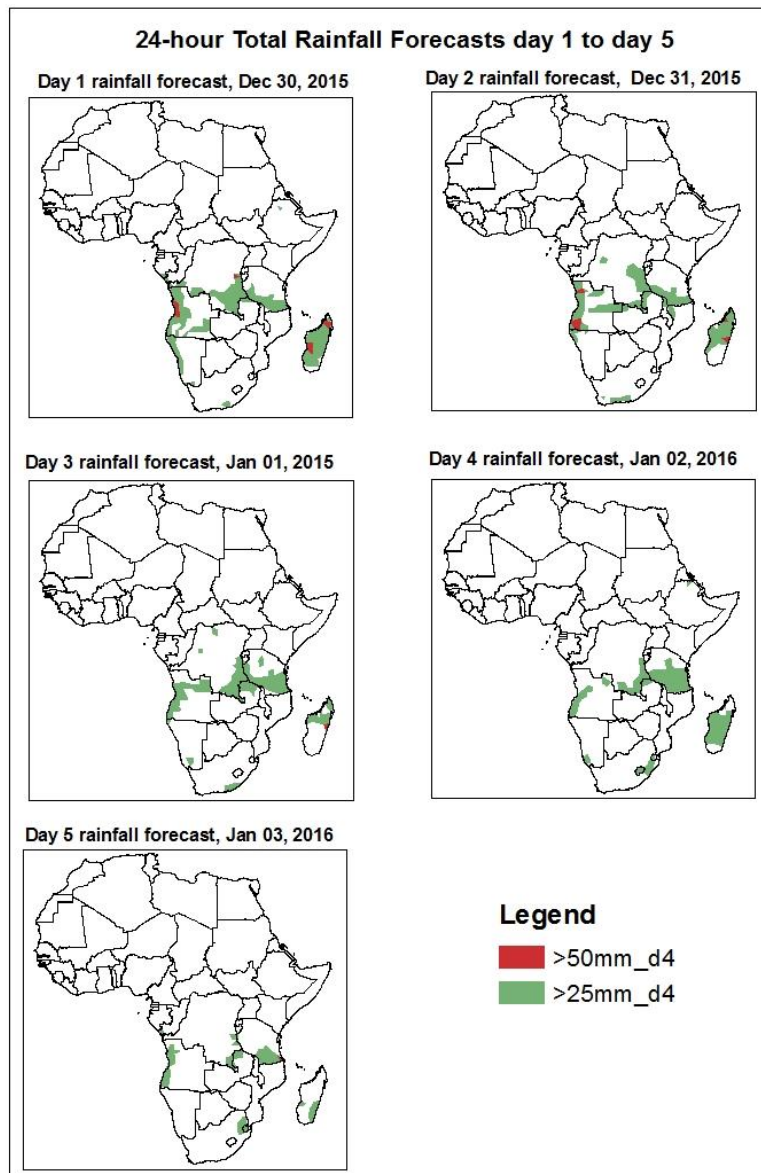
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

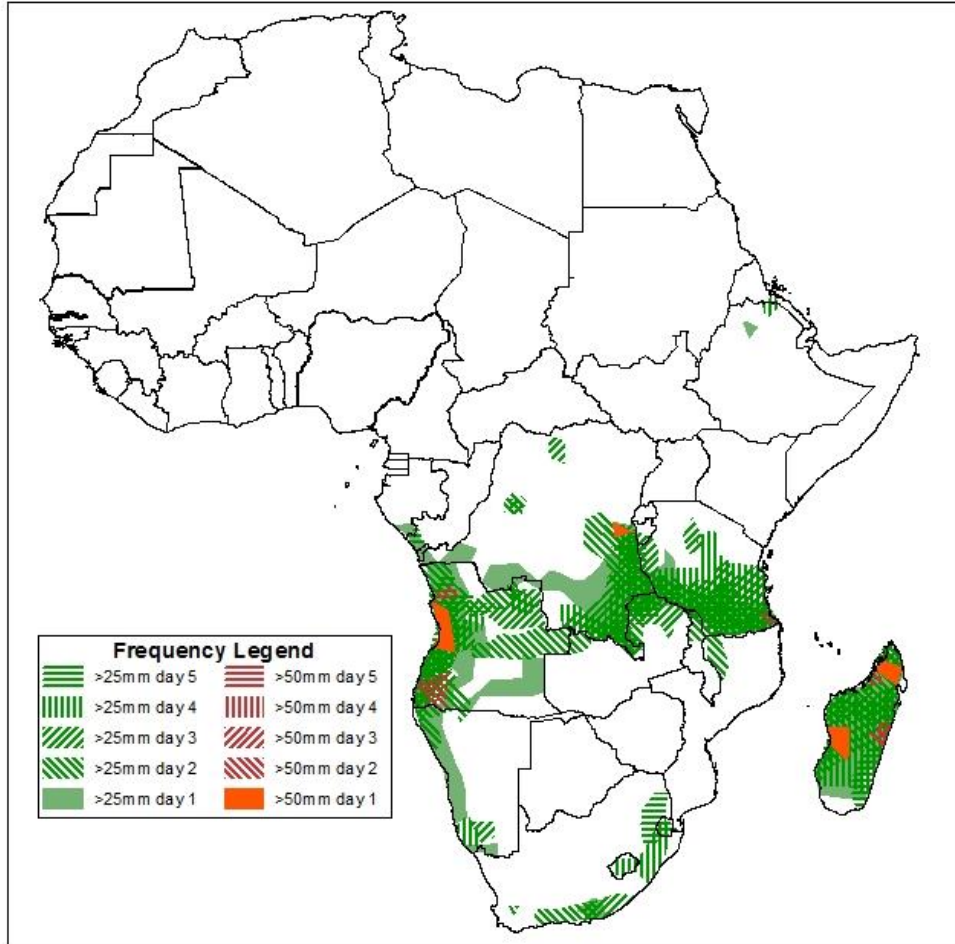
Valid: 06Z of Dec 30, 2015 – 06Z of Jan 03, 2016. (Issued on December 29, 2015)

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
30 December, 2015 - 03 January, 2016**

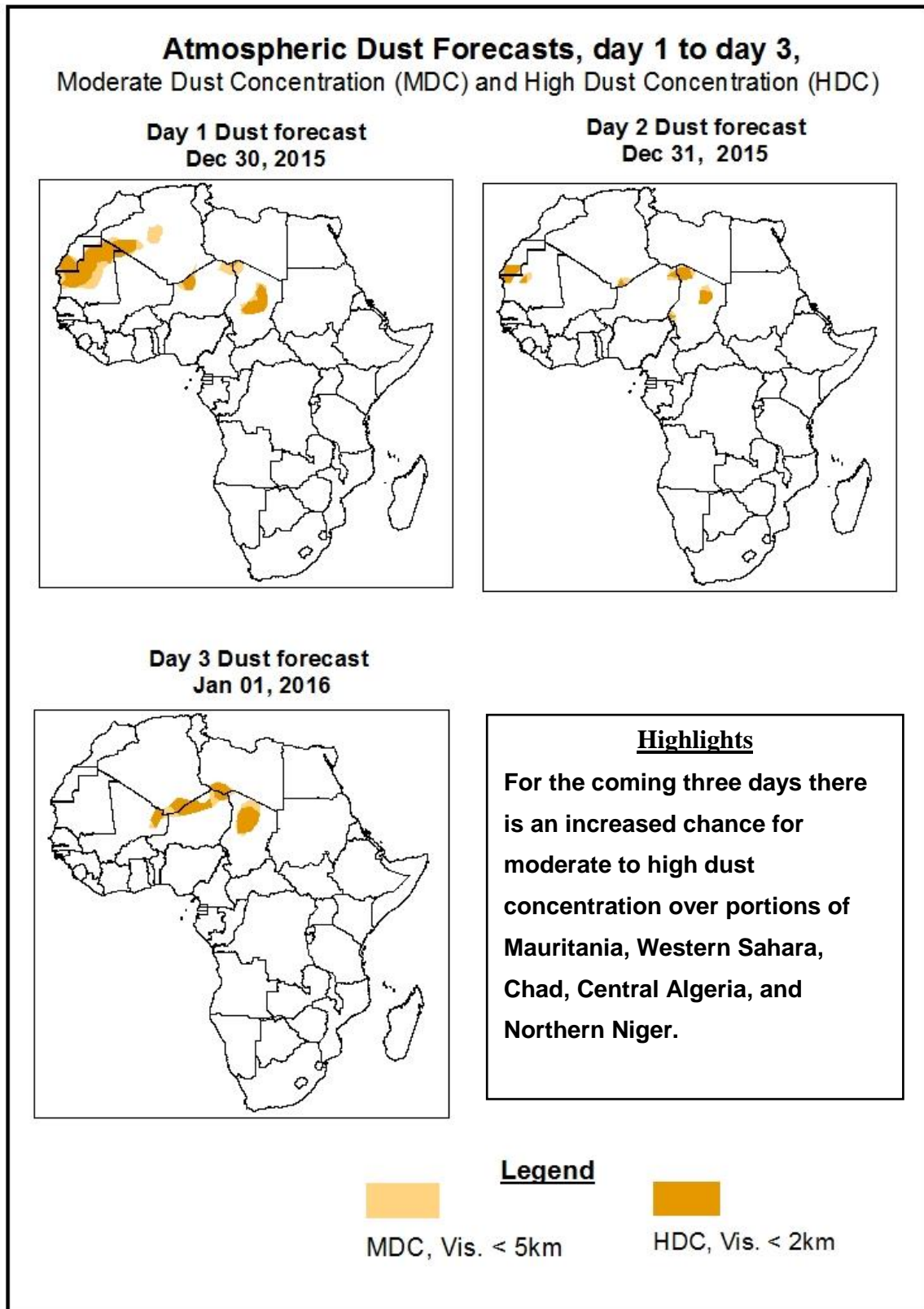


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over most parts of Madagascar, western Angola, South eastern DRC and Southern Tanzania, with high probability of heavy rainfall over parts of central and northern Madagascar, eastern DRC and western Angola.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Dec 30– 12Z of Jan 01, 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:30 December, 2015 - 03 January, 2016

The Extension of Azores high pressure system over Sahara is expected to weaken in to 1033mb, in to 1030mb and into 1027mb in 24, 48 and 72 hours' time respectively from its central value 1035mb. This high pressure system is also expected to attain this central value for about 24 hours and to intensify in to 1028mb in 120 hours' time. The tendency of continuous weakening of this high pressure system will decrease the dust concentration that have been *prevailed* over Chad, Southern Algeria, Western Sahara, Mauritania, Southern Niger, and Northern Nigeria. In 72 hours' time the dust concentration is expected to be limited over the border area of Chad, Niger, Mali and Algeria. The spatial position of this high pressure system is expected to make slight shift toward the center.

The Siberian high pressure system is expected to weaken in to 1030mb, into 1028mb and in to 1021mb in 24,48 and 72 hours' time respectively from its central value of 1032mb. In general , this pressure system expected to weaken from 1032mb in to 1021mb in three days' time, as a result of this significant weakening, the magnitude of the cold air coming in to east Africa will decrease, leading to increase the daily minimum temperature over the region. The spatial position of this high pressure system is expected not to make significant shift.

The St Helena high pressure system over South East Atlantic Ocean is expected to intensify in to 1024mb from its central value of 1021mb and weaken in to 1020mb and in to 1019mb in 48 and 72 hours' time respectively. This pressure system is also expected to intensify in to 1020mb and in to 1021mb in 96 and 120 hours' time. During the forecast period, the spatial position of this pressure system tends to make slight shift in to the west and back to the center.

The Mascarene high pressure system over Southwest Indian Ocean is expected to intensify in to 1034mb in 24 hours' time from its central value 1033mb and weaken in to 1026mb, into 1024mb, in to 1022mb and in to 1021mb in 48, 72, 96 and 120 hours' time respectively. In general, this pressure system is expected to weaken from 1034mb in to 1021mb in five days period, this significant weakening decrease the amount of moisture supposed to incur from south western Indian Ocean in to south eastern Africa.

At 925mb level, Strong low level convergence is observed over Democratic republic of Congo and Madagascar so that relatively moderate to heavy rainfall are expected around the region. But in relation to the continuous weakening of the Mascarene high pressure system, the cumulative rainfall for the coming five days, over the region is expected to be below normal up to normal.

At 850mb level, North-south oriented meridional component of ITCZ that have been located between Southern Ethiopia and Northern South Africa in the previous days is expected to be dominated by East west oriented component. This low level convergence crosses Angola, Democratic republic of Congo, Zambia, Northern Malawi and Southern Tanzania. As a result of this low level convergence, South western and South eastern Africa, DRC and Madagascar area are expected to be moist than the rest of Africa.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over most parts of Madagascar, western Angola, South eastern DRC and Southern Tanzania, with high probability of heavy rainfall over parts of central and northern Madagascar, eastern DRC and western Angola.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (December 28, 2015)

Moderate to heavy rainfall was observed over local areas in central Madagascar, western Zambia, North western Botswana and eastern Namibia.

2.2. Weather assessment for the current day (December 29, 2015)

Intense convective clouds are observed across many places over Central Angola, central Madagascar, western Congo, Southern DRC and Northern Mozambique.

