



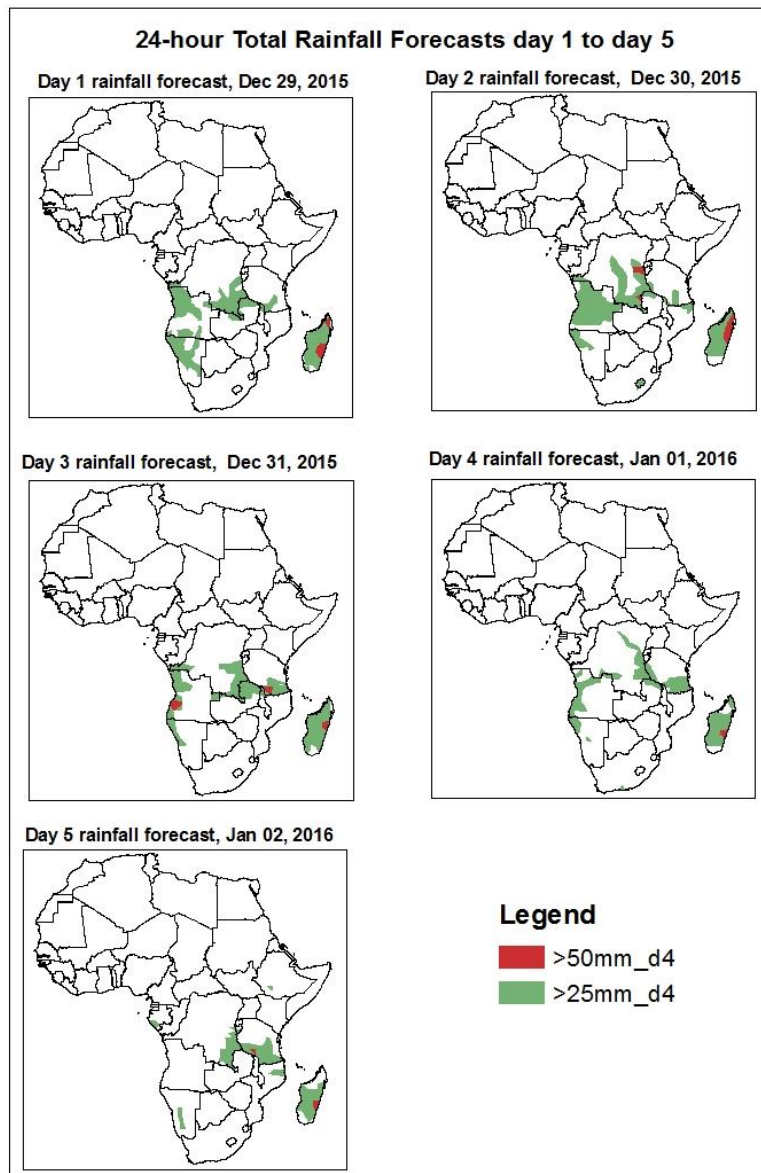
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

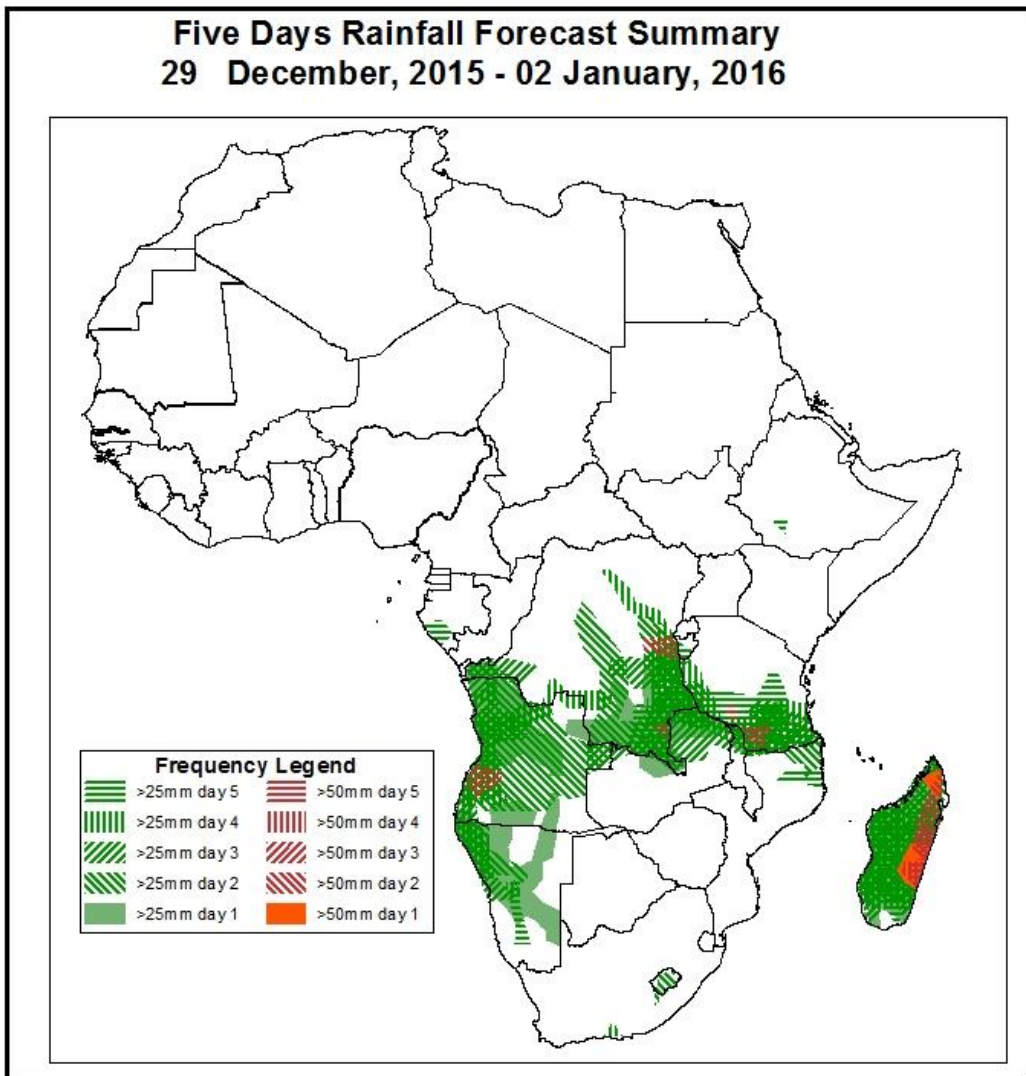
Valid: 06Z of Dec 29, 2015 – 06Z of Jan 02, 2016. (Issued on December 28, 2015)

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
29 December, 2015 - 02 January, 2016**

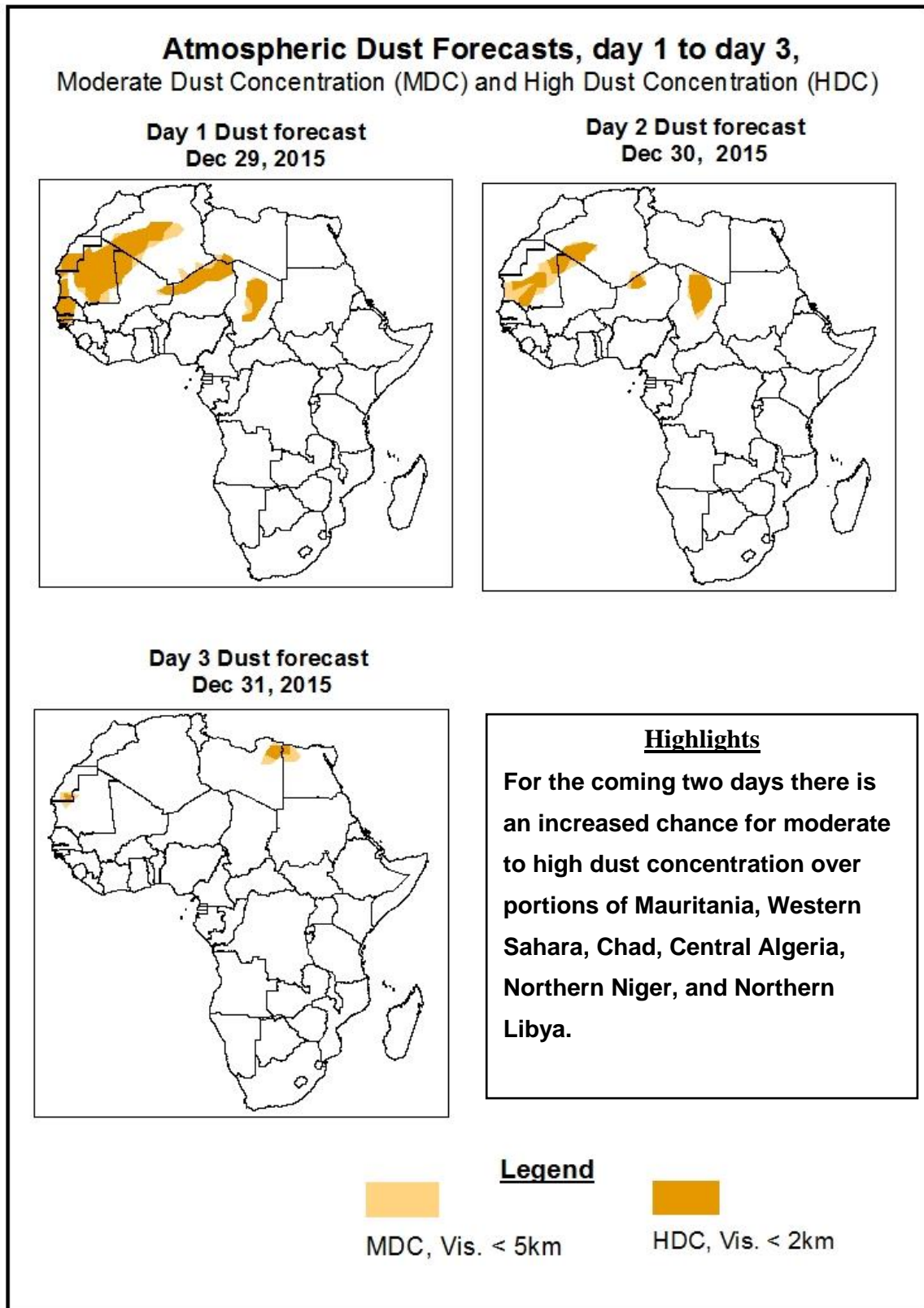


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over most parts of Madagascar, North western Namibia, Most parts of Angola, Southern DRC and Southern Tanzania, with high probability of heavy rainfall over parts of western Madagascar, eastern DRC,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

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Dec 29– 12Z of Dec 31, 2015

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: 29 December, 2015 - 02 January, 2016

The Extension of Azores high pressure system over Sahara is expected to attain its central value of 1033mb for about 24 hours and starts continuous weakening into 1030mb and in to 1027mb in 48 and 72 hours' time respectively and attain this central value up to 96 hours' time and start intensification in to 1028mb in 120 hours' time. After 24 hours stability time, this pressure system is expected to make continues weakening, this enables the dust concentration that have been *prevailed* over Chad, Southern Algeria, Western Sahara, Mauritania, Southern Niger, and Northern Nigeria on previous days to be continue for about two days and start significant decrease in 72 hours' time. 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 1022mb in 24,48 and 72 hours' time respectively from its central value of 1032mb. This pressure system is also expected to intensify in to 1024mb in 96 hours' time and to weaken in to the relative minimum value of 1021mb in 120 hours' time. In general , this pressure system expected to weaken from 1032mb in to 1021mb in five 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 1018mb in 48 and 72 hours' time respectively. This pressure system is also expected to intensify in to 1020mb in 96 hours' time and attain its this relative minimum value up to the end of the forecast period. 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, North western Namibia, Most parts of Angola, Southern DRC and Southern Tanzania, with high probability of heavy rainfall over parts of western Madagascar, eastern DRC, Southern Tanzania and western Angola.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (December 27, 2015)

Moderate to heavy rainfall was observed over local areas in most parts of central & Western Madagascar, Northern Namibia, Southern Angola, western Congo, central DRC, parts of Zambia and southern Tanzania

2.2. Weather assessment for the current day (December 28, 2015)

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

