



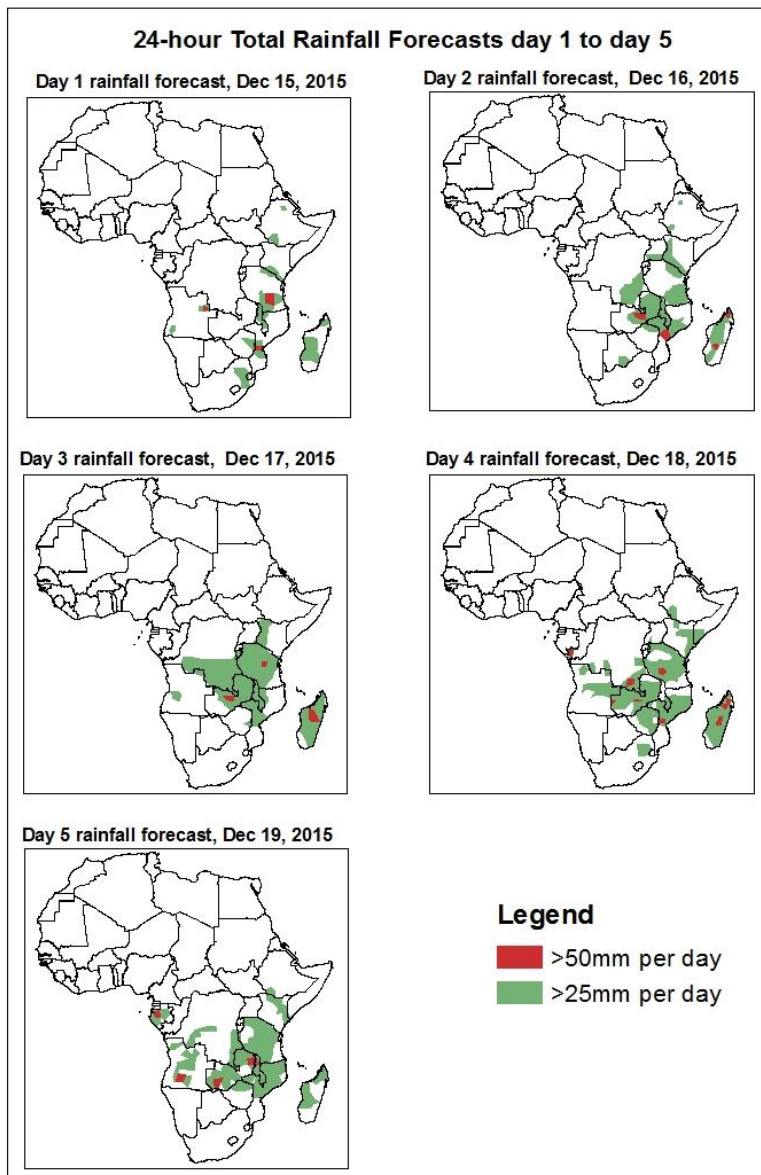
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

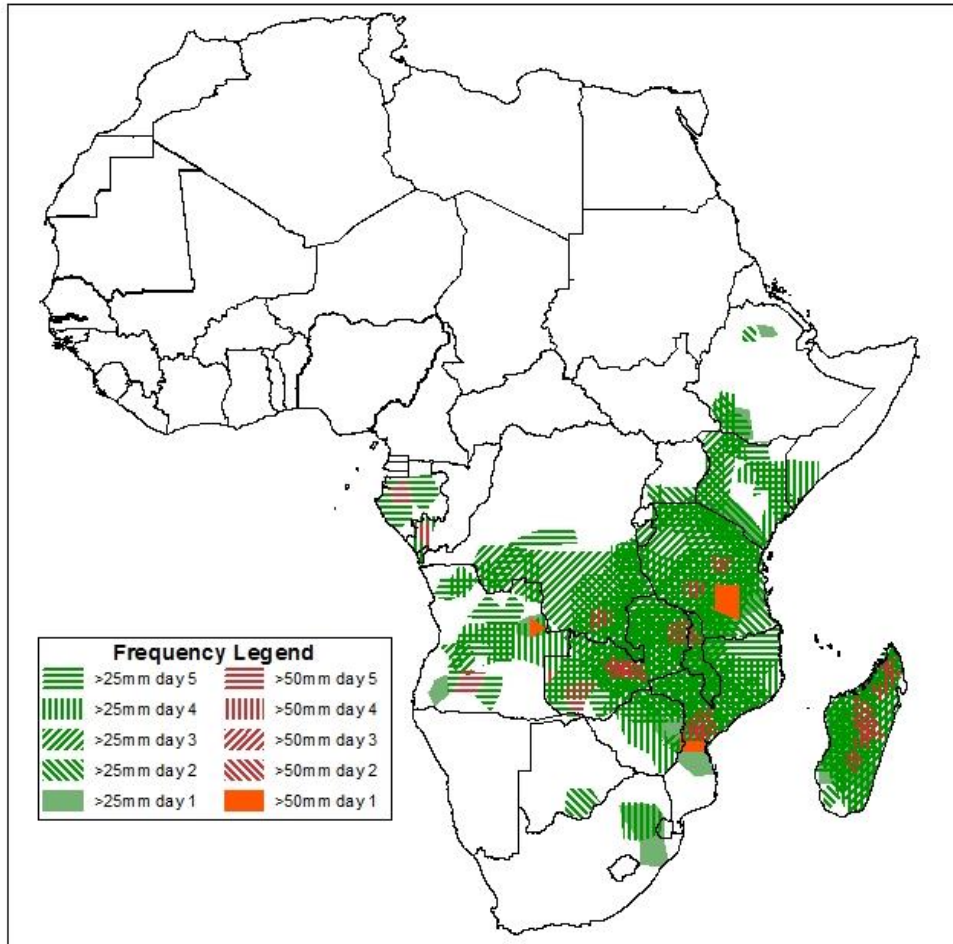
Valid: 06Z of Dec 15 – 06Z of Dec 19, 2016. (Issued on December 14, 2015)

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
15 - 19 December, 2015**

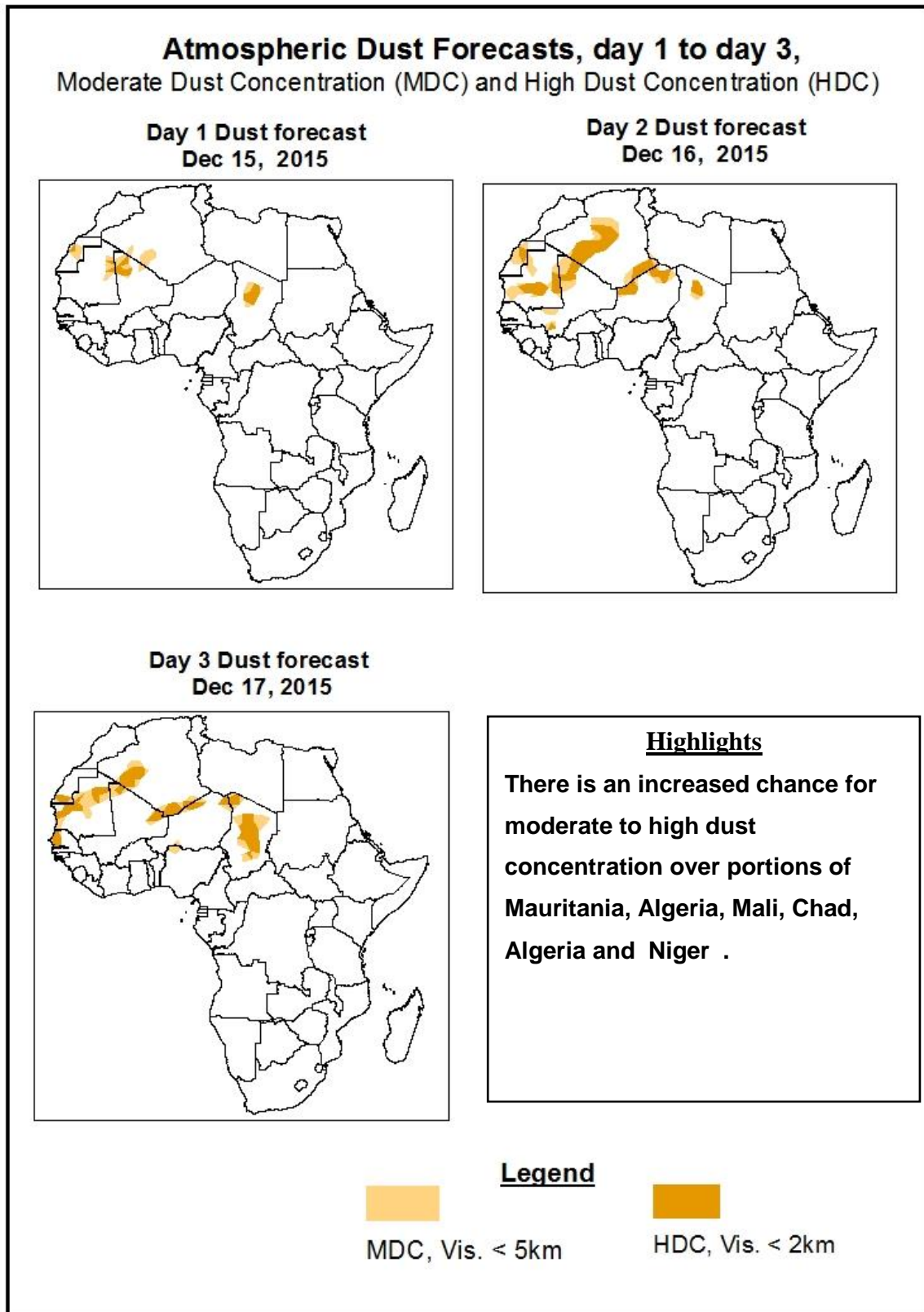


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over parts of south western Ethiopia, Kenya, Most parts of Tanzania, Northern Mozambique, Malawi, Zimbabwe, Zambia, Southern DRC, Gabon, Parts of Angola and most parts of Madagascar, with heavier rainfall events expected over Central Madagascar, Southern Tanzania, central Mozambique and Zambia.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Dec 15– 12Z of Dec 17, 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: 15 – 19 December, 2015

The Azores high pressure system is expected to intensify from its central pressure 1027mb to 1028mb in 24 hours' time. By continuous intensification the central value attains 1031mb in 48 hours' time. This high pressure system is expected to keep its central value as it is for the next 24 hours and weaken to 1029mb at 96 hour from the starting time of the forecast. And start intensification in to 1035mb by the end of the forecast period. The Intensification of this high pressure system expected to lead in to the high probability of widespread dust to prevail up Mauritania, Algeria and NE Sudan.

The Siberian high pressure system is expected to intensify in to 1031mb in 24 hours' time and in to 1033mb in 48 hours' time from the initial central value of 1028mb. By 72 hours from the initial time, this high pressure system is expected to starts weakening into 1032mb and attains this value for about 24 hours. By the end of the forecast period, this system is expected to intensify by 3mb in to the central value of 1035mb.

The St Helena high pressure system over Southeast Atlantic Ocean is expected to Oscillate up and down in 24 hours' time interval. That is from the central value of 1022mb at the initial period weaken into 1020mb in 24 hours' time and then intensified into 1021mb in 48 hours' time. By the same pattern again this system weaken in to the central value of 1020mb in 72 hours' time and back to intensification in to 1023mb in 96 hours' time. By the end of the forecast period this system is expected to maintain the relative maximum value of 1025mb.

The Mascarene high pressure system over Southwest Indian Ocean is expected to intensify slightly during the first half of the forecast period, with its central pressure value increasing from about 1020mb to 1022mb in 48 hours' time from the initial time, and then expected to weaken in to the central value of 1019mb in 72 hours' time. For the last two days of the forecast time, this high pressure system is expected to intensify in to 1023mb and 1024mb relatively.

At 925mb level, dry cyclonic flow is expected to prevail over much of central Sahara, this activity expected to enhance dust activities over portions of the Sahel region. Moist North easterly winds from Indian Ocean are expected to prevail over the coastal area of south eastern Africa leading rainfall activities over the region.

At 850mb level, strong low-level wind convergence over Mozambique, Zambia and Madagascar is expected to enhance rainfall in the region. The seasonal north-south oriented (meridional component of the ITCZ), extending between Southwest Ethiopia and Mozambique, is expected to enhance rainfall in the region, with an increased chance for heavy rainfall over Tanzania, Mozambique, Malawi, Zambia, Madagascar and portions of south eastern DRC. Lower-level wind convergence over eastern Africa is also expected to enhance rainfall South western Kenya and Ethiopia..

At 500mb level, westerly winds associated mid-latitude frontal systems is expected to expand southwards into Northeastern Africa, down to the latitudes of northern Ethiopia during the forecast period. This condition may lead to increase in cloudiness over Ethiopia with chances of isolated to scattered rainfall across the highland areas.

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 Ethiopia, Kenya, Most parts of Tanzania, Northern Mozambique, Malawi, Zimbabwe, Zambia, Southern DRC, Gabon ,Parts of Angola and most parts of Madagascar, with heavier rainfall events expected over Central Madagascar, Southern Tanzania, central Mozambique and Zambia.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (December 13, 2015)

Moderate to heavy rainfall was observed over local areas in Southern Mozambique, Swaziland, central Kenya, western Tanzania and most parts of Madagascar.

2.2. Weather assessment for the current day (December 14, 2015)

Intense convective clouds are observed across many places over Eastern Angola, Swaziland, Northern Mozambique, Southern Kenya and parts of Madagascar.

