



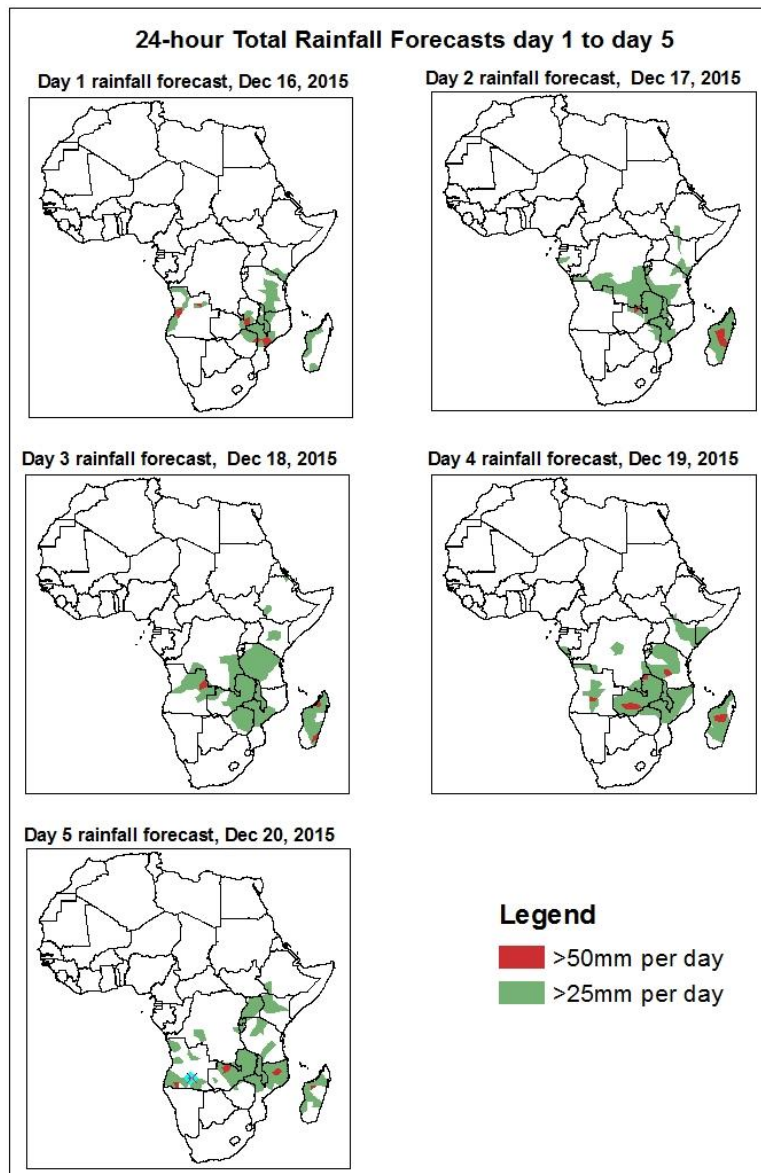
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

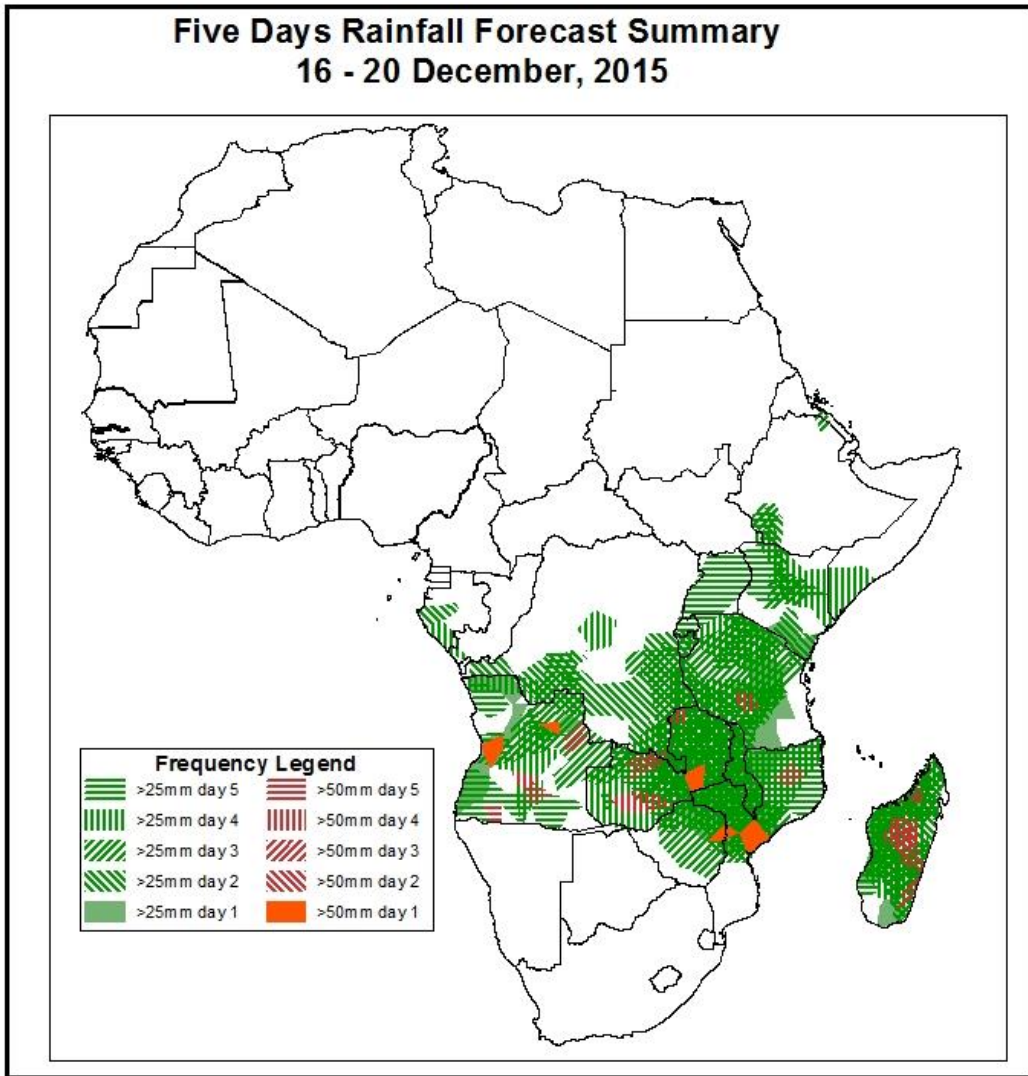
Valid: 06Z of Dec 16 – 06Z of Dec 20, 2015. (Issued on December 15, 2015)

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
16 - 20 December, 2015**

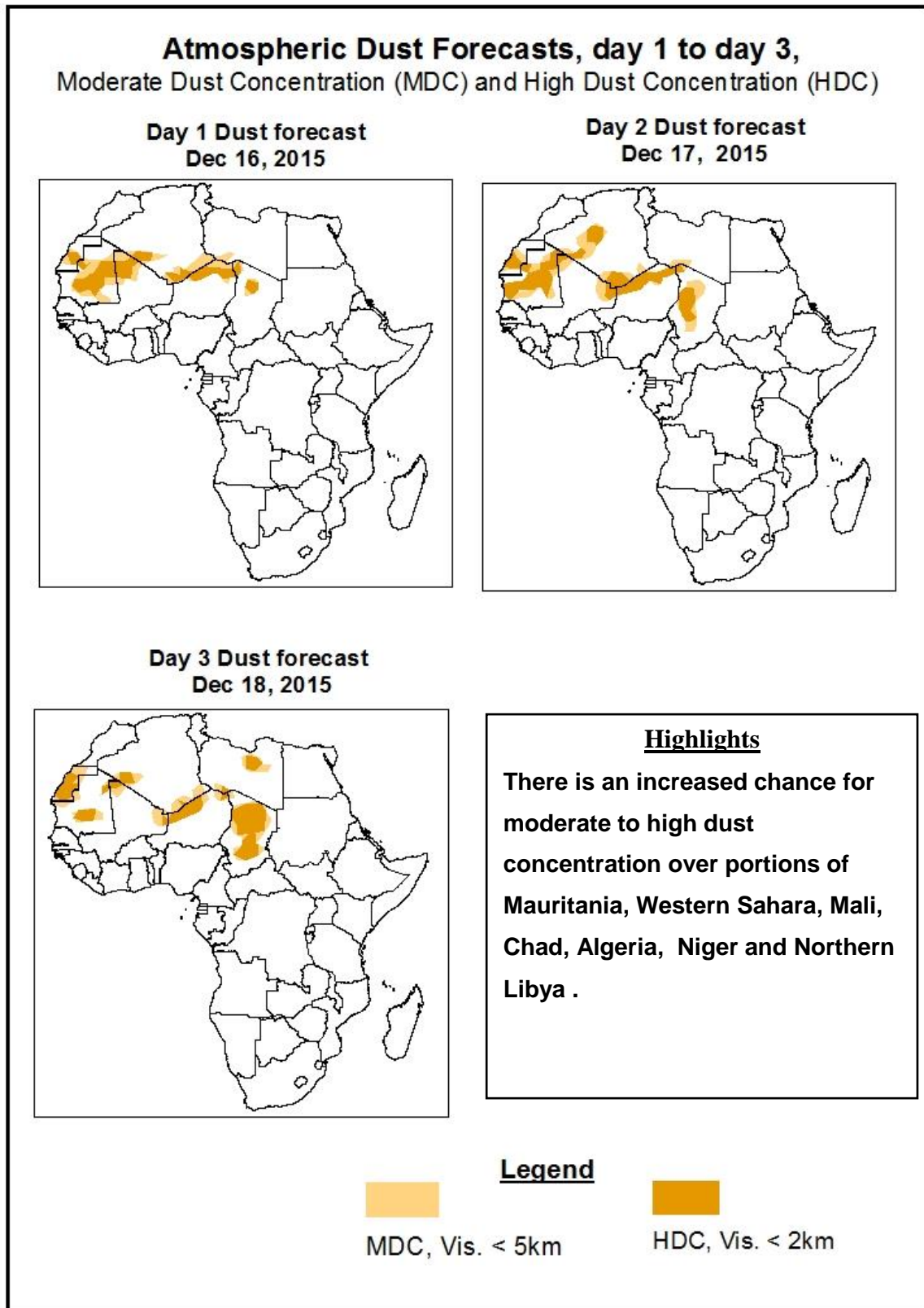


In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over parts of central Kenya, Most parts of Tanzania, Mozambique, Malawi, Zimbabwe, Zambia, Southern DRC, Gabon ,Parts of Angola and most parts of Madagascar, with heavier rainfall events expected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

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Dec 16– 12Z of Dec 18, 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: 16 – 20 December, 2015

The Extension of Azores high pressure system over Sahara is expected to intensify from its central pressure 1029mb to 1032mb in 24 hours' time and tends to weaken in to central value of 1031mb by the second 24 hours. By continuous weakening this system is expected to attain its relative minimum value of 1029mb in 72 hours from the initial time and expected to intensify in to 1031mb by in 96 hours and keep its central value as it is up to the end of the forecast period. As a result of this, for the first two days of the forecast period, there is high probability of widespread dust to prevail over Mauritania, Algeria, Cade and Western Sahara.

The Siberian high pressure system is expected to intensify from its central value 1021mb in to 1026mb in 24 hours' time and back to weaken in to 1025mb in 48 hours' time. By continuous weakening, the central value attains the central value 1024mb and 1023mb in 72 and 96 hours respectively. This system is expected to attain relatively maximum value of 1026mb by the end of the forecast period.

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 1018mb in 24 hours' time and then intensified into 2023mb in 48 hours' time. By the same pattern again this system weaken in to the central value of 1022mb in 72 hours' time and attain this central value up to the end of the forecast period.

The Mascarene high pressure system over Southwest Indian Ocean is expected to weaken in to 1018mb in 24 hours' time, from its central value of 1022mb. This system is also expected to intensify in to 1023mb in 48 hours and to be weaken again into 1022mb in 72 hours from the initial time. This central value is expected not to make significant changeup to the end of the forecast period.

At 925mb level, North easterly trade winds are expected to prevail over much of Sahara region and as a result of this there is high probability of dust to prevail over western Sahara and Mauritania and Northern Mali. 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 Tanzania is expected to enhance rainfall in the region. The seasonal north-south oriented (meridional component of the ITCZ), extending between Southern Ethiopia and Southern 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 central Kenya, Most parts of Tanzania, Mozambique, Malawi, Zimbabwe, Zambia, Southern DRC, Gabon ,Parts of Angola and most parts of Madagascar, with heavier rainfall events expected over central Namibia, Zimbabwe 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 14, 2015)

Moderate to heavy rainfall was observed over local areas in Mozambique, Southern Madagascar, Southern Ivory Coast, Southern Liberia, NE South Africa, central Kenya and central Tanzania.

2.2. Weather assessment for the current day (December 15, 2015)

Intense convective clouds are observed across many places over Angola, Mozambique, Southern Kenya, Zimbabwe, DRC and parts of Western Madagascar.

