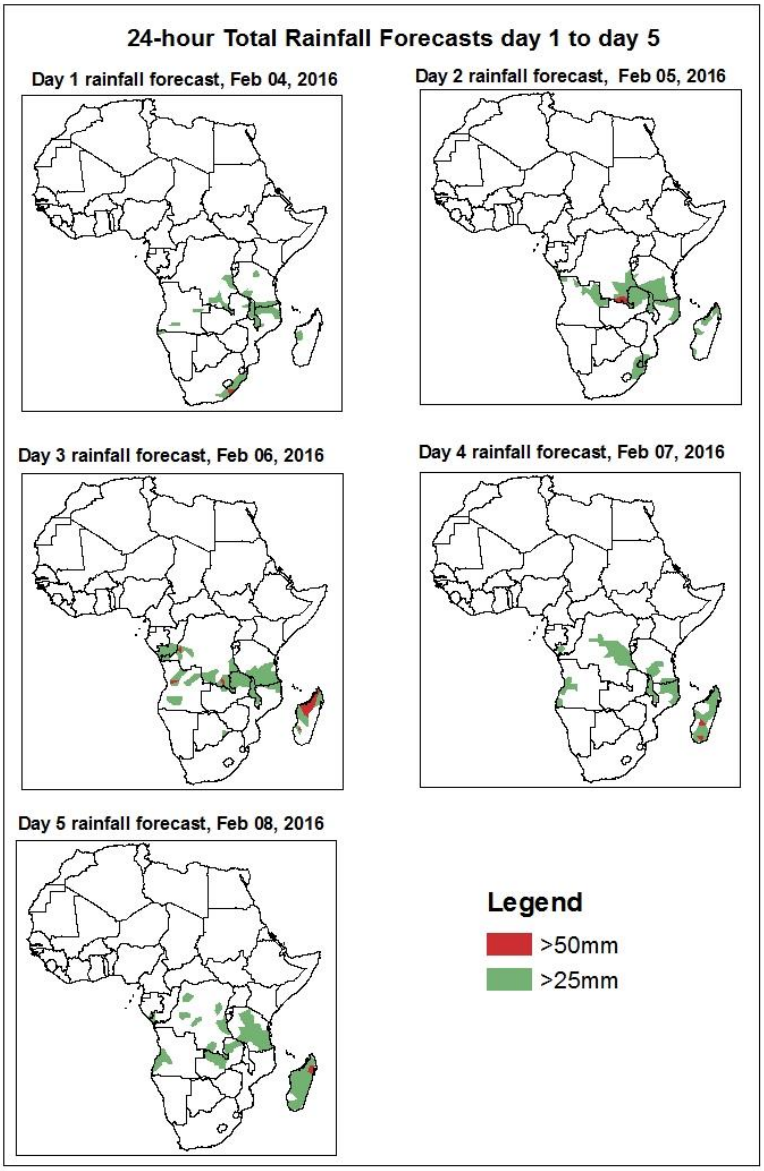
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

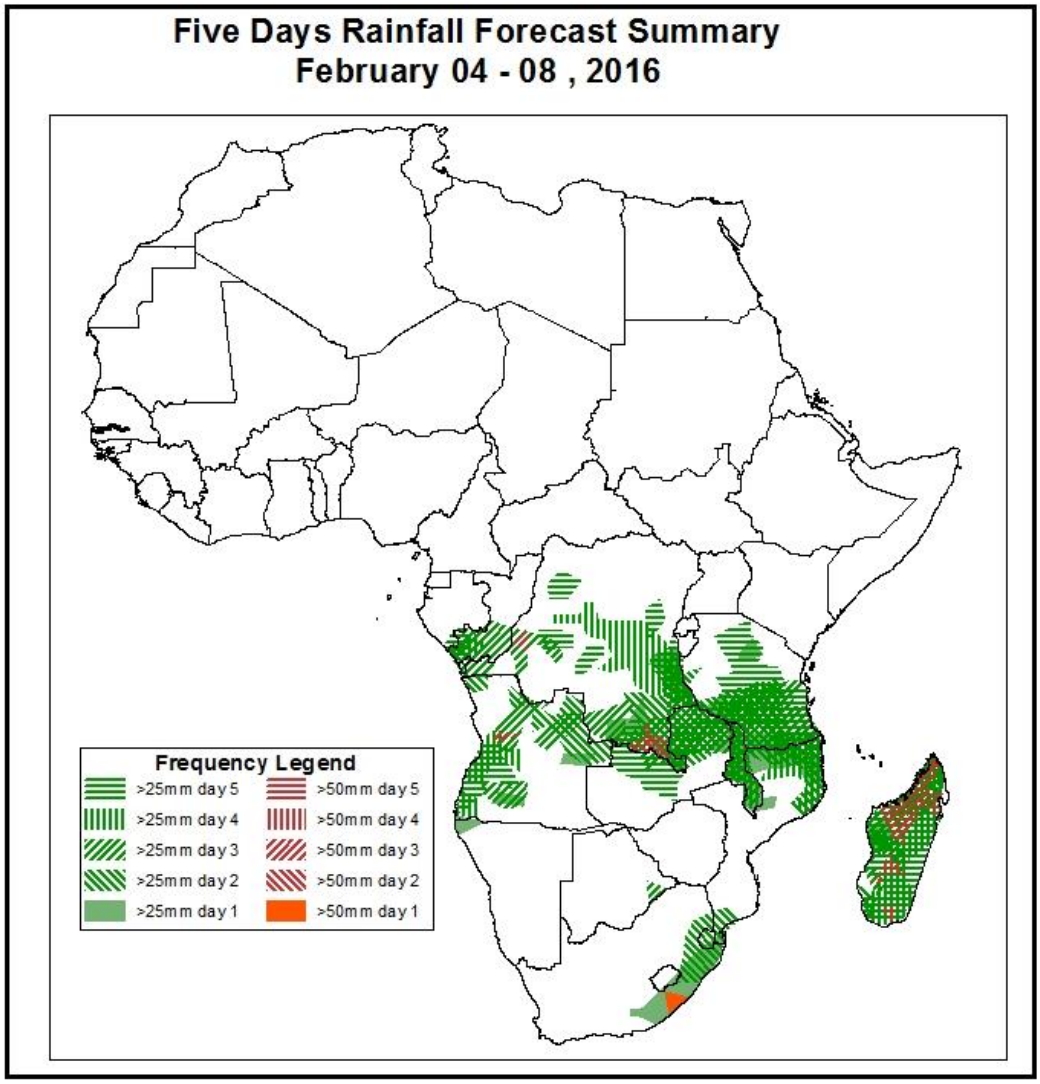
1. Rainfall and Dust Concentration Forecasts

Valid: 06Z of Feb 04, 2016 - 06Z of Feb 08, 2016. (Issued on February 03, 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.





Highlights

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Madagascar, south eastern south Africa, eastern Zambia, southern DRC, southern Tanzania, Malawi and northern Mozambique with high probability of heavy rainfall over parts of northern Madagascar.

1.2. Atmospheric Dust Concentration Forecasts

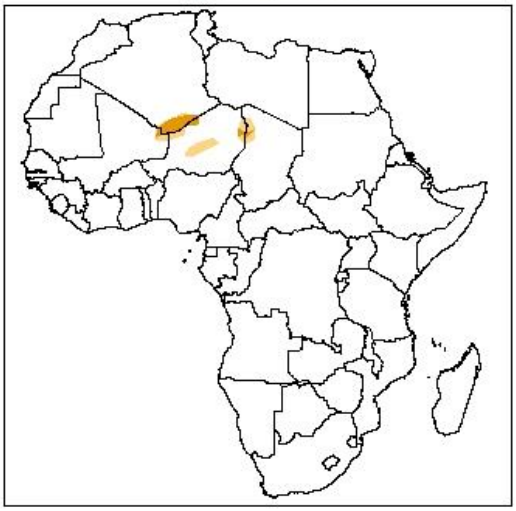
Valid: 12Z of Feb 04 – 12Z of Feb 06, 2016

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.

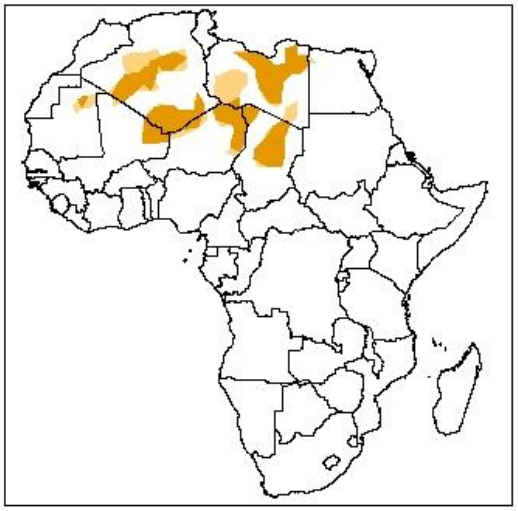
Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

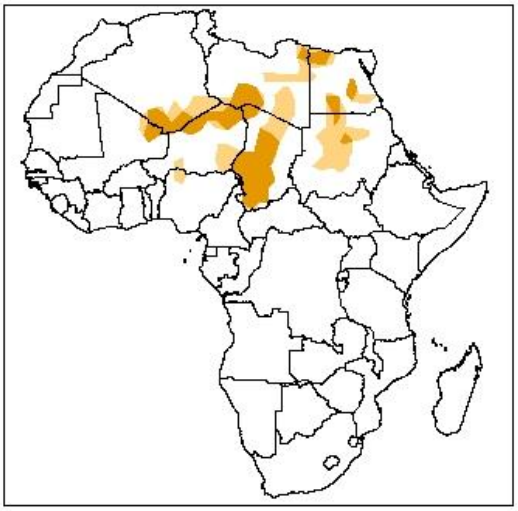
Day 1 Dust forecast
Feb 04, 2016



Day 2 Dust forecast
Feb 05, 2016



Day 3 Dust forecast
Feb 06, 2016



Highlights

In the coming three days there is an increased chance for moderate to high dust concentration over parts of Senegal, Mauritania, Algeria, Niger, Libya and central Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 2km

1.3. Model Discussion, Valid: Feb 04 – Feb 08, 2016

Azores high pressure system is expected to weaken in to 1038Hpa and into 1o31Hpa In 24 and 48 hours' time respectively from its central value of 1042Hpa. This high pressure system is also expected to attain this central value for about 48 hours and intensify in to 1035Hpa in 120 hours' time. The relative stability of this high pressure system is expected to increase the chance for dust concentration over Mauritania, Algeria, Niger, Libya and central Chad with high probability of visibility less than 2km over central Chad, Libya and Algeria.
The Arabian high pressure system is expected to weaken in to 1032Hpa, in to 1031Hpa, in to 1023hpa, in to 1020Hpa and in to 1019Hpa in 24, 48, 72, 96 120 hours' time respectively from the central value of 1033Hpa. Interaction of subtropical low pressure systems are accounted as a major factor to weaken this high pressure system and to pull up the ITCZ north word.

The Mascarene high pressure system over Southwest Indian Ocean is expected to intensify in to 1027Hpa in 24 hours' time from the central value of 1026Hpa and attain this value for about 24 hours and intensify back in to 1035Hpa in 96 hours' time.

St Helena high pressure system is expected to intensify in to 1025Hpa in 24 hours from the central value of 1023Hpa and attain this value for about 24 hours. This high pressure system is also expected to further weaken in to 1022Hpa in 72hours time and intensify in to 1027Hpa in 96 hours' time. By the end of the forecast period, this system is expected to attain 1022Hpa.

Both Mascarene and St Helena high pressure systems are expected to approach the coastal areas of South Africa and hence cumulative moisture supposed to incur in to South Africa is expected to decrease from the climatically normal.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Madagascar, south eastern south Africa, eastern Zambia, southern DRC, southern Tanzania, Malawi and northern Mozambique with high probability of heavy rainfall over parts of northern Madagascar.

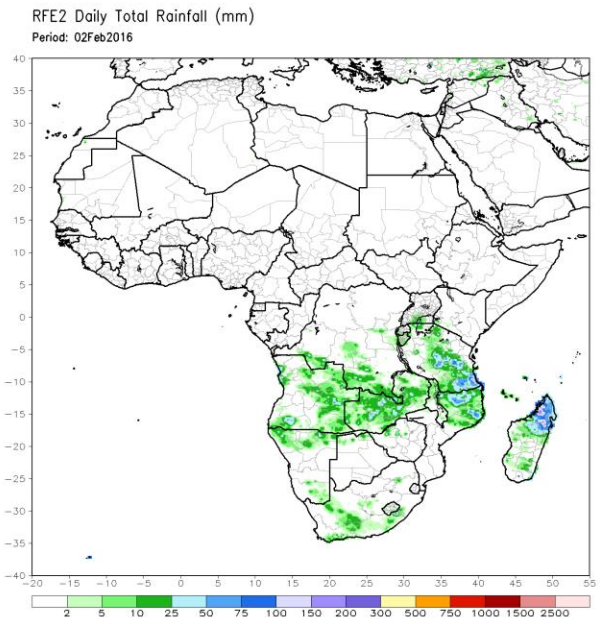
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 02, 2016)

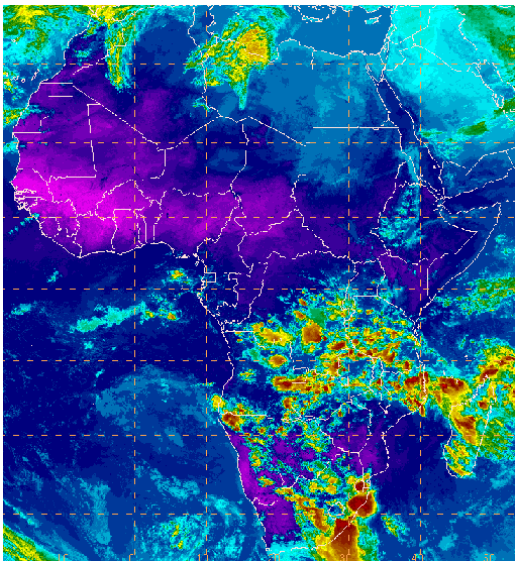
Moderate to heavy rainfall was observed over southern DRC, eastern Angola, southern Tanzania, northern Mozambique, central Zambia, northern Malawi and northern Madagascar.

2.2. Weather assessment for the current day (February 03, 2015)

Intense convective clouds are observed across, south eastern South Africa, southern Tanzania, central DRC, Swaziland, Zambia, Malawi, southern Angola, northern Mozambique and northern Madagascar.



IR Satellite Image (valid 1430z February 03, 2016)



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (right) based on IR Satellite image

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