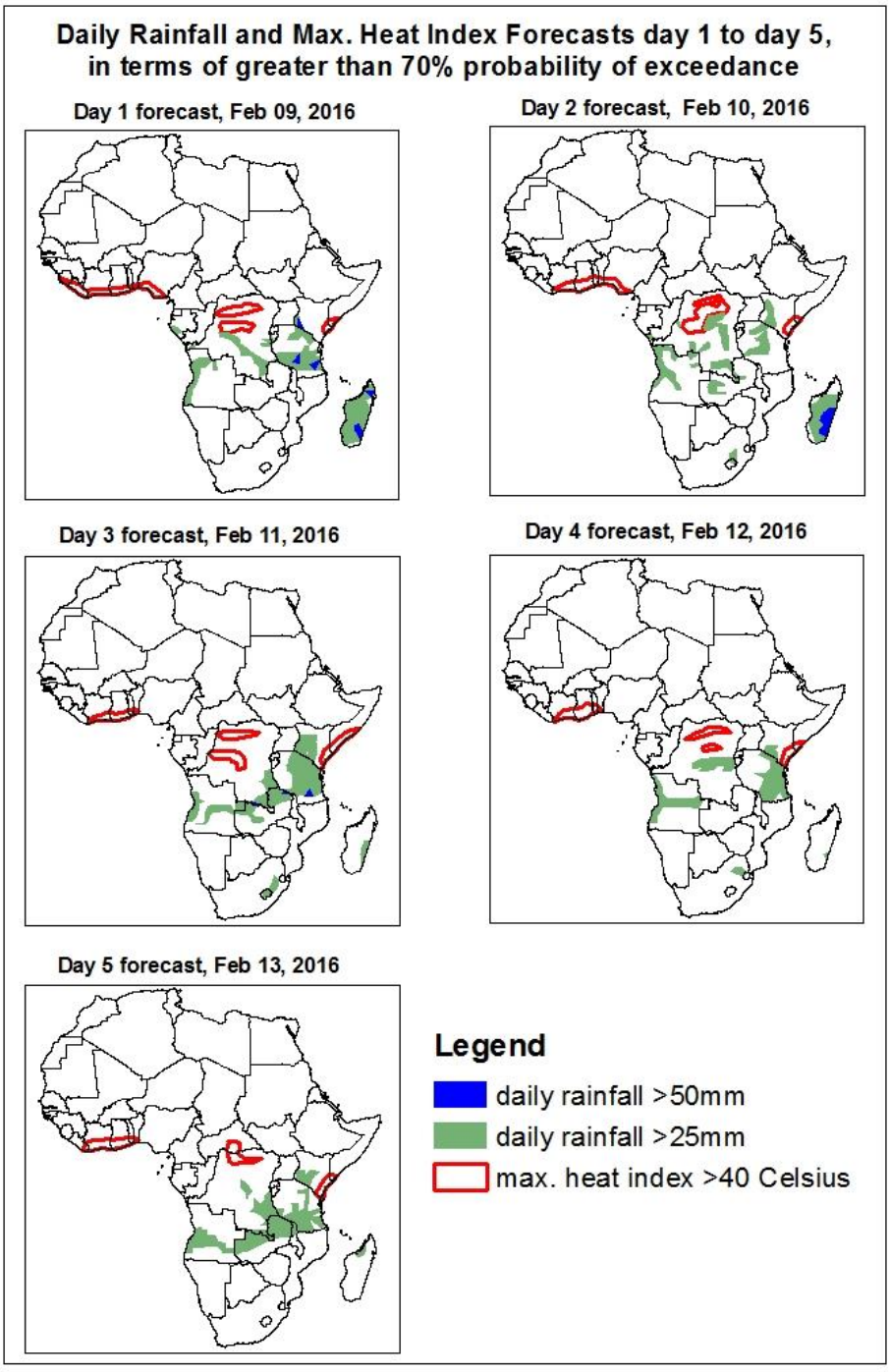
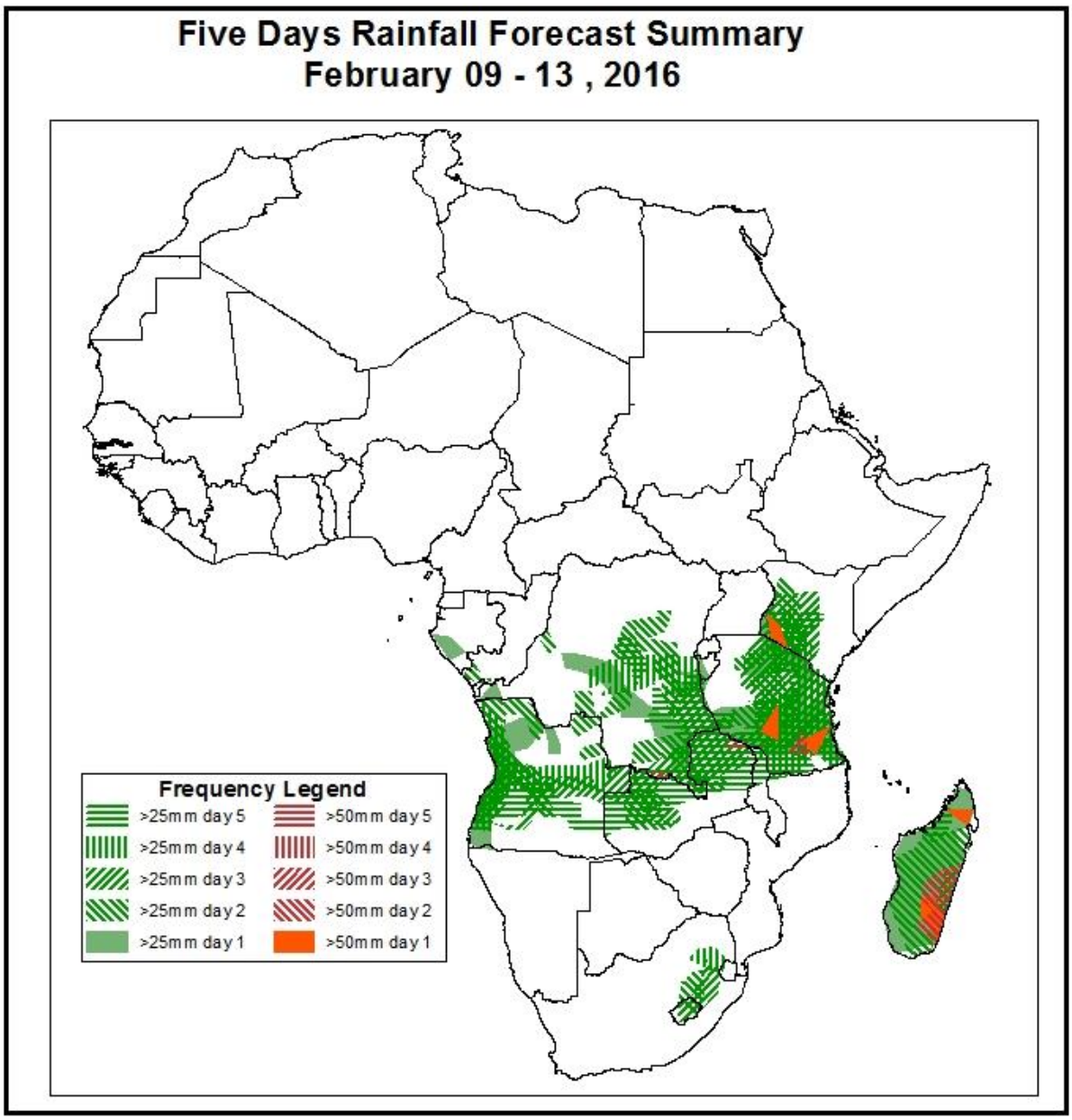
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 08, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 09 – Feb 13, 2016)*

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



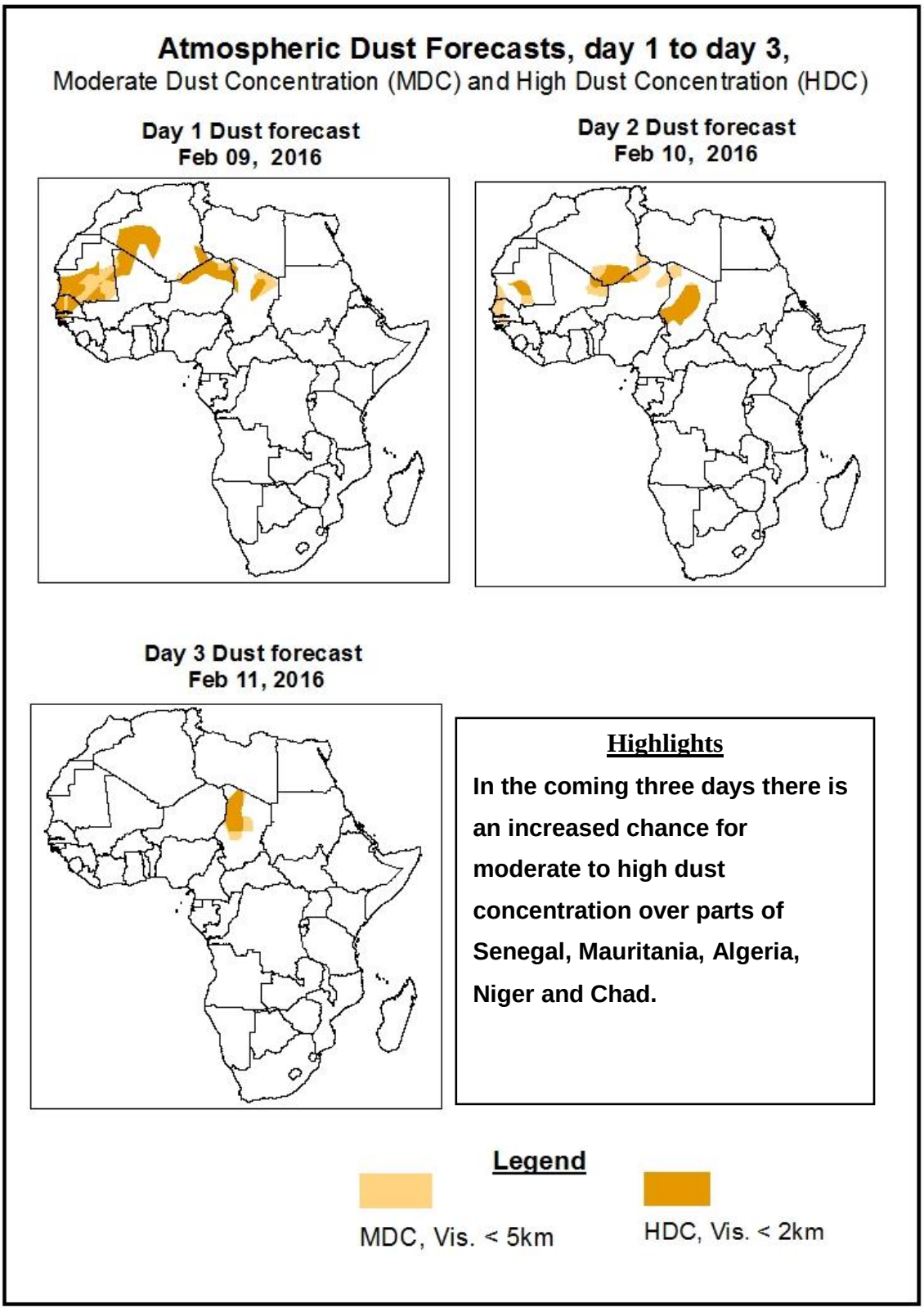


Highlights

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, western Angola, Zambia, southern DRC, southern Kenya and southern Tanzania, with high probability of heavy rainfall over parts of Madagascar and southern Tanzania.

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 09 – Feb 11, 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: Feb 09 – Feb 13, 2016

Azores high pressure system is expected to intensify in to 1033Hpa in 24 hours' time from its central value of 1032Hpa and weaken back in to 1032Hpa, in to 1031Hpa and in to 1030Hpa in 48, 72 and 96 hours' time respectively. By the end of the forecast period, this high pressure system is expected to attain 1031Hpa. Following the intensification of this pressure system, north easterly wind will dominate over northern western Africa and hence there is high probability of dust concentration to prevail over parts Senegal, Mauritania, Algeria, Niger and Chad with high probability of visibility less than 2 kilometers over Chad and Algeria

The Arabian high pressure system is expected to intensify in to 1038Hpa, in to 1046Hpa, and in to 1049Hpa in 24, 48 and 72 hours' time respectively from the central value of 1035Hpa. This high pressure system is also expected to weaken in to 1043hpa in 96 hours' time and intensify back in to 1044Hpa in 120 hours' time. In association to the position of this system, the north easterly wind seems to stare moisture picking from north Indian Ocean in to the eastern Africa high lands.

The Mascarene high pressure system is expected to weaken in to 1031Hpa and in to 1029Hpa in 24 and 48 hours' time from the central value of 1035Hpa. This high pressure system is also expected to intensify in to 1030hpa and attain this value up to the end of the forecast period. This intensification along with the development of low pressure system over Mozambique Channel increases the amount of moisture incursion in to Madagascar and southern Tanzania from south western Indian Ocean.

St Helena high pressure system is expected to attain its central value 1030Hpa for about 24 hours and weaken in to 1027Hpa in 48 hours' time. This high pressure system is also expected to intensify in to 1029Hpa in 72 hours' time and in to 1034Hpa in 96 hours' time and weaken back to 1033Hpa in 120 hours' time. The moisture supposed to incur in to western South Africa is expected to be suppressed, by the development of low pressure system over southern Atlantic Ocean.

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, western Angola, Zambia, southern DRC, southern Kenya and southern Tanzania, with high probability of heavy rainfall over parts of Madagascar and southern Tanzania. There is an increased chance for heat index values to exceed 40^{o}C along the Gulf of Guinea coast, northern DRC and coastal East Africa.

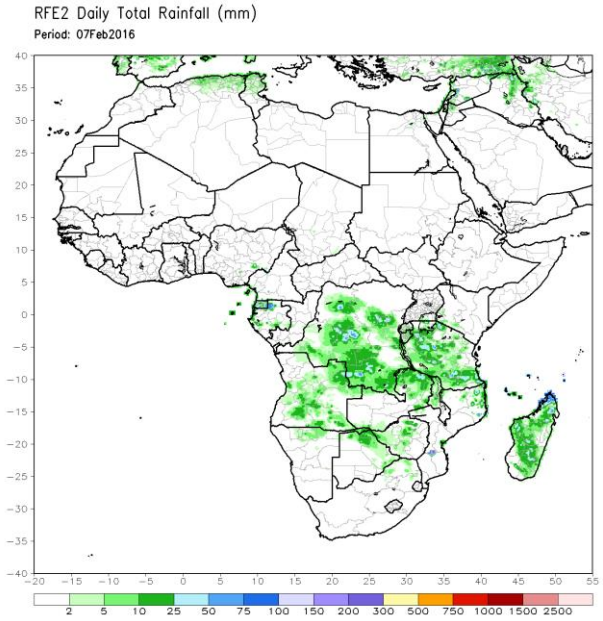
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 07, 2016)

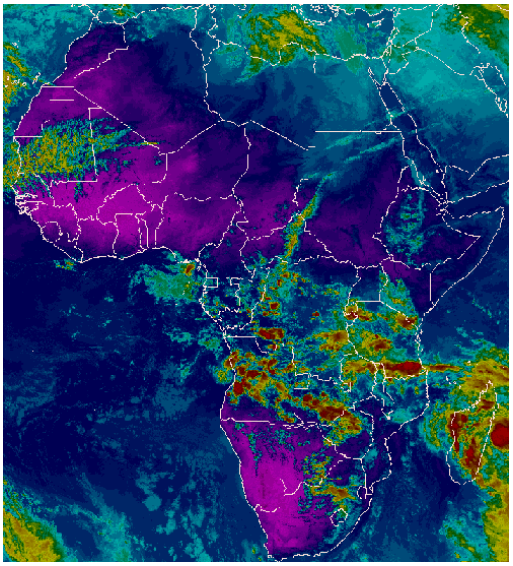
Moderate to heavy rainfall was observed over central DRC, central Tanzania, eastern Zambia, central Madagascar and central Angola.

2.2. Weather assessment for the current day (February 08, 2015**)**

Intense convective clouds are observed across central Tanzania, DRC, Zambia, central Angola, northern Zimbabwe and northern Madagascar.



IR Satellite Image (valid 1430z February 08, 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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