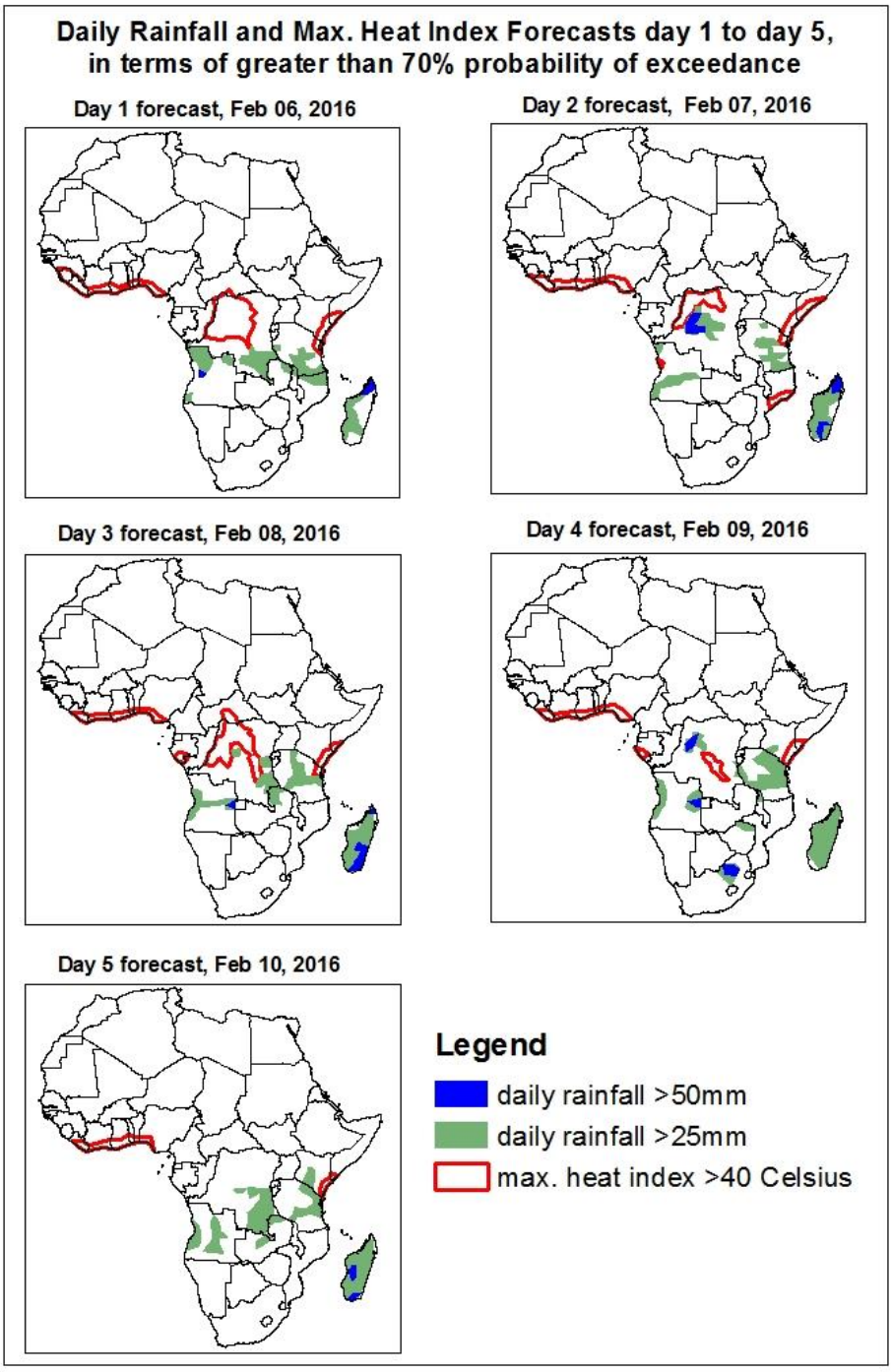
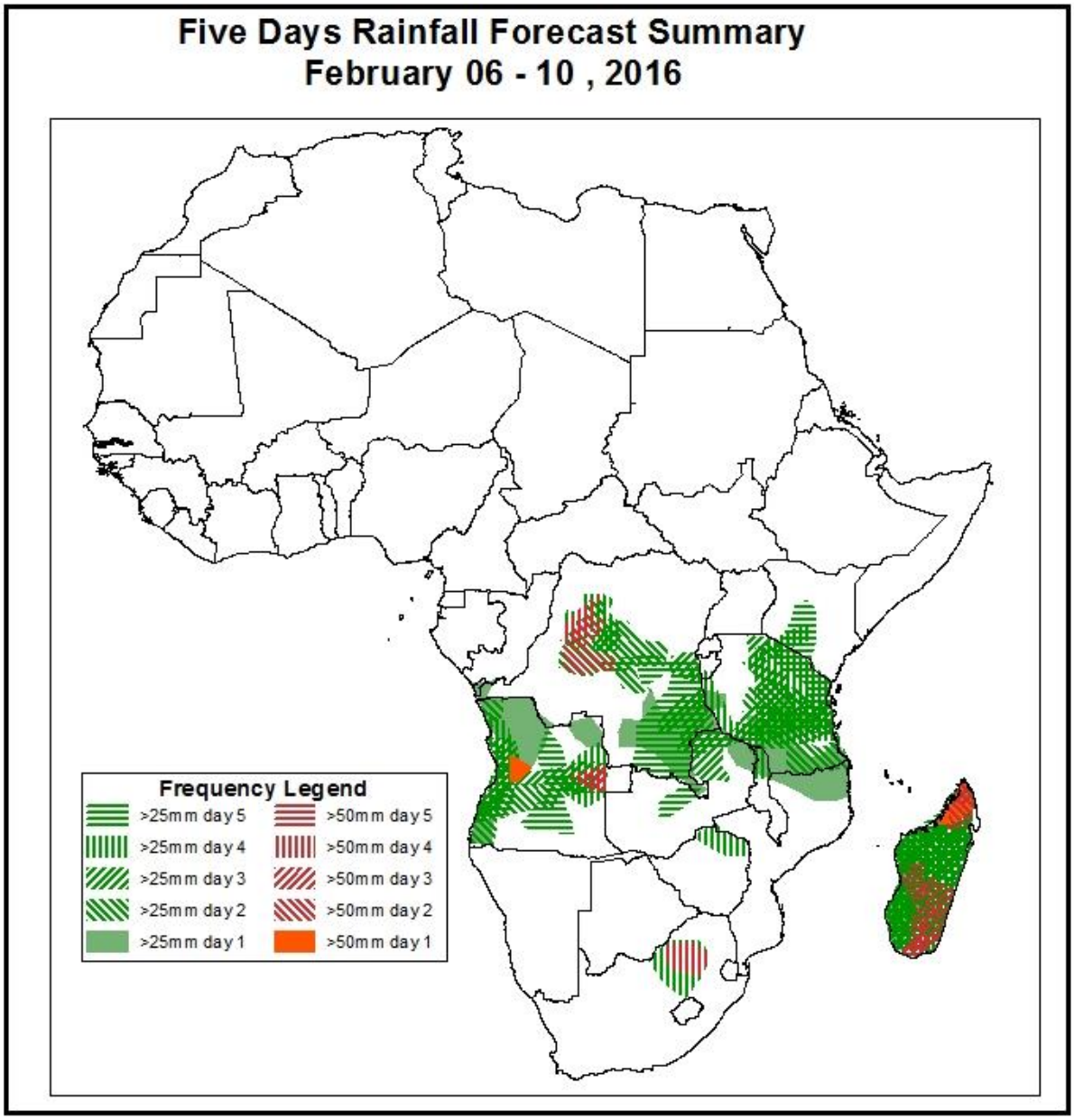
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 05, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 06 – Feb 10, 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.



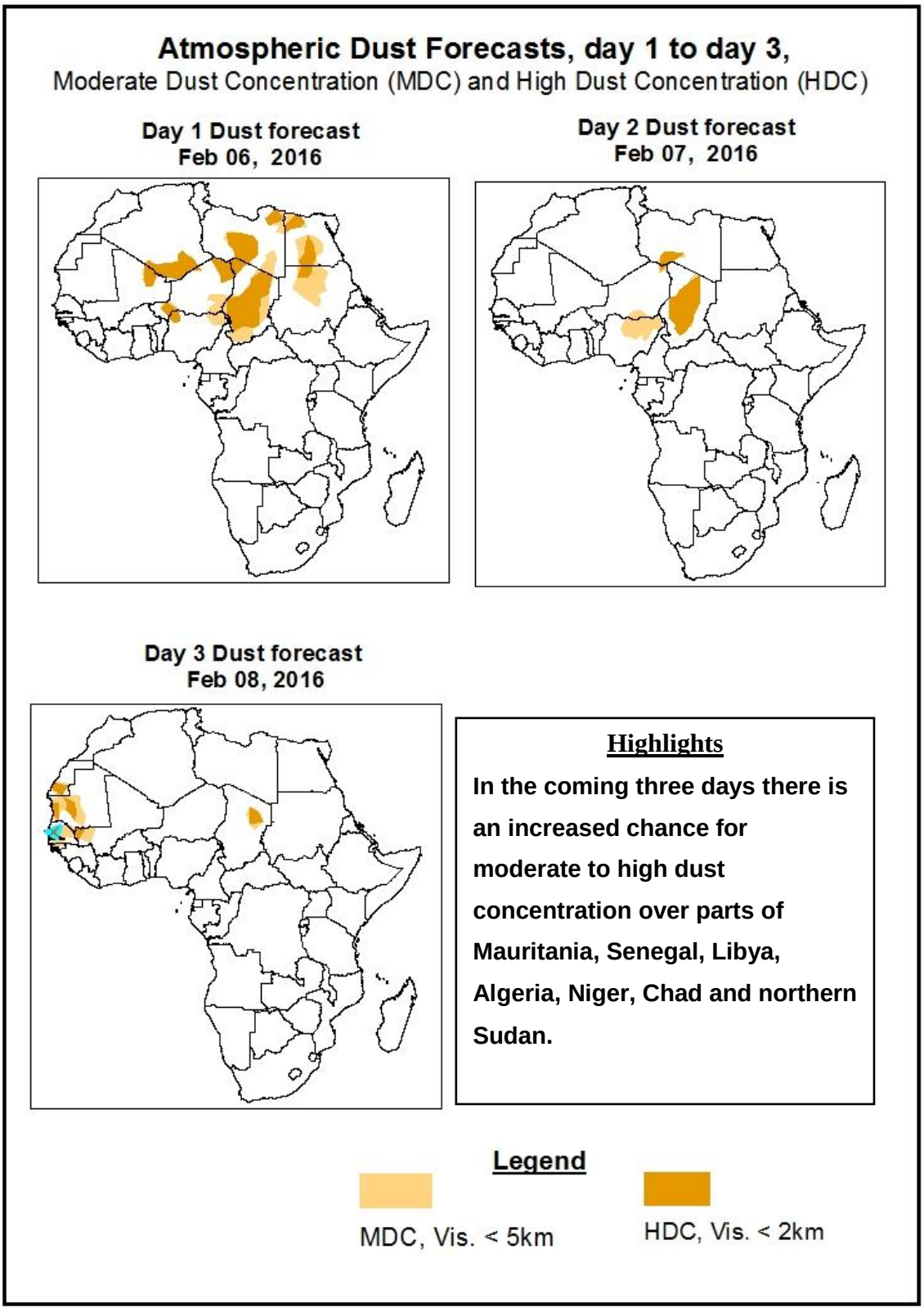


Highlights

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

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 06 – Feb 08, 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 06 – Feb 10, 2016

Azores high pressure system is expected to intensify in to 1032Hpa in 24 hours' time from its central value of 1031Hpa and attain this value for about 24 hours. This high pressure system is also expected to intensify further in to 1033Hpa and in to 1034Hpa in 72 and 120 hours' time respectively. The intensification of this high pressure system over northern Africa is expected to increase the chance of dust concentration over parts of Mauritania, Senegal, Libya, Algeria, Niger, Chad and northern Sudan with high probability of visibility less than 2 kilometers over Chad and Libya.

The Arabian high pressure system during the first 48 hours is expected to weaken in to 1020Hpa from the central value of 1025Hpa and intensify in to the relative maximum value of 1034hpa in 72 hours' time. Following the active interaction of sub-tropical systems, this high pressure system is also expected to further weaken in to the relative minimum value of 1019Hpa in 120 hours' time.

The Mascarene high pressure system over Southwest Indian Ocean during the forecast period is expected to attain relatively maximum value of 1035Hpa in 72 hours' time. 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 intensify in to 1022Hpa, in to 1026Hpa and in to 1028Hpa in 24, 48 and 72 hours' time respectively from the central value of 1019Hpa. This pressure system is also expected to further weaken in to 1021Hpa in 96 hours' time and intensify in to 1025Hpa in 120 hours' time. Even if there is a trend of intensification, 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, eastern Zambia, central DRC and southern Tanzania, with high probability of heavy rainfall over parts of Madagascar, western Angola and central DRC. 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.

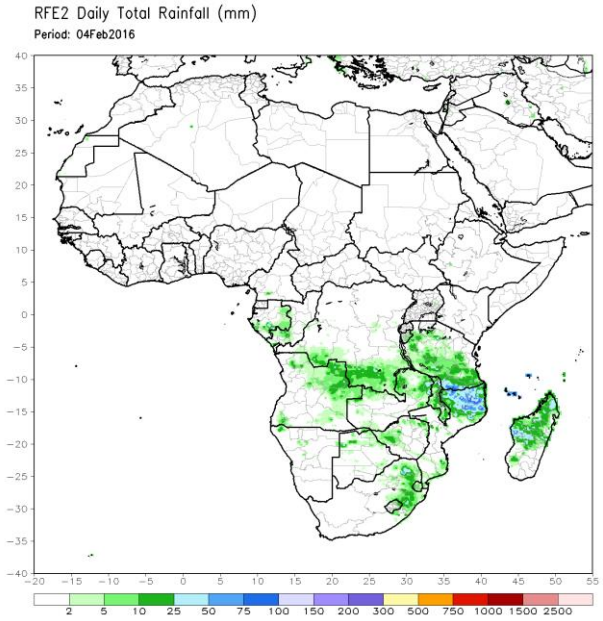
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 04, 2016)

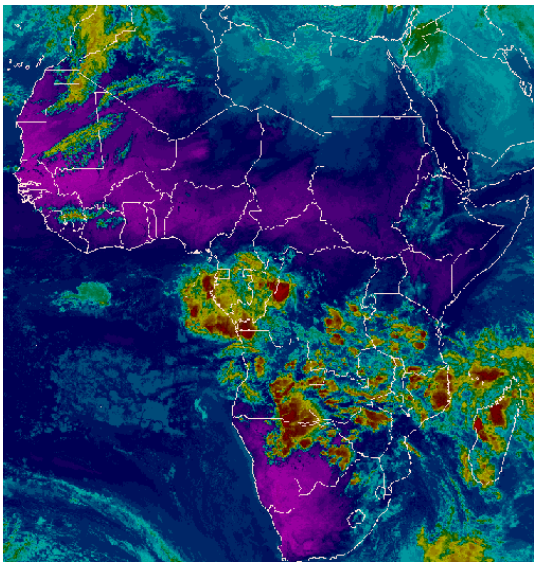
Moderate to heavy rainfall was observed over southern DRC, southern Tanzania, northern Mozambique, eastern Zambia, northern Madagascar and north eastern South Africa.

2.2. Weather assessment for the current day (February 05, 2015**)**

Intense convective clouds are observed across central Tanzania, DRC, Zambia, south eastern Angola, eastern Botswana, north eastern Namibia, northern Mozambique and northern Madagascar.



IR Satellite Image (valid 1430z February 05, 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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