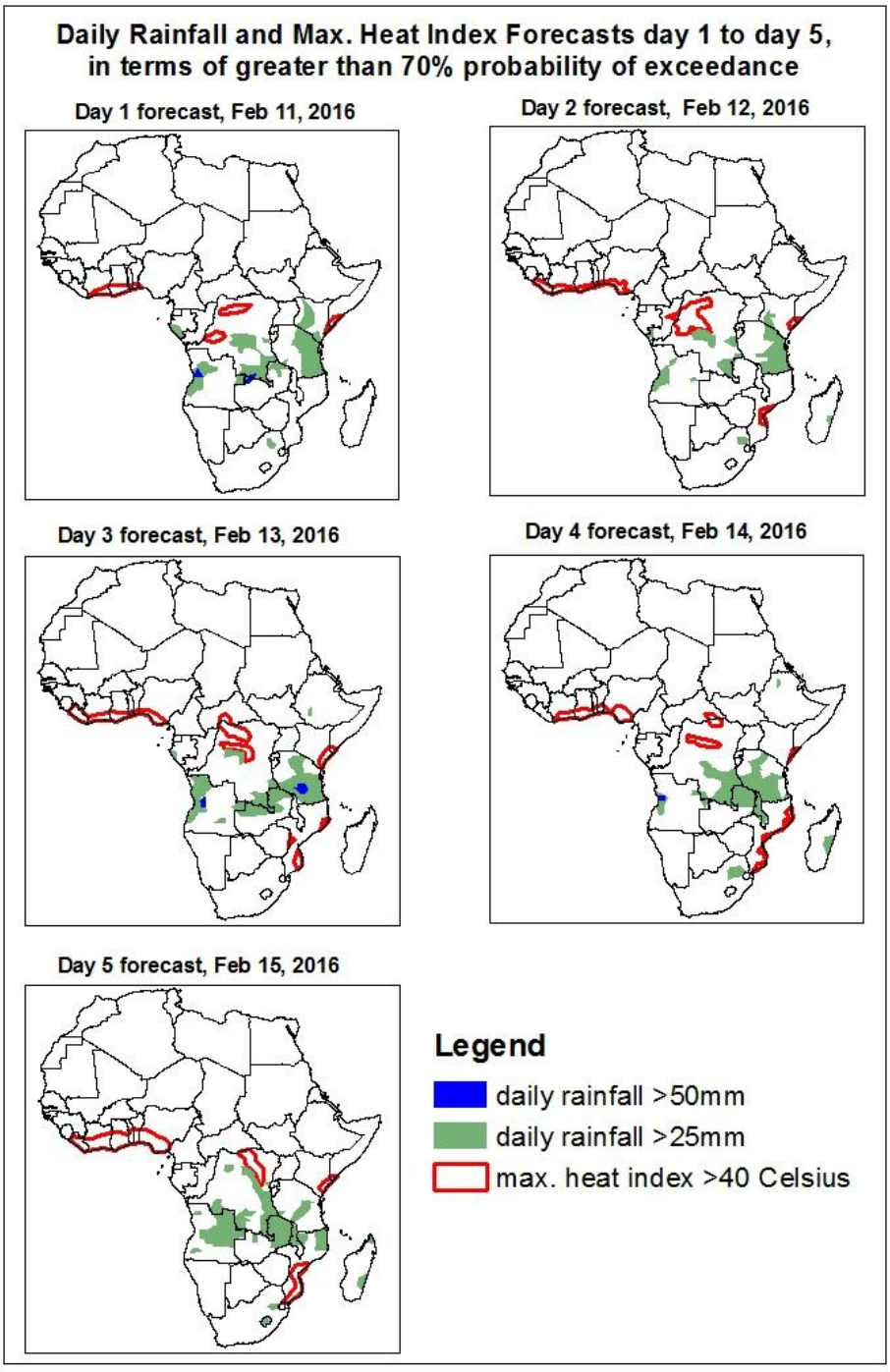
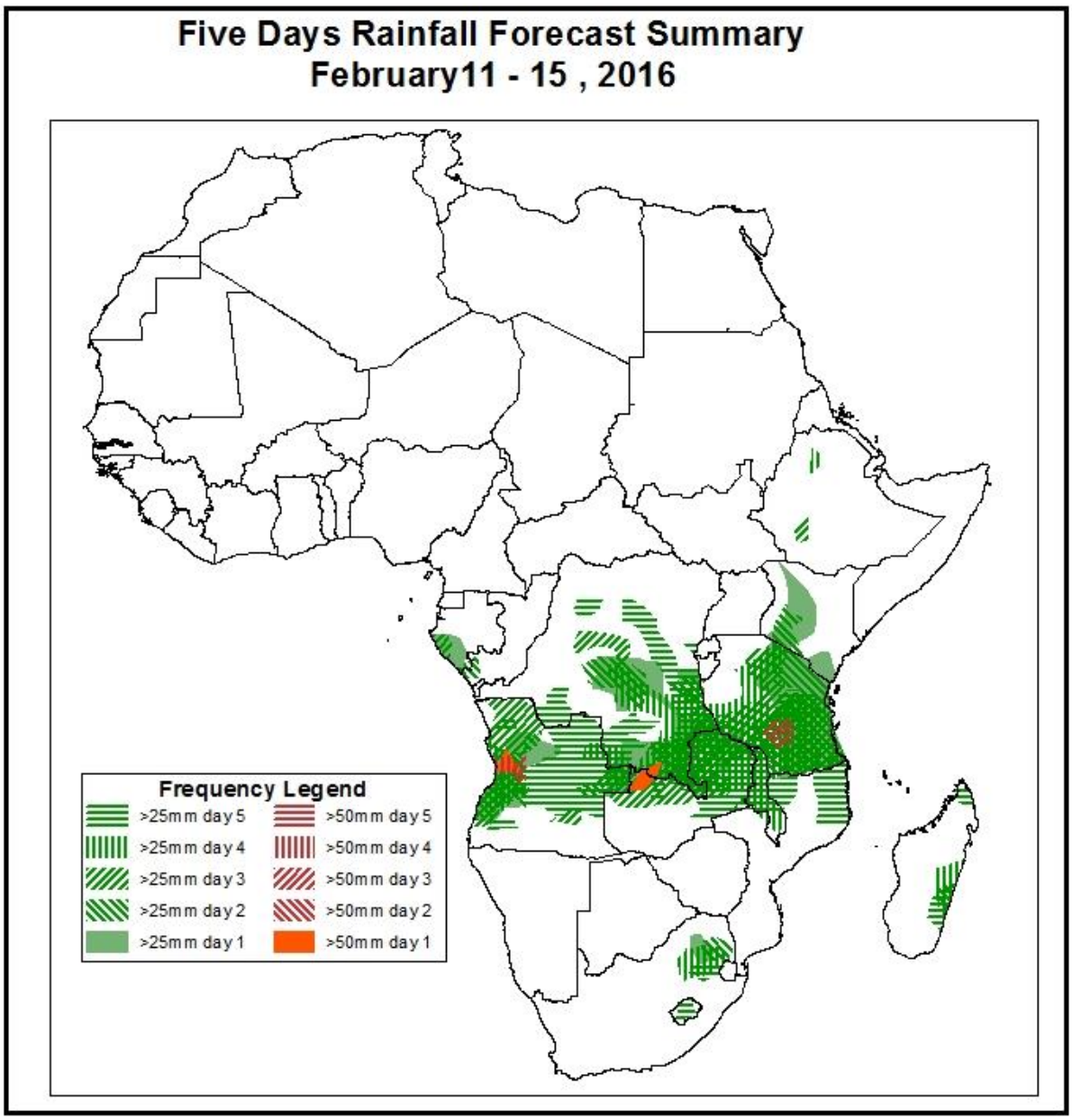
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 10, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 11 – Feb 15, 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.



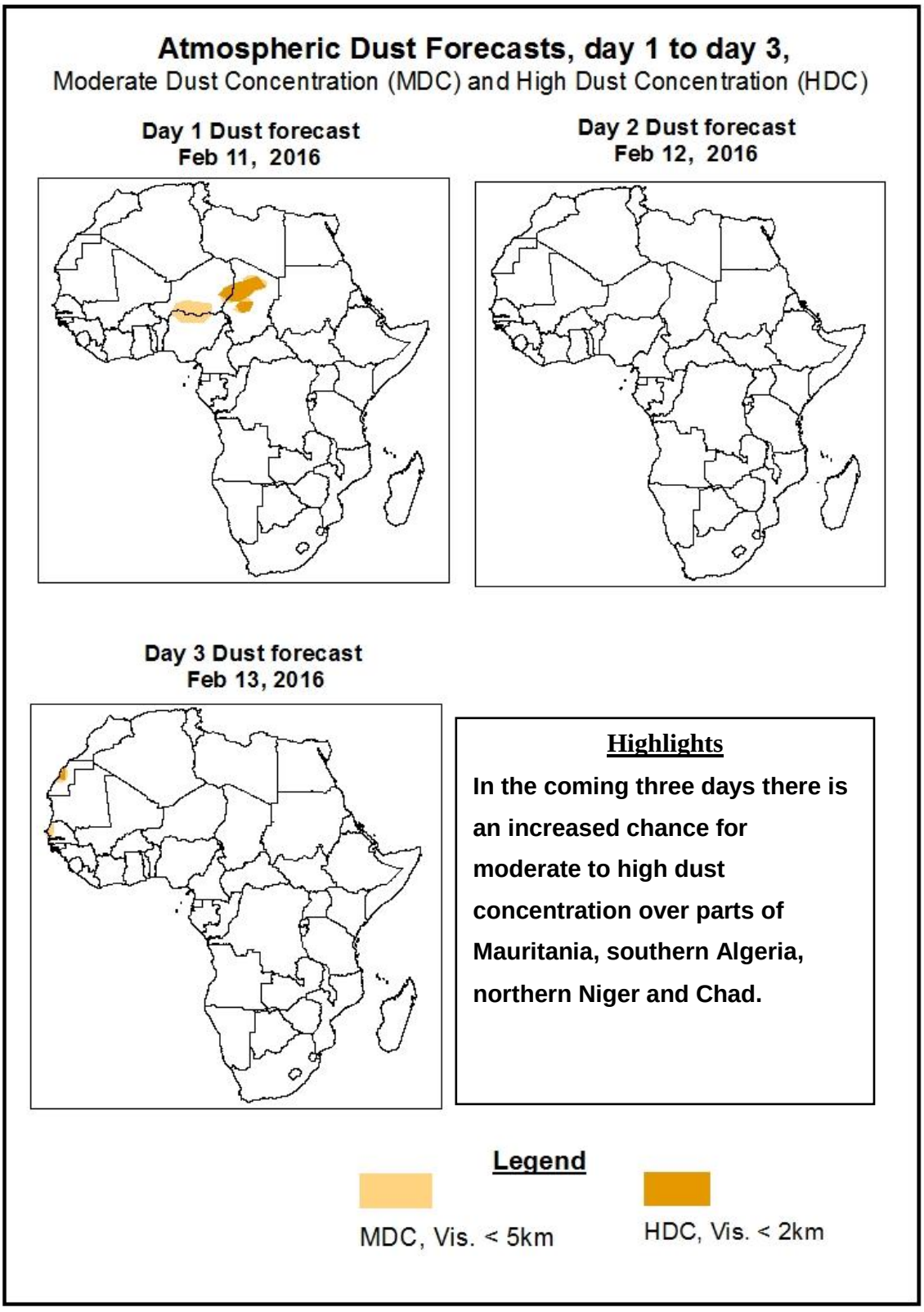


Highlights

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

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 11 – Feb 13, 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 11 – Feb 15, 2016

Extension of Azores high pressure system is expected to attain its central value 1027Hpa for about 24 hours and weaken in to 1025Hpa and in to 1022Hpa in 48 and 72 hours' time respectively. This high pressure system is also expected to attain the central value of 1022Hpa for 24 hours and intensify back in to 1024Hpa in 120 hours' time. Following the stability of this weak pressure system, dust concentration that has been prevailed over northern Africa is expected to decrease significantly. The Arabian high pressure system is expected to intensify in to 1050Hpa in 24 hours' time from its central value of 1044Hpa and weaken back in to 1040Hpa and in to 1036Hpa in 48 and 72 hours' time respectively. This high pressure system is also expected to intensify in to 1045Hpa in 96 hours' time and weaken back in to 1041Hpa in 120 hours' time.

The Mascarene high pressure system is expected to intensify in to 1030Hpa and in to 1031Hpa in 24 and 48 hours' time respectively from the central value of 1028Hpa. This high pressure system is also expected to weaken back in to 1030Hpa, in to 1028Hpa and in to 1026Hpa in 72, 96 and 120 hours' time respectively. In association to the continuous weakening of this system and the development of pressure system over central Indian Ocean, the moisture that has been incurring from southern Indian Ocean in to Madagascar is expected to decrease significantly.

St Helena high pressure system is expected to intensify in to 1030Hpa and in to 1034Hpa in 24 and 48 hours' time respectively from the central value of 1027Hpa. This high pressure system is also expected to weaken in to 1033Hpa, in to 1029Hpa and in to 1027Hpa in 72, 96 and 120 hours' time respectively. In relation to the development of low pressure system over central Atlantic Ocean, the moisture supposed to incur in to southern western Africa is expected to be suppressed.

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

There is also an increased chance for heat index values to exceed 40^{o}C along the Gulf of Guinea coast, eastern coastal area of Mozambique, northern DRC and coastal areas of East Africa.

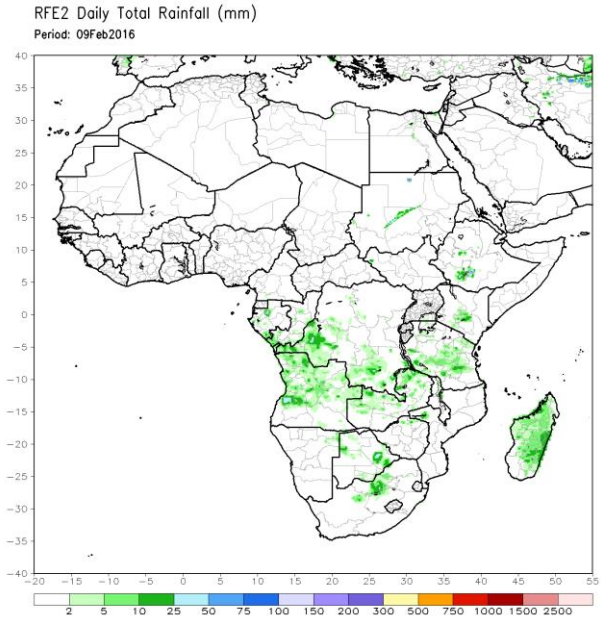
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 09, 2016)

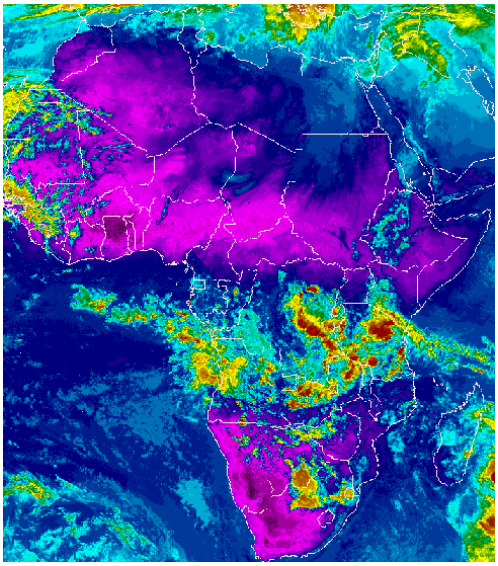
Moderate to heavy rainfall was observed over isolated parts of western DRC, western Angola, central Tanzania, eastern Zambia, eastern Madagascar and central Kenya.

2.2. Weather assessment for the current day (February 10, 2015**)**

Intense convective clouds are observed across Swaziland, northern Tanzania, eastern DRC, Zambia, northern South Africa and western Angola.



IR Satellite Image (valid 1430z February 10, 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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