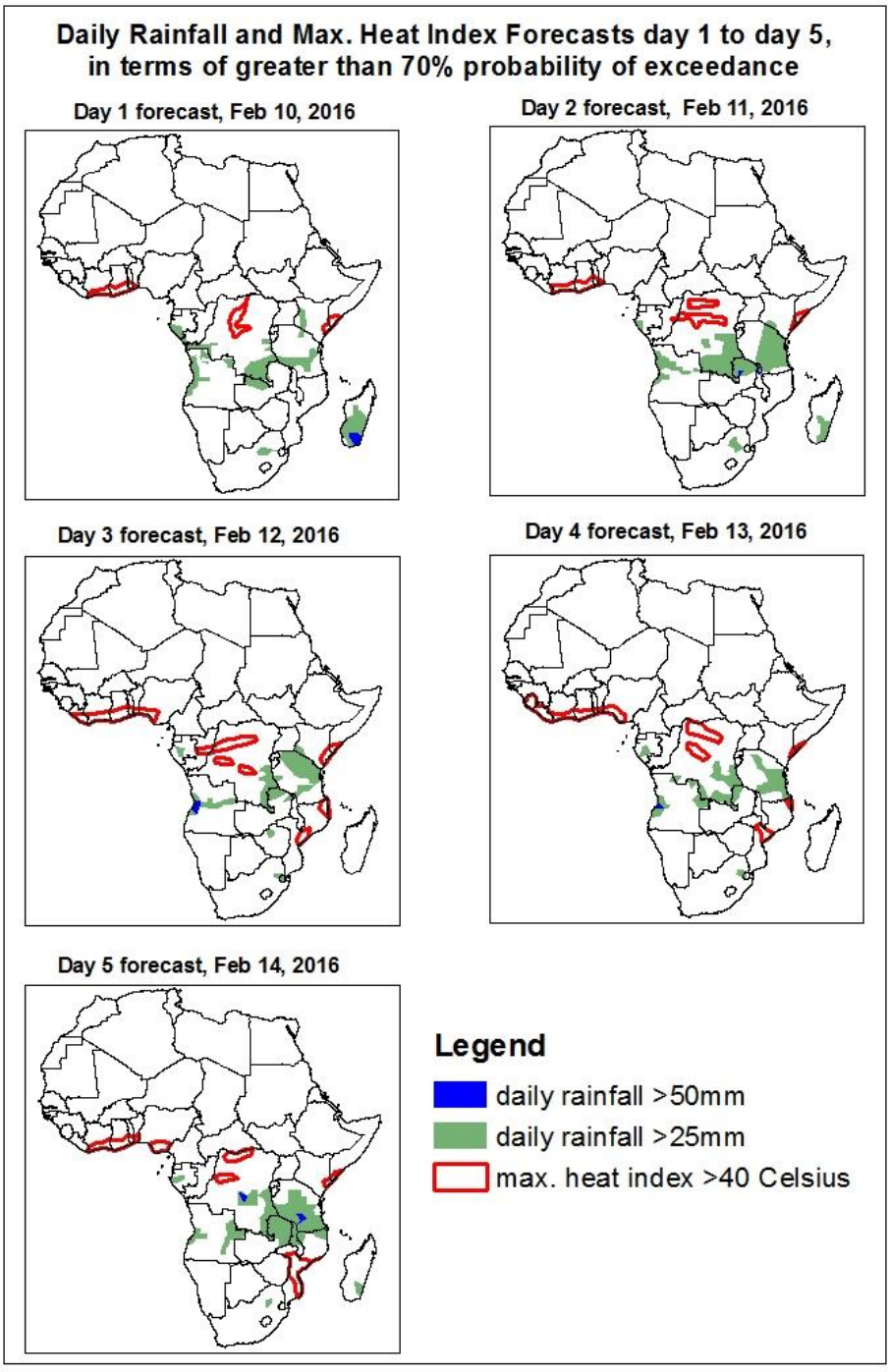
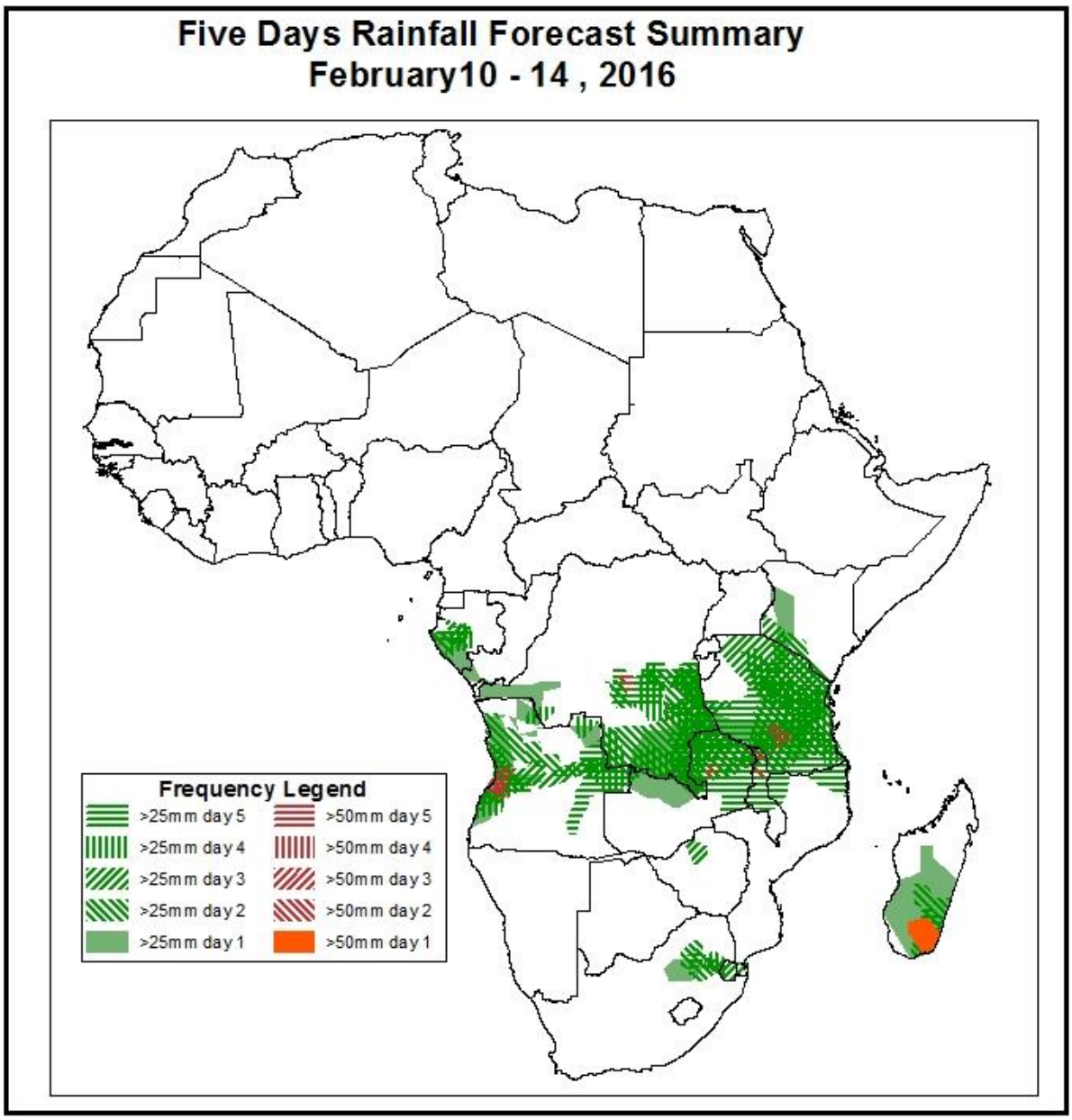
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 09, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 10 – Feb 14, 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.



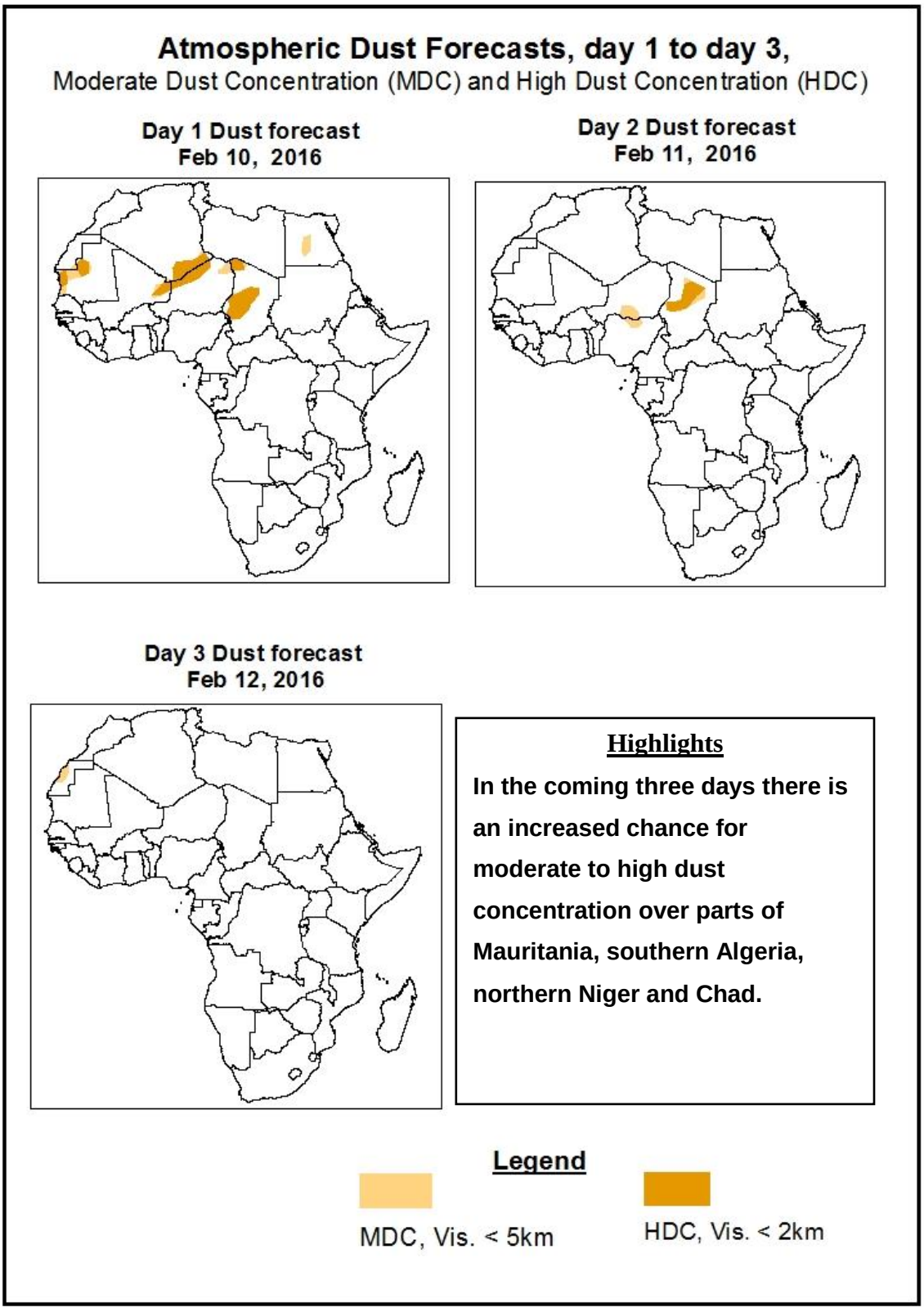


Highlights

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

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 10 – Feb 12, 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 10 – Feb 14, 2016

Azores high pressure system is expected to weaken in to 1029Hpa, in to 1027Hpa and in to 1025Hpa in 24, 48 and 72 hours' time respectively from its central value of 1031Hpa. This high pressure system is also expected to intensify in to 1026Hpa in 96 hours' time and to weaken back to 1026Hpa in 120 hours' time. Following the contentious weakening of this system, dust concentration that has been prevailed over parts Senegal, Mauritania, Algeria, and Niger is expected to decrease in amount in 24 hours' time but there is a high probability of visibility to be less than 2 kilometers over central Chad.

The Arabian high pressure system is expected to intensify in to 1040Hpa in 24 hours' time from its central value of 1037Hpa and attain this value for about 72 hours. This high pressure system is also expected to attain relatively maximum amount 1046Hpa in 120 hours' time and make slight shift towards north east direction. In association to the development of low pressure system over central and eastern Africa, 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 1028Hpa in 24 hours' time from the central value of 1031Hpa. This high pressure system is also expected to attain the central value of 1030Hpa for about 48 hours and weaken back to 1029Hpa and 1023Hpa in in 96 and 120 hours' time respectively.

St Helena high pressure system is expected to intensify in to 1027Hpa, in to 1029Hpa and in to 1033Hpa in 24, 48 and 72 hours' time respectively from the central value of 1020Hpa. This high pressure system is also expected to weaken in to 1030Hpa in 120 hours' time. In relation to the development of low pressure system over central Africa (beginning of north ward seasonal shift of ITCZ), the moisture supposed to incur in to southern Africa and Madagascar 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 Madagascar, western Angola, eastern Zambia, southern DRC, southern Kenya, western Gabon and southern Tanzania, with high probability of heavy rainfall over parts of southern Madagascar and southern Tanzania.

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

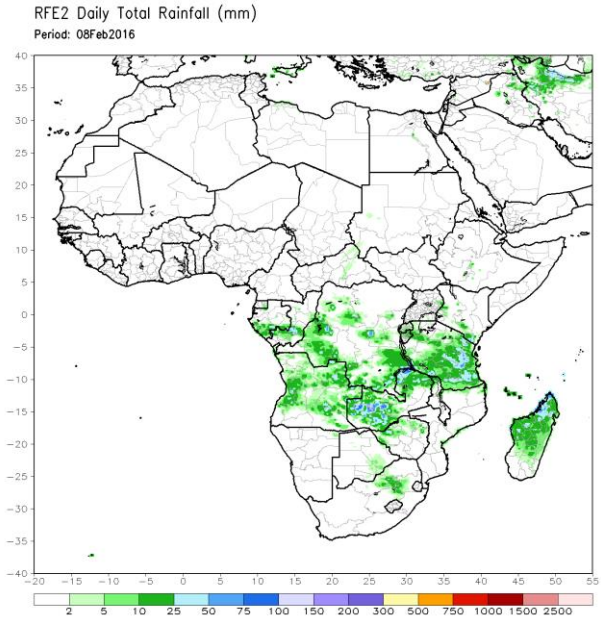
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 08, 2016)

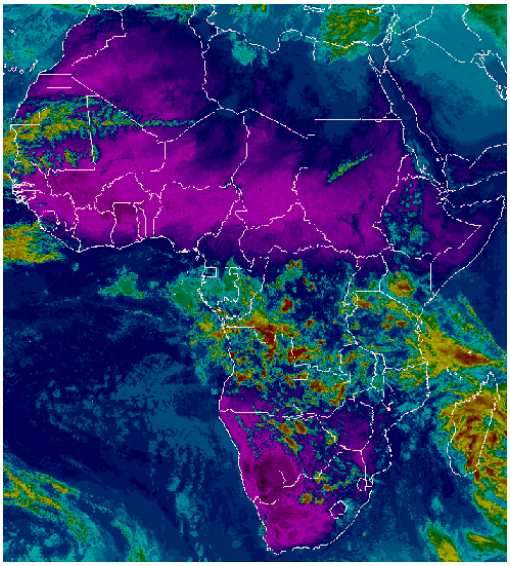
Moderate to heavy rainfall was observed over isolated parts of DRC, southern Tanzania, western Zambia, northern Madagascar and central Angola.

2.2. Weather assessment for the current day (February 09, 2015**)**

Intense convective clouds are observed across central Tanzania, western DRC, northern Botswana, western Zambia, central Angola, southern Kenya and central Madagascar.



IR Satellite Image (valid 1430z February 09, 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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