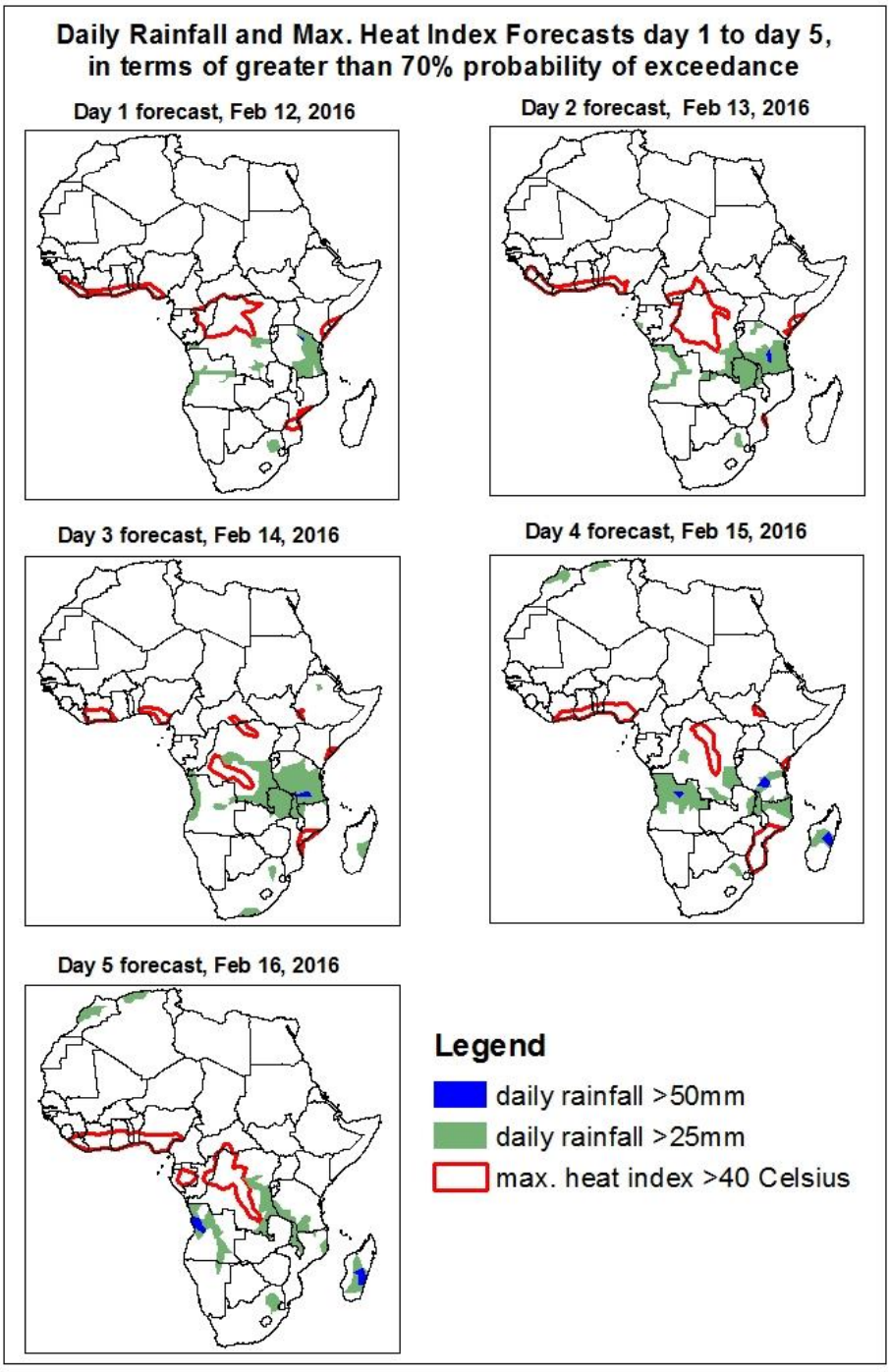
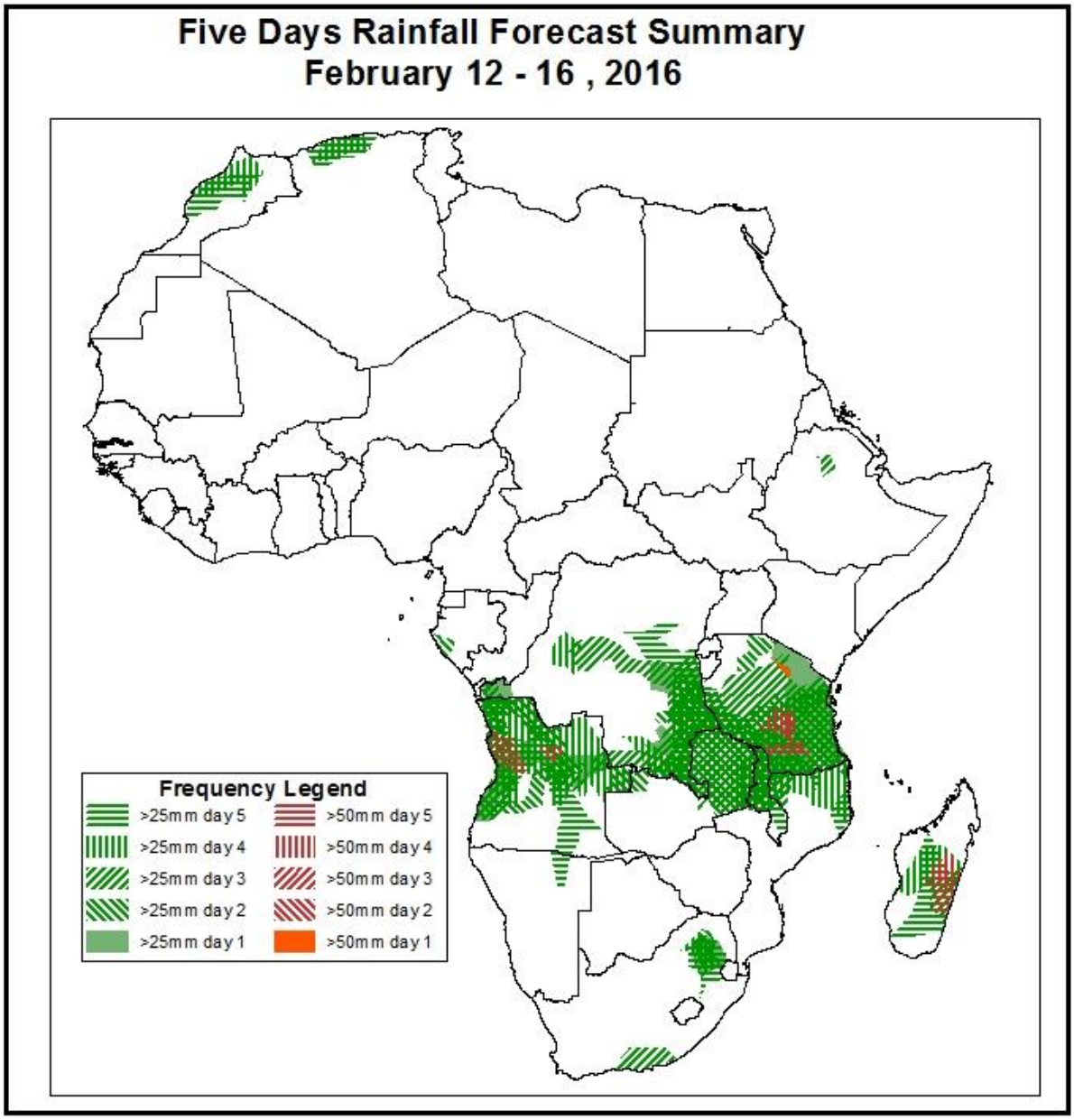
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 11, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 12 – Feb 16, 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.



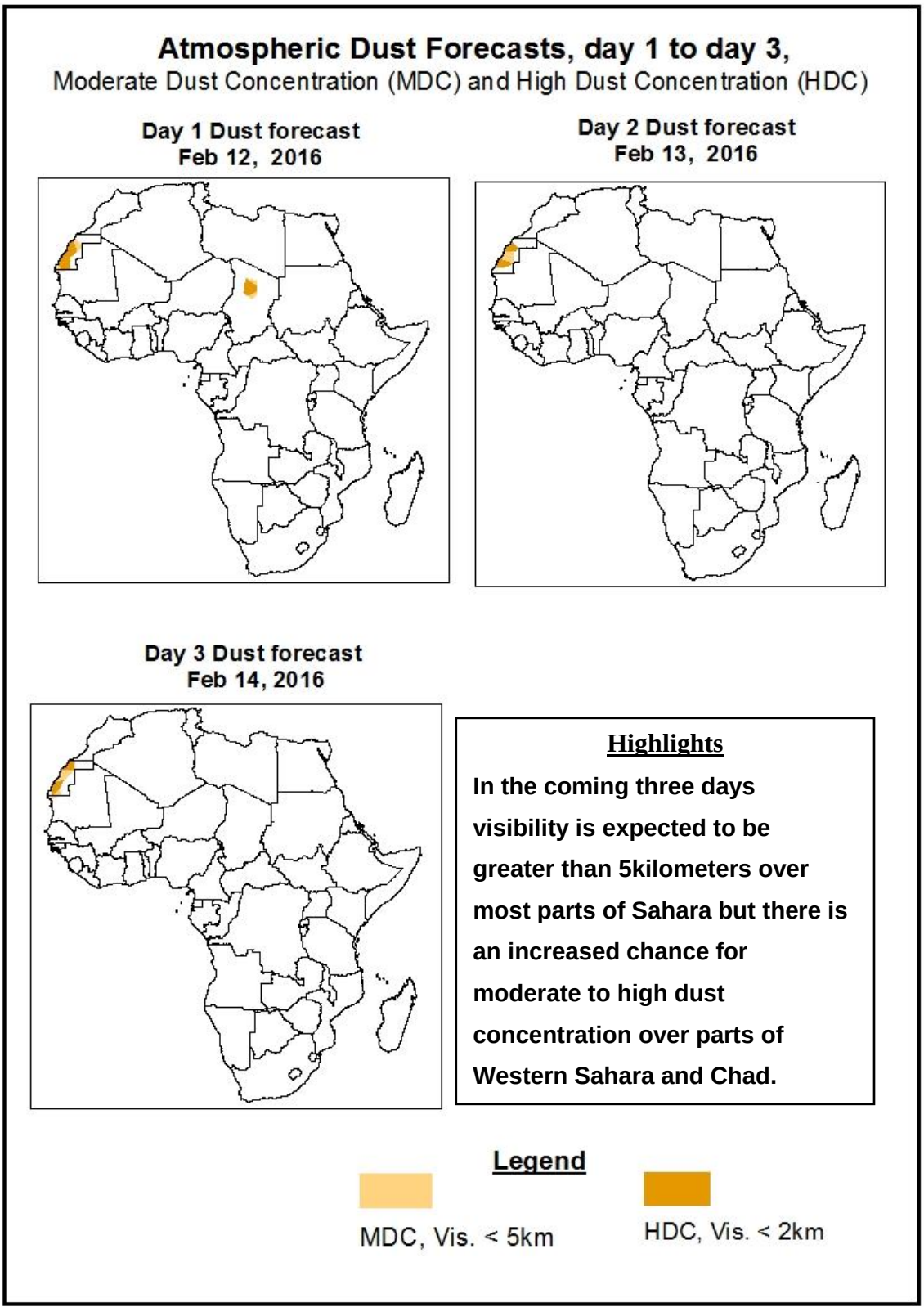


Highlights

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, northern Malawi, and eastern Madagascar with high probability of heavy rainfall over parts of southern Tanzania, eastern Madagascar and western Angola.

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 12 – Feb 14, 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 12 – Feb 16, 2016

Extension of Azores high pressure system over Sahara is expected to weaken in to 1024Hpa and in to 1022Hpa in 24 and 48 hours' time respectively from the central value of 1026Hpa. This high pressure system is also expected to attain the central value for about 24 hours and further weaken in to 1021Hpa 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 with the exceptions over parts of Western Sahara and Chad.

Due to the interaction of low pressure system from subtropics, the Arabian high pressure system is expected to weaken in to 1025Hpa in 48 hours' time from its central value of 1027Hpa and intensify back in to 1029Hpa and in 96 hours' time.

The Mascarene high pressure system is expected to intensify in to 1031Hpa and in to 1032Hpa in 24 and 48 hours' time respectively from the central value of 1029Hpa. This high pressure system is also expected to weaken back in to 1028Hpa in 96 hours' time and intensify in to 1031 in 120 hours' time. In association to the development of low 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 1034Hpa in 24 hours' time from the central value of 1030Hpa and weaken back into 1032Hpa, in to 1030Hpa and in to 1028Hpa in 48, 72 and 96 hours' time respectively. In relation to the development of low pressure system over central Atlantic Ocean, the moisture supposed to incur in to south 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, northern Malawi, and eastern Madagascar with high probability of heavy rainfall over parts of southern Tanzania, eastern Madagascar and western Angola.
There is also an increased chance for heat index values to exceed 40^{o}C along the Gulf of Guinea coast, Mozambique, central and northern DRC and coastal areas of East Africa.

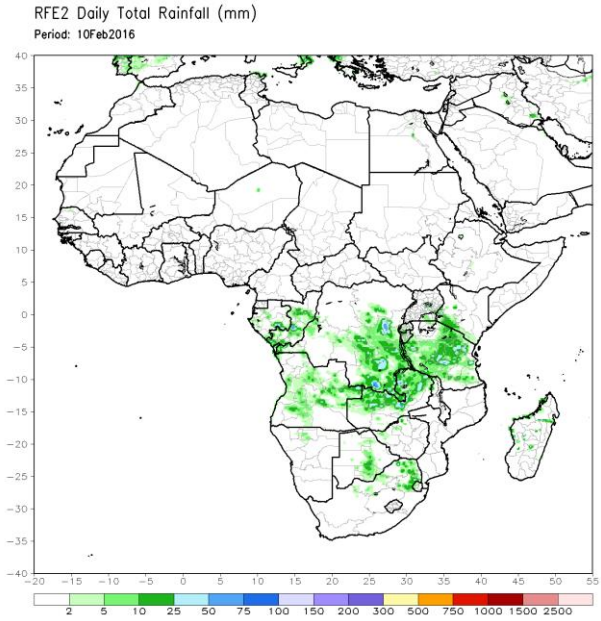
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 10, 2016)

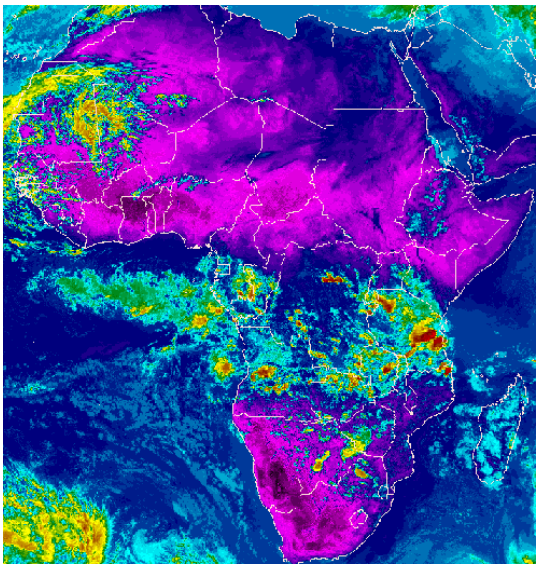
Moderate to heavy rainfall was observed over isolated parts of eastern DRC, central Angola, central Tanzania, eastern Zambia and southern Kenya.

2.2. Weather assessment for the current day (February 11, 2015**)**

Intense convective clouds are observed across Tanzania, central DRC, central Congo, Zambia, Botswana and western Angola.



IR Satellite Image (valid 1430z February 11, 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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