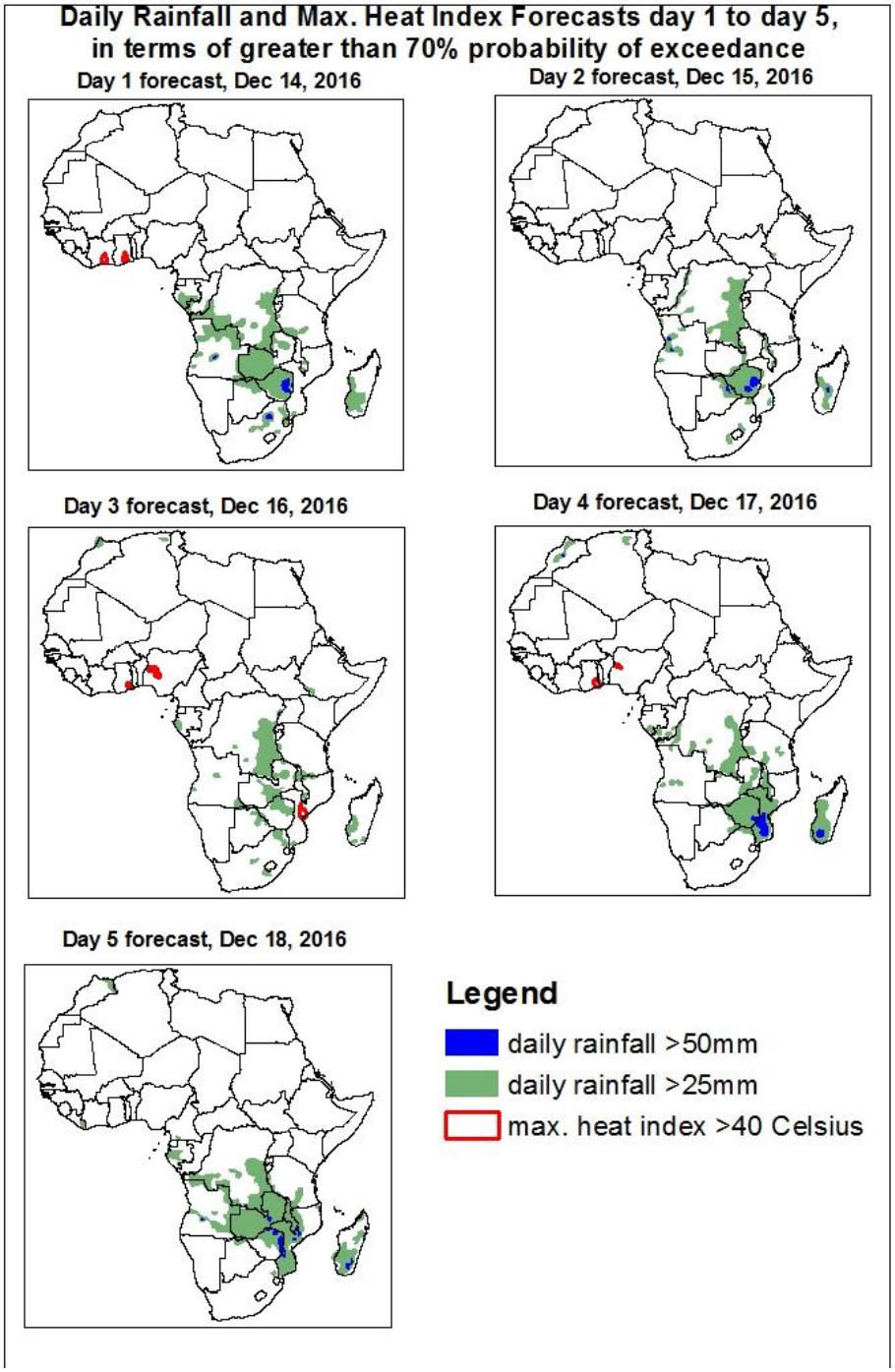
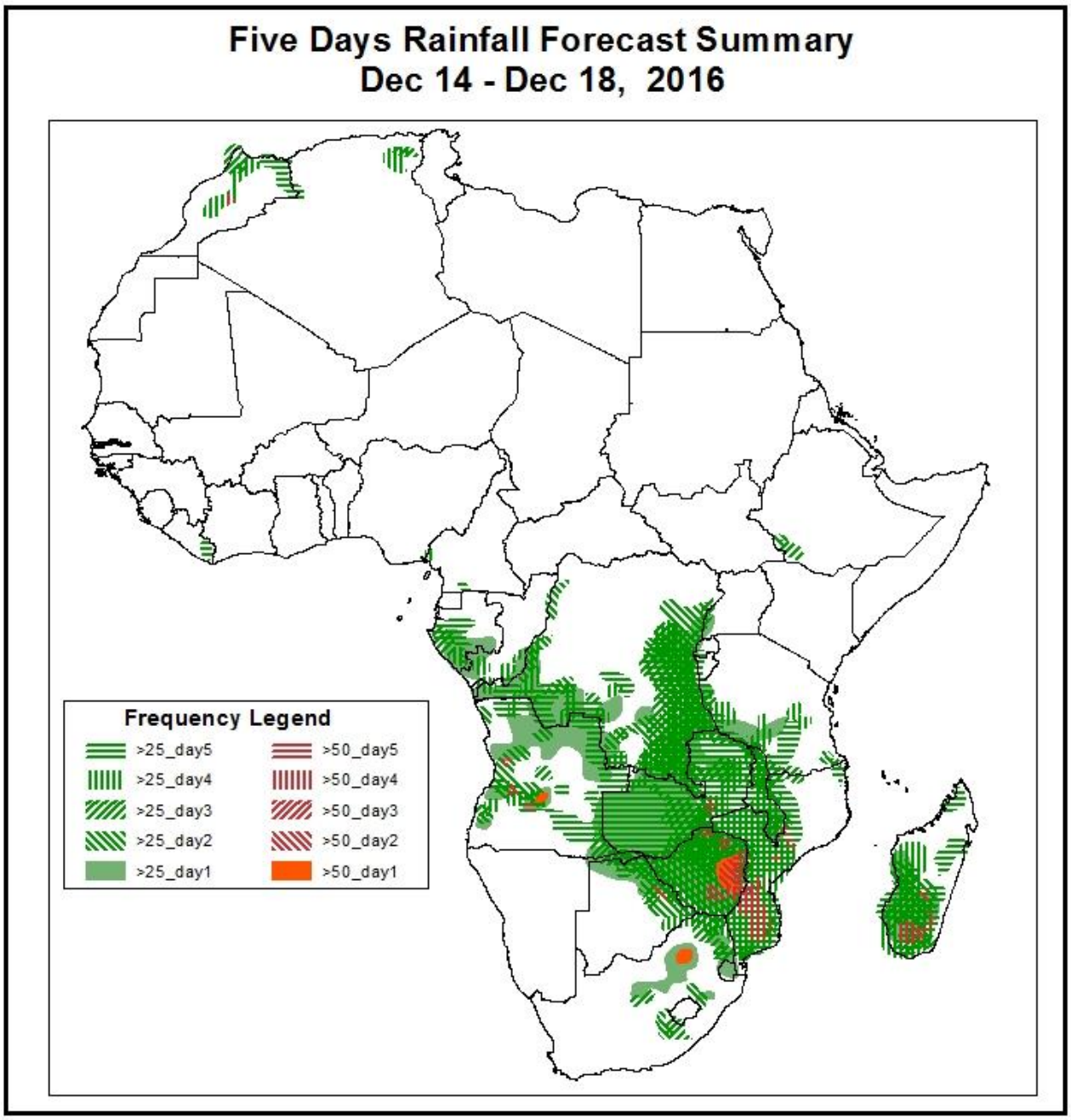
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on Dec 13, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Dec 14 – Dec 18, 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.



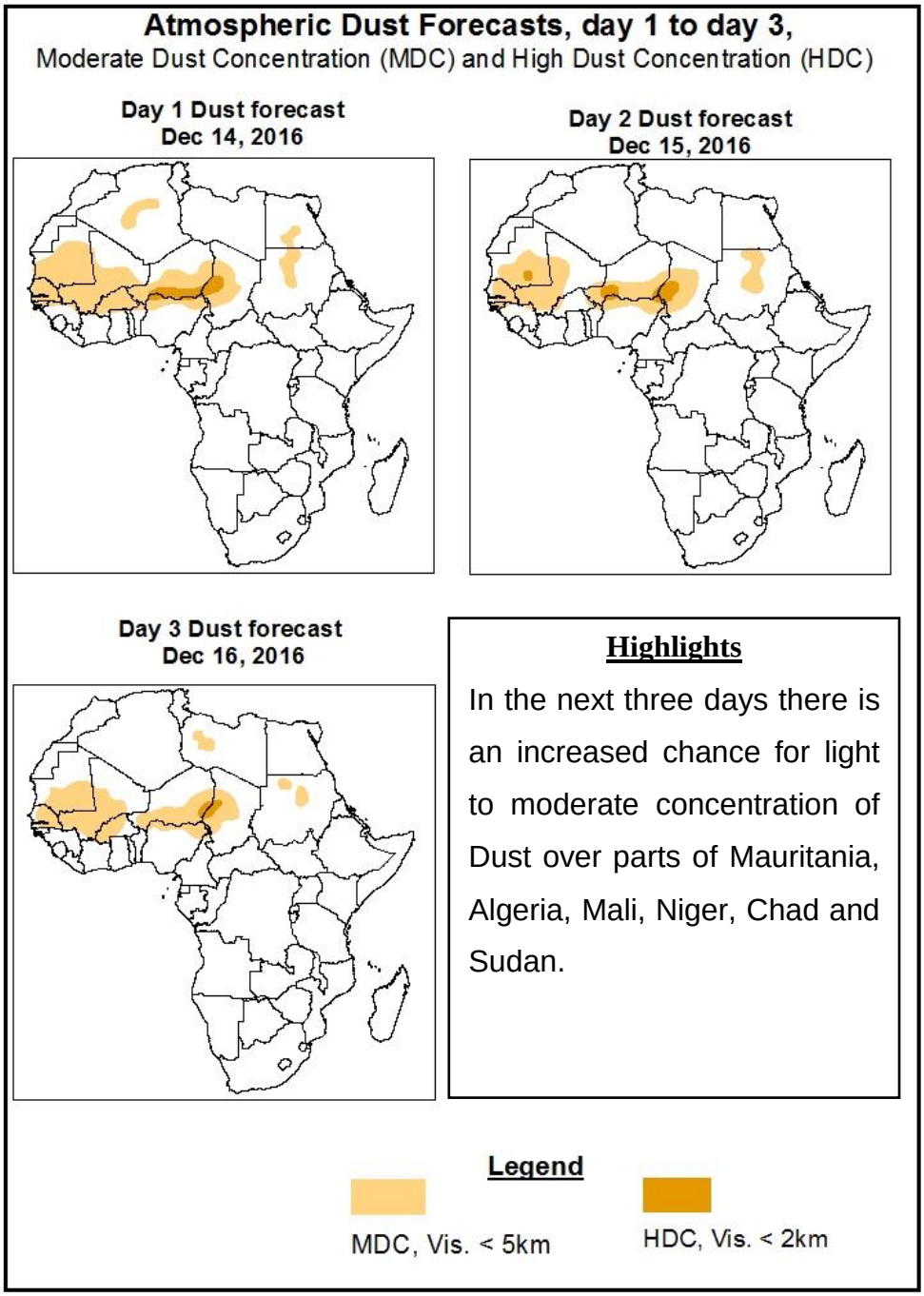


Highlights

In the next five days, lower level wind convergences across the Northern parts of the South African countries are expected to enhance rainfall in their respective regions. Therefore, there is an increased chance for two or more days of light to moderate rainfall over portion of Zambia, Zimbabwe, Malawi and Mozambique, local area of Gabon, DRC, Angola, Botswana, Tanzania, South Africa and Madagascar.

1.2. Atmospheric Dust Concentration Forecasts (valid: Dec 14 – Dec 16, 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: Dec 14 –Dec 18, 2016*

The Azores High Pressure system over the North Atlantic Ocean is expected to intensify, with its value of the central pressure increasing from 1029hPa to 1038hPa during the forecast period.

The St. Helena High Pressure system over the Southeast of the Atlantic Ocean is expected to intensify, with its value of the central pressure increasing from 1021hPa to 1022hPa in the next 48 hours, weakens to 1021hPa and intensifies to 1029hPa in the next 72 hours and 96 hours respectively, and later weakens to 1028hPa during the remaining forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to intensify, with its value of the central pressure increasing from 1029hPa to 1030hPa in the next 48 hours, weaken to 1024hPa in the next 96 hours, and later intensify to 1025hPa during the remaining forecast period.

At 925hPa, strong dry Northerly to Easterly winds may lead from light to moderate dust concentration over parts of Mauritania, Algeria, Mali, Niger, Northern Nigeria, Chad, Libya, Sudan and Egypt.

At 850hPa level, lower level wind convergences are expected to prevail over CAR, Congo, DRC, Angola, Namibia, Zambia, Botswana, Tanzania, Gabon, South Africa, South Sudan and Ethiopia.

In the next five days, lower level wind convergences across the Northern parts of the South African countries are expected to enhance rainfall in their respective regions. Therefore, there is an increased chance for two or more days of light to moderate rainfall over portion of Zambia, Zimbabwe, Malawi and Mozambique, local area of Gabon, DRC, Angola, Botswana, Tanzania, South Africa and Madagascar.

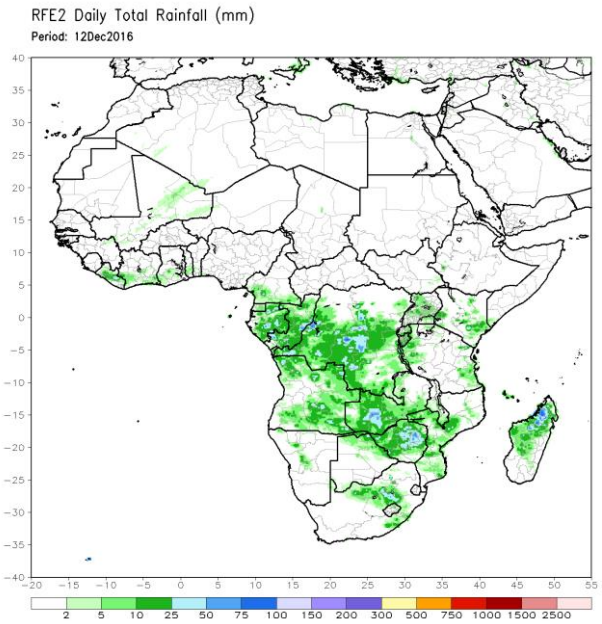
2.0. Previous and Current Day Weather over Africa

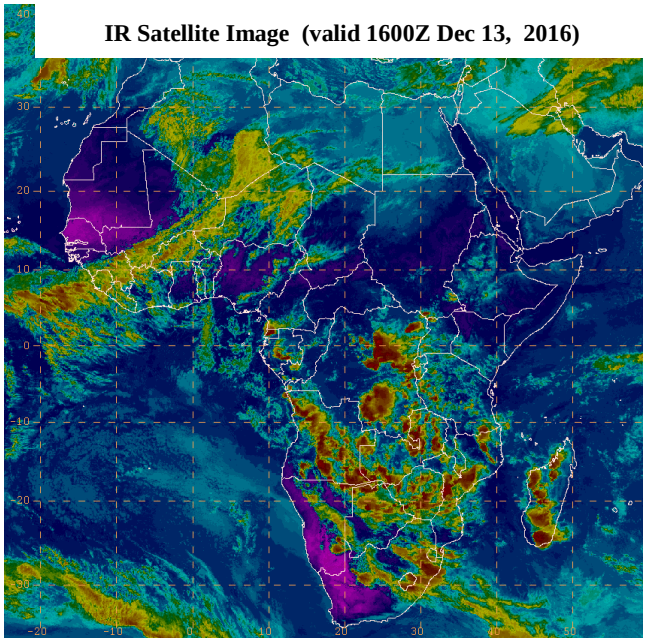
2.1. Weather assessment for the previous day (Dec 12, 2016)

Light to moderate rainfall was observed over portion of Liberia, Gabon, Congo, DRC, Angola, Zambia, Zimbabwe, South Africa and Madagascar.

2.2. Weather assessment for the current day (Dec 13, 2016)

Intense convective clouds are observed over portions of Equatorial Guinea, Gabon, DRC, Angola, Zambia, Zimbabwe, Botswana, Mozambique, South Africa, Lesotho and Madagascar.





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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