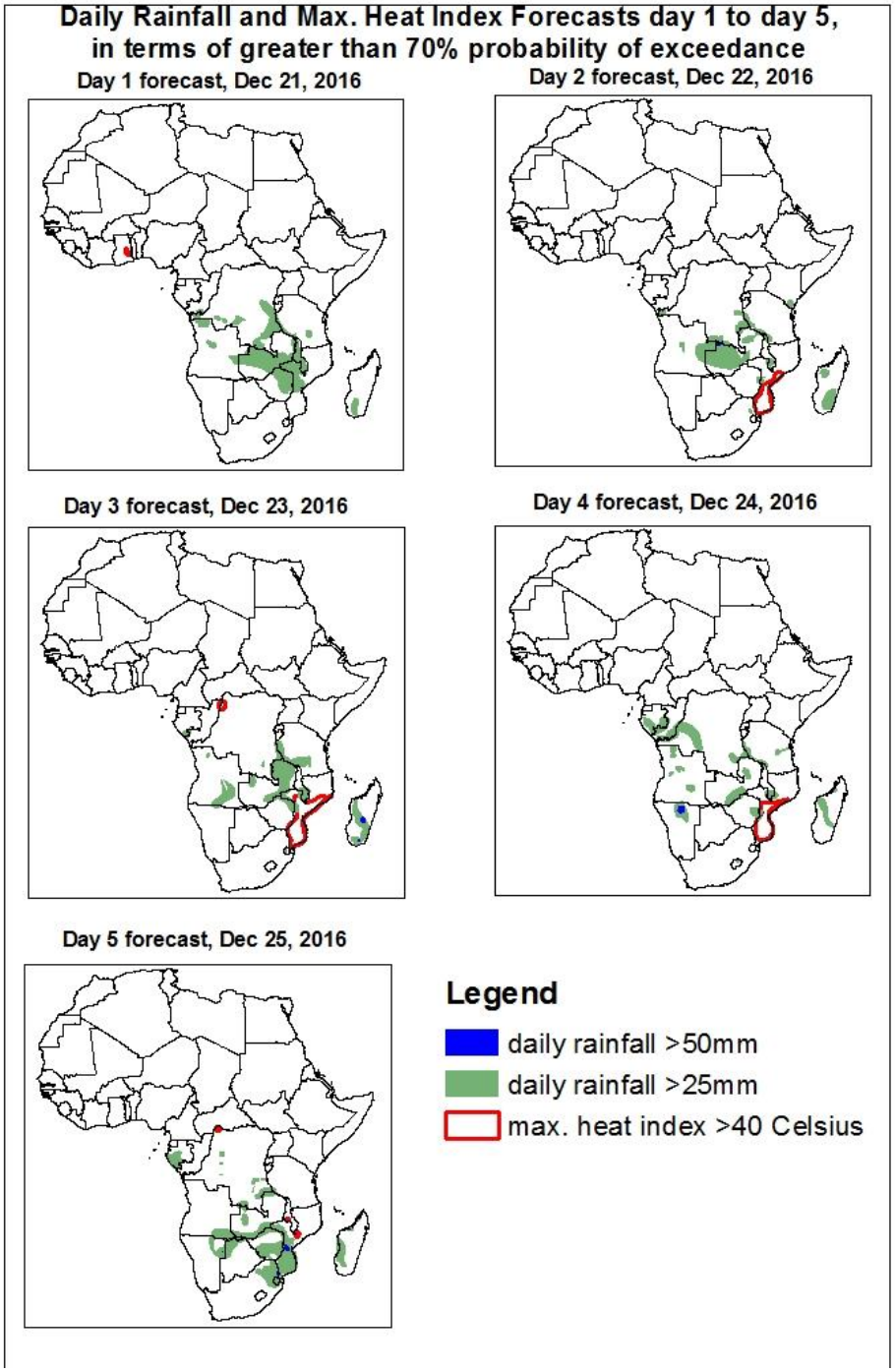
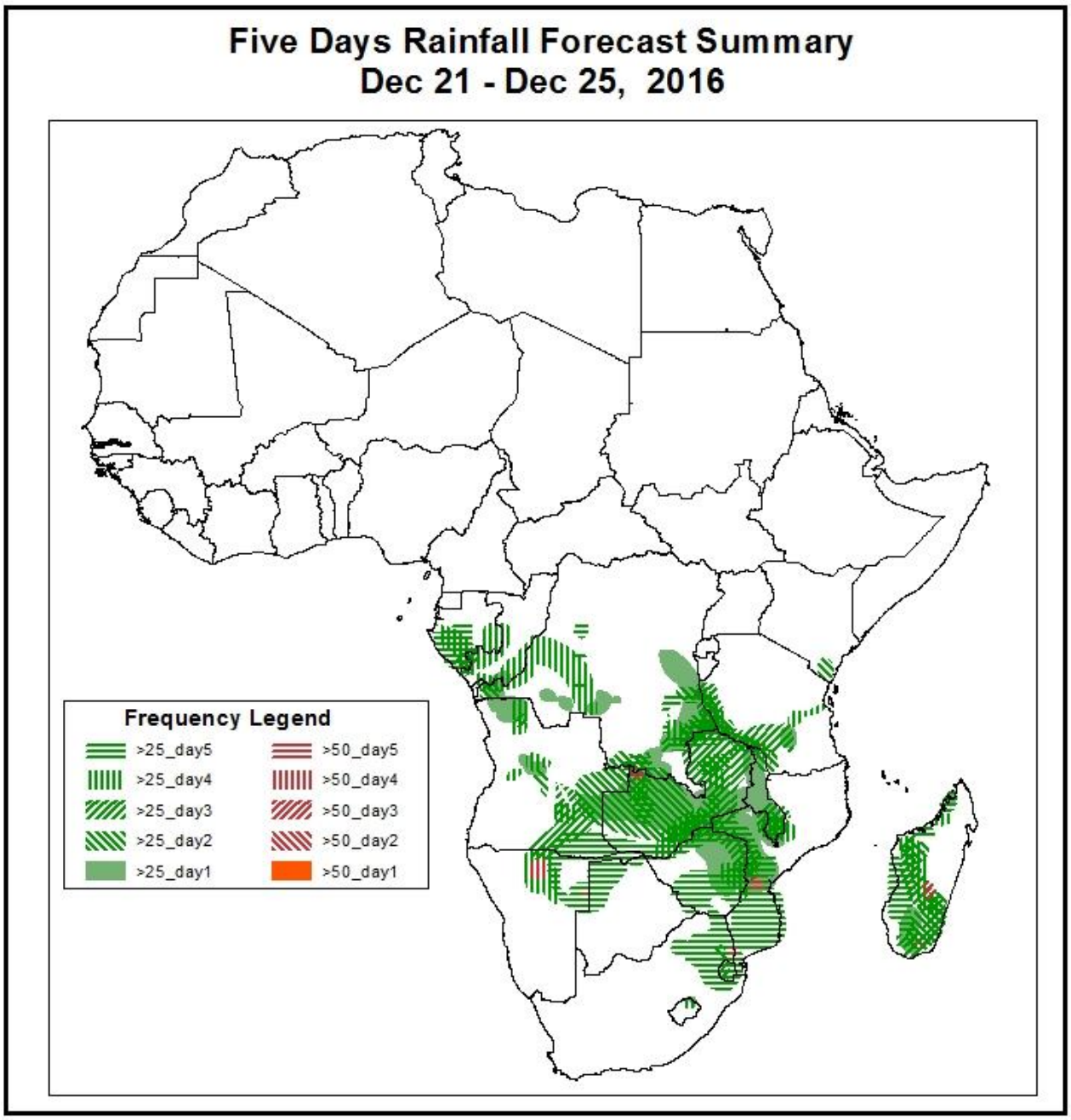
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on Dec 20, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Dec 21 – Dec 25, 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.



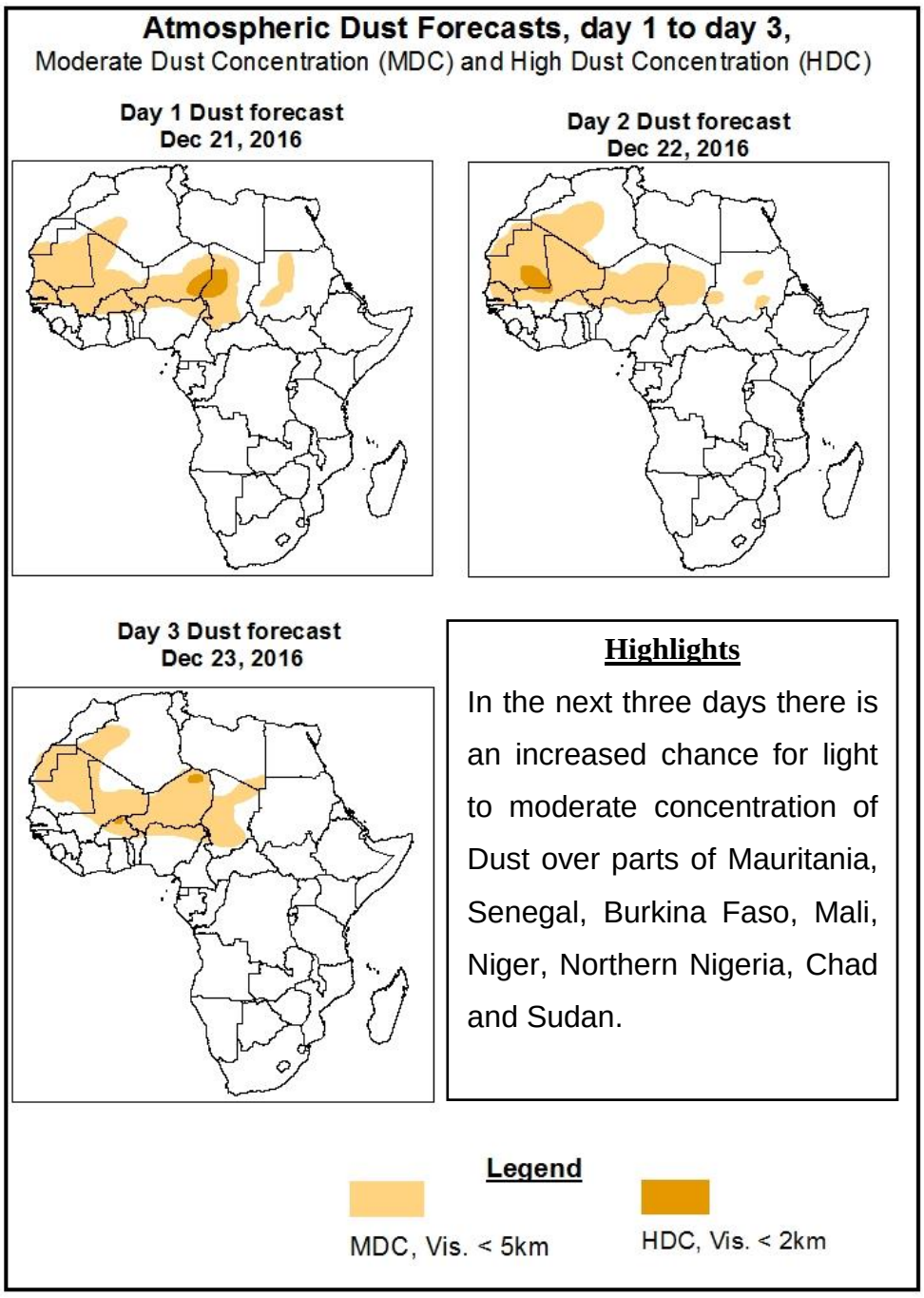


Highlights

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 Gabon, DRC, Angola, Namibia, Zambia, Zimbabwe, Mozambique, Swaziland, Tanzania and Madagascar.

1.2. Atmospheric Dust Concentration Forecasts (valid: Dec 21 – Dec 23, 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 21 –Dec 25, 2016*

The Azores High Pressure system over the North Atlantic Ocean is expected to intensify, with its value of the central pressure increasing from 1034hPa to 1038hPa in the next 96 hours, weaken to 1037hPa during the remaining forecast period.

The St. Helena High Pressure system over the Southeast of the Atlantic Ocean is expected to weaken, with its value of the central pressure decreasing from 1024hPa to 1019hPa in the next 72 hours, intensify to 1025hPa in next 96 hours, and weaken to 1024hPa 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 1020hPa to 1021hPa in next 72 hours, weaken to 1020hPa in next 96 hours, and intensify to 1021hPa during the remaining forecast period.

At 925hPa, strong dry Northerly to Easterly winds may lead from light to moderate dust concentration over parts of Western Sahara, Senegal, Mauritania, Mali, Burkina Faso, Niger, Northern Nigeria, Chad and Sudan.

At 850hPa level, lower level wind convergences are expected to prevail over DRC, Zambia, Botswana, Ethiopia and South Sudan.

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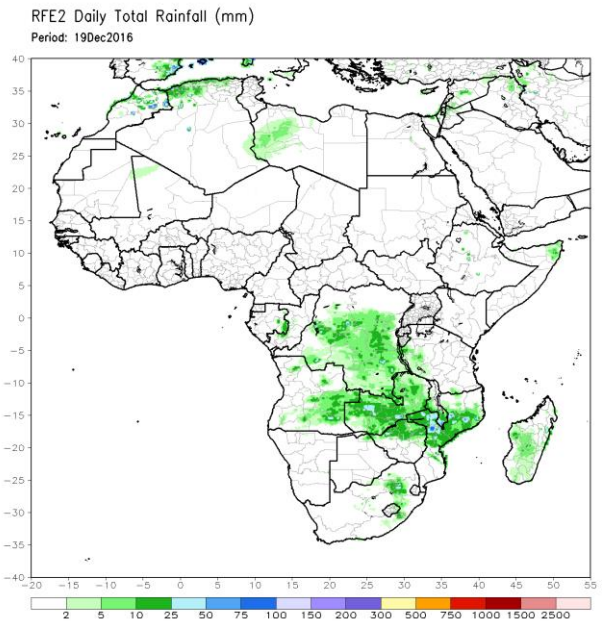
2.0. Previous and Current Day Weather over Africa

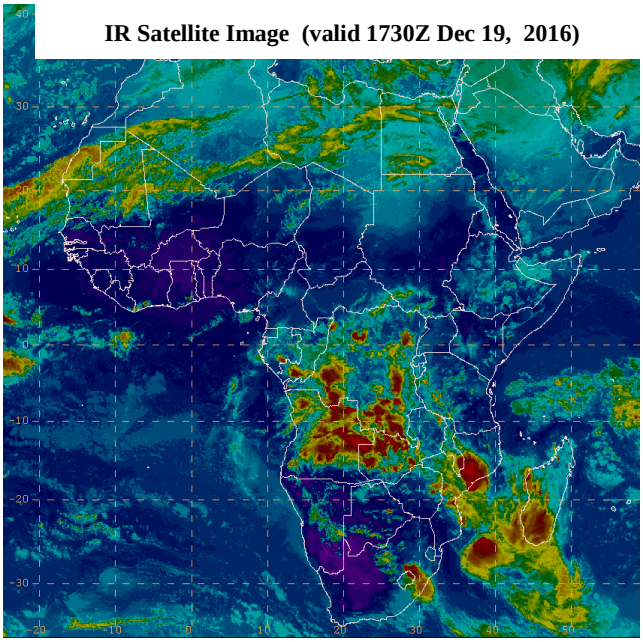
2.1. Weather assessment for the previous day (Dec 19, 2016)

Light to moderate rainfall was observed over portion of Morocco and Mozambique.

2.2. Weather assessment for the current day (Dec 20, 2016)

Intense convective clouds are observed over portions of Gabon, Congo, DRC, Angola, Zambia, Malawi, Mozambique, South Africa 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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