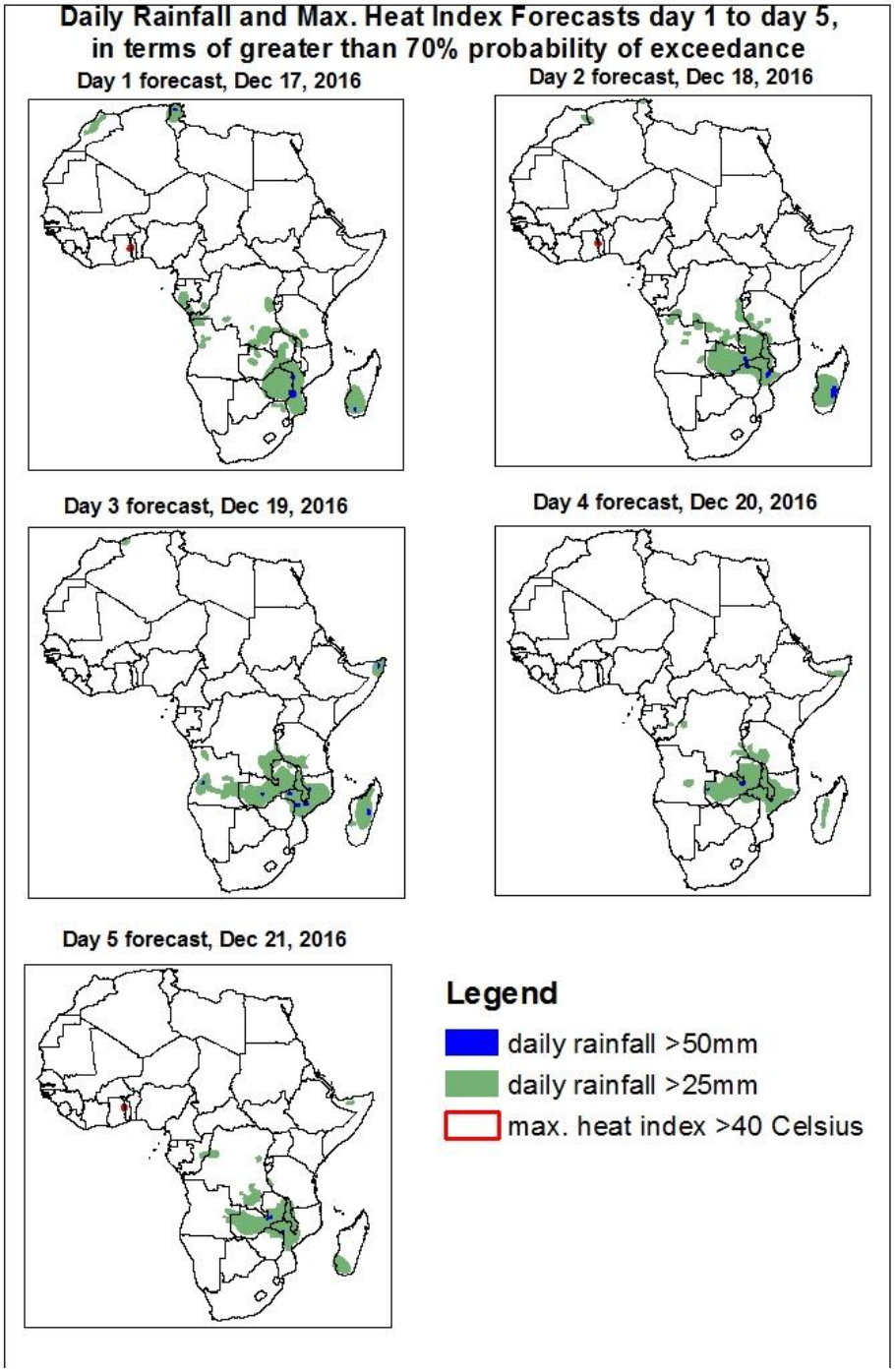
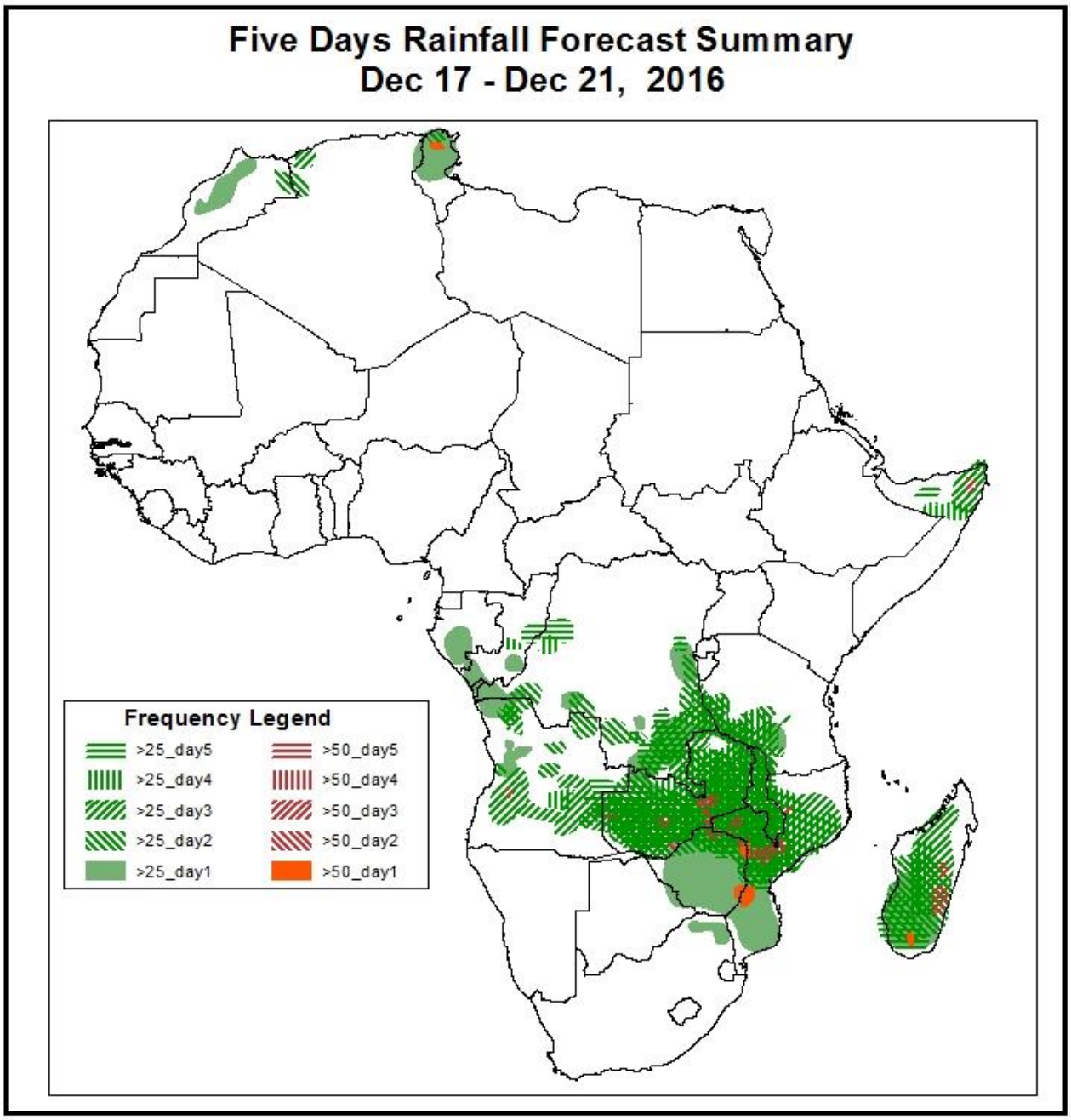
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on Dec 16, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Dec 17 – Dec 21, 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.



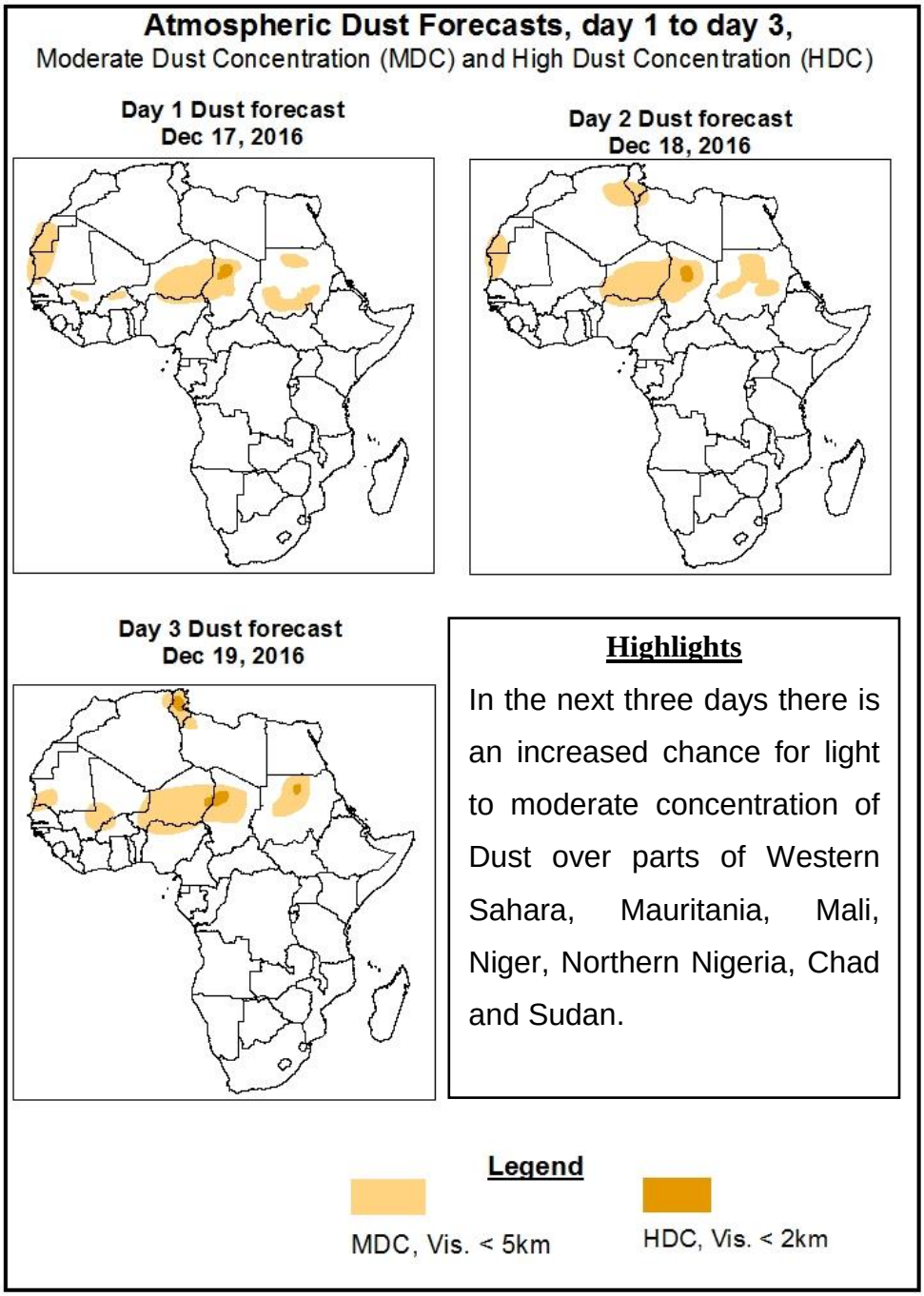


Highlights

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, Mozambique and Madagascar, local area of DRC, Angola, Tanzania and Somalia.

1.2. Atmospheric Dust Concentration Forecasts (valid: Dec 17 – Dec 19, 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 17 –Dec 21, 2016*

The Azores High Pressure system over the North Atlantic Ocean is expected to intensify, with its value of the central pressure increasing from 1035hPa to 1043hPa in the next 72 hours, weaken to 1034hPa 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 1029hPa to 1022hPa during the forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to weaken, with its value of the central pressure decreasing from 1024hPa to 1020hPa in the next 96 hours, intensify to 1022hPa 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, Gambia, Mauritania, Mali, Burkina Faso, Niger, Northern Nigeria, Chad, Libya, Tunisia and Sudan.

At 850hPa level, lower level wind convergences are expected to prevail over Cameroon, CAR, Congo, DRC, Angola, Namibia, Zambia, Namibia, Zimbabwe and Tanzania.

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, Mozambique and Madagascar, local area of DRC, Angola, Tanzania and Somalia.

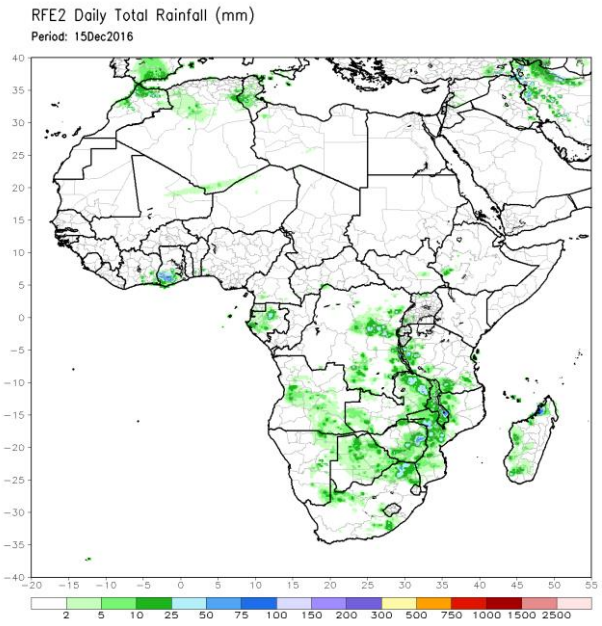
2.0. Previous and Current Day Weather over Africa

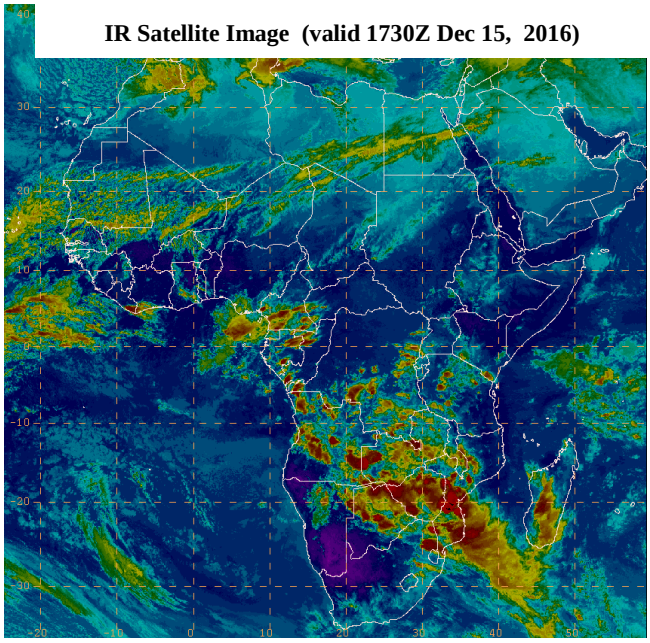
2.1. Weather assessment for the previous day (Dec 15, 2016)

Light to moderate rainfall was observed over portion of Morocco, Ghana, DRC, Zambia, Malawi, Zimbabwe, South Africa, Mozambique and Madagascar.

2.2. Weather assessment for the current day (Dec 16, 2016)

Intense convective clouds are observed over portions of Tunisia, Liberia, Cameroon, Gabon, Congo, DRC, Angola, Zambia, Zimbabwe, Botswana, South Africa, Mozambique, Malawi, Tanzania 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.

Authors: Wasiu Ibrahim & Edward Andrew (Nigeria/S.Sudan-Meteo) / CPC-African Desk);
wasiu.ibrahim@noaa.gov edward.okeiyg@noaa.gov