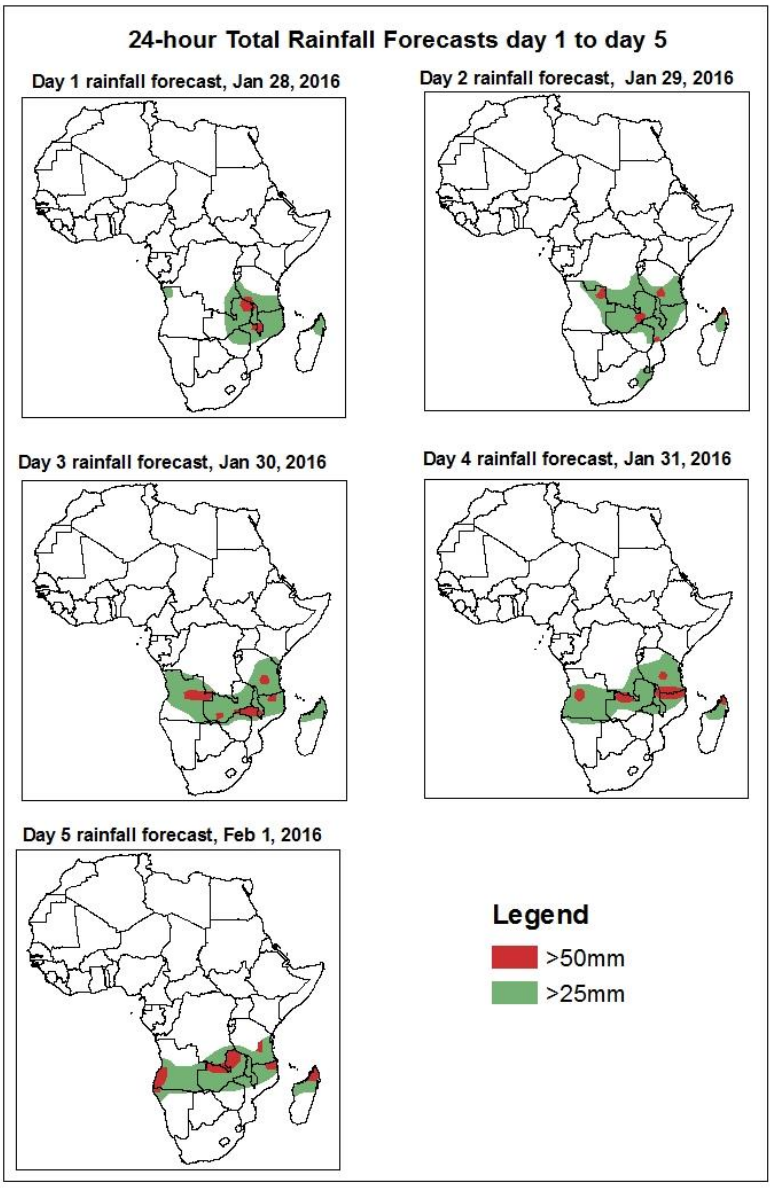
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

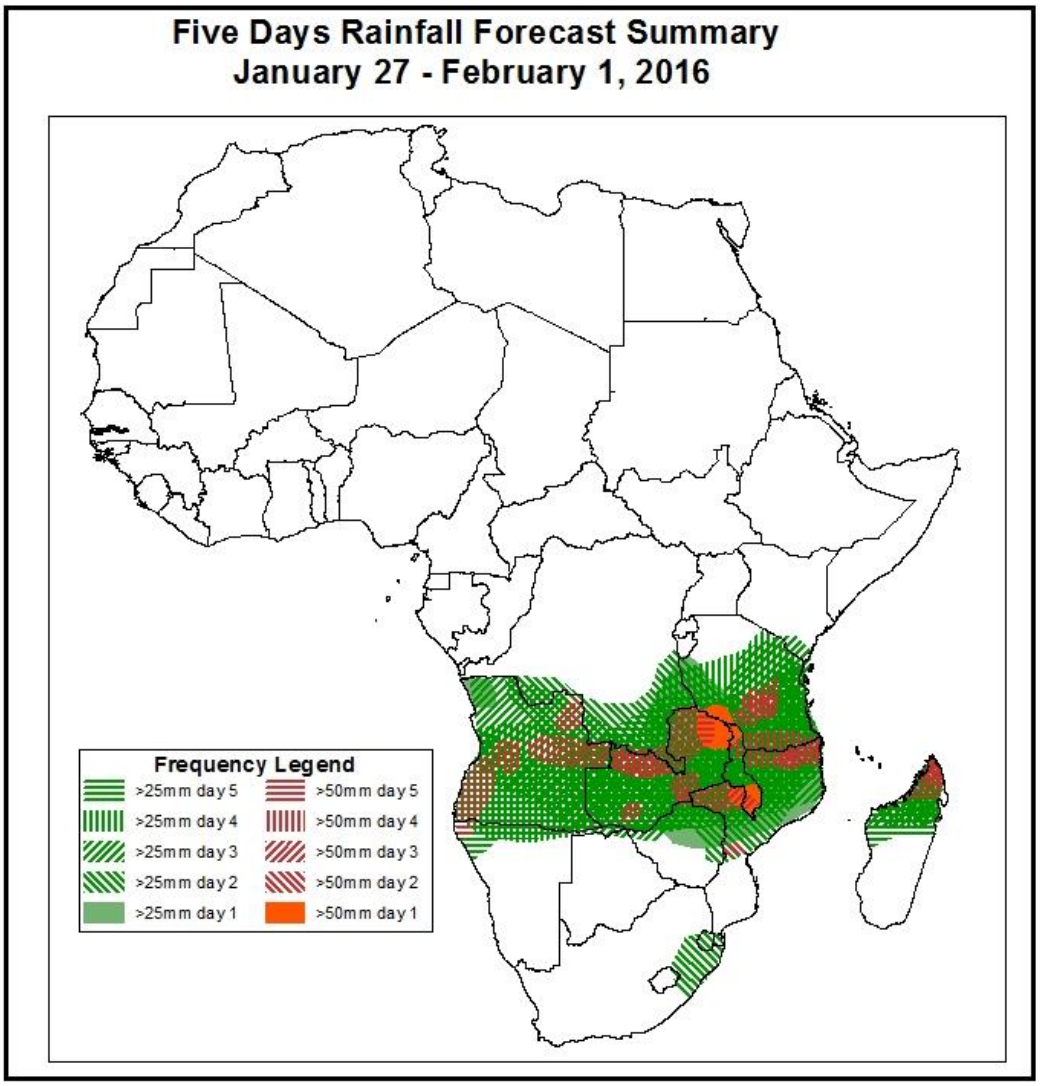
1. Rainfall and Dust Concentration Forecasts

Valid: 06Z of Jan 28 - 06Z of Feb 1, 2016. (Issued on January 27, 2016)

1.1. 24-hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP), based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.





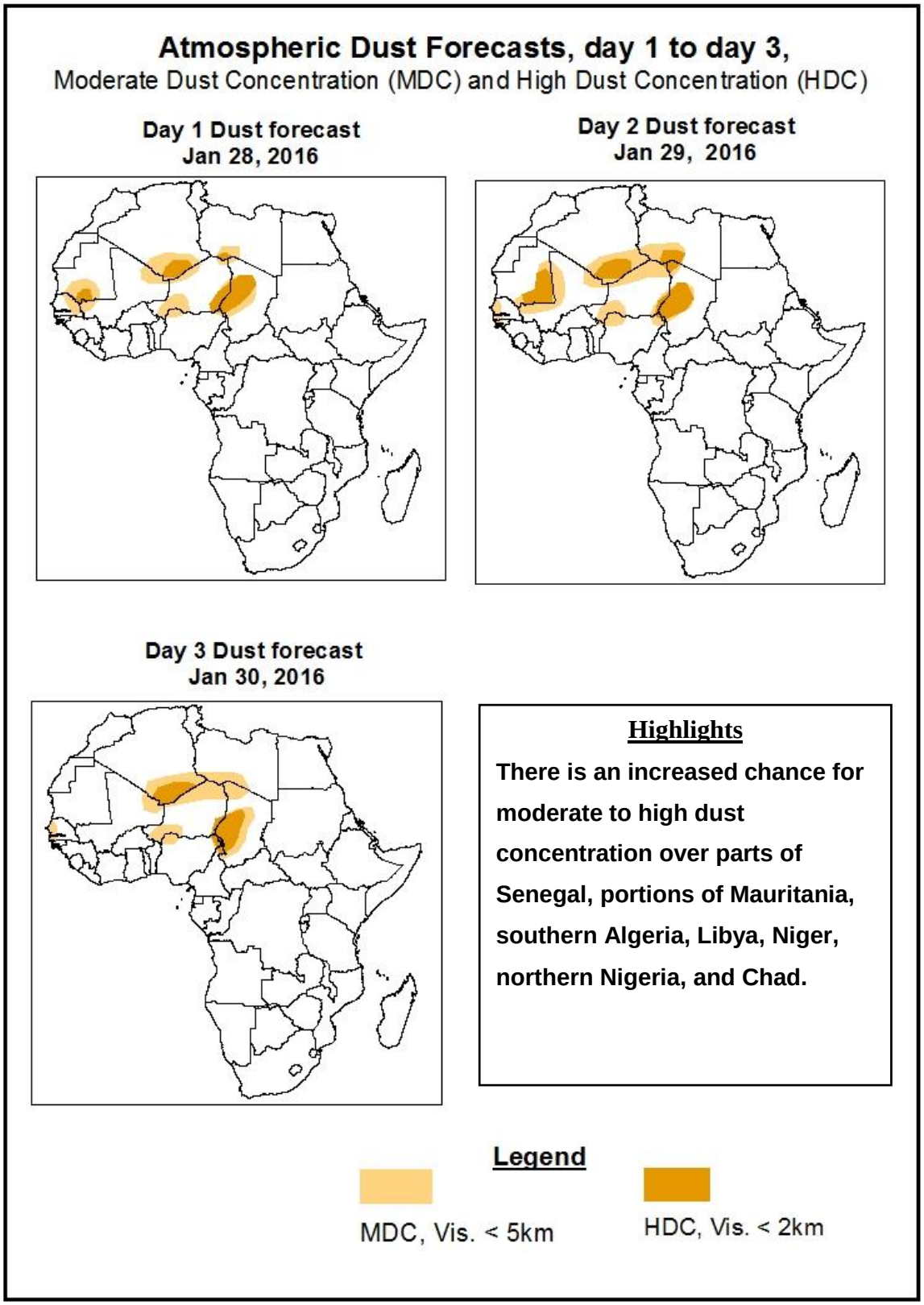
Highlights

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Angola, southern and eastern DRC, Zambia, Zimbabwe, Malawi, many parts of Tanzania, central and northern Mozambique, and northern Madagascar.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Jan 28 – 12Z of Jan 30, 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: Jan 27 – Feb 1, 2016

A high pressure system with its associated ridge is expected to prevail across northern Africa, the Mediterranean Sea and the neighboring areas of southern Europe, while maintaining an average central pressure value of 1032 hPa during the forecast period.

The St Helena high pressure system over Southeast Atlantic Ocean is expected to intensify, while shifting eastwards. It is central pressure value is expected to increase from about 1023 hPa to 1030 hPa, before it shifts to the Southwestern Indian Ocean in 96 hours.

The Mascarene high pressure system over Southwest Indian Ocean is expected to weaken gradually towards end of the forecast period, with its central pressure value decreasing from about 1031 hPa in 96 hours to 1028 hPa in 120 hours.

At 925 hPa level, a broad area of strong dry northeasterly to easterly flow is expected to prevail over much of North and West Africa, including the Sahel region, leading to an increased chance for widespread atmospheric dust concentration in the regions.

At 850 hPa level, an area of wind convergence between easterlies from the Indian Ocean and westerlies from the Congo Basin is expected to remain active across Tanzania and the neighboring areas during the forecast period. Zonal wind convergence is expected to prevail in the region between eastern Angola and northern Mozambique, across Zambia and southern Malawi, which is expected to enhance rainfall in the region.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Angola, southern and eastern DRC, Zambia, Zimbabwe, Malawi, many parts of Tanzania, central and northern Mozambique, and northern Madagascar.

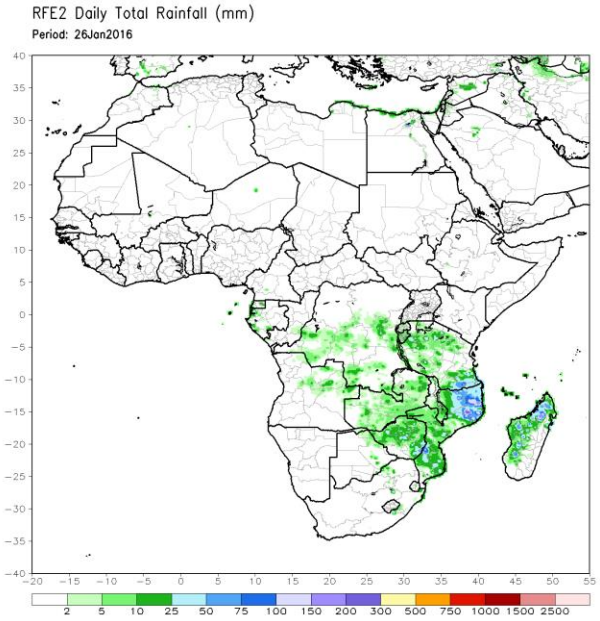
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (January 26, 2016)

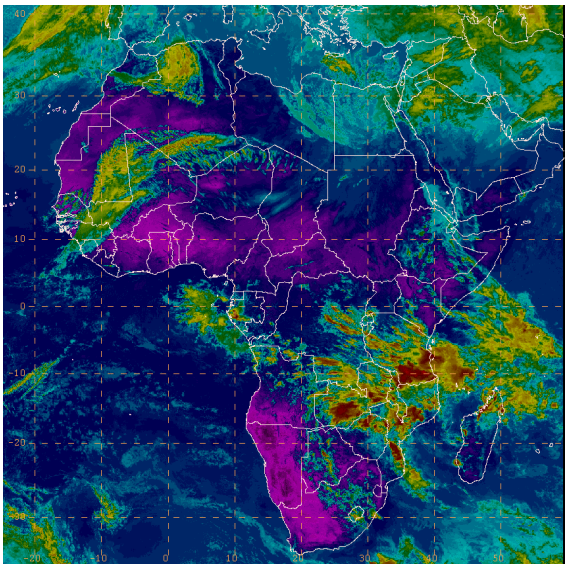
Moderate to heavy rainfall was observed over central and southern DRC, portions of Angola, Tanzania, Zambia, Zimbabwe, Mozambique, Malawi and portions of Madagascar, with the heavier rainfall amounts reported over portions of southern Tanzania, northern Mozambique and local areas in Madagascar.

2.2. Weather assessment for the current day (January 27, 2015)

Intense convective clouds are observed across portions of DRC, , Tanzania, Zambia, Zimbabwe, Malawi, Mozambique and northern Madagascar.



IR Satellite Image (valid 1430z January 27, 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

Author: Zerihun Hailemariam (Ethiopian National Meteorological Agency) / CPC-African Desk); zerihun.tessema@noaa.gov