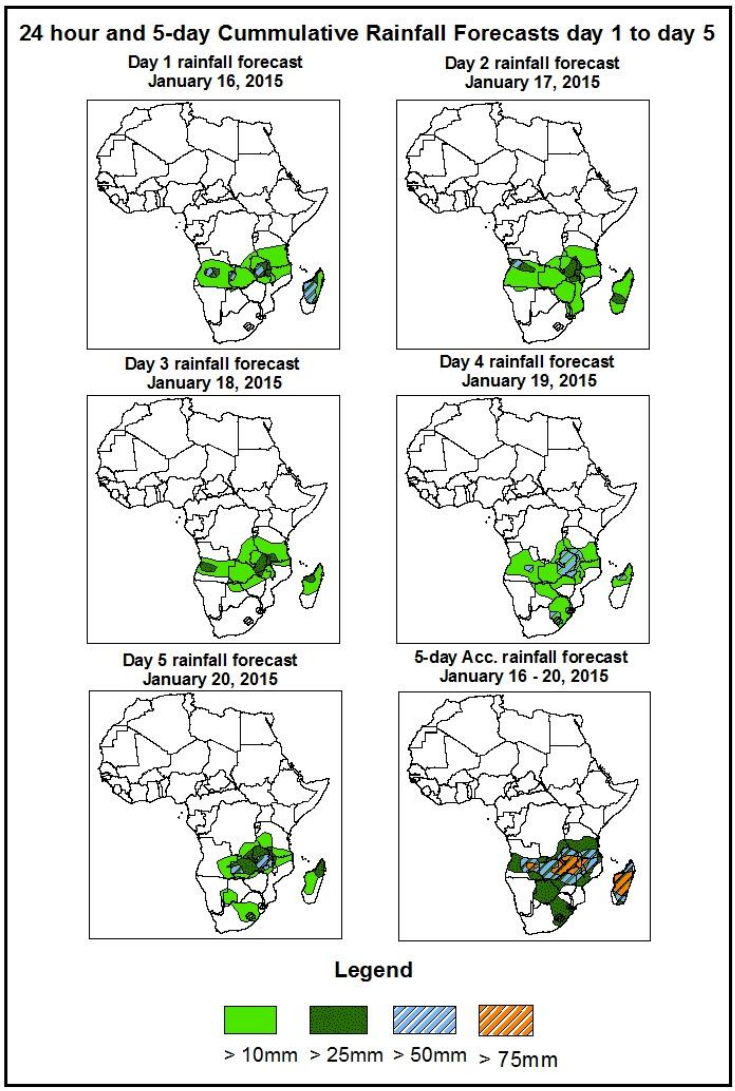
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of January 16 – 06Z of January 20, 2015. (Issued at 1730Z of January 15, 2015)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



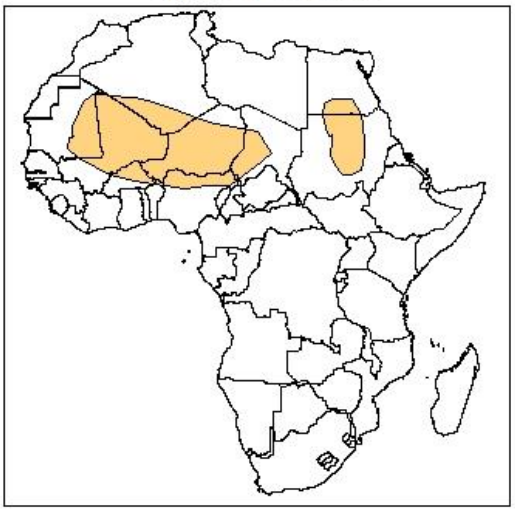
Summary

In the next five days, east-west oriented lower-level wind convergence in the region between Angola and Mozambique including Tanzania, a lower-level cyclonic circulation in the Mozambique Channel are expected to enhance rainfall in these regions. Hence, there is an increased chance for heavy rainfall over south east Angola, east and southern DRC, Malawi, south Tanzania, some portions of eastern South Africa and north Mozambique and much of Madagascar.

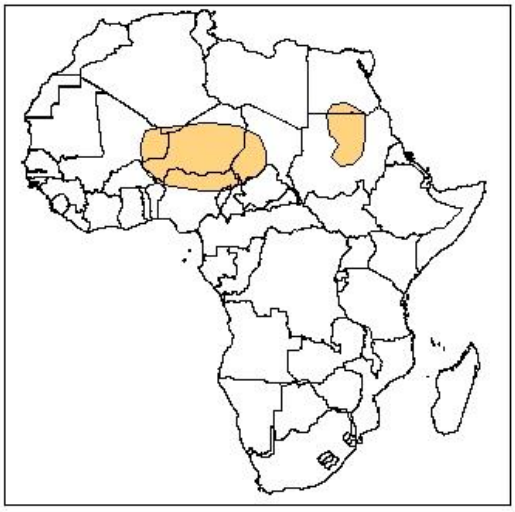
Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

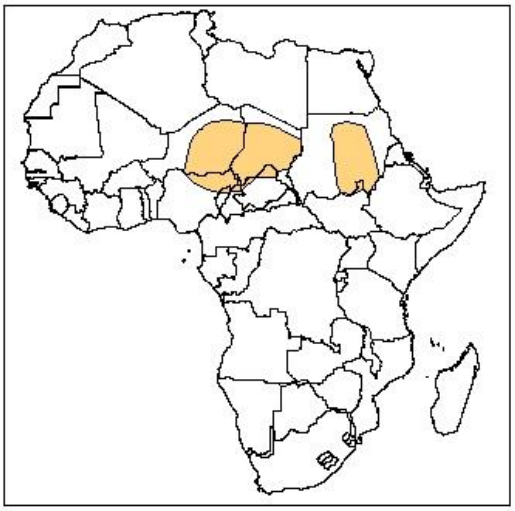
Day 1 Dust forecast
January 15, 2015



Day 2 Dust forecast
January 16, 2015



Day 3 Dust forecast
January 17, 2014



Highlights

There is an increased chance for moderate to high dust concentration over several parts of the Sahel, and North Africa countries, with highest dust concentration expected over Mauritania, Mali, Chad Niger, Burkina Faso, Northern Nigeria, Algeria, Sudan, Algeria and Egypt.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of January 13, 2015

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken slightly from a central pressure value of 1036hpa to a central pressure value of 1034hpa at 72 hours then strengthen to 1036hpa towards the end of the forecast period, according to the GFS model.

The Arabian High Pressure system is expected to strengthen from a central pressure value of 1024hpa to 1028hpa in 120 hours, according to the GFS model.

The central pressure value of the Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 1032hpa in 24hours to 1023hpa in 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to strengthen from a central pressure value of 1021hpa in 24 hours to 1026hpa in 96 hours, according to the GFS model.

A low pressure system in the Mozambique Channel is expected to fill up from a central pressure value of 990hpa in 24 hours to 997 in 48 hours and to 1006hpa in 120 hours as it moves over Madagascar, according to the GFS model.

At 925Hpa level, dry northeasterly to easterly wind (>20kts) is expected to prevail across much of the Sahel countries through 24 to 72 hours, and the intensity of the wind tends to weaken across the Northcentral and Northeastern regions of Africa, while remaining strong across Northwestern Africa towards end of the forecast period.

At 850Hpa level, dry northerly winds are expected to prevail across Central Africa countries and the northern parts of the Greater Horn of Africa during the forecast period. Wind convergences are expected to remain active in Angola, Namibia, Malawi, Mozambique, central Tanzania, Botswana, eastern DRC, Zambia, Rwanda, Burundi central South Africa and Madagascar, during the forecast period. Zonally oriented wind convergence is expected to prevail in the region between Angola and Mozambique,

whereas a cyclonic circulation in the Mozambique Channel is expected to fill up towards the end of the forecast period.

At 700hpa level, a north-western oriented trough is expected to prevail in the region between Angola and the Mozambique Channel during the forecast period, according to the GFS model.

At 500Hpa, a trough associated with a mid-latitude frontal system is expected to prevail across eastern Mediterranean Sea and the neighboring areas of Northeast Africa, while in the south, a ridge will prevail across the southern Africa region. Easterlies will prevail over the east African countries of Kenya and Uganda and westerlies over Tanzania, towards the end of the forecast period, according to the GFS model.

In the next five days, east-west oriented lower-level wind convergence in the region between Angola and Mozambique including Tanzania, a lower-level cyclonic circulation in the Mozambique Channel are expected to enhance rainfall in these regions. Hence, there is an increased chance for heavy rainfall over south east Angola, east and southern DRC, Malawi, south Tanzania, some portions of eastern South Africa and north Mozambique and much of Madagascar.

2.0. Previous and Current Day Weather Discussion over Africa

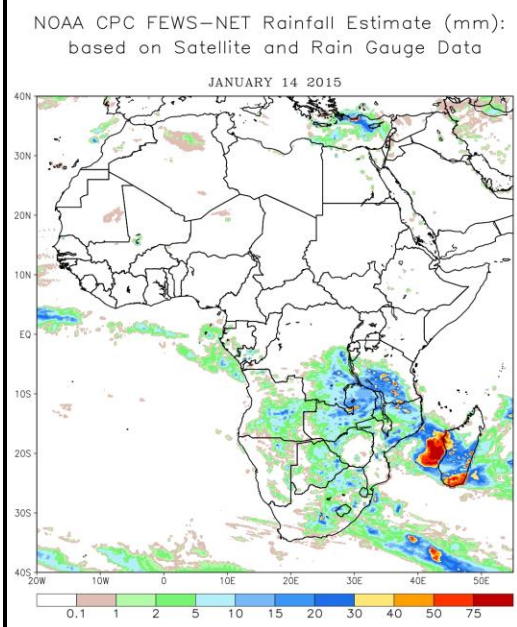
(January 14, 2015 – January 15, 2015)

2.1. Weather assessment for the previous day (January 14, 2015)

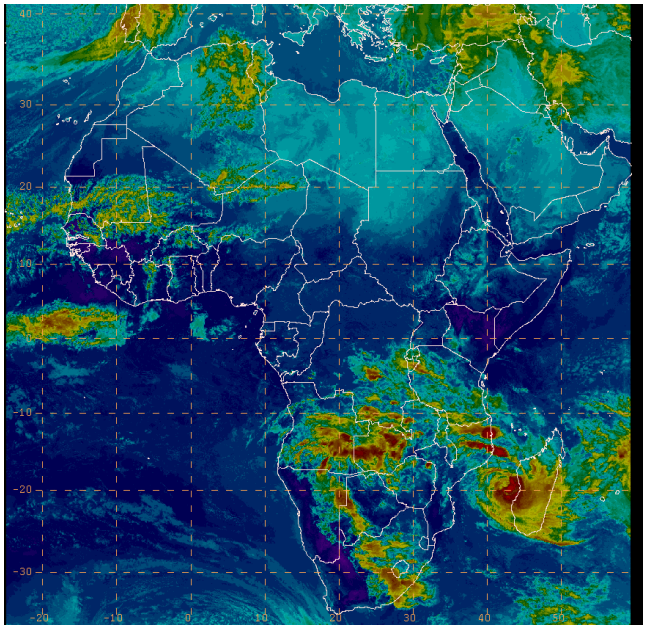
During the previous day, moderate to locally heavy rainfall was observed over portions of Angola, south and central Tanzania, Zambia, Malawi, eastern Botswana South Africa, Mozambique and much of Madagascar.

2.2. Weather assessment for the current day (January 15, 2015)

Intense convective deep clouds are observed across Angola, northern Namibia, south and central Tanzania, northern Zimbabwe, Zambia, central Malawi, southern DRC northern Mozambique, north east Namibia and much of Madagascar.



IR Satellite Image (valid 1800Z of January 15, 2015)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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