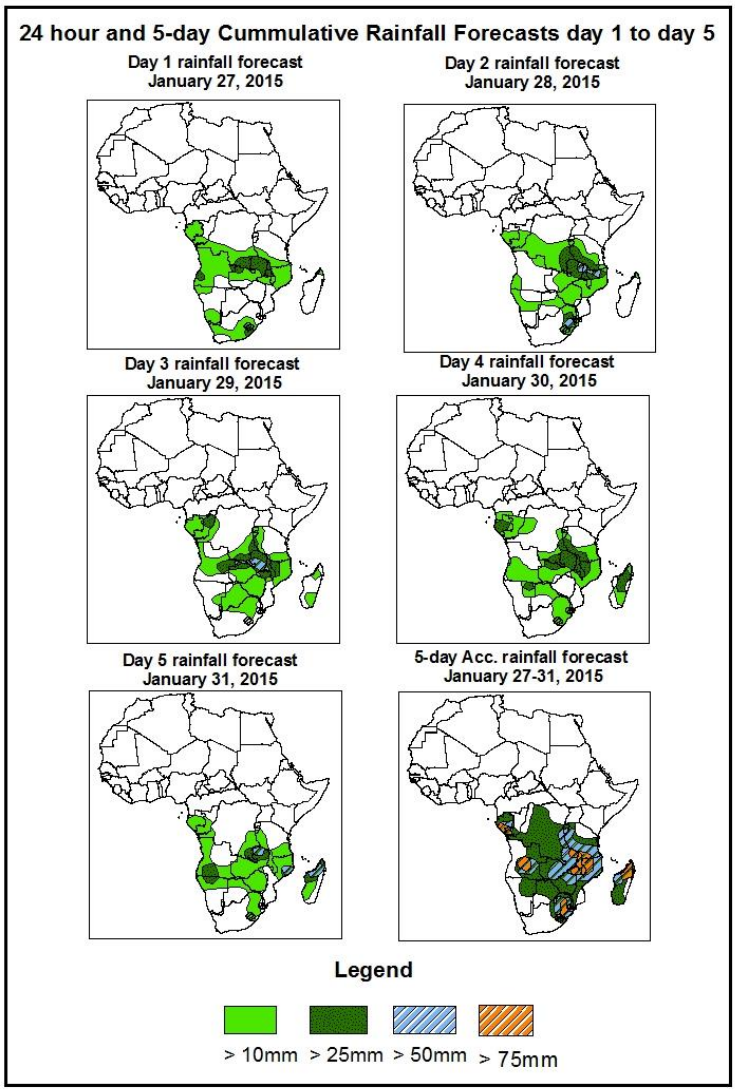
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of January 27 – 06Z of January 31, 2015. (Issued at 1830Z of January 26, 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.



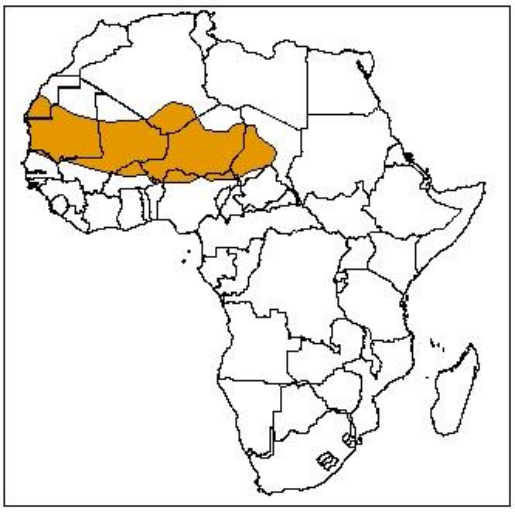
Summary

In the next five days, lower-level wind convergence in the region between Angola and Mozambique, are expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over some parts of Zambia, Central African Republic, Uganda, Tanzania, Malawi, Angola and eastern Namibia, Equatorial Guinea, some parts of Gabon, Mozambique, DRC and Madagascar.

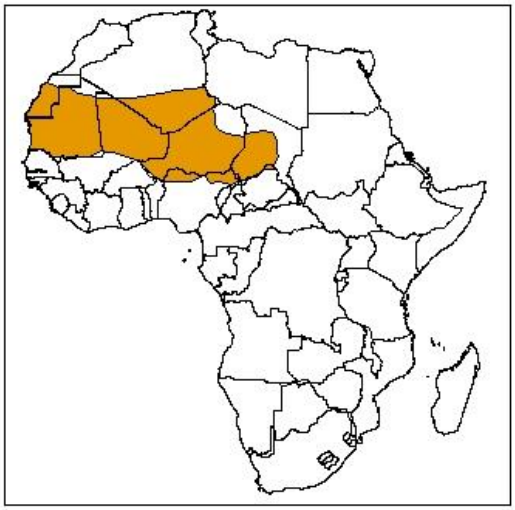
Atmospheric Dust Forecasts, day 1 to day 3,

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

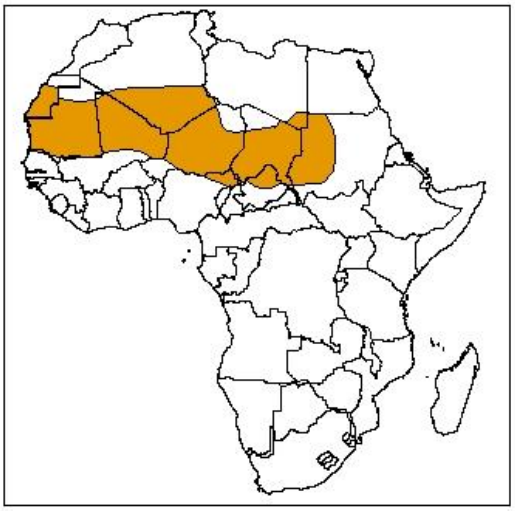
Day 1 Dust forecast
January 27, 2015



Day 2 Dust forecast
January 28, 2015



Day 3 Dust forecast
January 29, 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 Western Sahara, Algeria, Mali, Niger, Chad, Senegal, Sudan, Nigeria, Burkina Faso and Mauritania.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of January 26, 2015

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from a central pressure value of 1040hpa to a central pressure value of 1029hpa during the forecast period, according to the GFS model.

The Arabian High Pressure system is expected to weaken from a central pressure value of 1023hpa to 1020hpa in 48 hours, according to the GFS model.

The central pressure value of the Mascarene high pressure system over the southwestern Indian Ocean is expected to strengthen from 1024hpa to 10230hpa at the end of the forecast period, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from a central pressure value of 1023hpa in 24 hours to 1022hpa in 120 hours, 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, northeasterly winds are expected to prevail across Central and East African countries during the forecast period. Wind convergences are expected to remain active in Zambia, Tanzania, Malawi, Angola, eastern Namibia, Uganda, Zimbabwe, Equatorial Guinea Mozambique, DRC and Madagascar, during the forecast period. Zonally oriented wind convergence is expected to prevail in the region.

At 700hpa level, a zonal trough is expected between Angola and Mozambique, 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. Convergence over the Greater Horn of Africa

countries, zonal divergence between Angola and Mozambique will prevail in these regions respectively, during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence in the region between Angola and Mozambique, are expected to enhance rainfall in these regions. There is an increased chance for heavy rainfall over some parts of Zambia, Central African Republic, Uganda, Tanzania, Malawi, Angola and eastern Namibia, Equatorial Guinea, some parts of Gabon, Mozambique, DRC and Madagascar

2.0. Previous and Current Day Weather Discussion over Africa

(January 25, 2015 – January 26, 2015)

2.1. Weather assessment for the previous day (January 25, 2015)

Intense convective deep clouds were observed across some parts of Angola, Tanzania, Zambia, northern Malawi, DRC, northern Mozambique, Gabon, Mozambique and northern Madagascar.

2.2. Weather assessment for the current day (January 26, 2015)

Intense convective deep clouds are over across some parts of Angola, Tanzania, Zambia, Malawi, Congo Brazzaville Uganda, DRC, northern Mozambique, Gabon and northern Madagascar

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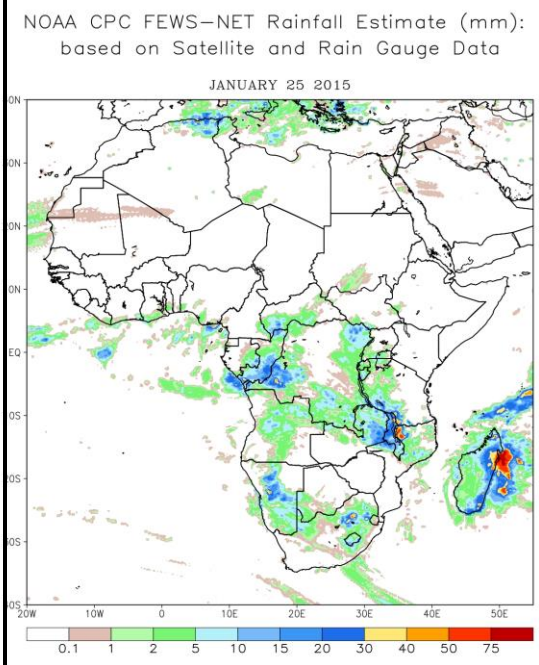
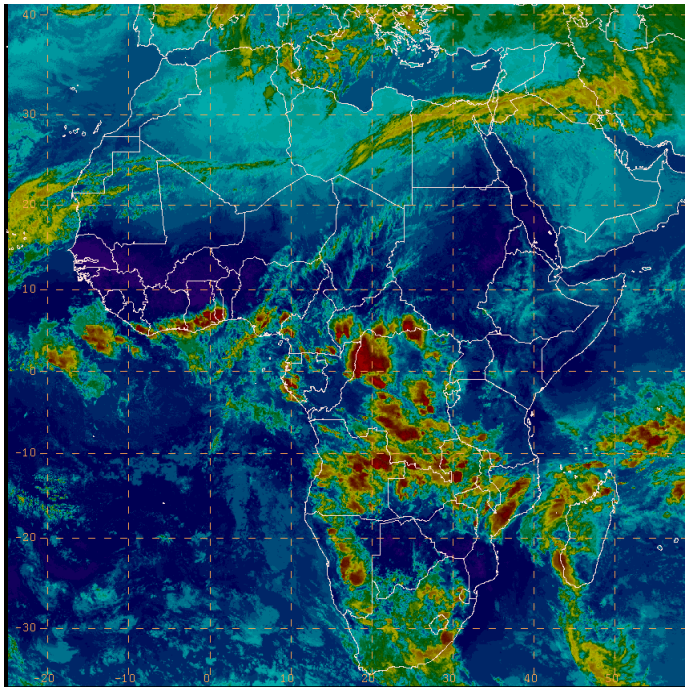


IR Satellite Image (valid 1830Z of January 26, 2015)



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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