

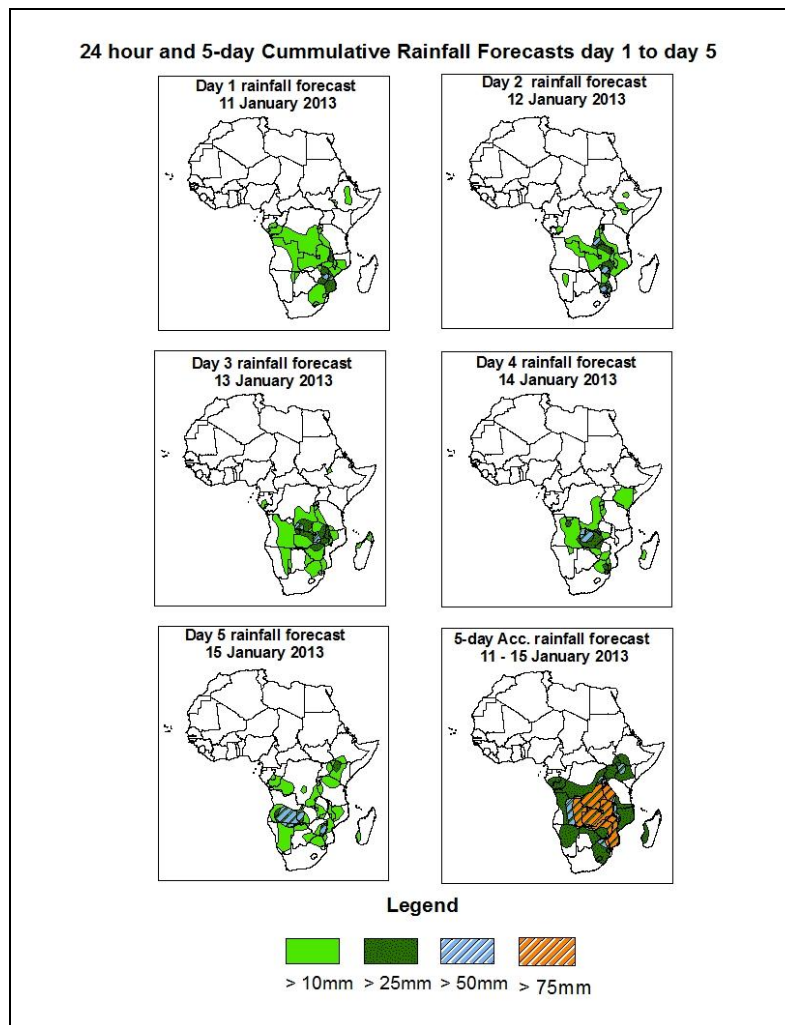


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 11 January – 06Z of 15 January 2013. (Issued at 17:00Z of 10 January 2013)

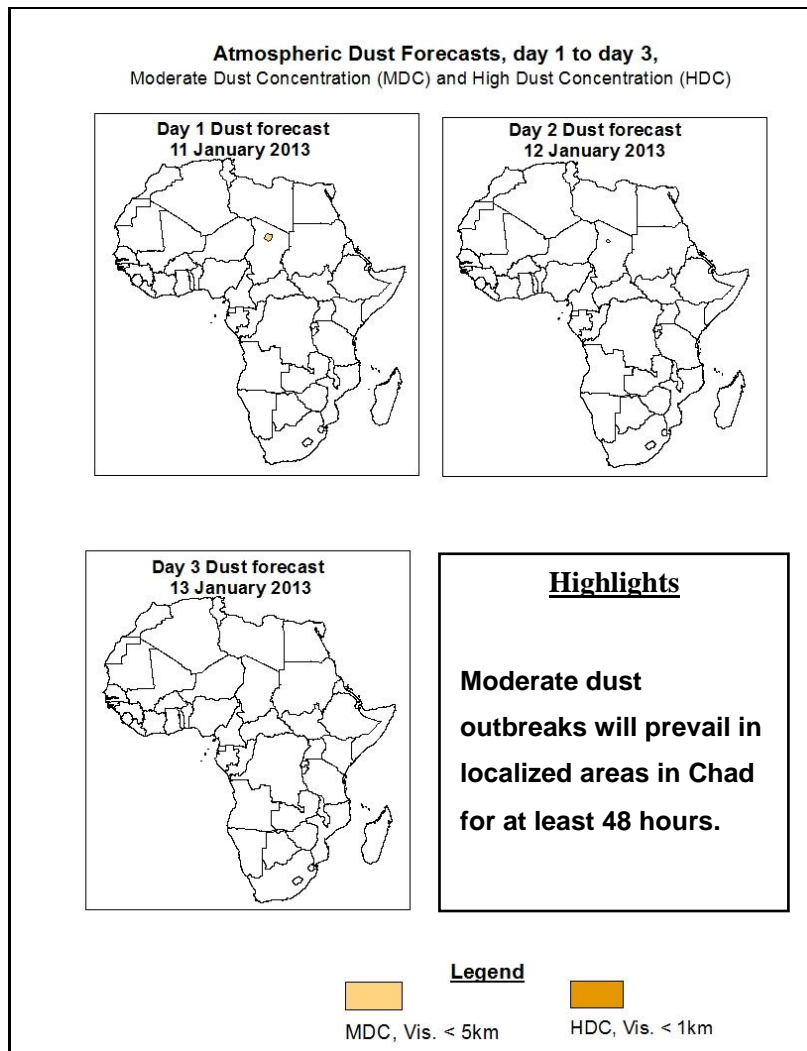
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, a north-south oriented convergence line in the region between Tanzania and southern region of Mozambique; localized wind convergences over southern region of Angola, a tropical low over Namibia and a coastal low over eastern region of South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas over parts of Angola, Zambia, Malawi, central and southern regions of Mozambique, and western region of Tanzania.



1.2. Model Discussion: Valid from 00Z of 10 January 2013

Model comparison (Valid from 00Z; 10 January 2013) shows all the three models are in general agreement in terms of depicting eastward movement of the Mascarene and St Helena high pressure systems during the forecast period. However, the models show slight differences in terms of central pressure values.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken slightly throughout forecast period, with its central pressure value decreasing from about 1030hpa to 1022hpa, according to the GFS model, from about 1029hpa to 1024hpa according to the ECMWF model, and from about 1030hpa to 1023hpa, according to the UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to maintain its central pressure value through 24 to 48 hours while shifting eastwards.

During this period, the central pressure value will be about 1028hpa according to the GFS and the UKMET models, and about 1027hpa according to the ECMWF model. A new Mascarene high pressure system is expected to form over Southwest Indian Ocean, after cutting itself from the St. Helena High pressure system through 48 to 72 hours. The central pressure value of the newly formed high is expected to increase progressively from about 1024hpa to 1028hpa according to the GFS, and from about 1024hpa to 1025hpa, according to the ECMWF model. According to the UKMET model the pressure of newly formed Mascarene will stabilize its central pressure of 1023hpa through, 72 to 120 hours.

The seasonal lows across Equatorial and Central Africa countries are expected to reveal less activity throughout the forecast period. The pressure of the previously mentioned lows will swing between 1008hpa to 1009hpa in total accordance with the three models (GFS, ECMWF and UKMET). A tropical low over parts of Namibia and a coastal low system over eastern region of South Africa are expected to dominate local circulations over their respective regions.

At the 850hpa level, the seasonal lower level wind convergence near the Congo Air Boundary (CAB) region is expected to prevail with moderate to poor convergence conditions throughout the forecast period. In contrast to the previously mentioned region, a north-south oriented convergence line in the region between the northwestern region of Tanzania and southern region of Mozambique is expected to dominate the weather conditions over parts of Tanzania, Malawi, and Zambia, and central region of Mozambique through 24 to 96 hours. Localized wind convergences are also expected to dominate the flow over western region of Angola through 72 to 120 hours.

At 500hpa, a trough in the mid-latitude westerly is expected to dominate the flow over northern countries of Africa and Mediterranean Sea throughout the forecast period. A cut-off low is expected to form over central region of South Africa through 24 to 48 hours.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to re-strengthen during the two last days of the forecast period; the core wind speed occasionally will exceed 110kts over Libya and Egypt through 24 to 48 hours.

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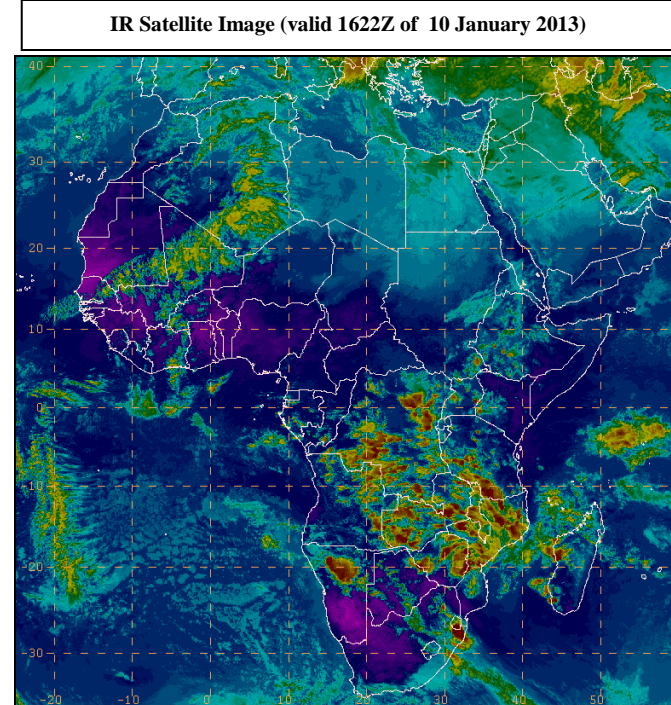
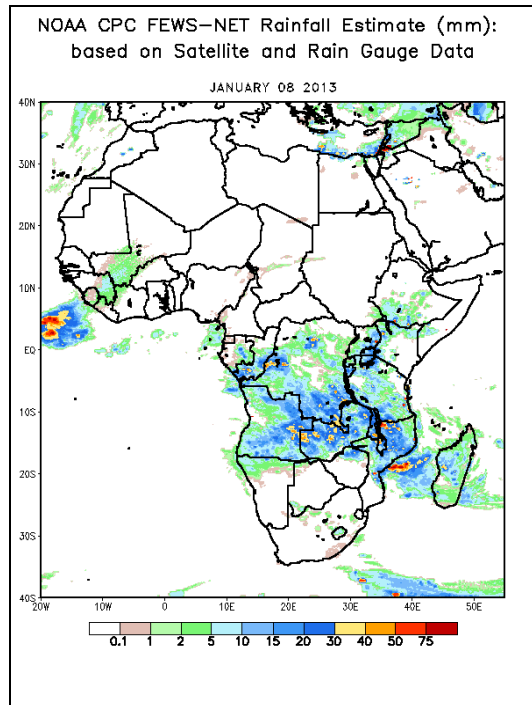
2.0. Previous and Current Day Weather Discussion over Africa (09 January 2013 – 10 January 2013)

2.1. Weather assessment for the previous day (09 January 2013)

During the previous day, moderate to locally heavy rainfall was observed over central and northern regions of Mozambique, parts of Zambia, Congo, DRC, Malawi and Angola.

2.2. Weather assessment for the current day (10 January 2013)

Intense clouds are observed over Mozambique, Zambia, Zimbabwe, Namibia and DRC.



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