

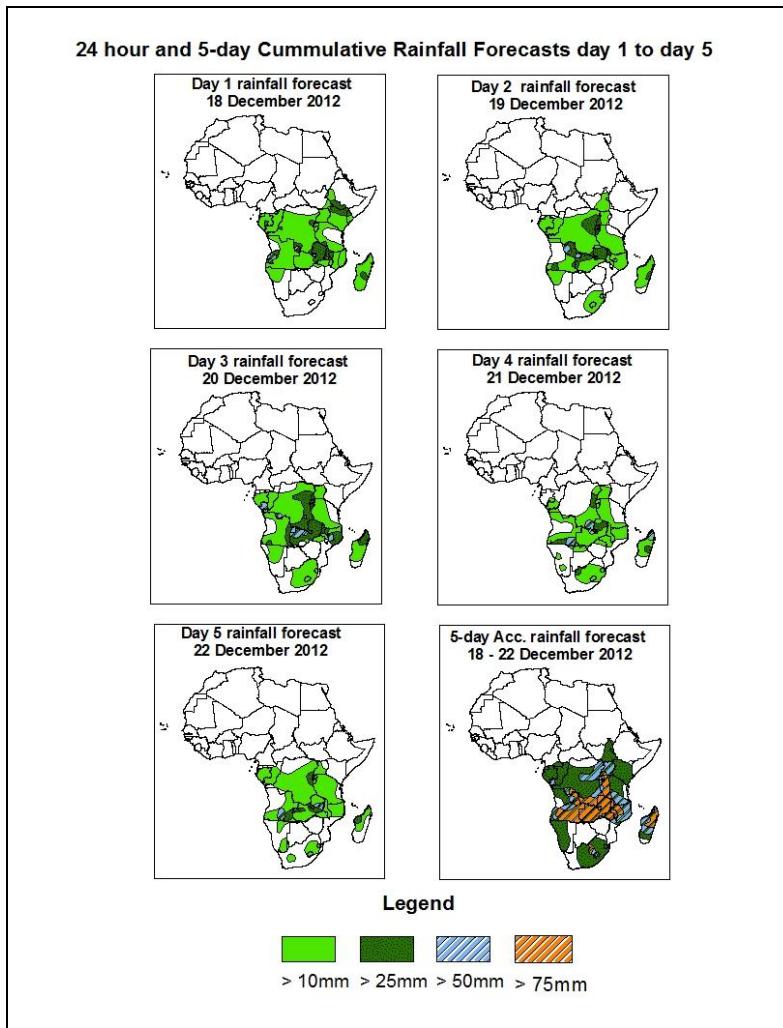


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 18 December – 06Z of 22 December 2012. (Issued at 17:00Z of 17 December 2012)

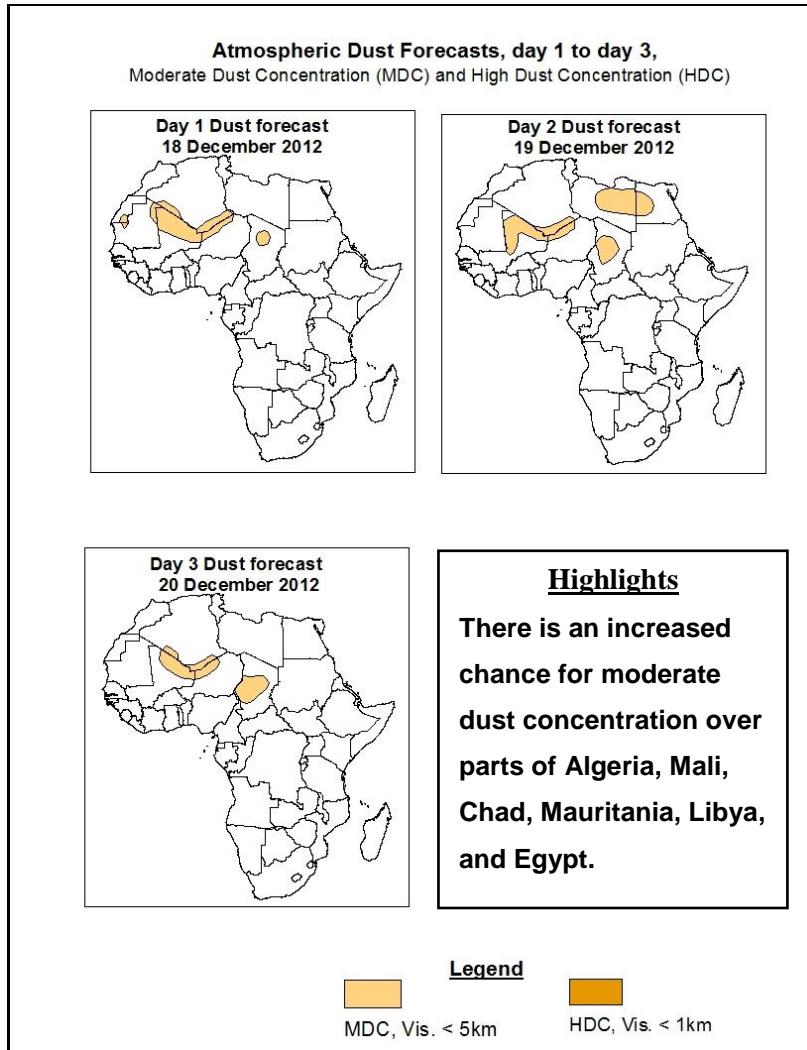
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, localized wind convergences across Gabon, Congo and RDC, lower-level wind convergences over parts of Southern Africa countries, a mid-latitude trough over South Africa, low pressure system over Mozambique Channel are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over local areas in Gabon, Congo, DRC, Madagascar, Zambia, Zimbabwe, Kenya, Malawi, central region of Angola, western region of Tanzania, southeastern region of South Africa and northern region of Mozambique.



1.2. Model Discussion: Valid from 00Z of 17 December 2012

Model comparison (Valid from 00Z; 17 December 2012) 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 through 24 to 72 hours, with its central pressure value decreasing from about 1021hpa to 1016hpa according to the GFS and the UKMET models, and from 1020hpa to 1016hpa according to the ECMWF model.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to weaken, while shifting eastwards with its central pressure value decreasing through

24 to 72 hours, from 1019hpa to 1016hpa, according to the GFS model, from 1019hpa to 1015hpa, according to the ECMWF model and from about 1020hpa to 1012hpa according to the UKMET 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 24 to 48 hours. The central pressure value of the newly formed high is expected to deepen slightly, with its central pressure decreasing from about 1019hpa to 1016hpa according to the GFS model, from about 1019hpa to 1018hpa according to the ECMWF model, and from 1020hpa to 1016hpa according to the UKMET model.

The seasonal lows across equatorial and Central Africa countries are expected to deepen slightly towards end of the forecast period, with its central pressure decreasing from 1008hpa to 1007hpa, in agreement with all the three models (GFS, ECMWF and UKMET). A low pressure system across Mozambique Channel is expected to deepen gradually, with its central pressure value decreasing from about 1005hpa to 1003hpa, according to the GFS model, from about 1007hpa to 1004hpa, according to the ECMWF model, and from about 1005hpa to 1002hpa according to the UKMET model.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to remain active through 24 to 72 hours. Lower level wind convergences are expected to remain active across Angola, Kenya, Zambia, Malawi, while localized wind convergences are also expected to dominate the flow over western parts of Tanzania and northern Mozambique. Localized wind convergences are expected to dominate the flow over eastern parts of South Africa.

At 500hpa, a trough in the mid-latitude westerly flow is expected to remain active over Northeast Africa during the forecast period. A cut of cyclonic circulation is expected to remain active through 24 to 96 hours over Central region of Southern Africa while a mid-latitude trough is expected to propagate over Southeast region of South Africa during the forecast period.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain moderate with the core wind speed occasionally exceeding 90kts during the forecast period over coastal North Africa and Mediterranean Sea.

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2.0. Previous and Current Day Weather Discussion over Africa

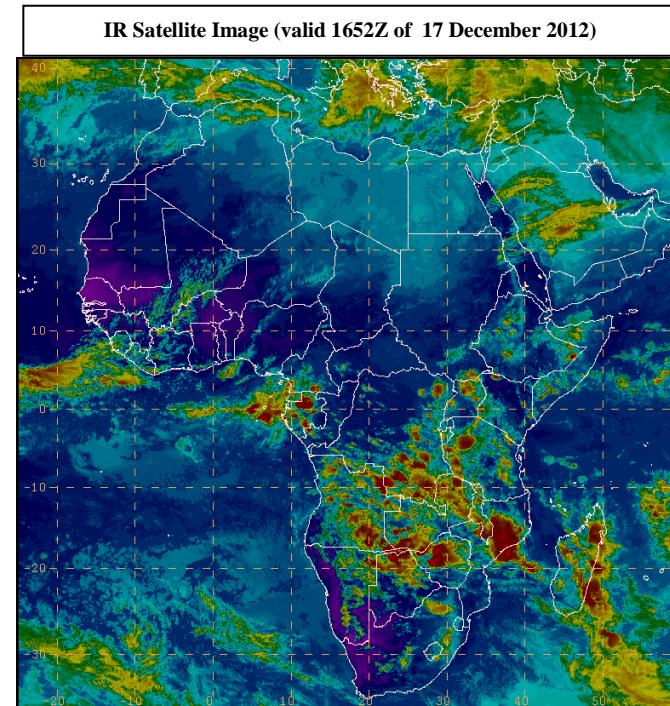
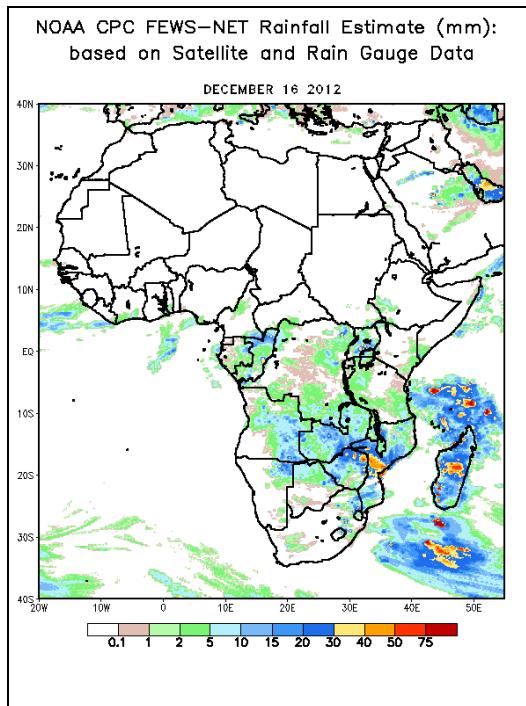
(16 December 2012 – 17 December 2012)

2.1. Weather assessment for the previous day (16 December 2012)

During the previous day, moderate to locally heavy rainfall was observed over Madagascar, central Mozambique, parts of DRC, Gabon, Zambia, Zimbabwe, Uganda and Congo.

2.2. Weather assessment for the current day (17 December 2012)

Intense clouds are observed over Gabon, Angola, Zambia, Zimbabwe and Madagascar, parts of DRC, Tanzania and northern region of Mozambique.



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