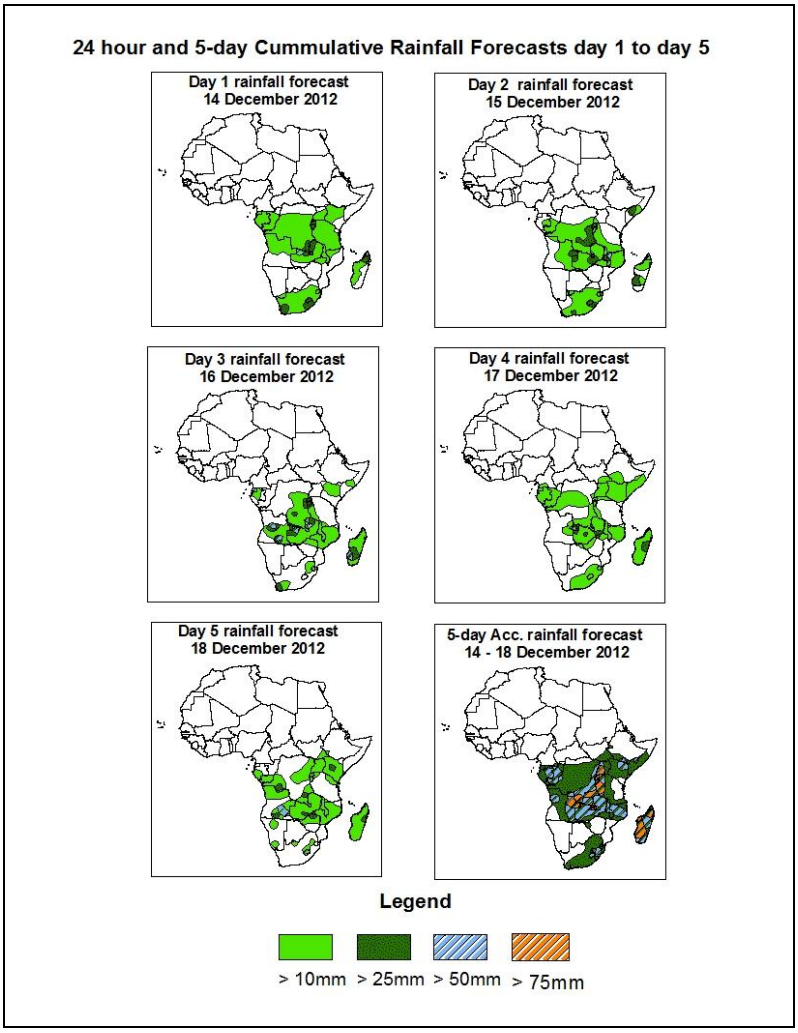
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 14 December – 06Z of 18 December 2012. (Issued at 17:10Z of 13 December 2012)

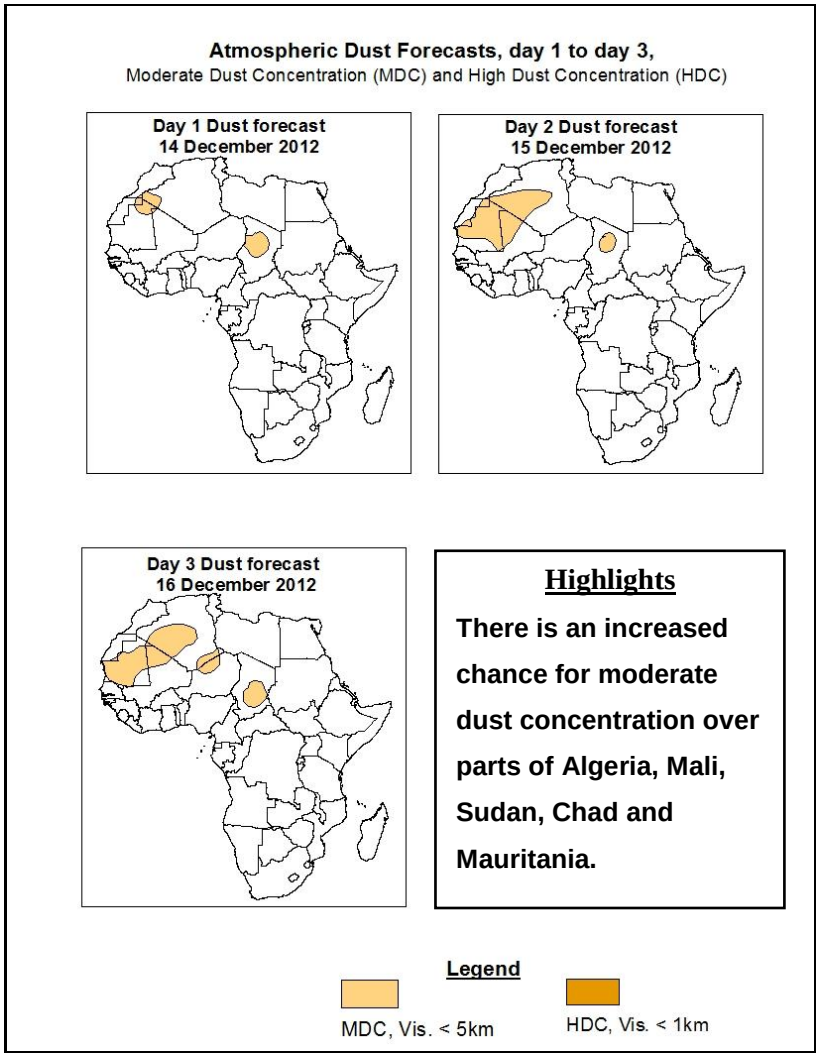
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 and Congo and southern RDC, lower-level wind convergences over parts of Southern Africa countries, and eastward propagating trough across South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over local areas in Gabon, Congo, parts of central Angola, Zambia, Zimbabwe, Malawi, parts of Tanzania and Kenya, southeastern region of South Africa, northern region of Mozambique and Madagascar.



1.2. Model Discussion: Valid from 00Z of 13 December 2012

Model comparison (Valid from 00Z; 13 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 48 hours, with its central pressure value decreasing from about 1021hpa to 1020hpa, according to the GFS and the ECMWF models and from 1022hpa to 1021hpa according to the UKMET model.

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

through 24 to 96 hours, from 1020hpa to 1019hpa, according to the GFS, from 1019hpa to 1018hpa according to ECMWF and from about 1020hpa to 1018hpa 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 72 to 96 hours. The central pressure value of the newly formed high is expected to strengthen slightly, with its central pressure increasing from about 1019hpa to 1020hpa according to the GFS model, from about 1018hpa to 1019hpa, according to the UKMET model, and is expected to deepen slightly from about 1019hpa to 1018hpa according to the ECMWF model.

The seasonal lows across equatorial and Central Africa countries are expected to deepen slightly through 48 to 120 hours, with its central pressure decreasing from 1008hpa to 1006hpa, according to the GFS and the UKMET models and from 1007hpa to 1006hpa according to the ECMWF model.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to remain weak through 24 to 72 hours, and expected to re-strengthen towards end of the forecast period. In contrast, lower level wind convergences are expected to remain active across Angola, Kenya, Botswana, Zambia, Zimbabwe, Malawi, while localized wind convergences are also expected to dominate the flow over southeastern parts of DRC, east Tanzania and northern Mozambique. An eastward propagating trough across South Africa is expected to remain active through 48 hours.

At 500hpa, a trough in the mid-latitude westerly flow is expected to remain active over Northeast Africa through 24 to 72 hours. A cut of cyclonic circulation is expected to remain active through 24 to 48 hours over Central region of South Africa while a mid-latitude trough is expected to propagate over Southeast region of South Africa towards end of the forecast period.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain strong with the core wind speed occasionally exceeding 150kts through 24 to 48 hours over coastal North Africa and Mediterranean Sea.

In the next five days, localized wind convergences across Gabon and Congo and southern RDC, lower-level wind convergences over parts of Southern Africa countries, and eastward propagating trough across South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over local areas in Gabon, Congo, parts of central Angola, Zambia, Zimbabwe, Malawi, parts of Tanzania and Kenya, southeastern region of South Africa, northern region of Mozambique and Madagascar.

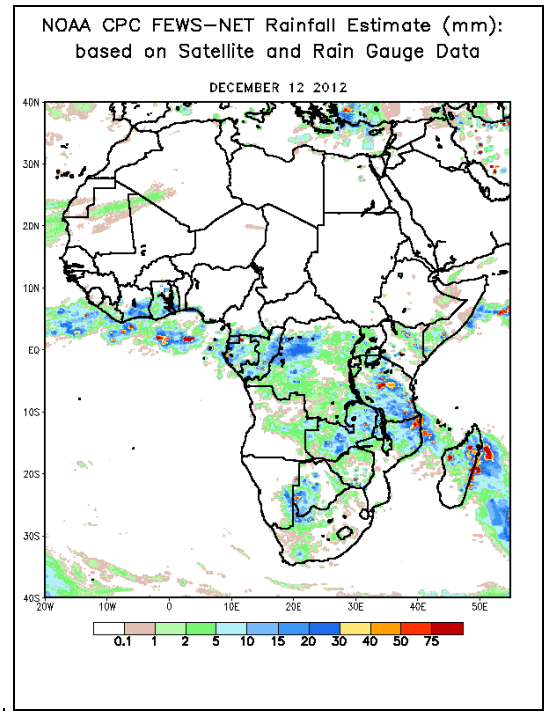
2.0. Previous and Current Day Weather Discussion over Africa (12 December 2012 – 13 December 2012)

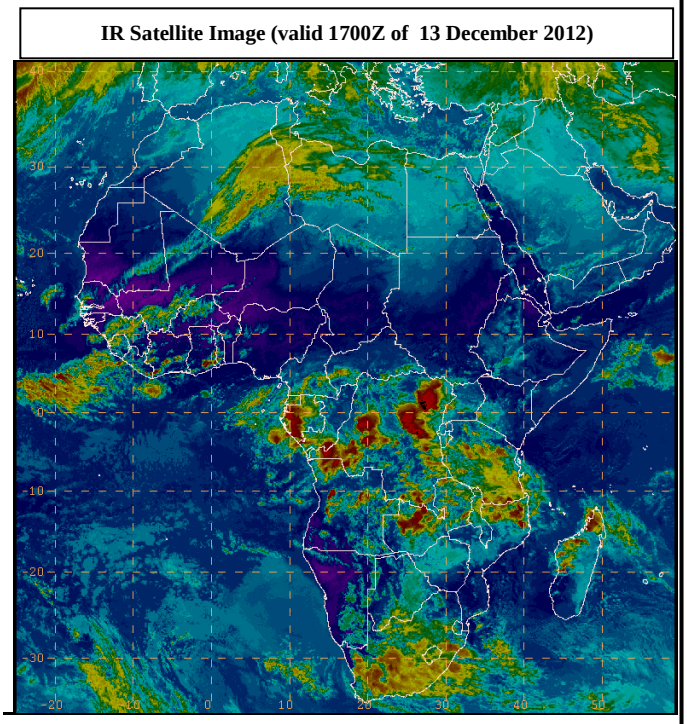
2.1. Weather assessment for the previous day (12 December 2012)

During the previous day, moderate to locally heavy rainfall was observed over Gabon, Congo, Zambia, parts of DRC, Tanzania, western parts of Botswana, eastern parts of Namibia, western parts of South Africa, northern parts of Mozambique, central and northern Madagascar.

2.2. Weather assessment for the current day (13 December 2012)

Intense clouds are observed over Congo, Gabon, DRC, Tanzania, Zambia, central and northern Angola, northern region of Mozambique, southern region of South Africa, north and east Madagascar.





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