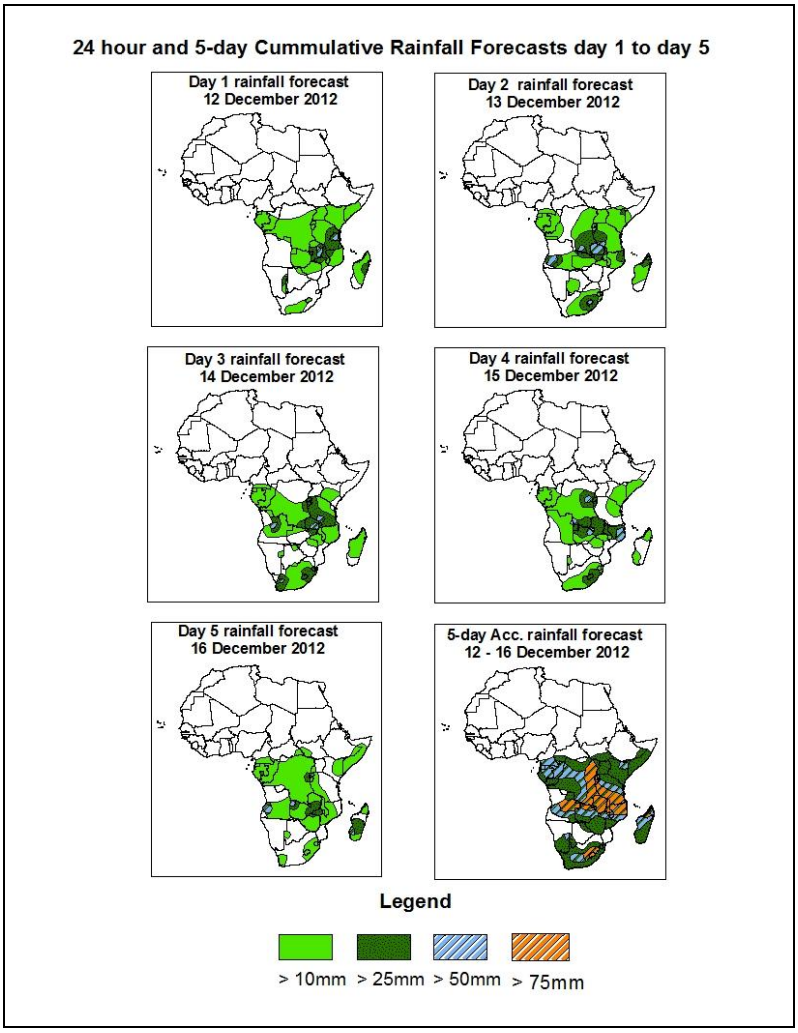
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 12 December – 06Z of 16 December 2012. (Issued at 17:00Z of 11 December 2012)

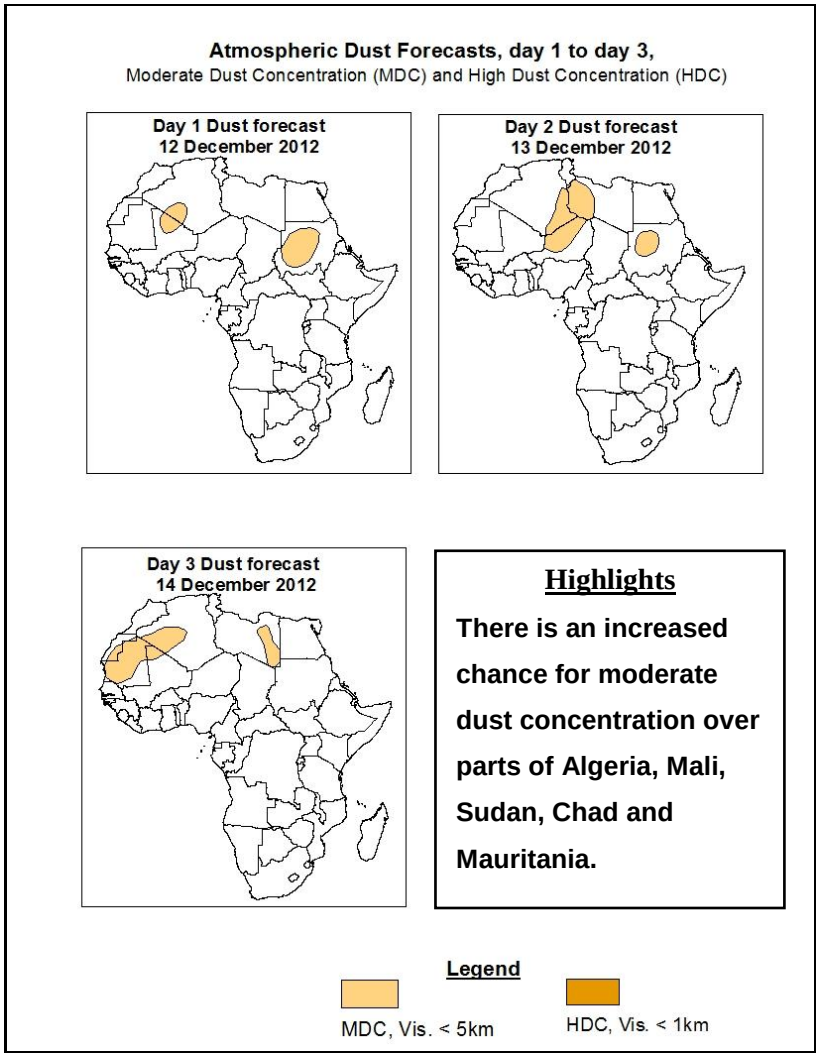
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 western Equatorial and East Africa, 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 and Congo, DRC, parts of Angola, Kenya, Rwanda, Uganda, Zambia, Zimbabwe, Malawi, parts of Tanzania and Kenya, Madagascar, eastern region of South Africa, and northern region of Mozambique.



1.2. Model Discussion: Valid from 00Z of 11 December 2012

Model comparison (Valid from 00Z; 11 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 48 to 120 hours, with its central pressure value decreasing from about 1025hpa to 1020hpa, according to the GFS, from about 1024hpa to 1017hpa according to the ECMWF model, and from 1026hpa to 1019hpa, 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 from

1021hpa to 1018hpa, according to the GFS, from 1021hpa to 1017hpa according to ECMWF and from about 1022hpa to 1016hpa 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 120 hours. The central pressure value of the newly formed high is expected to remain weak, with its central pressure decreasing from about 1021hpa to 1020hpa according to the GFS model, from about 1019hpa to 1017hpa, according to the ECMWF model, and from about 1021hpa to 1016hpa according to the UKMET model.

The seasonal lows across equatorial and Central Africa countries are expected to deepen slightly through 24 to 120 hours, with its central pressure decreasing from 1005hpa to 1007hpa, according to GFS model, from 1006hpa to 1008hpa according to ECMWF model and from 1005hpa to 1009hpa according to ECMWF model.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to remain active through 24 to 120 hours. Strong low level convergence is expected to prevail active over Gabon, DRC, Angola, Botswana, Zambia, Zimbabwe, Malawi while localized wind convergences are also expected to dominate the flow over southern, parts of Somalia, Tanzania and Mozambique. An eastward propagating trough across South Africa is expected to remain active through 96 hours while a southerly flow is expected to dominate the flow towards end of forecast period.

At 500hpa, a trough in the mid-latitude westerly flow is expected to remain active over Northeast Africa through 24 to 120 hours. A cut of cyclonic circulation is expected to remain active through 24 to 72 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 across all over North African countries, with the core wind speed occasionally exceeding 150kts through 24 to 96 hours, and tends to weaken towards end of the forecast period while moving to northeastern region.

In the next five days, localized wind convergences across western Equatorial and East Africa, 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 and Congo, DRC, parts of Angola, Kenya, Rwanda, Uganda, Zambia, Zimbabwe, Malawi, parts of Tanzania and Kenya, Madagascar, eastern region of South Africa, and northern region of Mozambique.

2.0. Previous and Current Day Weather Discussion over Africa

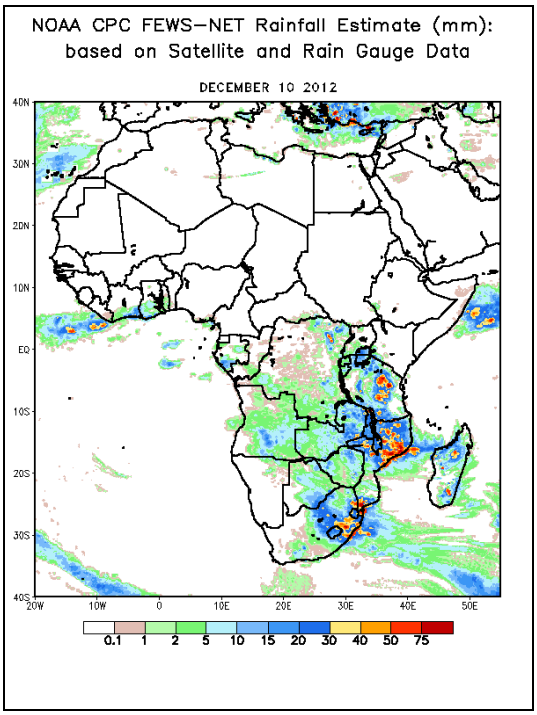
(10 December 2012 – 11 December 2012)

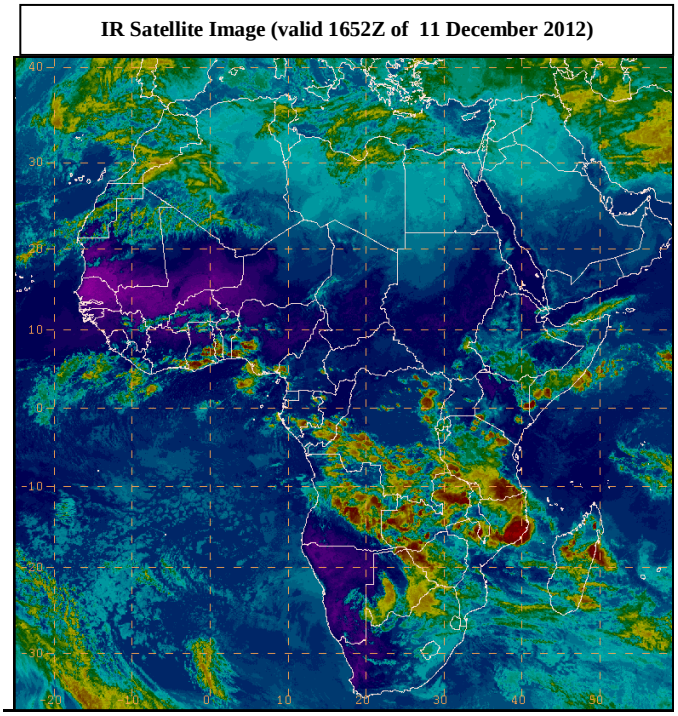
2.1. Weather assessment for the previous day (10 December 2012)

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

2.2. Weather assessment for the current day (11 December 2012)

Intense clouds are observed over Angola, northern region of Mozambique, Zimbabwe, Tanzania, Zambia and local areas of East Africa and 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

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