

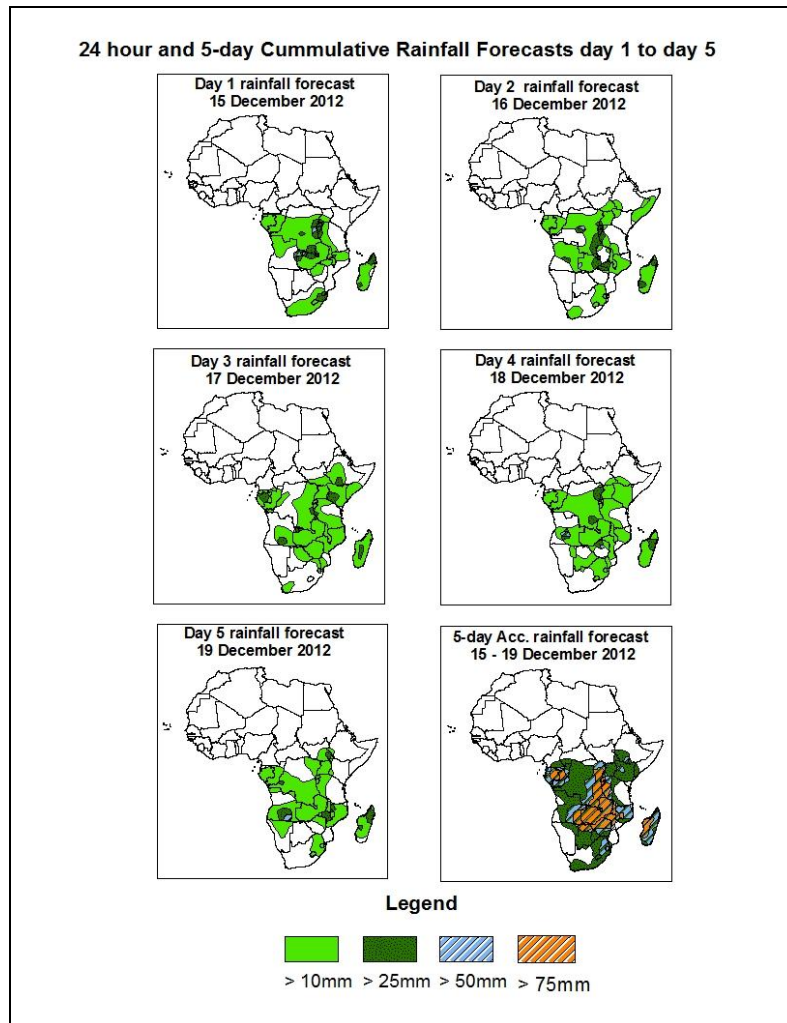


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 15 December – 06Z of 19 December 2012. (Issued at 17:00Z of 14 December 2012)

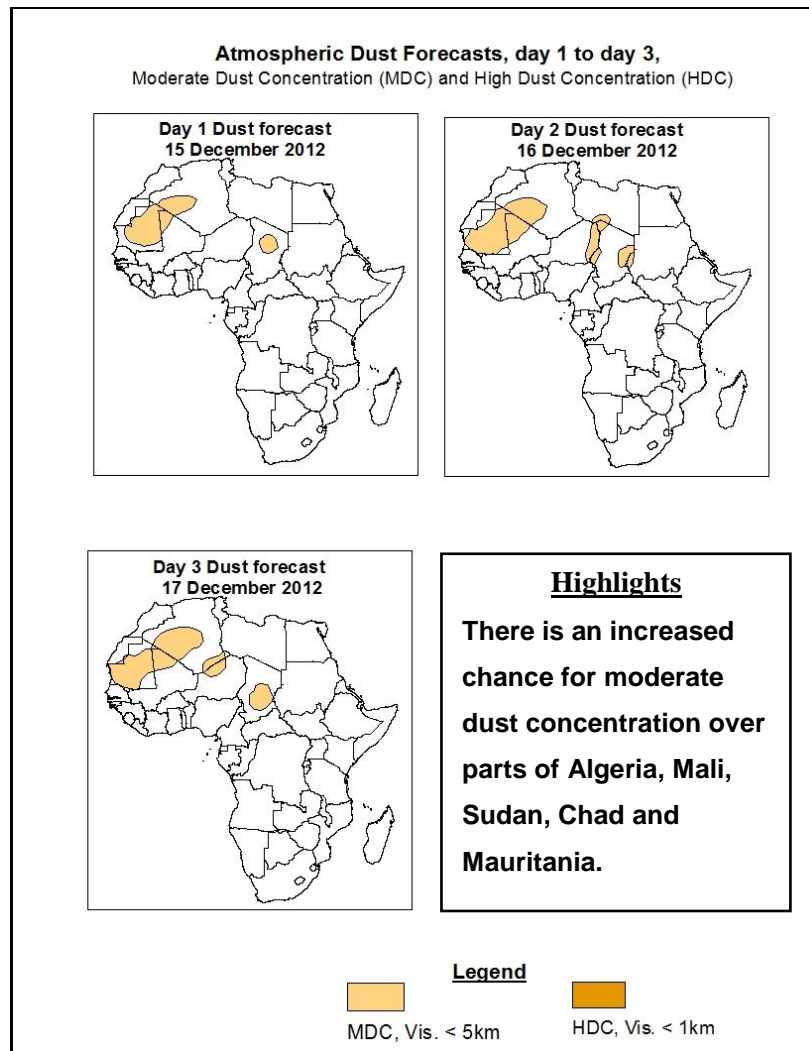
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 and east RDC, lower-level wind convergences over parts of Southern Africa countries, a mid-latitude trough is expected to propagate over 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, DRC, parts of southeastern Angola, Zambia, Zimbabwe, Malawi, parts of western Tanzania and Kenya, southeastern region of South Africa, northern region of Mozambique and Madaagascar.



1.2. Model Discussion: Valid from 00Z of 14 December 2012

Model comparison (Valid from 00Z; 14 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 72 to 120 hours, with its central pressure value decreasing from about 1022hpa to 1016hpa according to the GFS and from 1021hpa to 1019hpa according to the ECMWF and the UKMET models.

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

through 28 to 120 hours, from 1019hpa to 1016hpa, according to the GFS model, from 1019hpa to 1017hpa, according to the ECMWF model and from about 1019hpa 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 48 to 72 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 1018hpa to 1017hpa, according to the ECMWF model, and from 1019hpa to 1016hpa according to the UKMET model.

The seasonal lows across equatorial and Central Africa countries are expected to deepen slightly through 48 to 96 hours, with its central pressure decreasing from 1006hpa to 1005hpa, according to the GFS, from 1008hpa to 1007hpa according to the ECMWF and the UKMET models.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to remain weak during 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, and northern Mozambique. An eastward propagating trough across South Africa is expected to remain active through 96 hours.

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 strong with the core wind speed occasionally exceeding 130kts 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 and east RDC, lower-level wind convergences over parts of Southern Africa

countries, a mid-latitude trough is expected to propagate over 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, DRC, parts of southeastern Angola, Zambia, Zimbabwe, Malawi, parts of western Tanzania and Kenya, southeastern region of South Africa, northern region of Mozambique and Madagascar.

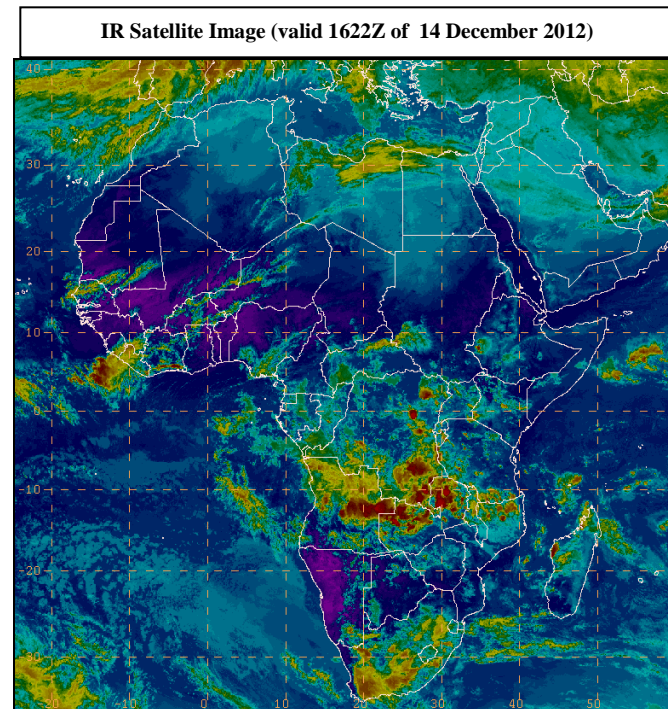
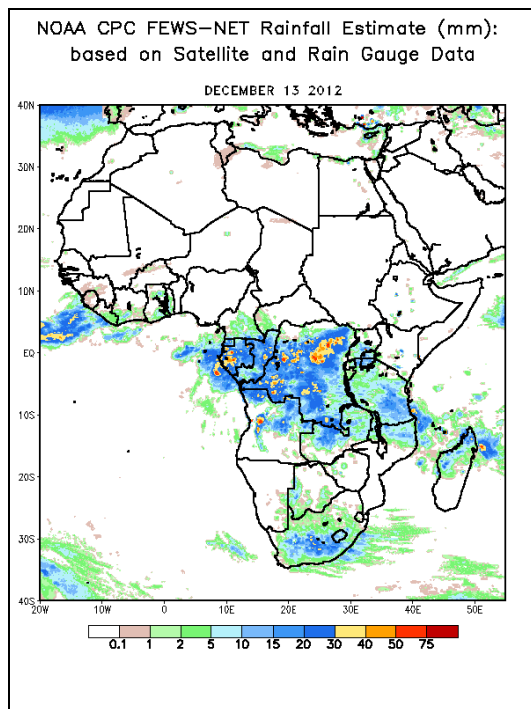
2.0. Previous and Current Day Weather Discussion over Africa (13 December 2012 – 14 December 2012)

2.1. Weather assessment for the previous day (13 December 2012)

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

2.2. Weather assessment for the current day (14 December 2012)

Intense clouds are observed over Angola, Zambia, South Africa, parts of DRC and Congo, northern region of Mozambique and northern region of 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