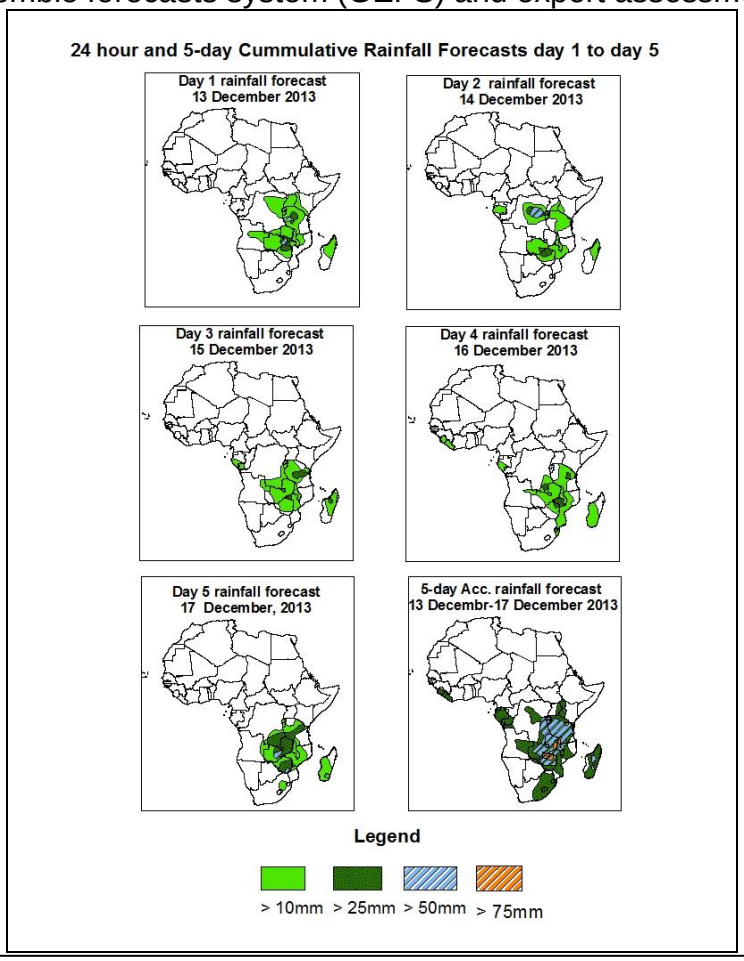
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 13 December – 06Z of 17 December, 2013. (Issued at 1800Z of 12 December 2013)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

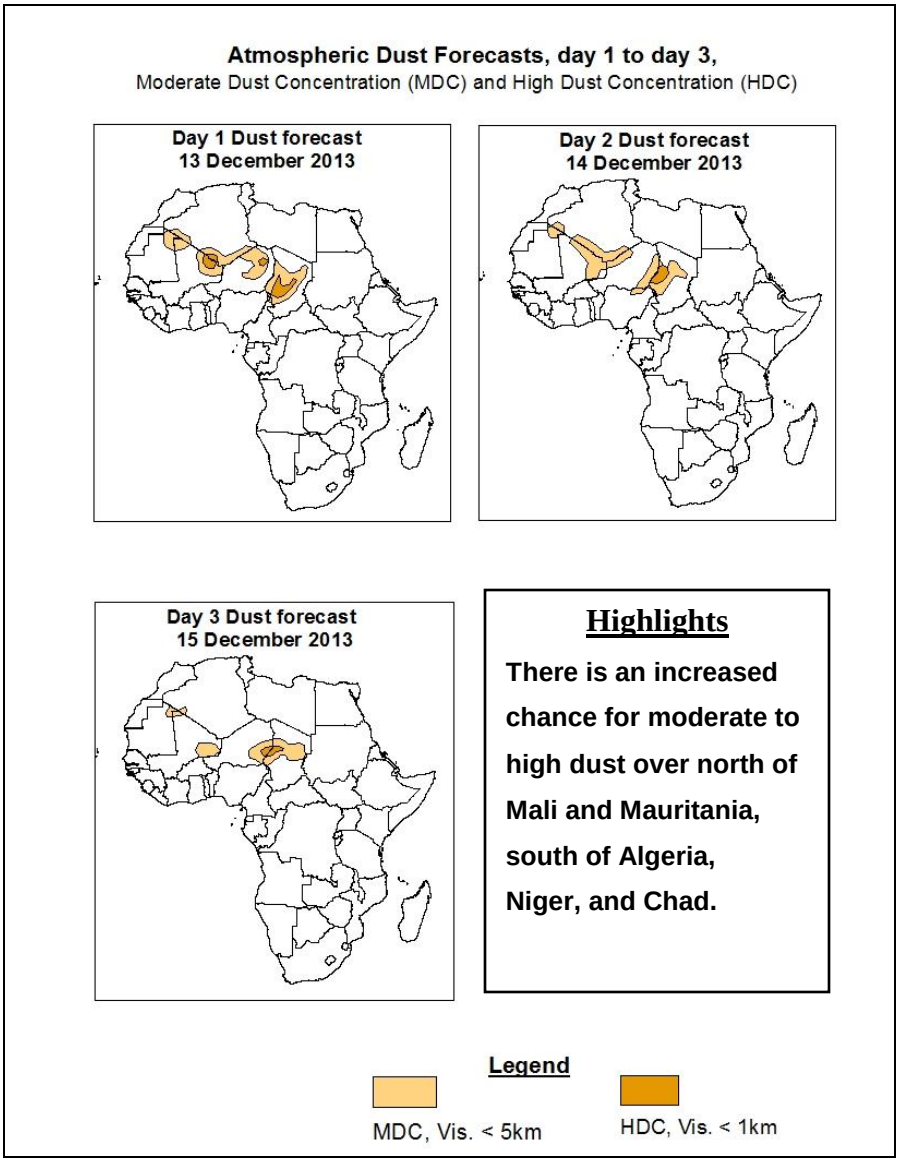
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, the low level-wind convergence over the some parts of the Lake Victoria region, DRC, Eastern Angola, Zimbabwe, Malawi, Zambia, Mozambique Channel, South Africa and Madagascar as well as areas of Congo Brazzaville, Gabon and Cameroon is expected to result into moderate rainfall in these regions. The weakening of the ridge over the Mozambique Channel is likely to shift the meridional arm of the ITCZ eastwards increasing chances of rain in western Kenya.

1.2. Atmospheric Dust Forecasts: Valid 13 December- 15 December 2013



1.2. Model Discussion: Valid from 00Z of 12 December 2013

Model comparison (Valid from 00Z: 12 December 2013) shows all the two models are in general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to weaken gradually during the forecast period. Its central pressure value is expected to decrease from 1023 hpa to 1021hpa in the first 72 hours and then rise to 1026 Hpa according to GFS model. The system is expected to maintain at 1023hpa in the first 72 hours and rise to 1029 hpa according to the UKMET model. However the control of the system will be far west leading to minimal control of the weather over the continent

According to both the GFS model and the UKMET model, the Mascarene high pressure system over southwestern Indian Ocean is expected to weaken during the forecast period and also propagate eastward. Its central pressure value is expected to decrease from 1027 hpa to 1019 according to both models. By the end of the forecast period the system is expected to have minimal impact on weather over the continent.

During the forecast period, seasonal wind convergence is expected to dominate over the Lake Victoria region (Parts of western Kenya , Burundi, Rwanda Tanzania and Uganda), DRC, East Angola, Zimbabwe, Malawi, Zambia, Mozambique Channel, South Africa and Madagascar. The Interaction is expected to result to generally moderate rainfall in most of these areas. Areas of Congo Brazzaville, Gabon and Cameroon in West Africa are also expected to receive some rainfall during the forecast period.

At 500hpa level, a trough associated with mid-latitude frontal system extending over Libya and Egypt remains deep throughout the forecast period. This will probably have Some chances of rains over the Egypt, Libya and North west Africa.

At 200hpa level, the sub-tropical Westerly Jet (with >70kts wind speed), extending between Mauritania and Egypt, across Western Sahara, north Mali, North Senegal North Niger, north Chad, Algeria, Tunisia Libya and Northern Sudan and tends to

persist during the forecast period. In the south, the sub-tropical westerly Jet (with 70 to 90kts wind speed) is expected to be mainly over south Africa, Southern parts of Mozambique and the western Indian ocean during the forecast period.

Therefore, in the next five days, the low level-wind convergence over the Lake Victoria, DRC, East Angola, Zimbabwe, Malawi, Zambia, Mozambique Channel, South Africa and Madagascar as well as areas of Congo Brazzaville, Gabon and Cameroon, is expected to result into moderate rainfall in these regions. The weakening of the ridge over the Mozambique Channel is likely to shift the meridianal arm of the ITCZ to the eastwards increasing chances of rain in western Kenya.

2.0. Previous and Current Day Weather Discussion over Africa

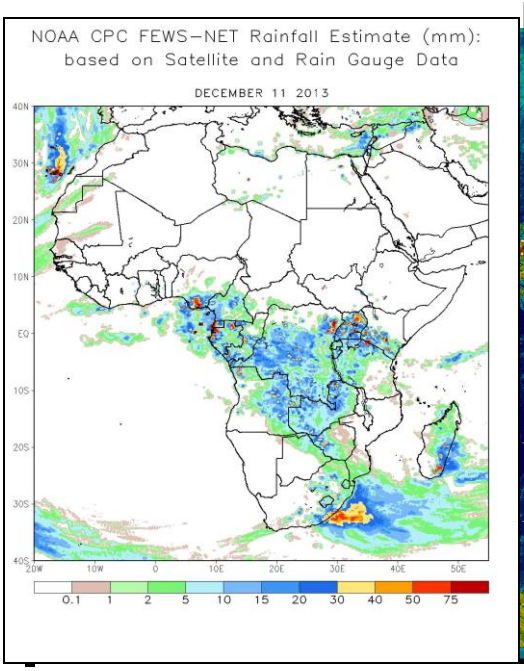
(11 December 2013 – 12 December 2013)

2.1. Weather assessment for the previous day (11 December 2013)

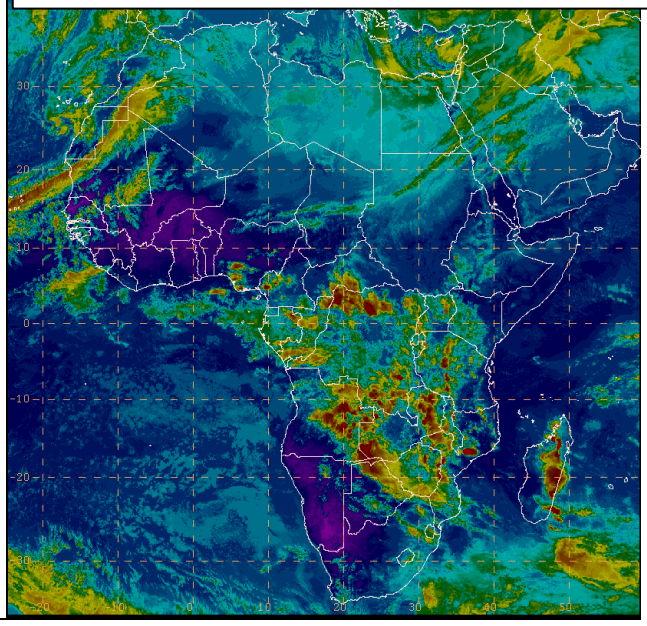
During the previous day, moderate to locally heavy rainfall was observed over some of South Nigeria, Cameroon, Gabon, Congo Brazzaville, DRC, Tanzania, Kenya, Angola, some parts South Africa, and Madagascar.

2.2. Weather assessment for the current day (12 December 2013)

Intense clouds were observed in southern Nigeria, Cameroon, Gabon, Congo Brazzaville, Tanzania, Zimbabwe, DRC, and Eastern Angola, Central Africa republic Eastern Botswana, Zambia, Swaziland, South Africa and Madagascar.



IR Satellite Image (valid 1652 Z of 12 December 2013)



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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