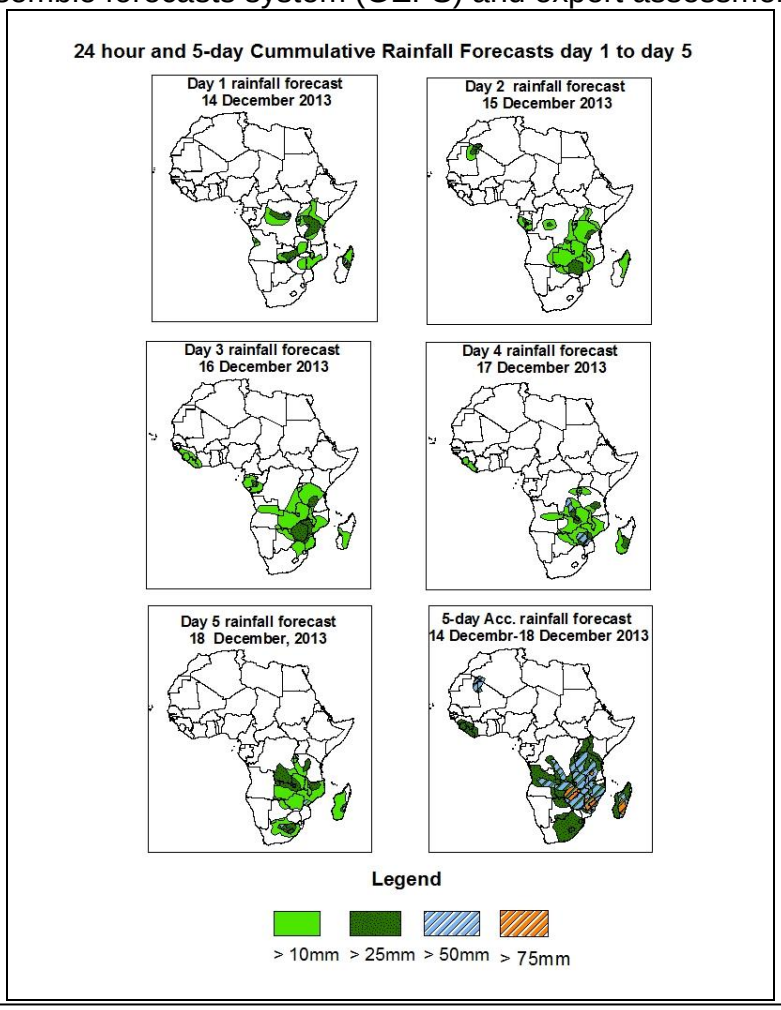
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 14 December – 06Z of 18 December, 2013. (Issued at 1800Z of 13 December 2013)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

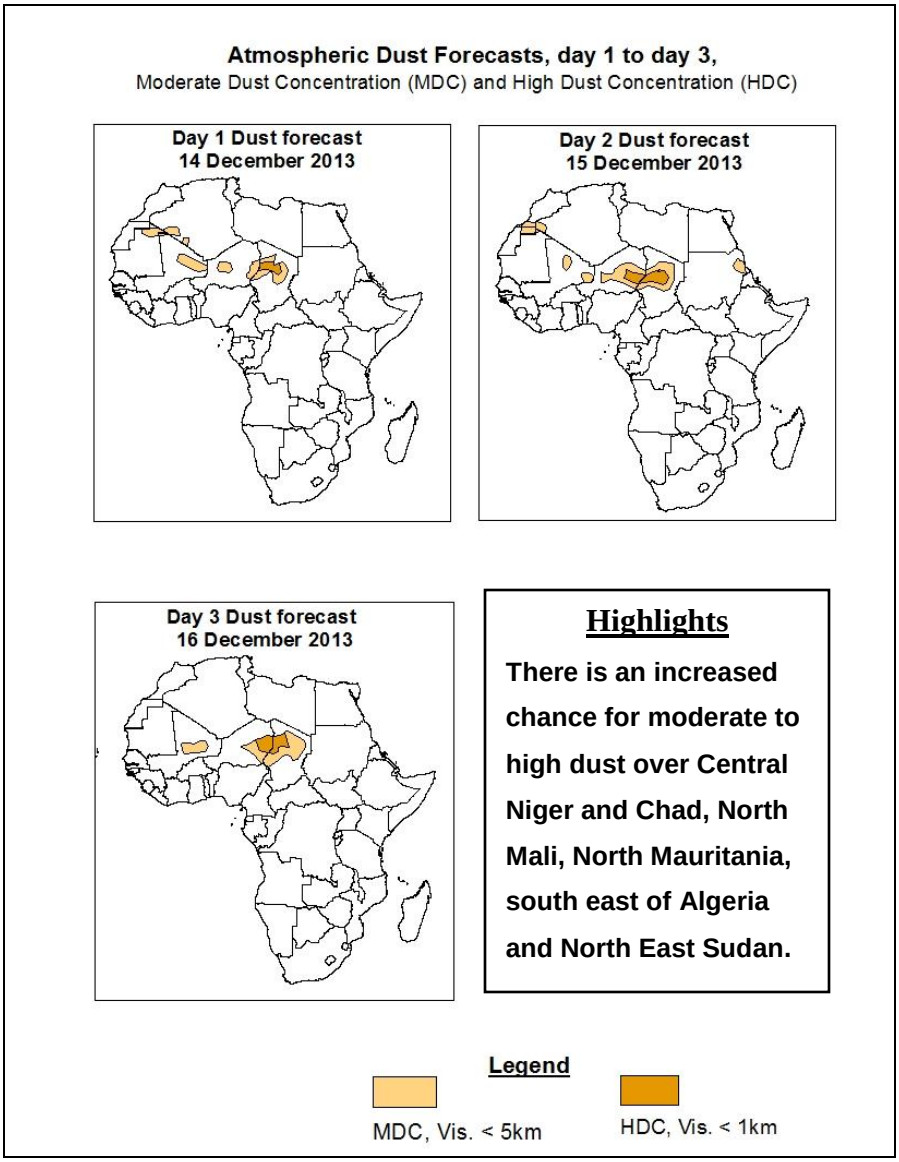
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

Therefore, in the next five days, the low level-wind convergence over western Kenya , Burundi, Rwanda, Tanzania ,Uganda, DRC, East Angola, Botswana, Zimbabwe, Malawi, Zambia, Mozambique Channel, South Africa and Madagascar., is expected to result into moderate rainfall in these regions. The heavy rains will be in Zambia, Zimbabwe DRC and Tanzania. The weak 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 during the first half of the forecast period. This shift is expected to cease in the second half of the forecast as the Mascarene anticyclone builds up.

1.2. Atmospheric Dust Forecasts: Valid 15 December- 17 December 2013



1.2. Model Discussion: Valid from 00Z of 13 December 2013

Model comparison (Valid from 00Z: 13 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 intensify from 1023 hpa to 1028hpa in the first 72 hours and then weaken to 1023 Hpa according to both the GFS model and the UKMET model. In the initial forecast period its control of the weather over the continent is minimal as its central control is far west. However in the second half of the forecast period, the system is expected to push the rain north away from South Africa and Namibia towards Botswana and Zambia.

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 1020 hpa to 1018 according to both models. However the system is expected to develop in the last part of the forecast period pushing the rains to the north.

During the forecast period, seasonal wind convergence is expected still to dominate over the Lake Victoria region (Parts of western Kenya , Burundi, Rwanda Tanzania and Uganda), DRC, East Angola, Botswana, 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 and Gabon in West Africa are also expected to receive some rainfall during the first half of the forecast period.

At 500hpa level, troughs associated with mid-latitude frontal system extending over Egypt and also over Algeria remain deep throughout the forecast period. This will probably have some of rains over the Egypt, Libya and North Chad, Algeria, and West Sahara.

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. The jet is expected to extend to Parts of Senegal, Gambia Guinea Sierra Leone Ivory Coast and Ghana towards the end of 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 Namibia and the western Indian ocean during the forecast period.

Therefore, in the next five days, the low level-wind convergence over western Kenya , Burundi, Rwanda, Tanzania ,Uganda, DRC, East Angola, Botswana, Zimbabwe, Malawi, Zambia, Mozambique Channel, South Africa and Madagascar., is expected to result into moderate rainfall in these regions. The heavy rains will be in Zambia, Zimbabwe DRC and Tanzania. The weak 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 during the first half of the forecast period. This shift is expected to cease in the second half of the forecast as the Mascarene anticyclone builds up.

2.0. Previous and Current Day Weather Discussion over Africa

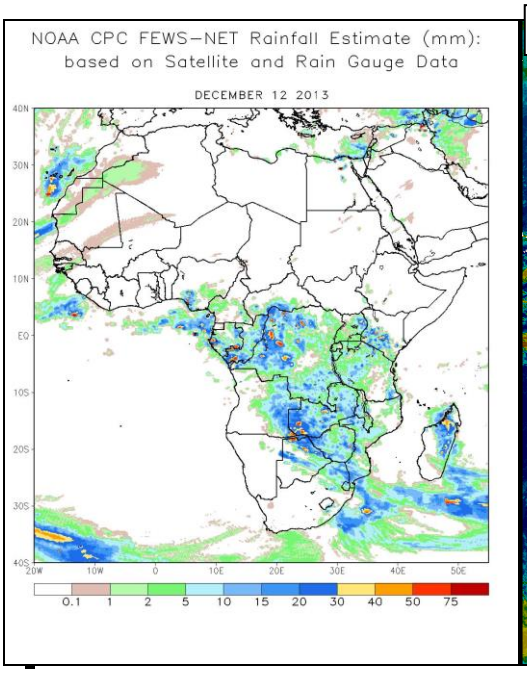
(12 December 2013 – 13 December 2013)

2.1. Weather assessment for the previous day (12 December 2013)

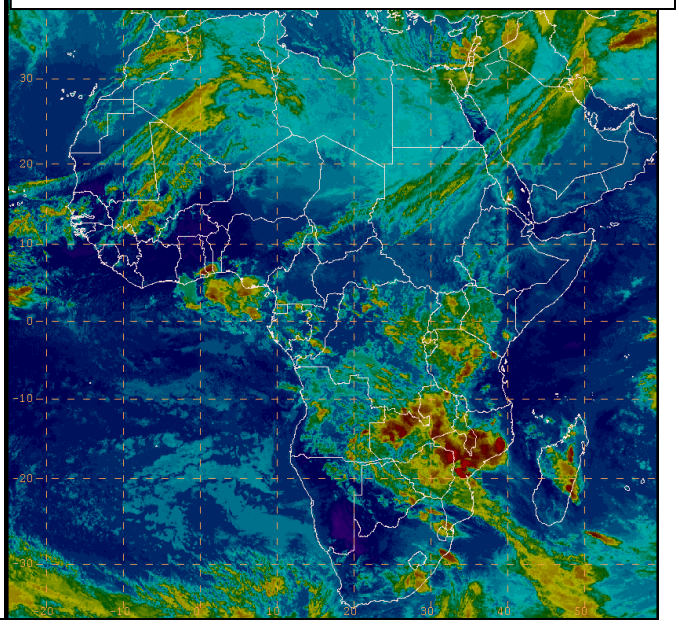
During the previous day, moderate to locally heavy rainfall was observed over some of South Nigeria, Cameroon, Gabon, Congo Brazzaville, DRC, Tanzania, Kenya, Uganda, Zambia, Mozambique, Zimbabwe Angola, some parts South Africa, and Madagascar.

2.2. Weather assessment for the current day (13 December 2013)

Intense clouds were observed Zimbabwe, Mozambique DRC, Zambia and Madagascar.



IR Satellite Image (valid 1800 Z of 13 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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