

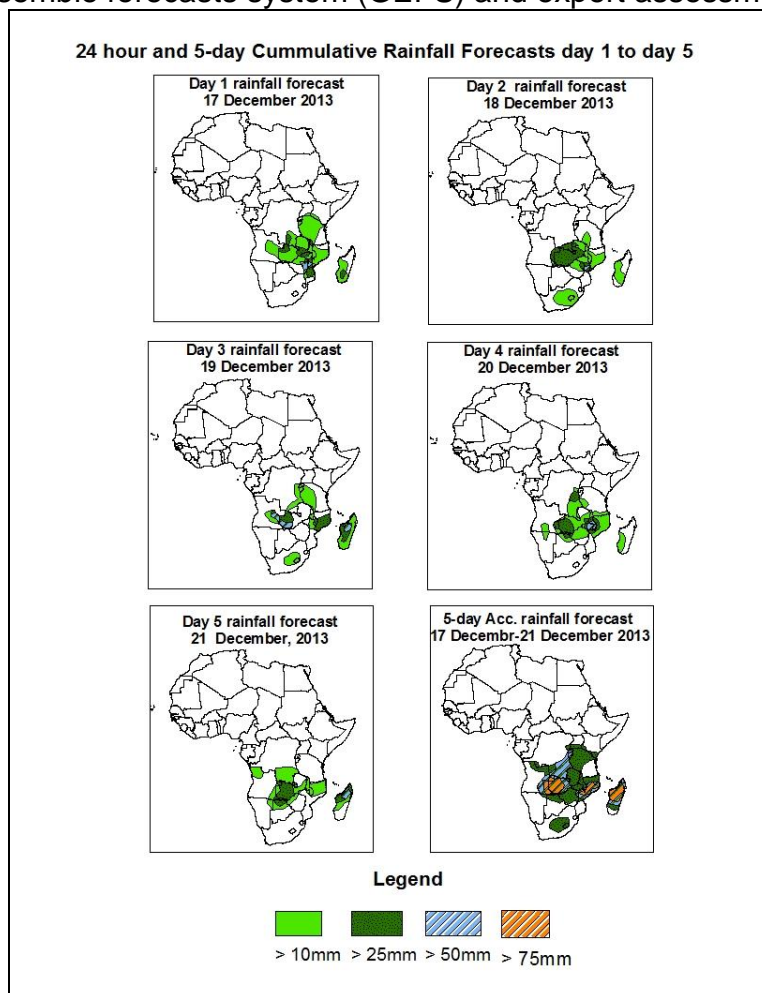


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 17 December – 06Z of 21 December, 2013. (Issued at 1800Z of 16 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.

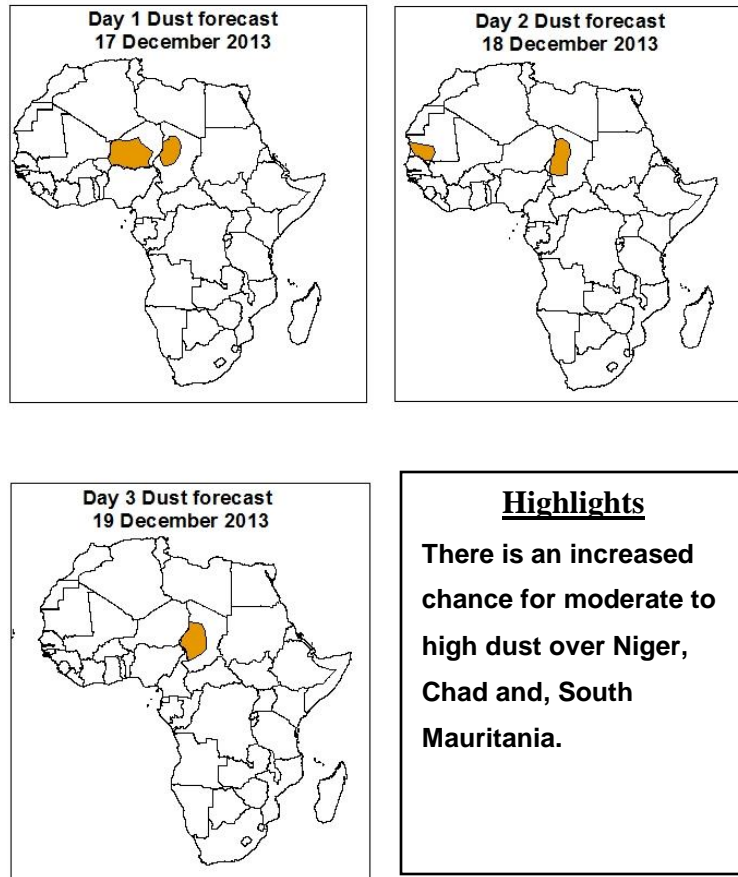


Summary

Therefore, the Lake Victoria region (Parts of western Kenya, Burundi, Rwanda Tanzania and Uganda), DRC, East Angola, Zimbabwe, Malawi, Zambia, Mozambique Channel and Madagascar are expected to receive generally moderate rainfall during the first half of the forecast period. Areas of Chad, Morocco and Algeria are expected to receive some rainfall due to the strong extra-tropical- Tropical interactions over the areas. The weak anticyclone over the Mozambique Channel is likely to maintain the meridional arm of the ITCZ to the east resulting into a continuation of rains over western Kenya during the initial part of the forecast period. This shift is expected to cease in the second half of the forecast as the Mascarene anticyclone builds up. In the second half of the forecast period much of the rains will be concentrated in Zambia, North Mozambique, Malawi and Southern DRC, Eastern Angola and southern Tanzania.

1.2. Atmospheric Dust Forecasts: Valid 17 December- 19 December 2013

Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)



Legend

	
MDC, Vis. < 5km	HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of 16 December 2013

Model comparison (Valid from 00Z: 16 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 weaken from 1027 hpa to 1021hpa according to both the GFS model and the UKMET model. However the system will continue to push most of the weather systems to the north depriving South Africa and Namibia rains.

According to both the GFS model and the UKMET model, the Mascarene high pressure system over southwestern Indian Ocean is expected to start building up in the second half of the forecast period from 1019 hpa to 1021 hpa. Due to the weak/ absence of the Mascarene anticyclone in the beginning of the forecast period, some parts of western and south west Kenya may continue to receive some rains during the first part of the forecast period. The development of the Mascarene in the second half of the forecast period will result in a push of the rains over the eastern part of the continent to the north towards Zambia, North Mozambique, Malawi and Southern DRC.

During the first half of 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, Zimbabwe, Malawi, Zambia, Mozambique Channel and Madagascar. The Interaction is expected to result to generally moderate rainfall in most of these areas. Areas of Chad, Morocco and Algeria expected to receive some rainfall due to the strong extra-tropical- Tropical interactions over the areas. However during second half of the forecast period much of the rains will be concentrated in Zambia, North Mozambique, Malawi and Southern DRC, Eastern Angola and southern Tanzania.

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

At 200hpa level, the sub-tropical Westerly Jet (with >70kts wind speed), extending between West Sahara and Egypt, across, north Mali, Mauritania, North Niger, north Chad, Algeria, Tunisia, Libya and Northern Sudan persist during the forecast period. The jet also extends to Parts of Senegal, Gambia, Guinea, Sierra Leone, Burkina Faso and Ivory Coast. In the south, the sub-tropical westerly Jet (with 70 to 90kts wind speed) is expected to be mainly over South Africa, Lesotho, Swaziland and the western Indian Ocean.

Therefore, the Lake Victoria region (Parts of western Kenya, Burundi, Rwanda Tanzania and Uganda), DRC, East Angola, Zimbabwe, Malawi, Zambia, Mozambique Channel and Madagascar are expected to receive generally moderate rainfall. Areas of Chad, Morocco and Algeria are expected to receive some rainfall due to the strong extra-tropical- Tropical interactions over the areas. The weak anticyclone over the Mozambique Channel is likely to maintain the meridional arm of the ITCZ to the east resulting into a continuation of rains over western Kenya during the initial part of the forecast period. This shift is expected to cease in the second half of the forecast as the Mascarene anticyclone builds up. In the second half of the forecast period much of the rains will be concentrated in Zambia, North Mozambique, Malawi and Southern DRC, Eastern Angola and southern Tanzania.

2.0. Previous and Current Day Weather Discussion over Africa

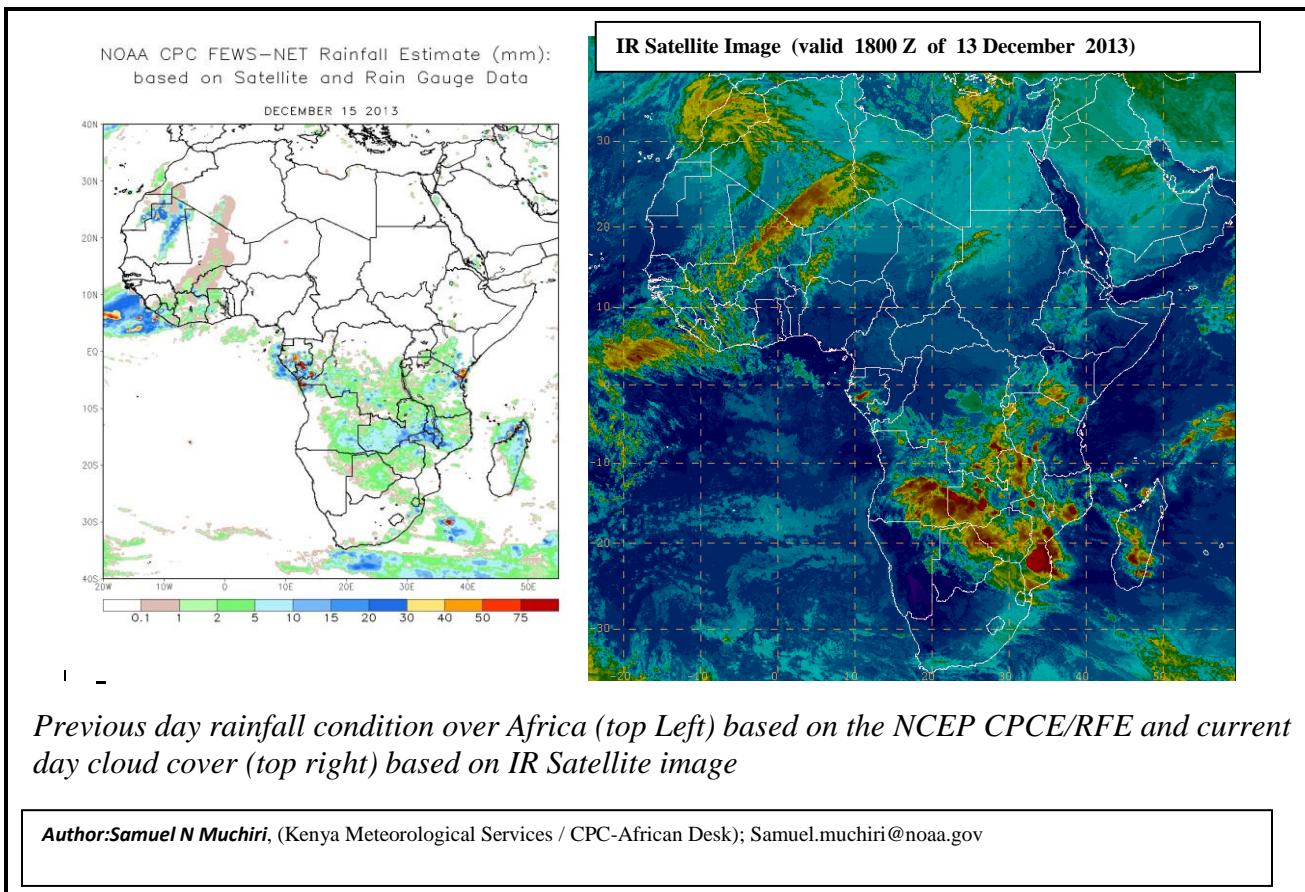
(12 December 2013 – 13 December 2013)

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 Gabon, Congo Brazzaville, Ivory coast, Ghana, Guinea, Liberia, DRC, Tanzania, Kenya, Uganda, Zambia, Mozambique, Botswana, Northern Namibia 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.



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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