

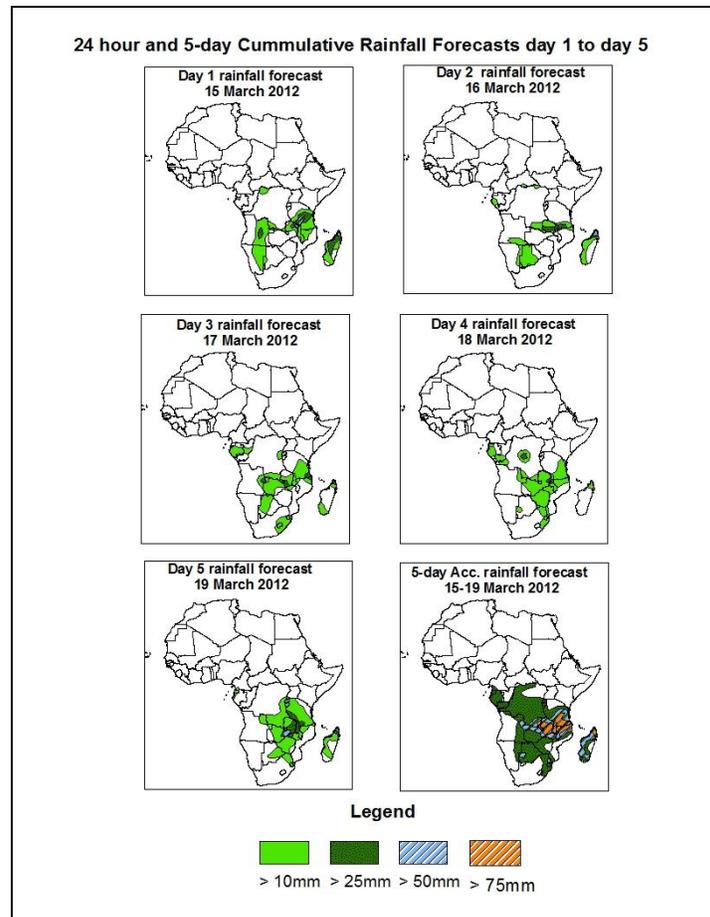


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 15 March – 06Z of 19 March 2012, (Issued at 15:00Z of 14 March 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 outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, low level tropospheric wind convergences from northern Congo to northwestern Uganda passing through northern DRC, the low level convergence in the vicinity of central Uganda, western Tanzania and northern Malawi associated with the meridional arm of the ITCZ, the zonal arm of the ITCZ over eastern Angola running across southern DRC and Zambia up to northern Malawi, Localized winds convergences over southern Botswana and South Africa and cyclonic circulations over Mozambique Channel off the coast of northwestern Madagascar are expected to enhance rainfall in their respective regions. Hence, there is a chance of heavy rainfall over Equatorial Guinea, Gabon, eastern Angola, Zambia, Botswana, southern DRC, northern Mozambique, Malawi, southern and central Tanzania and Madagascar Island.

## **1.2. Model Discussion-Valid from 00Z of 14 March, 2012**

The GFS model indicates series of lows and their associated trough across central and the South African countries. A low will form in the vicinity of central part of the Republic of Southern Sudan with a central MSLP value of 1005mb at the beginning of the forecast period. It tends to maintain its central MSLP and position throughout the forecast period. Another low will form in the vicinity of northern DRC and southern CAR with central MSLP value of 1010mb at the beginning of the forecast period. It tends to maintain its central MSLP and position throughout the forecast period. A low will form in the vicinity of central Nigeria with a central MSLP of 1010mb at the beginning of the forecast period. It tends to shift southeastwards to southern Cameroun and northern Gabon, deepening at the same time to a central MSLP value of 1005mb towards the end of the forecast period. Another low will form in the vicinity of western Zambia and eastern Angola through 48 to 72 hours with a central MSLP of 1010mb. It tends to fill towards the end of the forecast period.

The St. Helena High pressure system is located over southeast Atlantic Ocean with a central MSLP value of 1025mb at the beginning of the forecast period. It tends to weaken with its central MSLP value decreasing to 1020mb towards the end of the forecast period. The model locates the Mascarene high pressure system over southwestern Indian Ocean with a central MSLP of 1030mb at the beginning of the forecast period. It tends to propagate eastwards, weakening at the same time with its central MSLP value decreasing to 1025mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to be active from northern Congo to northwestern Uganda passing through northern DRC throughout the forecast period. A low level convergence zone is expected to form in the vicinity of central Uganda, western Tanzania and northern Malawi associated with the meridional arm of the ITCZ. It tends to maintain its location throughout the forecast period. Another convergence zone associated with the zonal arm of the ITCZ will be located over eastern Angola running across southern DRC and Zambia up to northern Malawi throughout the forecast period. Localized winds convergences associated with a mid-latitude trough are expected to dominate the flow over southern Botswana and South Africa throughout the forecast period. Cyclonic circulations tend to dominate the

flow over Mozambique Channel off the coast of northwestern Madagascar throughout the forecast period.

At 500hpa, an eastward propagating mid latitude trough with the low geo-potential value of 5760gpm is expected to dominate the flow over southern Africa through 24 to 96 hours.

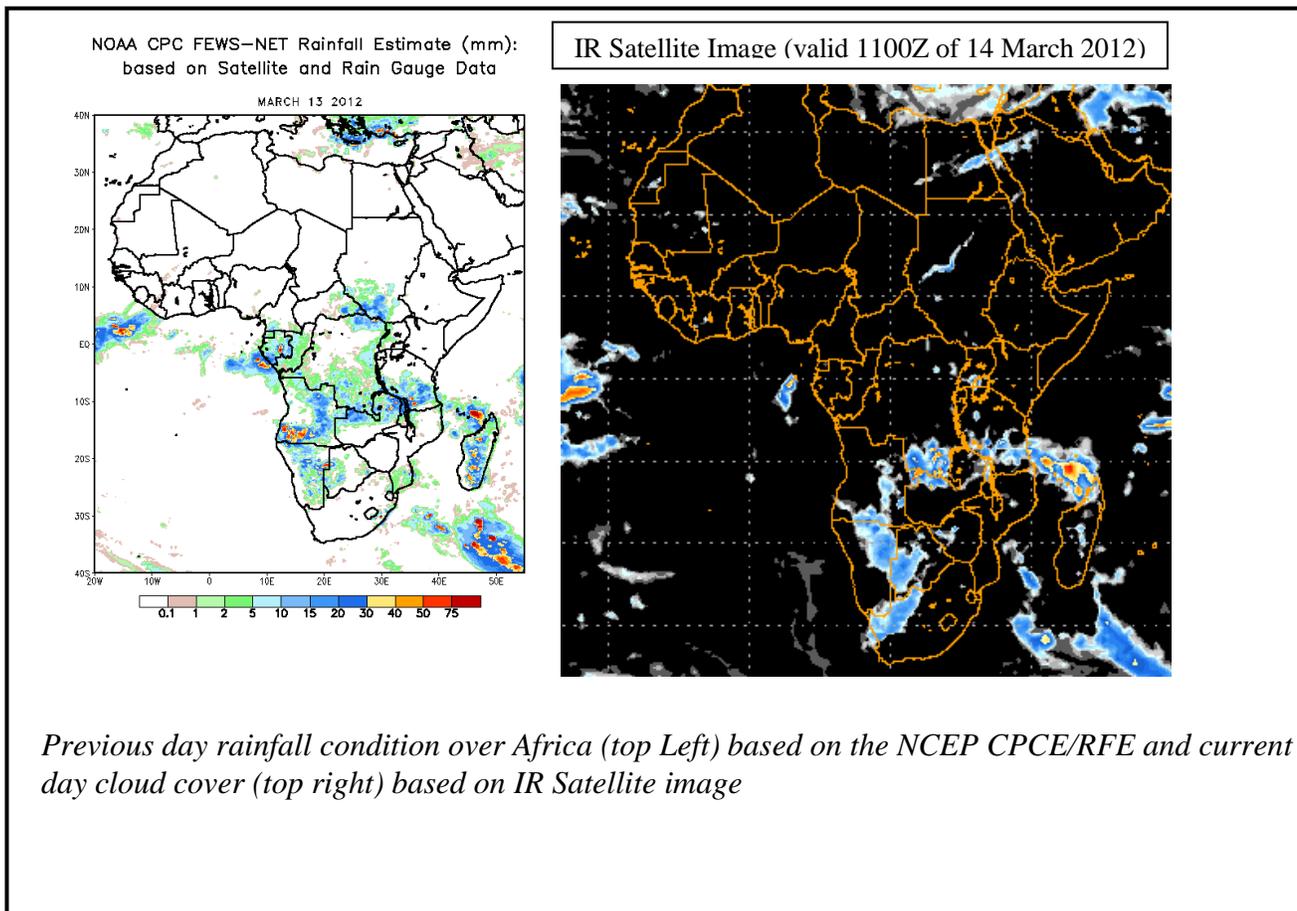
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow from eastern Libya across Egypt to Persian Gulf during the forecast period. The intensity of the jet is expected to exceed 100kts while moving to the east with its core values occasionally increasing to more than 160kts throughout the forecast period.

In the next five days, low level tropospheric wind convergences from northern Congo to northwestern Uganda passing through northern DRC, the low level convergence in the vicinity of central Uganda, western Tanzania and northern Malawi associated with the meridional arm of the ITCZ, the zonal arm of the ITCZ over eastern Angola running across southern DRC and Zambia up to northern Malawi, Localized winds convergences over southern Botswana and South Africa and cyclonic circulations over Mozambique Channel off the coast of northwestern Madagascar are expected to enhance rainfall in their respective regions. Hence, there is a chance of heavy rainfall over Equatorial Guinea, Gabon, eastern Angola, Zambia, Botswana, southern DRC, northern Mozambique, Malawi, southern and central Tanzania and Madagascar Island.

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

**2.1. Weather assessment for the previous day (13 March 2012):** During the previous day, moderate to locally heavy rainfall was observed over southern and eastern Angola, southern DRC, northern Zambia, northern Malawi, southern Tanzania, southeastern Gabon, southern part of Republic of Southern Sudan, Comoros Islands and Madagascar Island.

**2.2. Weather assessment for the current day (14 March 2012):** Intense clouds are observed over southern DRC, northern Zambia, southern Tanzania, southern & eastern Angola, eastern Namibia, western Botswana and northwestern South Africa.



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