

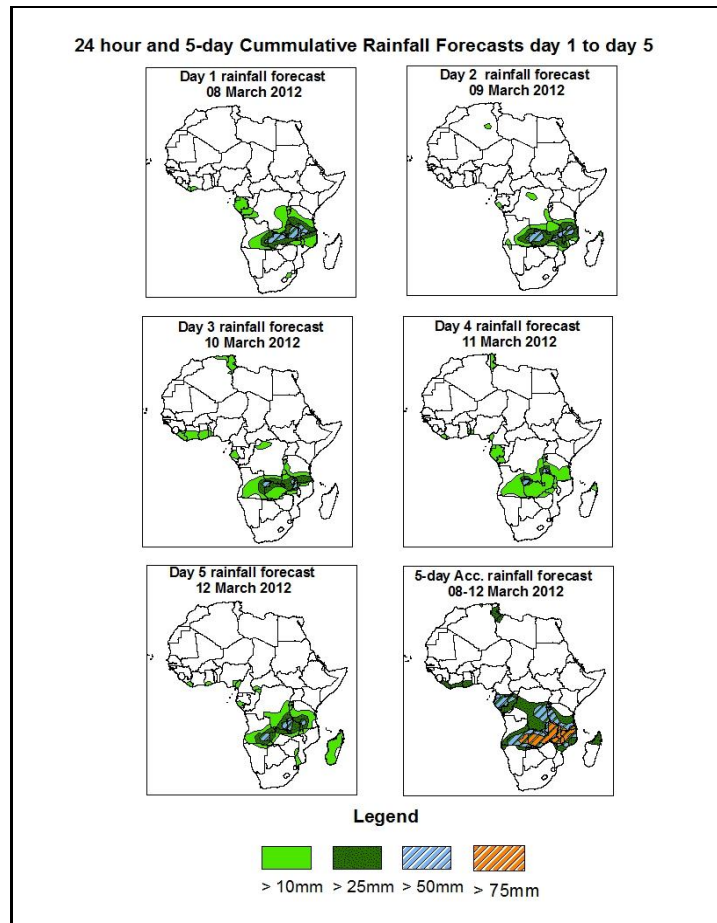


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 08 March – 06Z of 12 March 2012, (Issued at 18:00Z of 07 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 Gulf of Guinea to western Uganda passing through Equatorial Guinea, Gabon, southern Cameroun, Congo and northern DRC, the low level convergence in the vicinity of southern Uganda, central Tanzania and eastern Malawi associated with the meridional arm of the ITCZ and the zonal arm of the ITCZ over eastern Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Equatorial Guinea, Gabon, eastern Angola, Zambia, northern Zimbabwe, southern DRC, northern Mozambique, Malawi, Rwanda, Burundi and Tanzania.

## **1.2. Model Discussion-Valid from 00Z of 07 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 northern DRC and CAR with a central MSLP of 1010mb at the beginning of the forecast period. It tends to deepen with its central MSLP value decreasing to 1005mb towards the end of the forecast period. Another low will form in the vicinity of the Republic of Southern Sudan with a central MSLP value of 1005mb at the beginning of the forecast period. It tends to extend westwards and northwards to reach western CAR and southern part of Republic of Sudan towards the end of the forecast period. A low will form in the vicinity of northern Ghana, southern Burkina Faso and northern Togo with a central MSLP value of 1010mb at the beginning of the forecast period. It tends to maintain its central MSLP value throughout the forecast period. A low will form in the vicinity of eastern Angola, Zambia and northern Zimbabwe with a central MSLP of 1010mb at the beginning of the forecast period. It tends to shift westwards towards central Angola by the end of the forecast period. Another low will form in the vicinity of southern Namibia with a central MSLP of 1010mb at the beginning of the forecast period but will fill through 48 to 72 hours.

The St. Helena High pressure system over southeast Atlantic Ocean with a central MSLP value of 1020mb at the beginning of the forecast period tends to weaken through 24 to 48 hours with its central MSLP value decreasing to 1015mb. It thereafter tends to strengthen with its central MSLP value increasing 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 1020mb at the beginning of the forecast period. It tends to strengthen progressively to a central MSLP value of 1025mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to be active from Gulf of Guinea to western Uganda passing through Equatorial Guinea, Gabon, southern Cameroun, Congo and northern DRC throughout the forecast period. A low level convergence zone is expected to form in the vicinity of southern Uganda, central Tanzania and eastern Malawi associated with the meridional arm of the ITCZ. It tends to be stationary 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, Zambia and Malawi up to northern Mozambique / southern Tanzania throughout the forecast period.

At 500hpa, an eastward propagating mid latitude trough is expected to dominate the flow over central Algeria with the low geo-potential value of 5600gpm at the beginning of forecast period. The northeast-southwest oriented trough tends to propagate eastwards reach western Libya with a geo-potential value of 5600gpm towards the end of the forecast period.

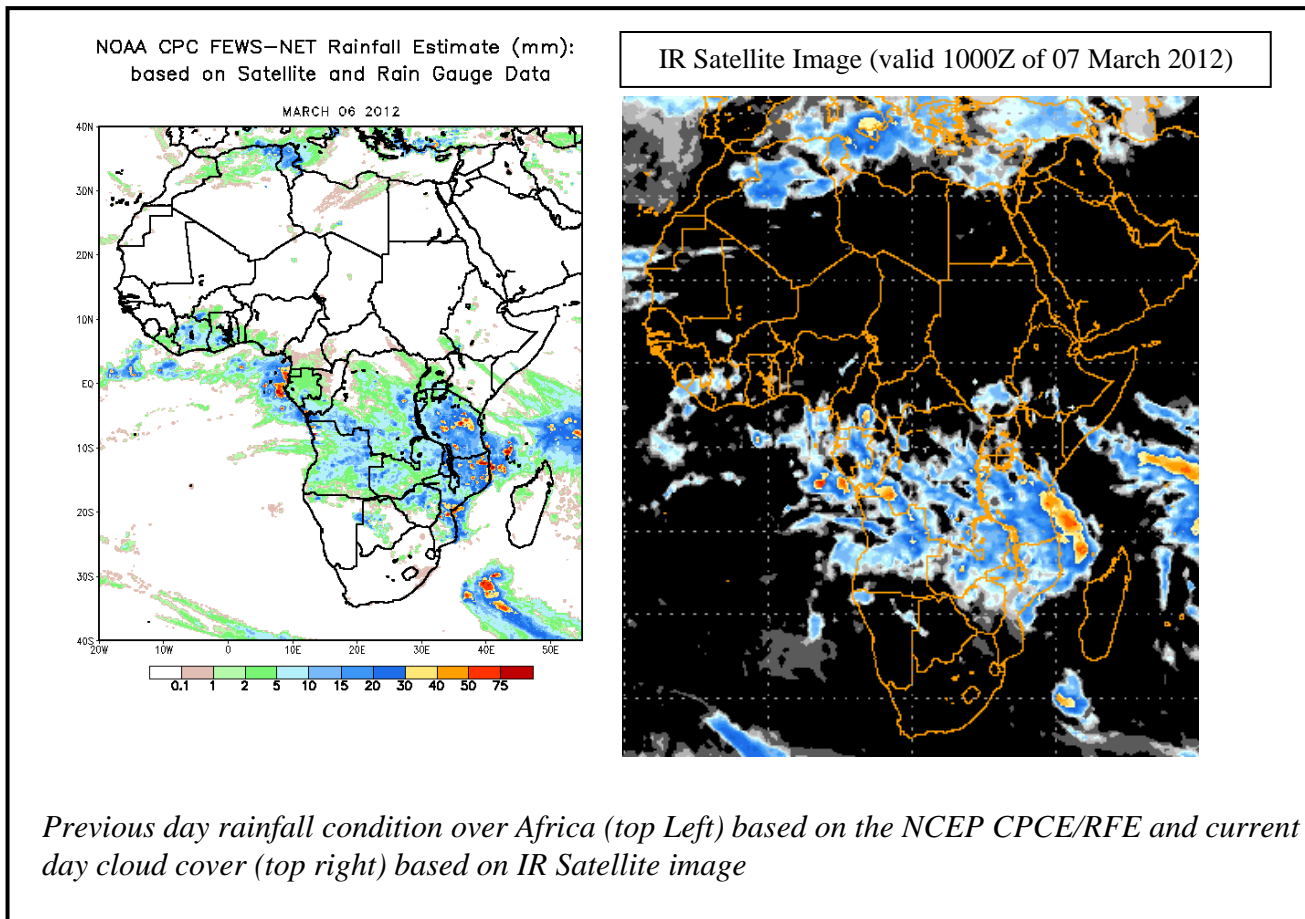
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow from northeastern Atlantic Ocean across northern Africa to Persian Gulf during the forecast period. The intensity of the jet is expected to exceed 140kts while moving to the east with its core values occasionally increasing to more than 160kts throughout the forecast period.

In the next five days, low level tropospheric wind convergences from Gulf of Guinea to western Uganda passing through Equatorial Guinea, Gabon, southern Cameroun, Congo and northern DRC, the low level convergence in the vicinity of southern Uganda, central Tanzania and eastern Malawi associated with the meridional arm of the ITCZ and the zonal arm of the ITCZ over eastern Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Equatorial Guinea, Gabon, eastern Angola, Zambia, northern Zimbabwe, southern DRC, northern Mozambique, Malawi, Rwanda, Burundi and Tanzania.

## 2.0. Previous and Current Day Weather Discussion over Africa (06 March – 07 March 2011)

**2.1. Weather assessment for the previous day (06 March 2012):** During the previous day, moderate to locally heavy rainfall was observed over Tanzania, Mozambique, Malawi, northeastern Zambia, western and eastern DRC, eastern Angola and Tunisia.

**2.2. Weather assessment for the current day (07 March 2011):** Intense clouds are observed over northern Zambia, Malawi, Tanzania, Mozambique, Angola, Congo, Gabon, Equatorial Guinea, DRC, northern Algeria and northern Tunisia.



Author(s): Ezekiel Njoroge, (Kenyan Meteorological Department / CPC-African Desk); [ezekiel.njoroge@noaa.gov](mailto:ezekiel.njoroge@noaa.gov)  
&  
Author(s): Lotfi Khammari, (Tunisian Meteorological Authority / CPC-African Desk); [lotfi.khammari@noaa.gov](mailto:lotfi.khammari@noaa.gov)