

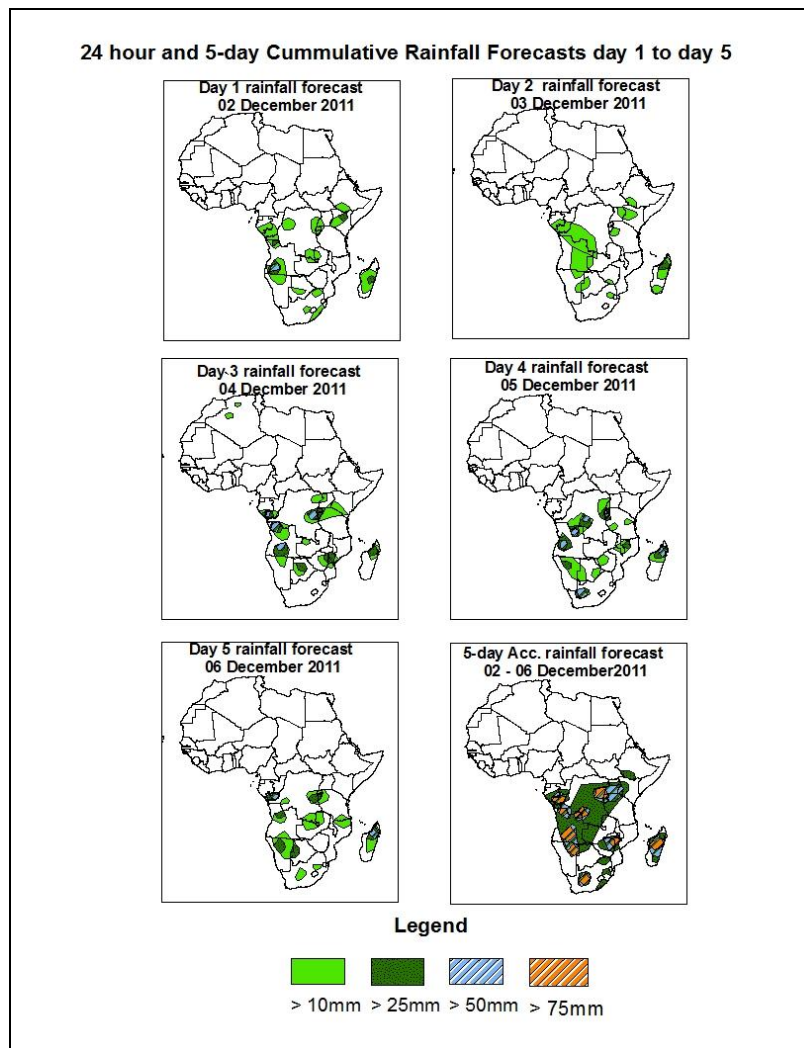


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 02December – 06Z of 06 December 2011, (Issued at 16:45Z of 01 December 2011)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP) exceeded, based on the NCEP outputs and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, seasonal and localized wind convergences are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over parts of Angola, Gabon, Congo Brazzaville, parts of DRC, north western Tanzania, north eastern Namibia, parts of Zambia, Madagascar, Burundi, Rwanda, parts of Kenya, Zimbabwe, parts of Mozambique, parts of Ethiopia, parts of Botswana, Uganda and parts of southern Africa.

## **1.2. Model Discussion-Valid from 00Z of 02 December 2011**

The GFS model indicates series of lows and their associated troughs across central and the South African countries. The low over DRC is expected to maintain its mean sea level pressure value of 1010mb during the forecast period. Another low is expected to form in the vicinity of Tanzania and it tends to maintain its central pressure value decreasing of 1011mb during the forecast period. A high pressure is expected to form over Arabian Peninsula and tends to weaken from 1021mb to 1020mb towards the end of the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken, with its MSLP value decreasing from 1030mb to 1020mb through 24 to 72 hours and then tends to intensify to 1025mb towards the end of the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to intensify, with its central pressure value increasing from 1020mb to 1025mb through 24 to 96hours and tends to weaken to 1020mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to dominate the flow over parts of Angola during the forecast period. The seasonal wind convergence across central African countries is expected to remain active during the forecast period extending across DRC. Localized wind convergences are also expected to dominate the flow over Zambia, South Africa, Tanzania, Algeria, Namibia, Zimbabwe and Uganda during the forecast period.

At 500hpa, eastward propagating trough in the westerly is expected to dominate the flow over Mediterranean Sea during the forecast period; with the low geopotential value of 5840gpm extending to the latitudes Egypt and Libya by 24. While by 48 hours it is expected to propagate over Egypt. Another trough is expected to propagate over Morocco countries through 48 to 96hours. This trough is expected to propagate over Tunisia and Algeria towards the end of the forecast period. A mid latitude frontal system is expected to propagate eastwards across the Southern African countries by 48hours.

At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, during the forecast period. The intensity of the

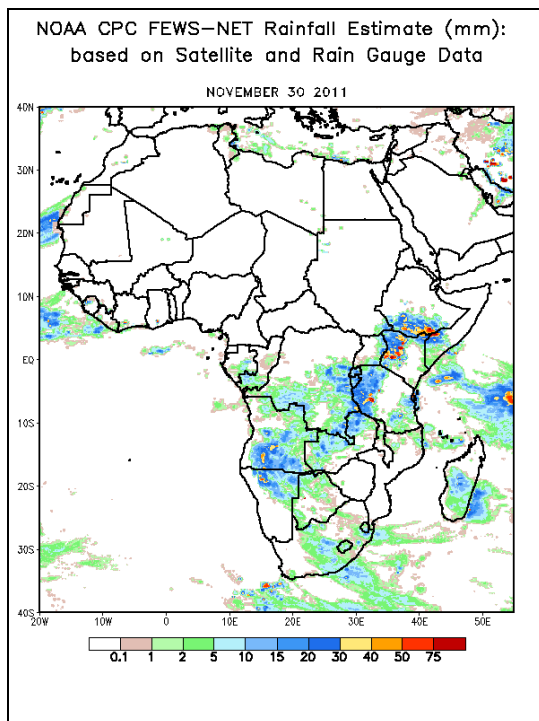
jet is expected to exceed 90kts over Libya, Algeria and Egypt by 24hours. While by 48 it is expected to extend over Algeria. By the end of the forecast period it is expected to propagate over Egypt with wind speed exceeded 110kts. Wind speed values associated with the southern Hemisphere sub-tropical westerly jet are expected to exceed 70kts during the forecast period.

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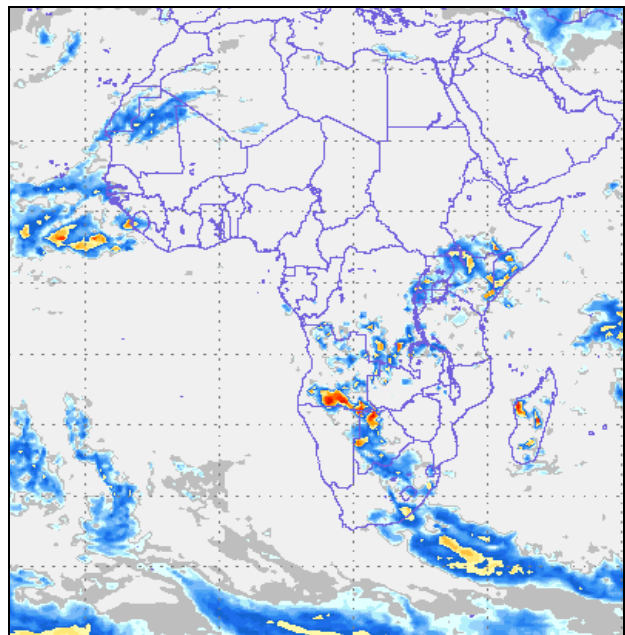
## 2.0. Previous and Current Day Weather Discussion over Africa (01December – 02 December2011)

**2.1. Weather assessment for the previous day (01December 2011):** During the previous day, moderate to locally heavy rainfall was observed over parts of DRC, southern Ethiopia, parts of Madagascar, Angola, parts of Zambia, parts of Congo, northern Mozambique, parts of Tanzania, parts of Namibia, parts of Kenya and parts of Uganda.

**2.2. Weather assessment for the current day (02December 2011):** Intense clouds are observed over Angola, parts of Zambia, parts of Tanzania, parts of DRC, portion of Madagascar, parts of Kenya, southern Ethiopia, northern Botswana, Rwanda, southern Somalia Burundi and parts of Southern Africa.



IR Satellite Image (valid 1300Z of 01December 2011)



*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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