

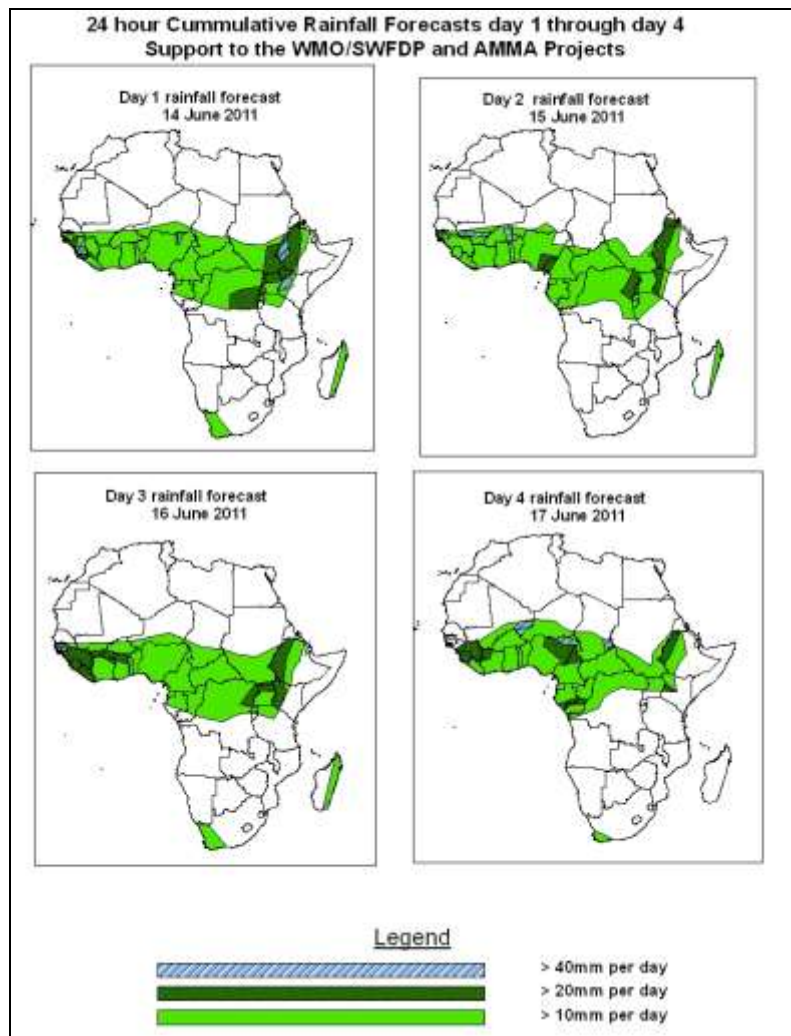


## NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

### 1.0. Rainfall Forecast: Valid 06Z of 14 June– 06Z of 17 June 2011, (Issued at 10:15 Z of 13 June 2011)

#### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 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

In the next four days, there is an increased chance for heavy rainfall over northeastern DRC, western Kenya and parts of Uganda due to active lower tropospheric convergence in the CAB region. Moreover, moist cross equatorial flow across the Horn of Africa is expected to maintain moderate to heavy rainfall over western Ethiopia. Moderate to heavy rainfall is also expected over southwestern parts of West Africa.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 13 June 2011**

According to the GFS, ECMWF and UKMET models, the monsoon trough, associated with heat lows across the Sahel region, Sudan and Iberian Peninsula is expected to have pressure values varying from 997 and 1009hpa during the forecast period. On the other hand, the East African ridge is expected to remain active across East Africa with its northern extent reaching the latitudes of Ethiopia during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain a central pressure value of 1024hpa during the forecast period. The Mascarene high pressure system over the southwest Indian Ocean is expected to maintain central pressure value of 1020hpa in 24 and tends to intensify to 1024hpa through 48 and 96 hours.

At the 850hpa level, the GFS model maintains the seasonal southeasterly moist flow from the Indian Ocean across East Africa turning into southwesterly flow as it passes across the Horn of Africa is expected to converge partly into Ethiopia. On the other hand, dry northeasterly winds are expected to continue dominating the flow over northern and portions of central Sudan. The seasonal convergence between moist winds from the Atlantic Ocean and dry winds from northern Africa is expected to be more active over central and eastern parts of the Gulf of Guinea and along the southwest coast of West Africa.

At the 700hPa level, the northwesterly winds are expected to dominate the flow over Sudan, Chad and CAR, while zone of strong easterly flow is expected to propagate across the Gulf of Guinea between Nigeria and the west coast of West Africa during the forecast period.

At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over Sudan, central African and the Gulf of Guinea and southern Sahel region, with the stronger winds associated with the African easterly Jet are expected over Chad, Niger, Nigeria, Cameroon, Burkina-Faso, Mali and southern Guinea-Bissau during the forecast period.

A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across Mediterranean Sea and mid-

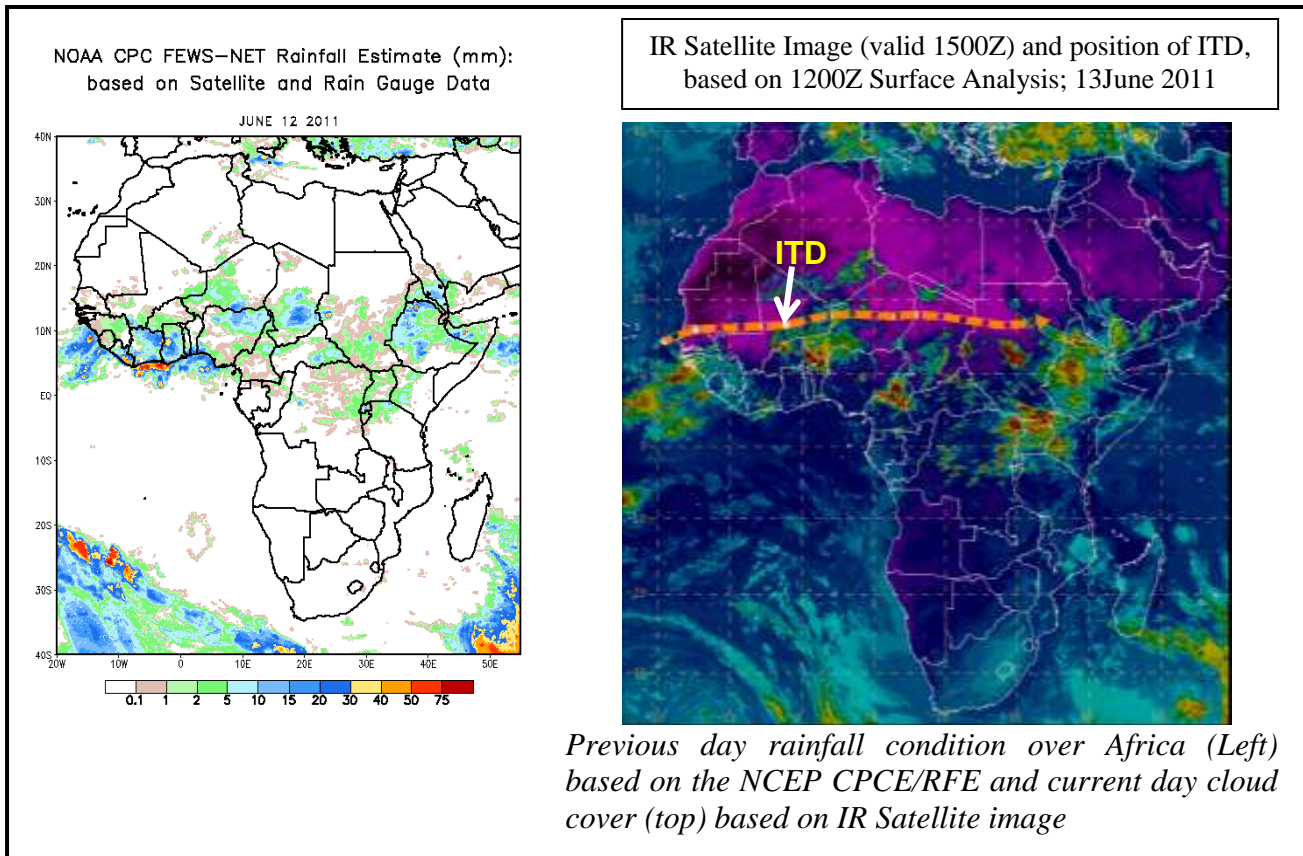
east through 24 hours and tend to weaken to (>90Kts) by 48 to 96 hours. On the other hand, strong winds (>110Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across Atlantic and Indian Ocean and Southern Africa during the forecast period.

In the next four days, there is an increased chance for heavy rainfall over northeastern DRC, western Kenya and parts of Uganda due to active lower tropospheric convergence in the CAB region. Moreover, moist cross equatorial flow across the Horn of Africa is expected to maintain moderate to heavy rainfall over western Ethiopia. Moderate to heavy rainfall is also expected over southwestern parts of West Africa.

## 2.0. Previous and Current Day Weather Discussion over Africa (12 – 13 June 2011)

**2.1. Weather assessment for the previous day (13 June 2011):** During the previous day, a combination of light and moderate rainfall was observed over Southern Guinea, Cote D'Ivoire, Ghana, parts of Chad and Ethiopia.

**2.2. Weather assessment for the current day (14 June 2011):** Intense clouds are observed over Southern Guinea-Bissau, part of Burkina-Faso, Southern Niger, parts of Sudan and DRC, northern Gabon, Uganda and Ethiopia.



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