

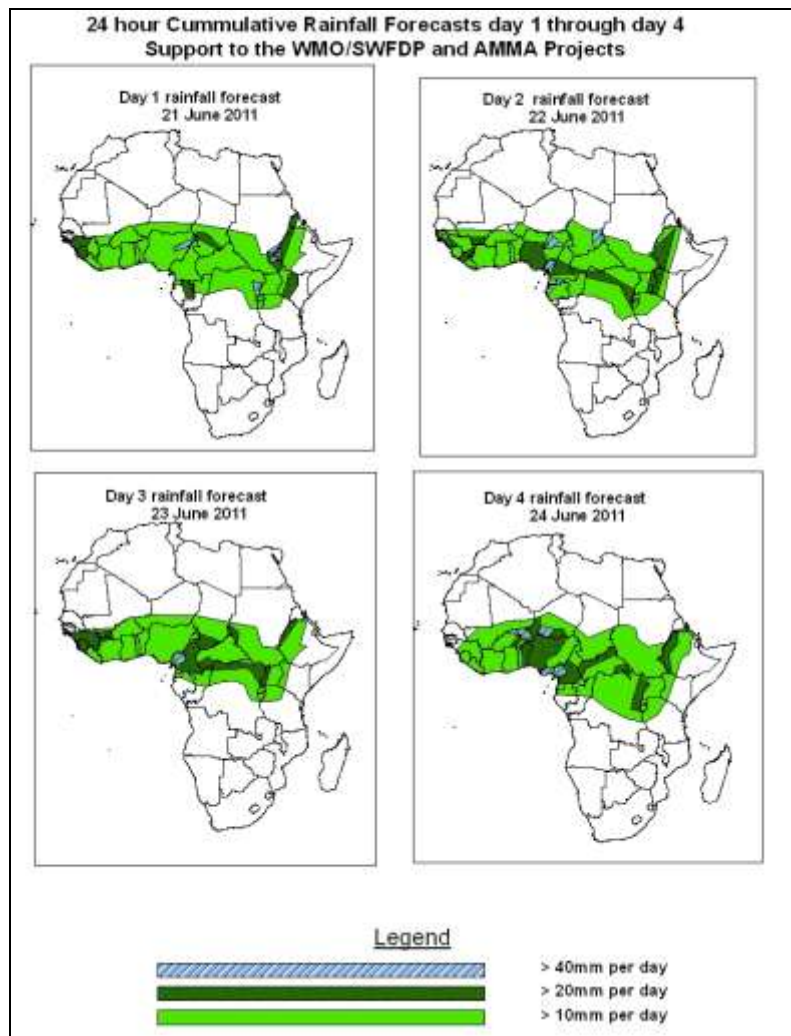


## NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

### 1.0. Rainfall Forecast: Valid 06Z of 21 June– 06Z of 24 June 2011, (Issued at 10:15Z of 20 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 Guinea Bissau, Guinea, Sierra Leone, Liberia, Nigeria, parts of CAR and southern Chad due to active easterly wave activity and its associated westward propagating storms. The seasonal cross-equatorial flow across East Africa is expected to continue enhancing rainfall over parts of eastern Sudan and western Ethiopia. Moderate to heavy rainfall is also expected in the vicinity of Lake Victoria due to active CAB in the region.

## **1.2. Models Comparison and Discussion-Valid from 00Z of 20 June 2011**

According to the GFS, ECMWF and UKMET models, the monsoon trough with its associated heat lows across the Sahel region is expected to maintain its east-west orientation during the forecast period. The central pressure value along its western end (near Mauritania and Mali) varies from 1003mb to 1007mb during the forecast period. On the other hand, the heat low over central African region and Sudan is expected to have central pressure value changing from 1007mb to 1009mb during the forecast period. On the other hand, the East African ridge across southeast and East Africa is expected to show little or no change during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain a central pressure value of 1028hpa through 24 hours and tends to intensify to a central pressure value of 1032hpa in 48 to 72 hours and back to 1028hpa by 96 hours. The Mascarene high pressure system over the southwest Indian Ocean is expected to maintain a central pressure value of 1020hpa through 24 to 72 hours and tends to weaken to 1016 by 96 hours.

At the 850hpa level, the GFS model indicates abundant moisture flux into West Africa from the Atlantic Ocean and converging across the Gulf of Guinea and southern Sahel areas. Moreover, the seasonal southeasterly moist flow from the Indian Ocean across East Africa turning into southwesterly flow as it passes across Sudan. Part of this flow is expected to continue converging into Ethiopia during the forecast period. On the other hand, dry northeasterly winds are expected to continue dominating the flow over northern and portions of central Sudan.

At the 700hPa level, a zone of strong easterly winds with its associated easterly wave is expected to propagate across the Gulf of Guinea region between Nigeria and the west coast of West Africa during the forecast period.

At 500hpa, easterly winds with moderate intensity (10 to 25 knots) 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 Burkina-Faso, Cote d'Ivoire, Ghana, Liberia, Sierra Leone, Guinea Mali and Guinea-Bissau during the forecast period.

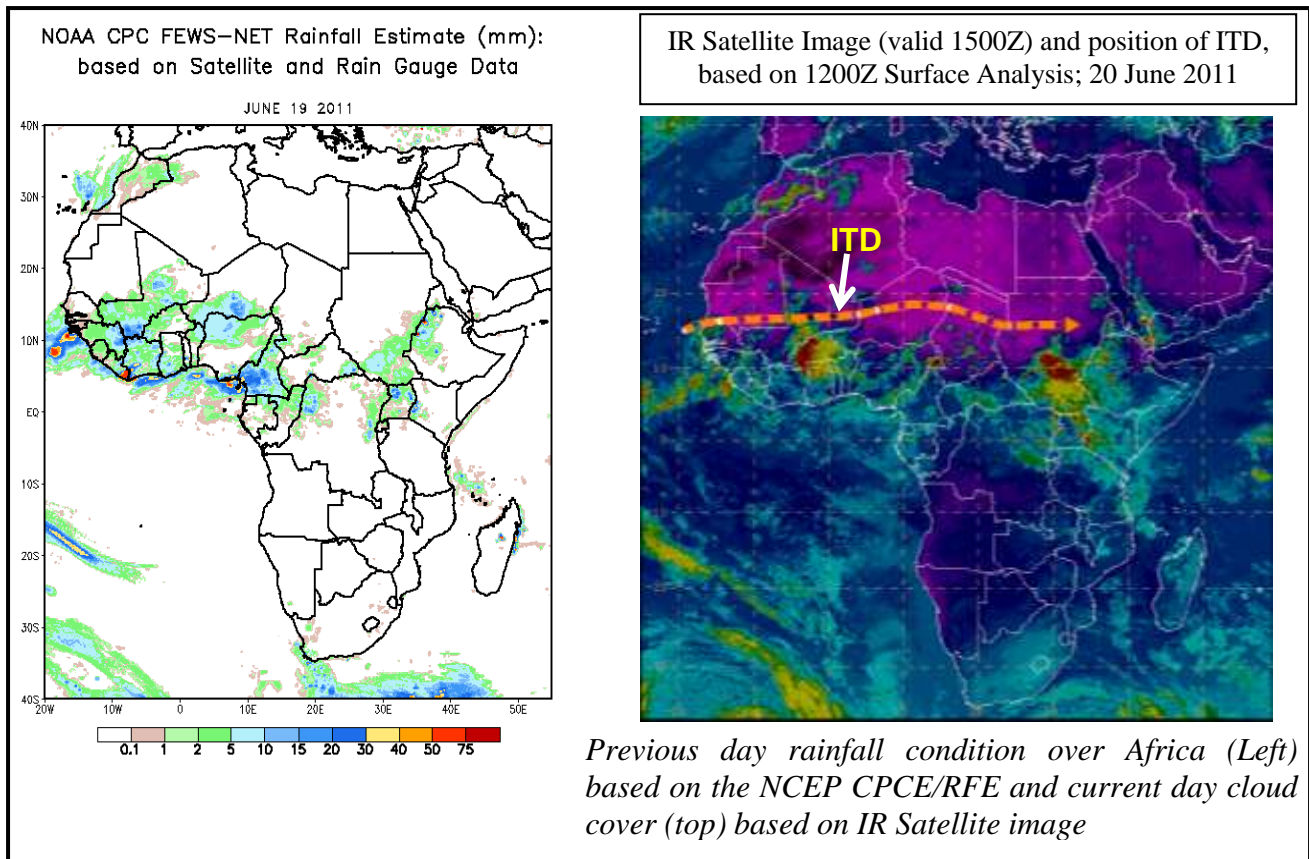
A zone of strong wind (>70Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across Mediterranean Sea and mid-east through 24 to 96 hours. On the other hand, strong winds (>150Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across Atlantic and Indian Ocean, Southern Africa and Lesotho throughout 24 to 72hours and weaken to (>130Kts) by 96 hours.

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## 2.0. Previous and Current Day Weather Discussion over Africa (19 – 20 June 2011)

**2.1. Weather assessment for the previous day (19 June 2011):** During the previous day, a combination of moderate and heavy rainfall was observed over Guinea-Bissau, Southeastern Mali, parts of Liberia, Cote d'Ivoire, and Cameroon.

**2.2. Weather assessment for the current day (20 June 2011):** Intense clouds are observed over Burkina-Faso and southern Sudan.



**Author(s): Orlando Mendes (Direcção Geral da Meteorologia Nacional da Guiné-Bissau) / CPC-African Desk), [orlando.mendes@noaa.gov](mailto:orlando.mendes@noaa.gov) and**

**Albert M. Sherman (Liberian Meteorological Agency) / CPC-African Desk), [albert.sherman@noaa.gov](mailto:albert.sherman@noaa.gov)**

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