

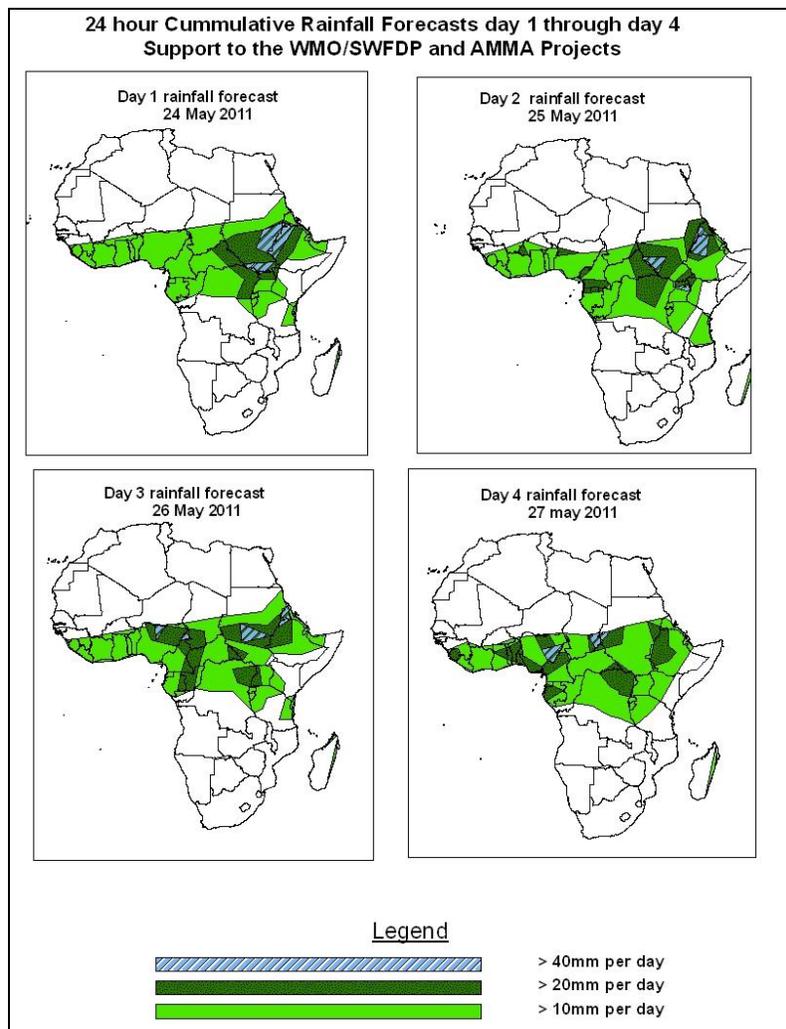


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 24 May – 06Z of 27 May 2011, (Issued at 12:10Z of 23 May 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, the strong cross equatorial flow across East Africa and its associated convergence over western Ethiopia and Sudan are expected to enhance rainfall in western Ethiopia and Sudan. Moreover, the strong southwesterly flow from the Atlantic Ocean towards eastern parts of the Gulf of Guinea and parts of central African region the localized convergences in the vicinity of Lake Victoria are expected to increase rainfall in their respective regions. In general, there is an increased chance for enhanced rainfall over eastern parts of the Gulf of Guinea, central African region and portions of the GHA region, with the heaviest rainfall event expected to occur over southern Sudan and western Ethiopia.

1.2. Models Comparison and Discussion-Valid from 00Z of 23 May 2011

According to the GFS, ECMWF and UKMET models, the east-west oriented trough, associated with heat lows across the Sahel region, Sudan and Iberian Peninsula is expected to have pressure values varying from 1001 and 1007hpa during the forecast period. On the other hand, the East African ridge, associated with the Mascarene high pressure system is expected to extend up to the latitudes of northern Ethiopia 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 progressively to 1032hpa in 48 hours and back to 1028hpa in 72 hours and weakens to 1024hpa by 96 hours. The Mascarene high pressure system over the southwest Indian Ocean is expected to maintain central pressure value of 1024hpa in 24 and 48 hours and tends to weaken to 1020hpa in 72 and 96 hours.

At the 850hpa level the GFS model shows strong southeasterly to easterly winds to dominate the flow over eastern parts of the Gulf of Guinea, while western parts of the Gulf of Guinea is expected to be influenced by more of dry northeasterly winds. Moist cross equatorial flow is expected to extend up to the latitudes of Sudan and western Ethiopia. The north-south oriented convergence in the CAB region is expected to remain active in the vicinity of Lake Victoria during the forecast period.

At the 700hPa level, southeasterly winds from western Indian ocean across Tanzania, Uganda and Kenya is expected to turn into a southwesterly flow after crossing the equator and tends to form a cyclonic turning over western Ethiopia and Sudan 24 to 72 hours and this cross equatorial flow tends to extend towards Congo and Gabon by 96 hours.

At 500hpa, easterly winds with moderate intensity (5 to 15knots) are expected to dominate the flow over Sudan, central African and the Gulf of Guinea and southern Sahel region, while the trough is expected to be over Algeria, Tunisia and Libya and tends to weaken during the forecast period.

A zone of strong wind (>90Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across the Atlantic Ocean to Algeria, Libya and Egypt through 24 hours and weakens to (>70kts) in 48 to 96 hours. On the

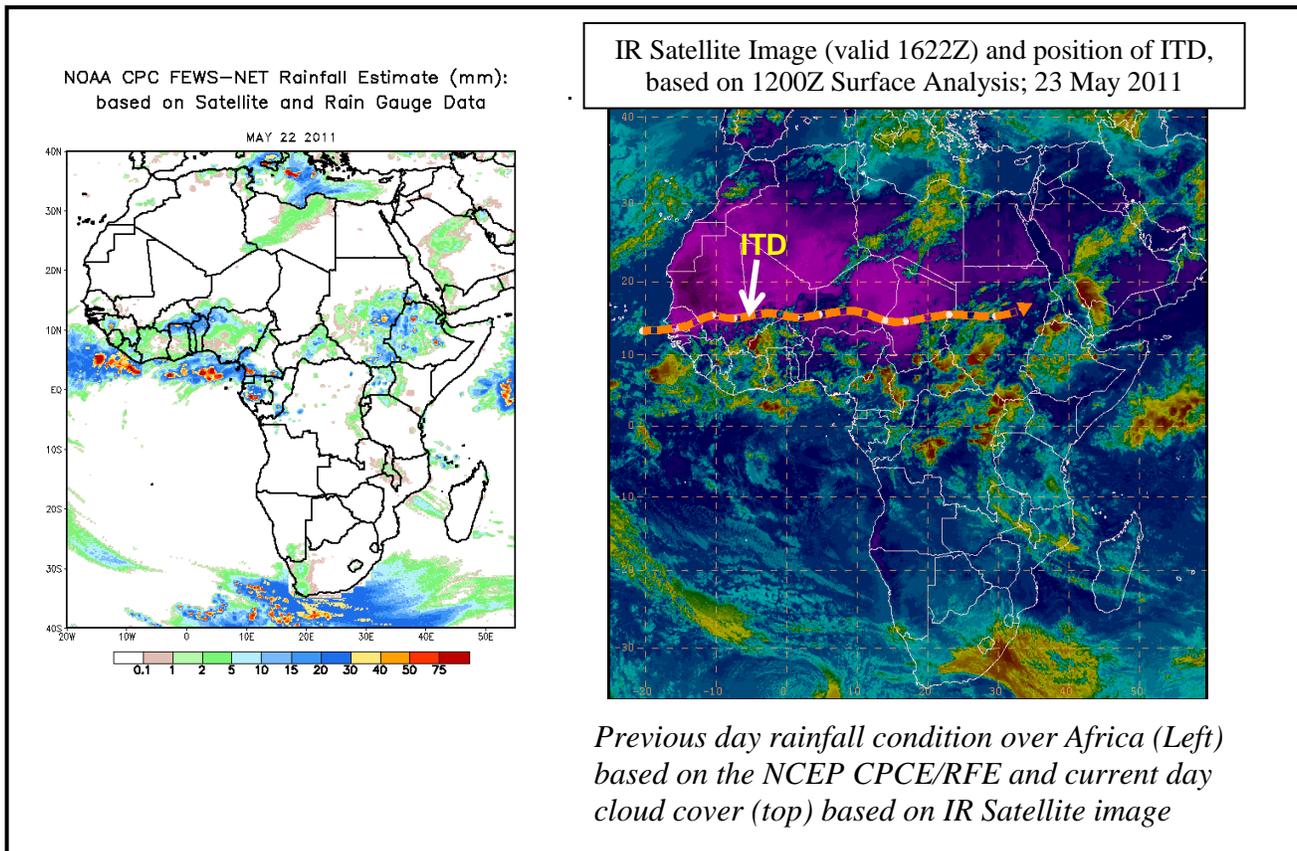
other hand, strong winds (>130Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across Atlantic and Indian Ocean, Southern Africa through 24 hours and to Weakens progressively to (>110kts) in 48 hours and (>90kts) in 72 and back to (>110kts) by 96 hours.

In the next four days, the strong cross equatorial flow across East Africa and its associated convergence over western Ethiopia and Sudan are expected to enhance rainfall in western Ethiopia and Sudan. Moreover, the strong southwesterly flow from the Atlantic Ocean towards eastern parts of the Gulf of Guinea and parts of central African region the localized convergences in the vicinity of Lake Victoria are expected to increase rainfall in their respective regions. In general, there is an increased chance for enhanced rainfall over eastern parts of the Gulf of Guinea, central African region and portions of the GHA region, with the heaviest rainfall event expected to occur over southern Sudan and western Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa (22 May –23 May 2011)

2.1. Weather assessment for the previous day (22 May 2011): During the previous day, a combination of moderate and heavy rainfall was observed over Southern Sierra Leone and Liberia, southern Burkina Faso, Benin, Nigeria, Cameroon, Gabon, Sudan and Ethiopia.

2.2. Weather assessment for the current day (23 May 2011): Intense clouds are observed over Burkina Faso, Cote D'Ivoire, Ghana, Cameroon, Sudan, Ethiopia, Uganda, DRC, and parts of Southern Africa.



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (top) based on IR Satellite image

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