

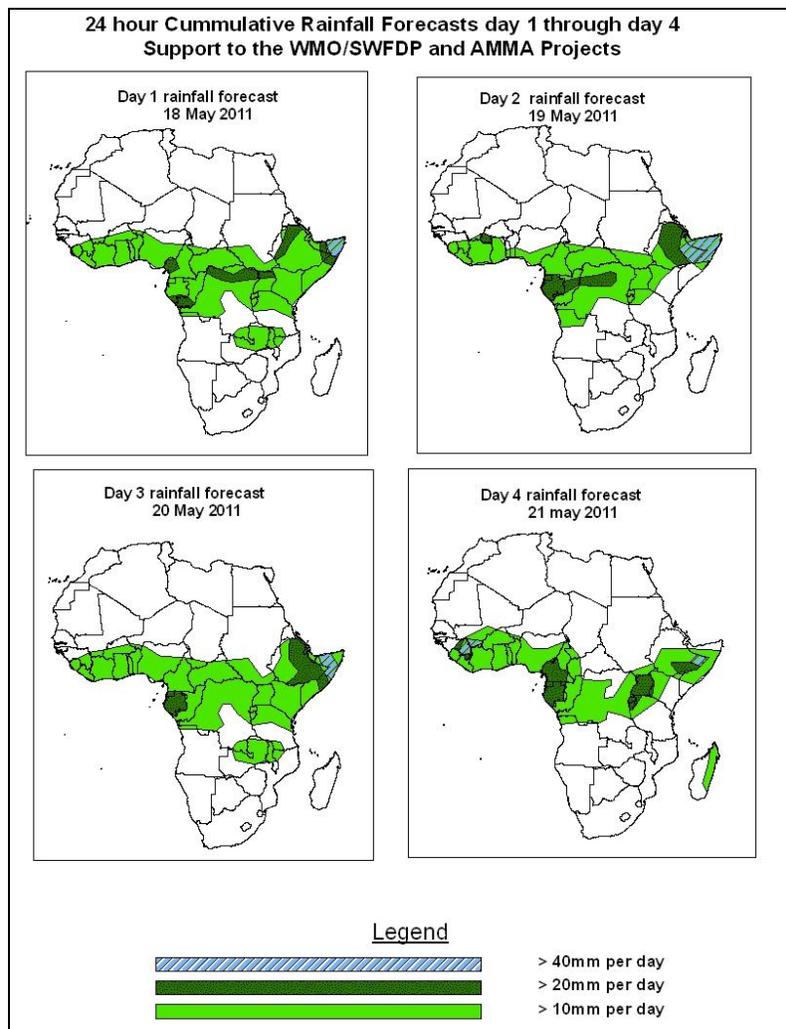


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 18 May – 06Z of 21 May 2011, (Issued at 9:45Z of 17 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, moist southeasterly to easterly winds from western Indian Ocean and their associated convergence in the Horn of Africa and the Gulf of Aden are expected to enhance rainfall in the region. The lower and mid-tropospheric easterly winds that dominate the flow between western GHA and the Gulf of Guinea across central African region are expected to continue enhancing westward propagation of thunderstorms into the western equatorial Africa, parts of central Africa and the Gulf of Guinea countries. Moreover, the seasonal lower tropospheric convergence in the Congo Air Boundary Region is expected to increase rainfall in the vicinity of the Lake Victoria area. In general, there is an increased chance for rainfall to exceed 20mm per day over part of CAR, parts of Cameroon, Guinea, DRC, portions of Burkina Faso, western Ethiopia, northern Somalia, Uganda, Gabon, Rwanda, Burundi and Congo, with the heaviest rainfall event expected to occur over southeast Ethiopia, and northern and central Somalia.

1.2. Models Comparison and Discussion-Valid from 00Z of 17 May 2011

According to the GFS, ECMWF and UKMET models, the Saharan High and its associated ridge is expected to be dominant over northern Africa, in the region between Algeria and Egypt through 24 to 96 hours. The east-west oriented trough, associated with heat lows across the Sahel region, Sudan, DRC and Iberian Peninsula is expected to have pressure values varying from 1002 and 1009hpa 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 through 24 hours and it tends to weaken gradually during the rest of the forecast period.

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

At the 850hpa level, a strong cross-equatorial flow, associated with the Somali Jet, is expected to dominate the flow over the western Indian Ocean and the coastal areas of the Horn of Africa. The GFS model also maintains an east-west oriented convergence line in the region between West Africa and Sudan across the central African region. This convergence is expected to remain active during the forecast period. The north-south oriented convergence in the CAB region is expected to remain active in the vicinity of its climatological position through 48 to 96 hours, while the easterly to southeasterly winds from the western Indian Ocean are expected to continue forming a strong convergence over the eastern parts of the GHA region during the forecast period.

At the 700hPa level, a cyclonic flow is expected to develop across the GHA and the Gulf of Aden region, which will enhance rainfall in the region during the forecast period. A trough in the westerlies is expected to propagate across the longitudes of eastern Libya, Sudan, Egypt, and the Red Sea through 24 to 48 hours. The northeasterly to easterly winds in Sudan, the central African region and the Gulf of Guinea are expected to persist through 24 to 96 hours.

At 500hpa, easterly winds with moderate intensity (5 to 20knots) are expected to dominate the flow over Sudan, the central African and the Gulf of Guinea region. A mid-

latitude trough is expected to propagate across Egypt, Sudan and Mediterranean at 24 hours.

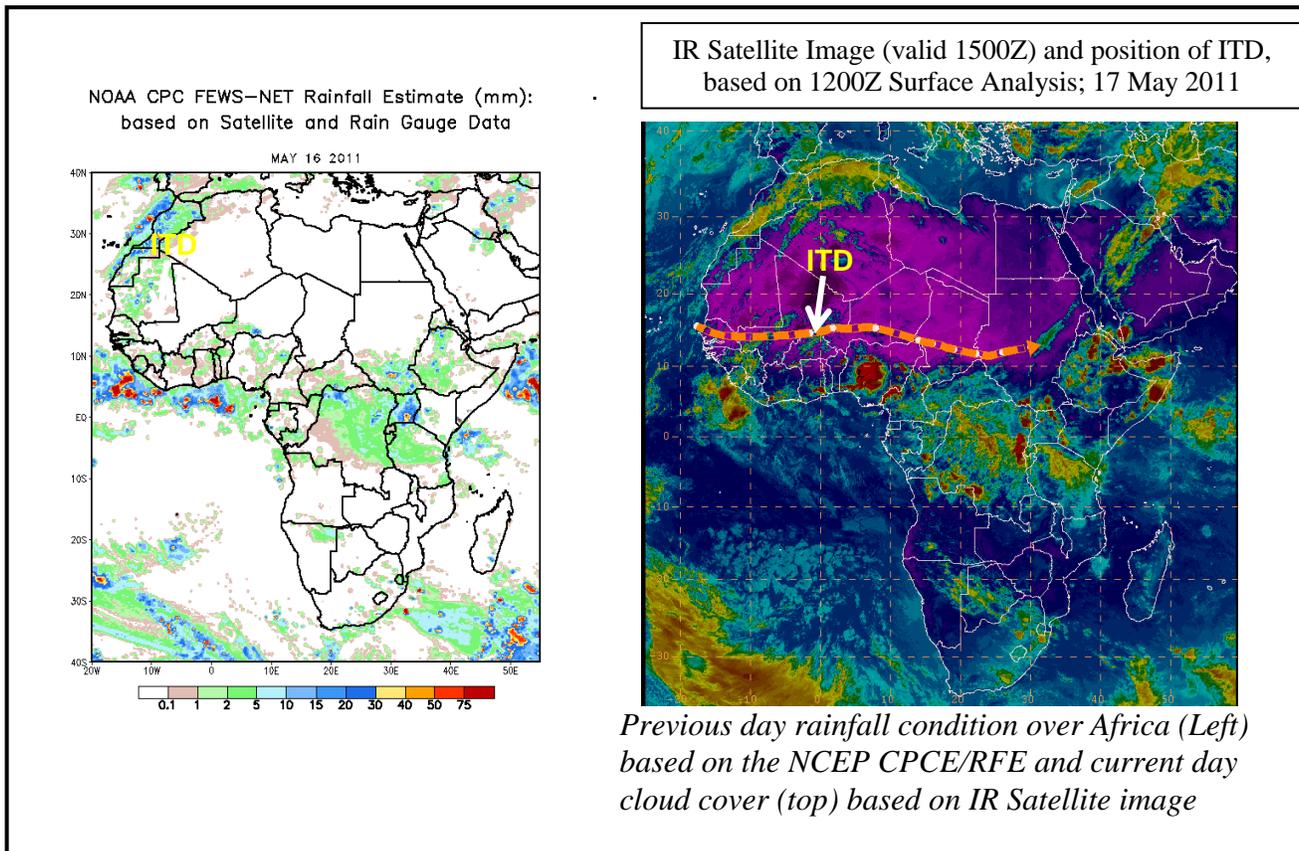
A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across to Morocco, Algeria and mid-east through 24 hours and weaken to (>90kts) in 48 and 72 hours and (>70kts) at 96 hours. On the other hand, strong winds (>130Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across Atlantic Ocean during forecast period.

In the next four days, moist southeasterly to easterly winds from western Indian Ocean and their associated convergence in the Horn of Africa and the Gulf of Aden are expected to enhance rainfall in the region. The lower and mid-tropospheric easterly winds that dominate the flow between western GHA and the Gulf of Guinea across central African region are expected to continue enhancing westward propagation of thunderstorms into the western equatorial Africa, parts of central Africa and the Gulf of Guinea countries. Moreover, the seasonal lower tropospheric convergence in the Congo Air Boundary Region is expected to increase rainfall in the vicinity of the Lake Victoria area. In general, there is an increased chance for rainfall to exceed 20mm per day over part of CAR, parts of Cameroon, Guinea, DRC, portions of Burkina Faso, western Ethiopia, northern Somalia, Uganda, Gabon, Rwanda, Burundi and Congo, with the heaviest rainfall event expected to occur over southeast Ethiopia, and northern and central Somalia.

2.0. Previous and Current Day Weather Discussion over Africa (16 May – 17 May 2011)

2.1. Weather assessment for the previous day (16 May 2011): During the previous day, a combination of moderate and heavy rainfall was observed over coastal areas of Gulf of Guinea, Uganda and eastern Somalia.

2.2. Weather assessment for the current day (17 May 2011): Intense clouds are observed over southern Sierra Leone and Liberia; Rwanda, DRC, Tanzania, Ethiopia, Uganda, Congo, Djibouti, Burundi, Southern Sudan, and north eastern Somalia.



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