

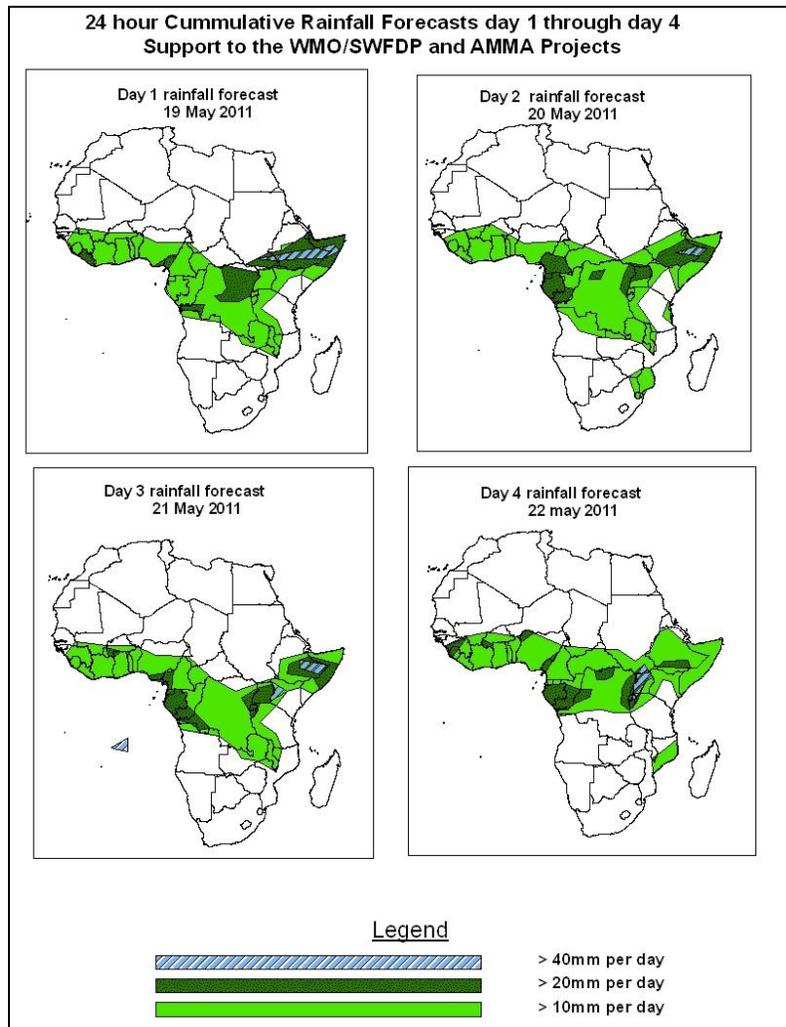


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 19 May – 06Z of 22 May 2011, (Issued at 10:35Z 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 in the equatorial Africa region are expected to continue enhancing westward propagation of thunderstorms into the western equatorial Africa. 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, 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 dominate northern Africa, in the region between Algeria and Egypt through 24 to 48 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 1008hpa 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 southeast Atlantic Ocean is expected to maintain a central pressure value of 1020hpa through 24 and 48 hours and tends to weaken to 1016hpa in 72 hours and intensifying to 1024hpa by 96 hours. The Mascarene high pressure system over southwest Indian Ocean is expected to maintain central pressure value of 1020hpa in 24 hours and weakens to 1016hpa by 48 hours and back to 1020hpa at 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 western Indian Ocean and the coastal areas of the Horn of Africa. The GFS model also maintains east-west oriented convergence line in the region between West Africa and Sudan across 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 during forecast period.

At the 700hPa level, anticyclonic circulation is expected in the region extending between eastern Mali and western Niger during the forecast period, while a cyclonic circulation is expected to develop across the GHA and the Gulf of Aden region, which will enhance rainfall in the region during the forecast period. The northeasterly to easterly winds in Sudan, central African region and the Gulf of Guinea are expected to persist through 24 to 96 hours.

At 500hpa, easterly winds with moderate intensity (10 to 20knots) are expected to dominate the flow over Sudan, central African and the Gulf of Guinea and southern Sahel region, with the strongest winds associated with the African Easterly Jet is expected over southern Burkina Faso and northern Togo through 96 hours.

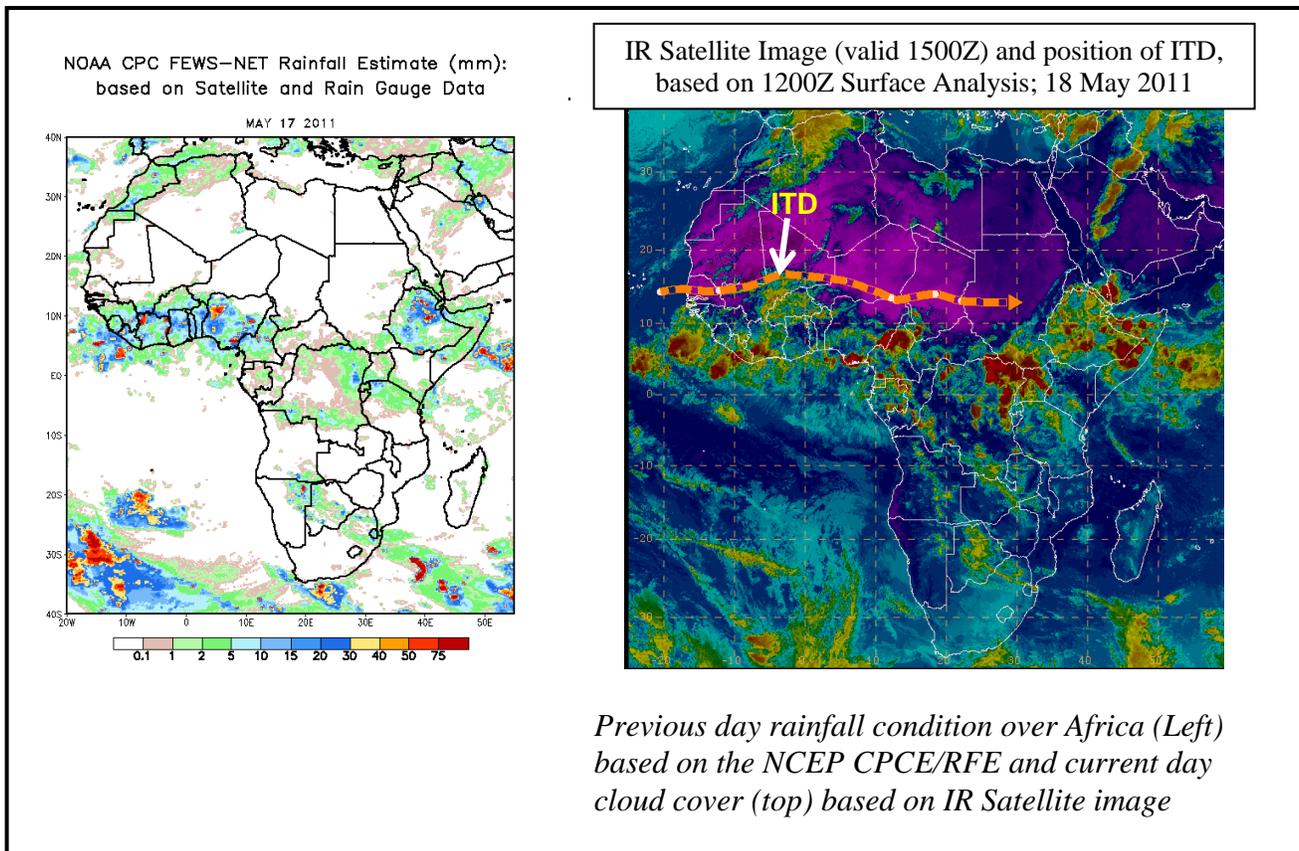
A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across to Algeria, Atlantic Ocean and mid-east through 24 hours and weakens progressively to (>90kts) in 48 hours and (>70kts) at 72 and 96 hours. On the other hand, strong 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 in the equatorial Africa region are expected to continue enhancing westward propagation of thunderstorms into the western equatorial Africa. 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, 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 (17 May – 18 May 2011)

2.1. Weather assessment for the previous day (17 May 2011): During the previous day, a combination of moderate and heavy rainfall was observed over parts of Gulf of Guinea region and Ethiopia, with locally heavy rainfall recorded on Cote D'Ivoire, Nigeria and Ethiopia..

2.2. Weather assessment for the current day (18 May 2011): Intense clouds are observed over southern Sierra Leone, Cote D'Ivoire and Liberia; Rwanda, southern Nigeria, northeastern DRC, Cameroon, Ethiopia, Uganda, Southern Sudan, and north Somalia.



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

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

Disclaimer: This bulletin is for training purposes only and should be used as guidance. NOAA does not make forecasts for areas outside of the United States.