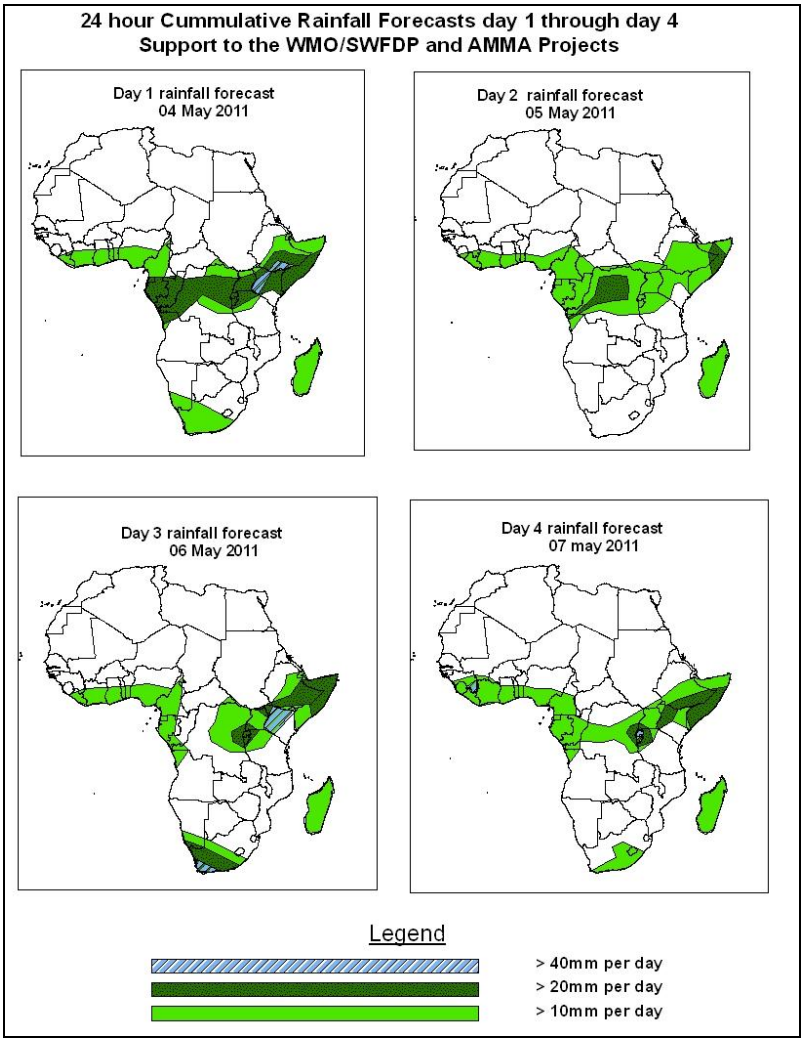
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 04 May – 06Z of 07 May 2011, (Issued at 10:00Z of 03 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, strong southeasterly winds from the Indian Ocean converging with dry northwesterly winds from northeast Africa are expected to enhance rainfall in the GHA region. Moreover, the seasonal lower tropospheric convergence in the Congo Air Boundary Region, localized convergences across western equatorial region and the westward propagating storms between central African region and the Gulf of Guinea coast are expected to enhance rainfall in their respective areas. In general, there is an increased chance for heavy rainfall over Gabon, Congo, and portions of DRC, Uganda, southern and eastern Ethiopia, southern Somalia and parts of South Africa.

1.2. Models Comparison and Discussion-Valid from 00Z of 03 May 2011

According the GFS, ECMWF and UKMET models, the ridge associated with the St Helena high pressure system is expected to remain strong through 24 to 96 hours, while extending northwards up to the coastal area of Gulf of Guinea. The East African ridge, associated with the Mascarene high pressure system is expected to remain strong across southeast and East Africa during the forecast period, while a ridge associated with the Azores high is expected to extend eastwards gradually across Mauritania, Morocco, Algeria and Tunisia and tends to become a cut off high towards end of the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain a central pressure value of 1024hpa in 24 and tends to weaken to 1020hpa in 48hours and back to 1024hpa at 72hrs and intensifying to 1028hpa by 96hours. The Mascarene high pressure system over southwest Indian Ocean is expected to maintain central pressure value of 1024hpa in 24 at 72 hours and tends to weaken to 1020hpa by 96 hours.

At the 850hpa level, the GFS model maintains the east-west oriented convergence line in the region between the western parts of the Gulf of Guinea and Sudan. This convergence is expected to persist with little or no change during the forecast period. On the other hand, the wind convergence associated with the meridonal arm of the ITCZ is expected to shift slightly to the west of its climatological position through 24 to 48 hours and to return back to the Congo Air Boundary (CAB) region through 72hours and tends to weaken by 96 hours.

At the 700hPa level, a trough in the westerlies is expected to propagate across Libya and Egypt through 48 hours and coastal of Morocco through 72 hours. Persistent northeasterly to easterly winds are expected to dominate the flow in the region between southern Sudan and western equatorial Africa across northern DRC through 24 to 96 hours.

At 500hpa, easterly winds with moderate intensity (10 to 15knots) are expected to dominate the flow over Sudan, central African and the Gulf of Guinea region through 24 to 96 hours. Locally strong winds (>30kts) associated with the African Easterly Jet are expected over Westerly Sudan through 24 hours and Easterly CAR by 72hrs. A mid-latitude trough is expected to move towards Red Sea across Egypt, while weakening

through 72 to 96 hours. Similarly, mid-latitude frontal systems are expected to dominate the flow over South Africa through 24 to 48 hours and tends to weaken by 72 and 96 hours.

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

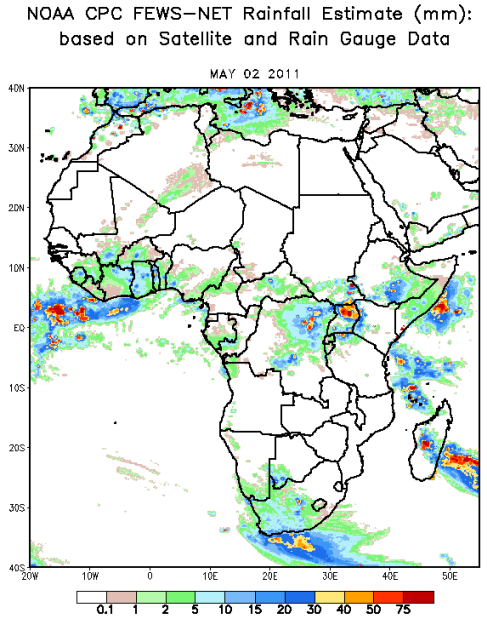
In the next four days, strong southeasterly winds from the Indian Ocean converging with dry northwesterly winds from northeast Africa are expected to enhance rainfall in the GHA region. Moreover, the seasonal lower tropospheric convergence in the Congo Air Boundary Region, localized convergences across western equatorial region and the westward propagating storms between central African region and the Gulf of Guinea coast are expected to enhance rainfall in their respective areas. In general, there is an increased chance for heavy rainfall over Gabon, Congo, portions of DRC, Uganda, southern and eastern Ethiopia, southern Somalia and parts of South Africa.

2.0. Previous and Current Day Weather Discussion over Africa (02 May –03 May 2011)

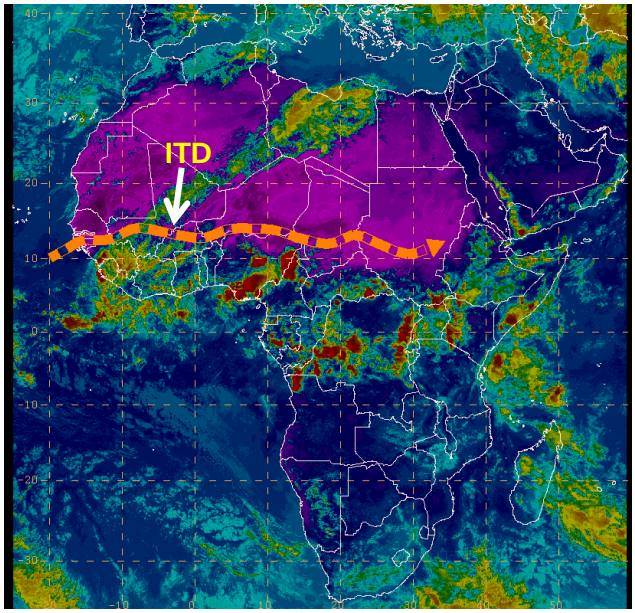
2.1. Weather assessment for the previous day (02 May 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over Southern Liberia parts of DRC, Uganda, eastern Somalia and parts of Ethiopia.

2.2. Weather assessment for the current day (03 May 2011): Intense clouds are observed over Sierra Leon, Guinea, Nigeria, Northern Cameroon, Gabon, Congo, DRC, southern Sudan, parts of Ethiopia and Kenya, Uganda, and Somalia.



IR Satellite Image (valid 1500Z) and position of ITD, based on 1200Z Surface Analysis; 03 May 2011



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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