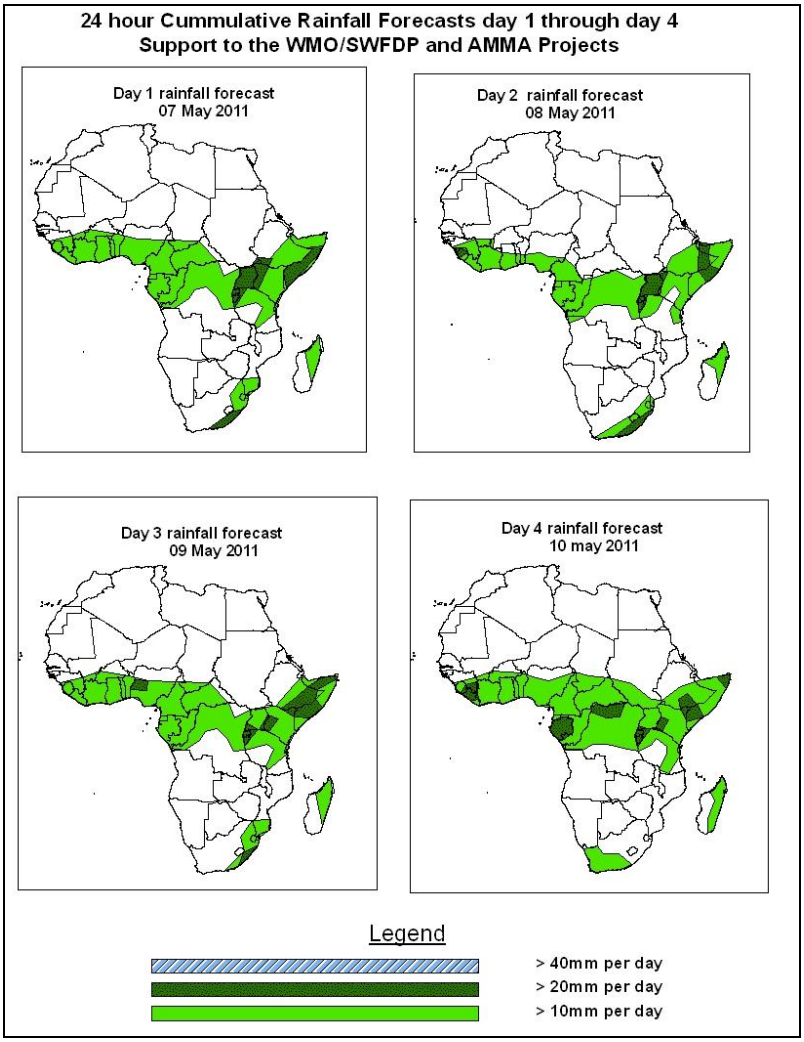
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 10 May – 06Z of 13 May 2011, (Issued at 10:30Z of 06 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 persistent southeasterly winds from the Indian Ocean converging with dry northwesterly winds from northeast Africa are expected to continue enhancing 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 rainfall to exceed 20mm per day over parts of many places in the Gulf of Guinea, central African Republic, parts of northern DRC, Uganda, southern Ethiopia and Somalia.

1.2. Models Comparison and Discussion-Valid from 00Z of 09 May 2011

According the GFS, ECMWF and UKMET models, the Saharan High is expected to shift eastwards between Libya and Egypt, while gradually weakening through 24 to 96 hours. An east-west oriented ridge associated with the Azores high is expected to extend gradually across Mauritania and Morocco through 24 to 96 hours. 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.

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

At the 850hpa level, the GFS model maintains the east-west oriented convergence line in the region between West Africa and Sudan across central African region. This convergence is expected to remain active throughout 24 at 96 hours. The north-south oriented convergence in the CAB region is also expected to remain active in its climatological position throughout 24 at 72 hours. Easterly to southeasterly winds from 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 trough in the westerlies is expected to propagate across eastern Libya, Egypt and Red Sea through 24 to 96 hours. The persistent northeasterly to easterly winds in central African region and the Gulf of Guinea are expected to attain a wavy pattern that propagates across the region through 24 to 96 hours.

At 500hpa, easterly winds with moderate intensity (15 to 20knots) are expected to dominate the flow over Sudan, central African and the Gulf of Guinea region, with the core of the maximum wind tending to propagate across the Gulf of Guinea countries through 24 to 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, Libya, Egypt and Mediterranean through 24 to 48 hours and tend to intensifying progressively to

(>110Kts) at 72 hours and (>130Kts) by 96 hours. On the other hand, strong winds (>90Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across Atlantic Ocean, southern Africa, Namibia and Botswana, through 24 and tend to intensifying to (>110Kts) at 72 and 96 hours.

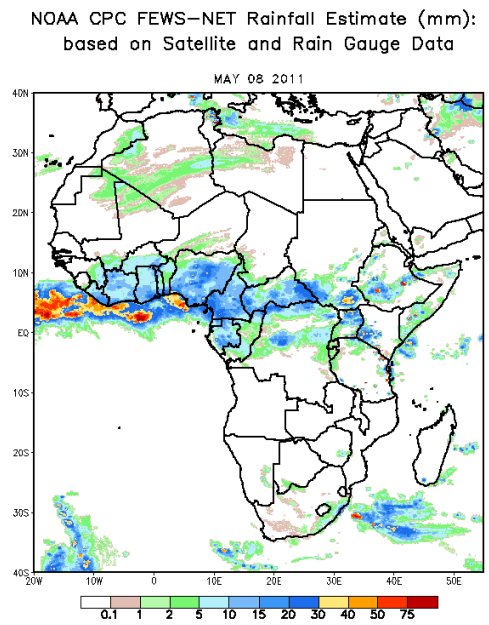
In the next four days, the persistent southeasterly winds from the Indian Ocean converging with dry northwesterly winds from northeast Africa are expected to continue enhancing rainfall in the GHA region. Moreover, the seasonal lower tropospheric convergence in the Congo Air Boundary Region, localized 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 rainfall to exceed 20mm per day over parts of many places in the Gulf of Guinea, Central African Republic, parts of northern DRC, Uganda, southern Ethiopia and Somalia.

2.0. Previous and Current Day Weather Discussion over Africa (08 May –09 May 2011)

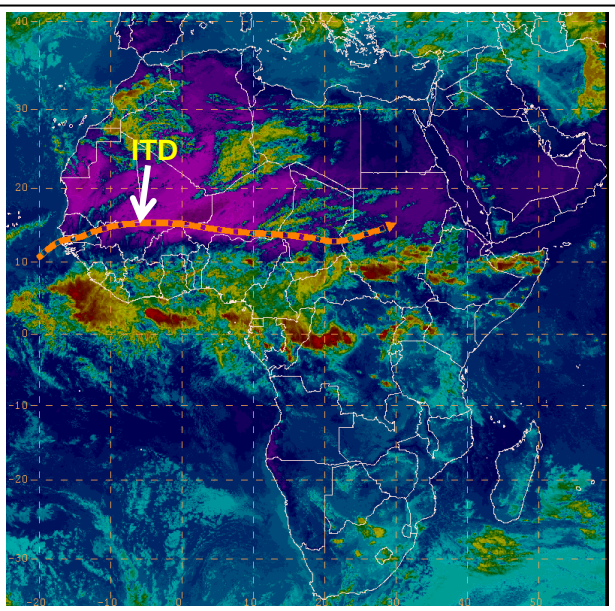
2.1. Weather assessment for the previous day (08 May 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over Southern Sierra Leon, Liberia and Cote D'Ivoire, Nigeria, CAR, Southern Sudan and parts of Uganda

2.2. Weather assessment for the current day (09 May 2011): Intense clouds are observed Gulf of Guinea coast, southern Sudan, parts of DRC, Congo, parts of Somalia and Ethiopia and Uganda.



IR Satellite Image (valid 1622Z) and position of ITD, based on 1200Z Surface Analysis; 09 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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