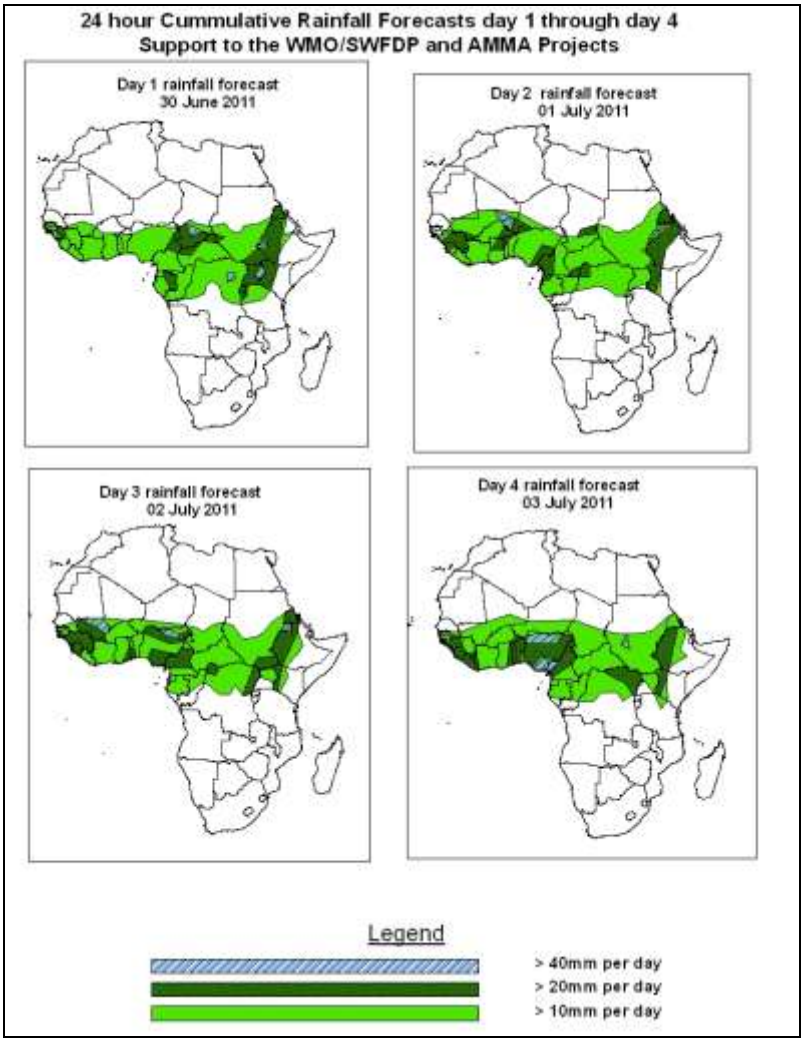
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 30 June– 06Z of 03 July 2011, (Issued at 09:30Z of 29 June 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, there is an increased chance for heavy rainfall over western parts of West Africa, portions of central Africa and western parts of equatorial Africa due to strong monsoon flow and westward propagating storms. Strong moist southerly flow with its associated convergence is expected to enhance rainfall in the vicinity of Lake Victoria during the first half of the forecast period. Moderate to heavy seasonal rainfall is expected to continue over parts of Ethiopia and Eritrea.

1.2. Models Comparison and Discussion-Valid from 00Z of 29 June 2011

According the GFS, ECMWF and UKMET models, the monsoon trough with its associated heat lows across the Sahel region is expected to maintain its east-west orientation during the forecast period. The central pressure value along its western end (near Mauritania and Mali) varies from 1004mb to 1008mb during the forecast period. On the other hand, the heat low over central African region and Sudan is expected to have central pressure that varies from 1004mb to 1006mb during the forecast period. The East African ridge across southeast and East Africa is expected to weaken slightly through 48 to 96 hours.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain a central pressure value of 1036hpa through 24hours and intensifying to 1040hpa by 48 hours and back to 1036hpa through 72 to 96hours. The Mascarene high pressure system over southwest Indian Ocean is expected to maintain central pressure value of 1020hpa through 24 hours and tends to weaken to 1016hpa from 48 to 96hours.

At the 850hpa level, the GFS model tends to maintain abundant moisture influx into West Africa from the Atlantic Ocean. This moist air is expected to converge across the Gulf of Guinea and southern Sahel areas. Moreover, the seasonal southeasterly moist flow from the Indian Ocean across East Africa, turning into southwesterly flow as it passes northern DRC and Sudan, is expected to converge over parts of Sudan and western Ethiopia during the forecast period. On the other hand, dry northeasterly winds are expected to continue dominating the flow over northern and portions of central Sudan.

At the 700hPa level, strong moist southerly wind with its associated convergence is expected to dominate the flow in the vicinity of Lake Victoria through 24 to 48 hours. However, this strong southerly flow is expected to weaken through 72 to 96 hours. On the other hand, northerly flow across northern Sudan turns into easterly flow as it reaches the border between Sudan and Chad. This easterly flow attains a wavy pattern as it passes central and West African region, with a zone of strong wind propagating between Nigeria and the west coast of West Africa through 24 to 96 hours.

At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over western Sudan, central African and the Gulf of Guinea and southern Sahel region, with the stronger winds associated with the African easterly Jet are expected over Mali and Burkina Faso through 48 and 96hours.

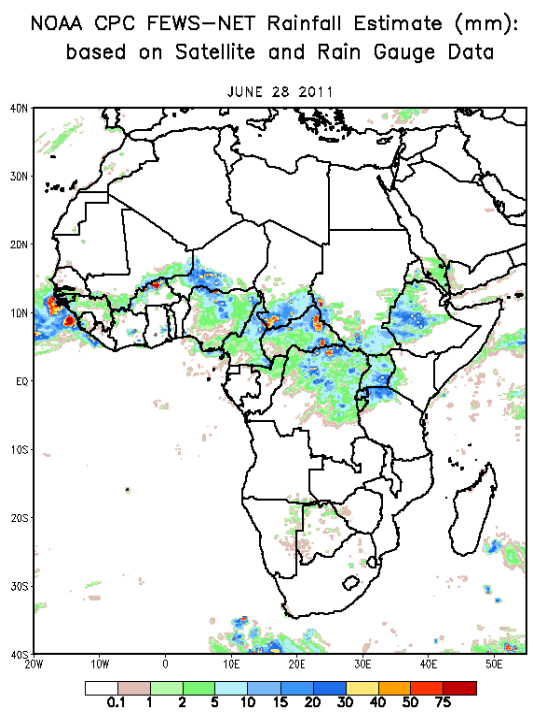
A zone of strong wind (>150Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected in the southern hemisphere across Atlantic and Indian Ocean, Southern Africa during the forecast period.

In the next four days, there is an increased chance for heavy rainfall over western parts of West Africa, portions of central Africa and western parts of equatorial Africa due to strong monsoon flow and westward propagating storms. Strong moist southerly flow with its associated convergence is expected to enhance rainfall in the vicinity of Lake Victoria during the first half of the forecast period. Moderate to heavy seasonal rainfall is expected to continue over parts of Ethiopia and Eritrea.

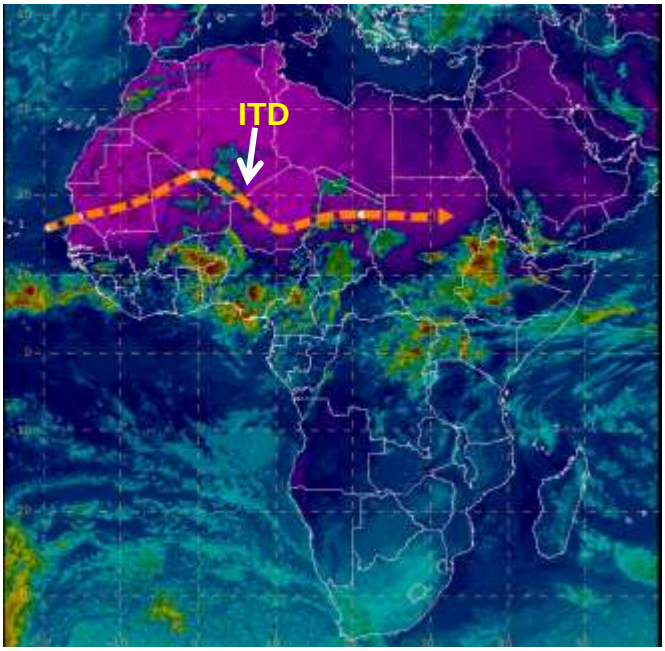
2.0. Previous and Current Day Weather Discussion over Africa (28 – 29June 2011)

2.1. Weather assessment for the previous day (28 June 2011): During the previous day, a combination of moderate and heavy rainfall was observed over Guinea-Bissau, western Guinea, northern Burkina Faso, Southern Niger, parts of Central Africa Republic western Ethiopia and part of Uganda.

2.2. Weather assessment for the current day (29 June 2011): Intense clouds are observed over Burkina Faso, Nigeria, Cameroon, eastern Sudan, Ethiopia, part of Uganda and eastern DRC.



IR Satellite Image (valid 1545Z) and position of ITD, based on 1200Z Surface Analysis; 28 June 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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