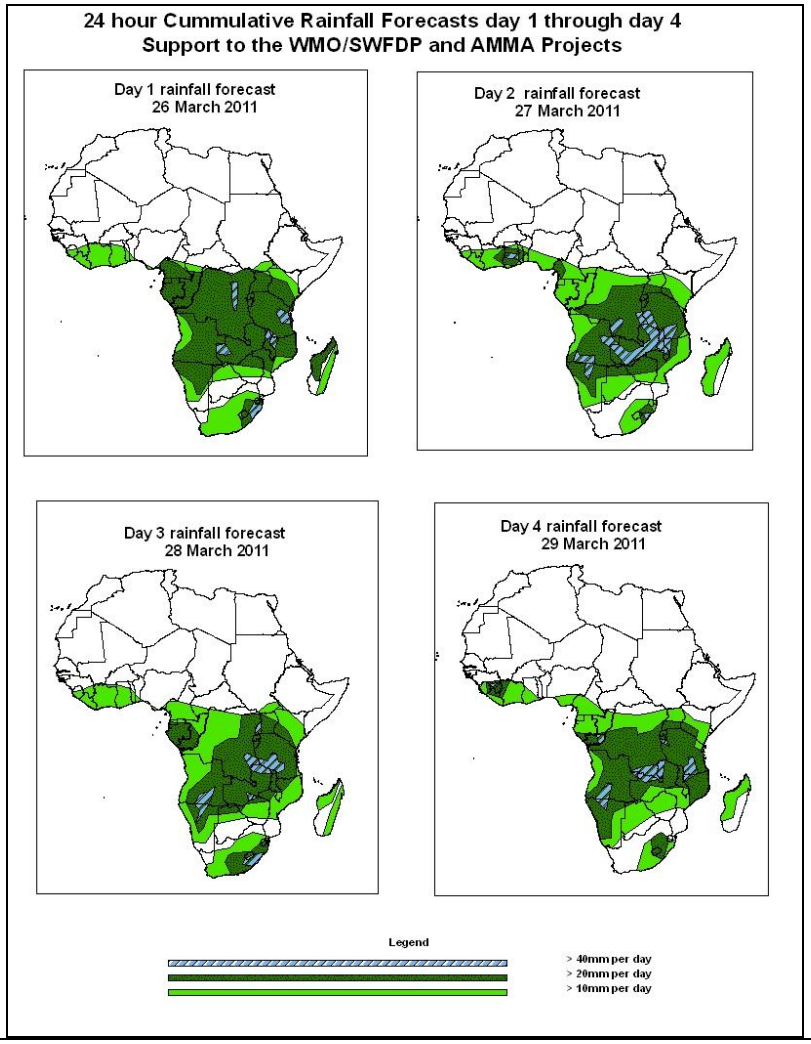
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 26 March – 06Z of 29 March 2011, (Issued at 12:00Z of 25 March 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, a combination of strong lower level convergence over southern Africa and the Congo Air Boundary (CAB), the presence of a mid-latitude frontal system along South African coast, influx of moisture laden Easterly's along Tanzania, Mozambique and South African axis, and moist south westerly's from the Atlantic into the Gulf of Guinea (G.G) coast will enhance moderate and heavy rainfall over their respective regions. Hence, there is an increased chance for rainfall to exceed 20mm per day over coast of G.G coast, Congo, Uganda, Kenya, Tanzania, DRC, Burundi, Rwanda, Malawi, Mozambique, Zimbabwe, Angola, Namibia, South Africa, Zambia, Madagascar and Botswana.

1.2. Models Comparison and Discussion-Valid from 00Z of 26 March 2011

Within the next four days, the GFS, ECMWF and UKMET models show the persistence of an east-west oriented trough formed by a series of cut off lows over southern Sudan, parts of Central African region and the coast of the Gulf of Guinea. A central pressure value of 1005hpa is expected along its eastern end (mainly over Central African Republic / Sudan region), and a pressure value of 1007hpa along its western end. The lows associated with the meridional arm of the ITCZ are active. There is a low pressure system over Angola region. The ECMWF model gives slightly higher pressure values than the GFS and UKMO models.

The St. Helena High pressure system over southeast Atlantic weakens from a central pressure value of 1026hpa to 1022hpa by 48 hours and absent from its climatological position thereafter. The Mascarene high pressure system over southwest Indian Ocean appears at its climatological position with a central pressure value of 1020hpa by 72 hours.

The east-west oriented convergence line in the region between the coastal areas of the Gulf of Guinea and northeast DRC at 850hpa level, as depicted by the GFS model, is expected to persist. The north-south oriented convergence line and the convergence line over Angola region both deepen and persist, filling slightly by 72 hours and deepening by 96 hours.

At the 700hpa level, mostly northeasterly winds dominate across most of western and central African countries with strong lower tropospheric convergence dominating the flow over Angola, Namibia, southern DRC, Zambia, and Angola.

At 500HPa, zones of strong wind in excess of 70Kts, which are associated with the African Easterly Jet, are expected in the vicinity of north Africa and the Mid –East by 24 hours, reducing in strength to about 50kts by 72 hours. Similar strong winds in excess of 50Kts are expected over the south Atlantic and the Indian Ocean.

A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet in the sub-tropical region of North Africa and the Mid -East is expected to be wavy all through.

Similarly, strong winds (>110Kts) associated with the Sub-Tropical Westerly Jet in the Sub Tropical region of the southern Atlantic and the coast of South Africa is expected to wavy all through, decreasing in strength (>70Kts) by 48 hours and picking up again (>90Kts) by 72 hours.

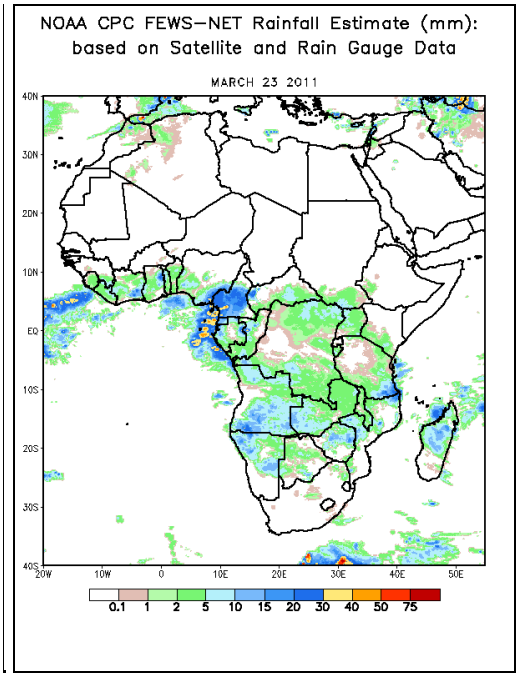
In the next four days, a combination of strong lower level convergence over southern Africa and the Congo Air Boundary (CAB), the presence of a mid-latitude frontal system along South African coast, influx of moisture laden Easterly's along Tanzania, Mozambique and South African axis, and moist south westerly's from the Atlantic into the Gulf of Guinea (G.G) coast will enhance moderate and heavy rainfall over their respective regions. Hence, there is an increased chance for rainfall to exceed 20mm per day over coast of G.G coast, Congo, Uganda, Kenya, Tanzania, DRC, Burundi, Rwanda, Malawi, Mozambique, Zimbabwe, Angola, Namibia, South Africa, Zambia, Madagascar and Botswana.

2.0. Previous and Current Day Weather Discussion over Africa (24 March – 25 March 2011)

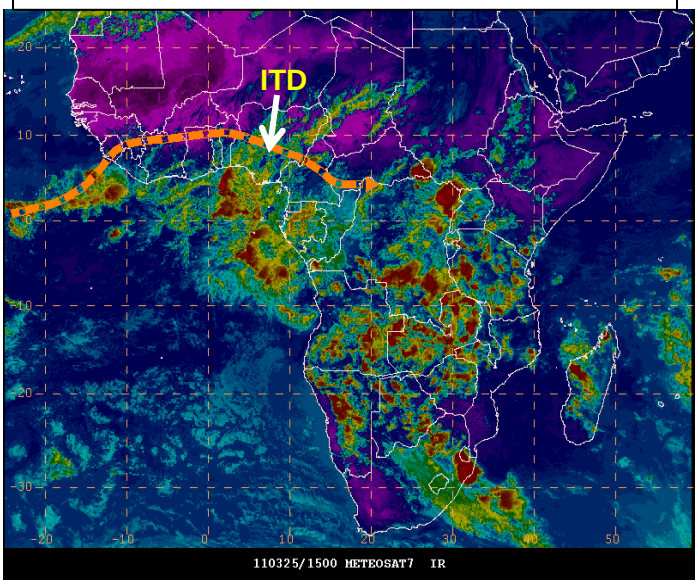
2.1. Weather assessment for the previous day (24 March 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over Gulf of Guinea coast, CAR, Congo, Tanzania, Angola, Namibia, Zimbabwe, Mozambique, Madagascar, DRC, Zambia, Kenya, Sudan and Ethiopia.

2.2. Weather assessment for the current day (25 March 2011): Intense clouds are observed over Nigeria, Cameroun, CAR, southern Sudan, Uganda, Kenya, DRC, Tanzania, Mozambique, Zambia, Zimbabwe, Botswana, Angola, Namibia, Madagascar, Malawi, northern South Africa and Rwanda.



IR Satellite Image (valid 1500Z) and position of ITD, based on 12Z Surface Analysis; 25 Mar 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

Author(s): Onyilo Desmond Onyilo (Nigerian Meteorological Agency) / CPC-African Desk), Desmond.Onyilo@noaa.gov

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