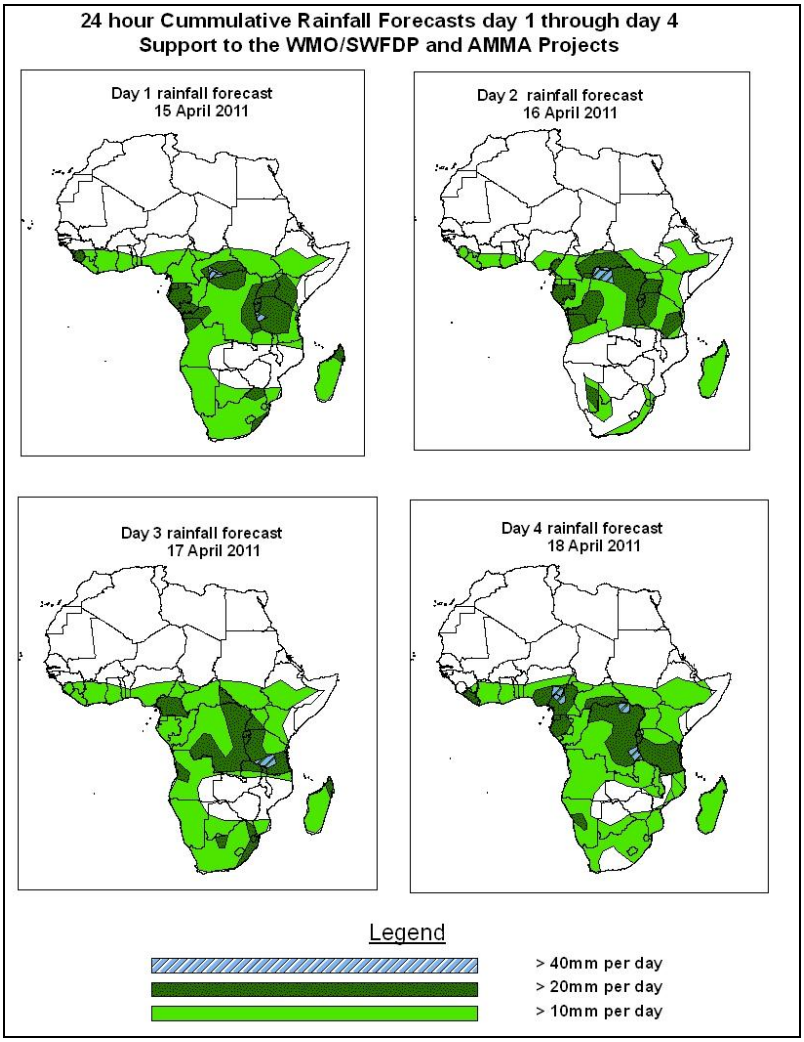
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 15 April – 06Z of 18 April 2011, (Issued at 11:45Z of 14 April 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 seasonal wind convergence in the CAB region, localized convergences in parts of central Africa and the Gulf of Guinea region are expected to maintain wide spread rainfall across the CAB region, northern parts of southern Africa as well as across central Africa and the Gulf of Guinea region, with locally heavy rainfall expected over Tanzania, southern Uganda, parts of CAR, DRC and parts of northern Angola, parts of Namibia, Rwanda, Burundi, Gabon, Cameroon, Equatorial Guinea and Liberia.

1.2. Models Comparison and Discussion-Valid from 00Z of 13 April 2011

In general the GFS, ECMWF and UKMET models more or less indicate the east-west oriented equatorial trough in its climatological position. This trough is formed by a series of cut off lows over southern Sudan, parts of Central African region and the coast of the Gulf of Guinea. In the coming four days, the lowest pressure values along this trough is expected to be as low as 1003hpa along its eastern end (mainly over Central African Republic / Sudan region), and as low as 1004hpa along its western end. The lows associated with the meridional arm of the ITCZ are expected to remain active over central DRC and northeastern Tanzania by 24 hours. The low pressure system over Angola region maintains at central pressure value of 1007hpa. The three models; ECMWF, GFS and UKMET show some level of similarity in their presentation of pressure patterns.

The St. Helena High pressure system over southeast Atlantic maintains a central pressure value of 1028hpa in 24, and expected to weaken to 1024hpa through 48 by 96 hours. The Mascarene high pressure system over southwest Indian Ocean is expected to maintain a central pressure value of 1020hpa in 24hours and expected to weaken to 1016hpa in 48 and 72 hours and to back to 1020hpa to 96 hours.

At the 850hpa level, the GFS model shows an east-west oriented convergence line in the region between the western parts of the Gulf of Guinea and the central African region. The dry northwesterly winds associated with this convergence are expected to remain strong throughout the forecast period, while the moist southwesterly winds will remain weak across the southern parts of the Gulf of Guinea and central African areas. Localized wind convergences are also expected to dominate the flow over parts of the Congo Air Boundary (CAB) and western parts of the equatorial Africa areas. A strong wind convergence in the Mozambique Channel during 24 hour is expected to weaken gradually through 48 to 96 hours.

At the 700hPa level easterly winds in central part of Africa is expected to turn into north-easterlies, while expanding westward through 24 to 96 hours. Localized wind convergences are also expected in the vicinity of CAR, DRC, Cameroon, Rwanda, Burundi, Uganda and Congo.

At 500hpa, zonal westerlies are expected to dominate the flow over sub-tropical Africa, while easterlies with moderate intensity (10 to 15knots) are expected to dominate the

flow between the Horn of Africa and Cameroon through 24 to 96 hours. A mid-latitude westerly trough is expected to propagate between southeast Atlantic Ocean and southwest Indian Ocean across South Africa through 24 to 96 hours.

A zone of strong wind (>130Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected across northeast Atlantic Ocean, Algeria, Niger, Libya, Egypt and the Middle East region through 24 hours, and it is expected to intensify progressively to (>110Kts) through 48 and 72 hours and (>90Kts) by 96 hours. On the other hand, strong winds (>90Kts) associated with the Sub-Tropical Westerly Jet is expected in the Sub Tropical region of southern Africa, Namibia and Botswana during the forecast period.

In the next four days, the seasonal wind convergence in the CAB region, localized convergences in parts of central Africa and the Gulf of Guinea region are expected to maintain wide spread rainfall across the CAB region, northern parts of southern Africa as well as across central Africa and the Gulf of Guinea region, with locally heavy rainfall expected over Tanzania, southern Uganda, parts of CAR, DRC and parts of northern Angola, parts of Namibia, Rwanda, Burundi, Gabon, Cameroon, Equatorial Guinea and Liberia.

2.0. Previous and Current Day Weather Discussion over Africa (13 April – 14 April 2011)

2.1. Weather assessment for the previous day (13 April 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over parts of Liberia, Sierra Leone, southern Cote D'Ivoire, Gabon, DRC, CAR, Lesotho, part of South, Africa part West of Angola and portions of Ethiopia and Tanzania.

2.2. Weather assessment for the current day (14 April 2011): Intense clouds are observed over Nigeria, Cameroon, CAR, DRC, and Uganda, part West of Ethiopia, Madagascar, North of Angola, Congo, Gabon, southern Somalia, Burundi and Rwanda.

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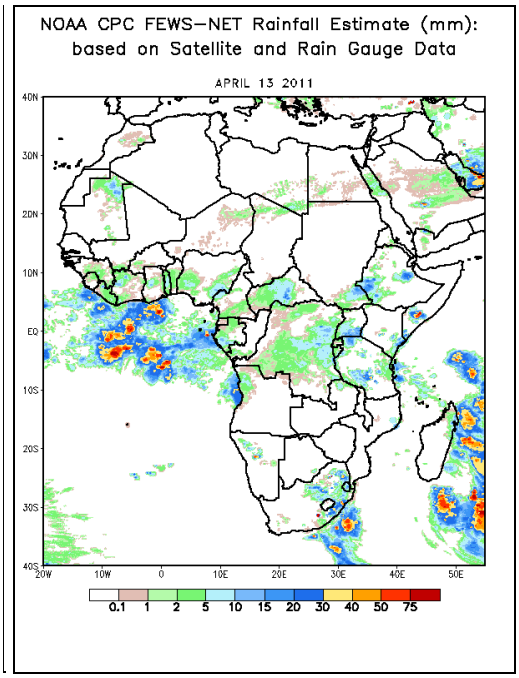
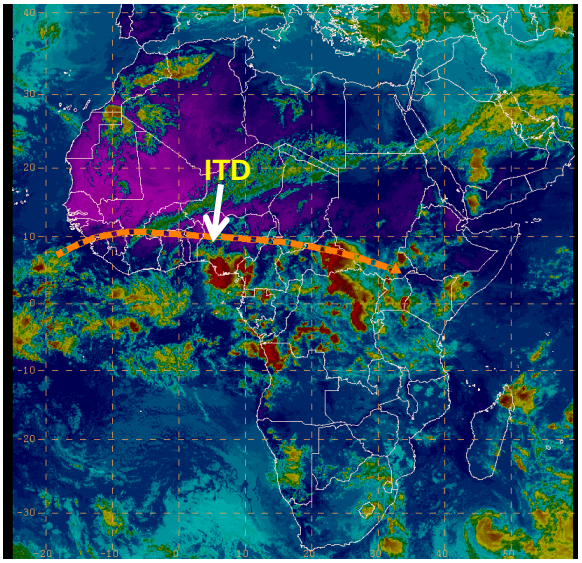


IR Satellite Image (valid 1700Z) and position of ITD, based on 1200Z Surface Analysis; 14 April 2011



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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