

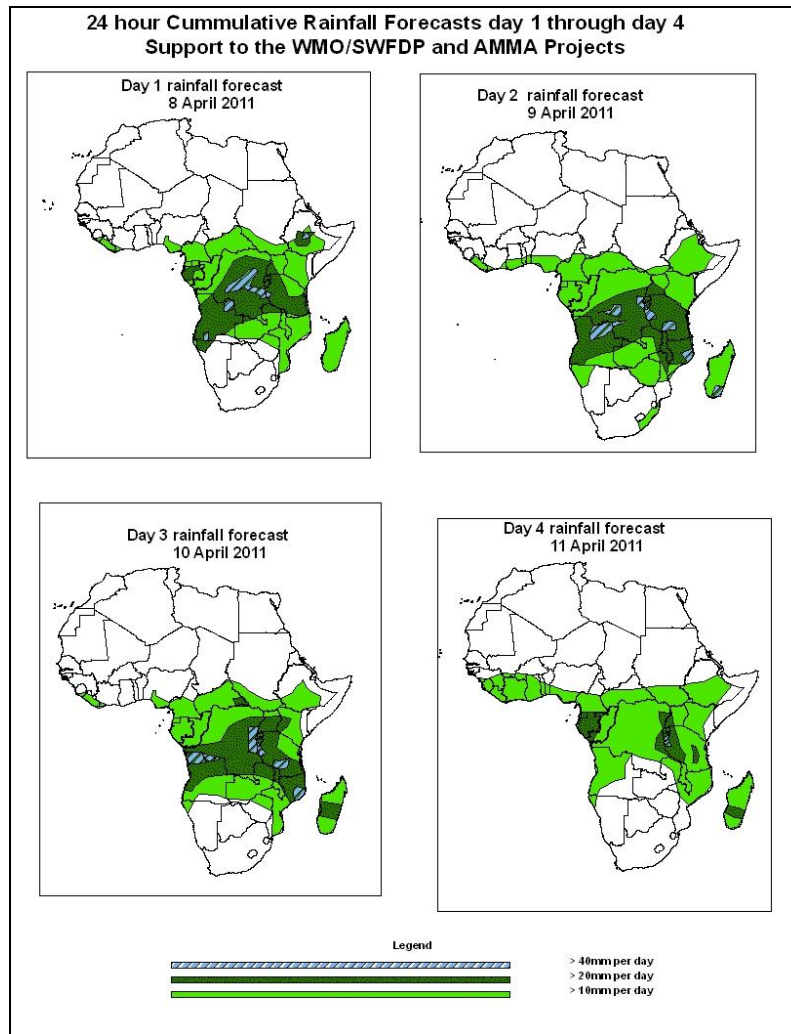


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 08 April – 06Z of 11 April 2011, (Issued at 13:00Z of 07 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

Rainfall should continue over most of southern Africa and Congo Air Boundary (CAB) region in the next three days. However, a significant decrease in rainfall is expected from 72 to 96 hours. Strong lower level convergence and the influx of moisture laden easterly's over the eastern coast of Africa should enhance moderate to heavy rainfall over southern Africa and the Congo Air Boundary (CAB) region. Rainfall is expected to increase slightly over the Gulf of Guinea region through 72 to 96 hours. Hence, there is an increased chance for rainfall to exceed 20mm per day over Congo, Gabon, DRC, parts of Ethiopia, Uganda, Burundi, Rwanda, northern Angola, Zambia, Malawi, northern Mozambique, Madagascar and Tanzania.

1.2. Models Comparison and Discussion-Valid from 00Z of 7 April 2011

The GFS, ECMWF and UKMET models show the persistence of an east-west oriented trough within the next four days, 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 1004hpa is expected along its eastern end (mainly over Central African Republic / Sudan region), and a pressure value of 1008hpa along its western end. The lows associated with the meridional arm of the ITCZ are active over central DRC and northeastern Tanzania by 24 hours. The low pressure system over Angola region maintains a central pressure value of 1009hpa. While the low pressure system over the Mozambique Channel is absent all through. 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 from 24 to 48 hours, then weakening to 1024hpa from 72 to 96 hours. The Mascarene high pressure system over southwest Indian Ocean intensifies from 1024hpa by 24 hours to 1028hpa by 72 hours and weakens to 1026hpa by 96 hour period.

At the 850hpa level, the GFS model shows the east-west oriented convergence line in the region between the coastal areas of the Gulf of Guinea and northeast DRC deepens progressively, filling only by 96 hour period.

The north-south oriented convergence line persists all through, active mostly over DRC, Burundi and Rwanda. The convergence line over Sudan and Ethiopia persists from 24 to 96 hours. The convergence line over the Mozambique Channel, absent by 24 hours, deepens from 48 hours' time.

Mostly northeasterly winds dominate across most of the tropical western and central African countries at the 700hpa level with strong lower tropospheric convergence dominating the flow over Angola, Gabon, Congo, DRC, Tanzania, Burundi, Rwanda and Somalia.

Lower tropospheric anticyclonic winds dominate the flow over southern African countries from 24 to 72 hours. However, the center of the anticyclonic flow is expected

to shift eastwards as a mid-latitude trough approaches the western coast of South Africa from 72 to 96 hours.

At 500hPa, a deep mid-latitude westerly trough is expected to propagate between Libya and Red Sea through 24 to 96 hours, with the southern extent of the trough reaching the latitudes of Niger, northern Chad, northern Sudan and northern Ethiopia. Similarly, a mid-latitude westerly trough is expected to propagate from its current position in South Africa to western Indian Ocean through 24 to 96 hours, while a new trough is approaching the western coast of South Africa after 96 hours.

A zone of strong wind (>150Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected in the vicinity of Libya, Egypt and the mid-east and expected to weaken gradually after 72 hours.

Similarly, strong winds (>110Kts) associated with the Sub-Tropical Westerly Jet in the Sub Tropical region of South Africa, south Atlantic and the Indian Ocean is expected to weaken gradually after 72 hours.

Rainfall should continue over most of southern Africa and Congo Air Boundary (CAB) region in the next three days. However, a significant decrease in rainfall is expected from 72 to 96 hours. Strong lower level convergence and the influx of moisture laden easterly's over the eastern coast of Africa should enhance moderate to heavy rainfall over southern Africa and the Congo Air Boundary (CAB) region. Rainfall is expected to increase slightly over the Gulf of Guinea region through 72 to 96 hours. Hence, there is an increased chance for rainfall to exceed 20mm per day over Congo, Gabon, DRC, parts of Ethiopia, Uganda, Burundi, Rwanda, northern Angola, Zambia, Malawi, northern Mozambique, Madagascar and Tanzania.

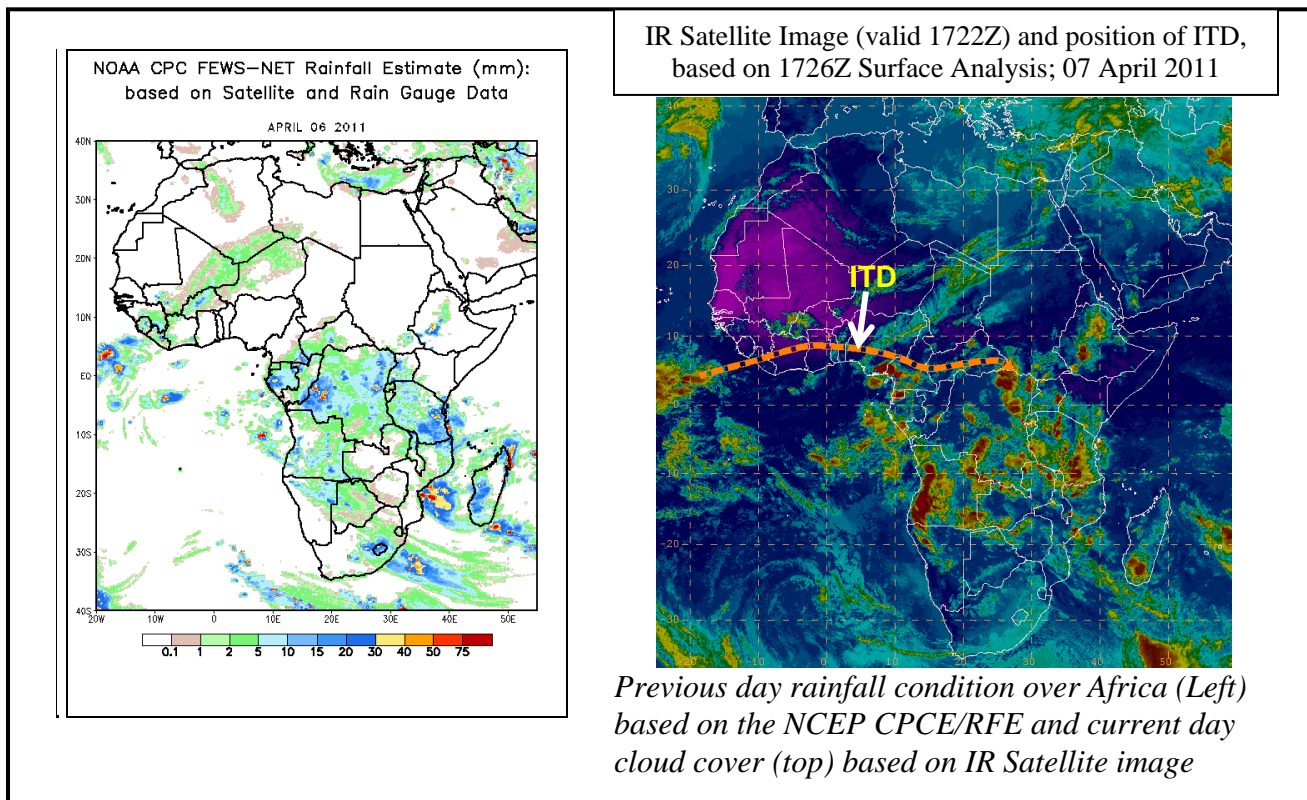
2.0. Previous and Current Day Weather Discussion over Africa (06 April – 07 April 2011)

2.1. Weather assessment for the previous day (06 April 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over Gabon, parts of DRC, southern Ethiopia, Tanzania, Lesotho and parts of Madagascar.

2.2. Weather assessment for the current day (07 April 2011):

Intense clouds are observed over parts of Burkina Faso, southwest Nigeria, CAR, Cameroun, Congo, Gabon, DRC, Kenya, Tanzania, Zambia, Malawi, Ethiopia, Mozambique, Madagascar, Angola, Namibia and Botswana.



Author(s): Orlando Mendes (Direccao Geral da Meteorologia Nacional da Guine-Bissau) / CPC-African Desk), orlando.mendes@noaa.gov and

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

Disclaimer: This bulletin is for training purposes only and should be used as guidance. NOAA does not make forecasts for areas outside of the United States.