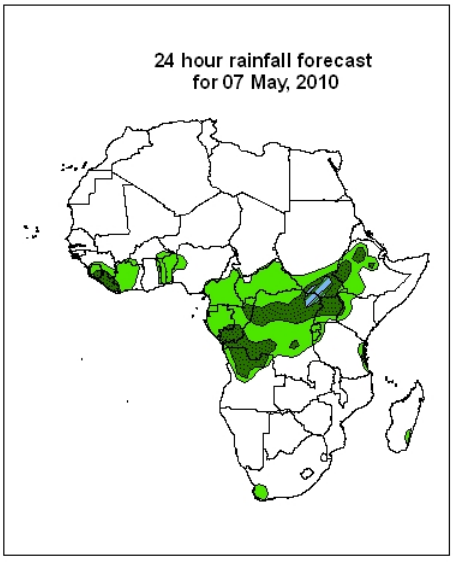
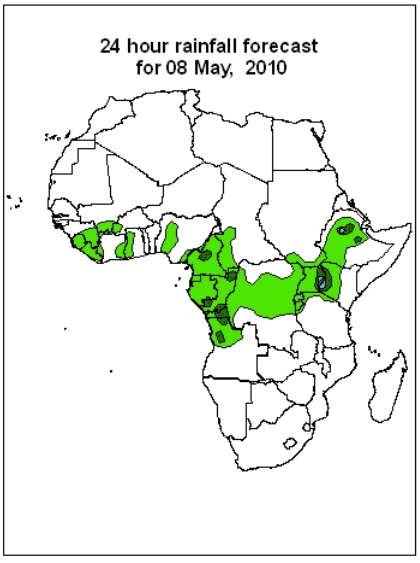
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 07 May – 06Z of 09 May 2010, (Issued at 14:00EST of 06 May 2010)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceedence based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



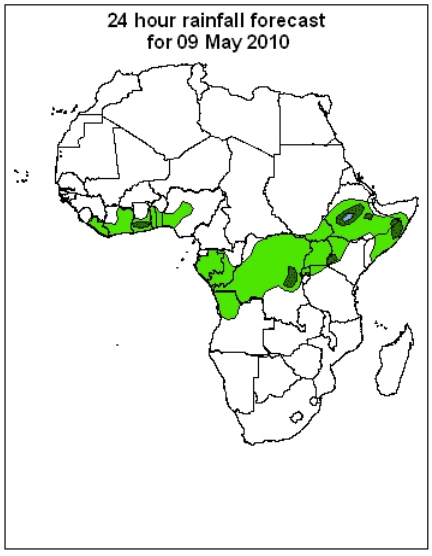


Legend

- >40mm per day
- > 20mm per day
- > 10mm per day

Summary

The seasonal convergence in the Congo Air Boundary (CAB) region is expected to remain active through 24 to 72 hours. As a result of this, many places in northeast DRC, Uganda, western Kenya and southwest Ethiopia will continue receiving moderate to heavy rainfall. The Belg rains are also expected to continue in eastern and southern Ethiopia. Rainfall is also expected to increase in southern Somalia through 48 to 72 hours. The coastal areas of the gulf of Guinea are expected to continue receiving light to moderate rainfall due to persistent onshore winds from the Atlantic Ocean.



1.2. Models Comparison and Discussion - Valid from 00Z of 06 May 2010

A mid latitude trough located over northwestern Atlantic is expected to move eastwards while weakening in 24 to 72 hours. A localized low pressure system located west of Algeria with central pressure value of 1008mb is expected to persist while slightly deepening in 24 to 72 hours. Low pressures located in the Red Sea and Gulf of Aden with central pressure values of 1005mb and 1007mb, respectively, are expected to maintain their position while slightly deepening through 24 to 72 hours. A low pressure system, with central pressure value of 1008mb, located off the coast of Somalia is expected to maintain its position through 24 to 72 hours. A low pressure system with central pressure value of 1010mb located along the coasts of Angola is expected to persist with slight change through 24 to 72 hours. On the other hand, a localized high pressure system with central pressure value of 1020mb located over South Africa is expected to persist with slight change in 48 to 72 hours. A sub tropical high pressure system with central pressure values of 1020mb located over southern Atlantic Ocean is expected to develop in 72 hours. The equatorial trough is expected to maintain its position with central pressure values of 1005mb in the Gulf of Guinea, 1006mb over Central Africa Republic and 1006mb over southern Sudan through 24 to 48 hours. The heat low over Sudan, with central pressure value of 1008mb is expected to maintain its position with slight change through 24 to 72 hours.

At 850mb level, the mid latitude trough located between 10^0W to 0^0 longitude is expected to expand towards east reaching along near 20^0E longitude while extending its axis 15^0N latitude through 24 to 48 hours. This trough axis is expected to retreat back and lying along the western coast of Africa while giving a way to the sub tropical Saharan Anticyclone in 48 to 72 hours. Another trough located between 20^0E to 30^0E longitude is expected to move slightly eastwards while the sub tropical anticyclone dominating much of the northern Africa regions in 24 to 72 hours. The northeasterly and southwesterly trade winds are expected to converge near 10^0N latitude in the region between coastal West Africa and Sudan through 24 to 72 hours. Meanwhile, the southeasterly winds from the periphery of the anticyclone in the Indian Ocean are expected to continue carrying moisture towards a strong lower level convergence in East Africa through 24 to 72 hours.

At 500mb level, a mid-latitude westerly trough, located along 20^0W longitude, is expected to extend up to Mauritania and southern Algeria in 24 hours while becoming

zonal in 48 to 72 hours. Another mid latitude trough located between 30^0E and 40^0E longitude, is expected to move slightly eastwards in 24 to 48 hours while moving further eastwards and reaching between 50^0E and 60^0E longitude in 48 to 72 hours. On the other hand, the mid tropospheric Anticyclonic circulation is expected to dominate the northern Africa regions through 24 to 72 hours. In the southern hemisphere, a zonal pattern in the mid-latitude westerlies dominates the flow in the sub-tropical regions through 24 to 48 hours while becoming slightly wavy in the next 72 hours.

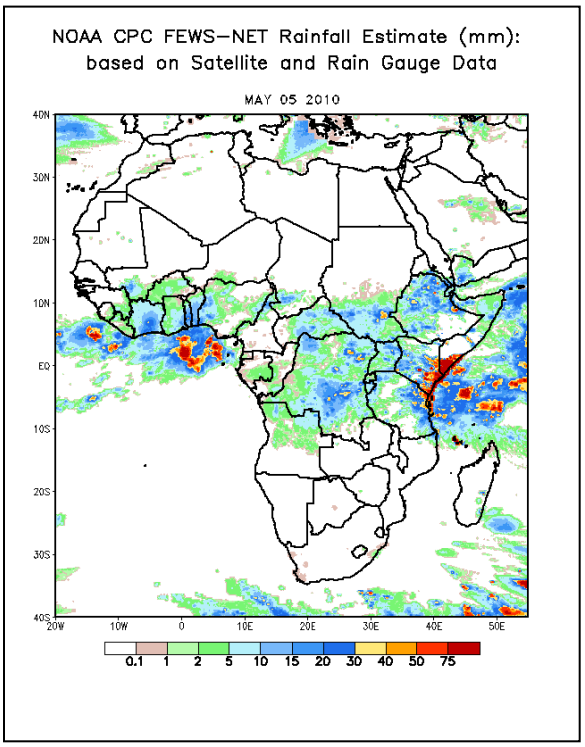
At 200mb, the flow in the northern Africa regions is expected to be slightly wavy in 24 hours, while more or less becoming zonal in 48 to 72 hours. On the other hand, the wind flow in the southern hemisphere is expected to be wavy along the coast of southern Africa through 24 to 72 hours. The speed of the jet wind is expected to weaken in 48 to 72 hours in association with an east ward propagating the westerly wave.

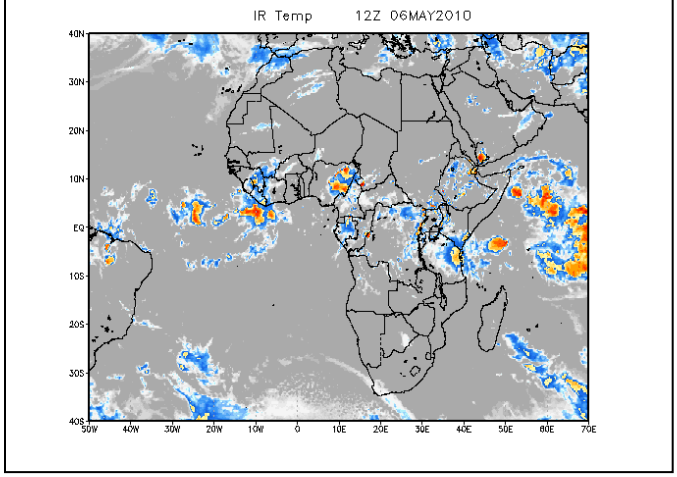
The seasonal convergence in the Congo Air Boundary (CAB) region is expected to remain active through 24 to 72 hours. As a result of this, many places in northeast DRC, Uganda, western Kenya and southwest Ethiopia will continue receiving moderate to heavy rainfall. The Belg rains are also expected to continue in eastern and southern Ethiopia. Rainfall is also expected to increase in southern Somalia through 48 to 72 hours. The coastal areas of the gulf of Guinea are expected to continue receiving light to moderate rainfall due to persistent onshore winds from the Atlantic Ocean.

2.0. Previous and Current Day Weather Discussion over Africa (05 May 2010 – 06 May 2010)

2.1. Weather assessment for the previous day (05 May 2010): During the previous day, moderate to heavy rains was observed over Ivory Coast, Togo, Benin, western part of Nigeria, southern Mali, southern Chad, northern Cameroon, Central African Republic, southern Sudan, parts of Ethiopia, Kenya, Somalia, Tanzania and DRC and few places of northern Namibia.

2.2. Weather assessment for the current day (06 May 2010): Isolated intense clouds are observed over Sierra Leone, Liberia, eastern half of Guinea, eastern Nigeria and adjacent areas of Chad and Cameroon, Gabon, parts of DRC, eastern half of Tanzania, southern and parts of Kenya, Uganda and Ethiopia.





Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (up) based on IR Satellite image

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