

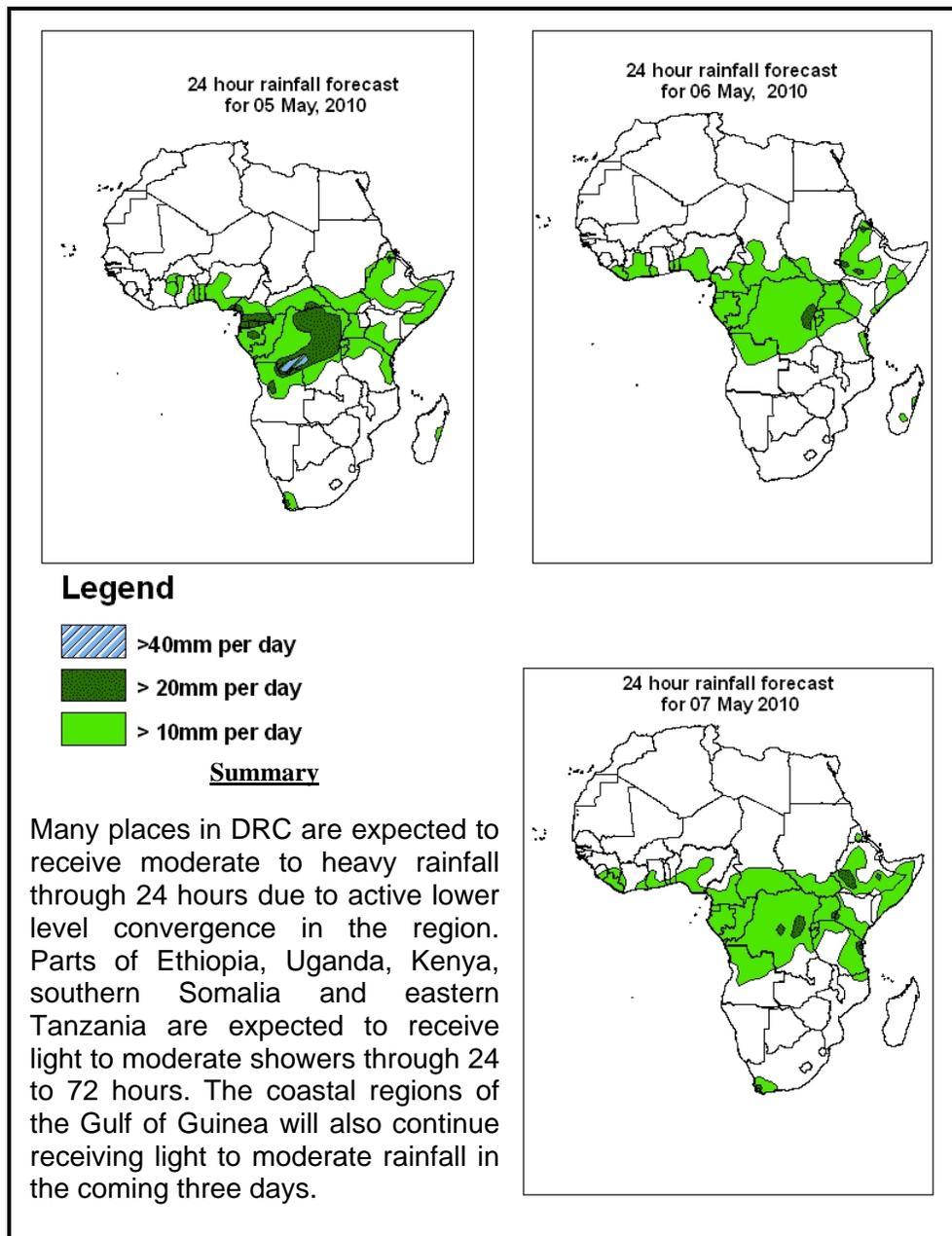


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 05 May – 06Z of 07 May 2010, (Issued at 14:00EST of 04 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.



## **1.2. Models Comparison and Discussion - Valid from 00Z of 04 May 2010**

A localized low pressure system located west of Algeria with central pressure value of 1005mb is expected to persist while slightly deepening in 24 to 48 hours. This low pressure is expected to move slightly eastwards while deepening further in 48 to 72 hours. A low pressure with central pressure value of 1011mb located over east of Mediterranean Sea is expected to persist while deepening in 24 to 48 hours. Low pressures located in the Red Sea and Gulf of Aden with central pressure values of 1004mb and 1006mb, respectively, are expected to maintain their position while slightly deepening through 24 to 72 hours. A low pressure system, with central pressure value of 1006mb, 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 1011mb 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 1019mb located over South Africa is expected to persist with slight change in 48 to 72 hours. A sub tropical high pressure systems with central pressure values of 1022mb and 1019mb located over southern Atlantic and southern Indian Ocean, respectively are 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, 1004mb over Central Africa Republic and 1006mb over southern Sudan through 24 to 48 hours. The heat low over Sudan, with central pressure value of 1005mb is expected to maintain its position with slight change through 24 to 72 hours.

At 850mb level, the mid latitude trough situated along  $10^{\circ}\text{E}$  is expected to move eastwards while slightly weakening through 24 to 48 hours. This trough is expected to weaken further in 48 to 72 hours. On the other hand, the sub-tropical anticyclonic circulation is expected to dominate much of the Northern Africa regions through 24 to 72 hours. The northeasterly and southwesterly trade winds are expected to converge near  $10^{\circ}\text{N}$  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 between  $10^{\circ}\text{W}$  and  $10^{\circ}\text{E}$  longitude, is expected to move eastwards while deepening in eastward back hanged to reach up to  $20^{\circ}\text{N}$  latitude in 24 to 48 hours. This trough is expected to retreat back to

westwards, while deepening further in 48 to 72 hours. Another westward back hanged trough located along  $30^{\circ}\text{E}$  longitude is expected to move eastwards 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 72 hours.

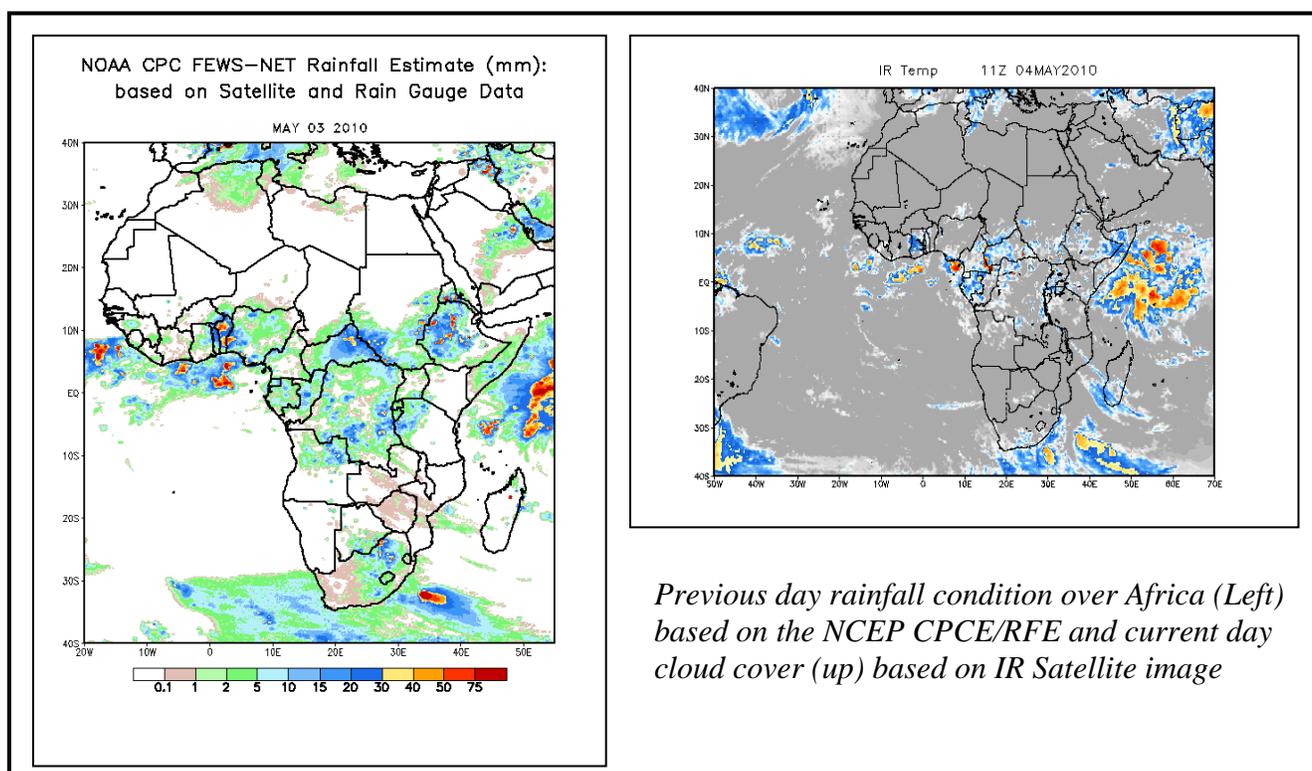
At 200mb, the flow in the northern Africa regions is expected be more or less zonal through 24 to 48 hours, while becoming wavy in 48 to 72 hours. On the other hand, a southeast-northwest oriented trough between the Indian and Atlantic Oceans across southern parts of South Africa is expected to move slightly eastward, while deepening through 24 to 48 hours. In the northern hemisphere, the maximum wind speed associated with this flow is expected to exceed 110 knots across eastern Morocco to western Algeria, northwest Algeria to northwestern Libya and eastern Algeria to coast of Libya, while exceed 90 knots across coast of Northwest Africa to central Libya, east of Egypt to western Asia, west coast of Africa to east of Libya and southwest of Algeria to coast of Libya. In the southern hemisphere, the maximum wind speed is expected to exceed 130 knots in the region between near  $0^{\circ}$  to  $10^{\circ}\text{E}$ , while exceed 110 knots between  $10^{\circ}\text{W}$  to  $20^{\circ}\text{E}$  longitude. The maximum wind speed exceeds 90 knots in the region between  $10^{\circ}\text{W}$  to  $25^{\circ}\text{E}$  longitude in 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.

Many places in DRC are expected to receive moderate to heavy rainfall through 24 hours due to active lower level convergence in the region. Parts of Ethiopia, Uganda, Kenya, southern Somalia and eastern Tanzania are expected to receive light to moderate showers through 24 to 72 hours. The coastal regions of the Gulf of Guinea will also continue receiving light to moderate rainfall in the coming three days.

## 2.0. Previous and Current Day Weather Discussion over Africa (03 May 2010 – 04 May 2010)

**2.1. Weather assessment for the previous day (03 May 2010):** During the previous day, moderate to heavy rains was observed over Togo, Benin and adjacent areas of Nigeria, eastern half of Central African Republic, southwestern part of Sudan, central part of Congo, parts of DRC, western half including central part of Ethiopia, northwestern part of Tanzania and northeastern part of South Africa.

**2.2. Weather assessment for the current day (04 May 2010):** Isolated intense clouds are observed over Ghana, Gabon, central African Republic and adjacent areas of Chad, northwestern, southern and eastern parts of DRC, southern part of Sudan, southeastern part of Ethiopia, Uganda, southern parts of South Africa and Madagascar.



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