

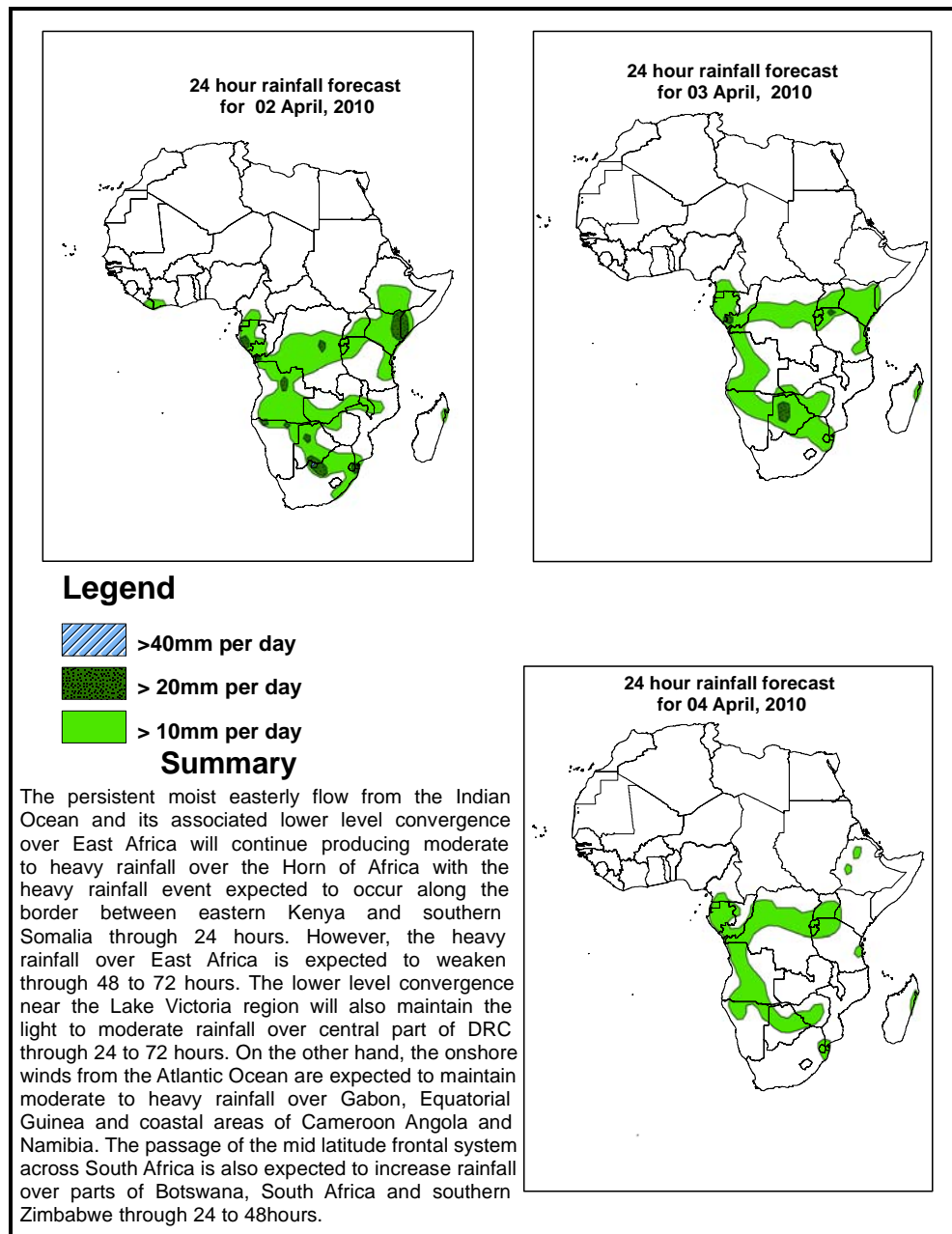


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 02 April –06Z of 04 April 2010, (Issued at 14:00EST of 01 April 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 01 April 2010**

A high pressure system, with central pressure values of 1022mb, located over north of Algeria is expected to move slightly eastwards, while slightly weakening in 24 to 48 hours. The center of this high pressure system is expected to shift northwards, while extending its ridge axis towards Mali and Sudan in 48 to 72 hours. In the southern hemisphere a localized high pressure cell is expected to persist over South Africa, with central pressure value of 1021mb, while its associated ridge extending towards Zimbabwe. A high pressure system with central pressure value of 1021mb over southern Atlantic Ocean is expected to move eastwards, while maintaining its central pressure value in 24 to 48 hours. The ridge associated with this high pressure system is expected to extend towards South Africa in 72 hours. Another localized high pressure system with central pressure value of 1019mb, located over Madagascar is expected to maintain its position through 24 to 72 hours. On the other hand, low pressure system with central pressure value of 1010mb is expected to persist over the Gulf of Aden in 24 to 72 hours, while another low pressure system with central pressure value of 1007mb, located over the Red Sea is expected to persist in 48 to 72 hours. A low pressure system with central pressure value of 1008mb, located off the coast of northwest of Angola, is expected to move slightly southwards through 24 to 72 hours. The low pressure zones associated with the equatorial trough are expected to deepen slightly from 1006mb to 1002mb over Gulf of Guinea, from 1005mb to 1003mb over central Africa and 1004mb to 1002mb over southern Sudan through 24 to 72 hours.

At 850mb level, a mid-latitude frontal system is expected to move between central and eastern Mediterranean Sea, while slightly filling up through 24 to 72 hours. On the other hand, the Saharan anticyclone is expected to build up gradually behind the westerly trough over northern African regions through 24 to 72 hours. The moist easterly to southeasterly winds from the Indian Ocean and their associated convergence are expected to persist dominating the flow over the Horn of Africa region through 24 to 72 hours. A mid-latitude frontal system in the southern hemisphere is expected to move eastwards across the southern tip of South Africa through 24 to 48 hours. The lower level wind convergence in the Congo Air Boundary (CAB) region is expected to weaken gradually through 24 to 72 hours. Besides, the lower tropospheric convergence zones over parts of the Gulf of Guinea countries and western parts of equatorial and southern Africa are expected to remain weak through 24 to 72 hours.

At 500mb level, a mid latitude trough in the westerlies is expected to deepen gradually over northeast Africa while slightly moving eastwards. On the other hand, the mid latitude flow over the southern hemisphere is expected to remain zonal through 24 to 48 hours while slightly wavy in 72 hours.

At 200mb, the flows over the subtropical regions of northern Africa are expected to remain zonal across the northern Africa region through 24 to 72 hours. On the other hand a wavy pattern in the westerly flow is expected to weaken gradually over the subtropical regions of the southern hemisphere in 24 to 72 hours. In the northern

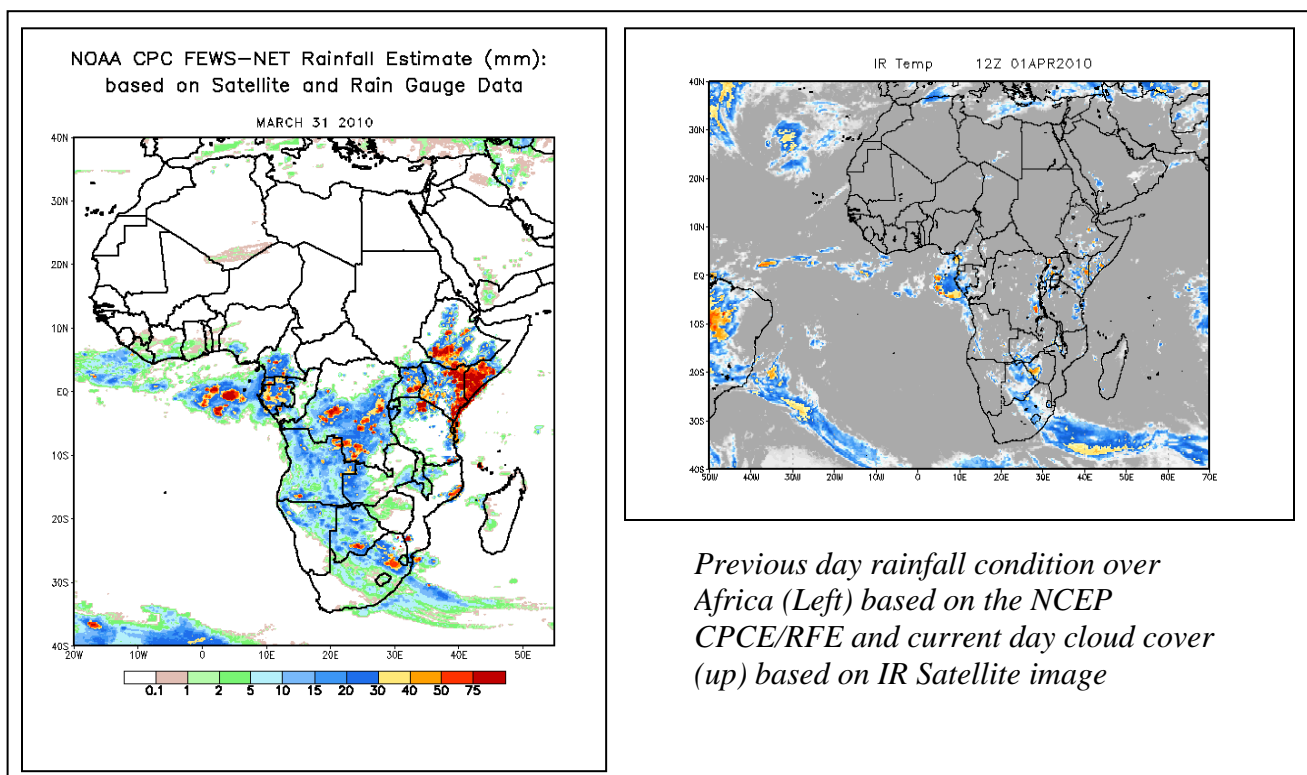
hemisphere, the maximum wind speed associated with this flow is expected to exceed 90 knots across northern Sudan to Asia through 24 to 72 hours.

The persistent moist easterly flow from the Indian Ocean and its associated lower level convergence over East Africa will continue producing moderate to heavy rainfall over the Horn of Africa with the heavy rainfall event expected to occur along the border between eastern Kenya and southern Somalia through 24 hours. However, the heavy rainfall over East Africa is expected to weaken through 48 to 72 hours. The lower level convergence near the Lake Victoria region will also maintain the light to moderate rainfall over central part of DRC through 24 to 72 hours. On the other hand, the onshore winds from the Atlantic Ocean are expected to maintain moderate to heavy rainfall over Gabon, Equatorial Guinea and coastal areas of Cameroon Angola and Namibia. The passage of the mid latitude frontal system across South Africa is also expected to increase rainfall over parts of Botswana, South Africa and southern Zimbabwe through 24 to 48hours.

## 2.0. Previous and Current Day Weather Discussion over Africa (31 March 2010 – 01 April 2010)

**2.1. Weather assessment for the previous day (31 March 2010):** During the previous day, moderate to heavy rainfall events were observed over places of Equatorial Guinea, Gabon, southern part of Cameroon, central and southern half of DRC, southern and central Ethiopia, much of southern Somalia, Uganda, Kenya, northern Tanzania, Angola and adjacent areas of Zambia and Namibia, Botswana, northeastern part of South Africa, Malawi and northeastern coastal areas of Mozambique.

**2.2. Weather assessment for the current day (01 April 2010):** isolated patches of intense clouds are observed over Equatorial Guinea, Gabon, Kenya, Uganda, Rwanda, Burundi, Botswana and adjacent parts of Zimbabwe, central part of South Africa, southern Ethiopia, eastern parts of Tanzania and DRC, Lesotho and Swaziland.



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