

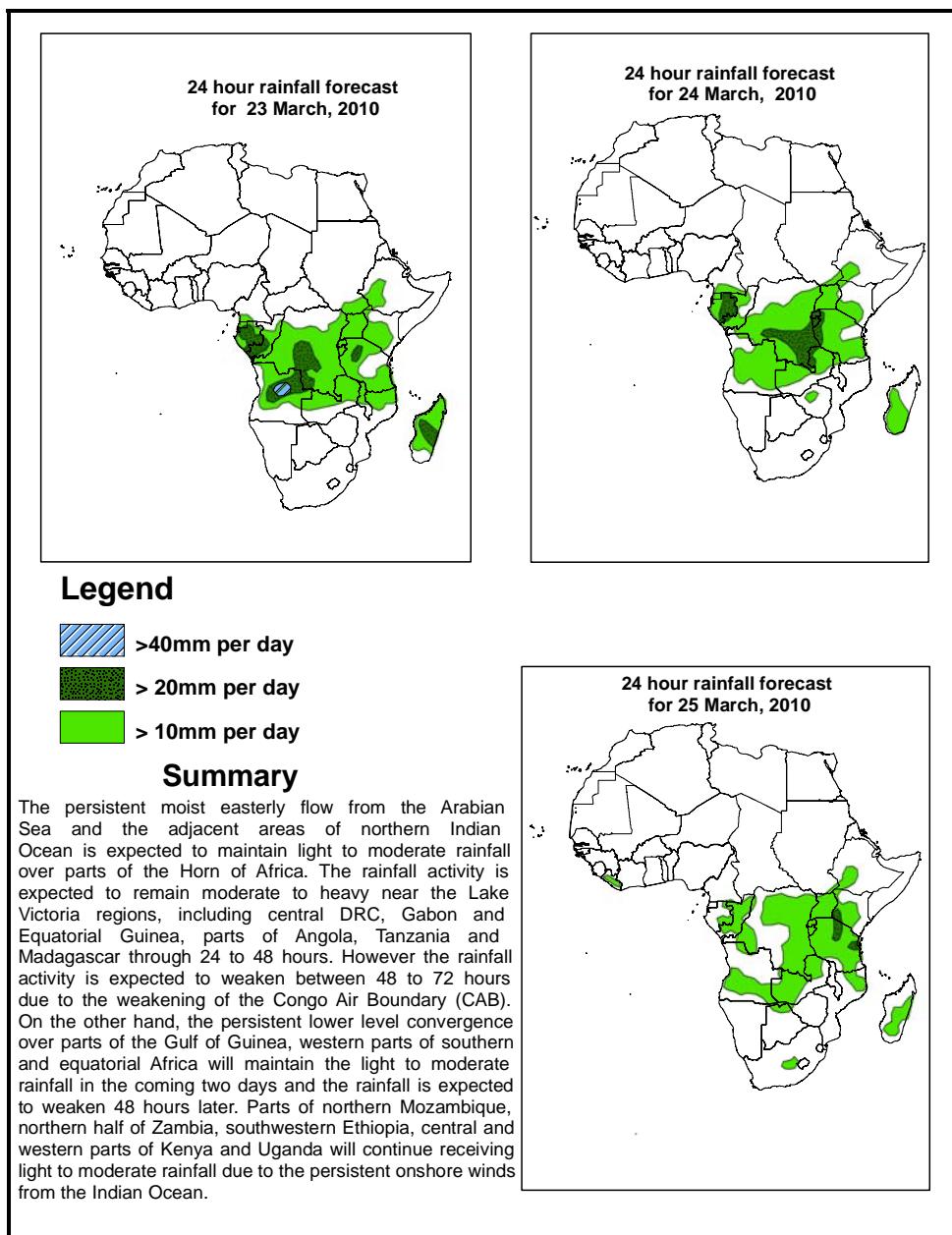


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 23 March –06Z of 25 March 2010, (Issued at 14:00EST of 22 March 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 22 March 2010**

The sub tropical high pressure system over northern Africa and the adjacent Mediterranean regions is expected to remain weak with maximum central pressure value of 1021mb through 24 hours and is expected to rebuild up through 48 to 72hours. On the other hand, localized low pressure systems are expected to develop over the Gulf of Aden and Red Sea region with central pressure values of 1007mb and 1009mb, respectively and will maintain their position through 24 to 72 hours. A Low pressure system with central pressure value of 1009mb over northwest coast of Angola is expected to extend southwards into Namibia and western parts of South Africa through 24 to 72 hours. The low pressure zones associated with the equatorial trough are expected to maintain central pressure values of 1007mb over Gulf of Guinea and 1005mb over central Africa and southern Sudan while slightly deepening through 24 to 48 hours.

At 850mb level, a westerly trough located near  $10^{\circ}\text{W}$  Longitude over northwestern Africa, is expected to deepen along west coast of Africa regions in 24 to 72 hours. The dry northeasterly winds associated with Saharan anticyclone are expected to continue dominating the flow over much of northern Africa through 24 to 72 hours. On the other hand, the easterly winds from the periphery of the Arabian anticyclone are expected to maintain moisture incursion towards the Horn of Africa. The seasonal wind convergence over the Congo Air Boundary (CAB) region is expected to remain active through 24 to 48 hours and will slightly weaken through 48 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 maintain the moderate to heavy rainfall activity through 24hours and will weaken through 48 to 72 hours.

At 500mb level, a cut off mid-latitude low near northern Red Sea is expected to move eastward while weakening through 24 to 72 hours. On the other hand, the westerly flow over the subtropical regions of the southern hemisphere will remain wavy, with a trough in the westerly flow getting back hanged off the west coast of South Africa through 24 to 72 hours.

At 200mb, the westerly flow over much of the subtropical regions of both hemispheres will remain zonal. The maximum wind speed associated with this flow is expected to exceed 110 knots in the region between southeastern Libya and eastern Asia, while the maximum wind speed values are expected to exceed 90 knots across northeastern Mauritania to eastern Asia through 24 to 72 hours.

The persistent moist easterly flow from the Arabian Sea and the adjacent areas of northern Indian Ocean is expected to maintain light to moderate rainfall over parts of the Horn of Africa. The rainfall activity is expected to remain moderate to heavy near the Lake Victoria regions, including central DRC, Gabon and Equatorial Guinea, parts of Angola, Tanzania and Madagascar through 24 to 48 hours. However the rainfall activity

is expected to weaken between 48 to 72 hours due to the weakening of the Congo Air Boundary (CAB). On the other hand, the persistent lower level convergence over parts of the Gulf of Guinea, western parts of southern and equatorial Africa will maintain the light to moderate rainfall in the coming two days and the rainfall is expected to weaken 48 hours later. Parts of northern Mozambique, northern half of Zambia, southwestern Ethiopia, central and western parts of Kenya and Uganda will continue receiving light to moderate rainfall due to the persistent onshore winds from the Indian Ocean.

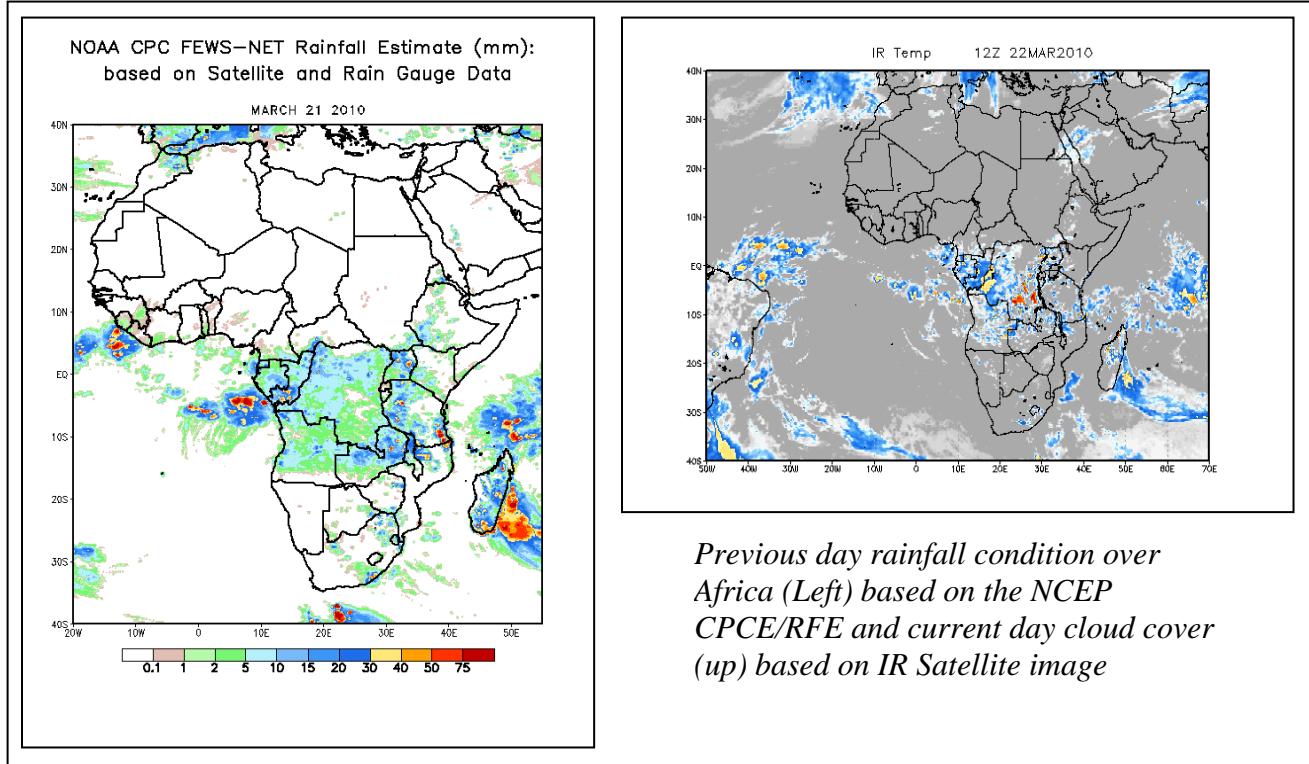
## **2.0. Previous and Current Day Weather Discussion over Africa (18-19 March 2010)**

### **2.1. Weather assessment for the previous day (21 March 2010):**

During the previous day, moderate to heavy rainfall events were observed over Congo, Uganda, Tanzania, Zambia, Malawi and Madagascar as well as few places of DRC, Gabon, Angola, South Africa and southwestern Ethiopia.

### **2.2. Weather assessment for the current day (22 March 2010):**

isolated patches of intense clouds are observed over DRC, Congo, Gabon, Zambia, Uganda, Tanzania and Madagascar.



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