

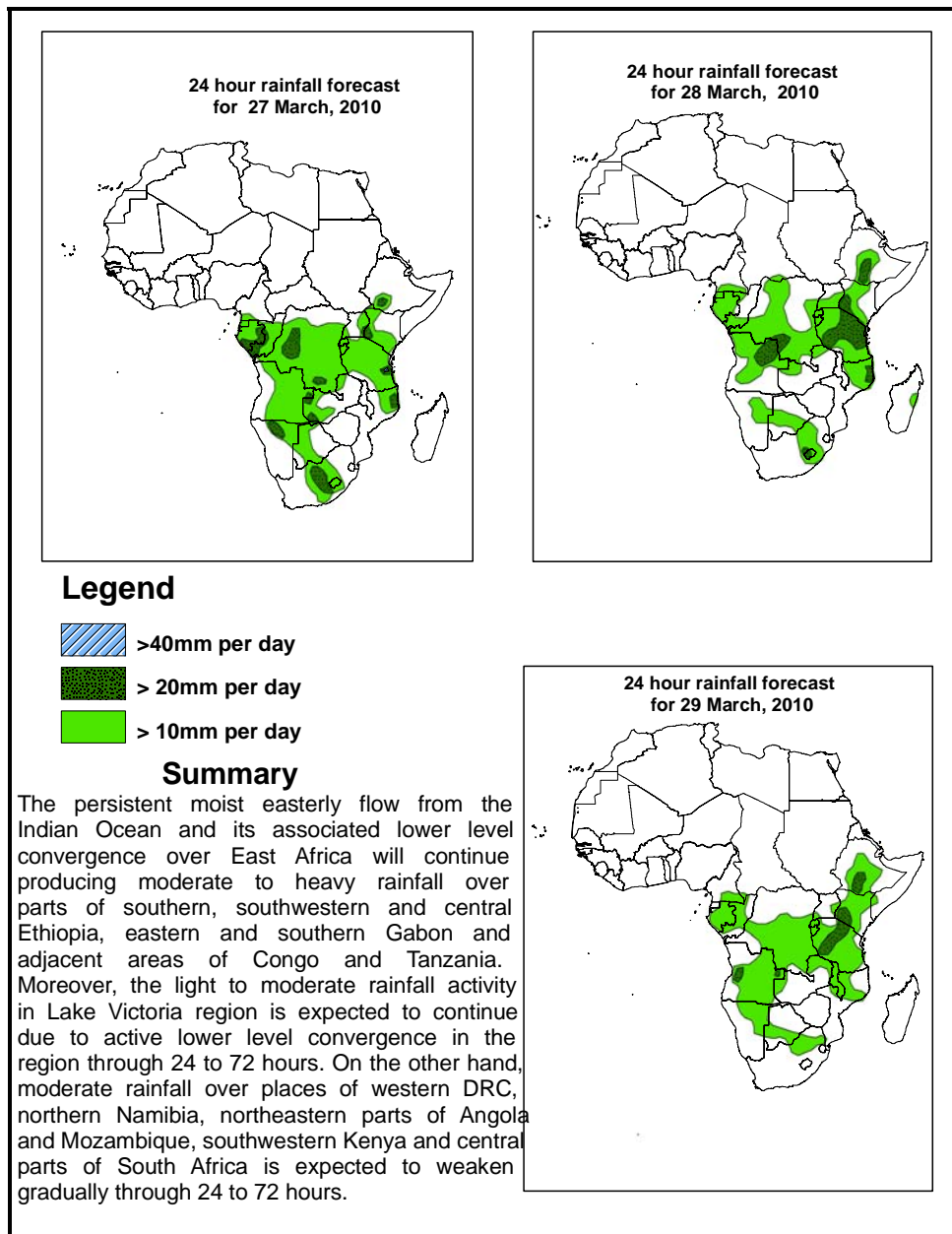


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid, 06Z of 27 March –06Z of 29 March 2010, (Issued at 14:00EST of 26 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 26 March 2010**

The subtropical high pressure system is expected to maintain its position over northern Africa, while gradually weakening through 24 to 72 hours. On the other hand the Arabian high is expected to continue having a maritime ridge that will enhance moisture incursion towards East Africa. The localized lower pressure systems are expected to persist between the two subtropical highs, in the vicinity of the Gulf of Aden. In the southern hemisphere a high pressure system with central pressure value of 1022mb located over southeastern Atlantic Ocean is expected to extend its ridge across Namibia towards inland South Africa through 24 to 72 hours. The low pressure zones associated with the equatorial trough are expected to persist more or less with central pressure values 1009mb over Gulf of Guinea, 1008mb over central Africa and 1006mb over southern Sudan through 24 to 72 hours.

At 850mb level, the Saharan anticyclone is expected to continue dominate the flow over much of the northern African regions, while expanding towards the Arabian Peninsula across Red Sea through 24 to 72 hours. With eastward expansion of the subtropical ridge, the interaction between the mid-latitude and tropical system is expected to weaken gradually, through 24 to 72 hours. However, the moist easterly to southeasterly winds from northern Indian Ocean and their associated convergence are expected to maintain the moderate to heavy rainfall activity over parts of East African countries through 24 to 72 hours. On the other hand, a mid-latitude frontal system is expected to pass across the southern portions of South Africa through 24 hours. The convergence in the vicinity of Lake Victoria is expected to remain active 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 weaken slightly through 24 to 72 hours.

At 500mb level, a mid-latitude trough near the 30<sup>0</sup>E longitude is expected to deepen, while the associated westerly flow expanding towards northern Sudan and Ethiopia through 24 to 48 hours. The trough is expected to retreat back slightly through 48 to 72 hours. On the other hand, the mid latitude trough over southeast Atlantic Ocean is expected to weaken through 24 to 72 hours.

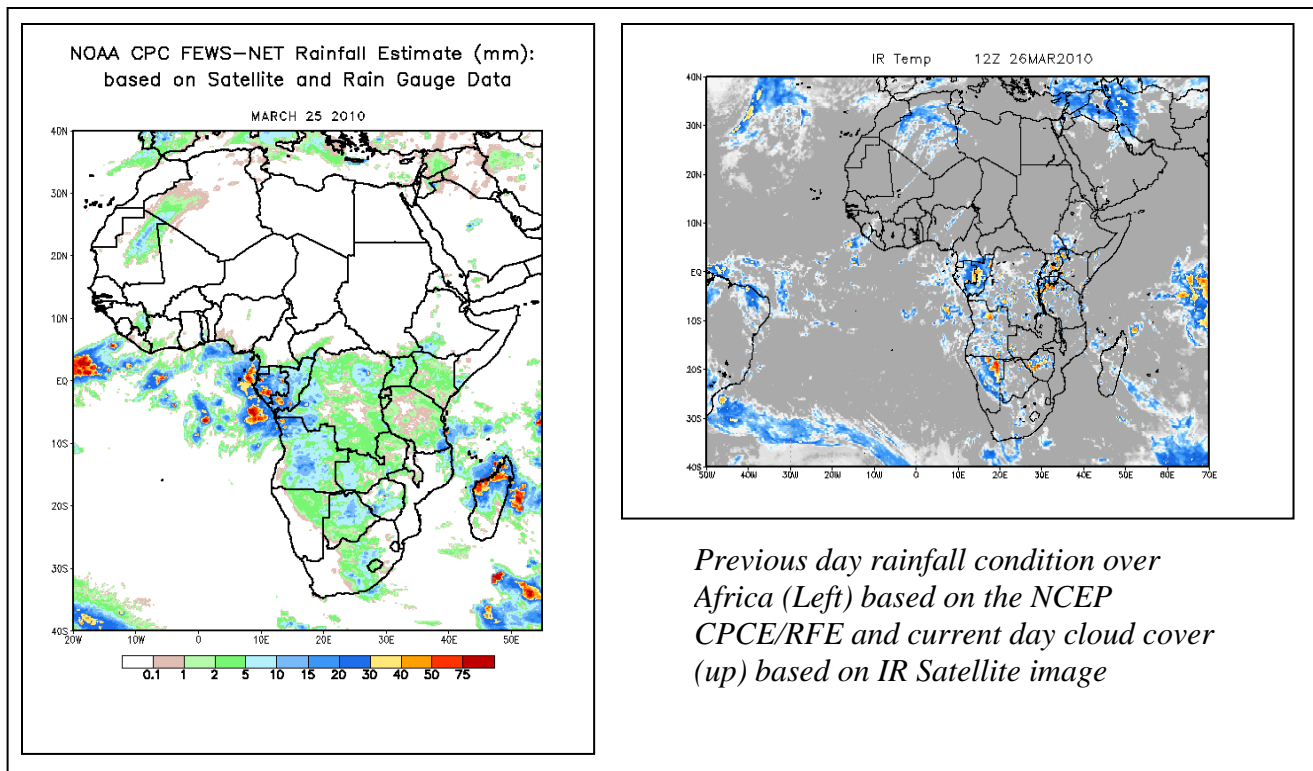
At 200mb, the flow over the subtropical regions of northern Africa expected to remain zonal in the region between Algeria and Egypt through 24 to 72 hours. On the other hand a wavy pattern in the westerly flow is expected to dominate the subtropical regions of the southern hemisphere, with a ridge axis over southern Africa countries and the trough axes over Atlantic and Indian Oceans. In the northern hemisphere, the maximum wind speed associated with this flow is expected to exceed 110 knots across central Egypt to Arabian Peninsula and central Red Sea to west of Asia, while the maximum wind speed values are expected to exceed 90 knots across southern Libya to west of Asia through 24 to 72 hours. On the other hand, in southern hemisphere the maximum wind speed is expected to exceed 130 knots across near 30<sup>0</sup>E longitude and 30<sup>0</sup>S latitude 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 parts of southern, southwestern and central Ethiopia, eastern and southern Gabon and adjacent areas of Congo and Tanzania. Moreover, the light to moderate rainfall activity in Lake Victoria region is expected to continue due to active lower level convergence in the region through 24 to 72 hours. On the other hand, moderate rainfall over places of western DRC, northern Namibia, northeastern parts of Angola and Mozambique, southwestern Kenya and central parts of South Africa is expected to weaken gradually through 24 to 72 hours.

## 2.0. Previous and Current Day Weather Discussion over Africa (25-26 March 2010)

**2.1. Weather assessment for the previous day (25 March 2010):** During the previous day, moderate to heavy rainfall events were observed over Gabon and adjacent areas of Equatorial Guinea, Congo and northern and central parts of Angola as well as northern part of Madagascar.

**2.2. Weather assessment for the current day (26 March 2010):** isolated patches of intense clouds are observed over Gabon and Congo, Uganda, northwestern Tanzania, northeastern Tanzania and Burundi as well as few places of DRC, Angola, Zimbabwe, Kenya, Namibia and southern Ethiopia.



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