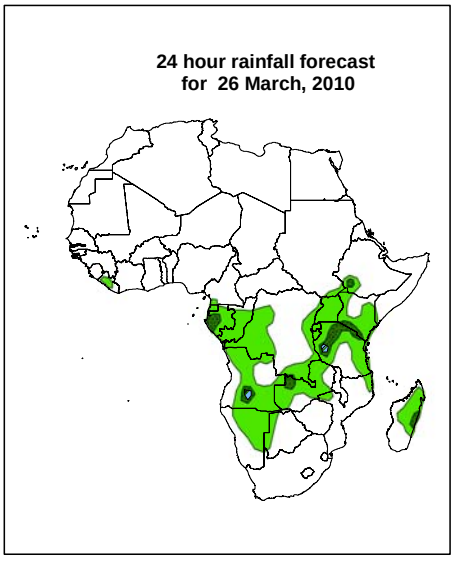
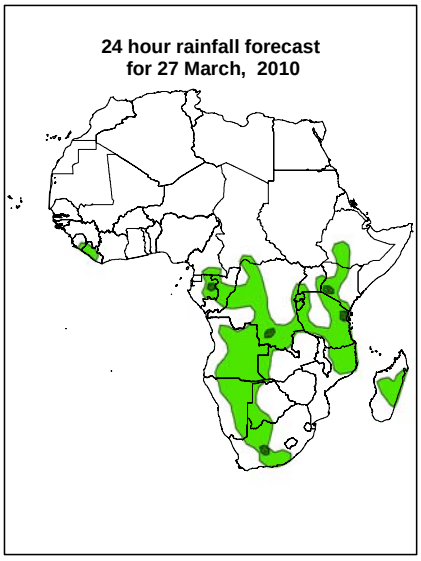
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 26 March –06Z of 28 March 2010, (Issued at 14:00EST of 25 March 2010)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

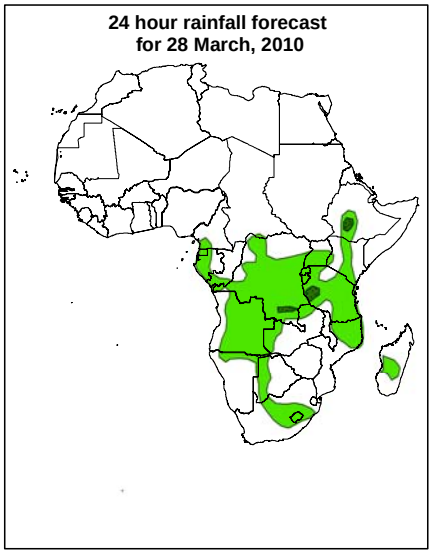
The forecasts are expressed in terms of probability of precipitation (POP) exceedence based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.





Legend

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



Summary

The 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, the heavy rainfall over central Angola, western Gabon, western Tanzania, southwestern Ethiopia and some places of southern DRC and central part of South Africa through 48 to 72 hours as a result of strong lower level wind convergence. The onshore winds from the Atlantic and Indian Oceans and their associated convergence are expected to maintain the light to moderate rainfall over much of DRC, Gabon, Equatorial Guinea, Kenya, Namibia, Angola, northern Mozambique and Lesotho as well as central parts of South Africa and Madagascar. The increased moisture incursion and its associated convergence are expected to enhance rainfall over southern Ethiopia and the adjacent areas.

1.2. Models Comparison and Discussion - Valid from 00Z of 25 March 2010

The subtropical high pressure centered over southern Libya is expected to weaken gradually through 24 to 48 hours. On the other hand, the localized low pressure systems developed over the Gulf of Aden and Red Sea are expected to persist with central pressure values of 1007mb and 1008mb, respectively. The low pressure zones associated with the equatorial trough are expected with central pressure values 1009mb over Gulf of Guinea, 1008mb over central Africa and 1006mb over southern Sudan through 24 to 72 hours. A Low pressure system, with central value of 1011mb is expected to persist along the off the southwest coast of Madagascar through 48 to 72 hours.

At 850mb level, the Saharan anticyclone is expected to weaken gradually, with a slight eastward movement through 24 to 72 hours. On the other hand, the maritime flow from Indian Ocean is expected to continue pumping moisture into the Horn of Africa through 24 to 72 hours. At the same time, the lower level wind convergence is expected to intensify over southern Ethiopia and the adjacent areas. On the other hand, a mid-latitude frontal system is expected to pass across the southern portions of South Africa through 24 to 72 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 30^0E longitude is expected to deepen slightly, while extending in the region between Eastern Mediterranean Sea and central Sudan, across Egypt through 24 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 courtiers 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 northwest of Algeria to northeast of Libya, central Libya to east of Arabian Peninsula and central Red Sea to east of Arabian Peninsula, while the maximum wind speed values are expected to exceed 90 knots across western Libya to 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 10^0E longitude and 30^0S latitude to near 20^0E longitude and 35^0S latitude, while exceeding 110 knots across near 5^0E longitude and 25^0S latitude to near 23^0E longitude and 32^0S latitude through 24 to 72 hours.

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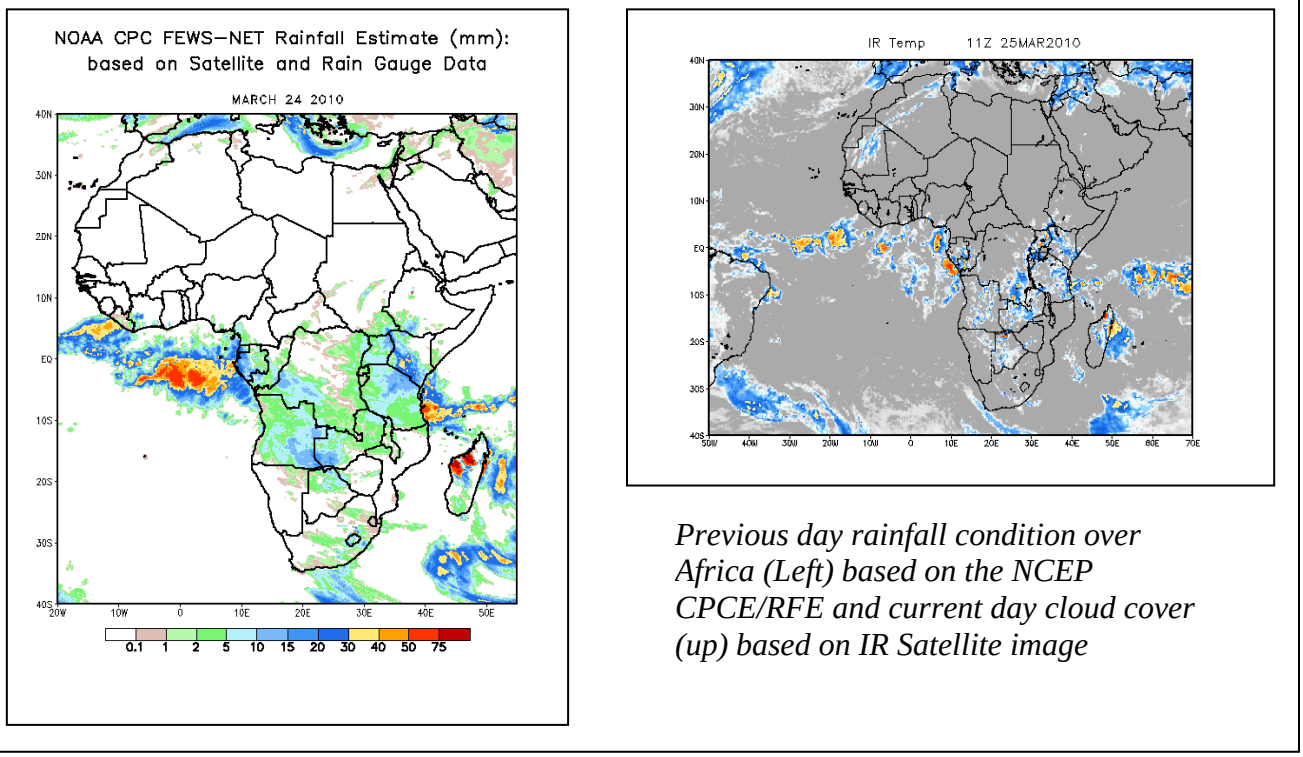
Ethiopia and some places of southern DRC and central part of South Africa through 48 to 72 hours as a result of strong lower level wind convergence. The onshore winds from the Atlantic and Indian Oceans and their associated convergence are expected to maintain the light to moderate rainfall over much of DRC, Gabon, Equatorial Guinea, Kenya, Namibia, Angola, northern Mozambique and Lesotho as well as central parts of South Africa and Madagascar. The increased moisture incursion and its associated convergence are expected to enhance rainfall over southern Ethiopia and the adjacent areas.

2.0. Previous and Current Day Weather Discussion over Africa (24-25 March 2010)

2.1. Weather assessment for the previous day (24 March 2010): During the previous day, moderate to heavy rainfall events were observed over western and central parts of Madagascar, southwestern part of Kenya and adjacent areas of Tanzania and Uganda, western Gabon, southwestern part of Zambia and adjoining areas of Angola.

2.2. Weather assessment for the current day (25 March 2010): isolated patches of intense clouds are observed over northern half of Madagascar, southern Congo, Rwanda, Uganda, some places of Kenya, Tanzania, Zambia and southern DRC and northern part of Botswana.



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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