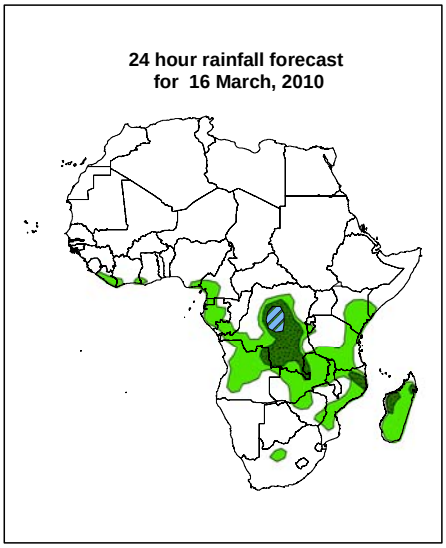
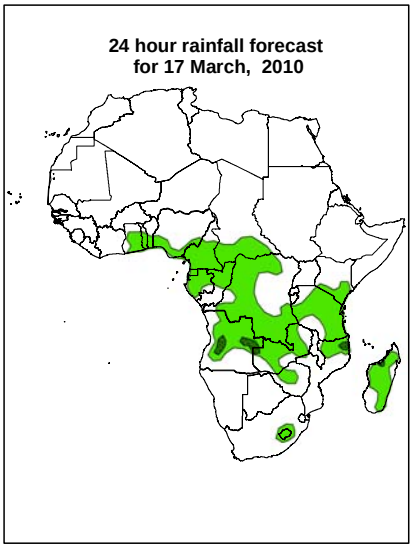
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 16 March –06Z of 18 March 2010, (Issued at 14:00EST of 15 March 2010)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

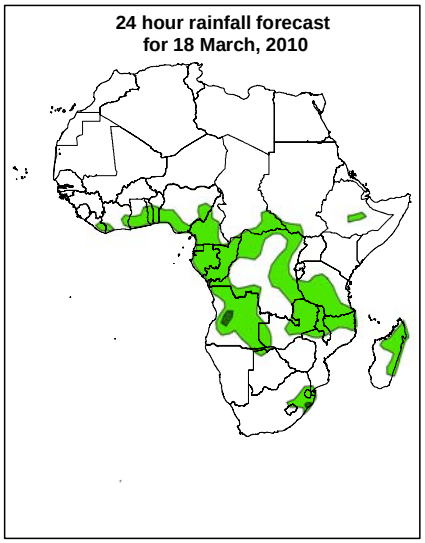
The forecasts are expressed in terms of probability of precipitation (POP) exceedence based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.





Legend

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



Summary

The active lower level convergence over the Congo Air Boundary (CAB) region will continue increasing rainfall to over 20mm per day over central parts of equatorial Africa in 24 hours. However, the rainfall activity is expected to decrease through 48 to 72 hours. On the other hand, the increased easterly flow across East Africa is expected to increase rainfall to over 10mm per day over Tanzania and its adjacent areas through 24 to 72 hours, while the interaction between mid-latitude and tropical systems will maintain the moderate rainfall over Madagascar and parts of Mozambique. On the other hand, the persistent lower level convergence over western parts of southern and equatorial Africa will maintain the light to moderate rainfall in the regions.

1.2. Models Comparison and Discussion - Valid from 00Z of 15 March 2010

A sub tropical high pressure system that dominates the flow over northern Africa between northeast Atlantic and Red Sea is expected to intensify, with its central pressure value increasing from 1028mb to 1031mb through 24 to 72 hours. On the other hand, a low pressure system situated over Persian Gulf with central pressure value of 1008mb is expected to move slightly southeast wards. In the southern hemisphere, a low pressure over coast areas of Angola is expected to maintain its position while its central pressure value tends to change slightly from 1011mb to 1010mb in 24 to 72 hours. Another localized low pressure system over coastal area of Namibia is expected to maintain its position with a slight change, while its central pressure value is expected to change slightly from 1012mb to 1011mb in 48 to 72 hours. A cut off low pressure system in the vicinity of Madagascar is expected to align its axis with the eastward moving mid-latitude frontal system. The central pressure values are expected to fill up slightly through 24 to 72 hours. A low pressure zone associated with the equatorial trough is expected to fill up slightly across the western and central parts of equatorial Africa, with central pressure values, from 1007 to 1008mb over Gulf of Guinea, 1005mb to 1007mb over Central African Republic and 1002mb to 1004mb over southern Sudan through 24 to 72 hours.

At 850mb level, the dry northeasterly wind associated with Saharan anticyclone is expected to dominate the flow over much of northern Africa through 24 to 72 hours. On the other hand, with eastward expansion of the Arabian anticyclone, the associated easterly flow is expected to increase moisture incursion across the Horn of Africa. Besides, the seasonal wind convergence is expected to remain active over western and central parts of equatorial Africa and parts of southern Africa. On the other hand, the interaction between tropical and mid-latitude systems in the vicinity of Mozambique is expected to continue enhancing rainfall over southeast Africa. Moreover, the seasonal convergence is expected to remain active over parts of the Gulf of Guinea countries.

At 500mb level, the trough in the mid-latitude westerly flow is expected to intensify gradually, while extending towards northwest Africa. On the other hand, s deep trough in the westerlies is expected to continue dominating the flow in the vicinity of the Mozambique Channel through 24 to 72 hours.

At 200mb, the northern parts of Africa will have westerly flow with a wavy pattern. The wind associated with this flow is expected to exceed 130 knots, while stretching across southern Tunisia to central Mediterranean Sea, northeastern Africa to Persian Gulf and central Libya to northeast coast of Africa while 110 knots across southwestern Algeria to eastern Mediterranean Sea, western Libya to Persian Gulf and southwestern Libya to Persian Gulf through 24 to 72 hours. Besides, the 90 knots isotach is expected to extend across north of Mali to Gulf of Persia, southeast Algeria to parts of the Persian Gulf.

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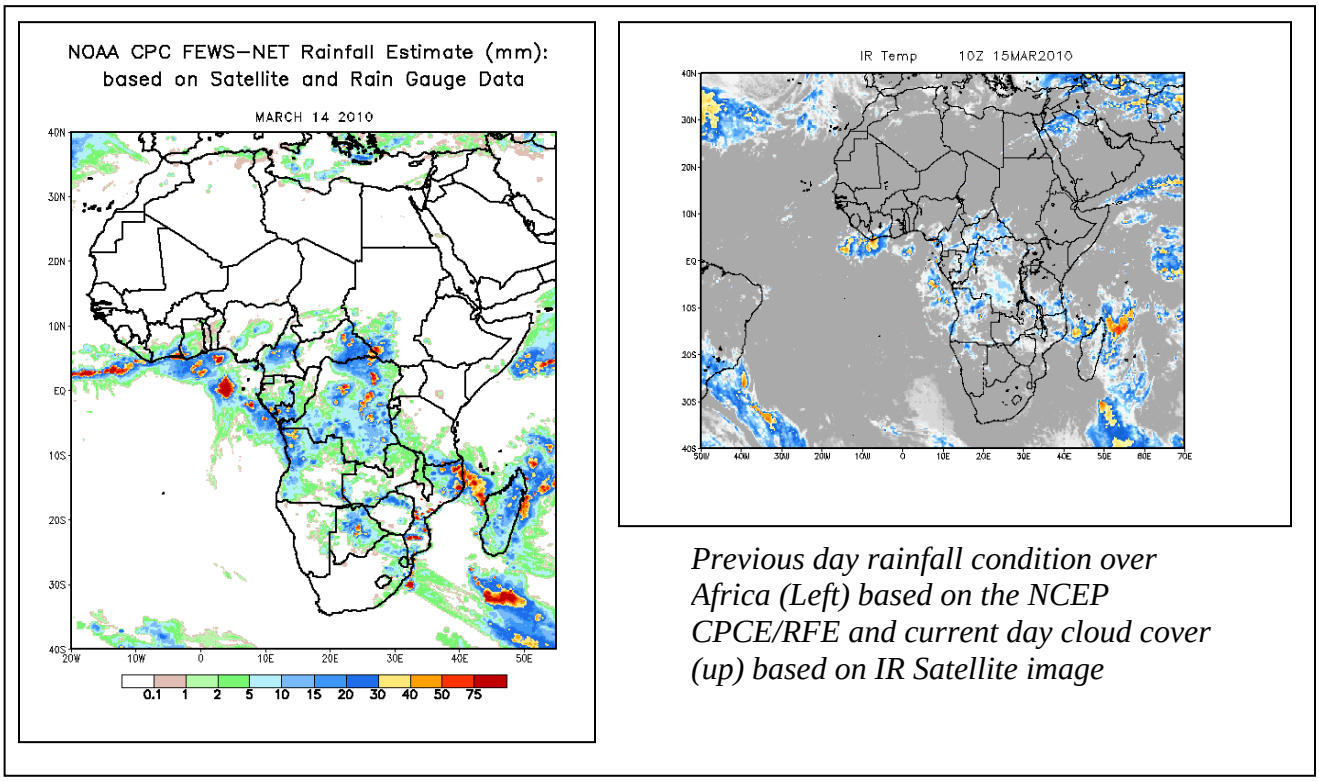
2.0. Previous and Current Day Weather Discussion over Africa (14-15 March 2010)

2.1. Weather assessment for the previous day (14 March 2010): During the previous day, moderate to heavy rainfall events were observed over most places of Madagascar and some places of Gabon and adjacent areas as well as few places of northern Ivory Coast, central part of Ghana, northwestern Namibia, northern half of Zambia, east central part of DRC, southern Cameroon, southwestern Angola, northwestern Namibia and northern Mozambique.

2.2. Weather assessment for the current day (15 March 2010): isolated patches of intense clouds are observed over southeastern Mozambique, central part of DRC, northern Zambia and southern coastal areas of Madagascar.



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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