

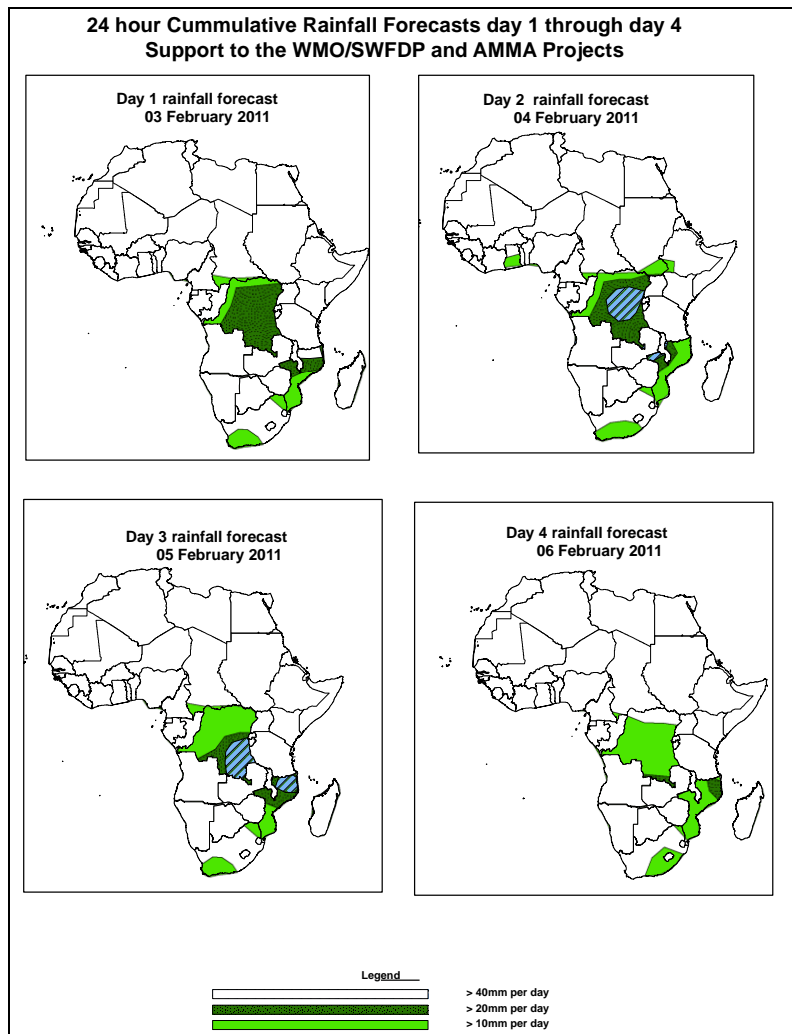


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 03 February – 06Z of 06 February 2011, (Issued at 14:00Z of 02 February 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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



Summary

In the coming four days, strong lower level convergences across central and southern African countries and the cyclonic circulation in the vicinity of Mozambique Channel are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for rainfall to exceed 20mm per day over Madagascar, Zambia, Mozambique, Angola, Burundi, Namibia, Malawi, Uganda, DRC and Western and southern Tanzania.

1.2. Models Comparison and Discussion-Valid from 00Z of 02 February 2011

From the GFS, ECMWF and UKMET models, a series of cut off lows over the southern parts of the Gulf of Guinea, parts of central African region and southern Sudan are expected to form an east-west oriented trough. In the coming four days, this trough is expected to deepen in its eastern end (near southern Sudan) from about 1007hpa to 1003hpa, while the trough is expected to fill up along its western end, and probably disappear completely. The lows associated with the meridional arm of the ITCZ are also expected to persist in the area extending between central DRC and western Namibia and expected to propagate west wards. A low pressure system in the vicinity of Mozambique Channel and Madagascar is expected to maintain its position, while slightly deepening. In general, similar pressure patterns are depicted by the GFS, ECMWF and UKMO models, while the ECMWF and UKMO model tends to indicate stronger high pressure values than the GFS model does.

According to the GFS, ECMWF and UKMET models, St. Helena High pressure system is expected to remain quasi-stationary, with its central pressure value at 1020hpa. Whereas, the Mascarene high pressure system over southwest Indian Ocean is expected to intensify through 24 to 96 hours from about 1024 to 1028hpa with its ridge extending north to the latitudes of Malawi and southern Tanzania.

At 850hPa level, the GFS model indicates east-west oriented convergence line in the region between the coastal areas of the Gulf of Guinea and northeast DRC. The convergence line is expected to weaken along its west end, while it remains strong along its eastern end through 24 to 96 hours. A north-south oriented convergence line is also expected to dominate the flow across Uganda, western Tanzania and Malawi through 24 to 96 hours. Another convergence line is expected in the region extending from western Angola to western Namibia, while localized cyclonic is expected to extend into South Africa. The cyclonic circulation near Madagascar is expected to maintain its position while strengthening through 24 to 96 hours.

At 700hPa level, the axis of a mid-latitude trough is located around longitude 43°E, and moves away to the Middle East region progressively. Its southern tip reaches over the central Red Sea region. A strong lower tropospheric convergence is expected to dominate the flow over Angola, Zambia, DRC and Zambia, through 24 to 96 hours. The

cyclonic circulation in the Mozambique Channel is expected to intensify through 24 to 96 hours.

At 200hPa, zone of strong wind (>50Kts) associated with the Sub Tropical westerly Jet in the sub-tropical region of northern Africa is expected to attain a wavy pattern through 24 to 48 hours and a zonal pattern for 72 to 96 hours. However, the maximum wind speed associated with jet is expected to increase (to values of above 150kts) in the next 96 hour period.

In the coming four days, strong lower level convergences across central and southern African countries and the cyclonic circulation in the vicinity of Mozambique Channel are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for rainfall to exceed 20mm per day over Madagascar, Zambia, Mozambique, Angola, Burundi, Namibia, Malawi, Uganda, DRC and Western and southern Tanzania.

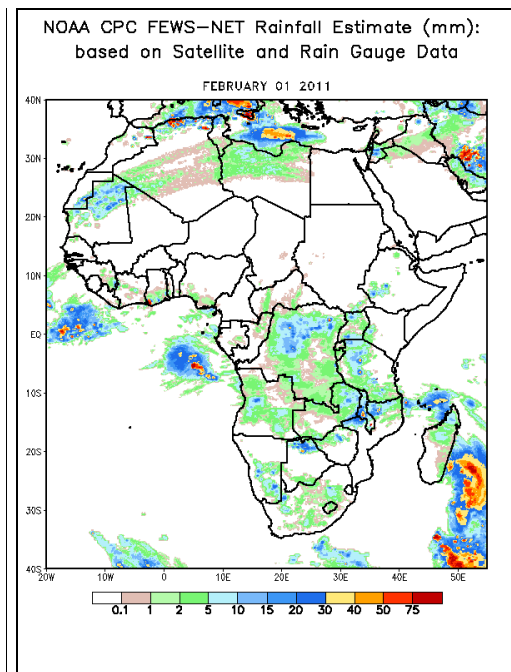
2.0. Previous and Current Day Weather Discussion over Africa (01 – 02 February 2011)

2.1. Weather assessment for the previous day (01 February 2011):

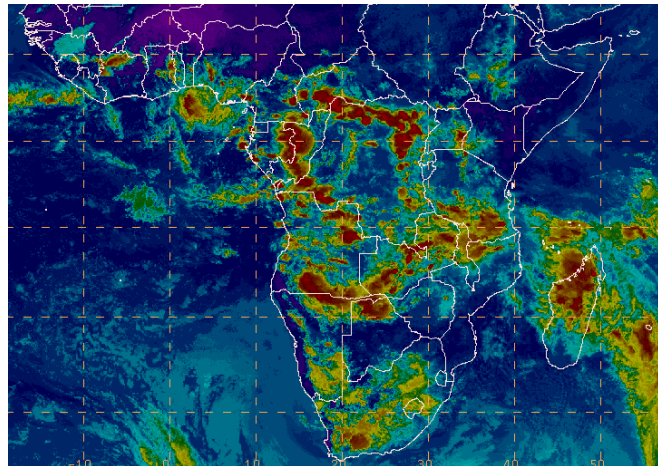
During the previous day, light to moderate rainfall was observed over DRC, Uganda, Angola, Portions of Tanzania, Eastern Zambia, Malawi, Southern Namibia Northern Madagascar and South Africa.

2.2. Weather assessment for the current day (02 February 2011):

Intense clouds are observed over southern parts of the Gulf of Guinea countries, DRC, Congo, Southern parts of Tanzania, Zambia, Malawi, South Africa, Madagascar and Angola.



IR Satellite Image, Valid 1722Z, February 2, 2011



*Previous day rainfall condition over Africa (Left)
based on the NCEP CPCE/RFE and current day
cloud cover (top) based on IR Satellite image*

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