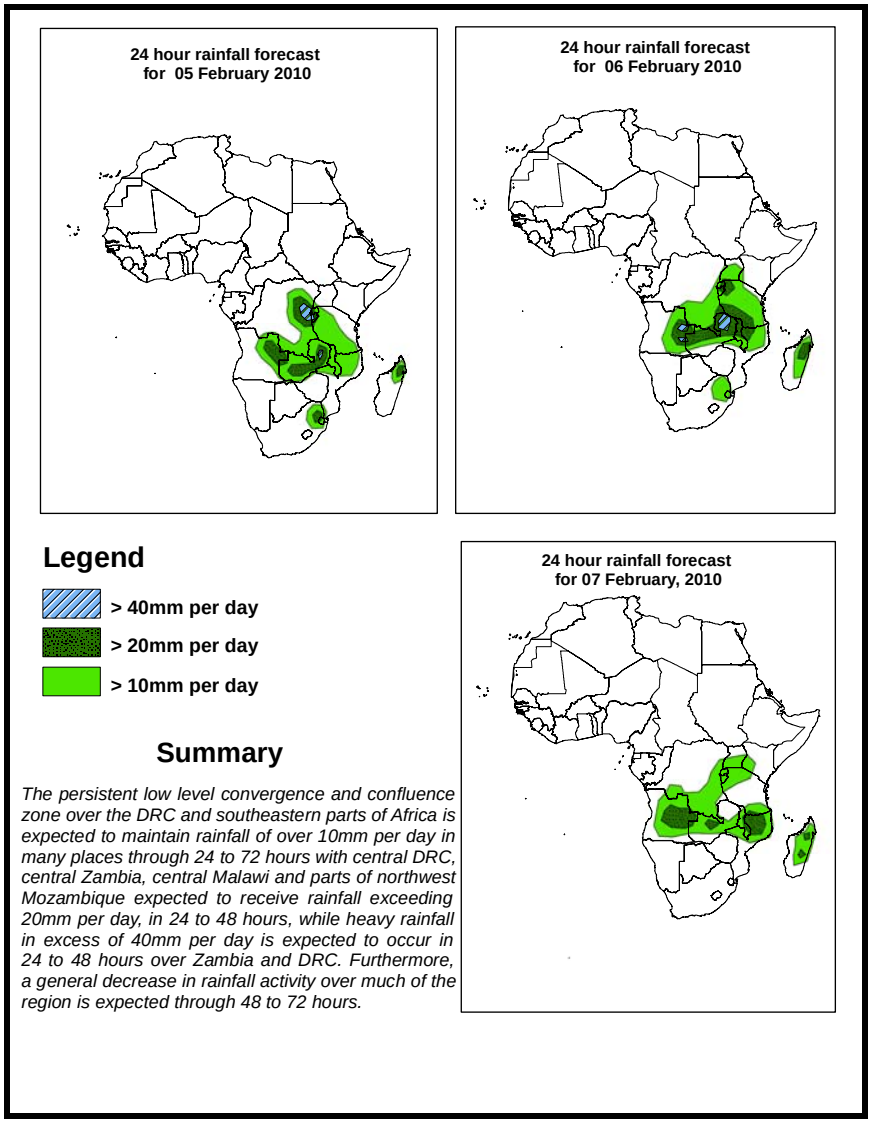
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 05 February –06Z of 07 February 2010, (Issued at 14:00EST of 04 February 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 05 February 2010

In 24 to 72 hours, much of North Africa and the Mediterranean Sea will be covered by the Saharan high, centered over Libya. The high is expected to strengthen and expands eastwards with its ridges extending to central Arabian Peninsula and southwards up to central Sudan, through 48 to 72 hours. The eastward movement of the high pressure system will tend to suppress the trough, existing over the Arabian Peninsula in 24 to 48 hours, and limit it to the south of the peninsula, the Gulf of Aden the red sea and the Horn of Africa, in 48 to 72 hours. On the other, a mid latitude low pressure system is expected to develop and cover central Mediterranean Sea towards north Africa with its centre over southern Europe.

Much of equatorial African is expected to be dominated by the equatorial trough, in 24 to 72 hours, with central pressure values reaching 1010mb over the Gulf of Guinea, 1007mb over Central Africa Republic, northern DRC, and 1006mb over southern Sudan. Besides, places over southern Africa are expected to reach pressure values of 1006mb over Botswana, Namibia and South Zambia, while the Mozambique Channel will reach central pressure values of 1008mb.

At 850mb level, an anticyclonic circulation associated with the subtropical high pressure system moving eastwards from the northeast Atlantic will tend to block a mid-latitude frontal system penetrating southwards in 24 to 72 hours. On the other hand, the east African monsoon flow from the Indian Ocean is expected to change its direction from southeasterly to easterly in 24 to 72 hours resulting in enhanced convergence over Ethiopia and the CAB region, most parts of east central and southern Africa with the peripheral flow from the Saharan anticyclone and the westerly flow from the Atlantic Ocean, respectively through 24 to 72 hours. Localized convergence is expected to remain active over southern Angola Namibia and South Africa.

At 500mb level, much of North Africa is expected to assume a wave pattern in the westerly flow, with a trough moving eastwards and extending southwards up to 10^0N in 24 to 72 hours. The peripheral wind associated with the trough will tend to bring cold air towards the tropical areas. Moreover, the southern hemisphere will experience a wavy flow in the subtopics which is expected to persist in 24 to 72 hrs.

At 200mb, North Africa will experience a zonal flow with wind speeds of up to 110 knots while narrow zones of 130 knots and 150 knots, from central Libya and the Persian Gulf, and over the Arabian Peninsula will exist in 24 to 72 hours.

The persistent low level convergence and confluence zone over the DRC and southeastern parts of Africa is expected to maintain rainfall of over 10mm per day in many places through 24 to 72 hours with central DRC, central Zambia, central Malawi and parts of northwest Mozambique expected to receive rainfall exceeding 20mm per day, in 24 to 48 hours, while heavy rainfall in excess of 40mm per day is expected to occur in 24 to 48 hours over Zambia and DRC. Furthermore, a general decrease in rainfall activity over much of the region is expected through 48 to 72 hours.

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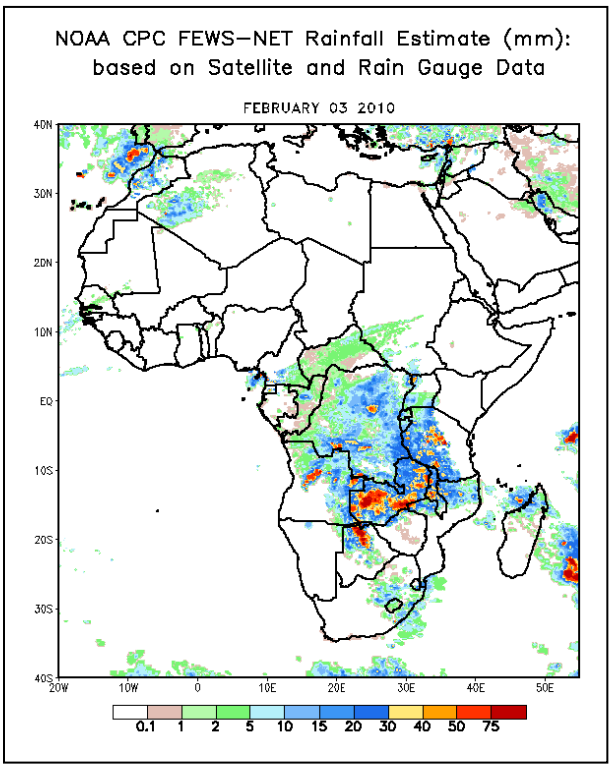
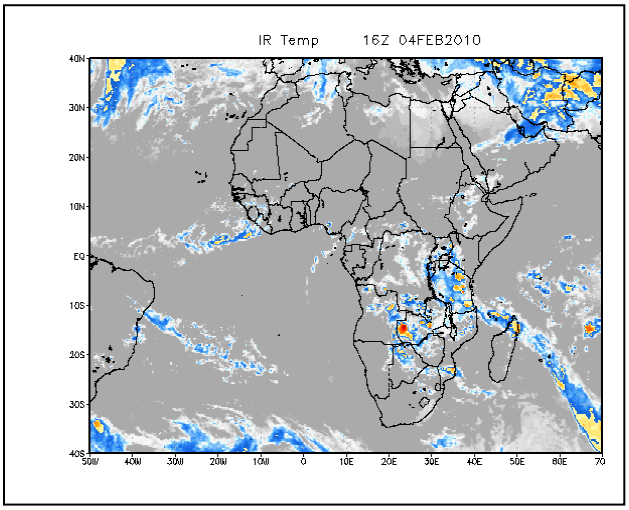
2. 0. Previous and Current Day Weather Discussion over Africa (03-04 February 2010)

2.1. Weather assessment for the previous day (03 February 2010): During the previous day, moderate to heavy rainfall events were observed over the Zambia, northern Botswana, south central Malawi parts of DRC parts of central Tanzania and parts of central Angola.

2.2. Weather assessment for the current day (04 February 2010): Intense cloud patches are observed over parts of western Zambia and east central Tanzania.





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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