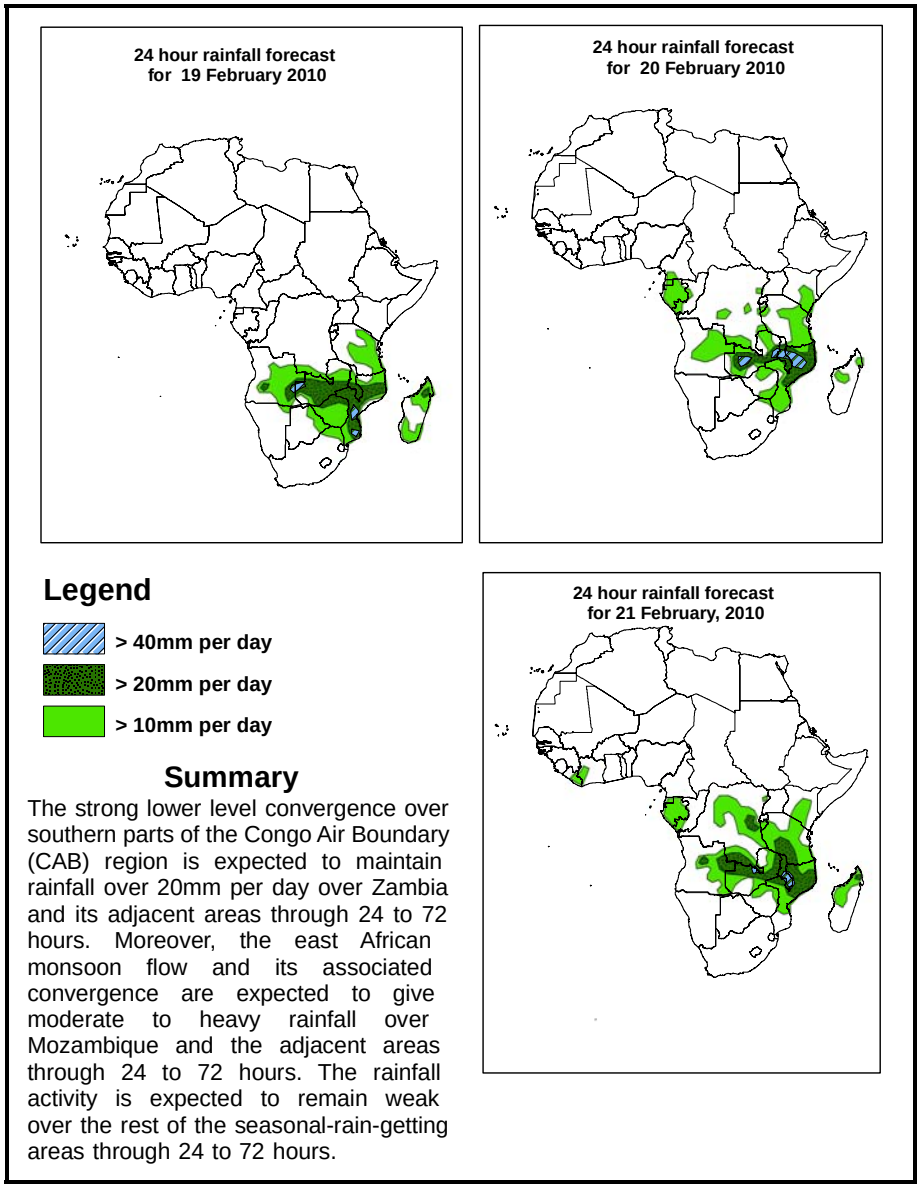
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 19 February –06Z of 21 February 2010, (Issued at 14:00EST of 18 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 19 February 2010

The mid latitude cyclonic circulation situated over western Mediterranean Sea with central pressure value of 991mb is expected to move eastwards while merging with a feeble cyclonic circulation extending its trough axis up to central Libya through 24 to 48 hours. This mid latitude system is expected to be blocked by a sub tropical high developed over the Saharan region with a central mean sea level pressure value of about 1019. Besides, the mean sea level pressure values associated with the equatorial trough are expected to be about 1007mb over the Gulf of Guinea, 1005 over Central African Republic and 1003mb over southern Sudan through 24 to 72 hrs. The low pressure system over the Mozambique Channel will remain 1009 in 48 to 72 hours. On the other hand, the ridge extending from a sub tropical high over the Arabian Peninsula is expected to reach up to the Horn of Africa in 72 hours. Moreover, a feeble anticyclonic circulation located over the southeastern part of South Africa will have a ridge that extends up to northern Angola while weakening in 72 hours.

At 850mb level, the mid-latitude westerlies are expected to dominate the flow over northwest Africa through 24 to 72 hours, with a deep trough moving from the coastal areas of Northwest Africa to central Mediterranean region through 24 to 72 hours. On the other hand, the East African monsoon wind and its associated convergence is expected to dominate the flow over southeast and southern Africa through 24 to 72 hours. The seasonal lower level convergence is expected to persist influencing the rainfall activity over the Congo Air Boundary (CAB) region and Zambia through 24 to 72 hours, while the convergence over Angola is expected to weaken gradually through 48 to 72 hours.

At 500mb level, a strong wavy pattern in the westerly wind is expected to dominate the flow over sub-tropical regions of northern and southern Africa. This wavy pattern is expected to be strong in the northern hemisphere through 24 to 48 hours while it is expected to remain weak in the southern hemisphere through 24 to 72 hours. The westerly flow trough axis from the Middle East region is expected to extend up to the Horn of Africa through 24 to 72 hours, whereas the westerly trough from the Azores region is expected to extend southwards across northwest Africa through 24 to 48 hours.

At 200mb, the flow over sub-tropical regions of North Africa is expected to be more zonal with a weak wavy pattern. On the other hand, the flow over the subtropical regions of the southern hemisphere is expected to be wavy through 24 to 72 hours, with a trough associated with flow is expected to cross South Africa in 24 to 48 hours. The wind speed associated with sub-tropical westerly jet stream of the northern hemisphere is expected to exceed 110 knots through 24 to 48 hrs, while the jet is expected to weaken slightly through 48 to 72 hours

The strong lower level convergence over southern parts of the Congo Air Boundary (CAB) region is expected to maintain rainfall over 20mm per day over Zambia and its adjacent areas through 24 to 72 hours. Moreover, the east African monsoon flow and its associated convergence are expected to give moderate to heavy rainfall over Mozambique and the adjacent areas through 24 to 72 hours. The rainfall activity is expected to remain weak over the rest of the seasonal-rain-getting areas through 24 to 72 hours.

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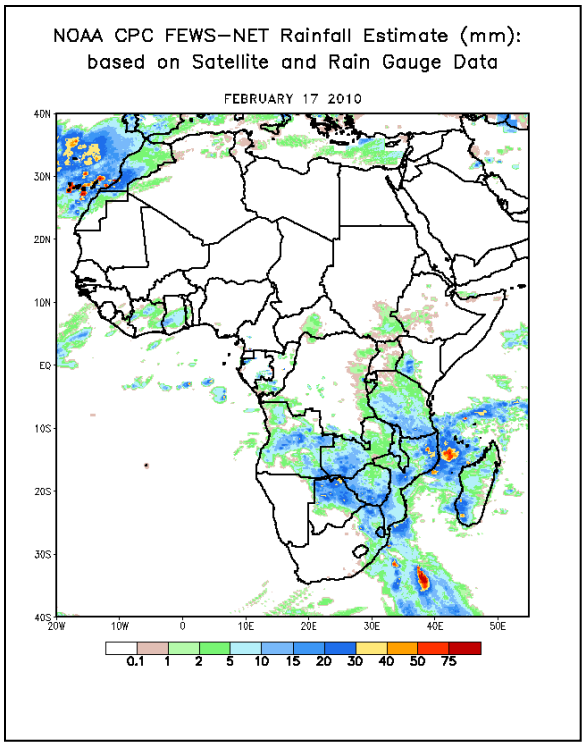
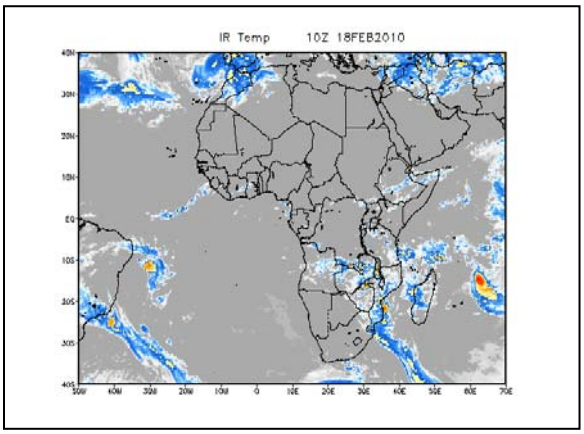
2. 0. Previous and Current Day Weather Discussion over Africa (17-18 February 2010)

2.1. Weather assessment for the previous day (17 February 2010): During the previous day, heavy rainfall events were observed over few places of northeastern Mozambique whereas, light to moderate rainfall events were observed over eastern extreme part of DRC and the adjoining areas of great Lake Region, parts of Ivory Coast and Ghana, Burundi, Angola, Zambia, northern half of Botswana, Zimbabwe, northeastern part of South Africa, much of Mozambique, Tanzania, Malawi, Zimbabwe, southwestern part of Congo, southwestern Ethiopia and Madagascar.

2.2. Weather assessment for the current day (18 February 2010): Intense cloud patches are observed over northern Botswana, central parts of Mozambique and Malawi as well as northern extreme part of Zambia.





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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