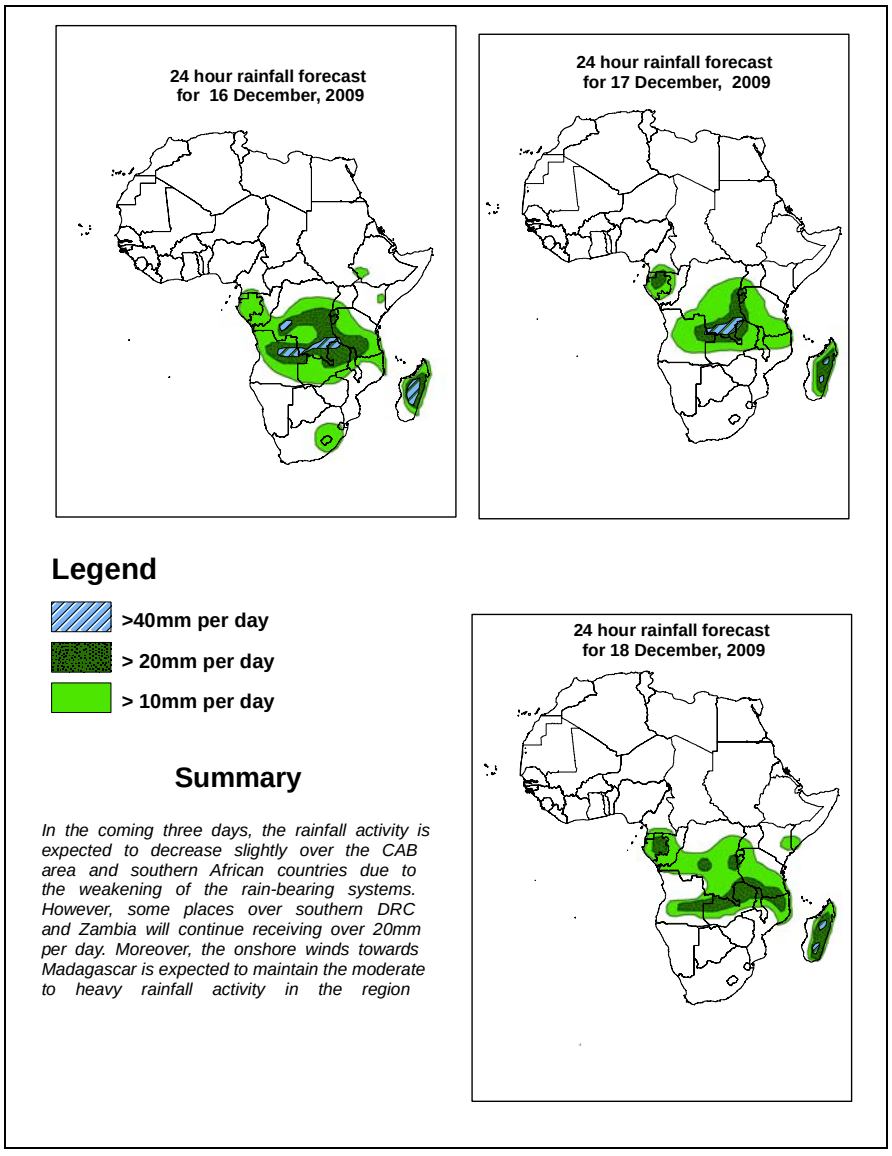
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 16 December – 06Z of 18 December 2009, (Issued at 14:00EST of 15 December 2009)

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 15 December 2009

The GFS, the UK Met Office and the ECMWF model forecasts indicate a gradual strengthening of northeasterly flow across the Horn of Africa through 24 to 72hrs at the expense of weakening of the persistent easterly flow. On the other hand, the persistent lower level convergence over eastern Angola and the Congo Air Boundary (CAB) area is expected to weaken gradually between 24 and 72hrs. The UK Met Office model predicts a quick weakening of the frontal system off the coast of South Africa, while the GFS and ECMWF models tend to maintain its strength with in the periphery of Mozambique Channel through 24 to 48hrs.

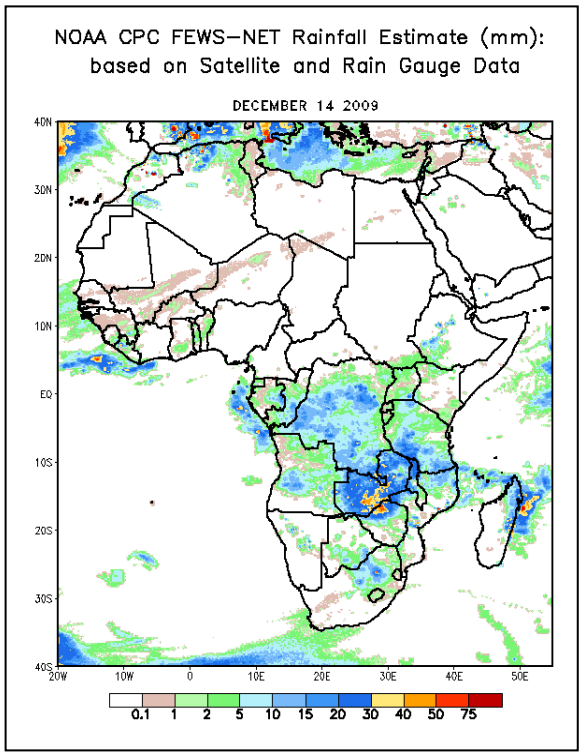
At the 500mb level, a mid latitude trough is expected to move between central Mediterranean Sea and Iraq while weakening in the period between 24 to 72 hrs. On the other hand, the mid latitude trough in the southern hemisphere is expected to remain over the periphery of Mozambique Channel through 24 to 72 hrs. At 200mb, a strong wind with speed of above 110knts is expected in the region between eastern Libya and Persian Gulf, with a slight weakening in the maximum wind speed through 48 to 72 hrs. In general, the UK Met Office model expects stronger jet stream than the other models do.

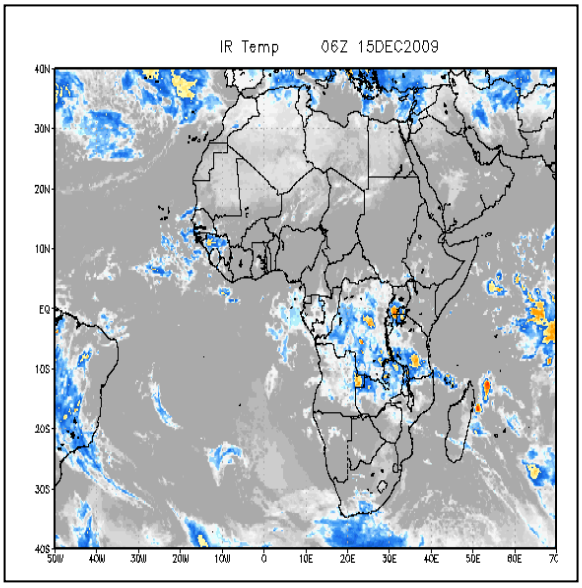
In the coming three days, the rainfall activity is expected to decrease slightly over the CAB area and southern African countries due to the weakening of the rain-bearing systems. However, some places over southern DRC and Zambia will continue receiving over 20mm per day. Moreover, the onshore winds towards Madagascar is expected to maintain the moderate to heavy rainfall activity in the region

2. 0. Previous and Current Day Weather Discussion over Africa (14 – 15 December to 2009)

2.1. Weather assessment for the previous day (14 December 2009): During the previous day, moderate to heavy rainfall events were observed over parts of Gabon, Congo, DR Congo, central Angola, southern Tanzania, Zambia, northern Zimbabwe, eastern South Africa and northeastern Madagascar.

2.2. Weather assessment for the current day (15 December 2009): Intense clouds are observed over parts of DR Congo, Lake Victoria basin, southern Tanzania, northeastern Angola and 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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