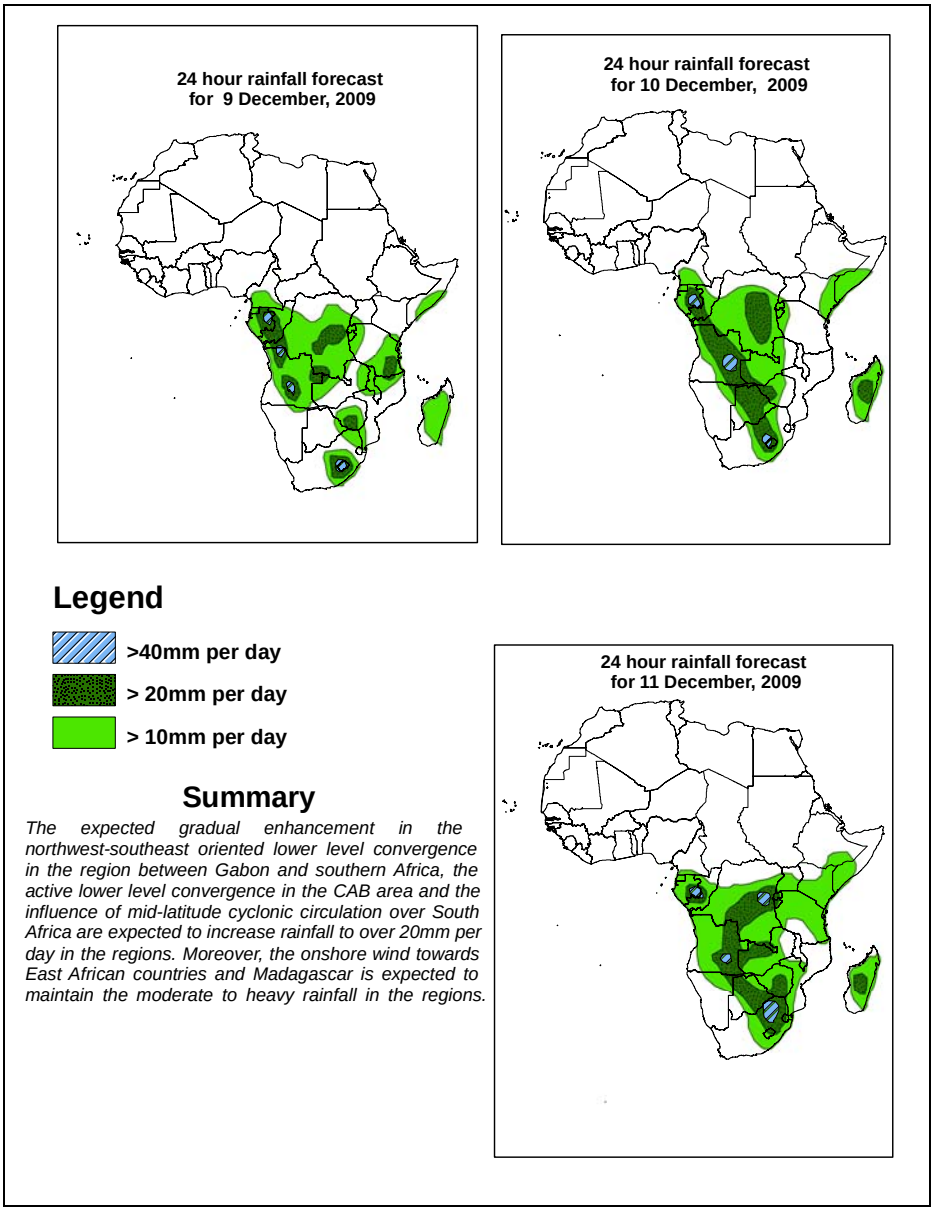
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 9 December – 06Z of 11 December 2009, (Issued at 14:00EST of 8 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 9 December 2009

The GFS and the ECMWF models indicate persistent low tropospheric easterly flow across East African countries with in a period of 24 to 72 hrs, while the UK Met Office model tends to weaken easterly flow between 48 to 72hrs. On the other hand, the northwest-southeast oriented lower level convergence in the region between Gabon and South Africa is expected to get enhanced gradually through 24 to 72hrs. Moreover, all the three models expect a gradual enhancement of the Congo Air Boundary (CAB) in the period between 24 to 72hrs. the persistent lower level cyclonic circulation over eastern parts of South Africa and the persistent onshore winds towards Madagascar and Mozambique are also indicated in the 24 to 72 hrs forecasts of the three models

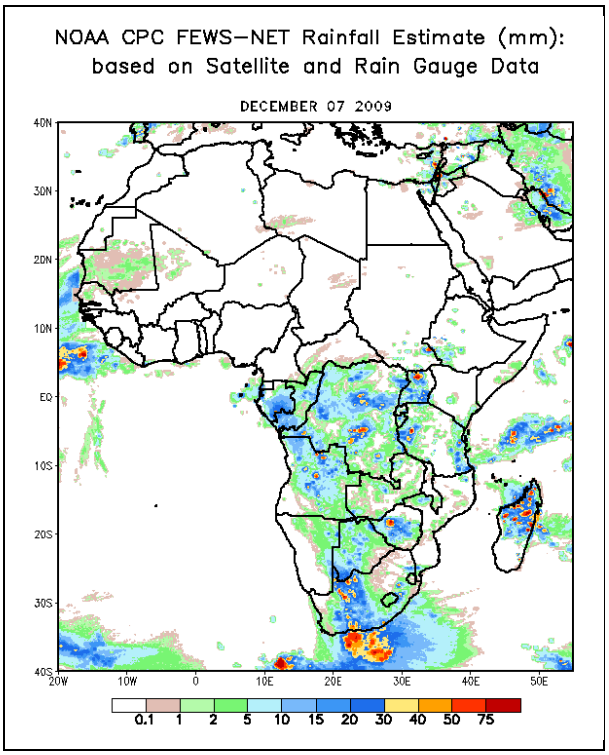
At the 500mb level, a fast moving mid-latitude trough in the westerlies is expected to move between southeast Atlantic Ocean and southwest Indian Ocean across South Africa through 24 to 72 hrs, while a mid latitude trough is expected to move eastward and dominate the flow over northeast Africa in the period between 24 to 72 hrs. On the other hand, the maximum wind speed at 200mb, associated with the sub-tropical westerly jet stream, is expected to get enhanced to values over 110kts in the region between Mauritania and Egypt within between 24 and 72hrs, while all the models over southern Hemisphere are expecting relatively weak subtropical westerly jet.

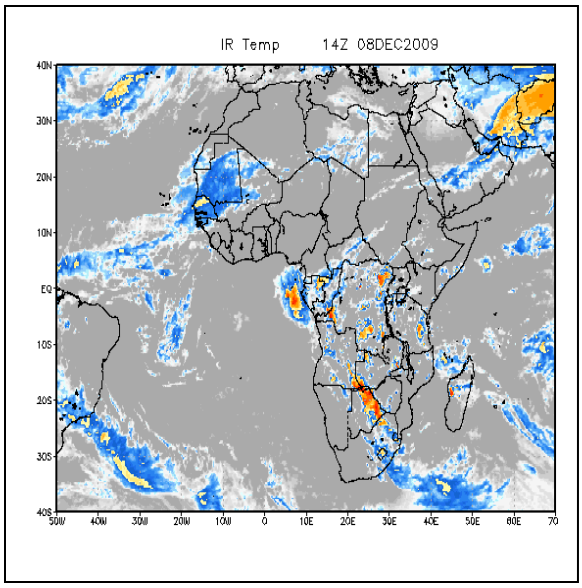
In general, expected gradual enhancement in the northwest-southeast oriented lower level convergence in the region between Gabon and southern Africa, the active lower level convergence in the CAB area and the influence of mid-latitude cyclonic circulation over South Africa are expected to increase rainfall to over 20mm per day in the regions. Moreover, the onshore wind towards East African countries and Madagascar is expected to maintain the moderate to heavy rainfall in the regions.

2. Previous and Current Day Weather Discussion over Africa (7 – 8 December to 2009)

2.1. Weather assessment for the previous day (7 December 2009): During the previous day, moderate to heavy rainfall events were observed over parts of Gabon, DR Congo, Uganda, western Tanzania, eastern Angola, Zambia, Zimbabwe, South Africa, e and Madagascar

2.2. Weather assessment for the current day (8 December 2009): Intense clouds are observed over parts of Congo, DR Congo, eastern Tanzania, northeastern eastern Botswana, eastern South Africa and northern 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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