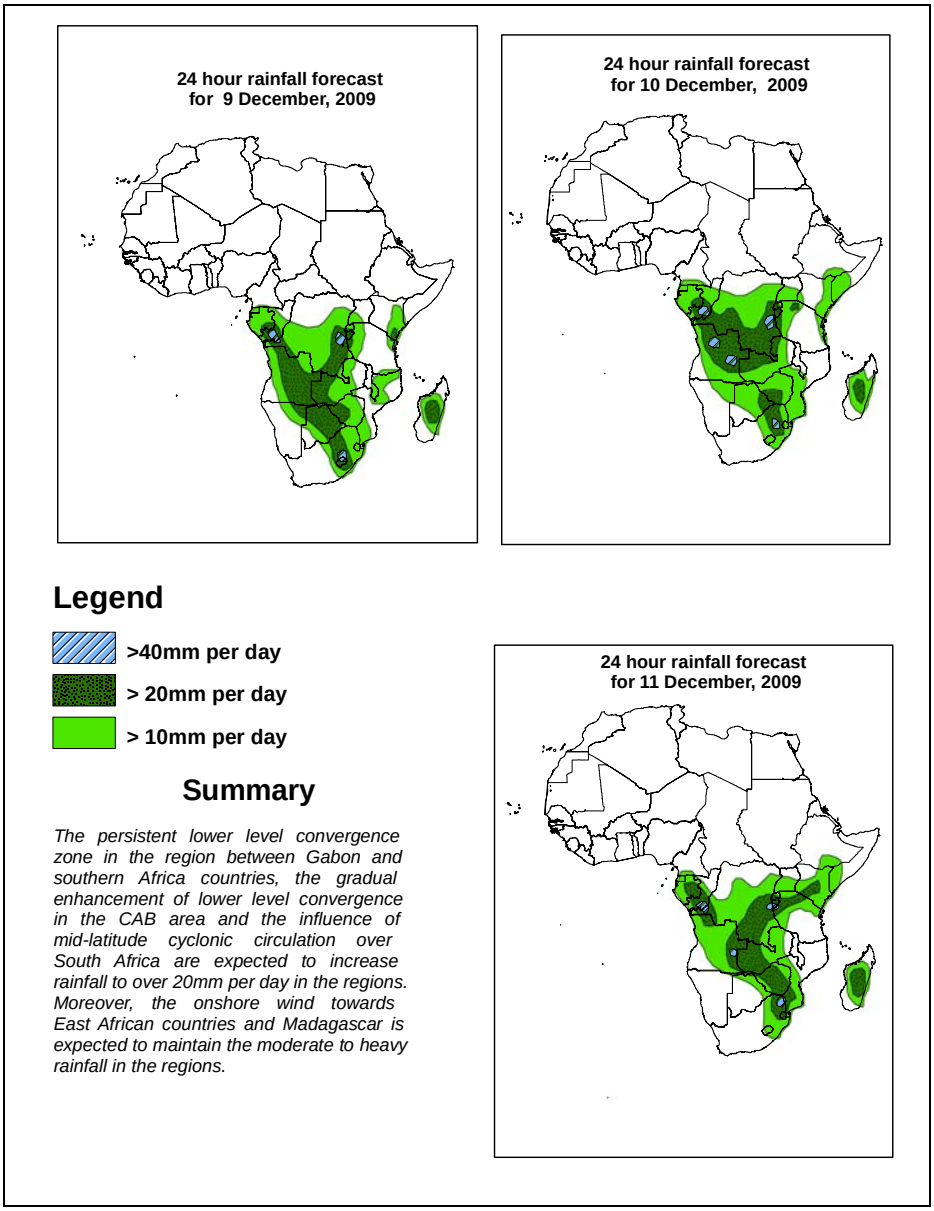
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 10 December – 06Z of 12 December 2009, (Issued at 14:00EST of 9 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 10 December 2009

All the three models indicate persistent low tropospheric convergence in the region between Gabon and northern Angola through 24 to 72 hrs, while a gradual enhancement in the lower level seasonal convergence is expected over the Congo Air Boundary (CAB) area in the period between 24 to 72 hrs. The three models also indicate a persistent low tropospheric convergence zone in the region between southern Angola and southeastern parts of South Africa through 24 to 72 hrs. The ECMWF and UK Met Office models indicated persistent easterlies across east African countries through 24 to 72 hrs, while the GFS model tends to weaken the easterly flow after 72hrs as a result of the prevailing of northeasterly flow in the region. On the other hand, 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.

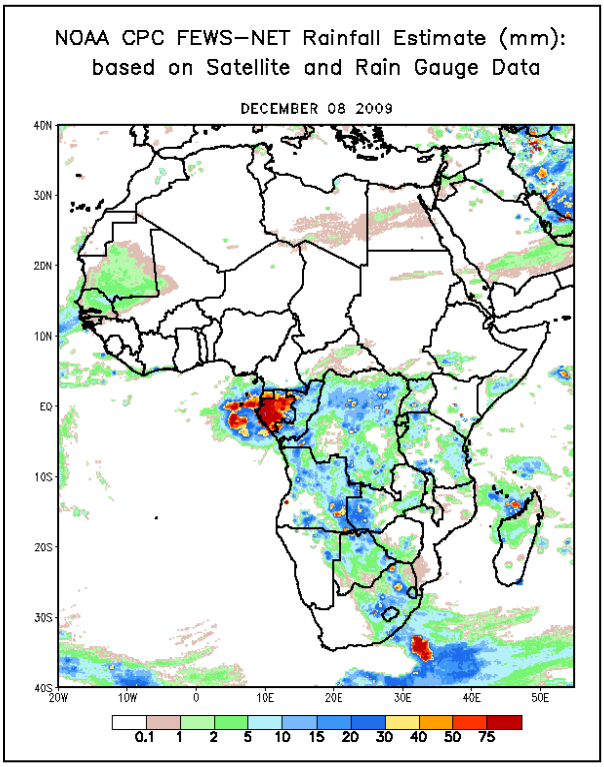
At the 500mb level, a fast moving mid-latitude trough in the westerlies is expected to move between southeast Atlantic Ocean and southwest Indian Ocean across South Africa through 24 to 72 hrs, while a mid latitude trough is expected to move eastward and dominate the flow over northeast Africa in the 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 24 and 72hrs, while all the models over southern Hemisphere are expecting relatively weak subtropical westerly jet.

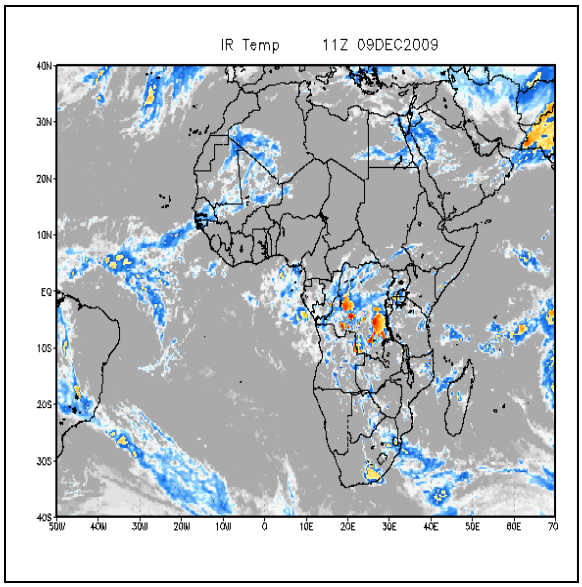
In general, the persistent lower level convergence zone in the region between Gabon and southern Africa countries, the gradual enhancement of lower level convergence in the CAB area and the influence of mid-latitude cyclonic circulation over South Africa are expected to increase rainfall to over 20mm 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. 0. Previous and Current Day Weather Discussion over Africa (8 – 9 December to 2009)

2.1. Weather assessment for the previous day (8 December 2009): During the previous day, moderate to heavy rainfall events were observed over parts of Gabon, DR Congo, Uganda, western Tanzania, eastern Angola, eastern Zambia, southern Zimbabwe, Botswana, eastern South Africa and northern Madagascar

2.2. Weather assessment for the current day (9 December 2009): Intense clouds are observed over parts of DR Congo, Lake Victoria region and eastern South Africa.





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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