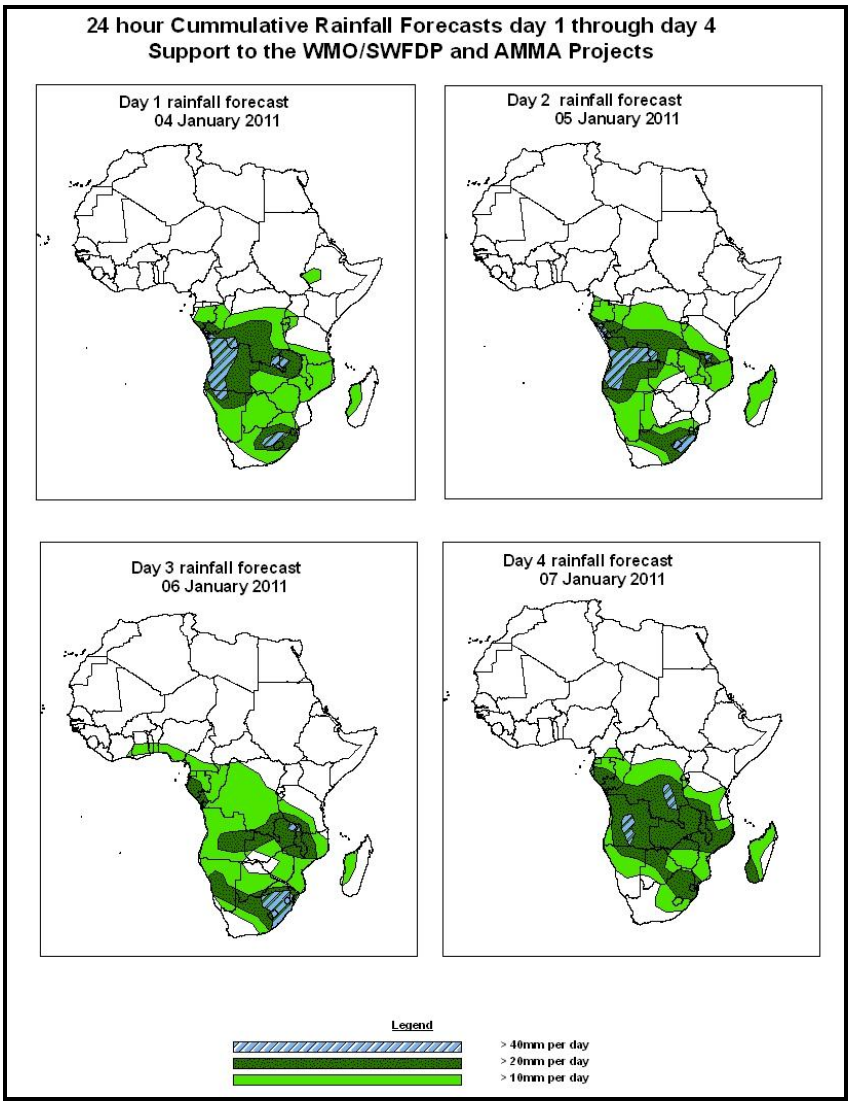
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 07Z of 04 JANUARY – 06Z of 07January 2011, (Issued at 14:00Z of 03 January 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceeded based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over Southern Africa and DRC with chances of locally heavy rainfall over Angola, South Africa, Lesotho, Swaziland, Namibia, DRC and Tanzania.

1.2. Models Comparison and Discussion-Valid from 00Z of 3 JANUARY 2011.

According to the GFS, ECMWF and UKMET models a trough along the Angola and Namibia coast is expected to persist during the next 24 to 96 hours. Another trough along the coast of Mozambique is expected to extend to Zambia and Botswana in the next 72 hours. The ECMWF model is indicating a cut off low along the Gulf of Guinea in the next 24 hours. Also UKMET and ECMWF are indicating a cut off low over southern Sudan to DRC in the next 24 hours; this system is shown by GFS during the next 48 hours. UKMET model is indicating a trough over Namibia and west coast of South Africa in the next 24 to 48 hours. The trough is expected to move eastwards in the next 72 to 96 hours.

The seasonal low pressure system (Meridional component of the ITCZ) is expected to be active over the southern parts of the Continent and DRC.

According to the GFS, ECMWF and UKMET models, St. Helena High pressure system over southern hemisphere is generally weak. Also Mascarene high pressure system is expected to remain generally weak.

At 850hPa level, The GFS model indicates Convergence line over DRC extending to Central Africa Republic and southern Sudan in the next 48 to 72 hours and then become limited over DRC. Another convergence over Angola is expected to extend to DRC and Zambia in the next 48 hours and later to Tanzania/Zambia border area. Another convergence line over Mozambique and Zambia is expected to persist during the next 96 hours. Another cyclonic convergence over South Africa is expected to extend to Botswana in the next 72 to 96 hours.

At 700hPa level, convergence over Angola is expected to extend to southeast of DRC in the next 72 to 96 hours. Another convergence line along the west coast of South Africa and Namibia is expected to move to Zambia and Malawi in the next 96 hours. In the next 48 hours the GFS model indicates another convergence line over Tanzania and Zambia with likelihood of extending to Mozambique and Madagascar in the next 72 to 96 hours.

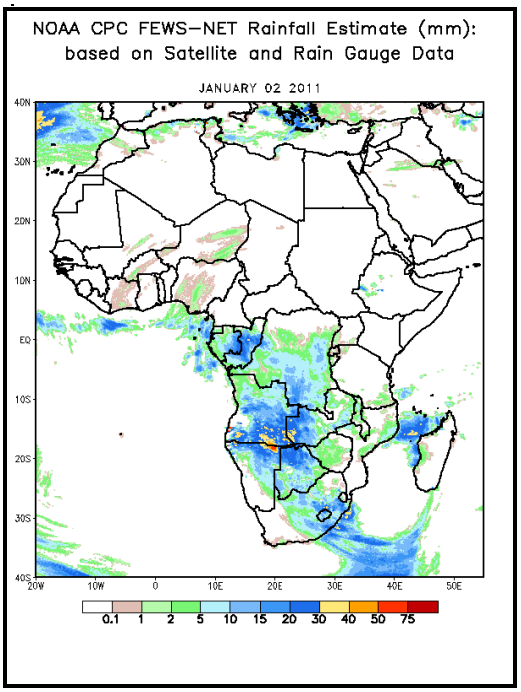
At 200hPa, zone of strong wind (>50Kts) associated with the Sub Tropical westerly Jet in the southern Hemisphere is currently weak and expected to persist during the next 96 hours.

In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over Southern Africa and DRC with chances of locally heavy rainfall over Angola, South Africa, Lesotho, Swaziland, Namibia, DRC and Tanzania.

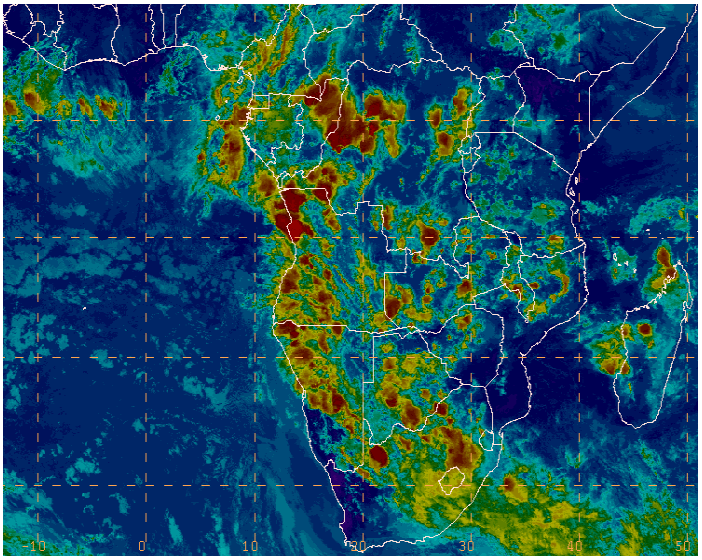
2.0. Previous and Current Day Weather Discussion over Africa (02 January 2011 – 03 January 2011)

2.1. Weather assessment for the previous day (02 January 2011):
During the previous day, moderate rainfall was observed over Angola, Namibia, Zambia and Botswana.

2.2. Weather assessment for the current day (03 January 2011): Intense clouds are observed over Angola, Namibia, Botswana, South Africa and DRC.



IR Satellite Image, Valid , January 03, 2011



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (top) based on IR Satellite image

Author(s): *Samwel Mbuya (Tanzania Meteorological Agency) / CPC-African Desk), samwel.mbuya@noaa.gov*

Omar Gouled Allaleh (Djibouti Meteorological Office / CPC-African Desk)), omar.allaleh@noaa.gov

---