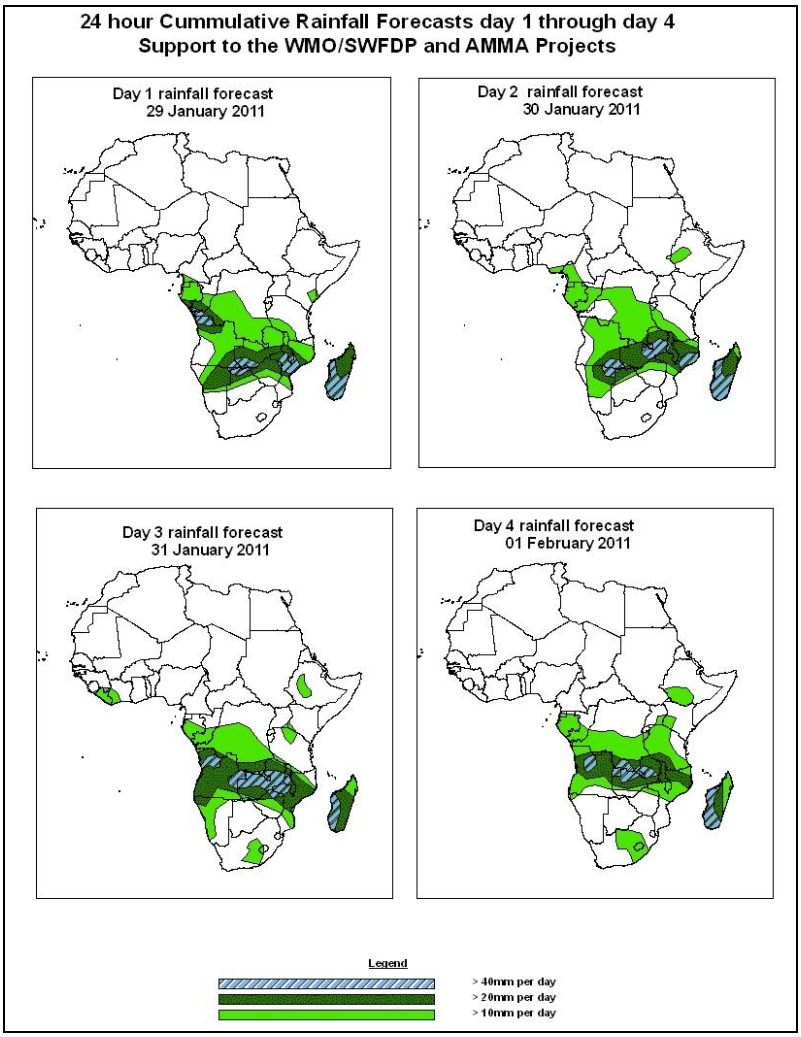
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 29JANUARY – 06Z of 01 February 2011, (Issued at 14:00Z of 28 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, favorable weather systems are expected to develop and deepen across central and eastern parts of the Southern African countries resulting in enhanced rainfall activity in the region. There is an increased chance for rainfall to exceed 20mm per day over places across southern Africa countries, with locally heavier rainfall events likely over Madagascar, Zambia, Mozambique, Botswana and part of western DRC.

1.2. Models Comparison and Discussion-Valid from 00Z of 28 JANUARY 2011.

According to the GFS, ECMWF and UKMET models a series of cut off lows over Madagascar, Mozambique, Zimbabwe, Botswana and Angola are expected to deepen during the next 24 to 72 hours. Another cut off low over northern DRC is likely to Trough over the northern portion of DRC and a southern part of Ethiopia is expected to deepen and become a low during the next 48 to 96 hours. A low across southern Namibia and South Africa is expected to deepen slightly during the next 48 to 72 hours.

The seasonal trough (Meridional component of the ITCZ) is expected to be active over Southern African countries.

According to the GFS, ECMWF and UKMET models, St. Helena High pressure system over southern hemisphere is expected to remain generally weak during the next 24 to 96 hours. Also the Mascarene high pressure system is expected to remain generally weak.

At 850hPa level, The GFS model indicates Convergence line over northern DRC extending to the Congo, Gabon and Cameroon during the next 72 hours. Another convergence line over Zambia, Mozambique and Zimbabwe is expected to deepen during the next 72 hours and extend to Angola. A cyclonic convergence over Madagascar is expected to persist during the next 96 hours.

At 700hPa level, a convergence line over Zambia and Mozambique is expected to extend to Malawi and Angola during the next 48 hours. Another convergence line over southern Botswana is expected to deepen and extend to Zimbabwe in the next 48 hours. A cyclonic convergence over Madagascar is expected to deepen during the next 48 to 96 hours.

At 200hPa, zone of strong wind (>50Kts) associated with the Sub Tropical westerly Jet in the southern Hemisphere is expected to move across the southern tip of South Africa in the next 48 hours. The associated wind speed is expected to be between 90 and 110KT.

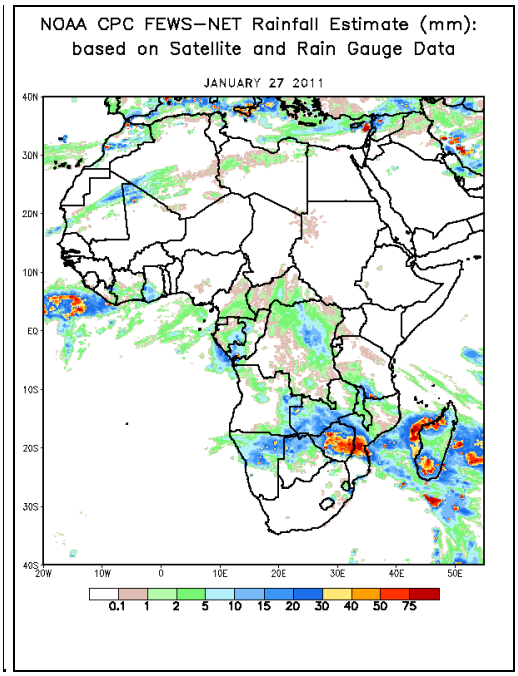
In the coming four days, favorable weather systems are expected to develop and deepen across central and eastern parts of the Southern African countries resulting in

enhanced rainfall activity in the region. There is an increased chance for rainfall to exceed 20mm per day over places across southern Africa countries, with locally heavier rainfall events likely over Madagascar, Zambia, Mozambique, Botswana and part of western DRC.

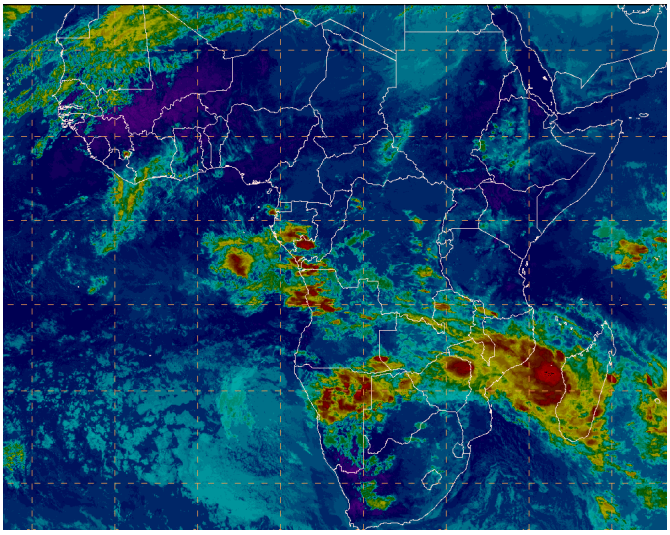
2.0. Previous and Current Day Weather Discussion over Africa (27 January 2011 – 28 January 2011)

2.1. Weather assessment for the previous day (27 January 2011):
During the previous day, moderate to heavy rainfall was observed over parts of Zambia, northern Namibia, Zimbabwe, central Mozambique and parts of Madagascar, with the heavier events occurring across Zimbabwe, central Mozambique and Madagascar.

2.2. Weather assessment for the current day (28 January 2011): Intense clouds are observed over southern Gabon, northwest Angola, northern Namibia, parts of Zimbabwe, central Mozambique and Madagascar.



IR Satellite Image, Valid 1800Z, January 28, 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

---