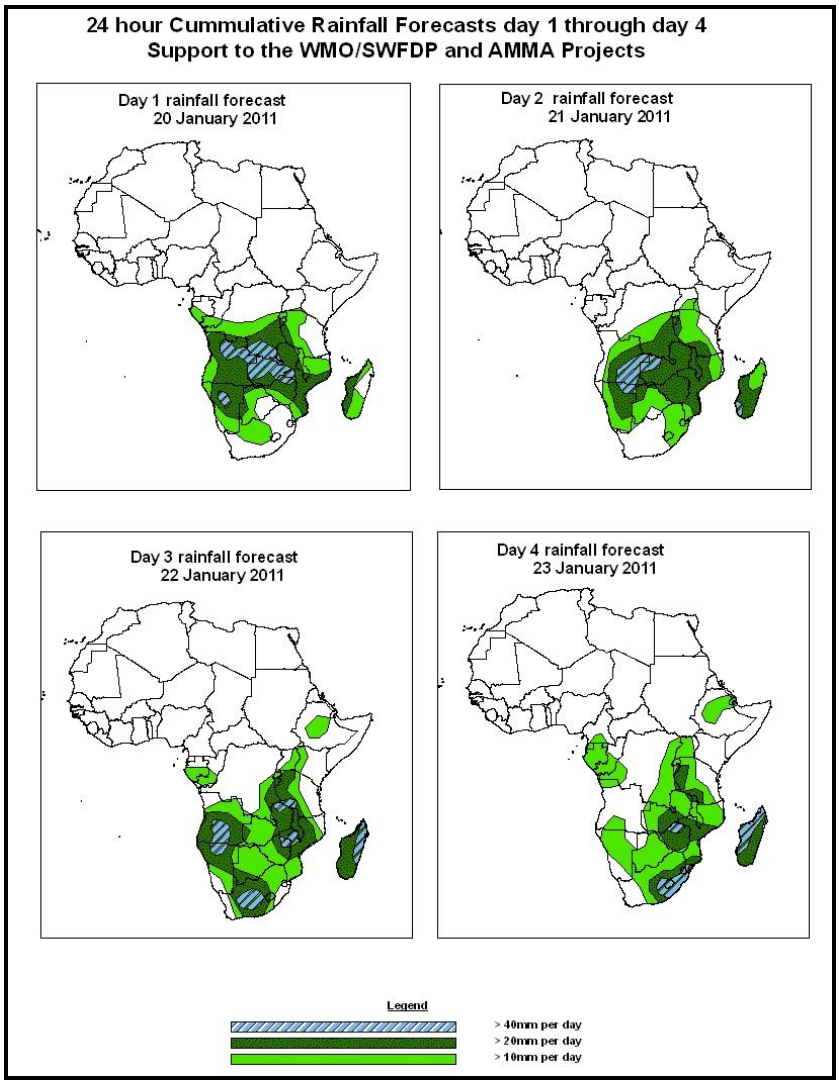
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 20 JANUARY – 06Z of 23 January 2011, (Issued at 14:00Z of 19 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, lower tropospheric weather systems are expected to deepen across western parts of the South African countries resulting in increased 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 Angola, Zambia, Mozambique, South Africa, Lesotho, Swaziland and Madagascar.

1.2. Models Comparison and Discussion-Valid from 00Z of 19 JANUARY 2011.

According to the GFS, ECMWF and UKMET models series of cut of lows are expected to deepen across DRC, Angola and Namibia, while the low pressure over East Africa is expected to fill up gradually through 24 to 72 hours. On the other hand cut off low over Zambia, Botswana, Mozambique and South Africa and its associated trough are expected to persist and extend eastwards during the next 48 to 96 hours. Another Trough over northern DRC, Gabon and Congo is expected to extend to the Gulf of Guinea in the next 48 to 96hours.

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

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

At 850hPa level, The GFS model indicates Convergence line over DRC and Lake Victoria along the western Tanzania. The convergence is expected to weaken gradually through 24 to 96 hours and move slightly westwards. On the other hand, a Cyclonic Convergence over western Zambia and Angola is expected to expand west and southwards, dominating the flow over western parts of Namibia, Zimbabwe and Botswana. A convergence along the Mozambique coast and the west cost of Madagascar is expected to persist. On the other hand, a weak trough is expected to dominate the flow over northeast Africa, including Eritrea, Djibouti and Ethiopia. This system is expected to move eastwards in the coming 96 hours.

At 700hPa level, a deep cyclonic convergence over western Zambia is expected to extend to Southeast Angola and northern Namibia through 24 to 72 hours and then become weak. Another convergence line over Angola and Southeast DRC is expected to deepen while extending east wards to Zambia through the next 48 hours. Another convergence over Mozambique, Malawi and Madagascar is expected to persist in the next 24 to 96 hours. A westward propagating mid-latitude cyclone is expected to dominate the flow over northeast Africa including Eritrea and Ethiopia in the coming 72 hours.

At 200hPa, zone of strong wind (>50Kts) associated with the Sub Tropical westerly Jet in the southern Hemisphere is expected to cross the southern tip of South Africa in the next 24 to 48 hours. The associated wind speed range between 90 and 110KT.

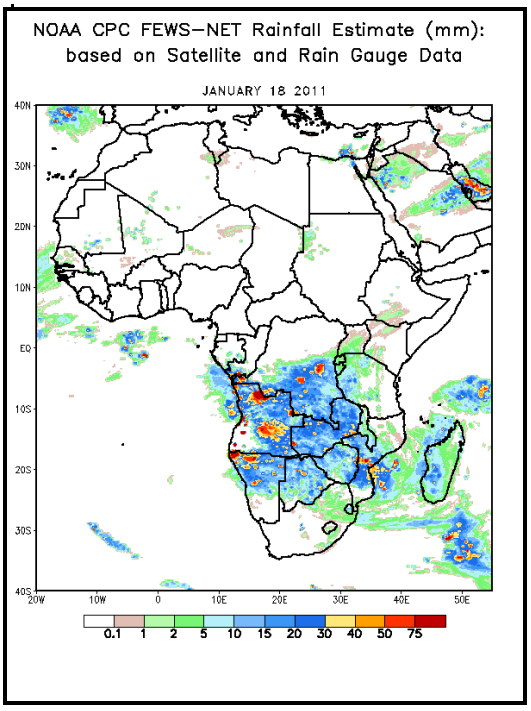
In the coming four days, lower tropospheric weather systems are expected to deepen across western parts of the South African countries resulting in increased rainfall activity in the region. There is an increased chance for rainfall to exceed 20mm per day over places across southern Africa countries, with locally heavier rainfall events likely over Angola, Zambia, Mozambique, South Africa, Lesotho, Swaziland and Madagascar.

2.0. Previous and Current Day Weather Discussion over Africa (18 January 2011 – 19 January 2011)

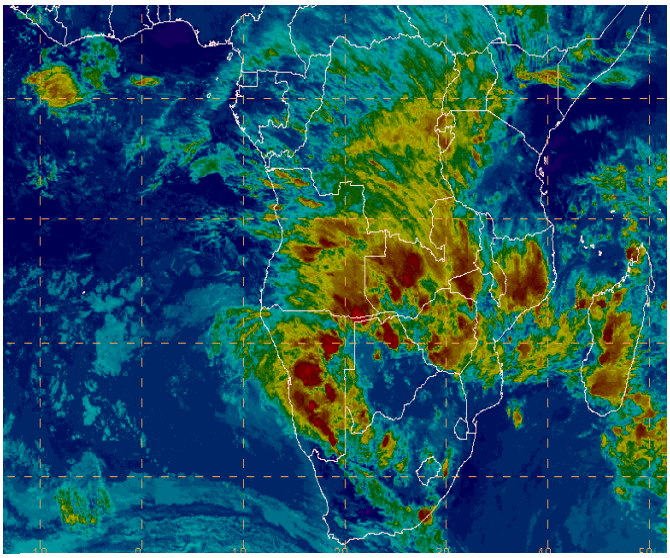
2.1. Weather assessment for the previous day (18 January 2011):

During the previous day, moderate to heavy rainfall was observed over parts of Angola, Namibia, DRC, Mozambique and Madagascar.

2.2. Weather assessment for the current day (19 January 2011): Intense clouds are observed over central and southern Mozambique, Tanzania, Zambia, Namibia, Botswana, Zimbabwe, DRC and parts of South Africa.



IR Satellite Image, Valid 1855Z, January 19, 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

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