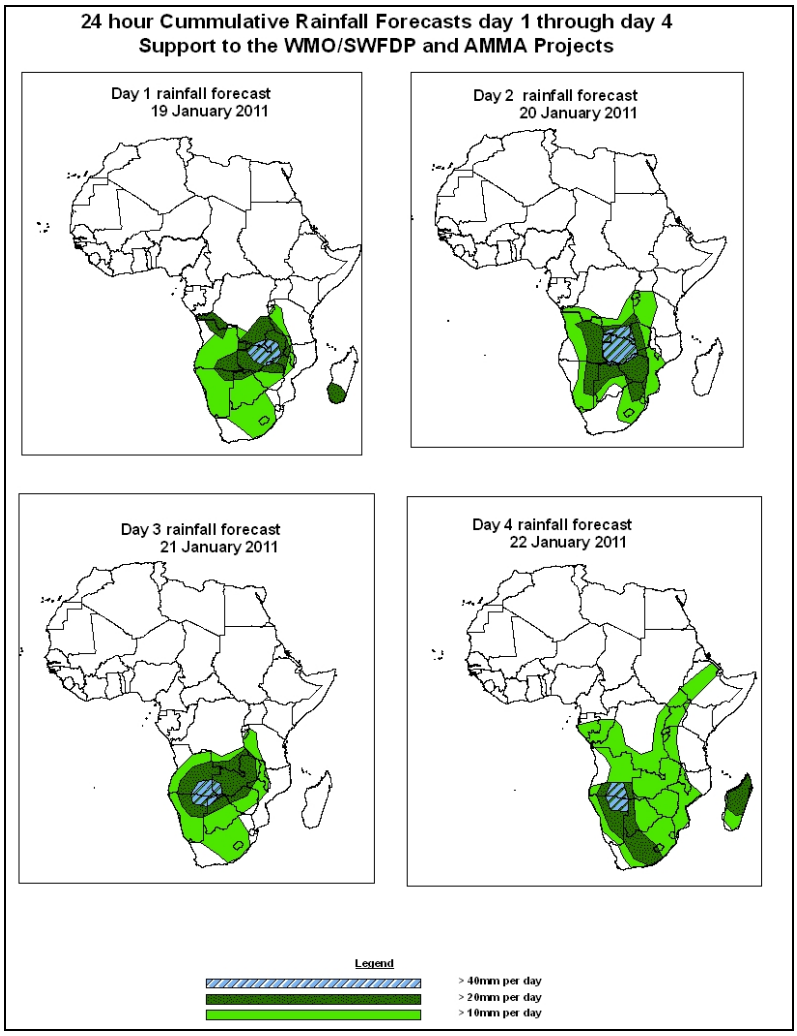
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 19 JANUARY – 06Z of 22 January 2011, (Issued at 14:00Z of 18 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 in the region. On the other hand, heavy rains are expected to decrease gradually over southeast Africa as a result of the weakening of the rain-bearing systems. In general, there is an increased chance for rainfall to exceed 20mm per day over many places across southern Africa countries, with the heavier rainfall events gradually shifting towards the west.

1.2. Models Comparison and Discussion-Valid from 00Z of 18 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 96 hours. On the other hand the low over southern Africa and its associated trough are expected to persist without showing significant change in the intensity.

Hence, the seasonal trough (Meridional component of the ITCZ) is expected to be more active over western parts of the South 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 Tanzania and the adjoining areas of East Africa is expected to weaken gradually through 24 to 96 hours. 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 the south African countries. The lower level convergence across southern parts of South Africa is expected to persist. On the other hand, a cyclonic circulation and its associated trough is expected to dominate the flow over northeast Africa, including Eritrea and Ethiopia. This system is expected to move eastwards in the coming 96 hours.

At 700hPa level, a deep convergence line over northeast Zambia near the border of southwest Tanzania and Malawi is expected to weaken through 24 to 96 hours. On the other hand, a cyclonic convergence over Angola/Namibia border is expected to deepen while expanding southwards through 48 to72 hours. Another convergence over Zimbabwe and Botswana is expected to move over northeast of South Africa in the next 24 to 72 hours. A westward propagating mid-latitude cyclone is expected to dominate the flow over northeast Africa including Eritrea and Ethiopia in the coming 96 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 48 hours. The associated wind speed range between 90 and 110KT.

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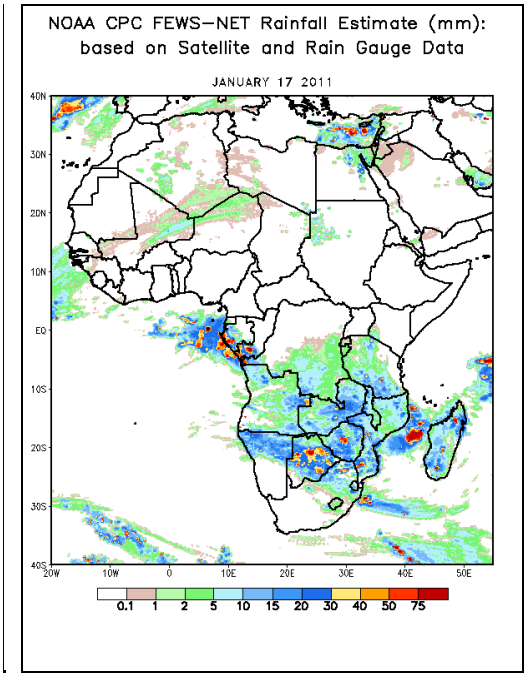
2.0. Previous and Current Day Weather Discussion over Africa (17 January 2011 – 18 January 2011)

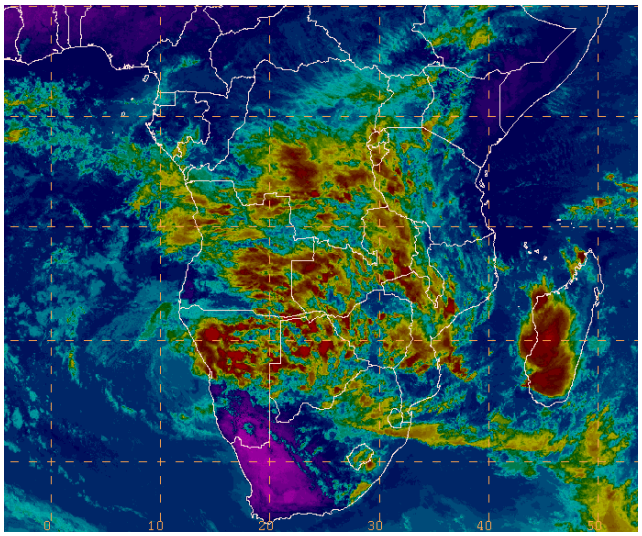
2.1. Weather assessment for the previous day (18 January 2011):

During the previous day, moderate to heavy rainfall was observed over parts of Gabon, Zambia, Congo, Botswana, Mozambique and Madagascar.

2.2. Weather assessment for the current day (18 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 1622Z, January 18, 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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