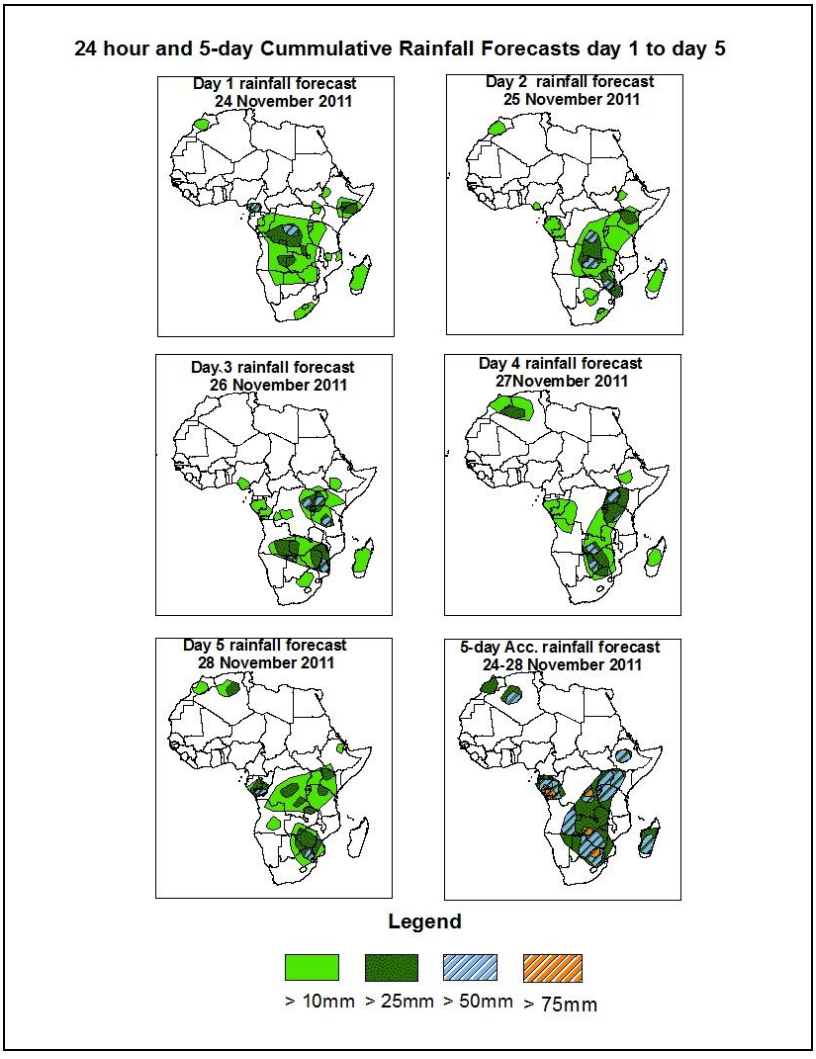
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 24November – 06Z of 28November 2011, (Issued at 16:45Z of 23November 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high 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 next five days, seasonal and localized wind convergences are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over eastern Angola, Gabon, Congo Brazzaville, parts of DRC, north western Tanzania, parts of Namibia, Zambia, Zimbabwe, parts of Botswana, parts of Madagascar, parts of Morocco, parts of Algeria, Burundi, Rwanda, western Kenya, Uganda, Southern Mozambique and parts of southern Africa.

1.2. Models Comparison and Discussion-Valid from 00Z of 24 November 2011

The GFS, ECMWF and UKMET models indicate series of lows and their associated troughs across central and the South African countries. The low over DRC is expected to deepen, with its mean sea level pressure value decreasing from 1010mb to 1008mb towards the end of the forecast period according to the GFS model. Another low is expected to form extending across Angola, Namibia, Zambia and Botswana and tends to weaken, with its MSLP value decreasing from 1007mb to 1006mb towards the end of the forecast period according to GFS model. A high pressure is expected to form over Arabian Peninsula and tends to weaken from 1021mb to 1016mb through 24 to 96hours and then tends to intensify to 1024mb by 120 hours according to GFS model. While according to ECMWF model it is expected to weaken from 1020mb to 1016mb through 24 to 72hours and then tends to intensify to 1020mb towards the end of the forecast period. According to UKMET model it tends to weaken, with its central pressure value decreasing from 1020mb to 1016mb towards the end of the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken, with its MSLP value decreasing from 1032mb to 1028mb towards the end of the forecast period according to GFS model. According to both ECMWF and UKMET models it is expected to weaken, with its MSLP value decreasing from 1032mb to 1026mb towards the end of the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to weaken, with its central pressure value of decreasing from 1020mb to 1016mb through 24 to 72hours and tends to intensify to 1020mb by 96hours and then weaken to 1016mb towards the end of the forecast period according to GFS model. While according to both UKMET and ECMWF models it is expected to weaken from 1020mb to 1016mb through 24 to 72hours and then intensify to 1024mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to dominate the flow over parts of Angola during the forecast period. The seasonal wind convergence across central African countries is expected to remain active during the forecast period extending across DRC. Localized wind convergences are also expected to dominate the flow over portions of Ethiopia, Zambia, Mali ,Zimbabwe, South Africa, Tanzania, Congo, Gabon, Algeria, Namibia, Botswana and Uganda during the forecast period.

At 500hpa, eastward propagating trough in the westerly is expected to dominate the flow over Mediterranean Sea during the forecast period; with the low geopotential value of 5820gpm extending to the latitudes Morocco and Algeria by 24 and expected to extend over Tunisia through 48 to 96hours .While at the end of the forecast period it is expected to extend to Libya. Another trough is expected to propagate over Egypt through by 120 hours. A mid latitude frontal system is expected to propagate eastwards across the Southern African countries during the forecast period.

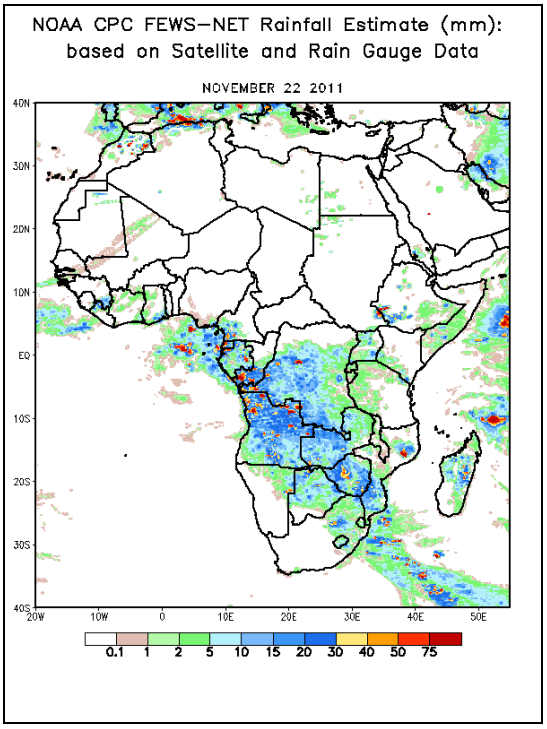
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, during the forecast period. The intensity of the jet is expected to exceed 130kts over Libya and Egypt by 24hours. While by 72 it is expected to extend over Egypt. By the end of the forecast period it is expected to propagate over Morocco, Algeria and Libya with wind speed exceeded 110kts. Wind speed values associated with the southern Hemisphere sub-tropical westerly jet are expected to exceed 110kts during the forecast period.

In the next five days, seasonal and localized wind convergences are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over eastern Angola, Gabon, Congo Brazzaville, parts of DRC, north western Tanzania, parts of Namibia, Zambia, Zimbabwe, parts of Botswana, parts of Madagascar, parts of Morocco, parts of Algeria, Burundi, Rwanda, western Kenya, Uganda, Southern Mozambique and parts of southern Africa..

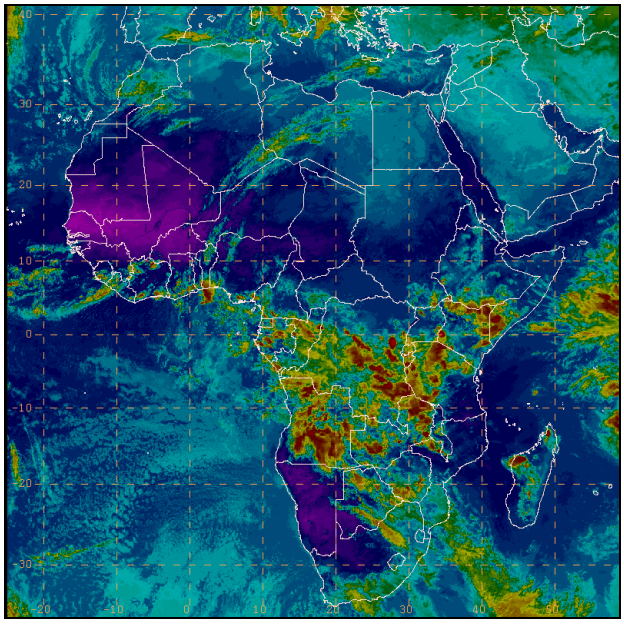
2.0. Previous and Current Day Weather Discussion over Africa (22November - 23November 2011)

2.1. Weather assessment for the previous day (22November 2011): During the previous day, moderate to locally heavy rainfall was observed over parts of Morocco, much of DRC, northern Algeria, southern Ethiopia, parts of Madagascar, Angola, Zambia, parts of Zimbabwe, parts of Gabon, southern Cameron, parts of Mozambique, parts of Botswana and Congo.

2.2. Weather assessment for the current day (23November 2011): Intense clouds are observed over parts of southern Benin, parts of Angola, parts of Zambia, parts of Tanzania, much of DRC, parts of Congo, portion of Madagascar, parts of Zimbabwe ,parts of Kenya, parts of Gabon, southern Ethiopia, southern Somalia and parts of Botswana.



IR Satellite Image (valid 1622Z of 23November 2011)



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

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