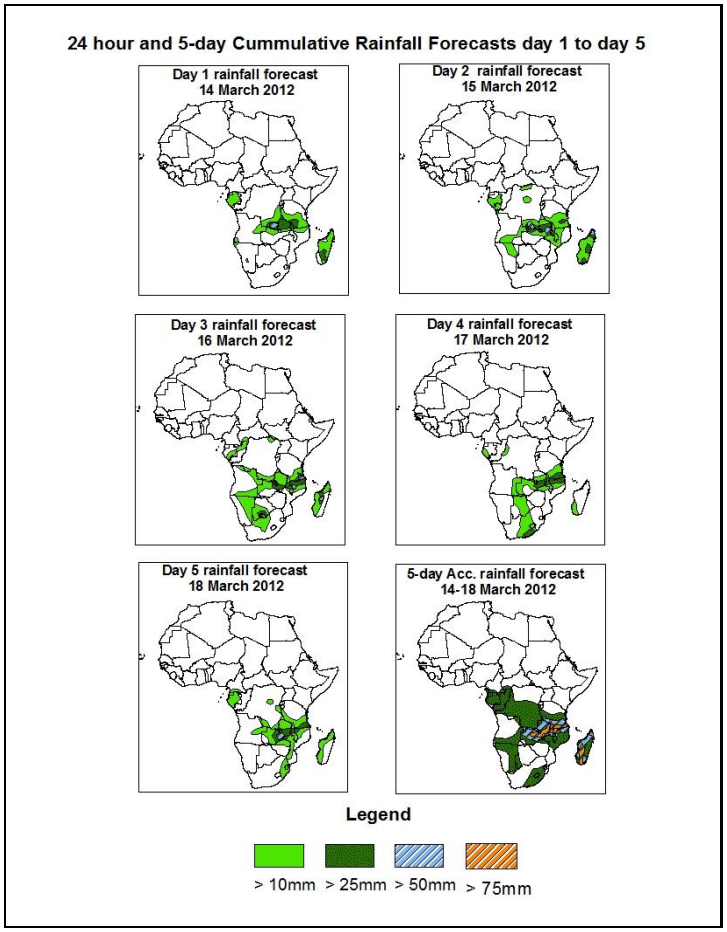
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 14 March – 06Z of 18 March 2012, (Issued at 15:00Z of 13 March 2012)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, low level tropospheric wind convergences from Gulf of Guinea to western Uganda passing through northern Congo, southern Cameroun and northern DRC, the low level convergence in the vicinity of central Uganda, western Tanzania, eastern Zambia and Malawi associated with the meridional arm of the ITCZ, the zonal arm of the ITCZ over central Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania and cyclonic circulations over Mozambique Channel off the coast of northwestern Madagascar are expected to enhance rainfall in their respective regions. Hence, there is a chance of heavy rainfall over Equatorial Guinea, Gabon, Congo, eastern Angola, northern Zambia, southern DRC, northern Mozambique, Malawi, southern and central Tanzania and Madagascar Island.

1.2. Model Discussion-Valid from 00Z of 13 March, 2012

The GFS model indicates series of lows and their associated trough across central and the South African countries. **A** low will form in the vicinity of the Republic of Southern Sudan with a central MSLP value of 1005mb at the beginning of the forecast period. It tends to maintain its central MSLP and position throughout the forecast period. **A**nother low will form in the vicinity of southern Chad and northern CAR with central MSLP value of 1005mb through 72 to 96 hours. It tends to maintain its central MSLP and position throughout the forecast period. **A** low will form in the vicinity of central Gabon with a central MSLP of 1005mb towards the end of the forecast period. **A**nother low will form in the vicinity of southwestern Cameroun with a central MSLP of 1005mb towards the end of the forecast period. **A** fifth low will form in the vicinity of eastern DRC with a central MSLP of 1005mb towards the end of the forecast period.

The St. Helena High pressure system is located over southeast Atlantic Ocean, near the southwest coast of South Africa with a central MSLP value of 1020mb at the beginning of the forecast period. It tends to strengthen with its central MSLP value increasing to 1025mb through 24 to 96 hours. It thereafter tends to weaken with its MSLP value decreasing to 1020mb towards the end of the forecast period. **T**he model locates the Mascarene high pressure system over southwestern Indian Ocean with a central MSLP of 1020mb at the beginning of the forecast period. It tends to strengthen with its central MSLP value increasing to 1030mb through 24 to 96 hours. It thereafter tends to weaken with its MSLP value decreasing to 1025mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to be active from Gulf of Guinea to western Uganda passing through northern Congo, southern Cameroun and northern DRC throughout the forecast period. A low level convergence zone is expected to form in the vicinity of central Uganda, western Tanzania, eastern Zambia and Malawi associated with the meridional arm of the ITCZ. It tends to maintain its location throughout the forecast period. Another convergence zone associated with the zonal arm of the ITCZ will be located over central Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania throughout the forecast period. Cyclonic circulations tend to dominate the flow over Mozambique Channel off the coast of northwestern Madagascar throughout the forecast period.

At 500hpa, an eastward propagating mid latitude trough is expected to dominate the flow over southern Africa with the low geo-potential value of 5760gpm throughout the forecast period.

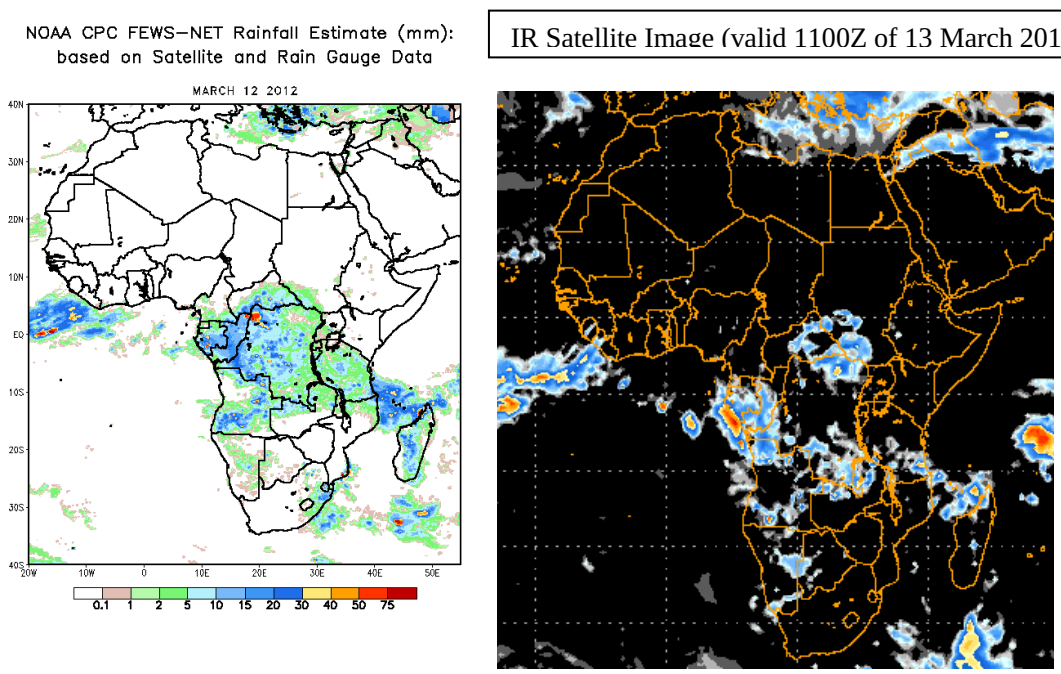
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow from central Libya across northern Egypt to Persian Gulf during the forecast period. The intensity of the jet is expected to exceed 100kts while moving to the east with its core values occasionally increasing to more than 160kts throughout the forecast period.

In the next five days, low level tropospheric wind convergences from Gulf of Guinea to western Uganda passing through northern Congo, southern Cameroun and northern DRC, the low level convergence in the vicinity of central Uganda, western Tanzania, eastern Zambia and Malawi associated with the meridional arm of the ITCZ, the zonal arm of the ITCZ over central Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania and cyclonic circulations over Mozambique Channel off the coast of northwestern Madagascar are expected to enhance rainfall in their respective regions. Hence, there is a chance of heavy rainfall over Equatorial Guinea, Gabon, Congo, eastern Angola, northern Zambia, southern DRC, northern Mozambique, Malawi, southern and central Tanzania and Madagascar Island.

2.0. Previous and Current Day Weather Discussion over Africa (12 March – 13 March 2012)

2.1. Weather assessment for the previous day (*12 March* 2012): During the previous day, moderate to locally heavy rainfall was observed over southern and eastern Angola, western DRC, Congo, Gabon, southern CAR, Comoros Islands and central Madagascar.

2.2. Weather assessment for the current day (*13 March 2012*): Intense clouds are observed over Equatorial Guinea, Gabon, southern Congo, northern, western & southern DRC, northern Zambia, southern Tanzania, southwestern Republic of Southern Sudan, eastern CAR and northwestern Madagascar.



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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