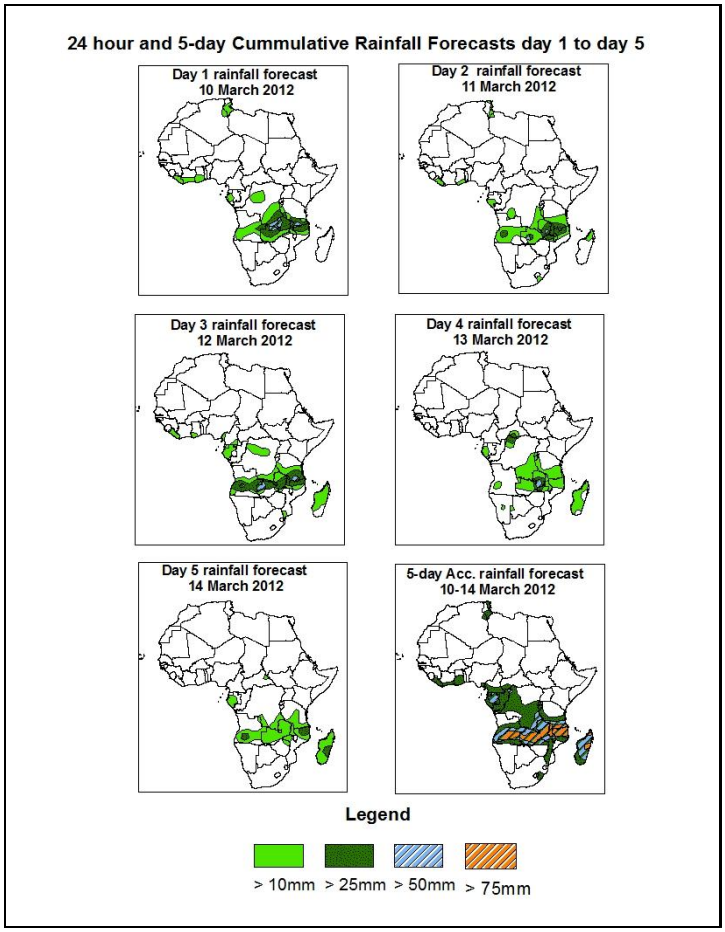
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 10 March – 06Z of 14 March 2012, (Issued at 18:00Z of 09 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 Cameroun, CAR and northern DRC, the low level convergence in the vicinity of eastern DRC, Rwanda, Burundi, southern Uganda and western Tanzania associated with the meridional arm of the ITCZ and the zonal arm of the ITCZ over central Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Equatorial Guinea, Gabon, Congo, central Angola, Zambia, northern Zimbabwe, DRC, northern Mozambique, Malawi, Rwanda, Burundi, Tanzania and Madagascar.

1.2. Model Discussion-Valid from 00Z of 09 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 extend northwards to reach southern part of Republic of Sudan towards the end of the forecast period. **A** low will form in the vicinity of central Namibia with a central MSLP of 1010mb through 24 to 48 hours. It tends to shift southwards to reach northern part of South Africa towards the end of the forecast period. **A** low will form over northwestern Libya with a central MSLP value of 1005mb at the beginning of the forecast period. It tends to shift northeastwards to reach Mediterranean Sea through 24to 48 hours.

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 maintain its central MSLP value while progressively shifting northwestwards to St. Helena Island by the end of the forecast period. **T**he model locates the Mascarene high pressure system over southwestern Indian Ocean with a central MSLP of 1025mb at the beginning of the forecast period. It tends to weaken progressively to a central MSLP value of 1015mb 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 Cameroun, CAR and northern DRC throughout the forecast period. A low level convergence zone is expected to form in the vicinity of eastern DRC, Rwanda, Burundi, southern Uganda and western Tanzania associated with the meridional arm of the ITCZ. It tends to be stationary 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 dominate the flow over western Libya through 24 to 48 hours.

At 500hpa, an eastward propagating mid latitude trough is expected to dominate the flow over eastern Tunisia with the low geo-potential value of 5440gpm at the beginning of forecast period. The northeast-southwest oriented trough tends to propagate northeastwards reach northwestern Egypt with a geo-potential value of 5640gpm towards the end of the forecast period.

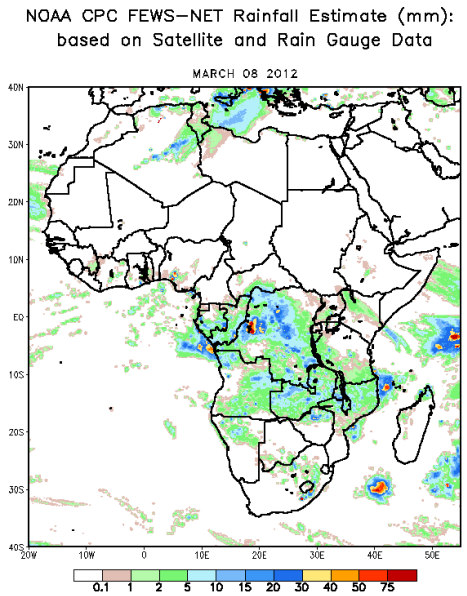
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow from southern Algeria across central Libya and northern Egypt to Persian Gulf during the forecast period. The intensity of the jet is expected to exceed 100kts while moving to the east with its core values 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 Cameroun, CAR and northern DRC, the low level convergence in the vicinity of eastern DRC, Rwanda, Burundi, southern Uganda and western Tanzania associated with the meridional arm of the ITCZ and the zonal arm of the ITCZ over central Angola running across southern DRC, Zambia and Malawi up to northern Mozambique / southern Tanzania are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Equatorial Guinea, Gabon, Congo, central Angola, Zambia, northern Zimbabwe, DRC, northern Mozambique, Malawi, Rwanda, Burundi, Tanzania and Madagascar.

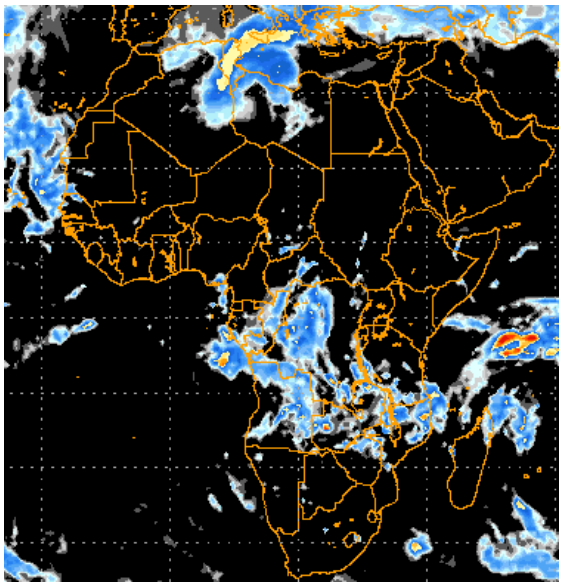
2.0. Previous and Current Day Weather Discussion over Africa (08 March – 09 March 2011)

2.1. Weather assessment for the previous day (*08 March* 2012): During the previous day, moderate to locally heavy rainfall was observed over several parts of DRC, eastern Congo, northern Zambia, Malawi and southern Gabon.

2.2. Weather assessment for the current day (*09 March 2011*): Intense clouds are observed over southern & western Tanzania, northern Mozambique, Zambia, eastern & northern Angola, eastern Gabon, Congo, western & southern DRC, northern Algeria, Tunisia and northwestern Libya.



IR Satellite Image (valid 1200Z of 09 March 2012)



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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