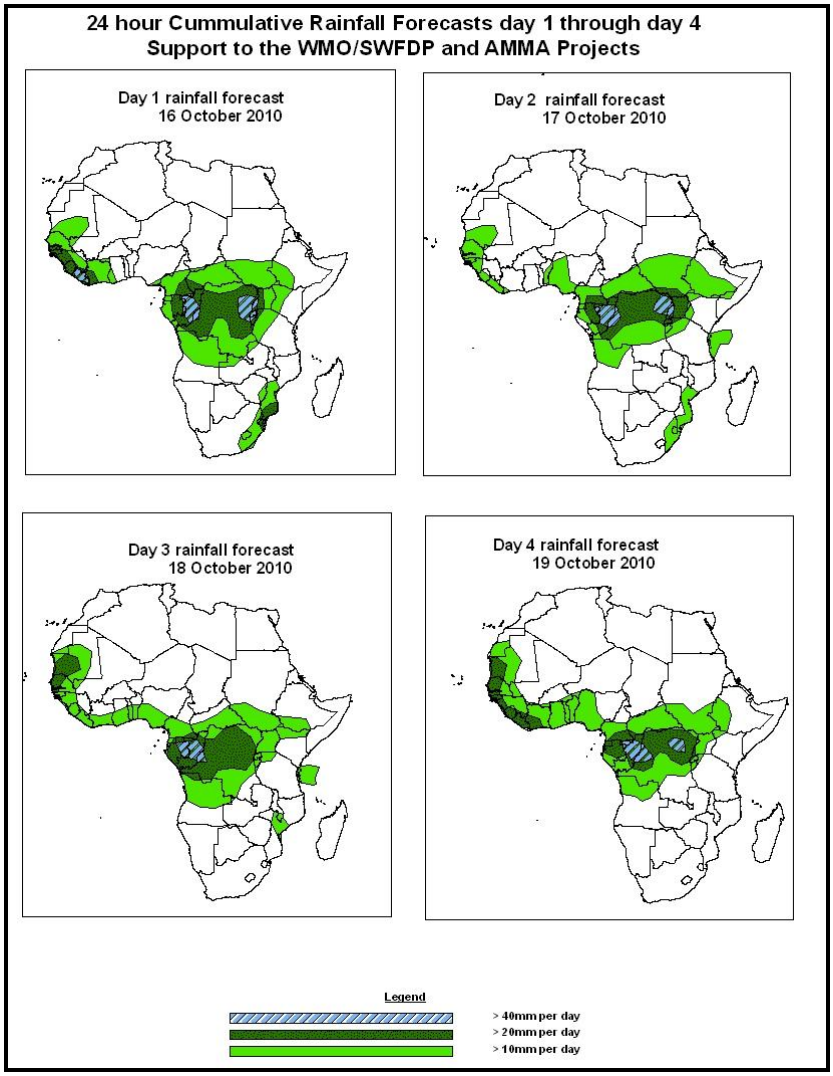
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 16 OCTOBER – 06Z of 19 OCTOBER 2010, (Issued at 14:00Z of 15 OCTOBER 2010)

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, there is an increased chance for rainfall to exceed 20mm per day over Central Africa, eastern parts of the Gulf of Guinea Countries, with chances of locally heavy rainfall over Congo and parts of Cameroon. A greater part of DRC is also expected to experience moderate to heavy rainfall during the next 24 to 96hours. Pockets of moderate rainfall are likely to occur over parts of Sierra Leone and Liberia during the next 24hours.

1.2. Models Comparison and Discussion-Valid from 00Z of 15 OCTOBER 2010

A cut off low pressure system over southern Niger is expected to extend a trough towards Mali tin the next 48hous and then begin to weaken from 72hours. A cording to GFS and UKMET model there is a trough over Sudan with pressure of 1008hPa, while the ECMWF indicate this system as a cut off low of about 1005hPa over Sudan and across Chad. Apart from the difference in position all the models are indicating that this system will weaken slightly in the next 48hour. Beyond 72 hours the models are not indicating any significant changes in the systems over the northern hemisphere region.

The seasonal low pressure system (Meridianal component of the ITCZ) over DRC is relatively weak at 1011hPa and continues to shift westwards and become diffused over western parts of DRC. A cut off low pressure situated over western parts of Zambia and including parts of southeastern DRC is expected to move slightly northwards during 24hours and then disappear.

The southern hemisphere High pressure system (St Helena) is has weakened slightly and move to the west during the past 24 hours. The central pressure of the system is expected to decrease further from 1028 to 1024hPa during the forecast period. The Mascarene high pressure is generally weak and remains displaced eastwards. However, occasional intensification of this system is likely during the 48 to 72hour cycle Therefore, the East African Ridge is expected to strengthen along the East African Coast beyond 72hours and its north extent limited to central parts of Kenya as predicted by GFS, ECMWF and UKMET models.

At 850hPa level, a trough over northeast Nigeria is expected to move southwards and become strong then move on to Burkina Faso in the next 48 to 72hours. A weak trough over the coast of Senegal is expected to disappear from the region in the next 24hours. A convergence line over Lake Victoria extends towards western parts of Zambia across DRC in 24 to 48hours then becomes weak and moves to the western parts of DRC.

At 700hPa level, a localized convergence line is active over Gabon, Congo and the Vicinity of Cameroon. Another convergence line over western DRC is expected to weaken and move towards Congo in the next 24hours. Another weak convergence line is along the border of Sudan and Ethiopia and is expected to shift towards southern Sudan in 48hours. A convergence line associated with a passing mid latitude trough is

expected to move over Sothern parts of Mozambique in the next 24hous. The Near Equatorial Trough (NET) over the East African coast is still not well positioned for the region. However, a weak and short lived through is expected in the vicinity of north east coast of Tanzania in 24hours.

At 500hpa, the African Easterly Jet is expected to remain weak with its associated wind speeds remaining below 25Kts in many areas of western and central African regions.

At 200hPa, zone of strong wind (>50Kts) is inclined further north. The strength of the Sub Tropical westerly Jet is expected to be 70 to 90Kts during this period in the vicinity of northern Mali. While the TEJ related strong winds are expected to remain weak (<25Kts) across much of the tropical African region during the forecast period.

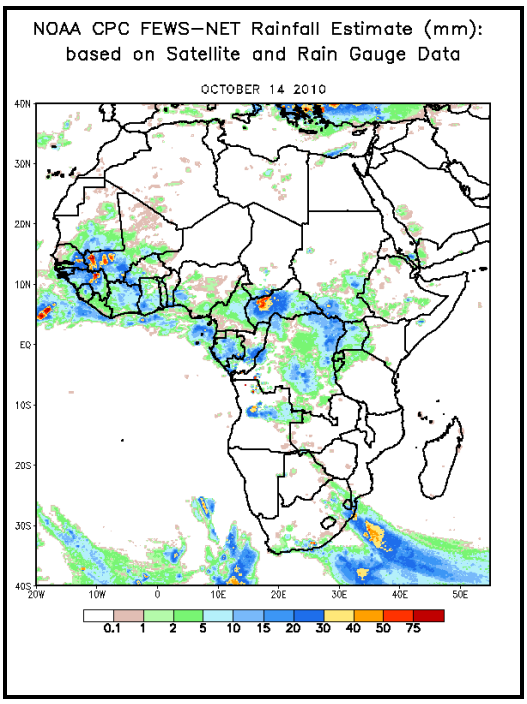
In the coming four days, there is an increased chance for rainfall to exceed 20mm per day over Central Africa, eastern parts of the Gulf of Guinea Countries, with chances of locally heavy rainfall over Congo and parts of Cameroon. A greater part of DRC is also expected to experience moderate to heavy rainfall during the next 24 to 96hours. Pockets of moderate rainfall are likely to occur over parts of Sierra Leone and Liberia during the next 24hours.

2.0. Previous and Current Day Weather Discussion over Africa (14 – 15 October 2010)

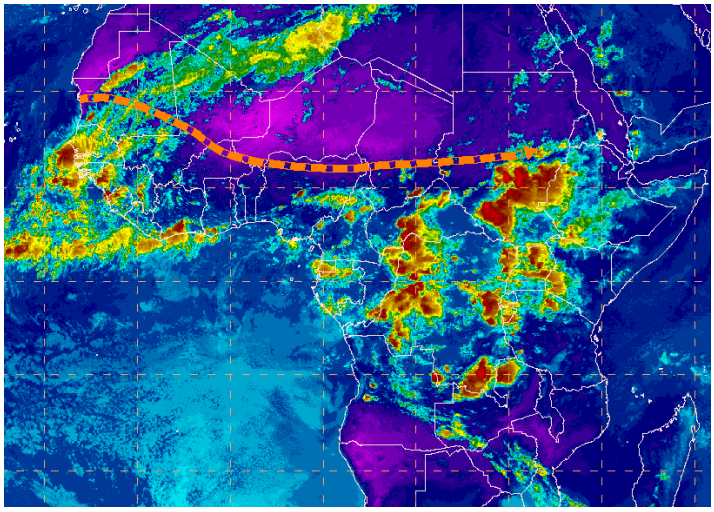
2.1. Weather assessment for the previous day (14 October 2010):

During the previous day locally heavy rainfall was observed over western areas of Mali and western coast areas of the Gulf of Guinea countries. Also moderate to heavy rainfall are indicated over Central Africa Republic and over the CAB region.

2.2. Weather assessment for the current day (15 October 2010): Intense clouds are observed over the central African countries, the CAB region and Gulf of Guinea countries.



IR Satellite Image, Valid 1630Z, October 15, 2010 and position of ITD (based on 1200Z Surface Analysis)



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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