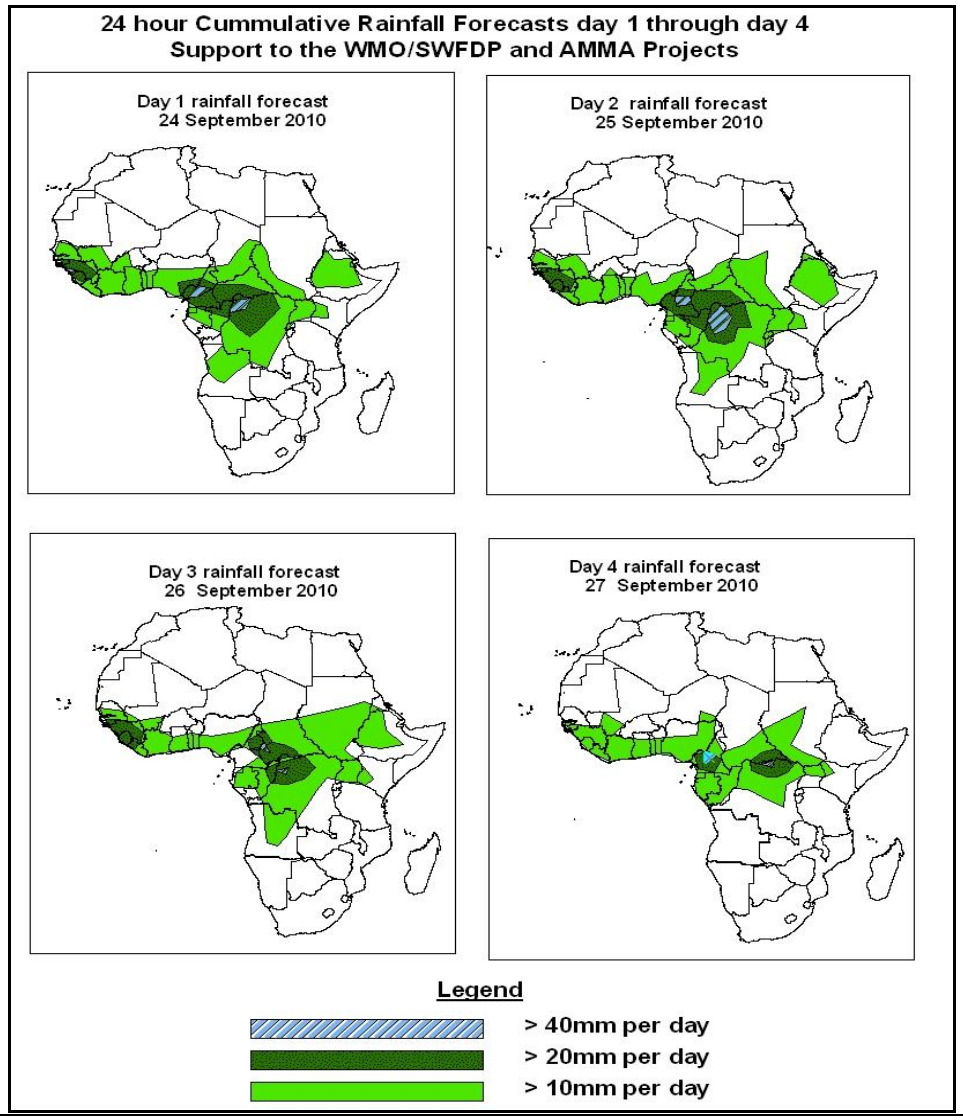
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 24 SEPTEMBER – 06Z of 27 SEPTEMBER 2010, (Issued at 14:00EST of 23 SEPTEMBER 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, the cyclonic circulation over the central African countries and its associated movement towards the coastal areas of the Gulf of Guinea is expected to enhance rainfall in the regions. Hence, there is an increased chance for the rainfall to exceed 20mm per day over southern Nigeria, Cameroon, Guinea and CAR. Heavy rainfall is also expected along the coastal areas of Guinea, Sera Leone and Liberia. The active convergence in the CAB region is also expected to maintain the heavy rainfall in in parts of DRC.

1.2. Models Comparison and Discussion-Valid from 00Z of 23 September 2010

A low pressure system over eastern Mali is expected to shift towards southern Algeria while slightly deepening. Its central pressure value is expected to change from 1008 to 1007hPa trough 24 to 96hours according to the GFS model, 1008 to 1005hPa on the ECMWF model and 1009 to 1005hPa on the UKMET model. Another low pressure system located over Chad is expected to move slightly to the west. Its central pressure value is expected to change from 1008 to 1009hPa on the ECMWF model trough 48 to 72hours, 1007 to 1006hPa on the UKMET model, and maintain its pressure value of 1007hPa on the GFS model. A low pressure system situated over southern Sudan is expected to maintain its position and to change its central pressure value from 1005 to 1007hPa according to the GFS model trough 24 to 96hours, 1007 to 1006hPa on the ECMWF model and 1005 to 1004hPa on the UKMET model trough 24 to 48hours. The seasonal low pressure system located over southern DRC is expected to maintain its central pressure value of 1008mb through 24 to 96 hours according to the GFS model, maintain central pressure value of 1010hPa according to the ECMWF model, while the UKMET model tends to increase its central pressure value from 1006mb to 1008hPa through 24 to 96hours.

The Azores high-pressure system is expected to intensify from central pressure value of 1025 to 1023hPa through 24 to 96hours. The St. Helena high, situated over southern Atlantic Ocean is expected to relax from central pressure values of 1036 to 1032hPa through 24 to 72 hours and regain its intensity 72 hours later. On the other hand, the Mascarene high pressure system is expected to relax slightly from central pressure values of 1027mb to 1026mb through 24 to 48 hours and to intensify from 1027 to 1031hPa trough 48 to 96hours.

At 850hpa, the cyclonic circulation in the vicinity Mali is expected to shift slightly to the west trough 24 to 96hours. Another cyclonic circulation located over western Chad is expected to move toward southern Niger through 24 to 96hours. A cyclonic circulation situated over southern Sudan is expected to move towards central Chad trough 24 to 96hours. A cyclonic circulation located over CAR is expected to move towards central Nigeria across Cameroon through 24 to 96 hours. The convergence associated with the CAB is expected to remain active across eastern Namibia, Angola, Zambia and DRC, while its expected to weaken across southwest Sudan, Kenya and southwest Ethiopia through 24 to 96 hours.

At 700Hpa**,** a weak trough associated with the African Easterly wave is expected to propagate across the longitudes of Niger/Mali through 24 to 48hours. This trough is expected to move further across the longitudes of Mali/Mauritania trough 48hours and continue to move towards Mauritania through 72 to 96hours. Another weak wave with its axis covering areas across Cameroun/CRA/southern Sudan is expected to propagate across the longitudes of Cameroun/CRA/southern Chad through 24 to 48hours and through the longitudes of Cameroun/Nigeria trough 72 to 96hours.

At 500hpa, the African Easterly Jet is expected to remain weak with its associated wind speeds remaining below 30Kts in many areas of western and central African regions.

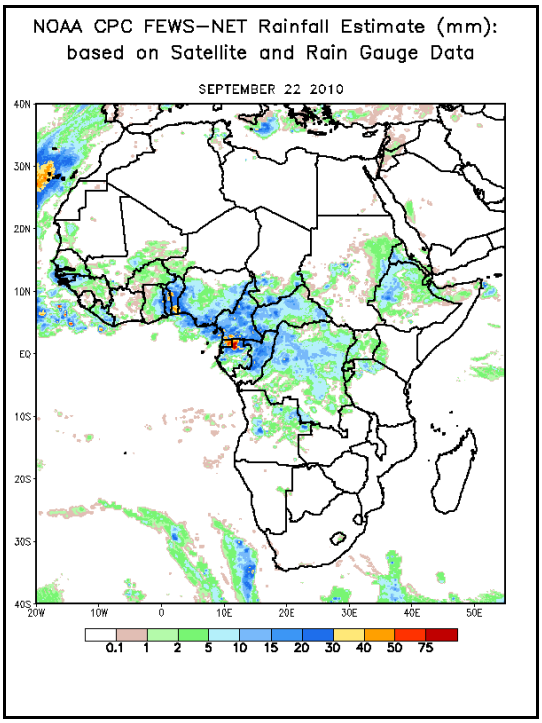
At 200hPa, zone of strong wind (>50Kts) is expected to dominate the flow in the vicinity of Iberian Peninsula, Libya and southwest on the Egypt. Meanwhile, on the other hand, high wind speed values, associated with the TEJ, are expected to dominate the flow in the vicinity of eastern Ethiopia and the neighboring areas of Somalia.

In the coming four days, the cyclonic circulation over the central African countries and its associated movement towards the coastal areas of the Gulf of Guinea is expected to enhance rainfall in the regions. Hence, there is an increased chance for the rainfall to exceed 20mm per day over southern Nigeria, Cameroon, Guinea and CAR. Heavy rainfall is also expected along the coastal areas of Guinea, Sera Leone and Liberia. The active convergence in the CAB region is also expected to maintain the heavy rainfall in in parts of DRC.

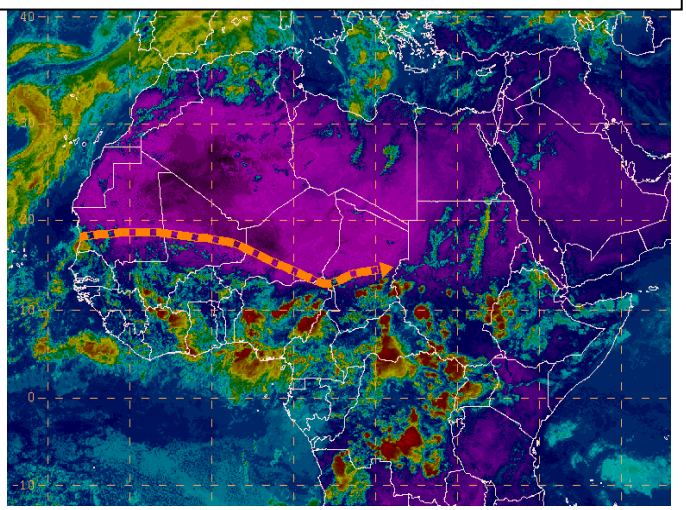
2.0. Previous and Current Day Weather Discussion over Africa (22 - 23 September 2010)

2.1. Weather assessment for the previous day (22 September 2010): During the previous day, moderate to heavy rainfall was observed over Togo, Benin, western Nigeria, Cameroon, northern Gabon, parts of CAR and northwest DRC.

2.2. Weather assessment for the current day (23 September 2010): Intense clouds are observed over southern Mali, Cote-d'Ivoire, Burkina Faso, Nigeria, Cameroon, southern Chad, Angola, northern DRC, southern Sudan, parts of Uganda and Ethiopia.



IR Satellite Image, Valid 1422Z, September 23, 2010 and position of ITD (based on 1200Z observation)



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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