

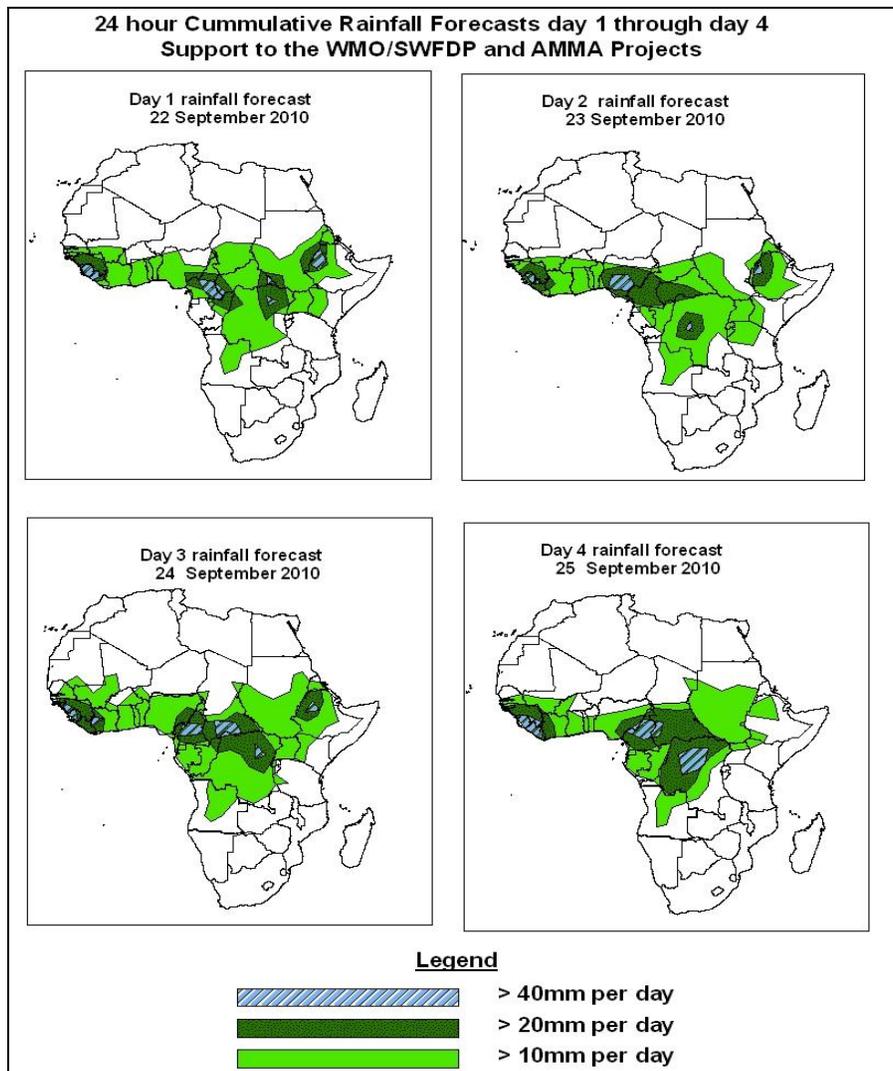


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 22 SEPTEMBER – 06Z of 25 SEPTEMBER 2010, (Issued at 14:00EST of 21 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 active convergence in the CAB region is expected to maintain the moderate to heavy rainfall in parts of the Horn of African countries. Especially, there is an increased chance for rainfall to exceed 20mm per day in the western and central parts of Ethiopia, DRC and southern Sudan. Southern Senegal, Guinea, Cote-d'Ivoire, parts of Cameroon, CAR and Nigeria and southern Chad are also expected to receive moderate to heavy rainfall due to favorable conditions of the West African Monsoon System.

1.2. Models Comparison and Discussion-Valid from 00Z of 21 September 2010

A low pressure system situated over central Mali is expected to shift towards western Mauritania. Its central pressure value is expected to change from 1006 to 1008hPa through 24 to 96hours on the GFS model, 1007 to 1008hPa according to the ECMWF model trough and 1004 to 1009hPa on the UKMET model. A low pressure system located over southern Niger is expected to move towards southern Mali. Its central pressure value is expected to change from 1007 to 1008hPa through 24 to 72hours according to the GFS model. Another low pressure system located over southern Chad is expected to move towards northern Nigeria. Its central pressure value is expected to change between 1007 to 1006hPa through 24 to 72hours according to the GFS model, and maintain its central pressure value of 1008hPa trough 24 to 96hours according to the ECMWF model, and 1006hPa on the UKMET model trough 48 to 96hours. A low pressure system located over eastern Sudan is expected to shift towards central Sudan. Its central pressure value is expected to change from 1005 to 1004hPa on the GFS model through 24 to 96hours, 1005 to 1006hPa according to the ECMWF model trough 24 to 72hours and 1003 to 1004hPa on the UKMET model. Another low pressure system situated over southern Sudan is expected to move towards southern Chad. Its central pressure value is expected to change from 1008 to 1007hpa on the GFS model trough 48 to 96hours. A high pressure system situated over Central Europe is expected to intensify, while extending its ridge across northern African countries. The seasonal low pressure system located over southern DRC is expected to change from central pressure value of 1009 to 1007hPa according to the GFS model, 1008 to 1010hPa according to the ECMWF model and 1005 to 1007hPa according to the UKMET model. In general, the Inter-Tropical Front (ITF) is expected to remain between 17°N and 20°N latitudes across West African countries (west of the Prime Meridian) through 24 to 48, while it is expected to stay between 16°N and 19°N latitudes east of the Prime Meridian.

The Azores high-pressure system is expected to relax from central pressure value of 1025 to 1019hPa through 24 to 48hours and intensify from 1025 to 1026hPa trough 72 to 96hours. The St. Helena high, situated over southern Atlantic Ocean is expected to relax from central pressure values of 1036 to 1034hPa through 72 to 96hours. On the other hand, the Mascarene high pressure system is expected to maintain its central pressure value of 1028hPa through 24 to 96hours.

At 850hpa, a cyclonic circulation situated over central Mali is expected to shift towards western Mauritania through 24 to 96hours. Another cyclonic circulation located over eastern Niger is expected to move towards southern Mali through 24 to 96hours. A cyclonic circulation situated over central Chad is expected to shift towards western Niger through 72 to 96hours. Another cyclonic circulation over eastern Sudan is expected to move towards eastern Chad, while slightly weakening through 24 to 96hours. Another cyclonic circulation located over Central African Republic is expected to move towards southern Chad through 48 to 96hours. The convergence associated with the CAB is expected to remain active across eastern Namibia, Angola, Zambia, DRC, 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 Mali through 24 to 48hours. This trough is expected to further move across the longitudes of Mauritania through 48hours. Another weak wave situated in the vicinity of CAR and southern Sudan is expected to propagate across the longitudes of Cameroun/ Chad through 72 to 96hours.

At 500hpa, African Easterly Jet is expected to weaken, with its associated wind speeds remaining 25Kts in the vicinity of southern Niger, Burkina Faso and southern Mali.

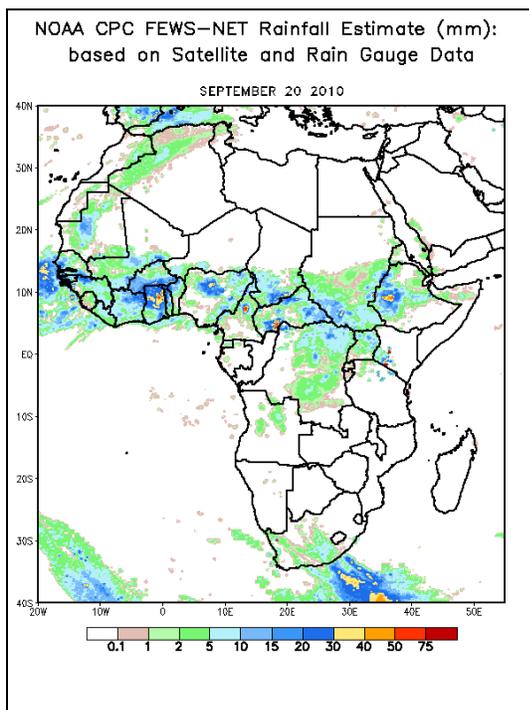
At 200hPa, zone of strong wind (>50Kts) is expected to dominate the flow in the vicinity of Morocco, Spain, Libya and eastern Mediterranean Sea. Meanwhile, strong upper level easterly flow associated with the Tropical Easterly Jet (>35Kts) is expected to dominate the flow across southern Ethiopia through 24 to 96hours.

In the coming four days, the active convergence in the CAB region is expected to maintain the moderate to heavy rainfall in parts of the Horn of African countries. Especially, there is an increased chance for rainfall to exceed 20mm per day in Western and central parts of Ethiopia, DRC, parts of Cameroon, CAR and southern Sudan. Southern Senegal, Guinea, Cote-d'Ivoire and Nigeria and southern Chad are also expected to receive moderate to heavy rainfall due to favorable conditions of the West African Monsoon System.

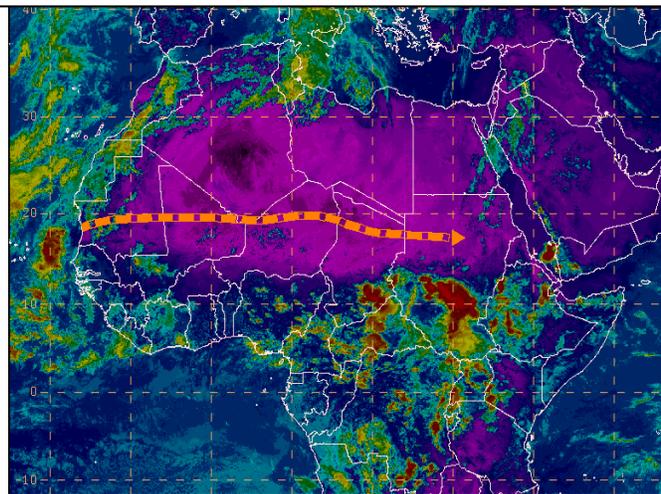
2.0. Previous and Current Day Weather Discussion over Africa (20 - 21 September 2010)

2.1. Weather assessment for the previous day (20 September 2010): During the previous day, moderate to heavy rainfall was observed over parts of Senegal, northern Ghana, parts of northern Nigeria, southern Chad, CAR, northeast DRC, southern Sudan and western Ethiopia.

2.2. Weather assessment for the current day (21 September 2010): Intense clouds are observed over western and southern Chad, Central African Republic, southern Sudan and eastern DRC, parts of Uganda, Kenya and Ethiopia.



IR Satellite Image, Valid 1400Z, September 21, 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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