

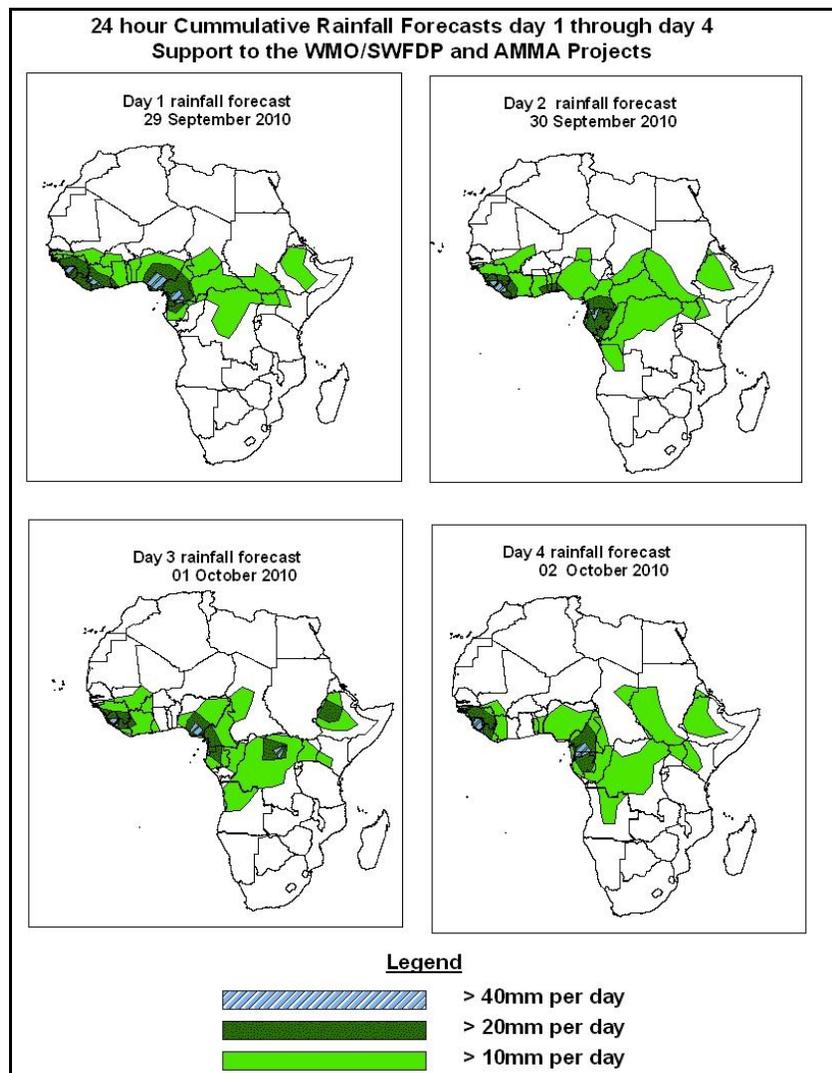


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 29 SEPTEMBER – 06Z of 02 OCTOBER 2010, (Issued at 14:00Z of 28 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 localized cyclonic circulations and the westward propagating troughs in the easterly flow are expected to maintain the moderate to heavy rainfall (>20mm per day) across Guinea, Sierra Leone, Liberia, Cote-d'Ivoire, southern Nigeria and Cameroon. The convergence in the CAB region is expected to remain weak, resulting in reduced rainfall activity. However, parts of northeast DRC and southwest Ethiopia are expected to receive better rainfall amount as compared to the rest of the CAB region.

1.2. Models Comparison and Discussion-Valid from 00Z of 28 September 2010

A low pressure system situated over eastern Mali is expected to shift towards western Mauritania while deepening. Its central pressure value is expected to change from 1007 to 1004hPa through 24 to 96hours according to the GFS model. Another low pressure system located over western Niger is expected to move slightly to the west while deepening. Its central pressure value is expected to change from 1007 to 1005hPa trough 24 to 96hours on the GFS and UKMET models. A low pressure system situated over central Chad is expected to move slightly to the west while deepening. Its central pressure value is expected to change from 1005 to 1004hPa on the GFS and UKMET models through 24 to 48hours, and 1007 to 1006hPa on the ECMWF model. Another low pressure system located over eastern Sudan is expected to move towards central Sudan while filling up. Its central pressure is expected to change from 1004 to 1005hPa through 24 to 72hours according to the GFS model, 1005 to 1006hPa on the ECMWF model and maintain its central pressure value of 1004hPa on the UKMET model. The seasonal low pressure system located over southern DRC is expected to change its central pressure value from 1008 to 1006hPa through 24 to 96 hours according to the GFS model, 1008 to 1007hPa according to the ECMWF model and 1006 to 1007hPa through 24 to 96hours according to the UKMET model. Two week high pressure systems are expected to maintain their positions and central pressure values in the vicinity of Cote-d'Ivoire (1013hPa) and Central African Republic (1012hPa) trough 24 to 72hours according to the ECMWF model. In general, the Inter-Tropical Front (ITF) is expected to remain between 17°N to 20°N latitudes across West African countries (west of the Prime Meridian) through 24 to 48hours, while it is expected to stay between 15°N and 18°N latitudes east of the Prime Meridian.

The Azores high-pressure system situated over northern Atlantic Ocean is expected to intensify while extending its ridge across northern African countries. Its central pressure value is expected to change from 1028 to 1029hPa through 24 to 48hours. The St. Helena high, situated over southern Atlantic Ocean is expected to relax from central pressure values of 1031 to 1028hPa through 48 to 72 hours and regain its intensity 24 hours later. On the other hand, the Mascarene high pressure system is expected to relax from central pressure values of 1035 to 1032hPa through 48 to 96 hours.

At 850hpa, the cyclonic circulation in the vicinity of Mali is expected to shift slightly to the west through 48 to 96hours. Another cyclonic circulation located over central Chad

is expected to move toward eastern Niger through 48 to 72 hours. A cyclonic circulation situated over central Sudan is expected to move towards western Sudan through 48 to 96 hours. A cyclonic circulation located over southern Sudan is expected to maintain its position through 48 to 72 hours. The convergence associated with the CAB is expected to remain weak across much of the CAB region.

At 700hPa, the African Easterly wave is expected to remain weak across the West African countries. However, weak trough in the easterlies is expected to dominate the flow across the coastal areas of the Gulf of Guinea countries.

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.

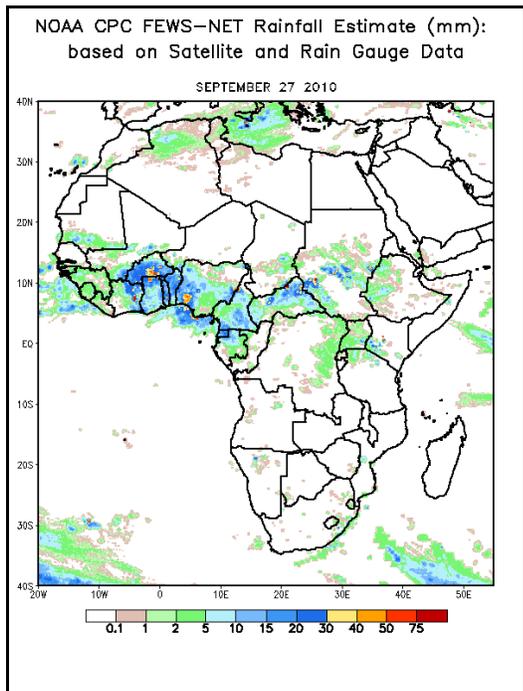
At 200hPa, zone of strong wind (>50Kts) is expected to dominate the flow in the vicinity of northern Algeria, Tunisia and eastern Mediterranean Sea. Meanwhile, high wind speed values, associated with the TEJ, are expected to dominate the flow in the vicinity of eastern Ethiopia and the neighboring areas of Somalia.

In the coming four days, the localized cyclonic circulations and the westward propagating troughs in the easterly flow are expected to maintain the moderate to heavy rainfall (>20mm per day) across Guinea, Sierra Leone, Liberia, Cote-d'Ivoire, southern Nigeria and Cameroon. The convergence in the CAB region is expected to remain weak, resulting in reduced rainfall activity. However, parts of northeast DRC and southwest Ethiopia are expected to receive better rainfall amount as compared to the rest of the CAB region.

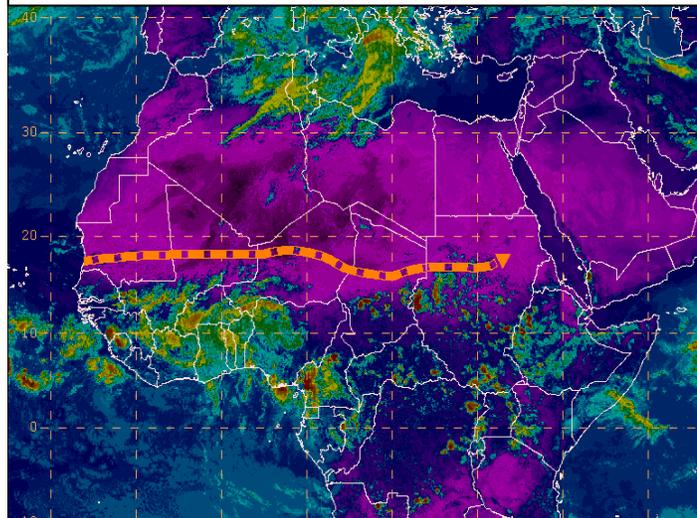
2.0. Previous and Current Day Weather Discussion over Africa (27 - 28 September 2010)

2.1. Weather assessment for the previous day (27 September 2010): During the previous day, moderate to heavy rainfall was observed over the eastern parts of Cote D'Ivoire, Burkina Faso, Togo, Benin, western Nigeria, parts of CAR and central Sudan.

2.2. Weather assessment for the current day (28 September 2010): Moderate to Intense clouds are observed over much of the Gulf of Guinea countries, parts of central African region, western Sudan, parts of Ethiopia, Uganda and western Kenya.



IR Satellite Image, Valid 1322Z, September 28, 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

Author(s): Diakaria Drame (Centre Meteorologique Principal de Bamako-Mali) / CPC-African Desk

Disclaimer: This bulletin is for training purposes only and should be used as guidance.
NOAA does not make forecasts for areas outside of the United States.