

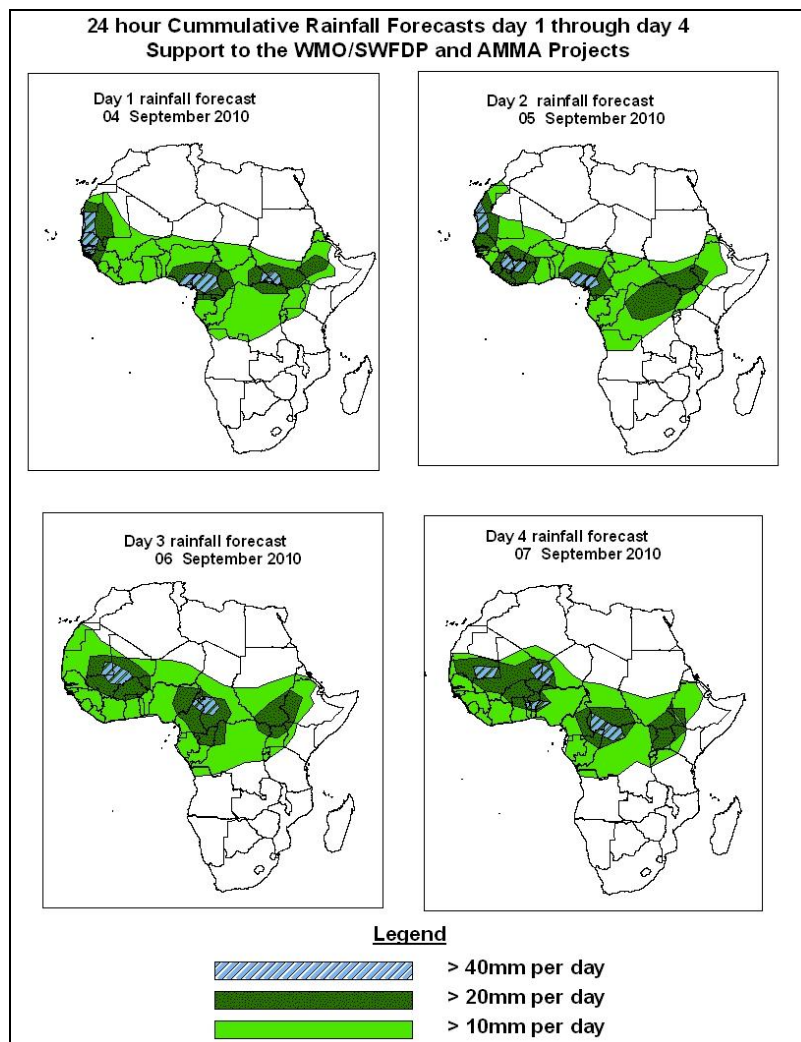


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 04 SEPTEMBER – 06Z of 07 SEPTEMBER 2010, (Issued at 14:00EST of 03 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 abundant moisture from the West African Monsoon flow, the westward propagating meso-scale convection systems and the active ITCZ across the Sahel countries are expected to maintain the moderate to heavy rainfall in many places of western and central Africa. Parts of the Horn of African countries are also expected to continue receiving moderate to heavy rainfall due to the active seasonal convergence in the vicinity of the CAB region and the abundant moisture available from the southern portions of the Indian and Atlantic Oceans. Thus, there is an increased chance for rainfall to exceed 40mm per day in parts of Mauritania, Senegal, Guinea Conakry, central Mali, and Cameroon, parts of Chad, Central African Republic and portions of southern Niger.

1.2. Models Comparison and Discussion-Valid from 00Z of 03 September 2010

A low pressure system situated in the area bordering eastern Mali and western Niger over western Niger is expected to move westward while slightly deepening. Its central pressure value is expected to change from 1006 to 1005hPa according to the GFS model through to 24 to 96hours. A second low pressure system located western Chad is expected to move towards eastern Niger while deepening. Its central pressure value is expected to change between 1004 to 1002mb according to the GFS model and between 1008 and 1007 according to the UKMET model. A low pressure system situated over northern Sudan is expected to maintain its position while deepening. Its central pressure value is expected to change from 1004 to 1002hPa through 24 to 96hours according to the GFS model. The seasonal low pressure system located over DRC is expected to change from central pressure value of 1008 to 1007hPa according to the GFS model, 1009 to 1011hPa according to the ECMWF model and 1008 to 1007hPa according to the UKMET models. A high pressure and its associated ridge are expected to build up along the western coastal regions of the Gulf of Guinea countries through 24 to 96 hours. In general the Inter-Tropical Front (ITF) is expected to remain between 18°N and 22°N latitudes across West African countries west of the Prime Meridian while it is expected to stay between 17°N and 20°N latitudes east of the Prime Meridian.

The Azores high-pressure system is expected to intensify from central pressure value of 1020hPa in 24 hours to a value of 1024hPa in 96hours, while its ridge is expected to remain off the coast of northeast Africa. The St. Helena high, situated over southern Atlantic Ocean is expected to intensify from central pressure values of 1028 to 1031mb through 24 to 96hours. The Mascarene high pressure system is also expected to intensify through 24 to 48hours. Its central pressure value is expected to change from 1032 to 1040mb through 24 to 72 hours.

At 850hpa, a cyclonic circulation situated over the western parts of West Africa is expected to leave the coast through 24 to 96 hours, while its associated trough is expected to continue maintaining rainfall over the region. A cyclonic circulation over central Niger is expected to move towards northern Mali while slightly weakening. Another cyclonic circulation is expected to shift between western Sudan and Chad and weaken gradually through 24 to 96 hours. The convergence associated with the CAB is expected to remain active in the region between eastern Angola and southwest Ethiopia. Through 24 to 96 hours.

At 700hPa, a trough associated with the African easterly wave is expected leave the western coastal regions of West Africa and propagate into the Atlantic Ocean through 24 to 96 hours. Another weak trough in the vicinity of the border between CAR and Chad is expected to propagate southwestwards while weakening through 24 to 96 hours.

At 500hpa, wind speeds associated with the African Easterly Jet are expected to exceed 30Kts in the vicinity of southern Nigeria, Chad and western Sudan, while the core of the jet is propagating westwards through 24 to 96 hours .

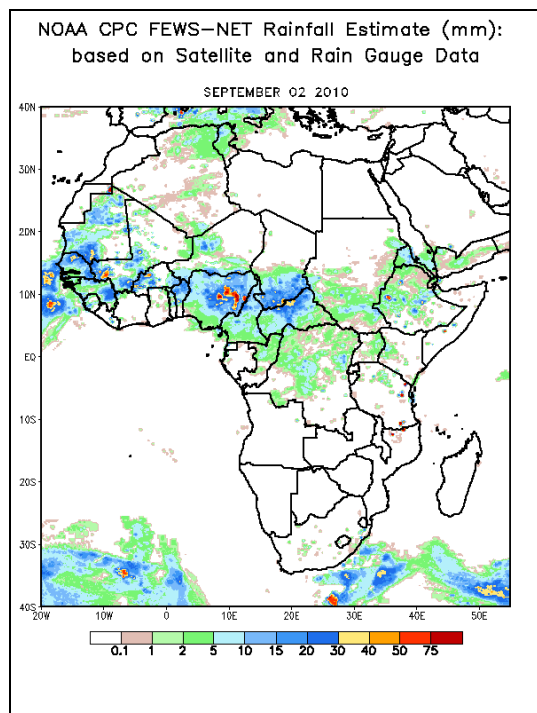
At 200hPa, zone of strong wind (>50Kts) is expected to dominate the flow in the vicinity of central and eastern Mediterranean Sea and the adjoining areas of northern Africa. Meanwhile, strong upper tropospheric easterly wind (>35Kts) is expected to dominate the flow across northern Somalia, southern Ethiopia parts of Sudan, Chad, Central African Republic, Cameroon and Nigeria through 24 to 48hours

In the coming four days, the abundant moisture from the West African Monsoon flow, the westward propagating meso-scale convection systems and the active ITCZ across the Sahel countries are expected to maintain the moderate to heavy rainfall in many places of western and central Africa. Parts of the Horn of African countries are also expected to continue receiving moderate to heavy rainfall due to the active seasonal convergence in the vicinity of the CAB region and the abundant moisture available from the southern portions of the Indian and Atlantic Oceans. Thus, there is an increased chance for rainfall to exceed 40mm per day in parts of Mauritania, Senegal, Guinea Conakry, central Mali, and Cameroon, parts of Chad, Central African Republic and portions of southern Niger.

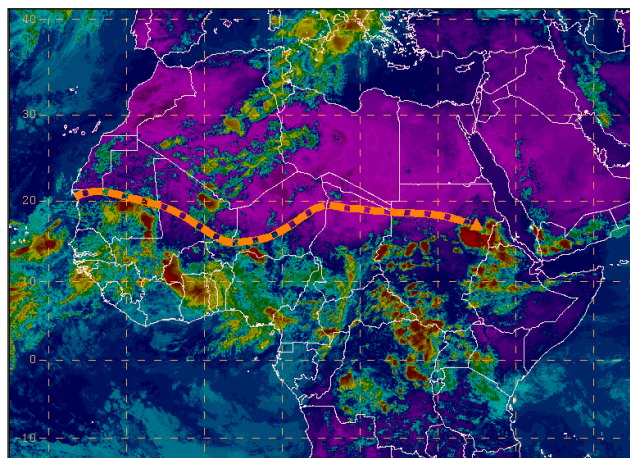
2.0. Previous and Current Day Weather Discussion over Africa (31 August 2010 – 01 September 2010)

2.1. Weather assessment for the previous day (02 September 2010): During the previous day, moderate to heavy rainfall was observed over parts of Mauritania, Senegal, southern and Mali, western Burkina Faso, Nigeria, southern Chad, Central African Republic and Ethiopia.

2.2. Weather assessment for the current day (03 September 2010): Intense clouds are observed over Mauritania, Senegal, parts of Mali, Burkina Faso, Ghana, Nigeria, Central African Republic, and DRC, parts of Sudan, Ethiopia, Uganda and western Kenya.



IR Satellite Image, Valid 1422Z, September 3, 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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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.*