

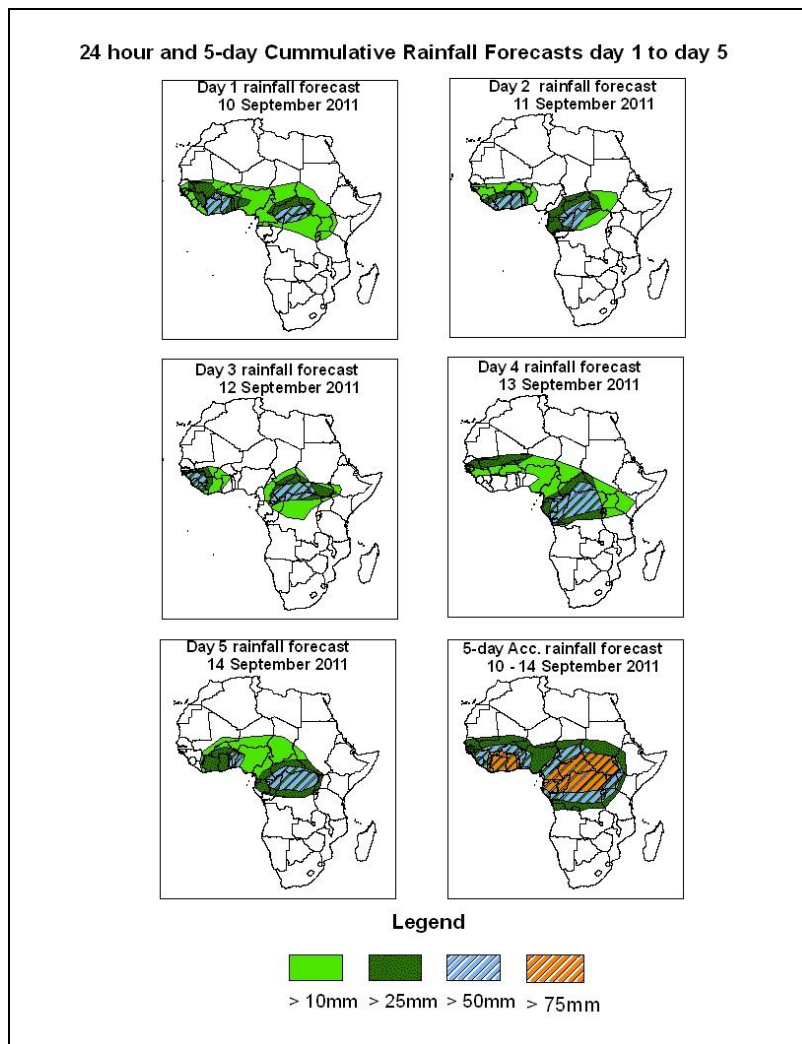


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 10 September – 06Z of 14 September 2011, (Issued at 10:15Z of 09 September 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high 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 next five days, westward propagating thunderstorms, cyclonic circulations and lower tropospheric wind convergences are expected to enhance rainfall across West and central African region. In general, there is an increased chance for heavy rainfall over southern Senegal, Gambia, Guinea Bissau, Guinea, Liberia, Sierra Leone, southern Mali, Cote D'Ivoire, Burkina Faso, Ghana, Togo, Benin, Cameroon, Congo, DRC, CAR and South Sudan, and South Chad.

1.2. Models Comparison and Discussion-Valid from 00Z of 07 September 2011

According to the NCEP/WRF, GFS, ECMWF and UKMET models, the monsoon trough with its associated heat lows across the Sahel region is expected to maintain its east-west orientation during the forecast period. A heat low with its central pressure value of 1007mb over Mauritania is expected to fill up, while shifting westward according to the ECMWF, GFS and UKMET models. Another low with its central pressure value of 1010mb is expected to form over northern Mali in 48 hours and tends to fill up through 48 hours to 72 hours according to the ECMWF. A low formed near Mali, Niger and Chad is expected to deepen, while expanding to cover big area near Mauritania, Mali, Niger and Chad. This low tends to fill up with its central pressure value increasing from 1008mb to 1009mb through 24 to 48 hours according to the GFS model. According to the UKMET model, a low formed over Chad is expected to expand and cover big area near Mauritania, Mali, Niger and Chad, while filling up with its central pressure value of 1008mb through 24 hours to 48 hours.

A 3rd low is expected to be formed over northern Mali, while shifting northwestward with its central pressure value of 1006mb according to the ECMWF model through 96hours to 120 hours. According to the GFS model, the low that covers big area is expected to deepen in two places: the first one over the border between Mali and Niger shifting westward across Mauritania, Mali, Niger and southern Algeria while deepening, with its central pressure value decreasing from 1007mb to 1006mb; the second one over Chad shifting westward across border between Chad and Niger, while deepening with its central pressure value decreasing from 1008mb to 1007mb through 72 hours to 120 hours. According to the UKMET model, this low is expected to deepen with its central pressure value decreasing from 1008mb to 1006mb through 48 hours to 120 hours.

A low pressure located over the Arabian Peninsula is expected to deepen with its central pressure value decreasing from 1000mb to 999mb according to the ECMWF model, from 1002mb to 1000mb according to the GFS model Through 24 hours to 96 hours. The low tends to fill up through 96 hours to 120 hours with its central pressure value increasing from 999mb to 1000mb according to the ECMWF model; from 1000mb to 1002mb according to the GFS model. According to the UKMET model, this low over

the Arabian Peninsula is expected to deepen with central pressure value decreasing from 999mb to 998mb through 24 hours to 72 hours and then tends to fill up through 72 hours to 120 hours with its central pressure value increasing from 998mb to 1000mb.

During the forecast period, the St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken with its central pressure value decreasing from 1027mb to 1024mb according to the ECMWF model, from 1026mb to 1024mb according to the GFS model and from 1027mb to 1025mb according to the UKMET model.

The Mascarene high is expected to intensify with its central pressure value increasing from 1032mb to 1036mb through 24 hours to 48 hours and then tends to weaken with its central pressure value decreasing from 1036mb to 1028mb through 48 hours to 120 hours. The East African ridge is expected to strengthen along with the intensification of the Mascarene high pressure system and then it tends to weaken with the weakening of the Mascarene high pressure system.

At the 850hpa level, a cyclonic circulation located over the border between southern Mali and southern Mauritania is expected to shift westward to the Atlantic Ocean through 24 hours to 48 hours. Another cyclonic circulation is expected to form over border between Mali and Niger shifting westward to the northern Mali and then filling up through 24 hours to 96. A cyclonic circulation located across Cote D'Ivoire, Ghana, Togo, Benin and Nigeria is expected to shift westwards to the Atlantic Ocean through 24 to 72 hours. A cyclonic circulation located over northeastern Chad is expected to shift westward to the border between Niger and Chad during the forecast period. Another deep cyclonic circulation is expected to form across the western CAR, eastern Cameroon, Sudan Republic and Congo border during the forecast period. West-East oriented wind convergences are expected between Sudan and Eritrea through 24 to 96 hours. The seasonal wind convergence is expected to prevail in the vicinity of Lake Victoria during the forecast period.

At 700mb level, an easterly wave is expected to propagate westward across Cote d'Ivoire, Ghana, Togo, Benin and western Nigeria to Guinea Conakry and Sierra Leone

through 24 to 72 hours. Another easterly wave is expected to propagate westward across the border between CAR, southern Sudan Republic and northern DRC to Gabon, CAR, DRC and southwestern Sudan.

At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over Mali and eastern Senegal during the forecast period. These zone of Strong easterly winds are expected to weaken gradually during the forecast period.

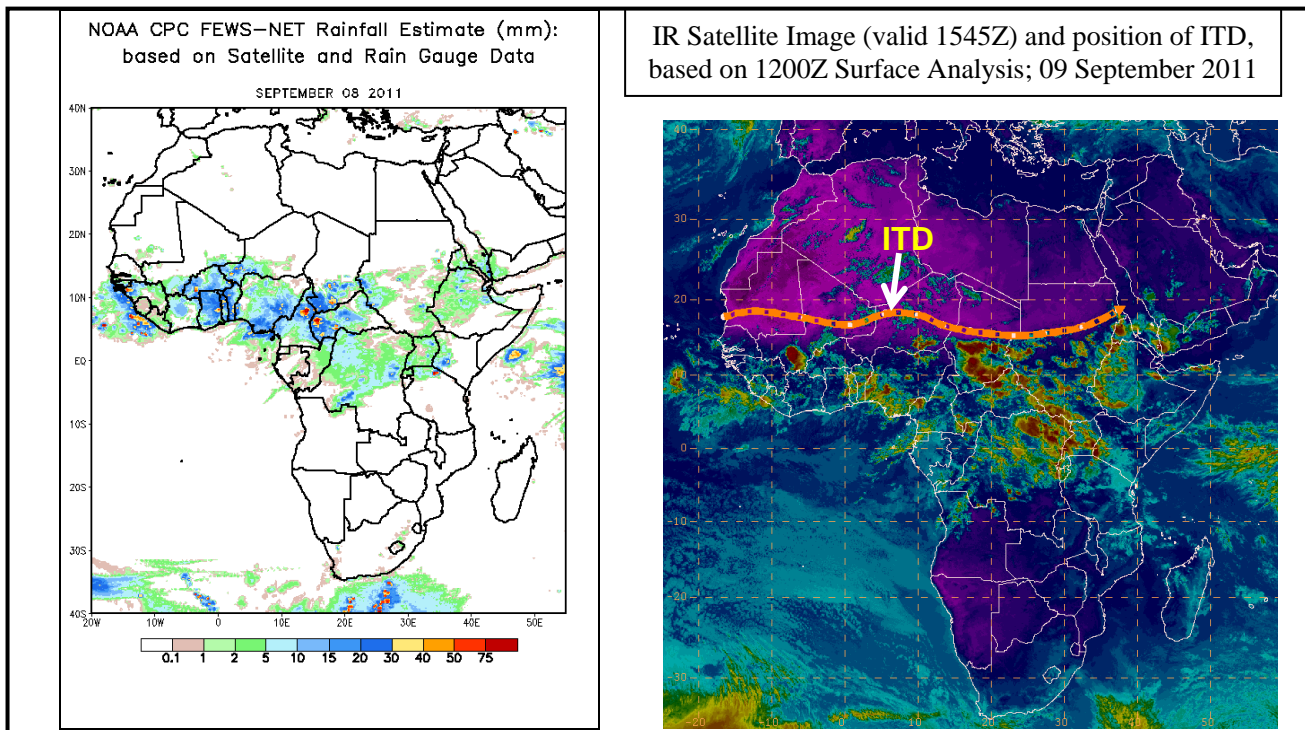
At 150hpa Strong winds, the TEJ is expected to remain weak during the forecast period.

In the next five days, westward propagating thunderstorms, cyclonic circulations and lower tropospheric wind convergences are expected to enhance rainfall across West and central African region. In general, there is an increased chance for heavy rainfall over southern Senegal, Gambia, Guinea Bissau, Guinea, Liberia, Sierra Leone, southern Mali, Cote D'Ivoire, Burkina Faso, Ghana, Togo, Benin, Cameroon, Congo, DRC, CAR and South Sudan, and South Chad.

2.0. Previous and Current Day Weather Discussion over Africa (08 – 09 September 2011)

2.1. Weather assessment for the previous day (08 September 2011): During the previous day, moderate to heavy rainfall was observed over Guinea Bissau, western Guinea; center Cote D'Ivoire, western Burkina Faso, much of Ghana, Togo, much of Benin, western CAR, parts of southern Sudan Republic and parts of northern Cameroon.

2.2. Weather assessment for the current day (09 September 2011): Intense clouds are observed over southern Mali, parts of Togo, parts of Benin, parts of southern Nigeria, border between Nigeria and Cameroon, much of southern Chad, much of southern Sudan Republic, border between Ethiopia and Sudan Republic and the border between Eritrea and Sudan Republic.



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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