

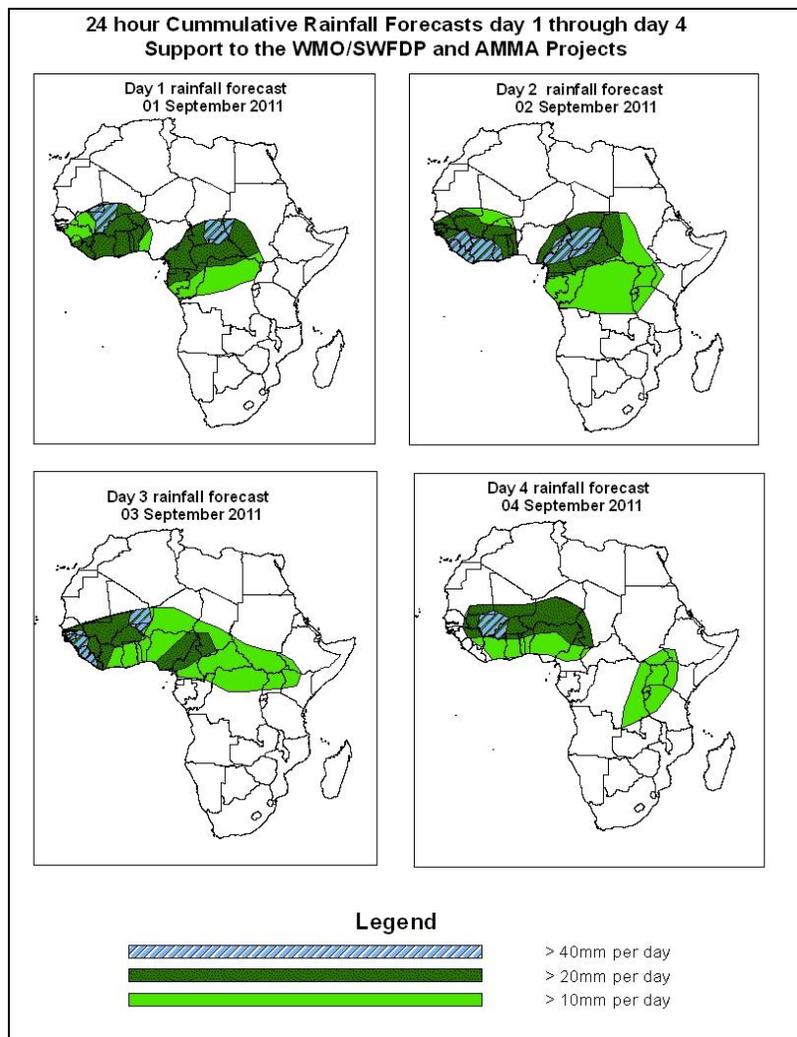


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 01 September – 06Z of 04 September 2011, (Issued at 10:15Z of 31 August 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 four days, westward propagating easterly waves and their associated convective activity are expected to enhance rainfall over many places of West Africa and central African countries. In general, there is an increased chance for moderate to heavy rainfall over southern Senegal, Gambia, southern and central Mali, Guinea Conakry, Sierra Leone, Liberia, Cote d'Ivoire Ghana, portions of Chad and CAR. Seasonally moderate to heavy rainfall is also expected over western Sudan and northern parts of DRC and Congo Brazzaville.

1.2. Models Comparison and Discussion-Valid from 00Z of 30 August 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 located over the northern Mali is expected to deepen through the forecast period with its central pressure value decreasing from 1009mb to 1006mb according to the ECMWF model, from 1009mb to 1005mb according to the GFS model, from 1008mb to 1004mb according to the UKMET model. A low located over boarder between Niger and Mali is expected to deepen with its central pressure value decreasing from 1010mb to 1007mb through 24 hours to 72 hours and tends to fill up with its central pressure value increasing from 1007mb to 1008mb according to the ECMWF model. GFS model localize this low pressure area over Chad deepening with its central pressure value from 1008mb to 1005mb through 24 hours to 72 hours and then filling up with its central pressure value from 1005mb to 1006mb. During the forecast period, the UKMET model tends to localize this low near northeastern Chad, with its central pressure value decreasing from 1008mb to 1005mb and shifting towards the border between Chad and Niger by the end of the forecast period. A low pressure located over Arabian Peninsula is expected to fill up during the forecast period with its central pressure value increasing from 997mb to 999mb according to the ECMWF model. This same low tends to deepen through 24 hours to 72 hours, with central pressure value decreasing from 997mb to 996mb and then tends to fill up with its central pressure value increasing from 996mb to 997mb through 72 hours to 96 hours according to the GFS model. According to the UKMET model, this low is expected deepen to fill up with its central pressure value decreasing from 997mb to 996mb through 24 hours to 72 hours and then it tends to fill up with its central pressure value changing from 996mb to 998mb through 72 hours to 96 hours.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify through 24 hours to 72 hours from central pressure values of 1027mb to 1031mb according to the ECMWF, from 1027mb to 1032mb according to the GFS model and from 1027mb to 103mb according to the UKMET model. It then tends to weaken from central pressure values decreasing from 1031mb to 1028mb according to the ECMWF model, from 1032mb to 1029mb according to the GFS model, from 1030mb to 1028mb according to the UKMET by the end of the forecast period. During

the forecast period the Mascarene high pressure system over southwest Indian Ocean is expected to weaken with its central pressure value decreasing from 1028mb to 1016mb according to the ECMWF, from 1028mb to 1020mb according to the GFS model and from 1028mb to 1020mb according to the UKMET model. The East African ridge is expected to weaken along with the weakening of the Mascarene high pressure system.

At the 850hpa level, a cyclonic circulation located over northern Mali is expected to shift southwestward to Atlantic Ocean through 24 hours to 72 hours. A cyclonic circulation located over the border between Chad and Sudan is expected to shift southwestward to southern Nigeria through 24 hours to 72 hours. Another cyclonic vortex located over across the borders of southeastern Guinea Conakry, eastern Serra Leone, Liberia and western Cote d'Ivoire is expected to fill up, shifting toward the region bordering Mali, Guinea Conakry and Cote d'Ivoire through 24 hours to 72 hours. A convergence zone is expected to form across northeastern Chad, Sudan and Eritrea during 72 hours. Seasonal wind convergence is expected to prevail in the vicinity of Victoria Lake during the forecast period.

At 700mb level, an easterly wave is expected to propagate over Serra Leone, Liberia, Cote d'Ivoire Ghana, Togo and Benin through 24 hours to 48 hours. A cyclonic circulation is expected to form a cyclonic vortex is expected to form across Cote d'Ivoire, Ghana, Benin and Togo through 72 hours to 96 hours. In the region between the Cameroon/CAR and southern Chad/northern Congo, a cyclonic vortex is expected to form, while shifting southwestward through 24 hours to 72 hours.

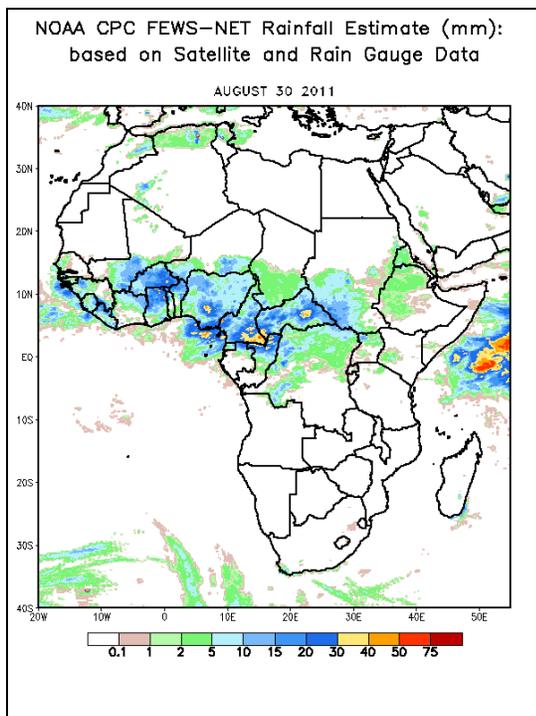
At 500hpa, easterly winds with moderate intensity (10 to 25knots) are expected to dominate the flow over Mali and eastern Senegal during the forecast period. Zone of strong easterly winds, associated with AEJ, is expected to develop across western Sahel region, near northern Mali and western Mauritania through 24 hours to 72 hours. Another zone of strong easterly winds, associated with AEJ is expected in the region between central Niger to Chad during the 24 hours, between eastern Mali to Sudan through 48 hours and between northeastern Niger to the cost line Mauritania and Senegal by 72 hours.

In the next four days, westward propagating easterly waves and their associated convective activity are expected to enhance rainfall over many places of West Africa and central African countries. In general, there is an increased chance for moderate to heavy rainfall over southern Senegal, Gambia, southern and central Mali, Guinea Conakry, Sierra Leone, Liberia, Cote d'Ivoire Ghana, portions of Chad and CAR. Seasonally moderate to heavy rainfall is also expected over western Sudan and northern parts of DRC ant Congo Brazzaville.

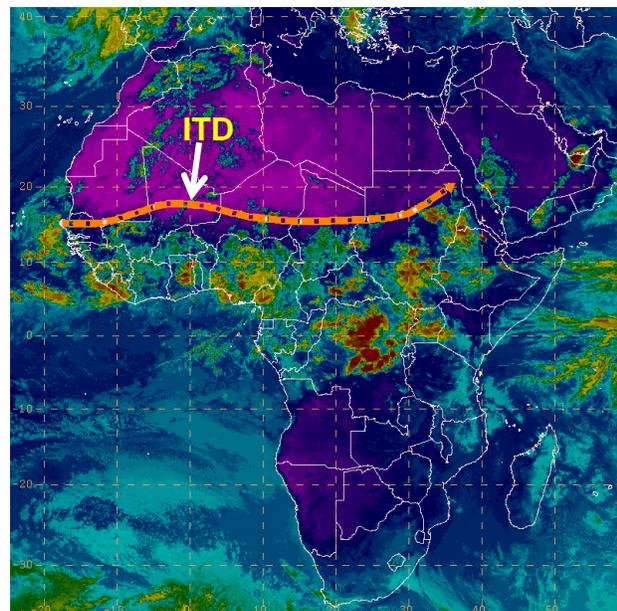
2.0. Previous and Current Day Weather Discussion over Africa (30 – 31 August 2011)

2.1. Weather assessment for the previous day (30 August 2011): During the previous day, moderate to heavy rainfall was observed over Burkina Faso, northern Ghana, Togo and Benin, Cameroon, CAR, portions of Nigeria, northern Congo and southwestern Chad.

2.2. Weather assessment for the current day (31 August 2011): Intense clouds are observed over Serra Leone, Ghana, much of Nigeria, part of CAR, northeastern DRC, Uganda, much of Sudan, and the border between Eritrea and Ethiopia and South Sudan Republic.



IR Satellite Image (valid 1545Z) and position of ITD,
based on 1200Z Surface Analysis; 31 August 2011



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

Author(s): Sadibou Ba (Agence Nationale de la Meteorologie du Senegal) / CPC-African Desk), sadibou.ba@noaa.gov and Aminata Makalou (Direction Nationale de la Meteorologie du Mali-ASECNA) / CPC-African Desk), aminata.makalou@noaa.gov

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