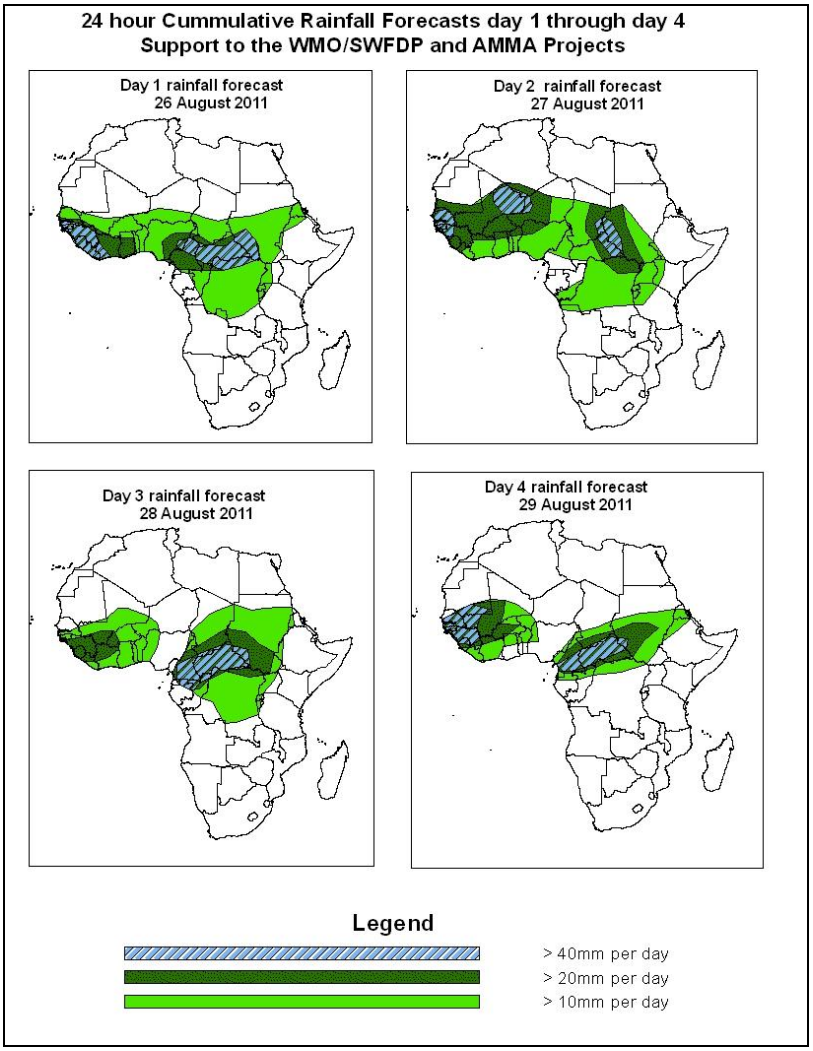
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 26 August – 06Z of 29 August 2011, (Issued at 10:15Z of 25 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 central and western African countries. In general, there is an increased chance for moderate to heavy rainfall over much of Mali, southeastern Mauritania, southern Senegal, Guinea Bissau, Guinea Conakry, Southern Chad, Northern Cameroon, CAR, western Sudan, northeast DRC and South Sudan Republic.

1.2. Models Comparison and Discussion-Valid from 00Z of 25 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. According to the ECMWF model, a heat low is expected develop over border between Mali and Algeria from 48 hours to 96 hours. This low is expected to shift westward, while filling up, with its central pressure increasing from 1007mb to 1008mb. The GFS model tends to locate this low near the border between Mali and Niger. The low is expected to deepen, with its central pressure value decreasing from 1008mb to 1006mb through 24 to 48hours. It then tends to shif westward over Mauritania and tending to fill up with central pressure value increasing from 1006mb to 1008mb through 48 to 96 hours. According to the UKMET mode this heat low is expected to deepen, with its central pressure value decreasing from 1008mb to 1006mb during the forecast period. A low located over Chad is expected to fill up, while is central pressure value increasing from 1008mb to 1009mb according to the ECMWF model, from 1008mb to 1006mb according to the GFS model. According to the UKMET model this low pressure tends to maintain its central pressure value of 1006mb during the forecast period. A low pressure located over Arabian Peninsula is expected to deepen during the forecast period with central pressure value decreasing from 999mb to 996mb according to the ECMWF model. This same low tends to deepen with central pressure value decreasing from 998mb to 996mb through 24 hours to 72 hours and to fill up through 72 hours to 96 hours, with central pressure value increasing from 996mb to 997mb according to the GFS model. According to the UKMET model, this low is expected to full up with its central pressure value increasing from 996mb to 998mb through 24 hours to 48 hours and then it tends to deepen with its central pressure value changing from 998mb to 996mb through 48 hours to 96 hours.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify from central pressure values of 1032mb to 1036m through 24hours to 48 hours and, then to weaken, with its central pressure value decreasing from 1036mb to 1024mb according to the ECMWF and GFS models. According to the UKMET model, this high pressure system is expecting to maintain a central pressure value of 1036mb through 24 hours to 48 hours and tends to weaken towards end of the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to

intensify with its central pressure value increasing from 1021mb to 1032mb through 24hours to 72 hours and tends to weaken, with its central pressure value decreasing from1032mb to 1030mb by the end of forecast period, according to the ECMWF model. According to the GFS model, this high pressure system tends to intensify with its central pressure value increasing from 1023mb to 1036mb through 24hours to 48 hours, and tends to weaken towards end of the forecast period, with its central pressure decreasing from 1036mb to 1029mb. According to the UKMET model, this high pressure system is expected to intensify with its central pressure value increasing from 1020mb to 1032mb through 24hours to 72 hours and to weaken, with central pressure value changing from1032mb to 1030mb, towards end of the forecast period. The East African ridge associated with Mascarene high across southeast and East Africa is expected to strengthen through 24 hours to 72 hours.

At the 850hpa level, a deep cyclonic circulation over the border between Mali and Niger is expected to shift westward over to the border between Mali and Mauritania during the forecast period. A series of localized cyclonic circulations are also expected from Guinea Conakry to Cameroon during 24 hours. A cyclonic circulation is also expected develop over the border between Chad and Sudan through the first half of the forecast period. And other cyclonic circulation is expected to dominate the flow over southern Niger, southern Chad, eastern Cameroon, CAR and DRC during the second of the forecast period. A strong wind convergence is expected across Sudan and Eritrea during the forecast period. Seasonal wind convergences are expected to prevail over vicinity of Victoria Lake during the forecast period.

At 700mb level, an easterly wave is expected to propagate over West Africa in the region between Cameroon and Senegal across Mali and Cote d'Ivoire.

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 propagate across the Sahel region between northern Guinea (Conakry), Guinea Bissau, western Mali and southern Senegal.

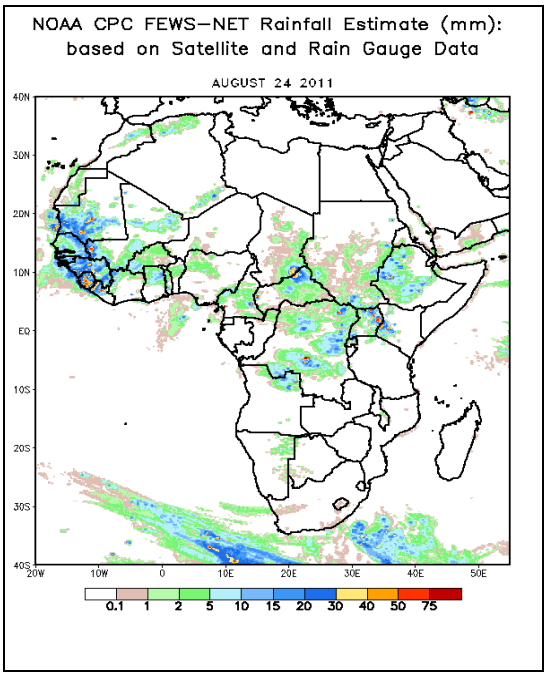
At 150mb, strong winds associated with the Tropical Easterly Jet (TEJ) are expected to prevail across southern Sudan, central Ethiopia.

In the next four days, westward propagating easterly waves and their associated convective activity are expected to enhance rainfall over many places of central and western African countries. In general, there is an increased chance for moderate to heavy rainfall over much of Mali, southeastern Mauritania, southern Senegal, Guinea Bissau, Guinea Conakry, Southern Chad, Northern Cameroon, CAR, western Sudan, northeast DRC and South Sudan Republic.

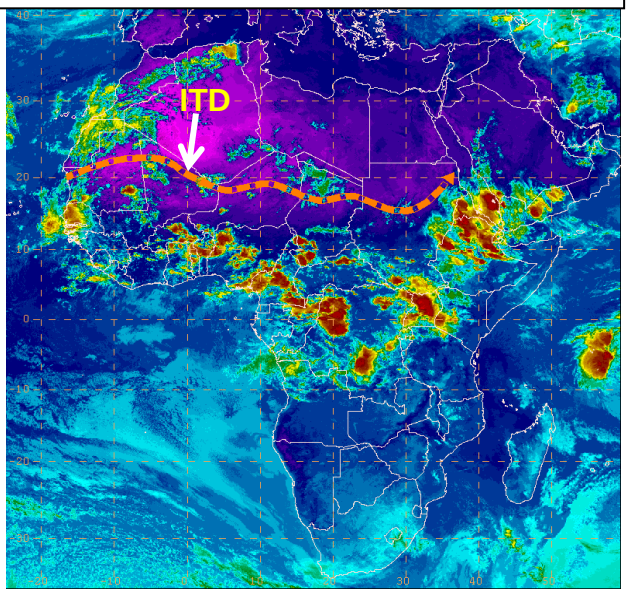
2.0. Previous and Current Day Weather Discussion over Africa (25 – 28 August 2011)

2.1. Weather assessment for the previous day (24 August 2011): During the previous day, moderate to heavy rainfall was observed over Senegal, Guinea, and Sierra Leone, local areas of CAR, northern DRC and Ethiopia.

2.2. Weather assessment for the current day (25 August 2011): Widespread intense clouds are observed western Senegal, southeastern Mauritania, Burkina Faso, northern Benin, northern Togo, part of Nigeria, central and portions of East African countries.



IR Satellite Image (valid 1652Z) and position of ITD, based on 1200Z Surface Analysis; 25 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

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