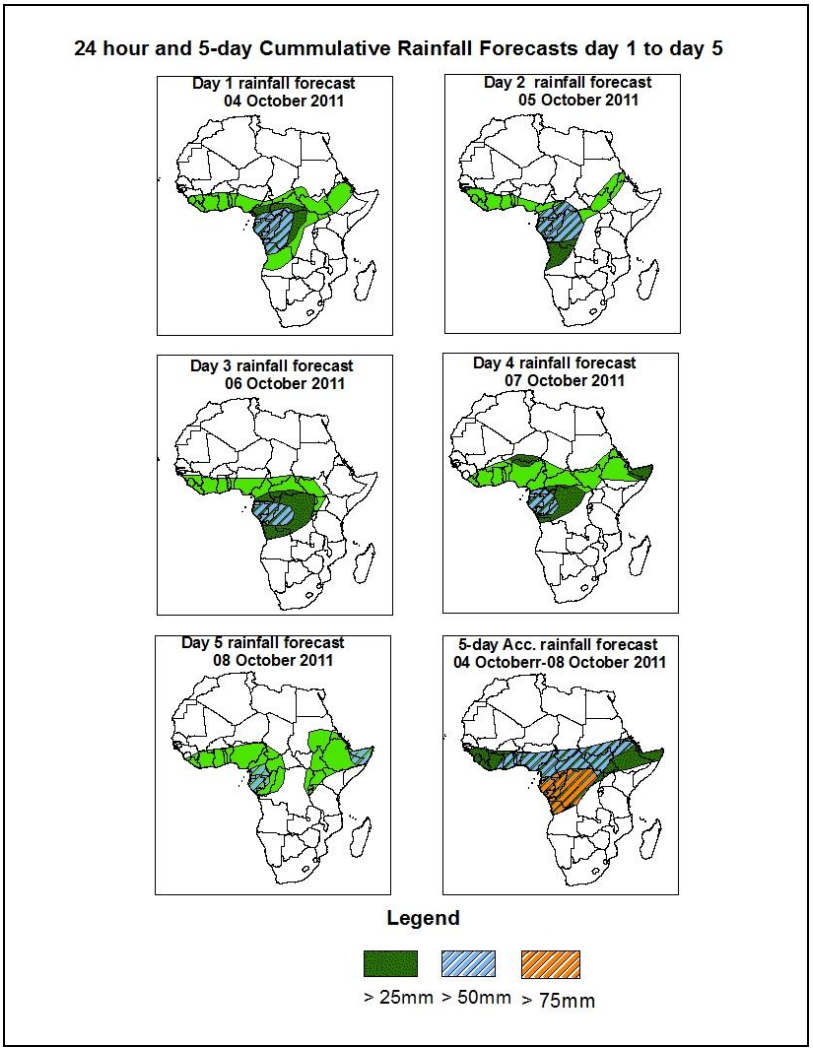
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 04 October – 06Z of 08 October 2011, (Issued at 10:15Z of 03 October 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, localized cyclonic circulations and lower tropospheric wind convergences are expected to enhance rainfall across the Gulf of Guinea, central African and the Congo Air boundary (CAB) region. In general, there is an increased chance for heavy rainfall over southeastern Cote D'Ivoire, parts of Sudan, South Sudan Republic, Gabon, Congo, northern and western DRC, northwestern Ethiopia and northwestern Angola.

1.2. Models Comparison and Discussion-Valid from 00Z of 04 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. The ECMWF model indicates a low pressure over northeastern Senegal, which is expected to shift westward, while deepening with its central pressure value decreasing from 1011mb to 1010mb through 96 to 120 hours. According to the GFS model, this low is expected to form over southwestern Mauritania, while shifting westward to coastal Mauritania/Senegal, while deepening with its central pressure value decreasing from 1009mb to 1007mb during the forecast period. According to the ECMWF model a low pressure is expected to develop over western Chad, while shifting westward to border between Mali and Niger during the forecast period, while deepening with its central pressure value decreasing from 1009mb to 1008mb through 24 to 72 hours, and then filling up with its central pressure value increasing from 1008mb to 1010mb through 72 to 96 hours. The GFS model tends to limit this low over central Chad, while shifting westward and filling up with its central pressure value increasing from 1008mb to 1009mb through 24 to 96 hours and then deepening with its central pressure value decreasing from 1009mb to 1008mb through 96 to 120 hours. According to the UKMET model this low pressure is located over eastern Chad, shifting towards central Chad, while filling up with its central pressure value increasing from 1005mb to 1008mb through 24 to 96 hours. According to the ECMWF model, a localized low pressure is expected to form over northern Sudan, while shifting eastward to eastern Sudan maintaining its central pressure value of 1008mb during the forecast period. According to the GFS model, this low is expected to be over central and eastern Sudan, while filling up with its central pressure value increasing from 1008mb to 1010mb through 24 to 96 hours and then, deepening with its central pressure value decreasing from 1010mb to 1008mb through 96 to 120 hours. According to the UKMET model this low pressure is expected to develop over eastern Sudan and maintain its central pressure value of 1005mb through 24 to 48 hours, while filling up by 72 hours and then reappearing by 120 hours with its central pressure value of 1005mb. According to the GFS model a low pressure area with two centers is expected over western and southern Niger with their both central pressure of 1008mb, merging into one system, while shifting westward to the border between Mali and Niger, and deepening with its central pressure value decreasing from 1008mb to 1007mb

through 24 to 48 hours and then filling up with its central pressure value increasing from 1007mb to 1008mb through 48 to 120 hours. According to the UKMET model this low area is expected have two centers: the first center over western Niger with a central pressure value of 1009mb and the second one over the border between eastern Mali and northwestern Niger with a central pressure value of 1008mb. The two centers tend to merge together, while shifting southwestward to the southwest Niger, deepening with its central pressure value decreasing from 1008mb (and 1009mb) to 1007mb during the forecast period.

A low over the Arabian Peninsula is expected fill up with its central pressure value increasing from 1005mb to 1011mb, according to the ECMWF model, from 1005mb to 1012mb according to the GFS model, through 24 to 96 hours and then to deepen with its central pressure value decreasing from 1011mb to 1010mb according to the ECMWF model, from 1012mb to 1011mb according to the GFS model through 96 to 120 hours. According to the UKMET model this low tends to deepen with its central pressure value decreasing from 1004mb to 1003mb through 24 to 72 hours, and then tends to fill up with its central pressure value increasing from 1003mb to 1010mb through 72 to 96 hours.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken with its central pressure value decreasing from 1030mb to 1020mb According to the ECMWF model, from 1028mb to 1020mb according to the GFS model, from 1030mb to 1020mb according to the UKMET model during the forecast period.

The Mascarene high is expected to intensify with its central pressure value increasing from 1020mb to 1032mb through 24 to 72 hours, to weaken with its central pressure value decreasing from 1032mb to 1029mb through 72 to 96 hours and then to intensify with its central pressure value increasing from 1029mb to 1031mb through 96 to 120 hours. The East African ridge is expected to intensify during the first half of the forecast period and tends to weaken during the second half of the forecast period along with the changes in the intensity of the Mascarene high pressure system.

At the 850hpa level, a deep cyclonic circulation with two vortices is expected to dominate the flow over northwestern Niger and border between Niger and Nigeria, while

shifting westward to the Mali, Algeria and Niger border during the forecast period. Another deep cyclonic circulation with two vortices is expected to dominate the flow over DRC shifting westward to over Gabon and Congo during the forecast period. A localized cyclonic circulation is expected to dominate the flow over Sudan and South Sudan Republic during the forecast period. Wind convergences are expected to dominate the flow over central Chad, South Sudan Republic, eastern Congo and central DRC and the border between DRC and Uganda through 24 to 48 hours, northeastern CAR and northern Cameroon and western Uganda through 48 to 72 hours, southern Chad through 96 hours.

At 700mb level, an easterly wave is expected to propagate westward over border between Chad and Niger through 24 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. In general, the AEJ is expected to remain weak during the forecast period.

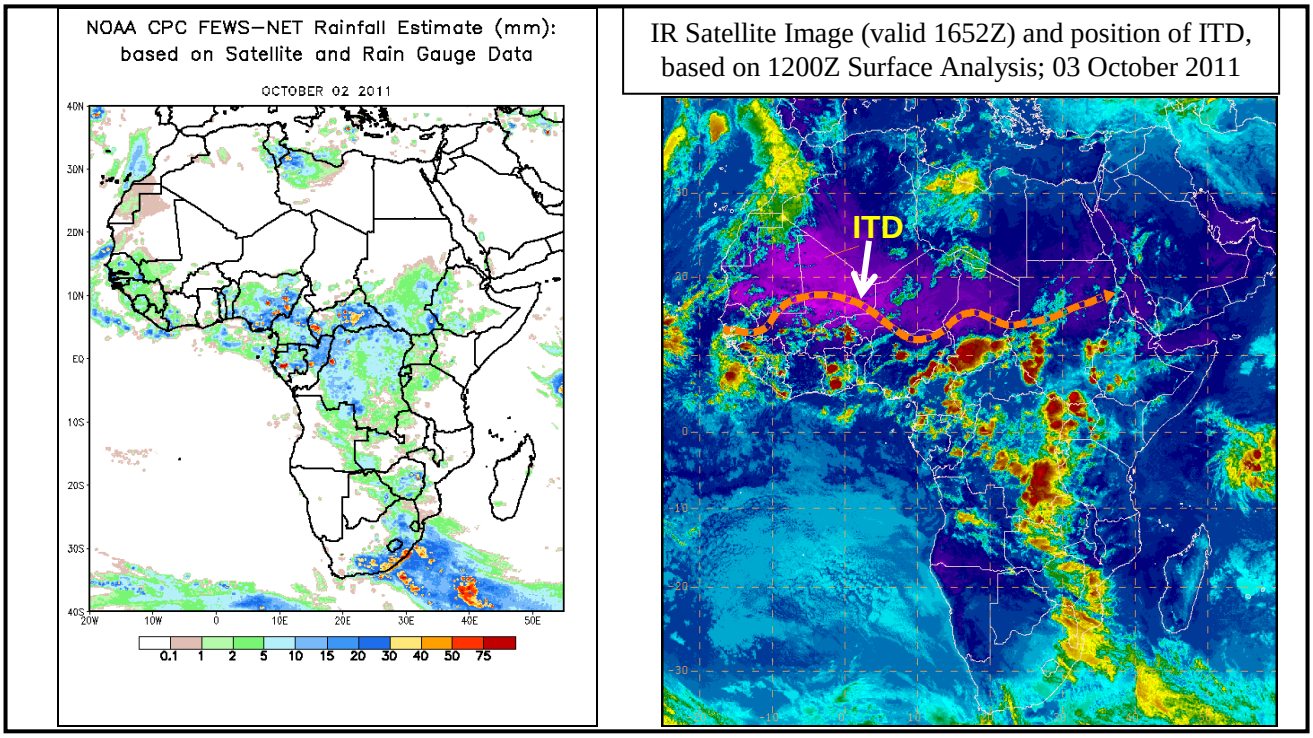
At 150hpa in general the TEJ is expected to remain weak during the forecast period.

In the next five days, localized cyclonic circulations and lower tropospheric wind convergences are expected to enhance rainfall across the Gulf of Guinea, central African and the Congo Air boundary (CAB) region. In general, there is an increased chance for heavy rainfall over southeastern Cote D'Ivoire, parts of Sudan, South Sudan Republic, Gabon, Congo, northern and western DRC, northwestern Ethiopia and northwestern Angola.

2.0. Previous and Current Day Weather Discussion over Africa (02 – 03 October 2011)

2.1. Weather assessment for the previous day (02 October 2011): During the previous day, moderate to heavy rainfall was observed near the southeast Nigeria, central Cameroon, central Gabon, northern Congo, much of CAR, much of western and northern DRC, parts of South Sudan Republic, Burundi and Rwanda.

2.2. Weather assessment for the current day (03 October 2011): Intense clouds are observed over part of Guinea Bissau, part of Guinea Conakry, Sierra Leone, much of Liberia, much of Ghana, part of Burkina Faso, part of southern Mali, central Nigeria, part of Cameroon and Gabon, southern Chad, western Sudan, border between CAR and Sudan Republic, border between Ethiopia and Sudan, part of southern Ethiopia, much of DRC and southeastern Africa..



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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