

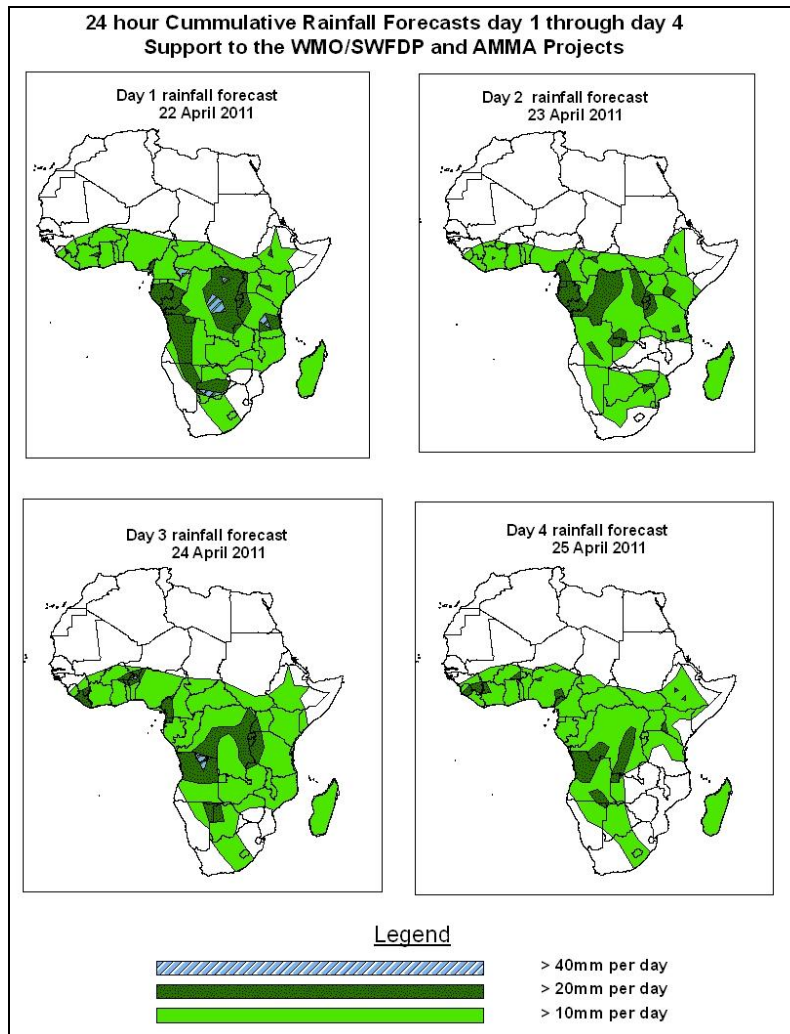


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 22 April – 06Z of 25 April 2011, (Issued at 11:15Z of 21 April 2011)

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 next four days, the lower tropospheric wind convergence across the Gulf of Guinea, the north-south oriented wind convergence in the CAB region and eastward propagating frontal system across southern Africa are expected to enhance rainfall in the respective regions. Moreover, easterly flow between eastern Africa to western equatorial Africa is also expected to enhance westward propagation of clouds towards the Gulf of Guinea coast. In general, there is an increased chance for rainfall to exceed 20mm/day over parts of Liberia, parts of Cote d'Ivoire, parts of Nigeria, Cameroon, Gabon, Congo, Angola, and Namibia, DRC, Rwanda, Burundi, parts of Kenya, Tanzania, parts of Ethiopia and Botswana

1.2. Models Comparison and Discussion-Valid from 00Z of 21 April 2011

According to the GFS, ECMWF and UKMET models, the ridge associated with the St Helena high pressure system is expected to remain strong while extending northwards up to the coastal areas of Cote d'Ivoire and Ghana through 24 to 48 hours. This ridge is expected to retreat southwards by 72 hours. On the other hand, the east Africa ridge, associated with the Mascarene high pressure system is expected to remain across southeast and East Africa during the forecast period, with no significant change in its intensity. The Saharan high is expected to shift northeastwards between eastern Algeria and northeast Egypt through 24 to 96 hours, while a ridge associated with the Azores high is expected to extend eastwards gradually across Mauritania and Morocco through 24 to 96 hours. A low pressure system over northeast Atlantic is expected to move eastwards western Mediterranean Sea across Spain through 24 to 96 hours.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain a central pressure value of 1024hpa during the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to assume a central pressure value of 1020hpa through 24 to 48 hours and weakens to 1016hpa through 72 to 96 hours.

At the 850hpa level, the GFS model shows an east-west oriented convergence line in the region between the western parts of the Gulf of Guinea and Sudan. This convergence is expected to remain active through 24 hours and strengthening further through 48 to 96 hours. The wind convergence associated with the meridional arm of the ITCZ is expected to shift westwards into the vicinity of western Gabon through 24 hours. However, the convergence is expected to restore back to its climatological position in the CAB region through 48 to 96 hours. Southwesterly winds from the Atlantic Ocean are expected to feed abundant moisture to the convergence line across the Gulf of Guinea region. The moist southeasterly flow from the Indian Ocean into East Africa is expected to persist through 24 to 96 hours.

At the 700hPa level, a trough in the westerly in the subtropical region of northern Africa is expected to shift between eastern Libya and Red Sea across Egypt, Sudan and Eritrea 24 to 96 hours. Persistent northeasterly to easterly wind is expected to dominate the flow over the tropical Africa, in the region between Sudan and the northern Angola through 24 to 96 hours.

At 500hpa, a trough in the westerlies in the subtropical region of northern Africa is expected to shift between eastern Libya and Red Sea across Egypt, Sudan and Eritrea, while gradually filling up through 24 to 96 hours. Similarly, mid-latitude frontal systems are expected to propagate between southeast Atlantic Ocean and southwest Indian Ocean across southern Africa through 24 to 96 hours. Locally strong winds (>30kts) associated with the Tropical Easterly Jet are also expected in the vicinity of southern Chad and western parts CAR and northern Cameroon.

A zone of strong wind (>110Kts) at 200hpa level associated with the Sub Tropical westerly Jet is expected to propagate eastwards across Mauritania, Algeria and Libya through 24 to 48 hours and then it tends to intensify to (>130kts) though 72 hours and it will weaken back to (>110kts) by 96 hours. On the other hand, strong winds (>90Kts) associated with the Sub-Tropical Westerly Jet is expected in the southern hemisphere across southeast Atlantic Ocean, southern Africa and southwest Indian through 24 to 96hours.

In the next four days, the lower tropospheric wind convergence across the Gulf of Guinea, the north-south oriented wind convergence in the CAB region and eastward propagating frontal system across southern Africa are expected to enhance rainfall in the respective regions. Moreover, easterly flow between eastern Africa to western equatorial Africa is also expected to enhance westward propagation of clouds towards the Gulf of Guinea coast. In general, there is an increased chance for rainfall to exceed 20mm/day over parts of Liberia, parts of Cote d'Ivoire, parts of Nigeria, Cameroon, Gabon, Congo, Angola, and Namibia, DRC, Rwanda, Burundi, parts of Kenya, Tanzania, parts of Ethiopia and Botswana.

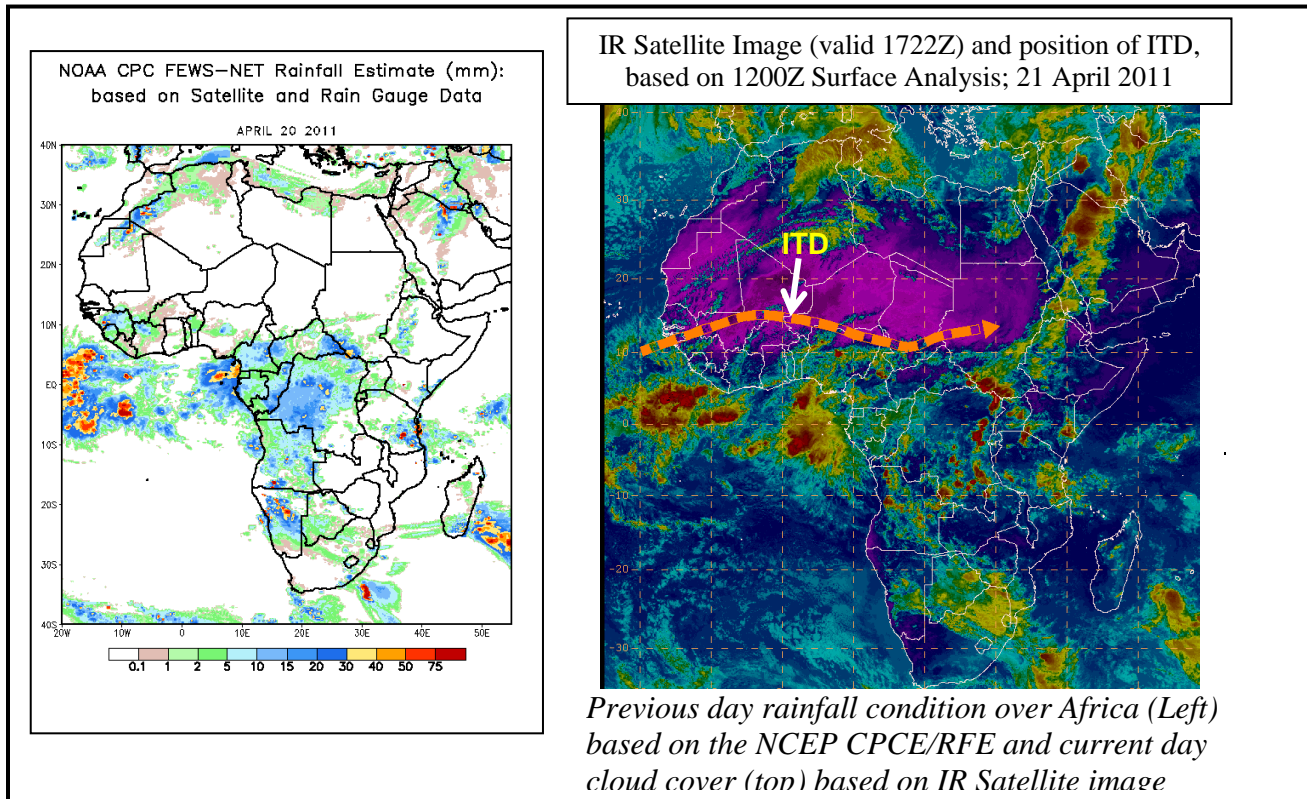
2.0. Previous and Current Day Weather Discussion over Africa (20 April – 21 April 2011)

2.1. Weather assessment for the previous day (20 April 2011):

During the previous day, a combination of moderate and heavy rainfall was observed over Guinea, Southern Sudan, parts of Namibia and Tanzania.

2.2. Weather assessment for the current day (21 April 2011):

Intense clouds are observed over Nigeria, Benin, Cameroon, Southern Sudan, Parts of DRC, parts of, Angola, Uganda, parts of Kenya, Botswana and parts of Southern Africa.



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