



Forecast Guidance for Africa

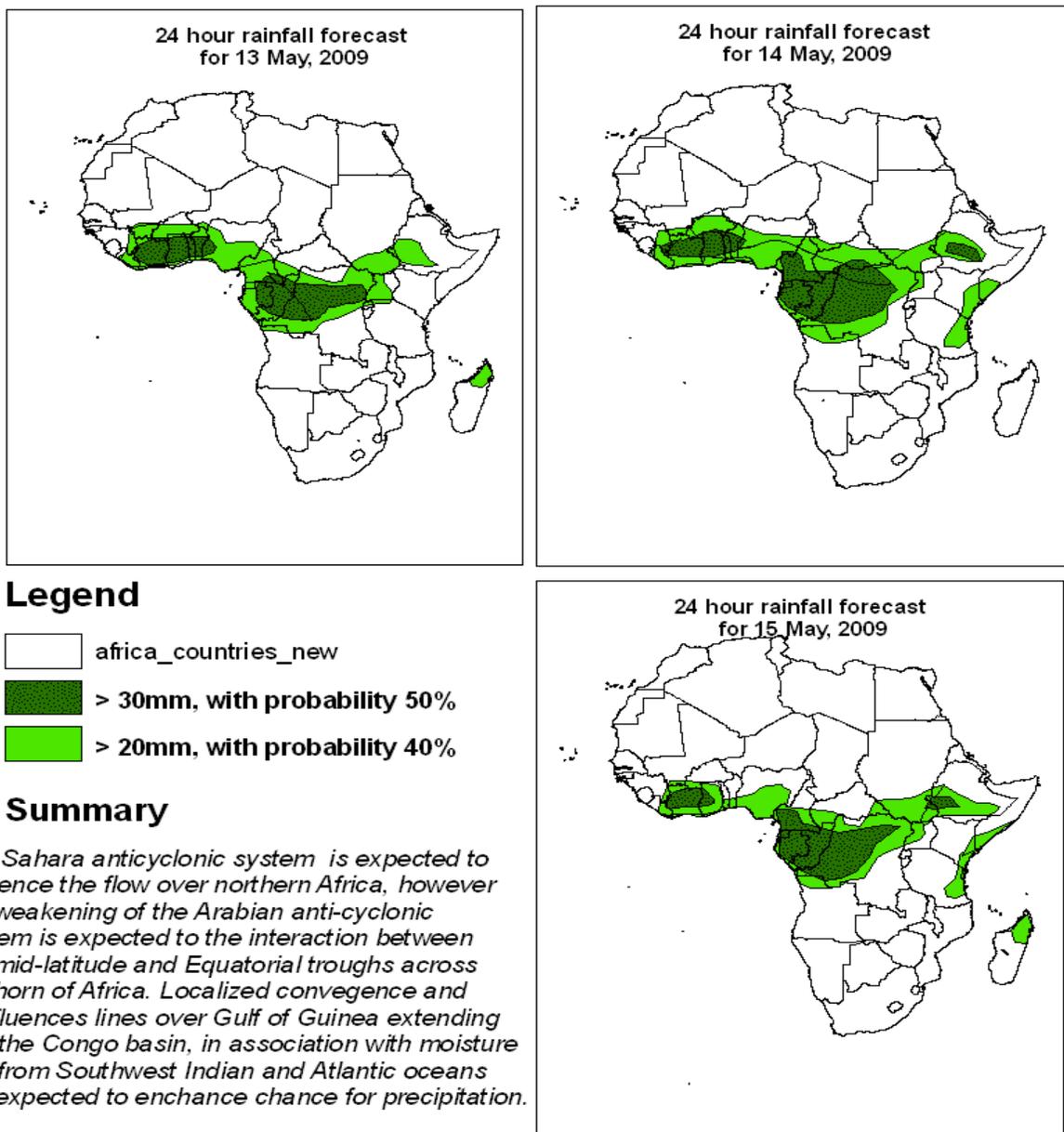
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 12 MAY, 2009

Valid: 00Z 13 MAY – 15 MAY, 2009

1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.



2. Model discussion

Model comparison (Valid from 00Z; 12 May, 2009): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give lower values than both the GFS and ECMWF models especially in the Equatorial region (10°S and 10°N).

2.1. Flow at 850hPa

T+24h: The Sahara anti-cyclonic system is expected to expand and influence the flow over northern Africa; however the weakening of the Arabian anti-cyclonic system and southwards movement over northwestern Indian Ocean is expected to allow the interaction between the mid-latitude and Equatorial troughs across the horn of Africa, enhancing chances of precipitation over eastern Africa. A trough is expected over northeast Atlantic Ocean, Morocco and Western Sahara. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Gabon, northern DR Congo, southern Sudan, northern Uganda and southern Ethiopia. In southern Africa, the Mascarene and St. Helena anti-cyclonic systems are expected to intensify and expand; while the penetration of the troughs associated with the westerly wave northwards up to 20°S latitude is expected to create an interaction between the mid-latitude and equatorial troughs over southwest Indian Ocean. A closed cyclonic circulation associated with the westerly wave is expected over southeast Atlantic Ocean.

T+48h: The flow in the northern hemisphere is expected to be similar as the previous day, however the expansion of the trough over northeast Atlantic Ocean, Morocco, western Algeria and Northern Mali is expected to push Sahara anti-cyclonic system eastwards. Localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, maintain their previous day positions; while the cyclonic systems associated with the westerly wave are expected to weaken and move slightly to the east over the Indian Ocean, while over southeastern Atlantic Ocean the trough is expected to extent further northwards up to 20°S latitude.

T+72h: In the northern hemisphere, the mid-latitude trough over northeast Atlantic Ocean and northwestern Africa is expected to expand and interact with the equatorial trough over western Africa, pushing the Saharan anti-cyclonic system further eastwards. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, a trough associated with the westerly wave is expected to penetrate further northwards up to 10°S latitude over southeast Atlantic Ocean, while the Mascarene anti-cyclonic system is expected to intensify, expand and move eastwards.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere, trough associated with the westerly wave is expected to extend up to 15°N latitude over North Africa across the Mediterranean Sea, creating a disturbed flow pattern of the westerlies. In the southern hemisphere, the development of anti-cyclonic system over southern Africa, together with cyclonic circulation systems over southeast Atlantic and southwest Indian Oceans are expected to create a disturbed flow pattern of the westerlies.

T+48h: In the northern hemisphere the flow is expected to be more similar to the previous day; however the troughs associated with the westerly waves is expected to move slightly eastwards and a closed cyclonic system to develop over the gulf of Aden region. In the

southern hemisphere flow is expected to be more similar to the previous day; however the anti-cyclonic system over southern Africa is expected to expand and extend southwards into southwestern Indian Ocean.

T+72h: In the northern hemisphere the flow is more similar to the previous day; however the troughs associated with the westerly waves is expected to move slightly to the east. In the southern hemisphere, the cyclonic systems within the westerlies are expected to weaken and the flow is expected to take a zonal pattern.

2.3. Flow at 200hPa

T+24h: In the northern hemisphere, two-way troughs associated with the westerly wave are expected over northeast Atlantic Ocean and the Mediterranean Sea creating a shortwave flow pattern over North Africa. Moreover in the south, the flow is expected to take a slightly disturbed pattern with a closed cyclonic circulation system over southeast Atlantic Ocean off the tip of South Africa.

T+48h: The flow is similar to that of the previous day but the troughs associated with the westerly wave are expected to weaken and shift slightly to the east in the northern hemisphere. In the southern hemisphere the flow is expected to be similar to the previous day, but take on a more zonal pattern.

T+72h: The troughs associated with the westerly wave in the northern hemisphere are expected weaken further while moving to the east. In the southern hemisphere, the flow is expected to take a similar pattern as the previous day.

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