



Forecast Guidance for Africa

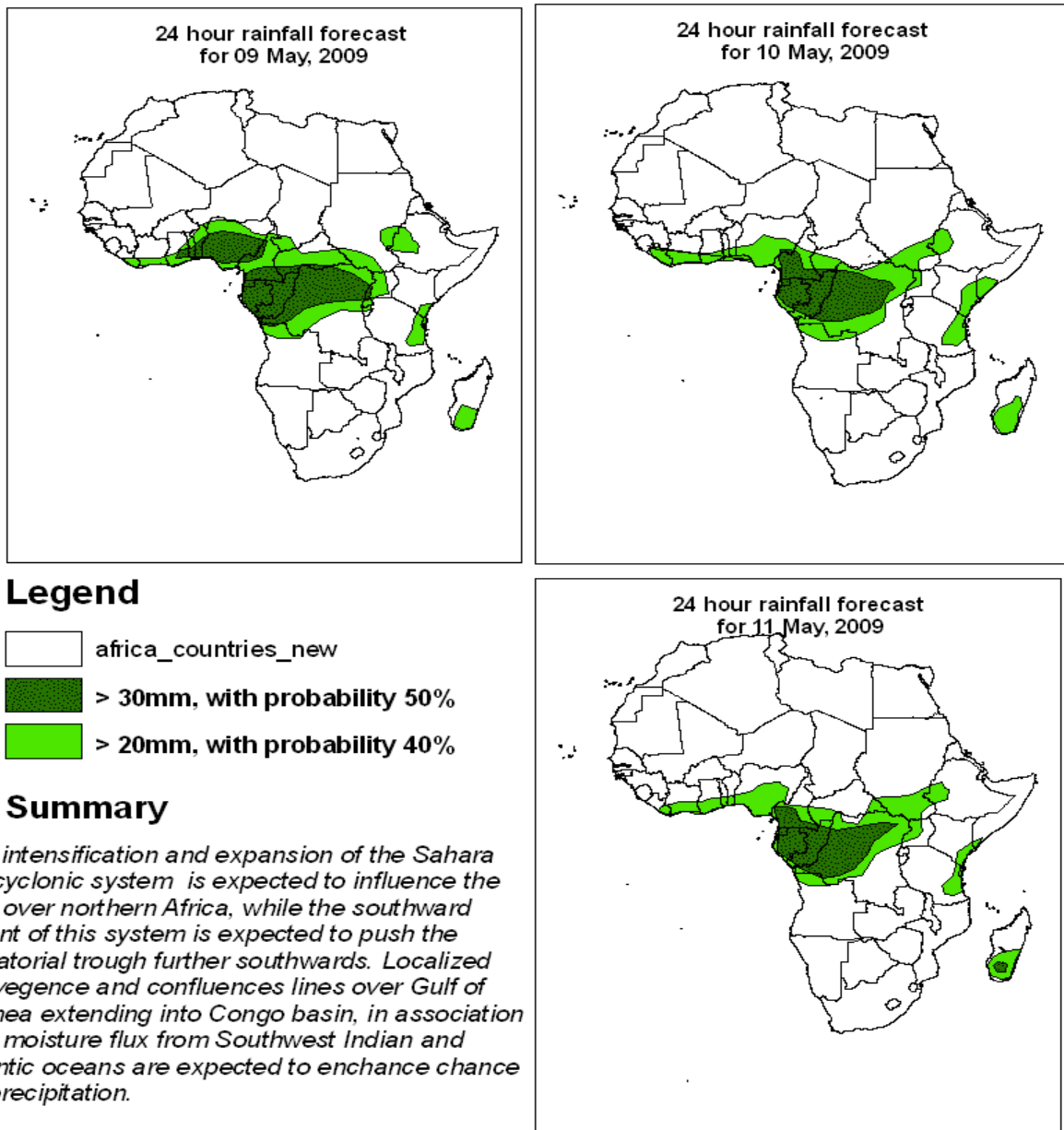
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 08 MAY, 2009

Valid: 00Z 09 MAY – 11 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; 08 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 intensification and expansion of the Sahara anti-cyclonic system is expected to influence the flow over northern Africa and the southward extent of this system is expected to push the Equatorial trough further southwards, while the Arabian anti-cyclonic system is expected to be maritime with its peripheral moist air flowing over the Gulf of Aden and adjoining horn of Africa region. A trough is expected over northeast Atlantic Ocean, and Western Sahara. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Gabon, northern DR Congo, southern Sudan, Uganda and western Ethiopia. Southern Africa is expected to be under the influence of the St. Helena anti-cyclonic system assuming continental characteristics as it extends over the continent. The closed cyclonic system that has persisted south of Madagascar is expected to continue interacting with the mid latitude westerlies.

T+48h: The trough over northeast Atlantic is expected to expand slightly pushing the Saharan anti-cyclonic system to the east. Localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, the flow is expected to be more or less similar to the previous day; however the closed cyclonic system south of Madagascar is expected to take a southeast-northwest orientation, giving way to eastward expansion of the St. Helena anti-cyclonic system.

T+72h: The Saharan anti-cyclonic system is expected strengthen and expand over much of North Africa, while its merger with the Arabian anti-cyclonic system is expected to continue blocking the interaction between the mid-latitude and tropical cyclonic systems, across the horn of Africa region. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, the penetration of the troughs associated with the westerly wave northwards up to 25°S latitude are expected to create a three way anti-cyclonic systems over southeast Atlantic Ocean, Southern Africa and southwest Indian Ocean.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere, troughs associated with the westerly wave are expected to extend up to 20°N latitude over North Africa, creating a disturbed flow pattern of the westerlies. In the southern hemisphere, the development of anti-cyclonic system and a closed cyclonic system over southwest Indian Ocean 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 to the east. In the southern hemisphere flow is expected to be more similar to the previous day; however the anti-cyclonic system within the westerlies is expected to expand and move eastwards.

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 flow is expected to be more disturbed by the development of another anti-cyclonic system and two troughs within the westerlies.

2.3. Flow at 200hPa

T+24h: In the northern hemisphere, three-way troughs associated with the westerly wave are expected over northeast Atlantic Ocean and another over the Mediterranean Sea, with a northeast-southwest oriented westerly trough expected to dominate the flow over the Gulf of Aden and adjoining areas of the horn Africa. Moreover in the south, the flow is expected to take on more of a zonal pattern with feeble trough over southwest Indian 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; however northeast-southwest oriented westerly trough is expected to persist over the Gulf of Aden and adjoining areas of the horn Africa . In the southern hemisphere the flow is expected to take 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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