CENTRE AFRICAIN POUR LES APPLICATIONS
DE LA METEOROLOGIE AU DEVELOPPEMENT

AFRICAN CENTRE OF METEOROLOGICAL
APPLICATIONS FOR DEVELOPMENT

Institution Africaine parrainée par la CEA et l'OMM

African Institution under the aegis of UNECA and WMO

AFRICAN REGIONAL CLIMATE CENTRE

DEMONSTRATION PHASE

ACMAD CONTRIBUTION TO THE WMO STATEMENT ON THE STATUS OF GLOBAL CLIMATE IN 2012

The Global monsoon is a dominant mode of annual variation of the tropical precipitation and circulation. Many features including extremes are embedded in the monsoon. One major phenomenon that characterizes the climate in Africa is the African monsoon.
Figure 1 describes precipitation patterns over Africa during July-August-September 2012.
Summer precipitation was above normal in 2012 after the very much above normal summer season in 2010 and a near normal season in 2011. Much of Senegal, southern Mauritania, western and eastern Mali, northern Burkina Faso recorded 40 percent and more above normal precipitation.

The Gulf of Guinea countries recorded precipitation deficits up to 30% of normal. Normal to above normal precipitation was recorded far north in the Western Sahara over areas favorable for locust development. Based on long range precipitation forecasts made in May 2012 and updated in June 2012, advices were given to relevant organizations to strengthen locust monitoring and control systems.
Further East over Ethiopia and coastal parts of Kenya and Tanzania, up to 30% deficit of precipitation was reported.
This pattern of normal or above normal precipitation over the Sahel and normal to below normal precipitation over much of the coastal parts of the Gulf of Guinea and parts of East Africa during the summer season is a typical feature of an active to hyperactive African monsoon season.

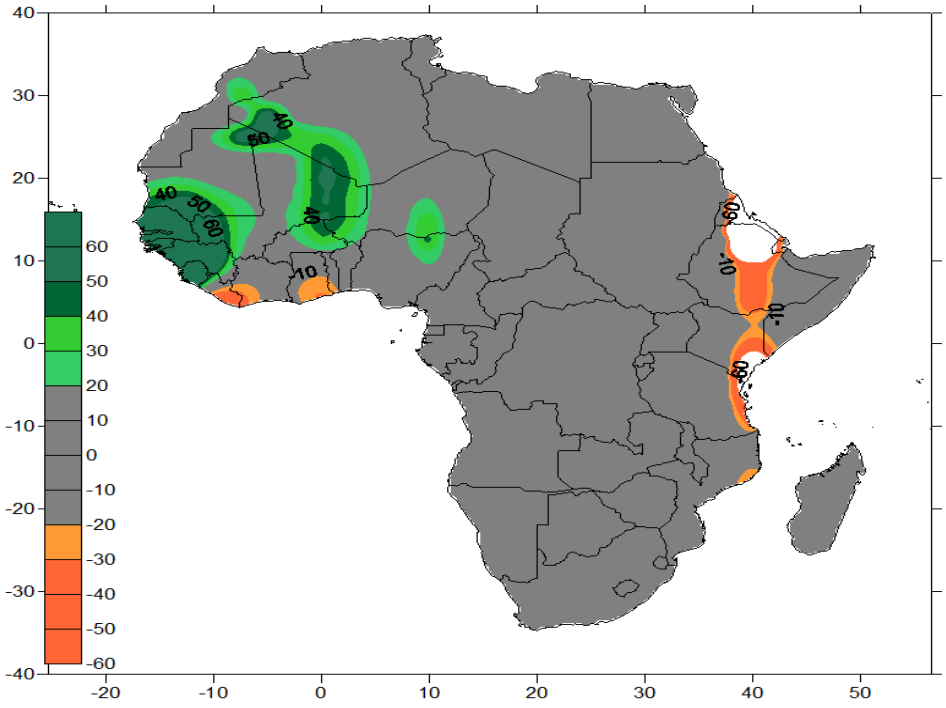

Figure 1: African precipitation anomaly for July-August-September 2012 for African land areas; gridded 2.5-degree based on precipitation estimates from rain gauge data analysis as percentages of average focusing on the 1979-2000 base period. (Source: ACMAD, Niger, and NOAA/NCEP/CPC, USA)

The active monsoon circulation was also noteworthy with strong westerly low level wind anomalies from the equator to about 10°N over much of West African coastal countries (figure 2).

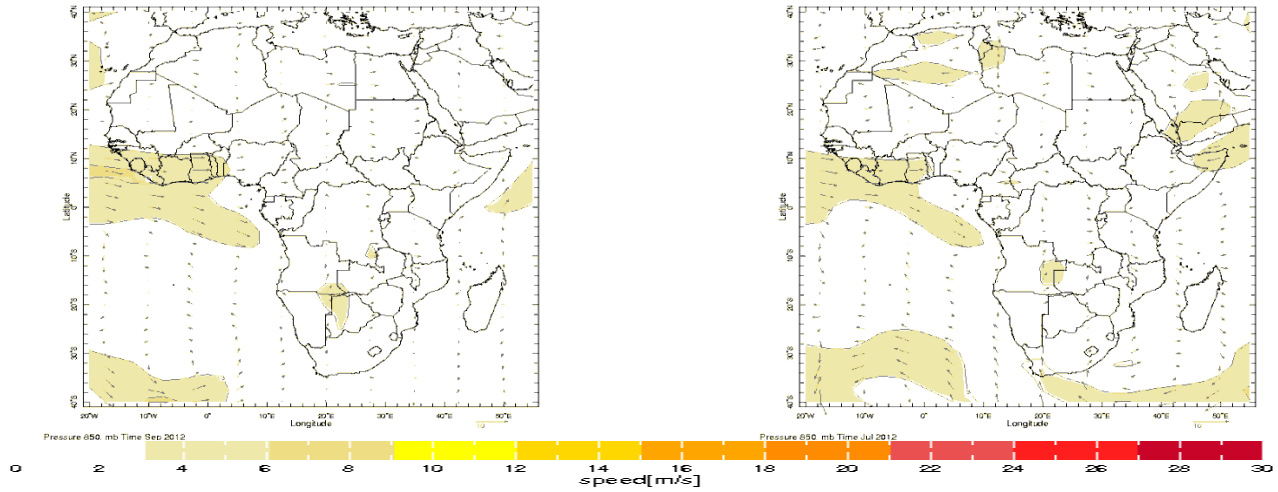

Figure 2: Wind anomalies at 850 hPa for July 2012(left) and September 2012 (right). Strong westerly anomalies indicating deep penetration of moist air over continental Western Africa; 1971-2000 base period. (Source: ACMAD, Niger and NOAA/NCEP Reanalysis, USA)

From May to September 2012 Normal to above normal temperatures were recorded across much of Africa. Above normal temperatures were higher over North Africa with very much above normal temperature in Morocco and Tunisia in August 2012 (figure 3). This temperature pattern was associated to an above normal Sea Surface Temperature over the Mediterranean Sea, a negative phase of the North Atlantic Oscillation and a predominance of the easterly phase of the Quasi-Biennial Oscillation during northern summer season in 2012.

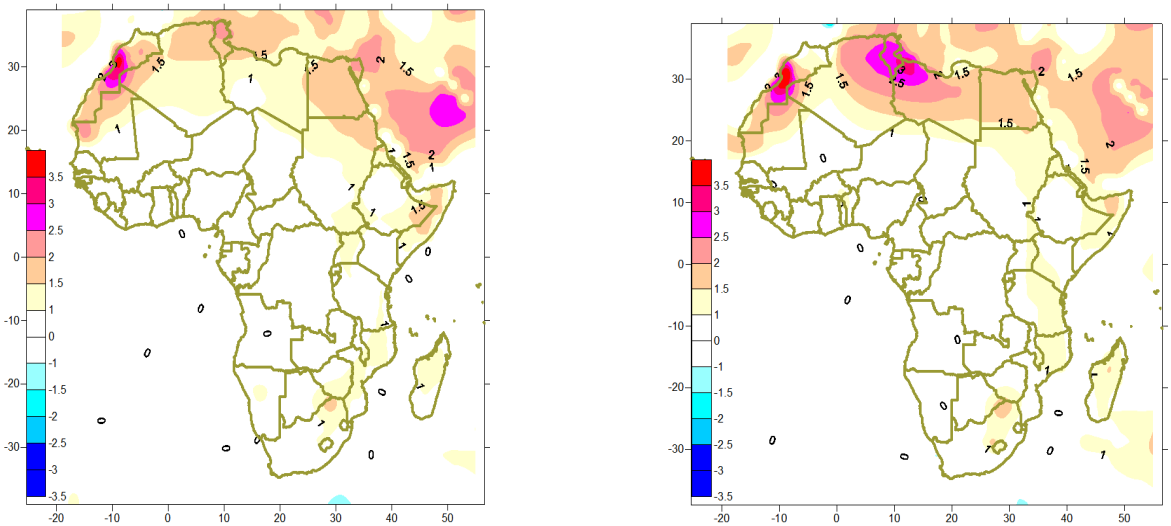

Figure 3: Temperature anomalies (°C) for Africa from May to September 2012(left) and August 2012 (right) relative to 1971-2000 base period; gridded 2.5-degree based on station observations analyses. High temperatures were recorded over North Africa with very high values in Morocco and Tunisia. (Source ACMAD, Niger, and NOAA/NCEP/CPC USA)