

**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

SEASONAL CLIMATE OUTLOOK

VALID FOR

JULY-AUGUST- SEPTEMBER 2011

IN WEST AFRICA, CHAD AND CAMEROON

**June 21, 2011
ABUJA
FEDERAL REPUBLIC OF NIGERIA**

EXECUTIVE SUMMARY

The moderate to strong La Nina conditions that prevailed since August 2010 in the equatorial eastern and central Pacific weakened in March-April 2011 and dissipated to ENSO neutral conditions in June 2011. ENSO neutral conditions are expected to persist from July to September 2011.

The above normal Sea Surface Temperatures (SSTs) observed over tropical eastern north Atlantic off the coast of West Africa in March weakened in April, May and first part of June 2011. Analysis of observations and model products suggest an evolution towards normal SSTs over most parts of the eastern tropical North Atlantic Ocean from July to September 2011.

Above normal SSTs prevailed until May 2011 over much of the eastern tropical south Atlantic. A cold tongue developed over the Coasts of Equatorial Guinea, Gabon and Congo and extending westward along the equator in May 2011. Recent trends on surface and subsurface waters as well as model products support a transition from above normal to normal SSTs over most parts of the eastern tropical South Atlantic Ocean with the persistence of the cold tongue from July to September 2011.

The above normal temperatures observed over the Mediterranean region will persist in July-August-September 2011.

Given current global tropical sea surface temperatures patterns and related trends, analysis and interpretation of global seasonal forecasting centers products, the following precipitation patterns are expected over the sub-region during July-August- September (JAS) 2011:

- **Above normal precipitation very likely** over eastern Sahel (zone 1) covering eastern Niger, the northern half of Nigeria, northern Cameroon and Chad. About 100% to 130% of normal precipitation is expected over much of this zone.

- **Normal to above normal precipitation very likely** over western Sahel (Zone 2) in Senegal, Gambia, Mali, Burkina Faso, southern Mauritania, northern parts of Guinea Conakry, Ivory coast, Ghana, Togo and Benin. About 80% to 120% of normal precipitation is expected for zone 2.

- **Normal to below normal precipitation is very likely** (zone3) over coastal areas of the domain from Cameroon to Guinea Bissau. About 70 to 100% of the normal precipitation is expected for zone 3.

The region is not expected to experience drought and rainfall amounts will not be as high as in 2010 which was among the wettest year on record since 1960. From analysis of monsoon circulation indices, middle to upper level wind shears and direction changes, sea surface temperatures and sub seasonal phenomena including the Madden Julian Oscillation (MJO), the monsoon onset (i.e. the time when the core of the African monsoon moves from the gulf of Guinea to the Sahel) is expected to be normal and the distribution of precipitation events is expected to be less regular compared to 2010 in the region. The period of normal onset over the region ranges from the third dekad of June to the first dekad of July 2011.

A- STATE OF THE OCEANS AND TRENDS

This part describes the most recent state of the global oceans and related trends.

A1- ATLANTIC OCEAN

Above normal SSTs observed east of the tropical north Atlantic off the coast of West Africa in April persisted up to early June 2011 with a localized cold anomaly under development. Recent observed trends and forecasts models are favorable for a weakening of the warm pattern leading to near normal SSTs over eastern north tropical Atlantic during July-August-September 2011.

Over tropical South Atlantic off the coasts of Gabon, Congo and Angola, below normal SSTs developed in May 2011 and extended westward in early June. However, on average over eastern tropical south Atlantic, sea surface temperatures were above normal up to May 2011. Observed trends and models products are favorable for a weakening of the warming leading to normal SSTs over most parts of eastern tropical south Atlantic during June to September 2011. However, the cold tongue is expected to persist throughout the season.

A2 - PACIFIC OCEAN

The cold phase of ENSO (LA NINA) has been observed since August 2010. A weakening LA NINA was observed from March to May 2011 signaling a transition to ENSO neutral conditions which have occurred during June 2011. Observed trends and models outputs are favorable to ENSO neutral conditions over the region during July-August-September 2011.

A3 - INDIAN OCEAN

Over much of the equatorial Indian Ocean, close to normal SSTs were observed during the past months and is expected to persist from July to September 2011.

B- FORECAST

Given the current trends and state of the oceans as indicated above, the existing knowledge on the impacts of sea surface temperature on rainfall in Africa and the outputs of dynamical and statistical seasonal forecasting systems and tools, precipitation Outlook for July-August-September 2011 in West Africa is expected as follows (figure):

- Over eastern Sahel (**zone II**) covering eastern Niger, the northern Nigeria, northern Cameroon and Chad. About 100% to 130% of normal precipitation is expected over much of the area;
- Over western Sahel (**Zone I**) in Senegal, Mali, Burkina Faso, southern Mauritania, upper parts of Guinea Conakry, Ivory coast, Ghana, Togo and Benin normal to above normal precipitation is very likely. About 80% to 120% of normal precipitation is expected for zone I;
- Over coastal areas of the domain from Cameroon to Guinea Bissau, normal to below normal precipitation season is very likely. About 70 to 100% of the normal precipitation is expected for **zone III**.

C- ONSET AND DISTRIBUTION OF PRECIPITATION WITHIN THE SEASON

A set of different tools were used to determine the monsoon period (i.e. the period during which monsoon precipitation belt moves from the Gulf of Guinea to the Sahel) and provide a broad qualitative estimate of the expected distribution of precipitation over the Sahel region of West Africa for the 2011 rainfall season.

These tools used include vertical wind shear at lower and middle troposphere, low level meridional wind change, upper level wind direction change, upper level convergence/divergence and SSTs were used as inputs.

There was a consensus among different tools that there will be a normal onset of the rainy season over the Sahel for 2011 beginning on the 3rd dekad of June 2011 and ending on the 1st dekad in July 2011 in the northern. With ENSO neutral conditions in the Pacific and observed variability of SSTs in the tropical Atlantic Ocean, precipitation distribution is expected to be less regular during the season than 2010. Monitoring and updates will be undertaken to detect and anticipate impacts of intraseasonal disturbances that may occur.

SEASONAL PRECIPITATION FORECAST FOR JULY-AUGUST-SEPTEMBER 2011 Update of June 2011

PREVISION SAISONNIERE CLIMATIQUE DES PRECIPITATIONS DE JUILLET-AOUT-SEPTEMBRE 2011 : Mise a jour de Juin 2011

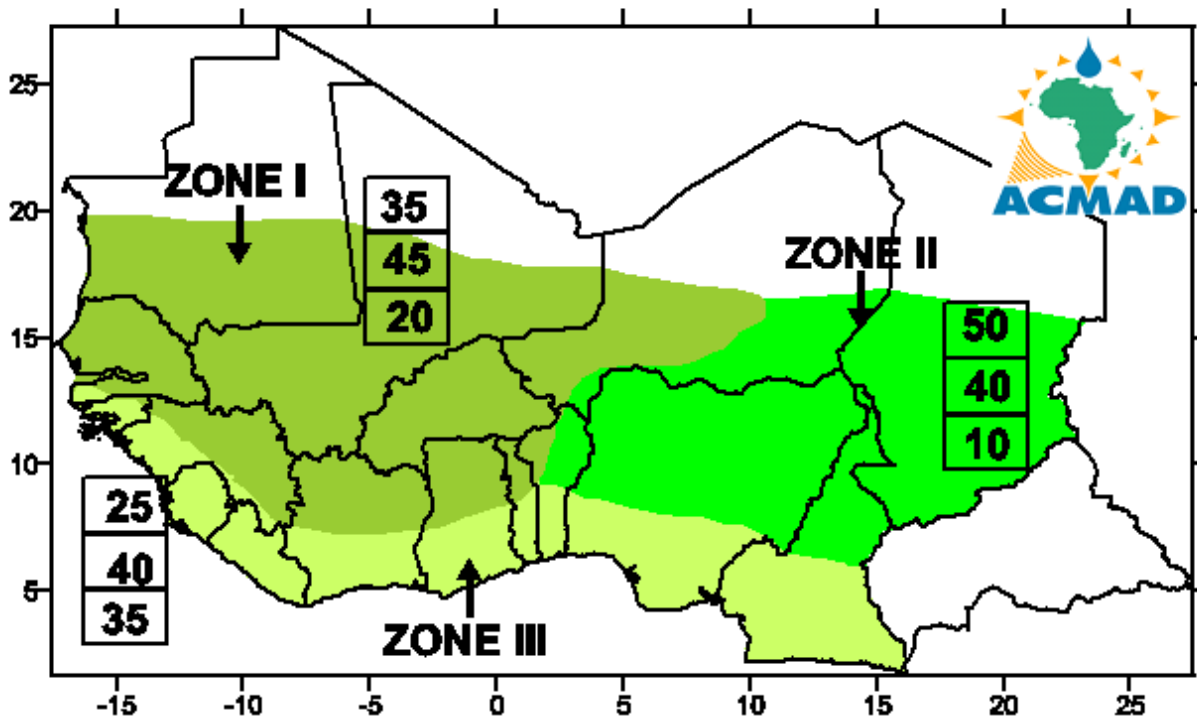


Figure: Precipitation Outlook Valid for July-August-September 2011 over West Africa, Chad and Cameroon.

NB: Users of this product are encouraged to contact National Meteorological and Hydrological Services for more detailed advices at country level.

