

**FIFTH FORUM ON CLIMATE AND HYDROLOGICAL SEASONAL FORECAST
IN WEST AFRICA, CHAD AND CAMEROUN
PRESAO-05**

A. STATE OF THE GLOBAL OCEAN DURING SPRING 2002:

The fifth forum on the Climate and Hydrological Forecast was held in Niamey at the Niger Basin Authority Headquarter (ABN) on June 06 2002 to estimate the total amount of rain for the coming season over the period from July to September 2002 in West Africa, Chad and Cameroon. The elaboration of the forecast took account of the current state of the global climate as well as its evolution and its impacts on the regional climate.

After a light attenuation in April, the warming of the sea surface temperature, observed in the Niño zone during March, intensified during May and would continue during next months according to the estimate of the global models. This situation usually corresponds to a decrease of the rainfall in the Sahel.

On the southern tropical Atlantic, a warming of the sea surface temperature is observed since March on the coasts of the Gulf of Guinea. This warming condition in the Atlantic is statistically synonymous with above normal precipitations over the Gulf Guinea countries and below normal on the sahelian part. However, it is advisable to point out that a strong variability characterizes the sea surface temperatures observed on this oceanic part. The behavior of the Northern tropical Atlantic, is marked by a clear tendency of strong warming condition observed since January on the Moroccan and Mauritanians coasts. That should attenuate the situation previously described on the Sahel.

Consequently, It is particularly significant to follow up the evolution of the sea surface temperature anomalies of the Central Pacific and the tropical Atlantic during June and July.

Thus the season August – July - September 2002 would be characterized by a regional as well as global forcing.

The forecasts reproduced on the joined chart represent a consensus estimate of the impacts of various forcings on the regime of regional precipitations. This forecast will be updated in July with the new observations of sea surface temperatures.

B METHODOLOGY.

The development of the climatic bulletin in this forum was carried out from the results of the coupled Ocean – Atmosphere dynamic models and the synthesis of the national and international models physically plausible and based on a statistical approach. The majority of national statistical models have been developed by the participants in the workshop of reinforcement of capacity as regards seasonal forecast, which have been organized from 20 May to 05 June 2002 in Niamey by the African Center of Meteorological Application for Development (ACMAD). The National Meteorological Services of the following countries have participated in this workshop: Mali, Burkina Faso, Niger, Chad, Benin, Cape Verde, Togo, Guinea Bissau, Senegal and Ghana.

The current state of knowledge on climate variability on seasonal and inter annual scales allows forecast of the seasonal averages on a relatively wide areas. This forecast can consequently take into account the total seasonal rainfall on a relatively wide space. Nevertheless climatic variations on finer scales could be observed. However, efforts on research are going on, in subjects like, the date of onset of the rainy season, the sequences of dry spells among others.

It is strongly advised to contact the national meteorological and hydrological services for a more detailed interpretation of the forecast and eventually to obtain additional directives.

For the presentation of the forecast, the experts use information of the models to estimate the probability that the seasonal total amount of precipitations for this year belongs to one of the three categories defined here below.

Definition of the categories

The Normal pluviometric is defined here as the average 30 years seasonal rainfall, over the period 1961-1990.

- The category "**above normal**" corresponds to the third of the observations whose seasonal cumulative total amount of precipitations were highest (33%).
- The category "**below normal**" corresponds to the third of the observations whose seasonal cumulative total amount of precipitations were weakest (33%).
- The category "**near normal**" corresponds to the group of the remaining years (33%).

The forecast domain has been divided into three zones after re-examination of the information on the forecast

Zone I: From Sierra Leone to the central Mauritania and extending on the Sahel up to the South-east of Niger and including the central Nigeria, the North of Benin and the extreme north of Togo and Ghana.

Zone II: constituted by the countries of the Gulf of Guinea, from the half east of Liberia and Guinea up to the central Cameroon, including the extreme southeast of Mali and the southwest of Burkina.

Zone III: including the Southern and Central Chad, Northern Cameroon, the North-East of Nigeria and the South-east of Niger.

C RAINFALL SEASONAL FORECAST FOR THE PERIOD JULY-AUGUST-SEPTEMBER 2002 ON WEST AFRICA CHAD AND CAMEROUN (see map)

Following consideration of consensus forecasts of those done at national level and those done in global centers, the map below was established to present the consensus seasonal forecast over west Africa, Chad and Cameroon. It is expected that the forecast will be updated at national levels during the month of July 2002.

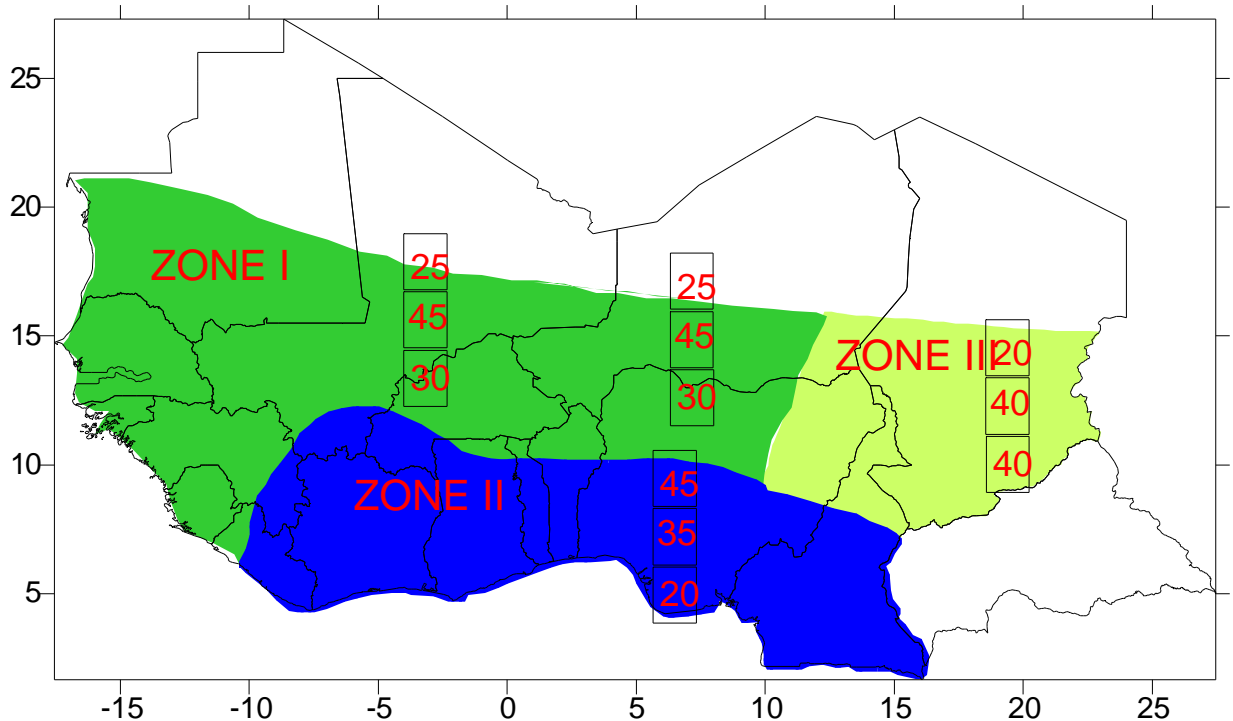
- For the region from Sierra Leone to the central Mauritania and extending on the Sahel up to the South-east of Niger and including the central Nigeria, the North of Benin and the extreme north of Togo and Ghana (zone I on the map), there are dominant probabilities for « near normal » conditions.
- For the region constituted by the countries of the Gulf of Guinea, that is the half east of Liberia and Guinea up to the central Cameroon, as well as the region including the extreme south-east of Mali and the south-west of Burkina (zone II on the chart), there are dominant probabilities for « above the normal » rainfall.
- Lastly, in the Southern and Central Chad, Northern Cameroon, the North-East of Nigeria and the South-east of Niger (Zone III on the map), there are dominant probabilities to have « near normal » conditions with a tendency for dry conditions.

Although we mentioned above the categories of stronger probability for this year, the users are reminded that by planning the coming season, there are possibilities of observing precipitations in the other categories.

Following consideration of consensus forecasts of those done at national level and those done in global centers the map below was established to present the seasonal forecast over West Africa, Chad and Cameroon. It is expected that the forecast will be updated at national levels during the month of July 2002. Hence, users are advised to contact the national meteorological service for the interpretation, additional information and the update of the forecast as soon as new information becomes available.



PREVISION SAISONNIERE DES PLUIES EN AFRIQUE DE LE TCHAD ET LE CAMEROUN JUILLET- AOUT- SEPTEMBRE 2002



Legend of the map:

For each zone defined by regional forecasting experts, the numbers are in 3 cases representing the probability that the seasonal total of precipitation are in "above-normal" (upper box), "near-normal" (middle box) and "below-normal" (Lower box). Hence in zone I, there is a 25% chance that the seasonal cumulative totals of precipitation be in the category "above-normal", 45% chance that it be "near-normal" and 30% chance that it falls within the "below-normal" Category (cf. section B for the definition of categories). The boundaries on the map should be considered as areas of transition for the forecast.