



Centre Régional AGRHYMET



## 2024 Forum on Seasonal Forecasts of Agro-hydro-climatic characteristics of the rainy season for Sudanian and Sahelian zones of West Africa (PRESASS, 2024)

April 26, 2024

*A generally wet 2024 rainy season is expected over the Sahelian strip, with late to average onset dates in the Central Sahel and early to average in the Western and Eastern Sahel, late to average cessation dates, short dry spells at the beginning of the season in the Western Sahel and average to long dry spells in the Eastern Sahel and overall long towards the end of the season across the entire strip Sahelian region, and overall above-average flows in the main river basins of the Sahel.*

**PRESASS 2024** was organized, from 22 to 26 April 2024 in Abuja, Nigeria, by the AGRHYMET Regional Climate Center for West Africa and the Sahel (AGRHYMET RCC-WAS) of CILSS, in collaboration with ACMAD, the National Meteorological and Hydrological Services (SNMHs), the WMO and West African River Basin Organizations.

### I. Forecast summaries

Seasonal forecasts are developed on the basis of analyses of the current situation, likely changes in Sea Surface Temperatures (SSTs), statistical models derived from SNMHs data, expert knowledge of climate characteristics in the region and forecasts of the world major climate centers. The analyses made it possible to make the following predictions, in relation to the average values of each parameter over the 1991-2020 reference period.

- **Average to above-average** rainfall totals are expected over the **May-June-July** period in most of the Sahel strip, from the Cabo Verde Islands to Chad and on the coastal parts of Ghana, Togo, Benin and Southwestern Nigeria. Rainfall is expected to be below average in Sierra Leone, Liberia, the extreme south-east of Nigeria and the coastal part of Cameroon. Elsewhere, rainfall totals are expected to be close to the climatological average.
- **Above-average to average rainfall totals** are expected over the **June-July-August and July-August-September** periods, in the agricultural strips of Chad, Niger, Mali, Mauritania, Senegal, Gambia, Burkina Faso, Guinea Bissau and the northern parts of Guinea, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria and Cameroon. Cumulative rainfalls are expected to remain average to above average in **June-July-August** on the coastal parts of Ghana, Togo, Benin and South-West Nigeria and below average over the season in Sierra Leone, Liberia, and in the extreme South-East of Nigeria. Elsewhere, rainfall totals are expected to be close to the climatological average;
- **Average to early season onset dates** are expected on the eastern Atlantic coast covering Senegal, The Gambia, Guinea Bissau, Guinea, northern Sierra Leone and southern parts of Mauritania and Mali. These onset dates of the agricultural season are estimated to be late to average in the Central Sahel covering southeastern Mali, Burkina Faso, the western half of the agricultural and pastoral strips of Niger, northeastern Côte d'Ivoire, northern parts of Ghana, Togo and Benin and northwestern Nigeria. They are expected to be average to late in the eastern part of the agricultural strip of Niger, northeastern Nigeria and the agricultural zone of Chad;
- **Generally late to average** cessation dates are expected in the Sahelian and Sudanian strips of West Africa and Chad;
- **Short to average dry spells** are expected at the beginning of the agricultural season, in the western part of the Sahelian and Sudanian strips of West Africa, particularly over southern Mauritania, the southern half of Mali, Senegal, the Gambia, Guinea Bissau, Guinea, northern parts

of Sierra Leone and Côte d'Ivoire and in the northwestern part of Ghana and the western part of Burkina Faso. In the western half of Burkina Faso, the agricultural areas of Niger and Chad, the north-east of Ghana and the northern parts of Togo, Benin and Nigeria, dry spells are expected to be average to long at the beginning of the season. Towards the end of the season, short to average dry spells are expected on the Atlantic coast covering southern Mauritania, Senegal, Gambia, Guinea Bissau, Guinea and northern Sierra Leone, central Nigeria and northern parts of Benin and Togo. On the other hand, dry spells are expected to be long to average throughout the rest of the area covering southern Mauritania, the agricultural parts of Mali, Niger and Chad, Burkina Faso and the northern parts of Côte d'Ivoire, Ghana, and Nigeria.

- Generally average to above average **flows** are expected in all river basins of West Africa, except the Lower Niger, the Lower Volta, the Sassandra and the Mono. Specifically, above-average flows are expected in the **Gambia Basin**, the **Upper Senegal Basin** (in Mali, Senegal and Guinea), the **Upper Niger River Basin** (in Guinea, Côte d'Ivoire and Mali), the **Niger Inner Delta** (in Mali), the **Nigerien and Nigerian portions of the Middle Niger River Basin**, the **Komadougou Yobé**, the **Logone Basin**, the **Upper Volta Basin** (in Côte d'Ivoire, Ghana, Togo and Burkina Faso), the **Comoé** (in Côte d'Ivoire and Burkina Faso) and the **Bandama** (in Côte d'Ivoire). Average to above-average flows are expected in the **lower Senegal River basin** (in Senegal and Mauritania), the Malian and Burkinabe portions of **the middle Niger River basin**, the **Chari basin** and the **Ouémé basin (Benin)**. The **lower Niger River basin**, including the **Benue River**(in Nigeria) and the **Mono basin** (Togo and Benin), are expected to experience average to below-average flows. Finally, below-average flows are expected in the **Sassandra Basin** (in Côte d'Ivoire) and the **Lower Volta** (in Ghana).

## II. Possible Negative Implications of the 2024 Seasonal Forecast

The 2024 seasonal forecast, while predicting generally favorable characteristics, may also have negative implications alongside or instead of the more expected positive ones. Indeed, in areas where above-average rainfall totals, early season onset dates, above-average to average runoffs and short dry spells are expected, it is not excluded to observe inconvenient situations that can, for example, be linked to excess humidity, rapid filling of low-pressure areas and overflowing of rivers, the rise of groundwater, the poor preparation of the agricultural season and transhumance movements, the impassability of roads, the difficulties of travel and access to areas of vital, economic and health interests.

Also, in areas where late onset dates and long dry spells are expected, it is to be expected that rainfall will be poorly distributed over time and space, which can disrupt the development of crops and fodder plants, crop and transhumance calendars, prolong the lean season, exacerbate the vulnerability of populations and lead to the abandonment of fields and the departure of workforce from rural areas.

## III. Risks related to the negative implications of the rainy season,

The likely risks related to the expected characteristics of the 2024 rainy season can be many and varied depending on the area. The wet nature of the season portends significant risks of flooding, submersion and therefore reduction of arable land, destruction of infrastructure (homes, roads, markets and schools, etc.), loss of crops and fodder, drowning of livestock and human beings, proliferation of germs of waterborne and diarrheal diseases (cholera, malaria, dengue, etc.), crop pest outbreaks, water pollution, restriction of movement of people and animals, soil water erosion, landslides, silting up of watercourses, weed outbreaks, post-harvest losses, loss of human and animal lives, etc.

In areas where the onset dates of the agricultural season will be late and the dry spells long, there is also a risk of persistent heat waves and hot winds, delays in the return of transhumant herders, loss of seedlings and harvests, and a drop in agricultural, fodder and fishing yields, food deficits, complication of food and nutrition crises, rising food prices, increased vulnerability, loss of livestock and falling animal prices, etc.

The combination of these likely climatic risks with situations of poverty and vulnerability of populations could lead to or exacerbate situations of land conflicts related to land use and land use change, conflicts between herders and farmers, conflicts over public infrastructure, social tensions and favor population idleness, begging, social tensions, violence and civil insecurity (banditry, terrorism, etc.).

## **IV. Recommendations**

### **1) With regard to the risk of flooding**

The overall rainfall expected in the Sudanian and Sahelian zones of West Africa and Chad and the overall above average flows expected in the majority of the river basins of the Sahel suggest a high risk of flooding that could lead to loss of crops, property and animal and human lives in exposed localities. To deal with those, it is recommended to:

- strengthen the communication of seasonal forecasts and their updates in order to inform, raise awareness among communities about risks and strengthen their capacities to avoid disasters, by supporting the efforts of the press, disaster risk reduction platforms, NGOs and country EWS;
- Strengthen the monitoring and response capacities of the agencies in charge of flood monitoring, disaster risk reduction and humanitarian aid;
- advise against and avoid the uncontrolled occupation of flood-prone areas by dwellings, crops and animals;
- reinforce protective dikes and maintain dams and road infrastructure;
- cleaning the drainage channels to facilitate the evacuation of rainwater;
- closely monitor the warning thresholds in sites at high risk of flooding and maintain strong collaboration between hydrological and meteorological services in order to enable anticipatory flood management in exposed areas, particularly in the Gambia Basin, the Upper Senegal Basin (in Mali, Senegal and Guinea); the upper Niger River basin (in Guinea, Côte d'Ivoire and Mali), the Inner Niger River Delta (in Mali), the Nigerien and Nigerian portions of the middle Niger River basin, the Komadougou Yobé, the Logone basin, the upper Volta basin (in Côte d'Ivoire, Ghana, Togo and Burkina Faso), Comoé (in Côte d'Ivoire and Burkina Faso) and Bandama (in Côte d'Ivoire);
- Limit large transhumance and avoid the movement of livestock at night and giving the care of animals to children;
- Promote the cultivation of crops adapted to the persistence of situations of excess water in the soil
- maintain vigilance and follow the updates of these seasonal forecasts and the short- and average-term forecasts produced and disseminated by the meteorological and hydrological services of the countries;

### **2) With regard to the risk of diseases**

Wetlands and flooded areas can be exposed to the development of disease germs (cholera, malaria, dengue fever, schistosomiasis, etc.). Also, the late onset dates of the season and the long to average dry spells expected in some parts of the Sahel could cause a persistence of high temperatures and dust winds favorable to the proliferation of other epidemic disease germs. To this end, it is recommended to:

- strengthen the capacities of national health systems and national disaster risk reduction platforms;
- disseminate warning information on climate-sensitive diseases and raise awareness among the population, in collaboration with meteorology, water resources and health services,
- sanitize inhabited areas and avoid contact with contaminated water, through drainage channel cleaning operations;
- prevent diseases by vaccinating populations and animals;
- prevent epizootic germs that prefer moist conditions;
- increase vigilance against crop diseases and pests (armyworm and other insect pests);

### **3) With regard to the risk of drought**

In areas where long dry spells are expected to lead to water deficits, particularly in the Sahel, there is a high risk that crop and fodder growth will be affected. To deal with that, it is recommended to:

- diversify agricultural practices through the promotion of irrigation and market gardening to reduce the risk of reduced food production;
- select crop species and varieties that are tolerant to water deficit in exposed areas;

- adopt water- and soil-conserving cultivation techniques;
- prevent the development of millet ear miner caterpillars;
- ensure rational management of surface water resources to meet different uses and prevent conflicts, particularly in the lower Niger River basin including the Benue (in Nigeria), the Mono basin (in Togo and Benin), the Sassandra basin (in Côte d'Ivoire) and the lower Volta (in Ghana);
- interact with technicians from the national and regional departments of Meteorology, Hydrology and Agriculture to obtain specific information and advice in terms of what to do.

#### 4) With regard to Conflict Risks

In areas where long dry spells are expected to lead to deficits in agricultural and feed production, it is recommended to:

- Strengthen productive capacities, at all levels by promoting the effective use of adequate strategies for adaptation, yield increase and resilience of the various agro-silvo-pastoral production systems;
- Raise awareness and create the conditions for inclusive, non-discriminatory and equitable management of public infrastructure and productive, environmental and socio-economic resources;
- Promote job creation, private entrepreneurship and income-generating activities for the most vulnerable groups, especially young people, to reduce idleness and ensure harmonious and sustainable development, at the local, national and regional levels. This will enable, among other things, to create the right conditions to strengthen the population's attachment to their land;
- Create and develop basic infrastructure and improve the livelihoods of communities.

#### 5) Recommendations to make the most of the rainy season

In view of the configuration of the 2024 rainy season predicting a globally wet situation in the Sudanian and Sahelian zones of West Africa and Chad, it is recommended *that farmers, herders, water resources managers, projects, NGOs and authorities:*

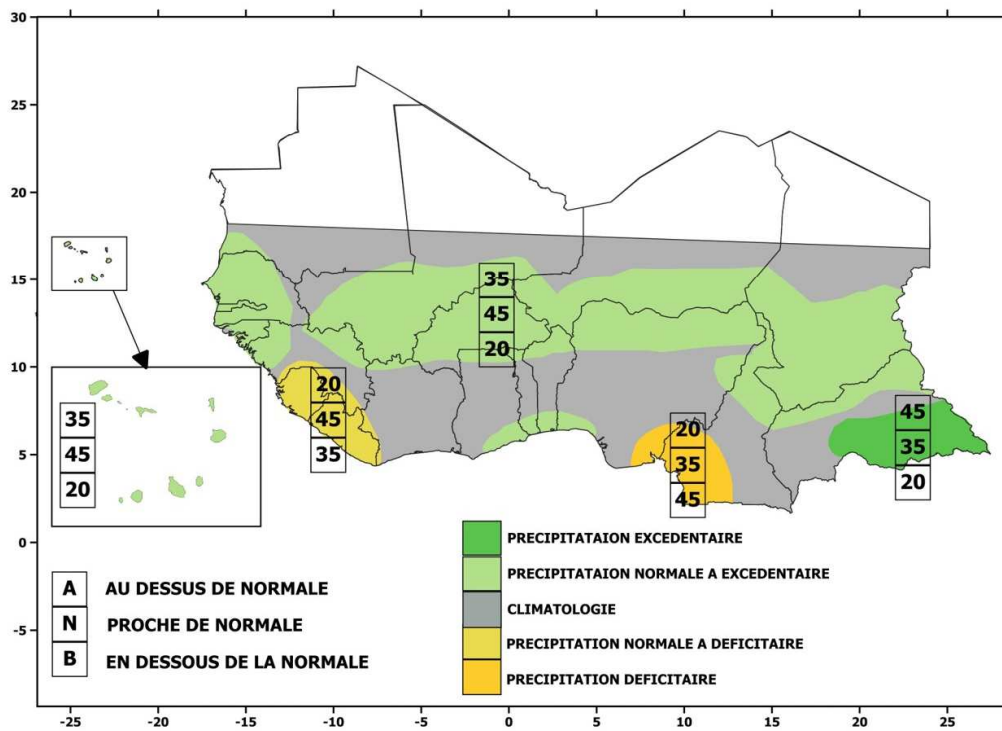
- Take advantage of average to above-average runoff by developing irrigated crops, particularly in the floodplains of the lower basin of the Senegal River (in Senegal and Mauritania), the Malian and Burkinabe portions of the middle Niger River basin, the Chari basin and the Ouémé basin (Benin);
- invest more in high-yielding crops that are tolerant of wet conditions (rice, sugarcane, tubers, etc.);
- set up systems for the collection and conservation of runoff water for agricultural and domestic use during the dry season,
- support the deployment of climate-smart techniques to increase crop and fodder yields, in the face of climatic risks, particularly those related to excess rainwater and drought,
- strengthen information, supervision and agro-hydro-meteorological assistance systems for producers;
- facilitate farmers' access to improved seeds and agricultural inputs adapted to their needs;
- secure incomes and alleviate agricultural losses through the promotion and subscription of index-based agricultural insurance;

**It is recommended that users of the different sectors be attentive to the updates of these seasonal forecasts that will be made by AGRHYMET CCR-AOS, ACMAD and the national meteorological and hydrological services, throughout the season.**

Done in Abuja on 26 April 2024  
The Forum

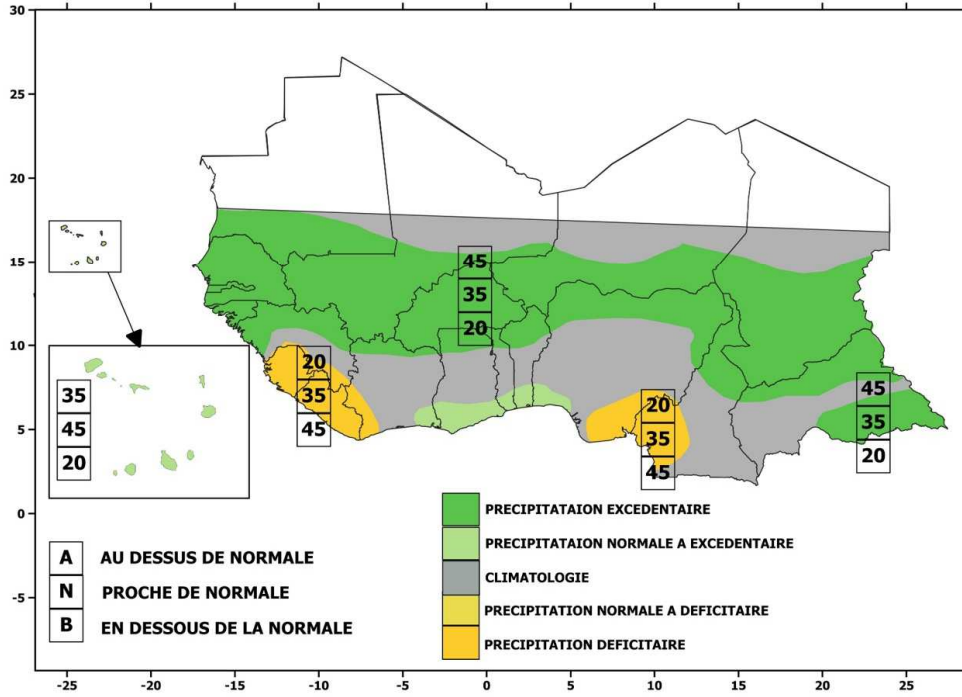


**PREVISION SAISONNIERE DES PRECIPITATIONS  
 POUR LA REGION SOUDANO-SAHELIENNES  
 VALABLE POUR MAI-JUIN-JUILLET 2024  
 ELABOREE LE 26 AVRIL 2024**





**PREVISION SAISONNIERE DES PRECIPITATIONS  
POUR LA REGION SOUDANO-SAHELIENNES  
VALABLE POUR JUIN-JUILLET-AOUT 2024  
ELABOREE LE 26 AVRIL 2024**



# PREVISION SAISONNIERE DES PRECIPITATIONS POUR LA REGION SOUDANO-SAHELIENNES VALABLE POUR JUILLET-AOUT-SEPTEMBRE 2024 ELABOREE LE 26 AVRIL 2024

