



AGRHYMET CCR-AOS

Centre Climatique Régional pour l'Afrique de l'Ouest et le Sahel



Seasonal forecasts of agro-hydro-climatic characteristics for the main rainy season in the **Gulf of Guinea countries**.

Spécial PRESAGG Bulletin – 01/2025

PRESA-GG 2025 was organized in Grand Bassam, Côte d'Ivoire, by AGRHYMET Regional Climate Center for West Africa and the Sahel (AGRHYMET RCC-WAS), in collaboration with ACMAD, the National Meteorological and Hydrological Services (NMHSs) of the Gulf of Guinea countries and river basin organizations.

For the 2025 major rainy season in the southern parts of the Gulf of Guinea countries, equivalent to normal cumulative rainfall, early to normal onset, early to normal cessation, long to normal dry spells and normal runoff are globally expected.

I. State and outlook for sea surface temperatures

1.1. State of sea surface temperatures in January 2025

In January 2025, the Southern Oscillation (ENSO) conditions shows that the negative sea surface temperature (SST) anomaly in the Niño 3.4 region (120-170°W, 5°S-5°N) intensified, reaching -0.71°C . This cooling of the east-central equatorial Pacific indicates the continuation of La Niña conditions (SST $< -0.5^{\circ}\text{C}$), which had already been crossed in December 2024. La Niña is generally associated with a drop in rainfall over the coastal countries of the Gulf of Guinea. The Indian Ocean Dipole Index (IOD) has returned to a neutral phase, after a brief negative period. On the other hand, the entire equatorial Atlantic basin remained warmer than normal, even though the western part showed a slight cooling trend, while the waters close to the African coast warmed further. (Figure 1).

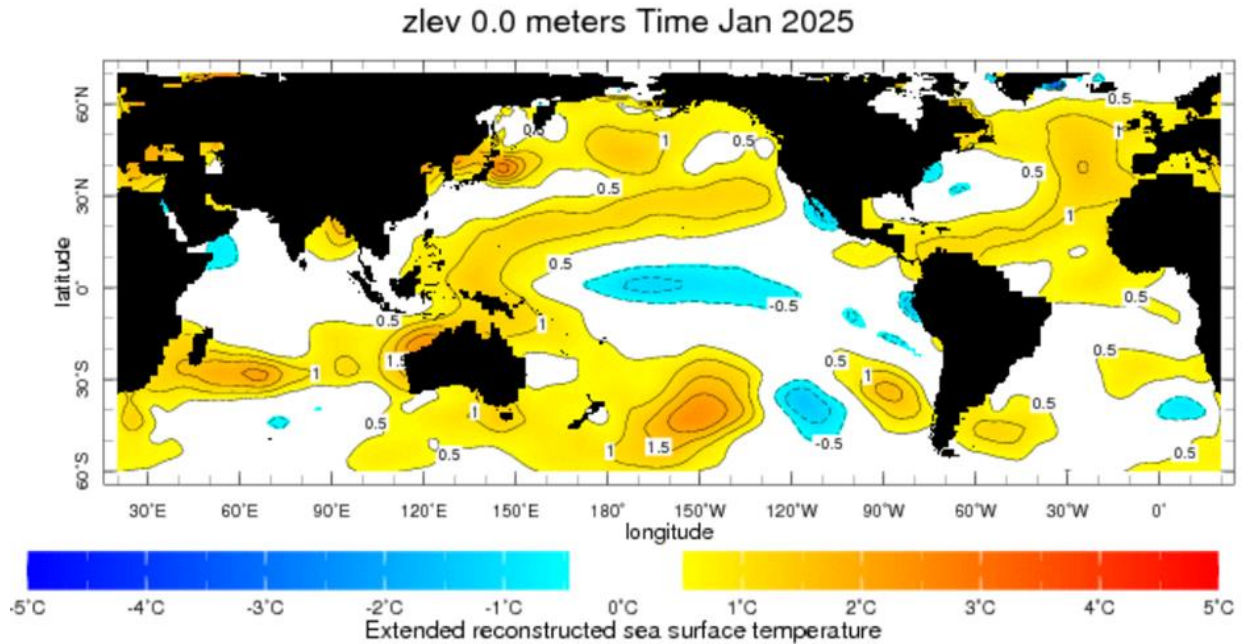


Figure 1: Sea surface temperature (SST) anomalies for January 2025, compared with the 1991-2020 reference period average (Source: IRI/NOAA/NCDC/ERSST-version5).

1.2. Sea surface temperatures outlook

ENSO forecast models predict slightly higher chances of La Niña conditions for the period January-March 2025, and neutral conditions (-0.5° to 0.5°C) from February to May 2025. The transition from La Niña to a neutral phase in the equatorial Pacific could influence the climate of Gulf of Guinea countries by modifying precipitation dynamics. It could attenuate droughts and boost a gradual return to more regular rainfall. However, this transition is accompanied by increased climatic variability, with irregular rainfall before weather conditions stabilize. This could lead to increased risks of flooding and epidemics in certain regions of the Gulf of Guinea.

The IOD should return to neutral levels, while SSTs in the equatorial Atlantic will remain positive, with pronounced anomalies in the northern part. As for SSTs in the Mediterranean, they indicate a trend towards positive anomalies.

This situation is part of an overall context in which most ocean basins are posting above-normal SSTs.

II. Forecast of the agro-hydro-climatic characteristics for the rainy main season

The 2025 forecast for the main rainy season in the southern parts of the Gulf of Guinea countries are based on data from the 1991-2020 (normal reference period). They are based on the analysis of the current situation and trends in Sea Surface Temperatures (SST), forecasts from global climate centers and statistical analyses National Meteorological and Hydrological Services (NMHSs) data, expert knowledge of climate characteristics in the Gulf of Guinea region, and consensus between the different information analyzed.

2.1. Onset dates of the season

This year, the starting dates of the agricultural season are expected to be late to normal in the south-western part of Côte d'Ivoire and in the coastal areas of Ghana, Togo and Benin. On the other hand, in southeastern Côte d'Ivoire, southern Ghana, central Togo, Benin and southern Nigeria, the onset of the season is likely to be early to normal (Figure 2).

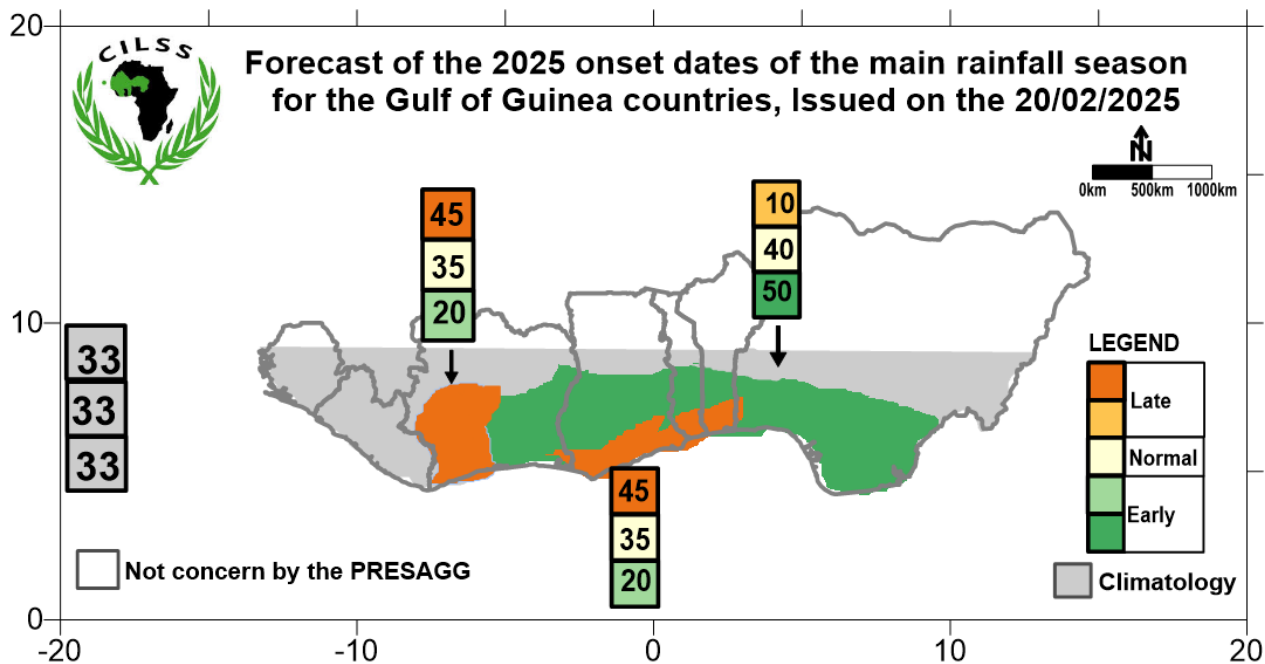


Figure 2: Forecast of the onset dates of the 2025 major agricultural season in the southern parts of the Gulf of Guinea countries.

2.2. Cumulative rainfall

The total rainfall this for the March-April-May (MAM) period, is expected to be equivalent to below the average amounts in the south-eastern Nigeria and south-western Côte d'Ivoire. Over south-western Nigeria, southern Benin, Togo, south-eastern Ghana and south-eastern Côte d'Ivoire, equivalent to above average cumulative rainfall is expected. Normal conditions are expected in the other parts of the forecast area.

During the April-May-June (AMJ) period, the same seasonal pattern is expected, albeit with a greater spatial extension for normal to above average conditions, particularly in Nigeria, Benin, Togo and Ghana (Figures 3 and 4).

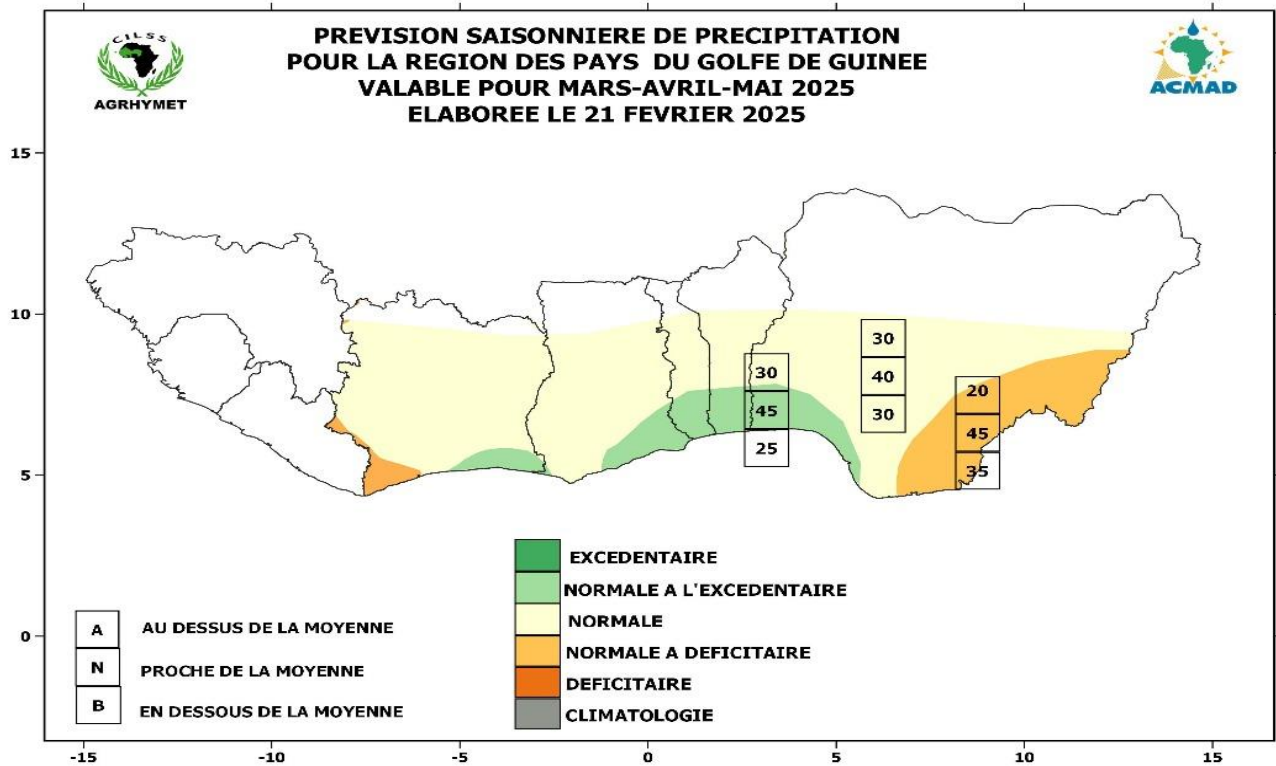


Figure 3: Rainfall forecast for the period March-April-May 2025 in the southern parts of the Gulf of Guinea countries.

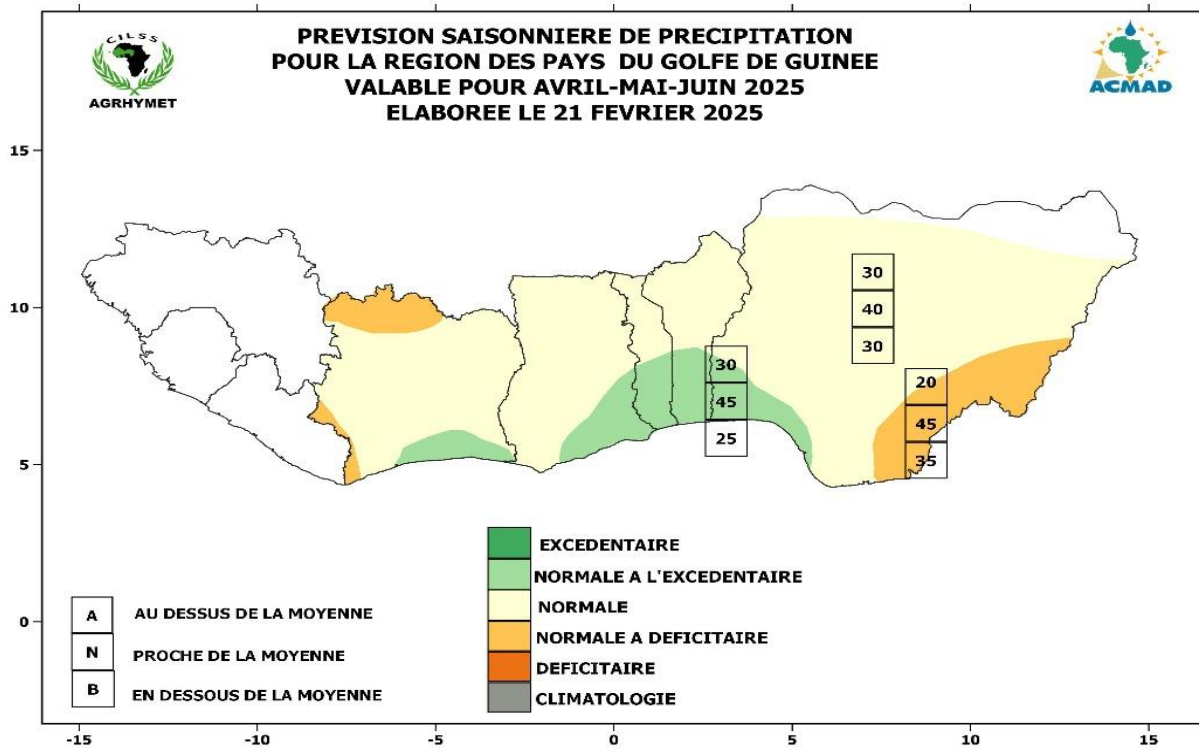


Figure 4: Rainfall forecast for the period April-May-June 2025 in the southern parts of the Gulf of Guinea countries.

2.3. River basin runoff

Generally, runoff is expected to be equivalent to or higher than the 1991-2020 hydrological normal (average flow) in all the coastal basins of the Gulf of Guinea countries. Explicitly, excessive runoff is expected in the lower parts of the Cavally (Côte d'Ivoire), Mono (Togo and Benin) and Ouémé (Benin) rivers, the coastal basins of Bia (Cote d'Ivoire), Tano an Ankobra (Ghana), the western part of San-Pedro and the eastern part of Agneby (Côte d'Ivoire) and Tano and Ankobra (Ghana); equivalent to above normal in the coastal basins of Boubo (in Côte d'Ivoire), Pra and Densu (in Ghana), Lac-Togo (in Togo), Comoé Inférieure and the eastern part of San-Pedro (Côte d'Ivoire). On the other hand, in the Couffo basin (Benin), the Sassandra basin and the western part of Agneby (Côte d'Ivoire), runoff is likely to be equivalent to below normal 1991-2020 (Figure 5).

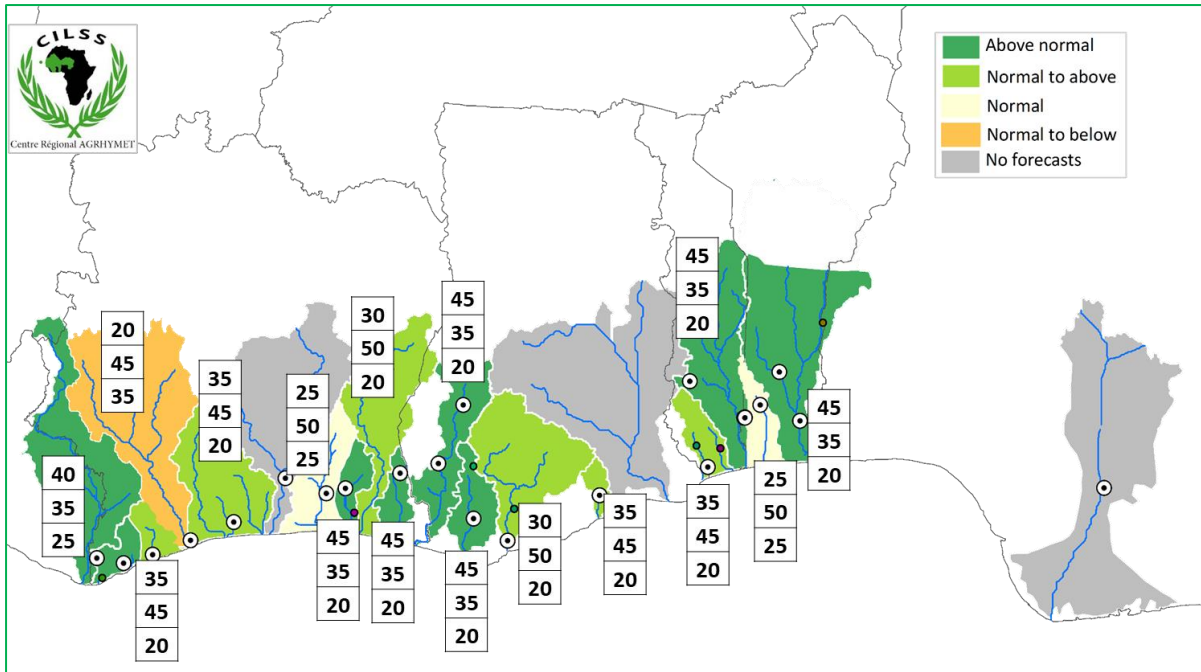


Figure 5: Forecast of the runoff in coastal basins of Gulf of Guinea countries for the 2025 major rainy season.

2.4. Length of dry spells at the beginning of the season

The forecast indicates that at the start of the main rainy season, the length of dry spells will be longer to normal over the southern strip of the Gulf of Guinea countries, streaking from southern Côte d'Ivoire up-to to the south-central Nigeria (Figure 6).

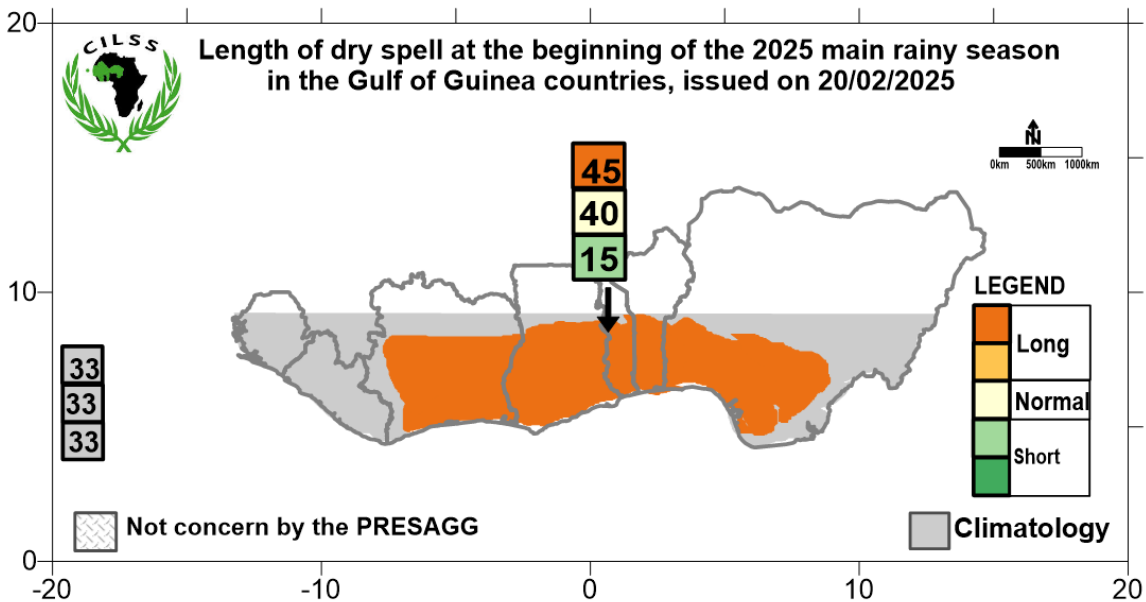


Figure 6: Prediction of dry spells at the start of the 2025 major rainy season in the countries of the Gulf of Guinea.

2.5. Length of dry spells towards the end of the season

Towards the end of the season, long to normal dry spell durations are expected over all southern parts of Côte d'Ivoire, Ghana, Togo, Benin and Nigeria (Figure 7).

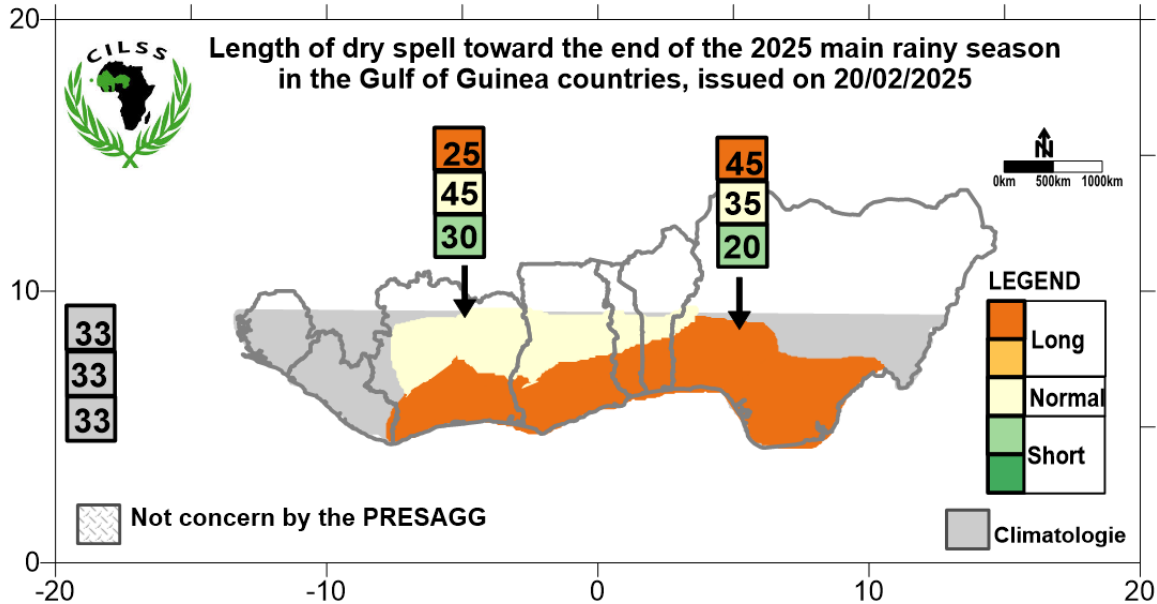


Figure 7: Forecast of the end dates of the 2025 major rainy season in the countries of the Gulf of Guinea.

2.6. Cessation date of the season

This year, early to normal end-of-season dates are expected over the southern strip of the Gulf of Guinea countries, from central Côte d'Ivoire to southern Nigeria. However, normal to late end-of-season dates are expected over the extreme south of Nigeria (Figure 8).

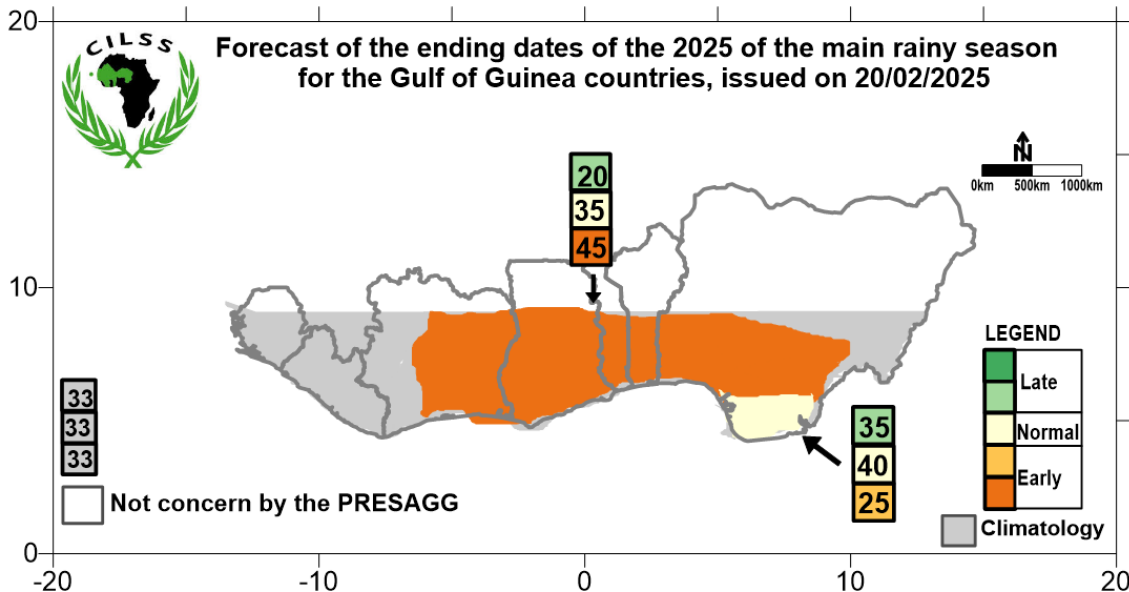


Figure 8: Forecast of dry sequences towards the end of the main rainy season 2025, in the countries of the Gulf of Guinea.

III. Recommendations

The potential negative impacts of the 2025 seasonal forecasts in the southern parts of the Gulf of Guinea countries could be as follows:

- In areas where above-average rainfall and runoff are expected, the risk of extreme events, such as flooding, remains very high. Similarly, the expected early onset of the season in most of the area would be favorable to flooding quite early.
- In areas where late onset dates, long dry spells and early cessation dates are expected, the risk of poor rainfall distribution is high. This could have negative impacts on crop growth. In basins where flows are expected to be below average, water supplies to dams, irrigated perimeters and fish production in flood-prone areas would be negatively impacted.

As for the potential positive impacts, they would be as follows:

- In areas where an early onset of the rainy season, above-average rainfall totals and flows are expected, stakeholders could seize these opportunities to increase agricultural, energy and fisheries production.

3.1. With regard to the risk of drought

Below average cumulative rainfall forecast for southeastern Nigeria and southwestern Côte d'Ivoire, early end-of-season dates and long dry spell durations pose a risk of water deficits in the areas concerned. These water deficits could disrupt plant growth and favor the development of crop pests. To reduce these risks, it is recommended to:

- Ensure regular and timely dissemination of weather, climate and hydrological information to users and decision-makers throughout the rainy season.
- Promote interaction with Meteorology, Agriculture and Hydrology technicians for specific information and advice on the actions to be taken.
- Promote the deployment of climate-smart techniques adapted to drought, including: the selection of species or varieties tolerant to water deficit, supplementary irrigation, and the efficient use of agrometeorological advice.

- Promote risk transfer to protect producers against the effects of crop losses through the subscription to index-based agricultural insurances.

3.2. With regard to the risk of flooding

The southern parts of the Gulf of Guinea countries are quite vulnerable to the risk of flooding due in particular to their denser population, their high level of anthropization, the rapid saturation of the soil and the low level of maintenance of sanitation networks. The forecast for the 2025 rainy season would be favorable to flooding, especially in areas where above average flows are expected. To reduce these risks, it is recommended to:

- Strengthen community awareness of the risks and their capacity to take preventive actions.
- Maintain permanent monitoring and ensure the production and dissemination of short- and medium-range forecasts, in particular by the national meteorological and hydrological services.
- Strengthen the response capacities of flood management, disaster risk management and humanitarian aid agencies, as well as the efforts of the press, communication platforms, NGOs and country early warning systems.
- Avoid the occupation of flood prone zones by homes, animals and crops.
- Ensure the safety of vulnerable people, including children, the elderly and those with limited mobility.

3.3. With regard to the risk of diseases

Wetlands and flooded areas can be favorable to the development of disease germs (cholera, malaria, dengue fever, schistosomiasis, etc.). Similarly, the long dry spells expected in some areas could lead 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 alert information on climate-sensitive diseases and raise awareness among the population, in collaboration with the meteorological, water resources and health services.

- Strengthen vigilance against crop diseases and pests by taking steps to prevent invasions (armyworm and other insect pests).
- Clean up populated areas and avoid contact with contaminated water, through drainage and rainwater evacuation operations.

3.4. With regard to the opportunities to seize

In view of the generally average to above average nature of rainfall in the Gulf of Guinea countries, it is recommended that the authorities, NGOs and projects support the various producers, including women and young people, to make better use of the rainy season by:

- supporting the deployment of techniques to increase crop yields and enhance water resources;
- strengthening agro-hydro-meteorological assistance to producers, including women and youth engaged in productivity;
- facilitating producers' access to improved seeds, adequate agricultural equipment, micro-finance, index-based agricultural insurance and other adapted technologies;
- taking advantage of average to above average situations to develop fish farming and optimize fishing yields in river basins.

Finally, it is recommended that stakeholders in the various sectors pay attention to the updates that will be made by the national meteorological and hydrological services, AGRHYMET CCR-AOS and ACMAD throughout the rainy season.

