



AGRHYMET CCR-AOS

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



Seasonal forecast of Agro-Hydro-Climatic characteristics for the main rainy season in the **Gulf of Guinea countries** (PRESAGG - 2024)

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The PRESAGG 2024 was organized in Accra, Ghana by AGRHYMET Regional Climate Center for West Africa and the Sahel (AGRHYMET CCR-AOS) and the Ghana Meteorological in collaboration with their partners, including ACMAD, National Meteorological and Hydrological Services (NMHSs) and river basin organizations of Gulf of Guinea coastal countries and the WMO.

For the 2024 major rainy season in the Gulf of Guinea countries it is expected, a late start of the season; a late to normal end to the season; normal rainfall amounts; long dry spells and average runoff in coastal river basins.

I. Current state and outlook for sea surface temperatures

1.1. Current state for sea surface temperatures

In January 2024, sea surface temperatures (SSTs) over the equatorial Pacific Ocean basin began to decrease significantly. The NINO3.4 index value was 1.78°C, still indicating the presence of an El-Nino situation. Over the tropical Indian Ocean, the dipole index continued to decrease and

still in a neutral phase, while warming persisted in the North Atlantic Ocean. However, in the Gulf of Guinea, the trend is towards a neutral situation. SSTs over the Mediterranean Sea remained warm (Figure 1).

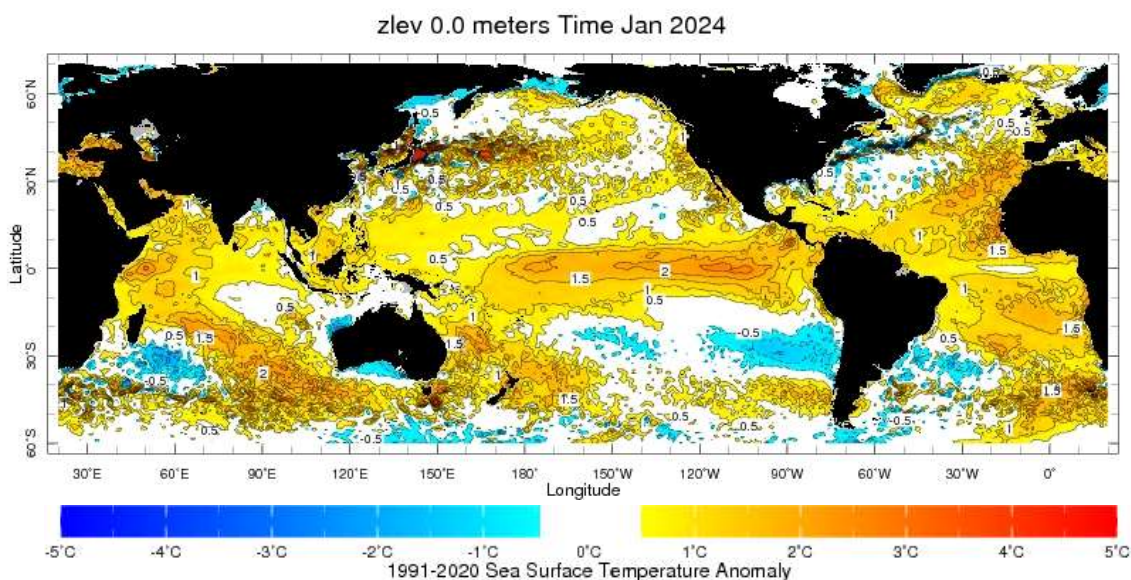


Figure 1: Sea surface temperature (SST) anomalies of January 2024, compared with the 1991-2021 average reference period (Source: NOAA)

1.1. Outlook for sea surface temperatures

According to ENSO forecasts for the Nino3.4 zone, a shift from warm (El-Nino) to neutral conditions is very likely over the next two months. Warming over the North Atlantic Ocean will continue for the next three to six months. For the Indian Ocean dipole, a neutral situation is expected. SST conditions over the Mediterranean will persist.

II. Seasonal forecasts of agro-hydro-climatic characteristics

The Agro-hydro-climatic forecasts for 2024 are based on data from 1991 to 2023. Comparisons are made with the normal (reference period) 1991-2020.

2.1. Onset of the agricultural season

Late to normal agricultural season starting dates are forecast for most of the southern regions of the Gulf of Guinea countries, stretching from south-central Côte d'Ivoire to south-western Nigeria, including south of Ghana, Togo and Benin (Figure 2).

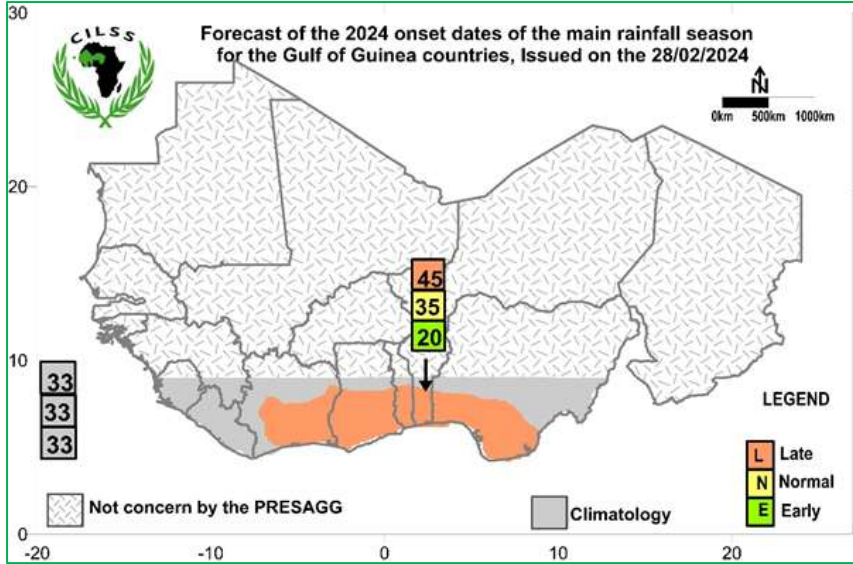


Figure 2 : Forecast of the onset dates for the 2024 major rainy season in the southern parts of the Gulf of Guinea countries .

2.2. Rainfall totals

For the March-April-May (MAM) period, equivalent to above average rainfall is expected over southeastern and southwestern Nigeria, southern Togo and Benin, southeastern Ghana, the western coast of Liberia, Sierra Leone and the southern coast of Guinea. On the other hand, on the west coast of Ghana, the coastal Côte d'Ivoire and the western coast of Liberia, below average-to-average cumulative rainfall are very likely. Elsewhere in the forecast area, a climatological situation is expected (Figure 3)

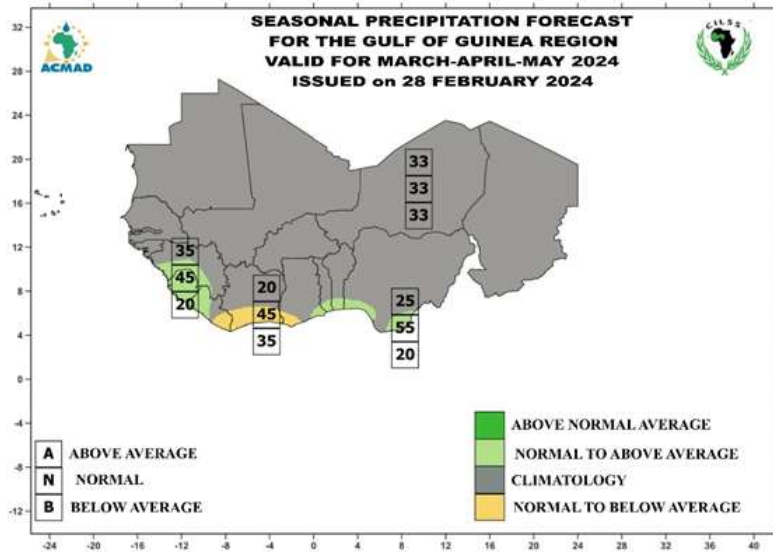


Figure 3 : Forecast rainfall totals for the March-April-May 2024 period in the southern parts of the Gulf of Guinea countries .

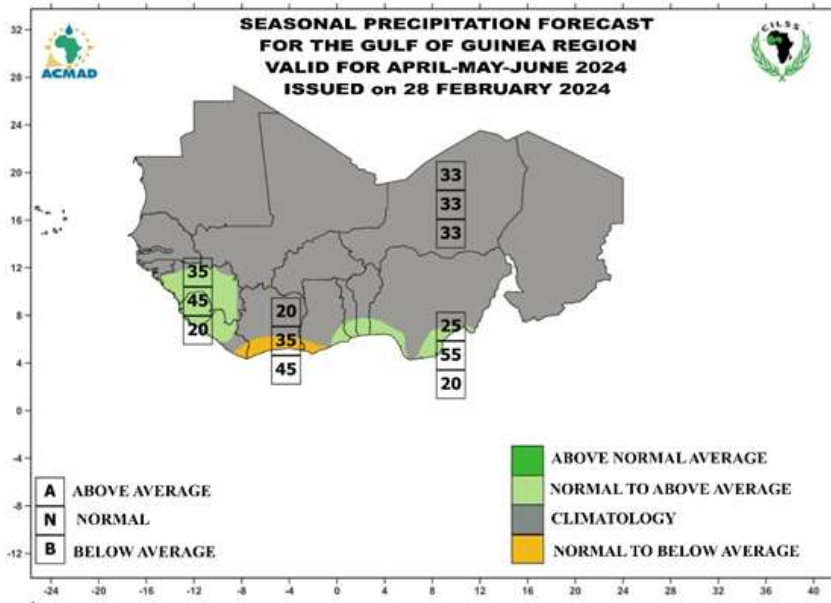


Figure 4 : Forecast rainfall totals for the period April-May-June (AMJ) 2024 in the southern parts of the Gulf of Guinea countries .

As for the April-May-June (AMJ) period, the same pattern as the MAM season is maintained, with equivalent to above normal rainfall totals over the bimodal zone stretching from Nigeria to southeast Ghana, over the areas extending from the western coast of Liberia to the southern coast of Guinea. For the eastern coast of Ghana, Côte d'Ivoire and the western coast of Liberia, rainfall totals are expected to be below the average for the reference period. Elsewhere in the forecast area, the climatological conditions are expected (Figure 4).

2.3. Coastal rivers basin runoff

Overall runoffs are equivalent to higher than normal in coastal river basins in the eastern flank of the area concern, while they will be equivalent to lower than normal in the western side of the basins of the Gulf of Guinea.

Specifically, excessive runoff is expected in the Ouémé basin (Benin), Lower Volta basin (Ghana), Densu basin, Tano basin, Ankobra basin and Pra basin (Ghana), Cavally basin, Comoé basins and Bia basin (Côte d'Ivoire), as well as in the Lower Niger Delta basins (Nigeria). On the other hand, the Bandama, Agneby (Côte d'Ivoire), Mono (Togo and Benin) and Lac-Togo basins are expected to have rivers flows equivalent to or slightly above normal. Finally, runoff deficits are expected in the lower Sassandra basin, and the coastal basins of Boubo and San Pedro (in Côte d'Ivoire), (Figure 5).

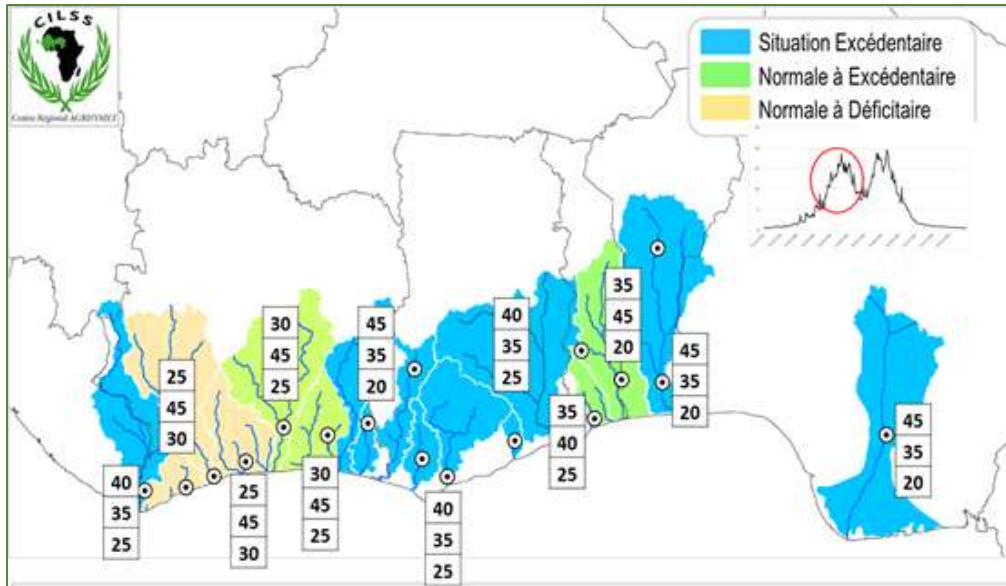


Figure 5: Forecast runoff in the coastal basins of the Gulf of Guinea countries, for the main rainy season of 2024.

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

Long to equivalent to average dry spell durations at the beginning of the agricultural season are forecast over the southern belt of Gulf of Guinea countries, extending from central Côte d'Ivoire to south-western Nigeria passing through southern Ghana, Togo and Benin. However, normal to short dry spells are expected in south-central Nigeria. Elsewhere, the climatology is expected to prevail (Figure 6).

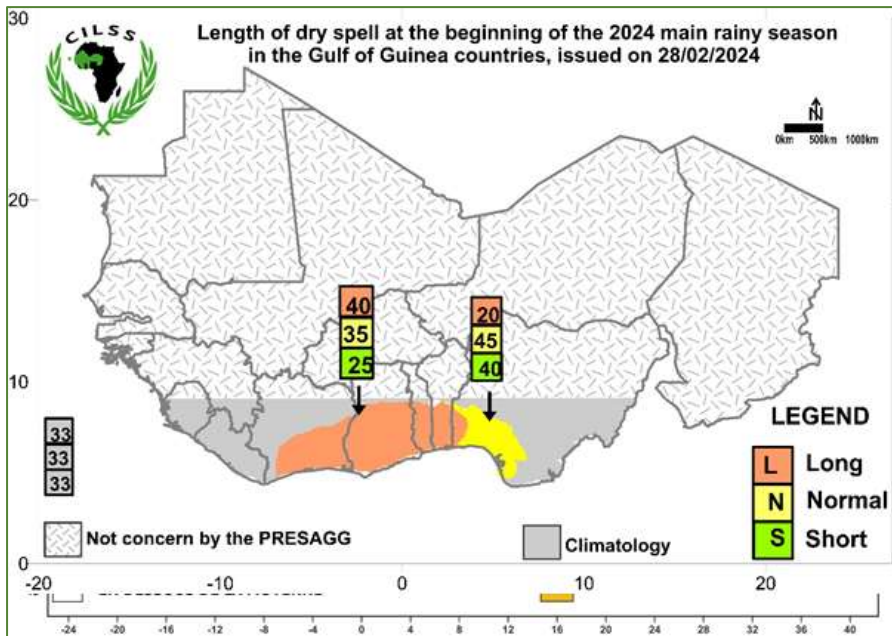


Figure 6: Forecast of the length of dry spells at the beginning of the 2024 main rainy season in the Gulf of Guinea countries

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

Towards the end of the agricultural season, long-to-medium dry spells are expected in the belt stretching from central Côte d'Ivoire to south-western Nigeria, also covering southern Togo, Ghana and Benin. Elsewhere, a climatological situation with equiprobability of categories is expected (Figure 7).

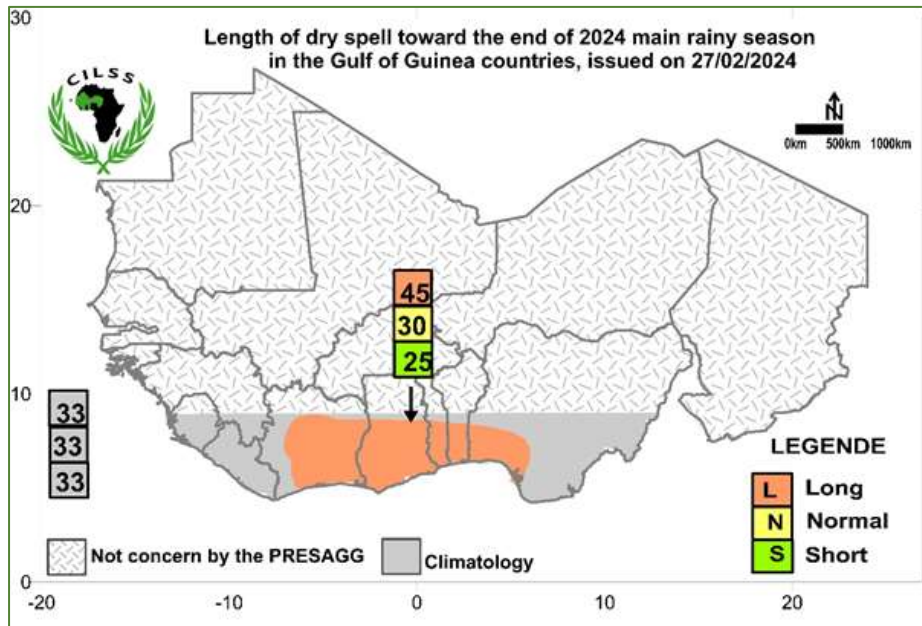


Figure 7: Forecast length of dry spells towards the end of the 2024 major rainy season in the Gulf of Guinea countries .

2.6. End-of agricultural season dates

Early to normal end-of-agricultural season dates are expected in the southern half of the Gulf of Guinea countries, stretching from southeastern Côte d'Ivoire to southwestern Nigeria, including southern Ghana, Togo and Benin. Elsewhere, climatological with equiprobability are expected (Figure 8).

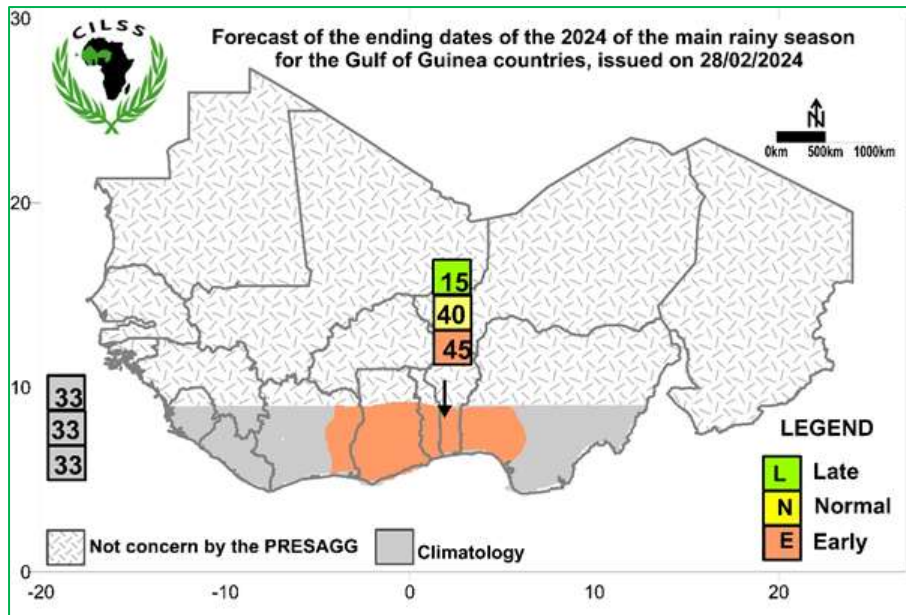


Figure 8: Predicted dates for the end of the 2024 major rainy season in the Gulf of Guinea countries .

III. Recommendations

3.1. With regard to drought

The situations of rainfall deficits in southern Côte d'Ivoire and surrounding areas in Ghana and Liberia, late to average season starting dates, early to average ending dates of season and longer to average dry spell durations point to risks of water deficits in the areas concerned. These water deficits could hinder the establishment and growth of plants and favor the development of insect pests of crops. Considering this situation, and in order to reduce the risk of a decline in agricultural yields, it is recommended to:

- diversify agricultural practices, through the promotion of irrigation, market gardening and the association of crops;
- adopt tillage techniques that conserve soil and water,
- favor short-cycle crop species and varieties that are most tolerant to water deficit,
- increase vigilance against crop pests (armyworm and other insect pests);
- promote and encourage the transfer of risks related in particular to rainfall to protect producers against the effects of crop losses, through the subscription to index-based agricultural insurance;
- promote the establishment of food stocks;
- strengthen monitoring of food and nutrition security in at-risk areas;
- continuously and effectively disseminate and communicate weather and climate information to end-users and decision-makers;
- interact with technicians from the National Meteorological, Agricultural extension and Hydrological agencies for specific information and agro-hydro-meteorological advice on the actions to be taken.

3.2. With regard to flooding

Coastal basins are areas with a high risk of flooding, due in particular to high levels of human activity, degradation of vegetation cover, rapid soil saturation, non-compliance with buffer zones and lack of maintenance of sewerage networks.

As a result, and despite the late season starting dates, early season ending dates, long dry spell durations expected in the southern parts of the Gulf of Guinea countries, it is not excluded to observe heavy rainfall events that could lead to localized flooding, especially in areas where average to above average runoff is expected. To reduce the risk of flood-related disasters (loss of property and human lives, loss of arable land and crops, water-borne diseases, pollution of water supply systems, etc.), it is recommended to:

- to maintain vigilance and follow the updates of these seasonal forecasts and the short- and medium-term forecasts produced and disseminated by the national meteorological and hydrological services,
- strengthen the monitoring and response capacities of agencies in charge of flood monitoring, disaster risk reduction and humanitarian aid;
- avoid the occupation of flood-prone areas, for homes and crops;
- ensure the cleaning of gutters and the sanitation of built-up areas
- Strengthen safety stocks of food and pharmaceutical products
- Avoid contact with sewage

3.3. Recommendations to make better use of the rainy season

Au In view of the generally average to below average nature of the major rainy season in the southern parts of the Gulf of Guinea countries in 2024, it is recommended that agricultural organizations, authorities, water resources managers, projects and NGOs, support producers, including women and youth, to make better use of the rainy season by:

- supporting the deployment of climate-smart techniques to increase crop yields in the face of climate risk factors such as droughts, floods and crop pests;
- strengthening agro-hydro-meteorological supervision and assistance mechanisms for producers, particularly for the benefit of the most committed men, women and young people;
- facilitating farmers' access to improved seeds, adequate agricultural equipment, micro-finance, index-based agricultural insurance and techniques adapted to situations of limited water availability,
- taking advantage of average to above average runoff situations to develop fish farming and optimize fishing yields in river basins,
- Strengthening the dissemination and communication of hydro-climatic information (including seasonal forecasts) and community awareness raising through radio, television, mobile telephony and information platforms for disaster risk reduction.

Finally, it is recommended that stakeholders in the various sectors be attentive to the updates that will be made by AGRHYMET RCC-WAS, ACMAD and the national meteorological and hydrological services throughout the season.