
EARLY WARNING BULLETIN FOR FOOD SECURITY

No. 2021/03

IN THE GAMBIA

Period: May 21 - 31, 2021



Government of The Gambia

Produced and Published by the Multidisciplinary
Working Group of the AGRHYMET Regional
Programme

Focal Point: Department of Water Resources

TEL: (+220) 4227631 / 422 28 72/ 4224122

FAX: (+220) 422 50 09 / E-MAIL: dwr@gamtel.gm



1. SEASONAL CLIMATE FORECAST FOR YEAR 2021 OVER THE GAMBIA

1.1 Introduction

The Department of Water Resources (DWR) has issued the July-August-September (JAS) 2021 seasonal rainfall prediction, as part of its responsibility of ensuring effective monitoring of the nation's climate and subsequent provision of the necessary weather advisories and early warnings to planners, decision-makers and operators in the various rainfall-sensitive socio-economic sectors. The sole aim of this effort is to enhance preparedness against climate hazards in the various sectors.

As in the previous years, the prediction was based on the strong tele-connection between El Nino/ Southern Oscillation (ENSO) and Sea Surface Temperature (SST) anomalies over the Central Pacific Ocean (Nino 3.4 region) and Tropical North Atlantic Ocean and the rain bearing systems over The Gambia.

On the inter-annual to seasonal time scales, the variability of sea surface temperature in the equatorial Pacific (El Nino / La Nina), tropical Atlantic and Indian Oceans influence rainfall during the period July-August-September in West Africa and particularly the Sahel. La Nina (or El Nino) conditions often coincide with the wet (dry) summer season over most of the Sahel.

When the Gulf of Guinea is warm (or cool) during April-May-June-July, it is favourable for wet conditions (or dry) over the adjacent countries. When the tropical Atlantic is cold north of Equator and warm South of it (or warm in the north and cold in the south), it is favourable for dry conditions (or wet) in the Sahel and wet conditions (dry) over the Gulf of Guinea countries.

The variations in sea surface temperature of the Indian Ocean influence rainfall over the eastern part of the Sahel (Chad, Sudan). Warming to the west of the Indian Ocean off the coast of east Africa is expected to favour a wet summer season over eastern Sahel.

1.2 JAS 2021 Rainfall Prediction

For the coming July-August-September period, considerable variations in the amount of rainfall in the various places over the country are expected, as shown on figure 1 below.

Annual rainfall amount is predicted **very likely** to be **normal** to **likely below normal** in the country. Most places in the country are however predicted to experience normal annual rainfall with the highest amount above 700mm expected in the western sector of the country. Amount in the range of 600 - 650mm are likely over the rest of the country.

The predicted 2021 rainfall values would therefore be normal over large areas of the country. The latest figures indicate a 25% chance of above normal rainfall, 45% chance of near normal rainfall and 30% chance for below normal rainfall. **Put in simpler terms, this means that the chance of having normal rainfall is higher than the chance of having a below normal rainfall.**

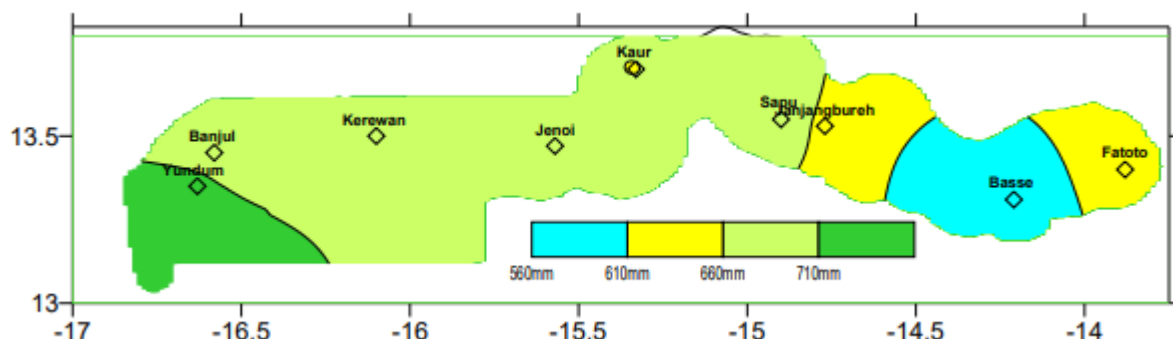


Figure 1: JAS 2021 forecast rainfall in mm

1.3 Beginning of the farming season (Onset)

In an agrarian economy like in The Gambia, where rain fed-agriculture is predominant, rainfall onset for the commencement of farming season is crucial. It affects establishment of crops, agricultural production and subsequently, national economies. Failure in the timely establishment of rainfall onset usually affects farmers. It is essential that, after a given date, the rain will become fairly continuous and sufficient to provide adequate soil moisture for and after planting is maintained as the season advances for successful establishment of crops.

The early arrival of rainfall associated with monsoon is more likely than climatology over parts of the country. In 2021, The Gambia is expected to see rainfall onset between **9th June and 18th June** as illustrated in figure 2 below. These dates are expected to be generally early by up to 2 weeks over large parts of the country.

Judicious use of these predictions in planning agricultural activities will lead to safe sowing and enhanced crop and food production. This information should be widely available to extension services and agencies that have the responsibility of advising farmers on appropriate time of planting and varieties to be planted.

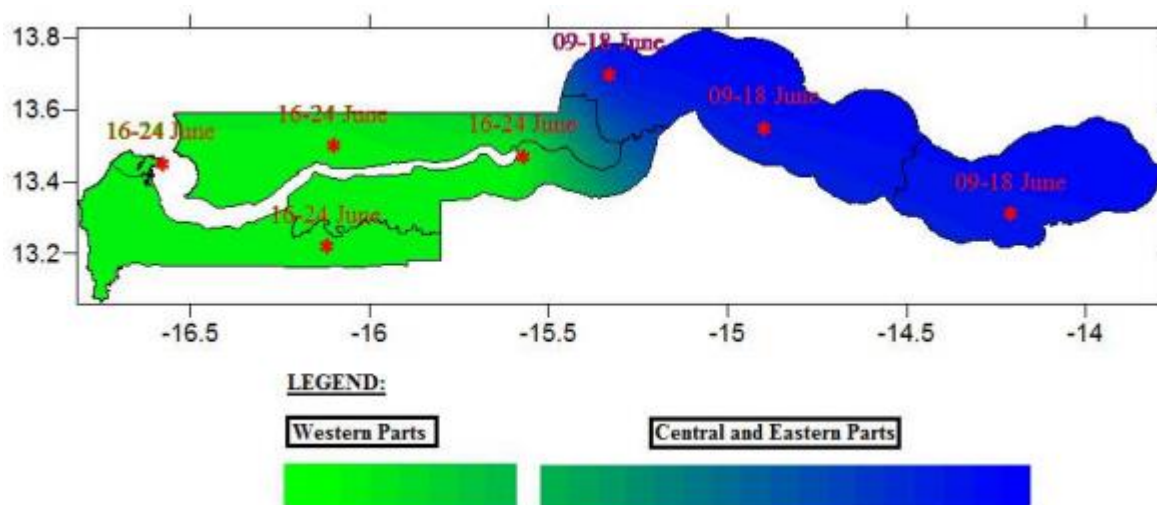


Figure 2: 2021 Forecast onset dates

A normal length of season is predicted for most part of the country. It is expected to be in the range of 110-130 days. Medium to long dry sequences are expected at the start and end of the rain season respectively in most part of the country.

The flows at the River Gambia are expected to be **above normal flow**.

2. POTENTIAL SOCIO-ECONOMIC IMPLICATIONS OF 2021 SEASONAL RAINFALL PREDICTION.

Hazards associated with 2021 Seasonal Rainfall Prediction

- Early to Near normal onset very likely over much of the country
- Early to normal end dates
- Normal to long dry spells during the start and end periods respectively;
- Torrential rains accompanied by strong winds
- Flash flooding due to heavy precipitation
- Heavy thunderstorms
- High humidity and excessive heat
- Above normal River flow.

2.1 For the agriculture sector

In view of the expected average to below average rainfall totals all over The Gambia, average to longer dry spell durations, it is recommended to:

- Support the deployment of techniques to increase crop yields and foraging plants, through the choice of varieties of high yields crop and good seedlings and use of fertilizers (organic manure and mineral fertilizer),
- Strengthen the agro-hydro-meteorological supervision and assistance mechanisms for producers;
- Facilitate farmers access to improved seeds, in particular those with high yields that are adapted to normal to below normal rainfall.
- Use available water through the promotion of irrigation, recession of crops and aquaculture, in particular in flood plains.
- Invest in planting more seeds and exploit more arable land;
- Strengthen vigilance against weeds and pests (locusts and other insects).
- Sow early arable land;
- Prioritize high land areas for planting particularly areas along the River Gambia.

2.2 Disaster Management Sector

With the expected hazards mentioned above, the risk of both flash and riverine flooding is high. In order to mitigate these risks to people, animals, crops and goods, it is recommended to:

- Prevent the uncontrolled occupation of flood-prone areas, particularly in urban areas,
- Ensure the regular cleaning of the drainage channels Closely monitor the alert thresholds in the various high-risk flood sites;
- Reinforce the flood protection dikes;

- Strengthen the communication of seasonal forecasts and awareness raising among vulnerable communities, by involving state actors and the various disaster risk reduction platforms in the communication and crisis management chain,
- Strengthen the monitoring and response capacities of agencies in charge of flood monitoring, disaster risk reduction and humanitarian aid,
- Conduct simulation exercises as part of the preparation of flood response plans

2.3 Regarding Phytosanitary and food insecurity risks

In view of the generally wet conditions with the quantities of rain above the seasonal average in 2021 in the **Central and Eastern Sahel**, it is possible to observe an incursion of locust swarms' pilgrims thanks to the early start and long dry stretches planned in the Sahelian band. This risk, associated with the situation related to COVID19 pandemic, could worsen food insecurity situations in the Sahel and West Africa.

To prevent the risks, it is recommended that:

- States to strengthen surveillance for desert locust invasion in the risk areas of frontline countries and to maintain vigilance against other crop pests such as the fall armyworm;
- Inter-Governmental Organizations (IGOs) in the region to mobilize Technical and Financial Partners (TFPs) and the international community to support the country for a preventive management of phytosanitary risks.
- TFPs, to support the Sahel and West African States, the IGOs of the region in their efforts to control crop pests and other plagues that can negatively impact agricultural production and, beyond that, the food and nutritional security of the people.

2.4 Faced with the risk of drought

With the expected normal to below normal rainfall for the 2021 rainy season and average to long dry spells expected at the start and end of the season, the installation of crops and fodder biomass over most places could be delayed. The water deficits can indeed lead to planting failures, affect the plant growth, promote the development of insect pests of crops, delay the return of transhumant to the North, prolong the lean season for animals and cause conflicts between breeders and farmers. To prevent these risks, it is recommended to:

- Diversify agricultural practices, in particular through the adoption of techniques for managing water on the plot and promoting irrigation and market gardening to reduce the risk of production in exposed areas;
- Set up stocks of livestock feed,
- Prevent conflicts, by sensitizing pastoralists and farmers
- Strengthening the monitoring and guidance of the movements of breeders at the search for pastures and water points,
- Build capacity of crop protection services to intervene in the event of outbreaks of crop pests,
- Ensure integrated management of water resources for a better consideration of the different uses, in particular the needs of hydro-electric dams and hydro-agricultural facilities,
- Farmers to interact with the technicians from the Department of Water Resources and from the extension and plant protection services of the Department of Agriculture for agro-hydro meteorological advice;

2.5 Regarding health risks

To reduce the risk of water-related diseases (Cholera, malaria, diarrhea, etc.) in flooded areas, it is strongly recommended to:

- Raise awareness on climate-sensitive diseases, in collaboration with meteorological, hydrological and health services,
- Vaccinate people and animals, encourage the use of mosquito nets, set up stocks of medicine for curative treatments, especially in areas that will be difficult access following floods,
- Monitor water quality and set up stocks of treatment products
- Strengthen the capacities of national health systems and disaster risk reduction platforms,

2.6 Conclusion

A forecast is just a set of probabilities attached to a set of future events. In order to understand a forecast, all one needs to do is to interpret those bits of information. Unfortunately, there are problems in communicating each element, so that the user of a forecast understands what its producer means. Following the consistency between the seasonal forecast probabilities and the observed rainfall that has been issued since 1998, we are recommending that the JAS seasonal forecast issued each year in the month of May to be used by the policy-makers as an early warning information. Timely climate information can lead to important decisions by producers that can dramatically increase productivity windows of opportunity. Armed with Climate information, important decisions can be made on amounts of food to store for food reserve and excess for sale as envisaged in National Development Plan 2018 - 2021. Pleased to inform the Cabinet and all those involved in monitoring the agricultural production that the update of the 2021 seasonal rainfall prediction will be made by Department of Water Resources at the end of June 2021.

3. PROGRESS OF THE RAINY SEASON

The Inter-Tropical Discontinuity (ITD), demarcating boundary between the dry and moist regions over West Africa continued its northward movement especially along its eastern axis. However, the mean surface position of the ITD was located over southern Senegal, stretching towards southern Mali, northern Burkina Faso and onto Niamey. Thus, the ITD was situated south of The Gambia.

Places to the north of the ITD were dry and stable with dust haze observed over The Gambia, Senegal and Mali. However, to the South of the ITD were characterized with thunderstorms and rain over the Gulf of Guinea states including Ghana, Ivory Coast, Benin and Togo.

3.1 Outlook of the next dekad (June 1 - 10, 2021)

The atmosphere is expected to remain warm with partly cloudy to cloudy conditions during the period (June 1 to 8). Thereafter, rain and thunderstorm is expected to affect the country.

3.2 Agrometeorological Situation

3.2.1 Rainfall

As in the previous dekad, no rainfall was recorded throughout the country. This situation is similar to that of last year 2020 during the same period.

3.2.2 Temperature

Average temperatures across the country varied between 28°C in the Western Third and 36°C in the Middle and Eastern Thirds of the country respectively. Minimum temperatures dropped to 19°C in the Western Third, whereas maximum temperatures peak at 45°C recorded over the Eastern Third of the country.

3.2.3 Winds

Winds were light, moderate and occasionally strong in speed across the country, with a maximum gust of 29.5 km/hour recorded over the country.

3.2.4 Sunshine Duration

During this dekad, sunshine duration on average was above 9 hours countrywide.

3.2.5 Relative Humidity

An average lowest relative humidity (RH) varied between 16% in the middle third and 57% in the western third; whereas average highest RH varied between 52% in the middle third and 95% in the western third of the country.

4. AGRICULTURAL SITUATION

As the rainy season draws closer, farmers across the country are busy on field clearing, acquisition and preparation of seeds and farm implements. However, most farmers are yet to be fully engaged in these pre-season activities, even though it is high time to do so to avoid delay in their rainy season activities.

4.1 Crop Production

Crop production during this dekad was mainly dry season rice production in CRR, in which crops are at advance vegetative stages. Vegetable gardening is also in progress in lowlands especially in the Western Half of the country. However, for upland crops no sowing was observed.

4.2 Crop Protection

Up to the time of publication, no major pest or disease outbreak on crops was reported throughout the country.

Banjul, June 02, 2021
National MWG of The Gambia

Composition of MWG:

Department of Water Resources
Planning Services - Department of Agriculture (DOA)
Communication, Extension & Education Services - DOA
Animal Health & Production Services - DOA
Plant Protection Services - DOA
National Disaster Management Agency (NDMA)

Direct your comments and questions to:

The Director
Department of Water Resources
7 Marina Parade, Banjul
The Gambia
Tel: (+ 220) 422 76 31 / 422 41 22 / 890 52 29
Email: dwr@mofwrnam.gov.gm