



# AGRICULTURAL CALENDAR

## FOR THE 2024 SECOND CROPPING SEASON

### in the Monomodal, Bimodal and Western Highlands Agro-Ecological Zones of Cameroon



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## GLOSSARY

***Agricultural Calendar:*** The agricultural calendar is a decision-making tool for agricultural activities. It presents the types of agricultural crops (maize, cocoa, beans, etc.), the agricultural activities (preparing the soil, sowing, maintenance, etc.) in a given agro-ecological zone (Sudano-Sahelian, Guinea High Savannah, Highlands, bimodal rain forest and monomodal rain forest).

***Climate:*** All meteorological elements and phenomena (temperature, atmospheric pressure, precipitation, wind, etc.), as well as their dynamics in time and space (expressed in seasons) that characterize a given place or a specific geographical area over a long period (at least 30 years according to the WMO).

***La Niña*** is a cold marine current, an unusual climate phenomenon that usually occurs every 2 to 7 years in the equatorial Pacific and especially along the coast of Latin America. It is characterized by the upwelling of oceanic waters from the depth to the surface. These waters are usually highly nutrient-rich. It affects the global circulation of the atmosphere, and its consequences are worldwide: modification of wind patterns, rainfall, the appearance of extreme climate events such as floods, extreme droughts, etc.).

***El Niño*** is a warm ocean current (opposite of ***La Niña***), characterized by an increase in ocean surface temperature. It is a large-scale oceanic phenomenon that takes place in the equatorial Pacific, with a periodicity of 2 to 5 years. It affects the large-scale global circulation of the atmosphere and the wind regime. El Niño is the warm phase of the coupled ocean/atmosphere phenomenon known as ENSO (El Niño Southern Oscillation).

***Climate Variability:*** Variations in meteorological parameters (temperature, rainfall, etc.) around an average on seasonal and inter-annual time scales in a given region.

***Climate Change:*** also known as climate disruption, corresponds to a long-term change (from one decade to one million years) in the statistical parameters (average parameters, variability, etc.) of the Earth's global climate or its various regional climates. These changes may be due to intrinsic earth processes, external influences or, more recently, human activities.

***Agro-Ecological Zone:*** A geographical unit defined in terms of climate, geomorphology and soils, and/or vegetation cover and possessing a specific range of potentials and constraints for land use. Cameroon has five agroecological zones, i.e. the Sudano-Sahelian, the Guinea High Savannah, the Bimodal Rain Forest, the Highlands and the Monomodal Rain Forest Zones.

## SUMMARY

The climate forecasts for August-December 2024 indicate a general decrease in rainfall in the Centre, East and South regions (the Bimodal Rain Forest zone). However, there is an increase in rainfall in the Littoral and South West regions (the Monomodal rain forest zone) and the West and North West regions (the Highlands zone).

### Weather forecasts for August-December 2024 indicate that:

#### Regarding the RAINY SEASON, the probable start dates are as follows:

- ❖ The continuation of the Rainy season in the Monomodal Zone (**Littoral** and **Southwest regions**).
- ❖ Generally, in the **East** and **South regions**, the long rainy season is expected to start from the **second Dekad of August 2024 (specifically from the 13<sup>th</sup>)**.
- ❖ **However**, **Betare Oya**, **Garoua Boulai**, and **Bangbel** in the **East region** are experiencing the continuation of the rainy season, similar to the **Guinean High Savannah Zone**. Additionally, **Kribi**, **Campo**, and **Lolodorf** in the **South region**, are also observing the continuation of the rainy season, just like the **Monomodal Zone**.
- ❖ Generally in the **Center region**, the long rainy season will begin by the **14<sup>th</sup> August 2024**. **However**, **Ngambe Tikar**, **Sangbe**, and **Ndipa** in the Center region are still observing the continuation of the Rainy season, just as the **Guinean High Savannah Zone**.

#### Probable END DATES of the RAINY SEASON in the Monomodal, Western Highlands & Bimodal:

- In the **monomodal zone** and the **high plateau zone**, the rainy season is expected to end during the **second Dekad (around the 18<sup>th</sup>) of November 2024** in the **West and Northwest regions**, and the **third Dekad (around the 23<sup>rd</sup>) of November 2024** in the **Littoral and Southwest regions**.
- In the **bimodal zone**, the long rainy season is expected to end around the **third Dekad of November 2024** in the **East, Centre, and South regions**, respectively.

#### Based on the above conclusions, ONACC recommends the following start dates for planting:

- ❖ For the Monomodal Zone (**Littoral** and **Southwest regions**), planting should have started based on the crop type.

- ❖ From the **15<sup>th</sup> August 2024** in the **East** and **South regions**. **However**, **Betare Oya, Garoua Boulai, and Bangbel** in the **East region** are expected to follow the **Guinean High Savannah cropping calendar (2<sup>nd</sup> Dekad of April)**. Additionally, **all localities** around the coastal strip (e.g. **Kribi, Campo, and Lolodorf** etc.) in the **South region**, are expected to follow the **cropping calendar** of the **Monomodal Zone (1<sup>st</sup> Dekad of March)**.
- ❖ From the **16<sup>th</sup> August 2024** In the **Center Region**. **However**, **Ngambe Tikar, Sangbe, and Ndipa** in the Center region are expected to follow the **Guinean High Savannah cropping calendar (2<sup>nd</sup> Dekad of April)**.

## 1. INTRODUCTION

### 1.1. Context and justification

The 6<sup>th</sup> report of the Intergovernmental Panel on Climate Change (IPCC) of 2022 confirms the evidence of climate change and its adverse effects on socio-economic development and ecosystems. This report particularly reveals the very vulnerable character of Africa to climate change and underlines the numerous risks and impacts that this continent is already undergoing (in the countries of the Horn of Africa, it is observed that extreme droughts lead to agricultural losses resulting in a lack of access to food for the populations). In 2011, 12.4 million people were suffering from famine in Djibouti, Ethiopia, Kenya and Somalia (FAO, 2011). Thus, identifying solutions to the negative impacts on development sectors caused by climate disruption is becoming a priority for African countries.

In Cameroon, climate change is reflected, among other things, in the disruption of the onset and end dates of the rainy seasons, the decrease in rainfall amounts, the poor distribution of the number of rainy days, the multiplication of extreme climate events (floods, extreme droughts, violent winds, sandstorms and haze, etc.), which are increasingly recurrent and catastrophic. The corollary of this is the disruption of agricultural and fishing activities, the resurgence of plant diseases, the loss of biodiversity, the multiplication of conflicts over the management of natural resources, food insecurity, population migration and the degradation of ecosystems.

The absence of forecasts and baseline information on these hazards increases the country's vulnerability to climate change (PNACC, 2015, National Communications, 2005 and 2014, PAN-LCD, 2006, NBSAP, 2012).

Cameroon, aware of the stakes of this global phenomenon for its socio-economic development, has engaged in various processes related to climate change, notably ratification of the United Nations Framework Convention on Climate Change, adherence to the Kyoto Protocol, and very recently, the signature and ratification of the Paris Agreement. In order to better monitor the commitments undertaken within the framework of the above-mentioned Conventions and Protocols, the Head of State created and operationalized the National Observatory on Climate Change (NOCC), and entrusted it with the main mission of **"monitoring and assessing the socio-economic and environmental impacts of climate change, and proposing preventive, mitigation and/or adaptation measures to the adverse effects and risks associated with these changes"**. Thus, the Observatory, in collaboration with the Ministry of Agriculture and Rural Development (MINADER), produces an annual agricultural calendar. This calendar is a decision-making and advisory tool for agricultural activities and adaptation to the effects of climate change. For the season from August to December 2024, an agricultural calendar specific to the Monomodal and Bimodal rain forest zones, as well as the Highlands zone, has been produced.

## 1.2. Methodology

Production of agricultural calendars for the Monomodal and Bimodal rain forest Agroecological Zones (AEZs) and the Highlands zone requires:

### a) Data collection

It involves :

- Climate data collected from the platforms of the major international centres (AccuWeather, Windy, IRI, NOAA, MétéoFrance, ACMAD, NCEP, etc.);
- Field data on farmers' experiences;
- Information used in the activity reports of the technical structures of MINADER, IRAD and CIFOR.

## **b) Treatmentt and analysis**

The data was processed using statistical software (Excel, SPSS, Stata, ArGIS, QGis) and output from NOCC-MC's climate model. The data was analysed using averages, percentages and deviations, supported by descriptive analyses.

To process and analyse the information, several working sessions were organized by a joint technical team made up of experts from MINADER and NOCC.

After review sessions, the agricultural calendars were validated at a workshop attended by a number of stakeholders.

## **2. SUMMARY OF CLIMATE FORECASTS FOR THE PERIOD FROM AUGUST - DECEMBER 2024**

In view of the global climatic context, the research work carried out by NOCC on the spatial and temporal dynamics of rainfall in the five agro-ecological zones of Cameroon in relation to La Niña episodes (from March to May from 1950 to 2022 and the one ongoing since August 2023) and the results of the work of the international climate prediction centres such as (NOAA, METEO France, NCEP, ACMAD, etc.), the period from August to December 2024 will be marked by:

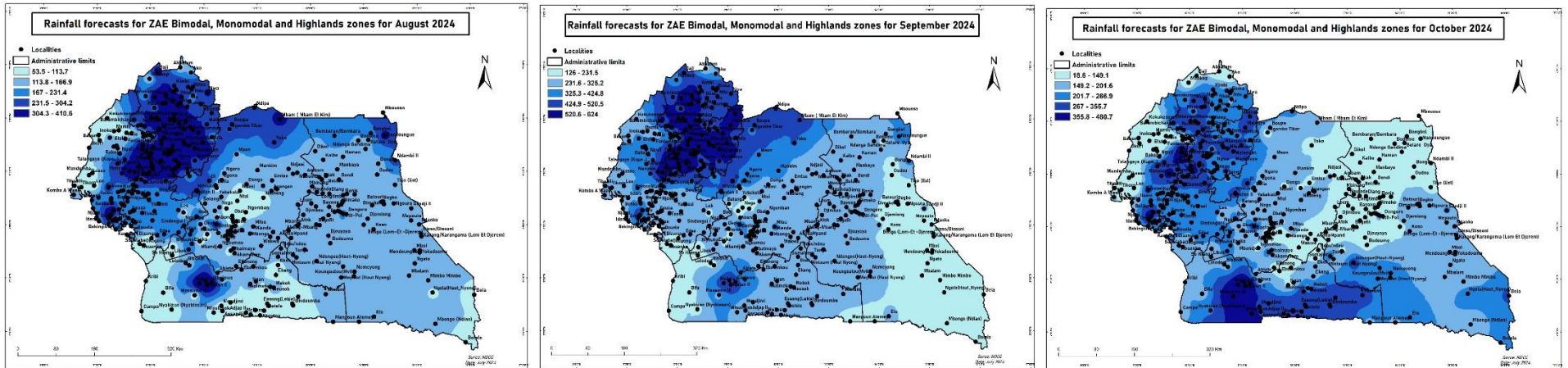
### ***A. At the general level:***

- a progressive installation of the monsoon in all parts of the National Territory.
- a retreat of the Harmattan towards the southern part of Lake Chad;
- a migration of the Inter-Tropical Front (ITF) towards the southern part of Lake Chad;

### ***B. In the three Agroecological Zones of Interest:***

Start dates of the main rainy season

- In the bimodal rainfall forest zone, the likely start of the rainy season is from:
  - The second decade (from the 13th) of August in the East and South regions;
  - The second decade (from the 14th) of August in the Center region.
- In the **monomodal rainfall forest zone and the high plateau zone**, the **rainy season is continuing** in the West, Northwest, Littoral and Southwest regions.



*Figure 1 : Rainfall forecast map for the months of August, September and October 2024 for the areas of interest.*

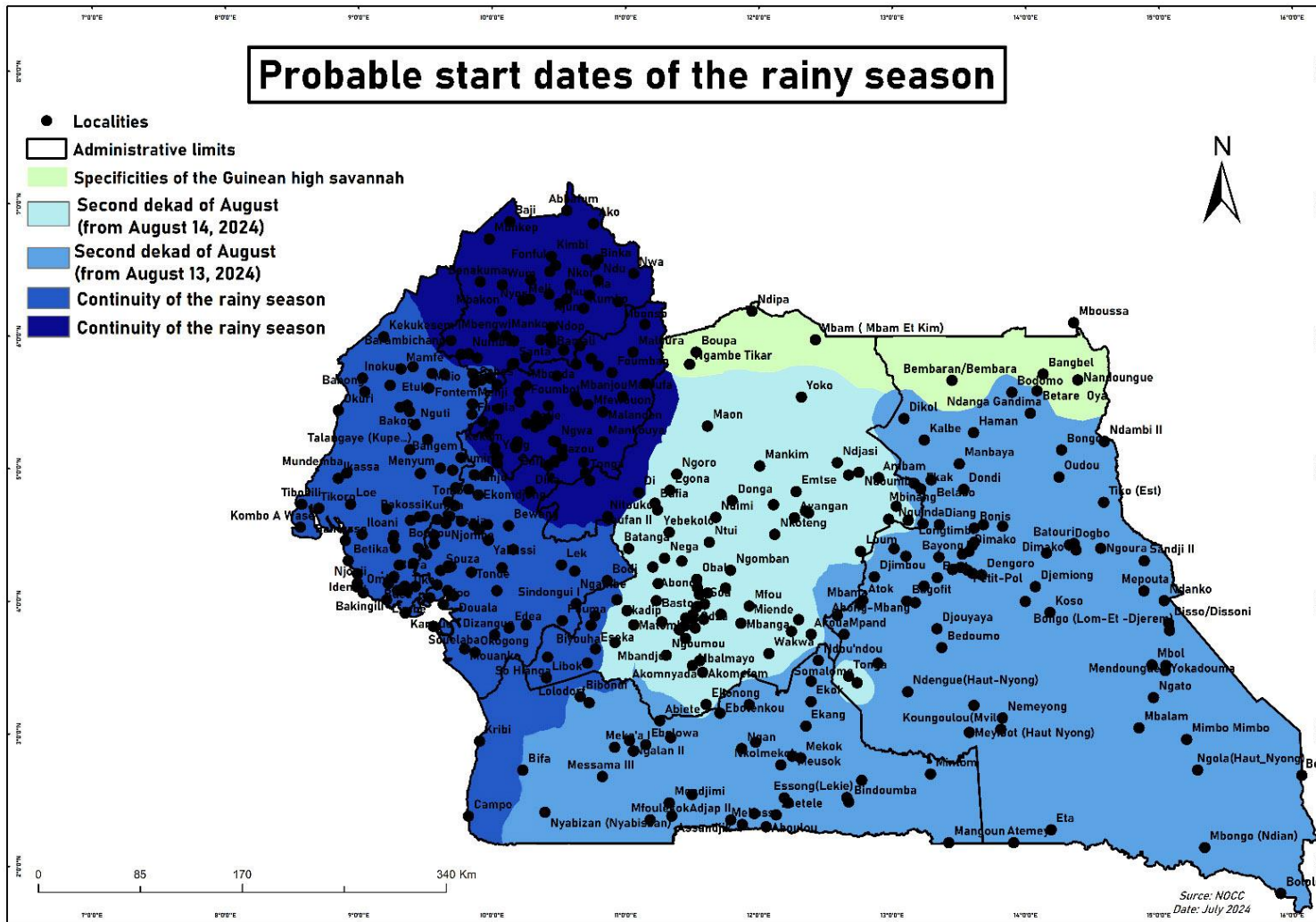


Figure 2: Forecast map of the start dates of the rainy season in the southern part of Cameroon

Based on the above conclusions, the National Observatory on Climate Change (NOCC) recommends planting from:

- **first dekad of March (from the 5<sup>th</sup>) in the Littoral and South West regions.** However, for certain localities like **Manjo, Nkongsamba, and Melong** in the **Littoral**, as well as **Baranka, Bechati, Menji, and Bangem** in the **Southwest**, it is advised to start planting from the **14<sup>th</sup> of March 2024**.
- **second dekad (from the 14<sup>th</sup>) of March in the Centre and South regions;** Except for localities like **Yoko and Sangbe** in the **Center**, where planting is recommended from the **7<sup>th</sup> of April 2024**. However, for localities like **Kribi, Campo, and Lolodorf** in the **South region**, where the rainy season has already begun, farmers can start planting, similar to the case of the Littoral region.
- **second dekad (from the 14<sup>th</sup>) of March in the West and North West regions;** Except for **Nwa** and its environs in the **Northwest**, where planting is recommended to start by **7<sup>th</sup> April 2024**.
- **third dekad (from the 18<sup>th</sup>) of March in the East region.** However, for **Mabele and Garoua-Boulai**, it is advisable to start planting from the **7<sup>th</sup> of April 2024**.

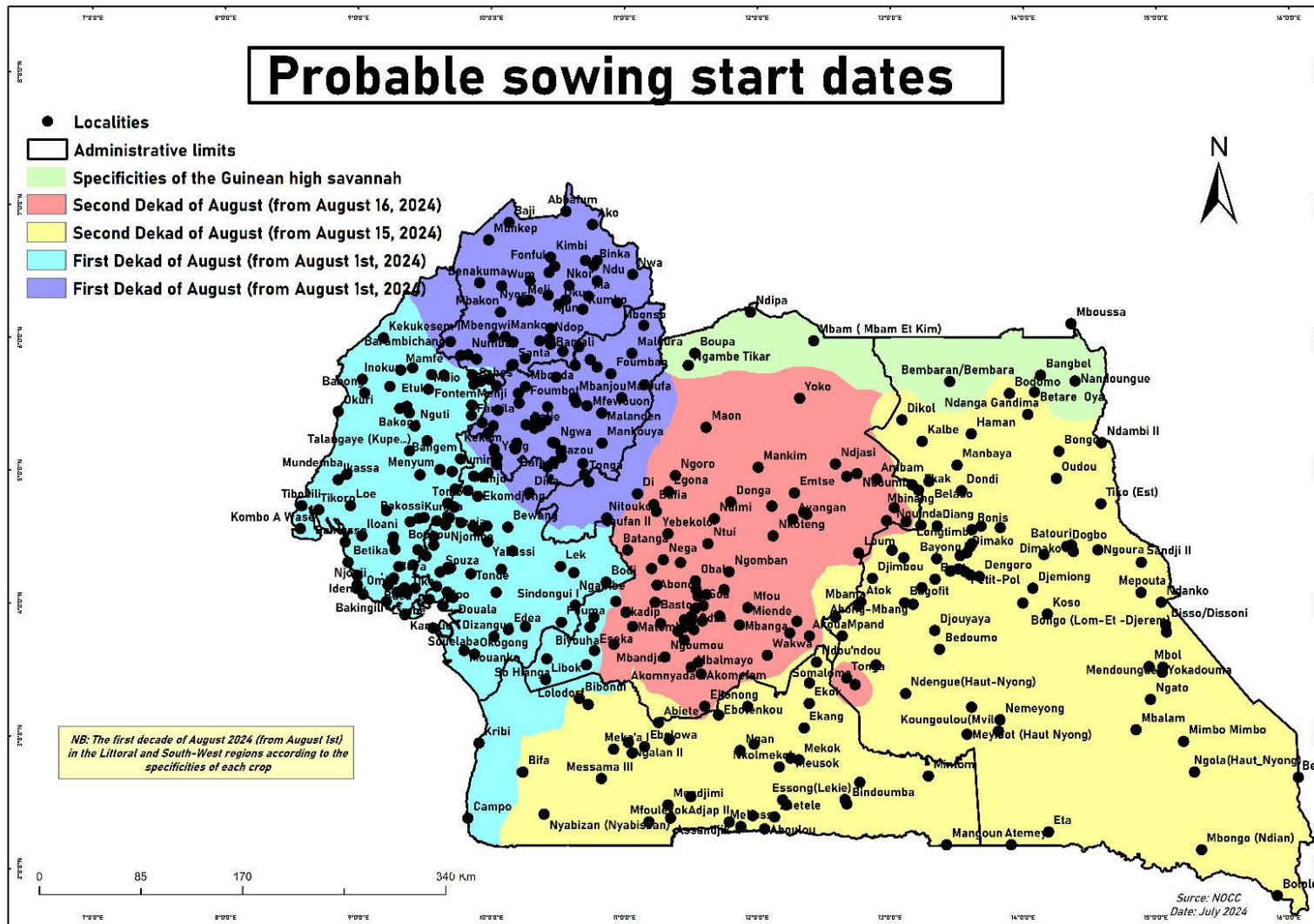


Figure 3: Spatialization of probable start dates for planting in the far southern region of Cameroon for the second agricultural season of 2024

### 3. THE MAIN AGRICULTURAL ACTIVITIES TO BE CARRIED OUT IN THE AREAS OF INTEREST

This agricultural calendar proposes a schedule to help producers better plan, manage and monitor agricultural operations in order to adjust to climatic perturbations so as to optimize crop yields.

#### Activity Schedule

The main agricultural operations taken into account in this calendar are:

- a) **Land preparation:** it usually starts before the presumed date for final planting of the crop (sowing or planting).
- b) **Clearing and cleaning:** This is the clearing and cleaning of a site. It is the natural or human destruction of a wooded area, forest or "wasteland", when the aim is to put an end to the wooded state, generally to cultivate the land or transform it into pasture.
- c) **Labour:** it refers to any action related to the exploitation of agricultural land, generally using manual agricultural tools (spade, hoe, plough, etc.) or mechanised tools (power tillers, tractors, etc.).
- d) **Sowing/planting:** It consists of planting seeds after ploughing and/or ridging. There are two sowing methods: direct sowing and nursery sowing.
- e) **Maintenance:** This activity includes fertilizer application, weeding, hoeing, pruning, etc.
- f) **Phytosanitary treatmentt:** This involves applying plant protection products to prevent or fight against various plant attacks or diseases.
- g) **Harvesting:** all the agricultural work involved in collecting the useful parts of cultivated plants (fruit, seeds, stems and fibres, leaves, roots, bulbs, etc.).

## 4. SCHEDULE OF ACTIVITIES

### 4.1. Bimodal rainforest zone (Centre, South and East regions)

Table 1: Schedule of agricultural activities for the **Bimodal Rainforest Zone**  
(Centre and South regions).

Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
Rainfed rice Maize	Land preparation	█																	
	Sowing				█														
	Maintenance (weeding)							█											
	Fertilisation							█											
	Phytosanitary treatment + (Rainfed rice)										█								
	Harvesting																█		
Groundnuts Soybean Nièbé Beans	Land preparation	█																	
	Sowing				█														
	Maintenance (weeding)							█											
	Fertilisation							█											
	Phytosanitary treatment										█								
	Harvesting																█		
Tomate Pepper Bell Pepper	Land preparation	█																	
	Transplanting				█														
	Maintenance (ridging)							█											
	Fertilisation							█											
	Phytosanitary treatment							█											
	Harvesting													█					
Watermelon Cabbage	Land preparation	█																	
	Sowing				█														
	Maintenance (ridging)							█											
	Fertilisation							█											

Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
	Phytosanitary treatment																		
	Harvesting																		
Palm tree (Old plantation)	Fertilisation																		
	Maintenance (weeding, pruning)																		
	Harvesting																		
Plantain/banana (New plantation)	Land preparation																		
	Planting																		
	Maintenance (weeding, Staking, Pruning, Defoliation, phytosanitary treatment, etc.)																		
	fertilisation																		
Plantain/banana (Old plantation)	Phytosanitary treatment																		
	Maintenance (weeding, Staking, Pruning, Defoliation, phytosanitary treatment, etc.)																		
	fertilisation																		
Paw-paw (New plantation)	Harvesting																		
	Land preparation																		
	Planting																		
	Maintenance (weeding etc..)																		
Paw-paw (Old plantation)	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		
Cassava	Maintenance (weeding etc..)																		
	Phytosanitary treatment																		
	Harvesting																		
	Fertilisation																		
	Maintenance (weeding, pruning, etc..)																		
Sweet potatoe	Sowing																		
	Land preparation																		

Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
Taro	Maintenance (weeding, pruning, etc..)																		
	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		
Pineapple	Land preparation																		
	Sowing																		
	Maintenance (ridging)																		
	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		
Perennial crops (pear, Mango, Safou) <sup>1</sup>	Setting up the Plantation																		
	Land preparation																		
	Planting																		
	Maintenance (Weeding, maintenance and sanitary pruning, etc..)																		
	Phytosanitary treatment																		
	Fertilisation																		
Citrus fruits (Grapefruit, Lemon, Mandarin, Orange, Pomelo)	Setting up the Plantation																		
	Land preparation																		
	Planting																		
	Maintenance (Weeding, maintenance and sanitary pruning, etc..)																		
	Phytosanitary treatment																		
	Fertilisation																		
Cocoa (New plantation)	Setting up the Plantation																		
	Land preparation																		
	Planting																		
	Maintenance (weeding)																		

<sup>1</sup> For fruit trees (improved varieties), the harvest is done three (03) years after planting..

Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3
	Phytosanitary treatment																		
	Fertilisation																		
Cocoa (Old plantation)	Maintenance (clearing, pruning, harvesting, etc.)																		
	Phytosanitary treatment (Fight against black pod)																		
	Phytosanitary treatment (fight against anti-capsid)+ leaf fertilization																		
	Harvesting																		
Coffee (New plantation)	Setting up the Plantation																		
	Land preparation																		
	Planting																		
	Entretien																		
	Phytosanitary treatment																		
	Fertilisation																		
Coffee (Old plantation)	Maintenance (clearing, pruning)																		
	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		

**D1...n=Dekad (10 consecutive days) ; C=Agricultural Campaign**

*NB : All these climate forecasts will be updated every 10 days in the decadal alert bulletins for better planning of agricultural activities.*

## 4.2 Monomodal and Highland zones (South West, Littoral, West and North West Regions)

Table 5: Agricultural activities schedule for the **Monomodal and Highland Zones (South West, Littoral, West and North West Regions)**

Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3
Rainfed rice Maize	Land preparation	█			█														
	Sowing					█	█	█											
	Maintenance (weeding)						█	█	█	█	█	█							
	Fertilisation						█	█	█	█	█	█							
	Phytosanitary treatment						█	█	█	█	█	█							
	Harvesting																	█	█
Wheat	Land preparation	█			█														
	Sowing					█	█	█											
	Fertilisation						█	█	█	█	█	█							
	Phytosanitary treatment						█	█	█	█	█	█							
	Harvesting																	█	█
Groundnuts Soybean Nièbé Beans	Land preparation	█			█														
	Sowing					█	█	█											
	Maintenance (weeding)						█	█	█	█	█	█							
	Fertilisation						█	█	█	█	█	█							
	Phytosanitary treatment						█	█	█	█	█	█							
	Harvesting																	█	█
Tomate Pepper Bell Pepper	Land preparation et pépinière	█			█														
	Planting					█	█	█											
	Maintenance (ridging)						█	█	█	█	█	█							
	Fertilisation						█	█	█	█	█	█							
	Phytosanitary treatment						█	█	█	█	█	█							
	Harvesting																	█	█
Watermelon	Land preparation	█			█														
	Sowing					█	█	█											
	Maintenance (ridging)						█	█	█	█	█	█							

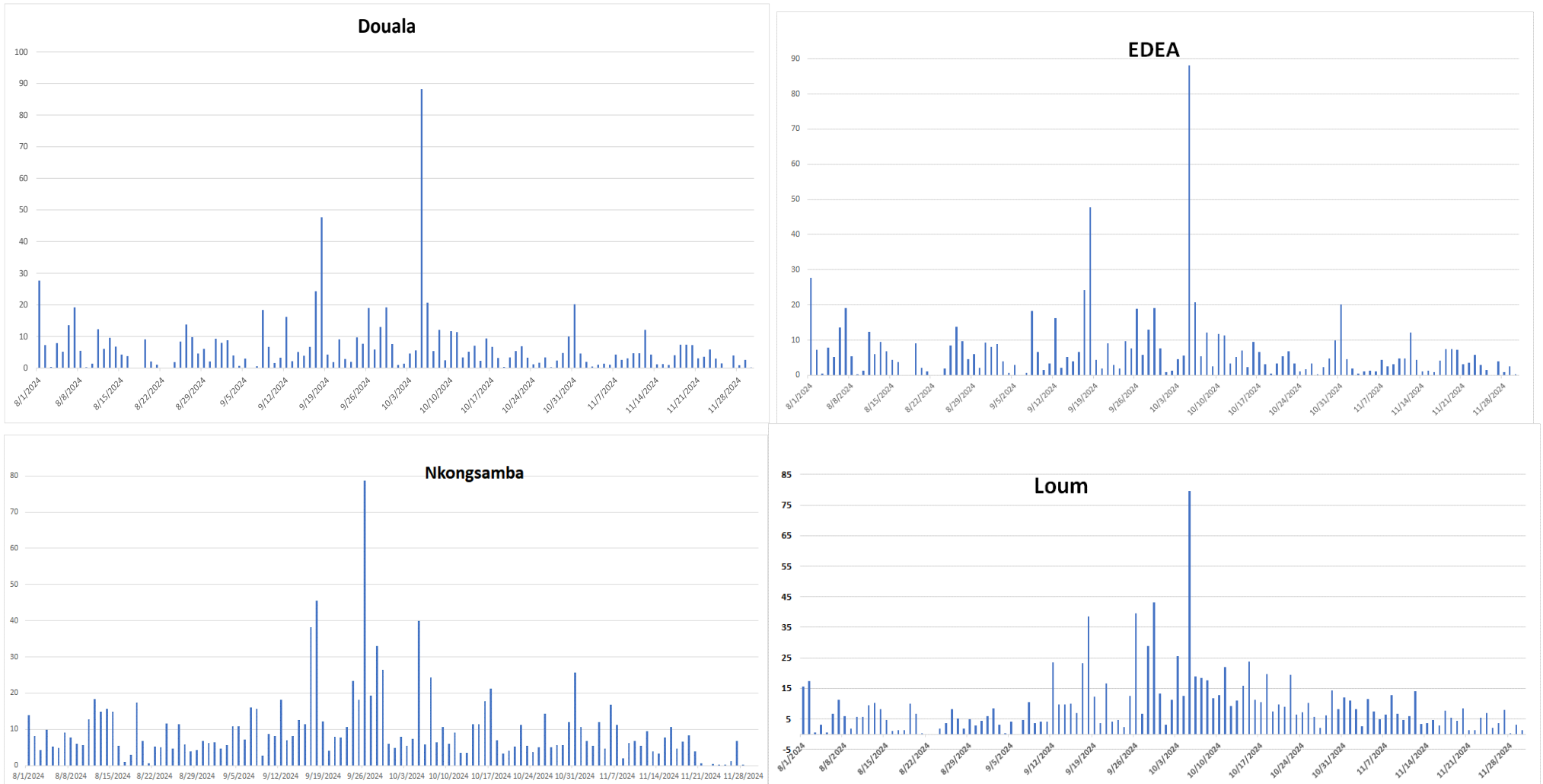
Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3
	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		
Cabbage	Land preparation et pépinière																		
	Sowing																		
	Maintenance (ridging)																		
	Fertilisation																		
	Phytosanitary treatment																		
	Harvesting																		
Palm tree (Old plantation)	Fertilisation																		
	Maintenance (weeding, Staking, Pruning, Defoliation, phytosanitary treatment, etc.)																		
	Harvesting																		
Plantain/banana (New plantation)	Land preparation																		
	Planting																		
	Maintenance (weeding, Staking, Pruning, Defoliation, phytosanitary treatment, etc.)																		
	Fertilisation																		
Plantain/banana (Old plantation)	Phytosanitary treatment																		
	Maintenance (weeding, Staking, Pruning, Defoliation, phytosanitary treatment, etc.)																		
	Fertilisation																		
Paw-paw (New plantation)	Harvesting																		
	Land preparation																		
	Planting																		
Paw-paw (Old plantation)	Maintenance (weeding)																		
	Fertilisation																		
	Phytosanitary treatment																		
	Maintenance (weeding etc.)																		
Paw-paw (Old plantation)	Phytosanitary treatment																		
	Harvesting																		
	Maintenance (weeding etc.)																		

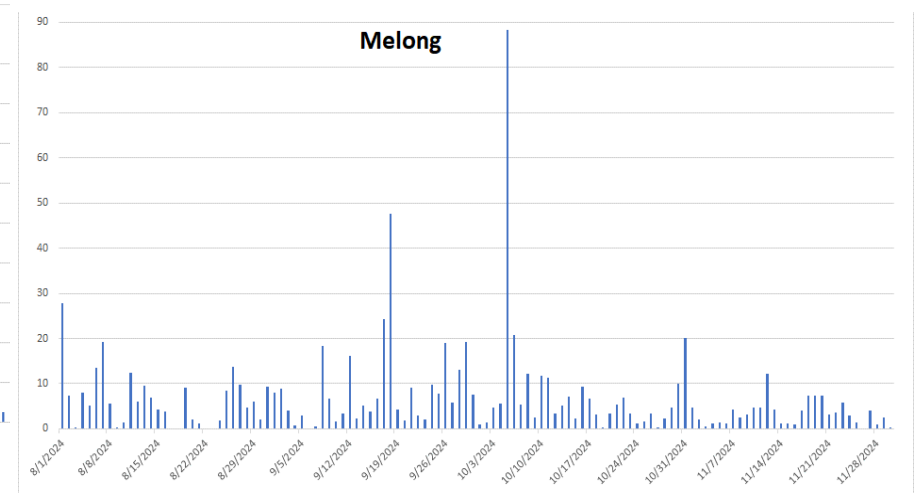
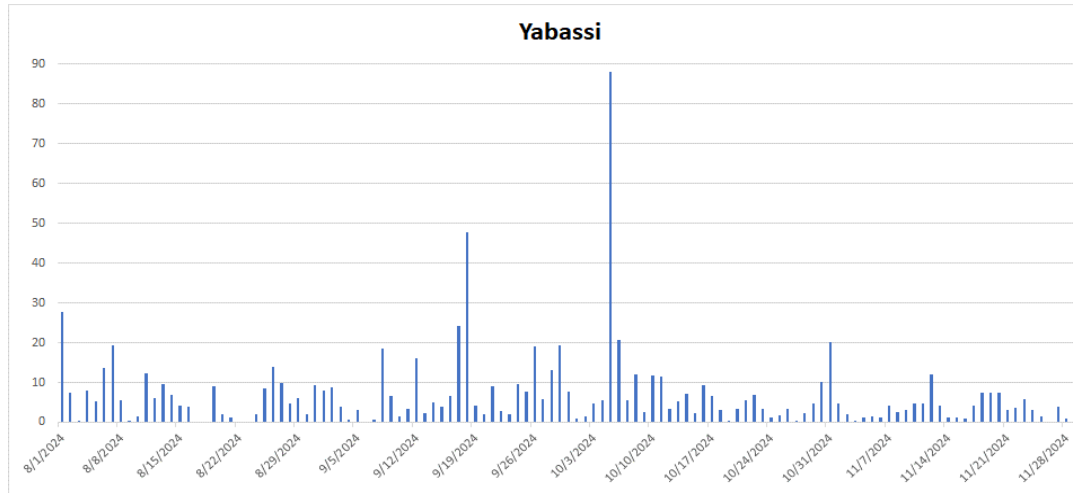
Crops	Technical Itinerary	Chronogramme																	
		July			August			September			October			November			December		
		D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3
Cassava	Land preparation	■																	
	Sowing				■														
	Maintenance (ridging)							■											
	Fertilisation							■											
	Phytosanitary treatment							■			■								
	Harvesting																		
Sweet potatoe Taro	Land preparation	■																	
	Sowing				■														
	Maintenance (ridging)							■											
	Fertilisation							■											
	Phytosanitary treatment							■			■								
	Harvesting																		
Irish potatoe	Land preparation	■																	
	Sowing				■														
	Maintenance (ridging)							■											
	Fertilisation				■			■											
	Phytosanitary treatment				■			■											
	Harvesting																■		
Pineapple	Land preparation	■																	
	Sowing				■														
	Maintenance (ridging)							■											
	Fertilisation				■			■											
	Phytosanitary treatment				■			■			■								
	Harvesting																		
Perennial crops (pear, Mango, Safou) <sup>2</sup>	Setting up the Plantation																		
	Land preparation	■																	
	Planting				■														
	Maintenance (clearing, weeding, Defoliation etc..)							■			■			■			■		
	Phytosanitary treatment													■			■		

<sup>2</sup> For fruit trees (improved varieties), the harvest is done three (03) years after planting..

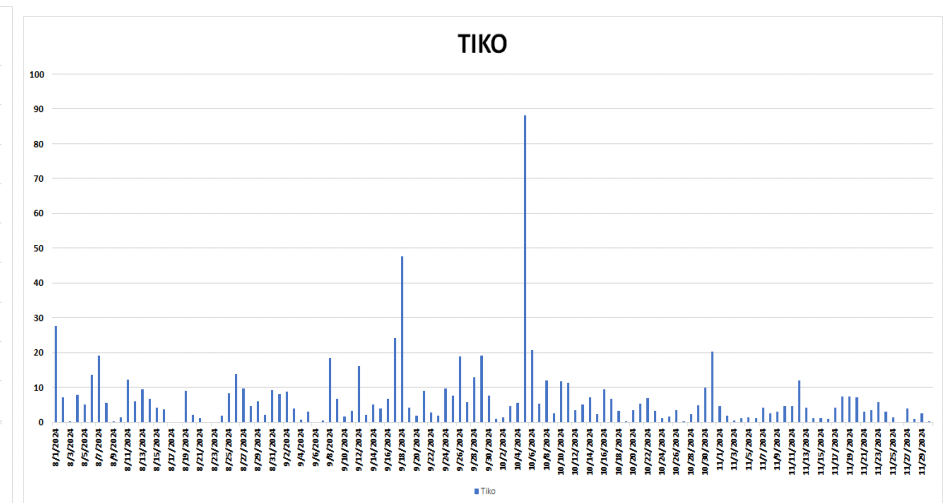
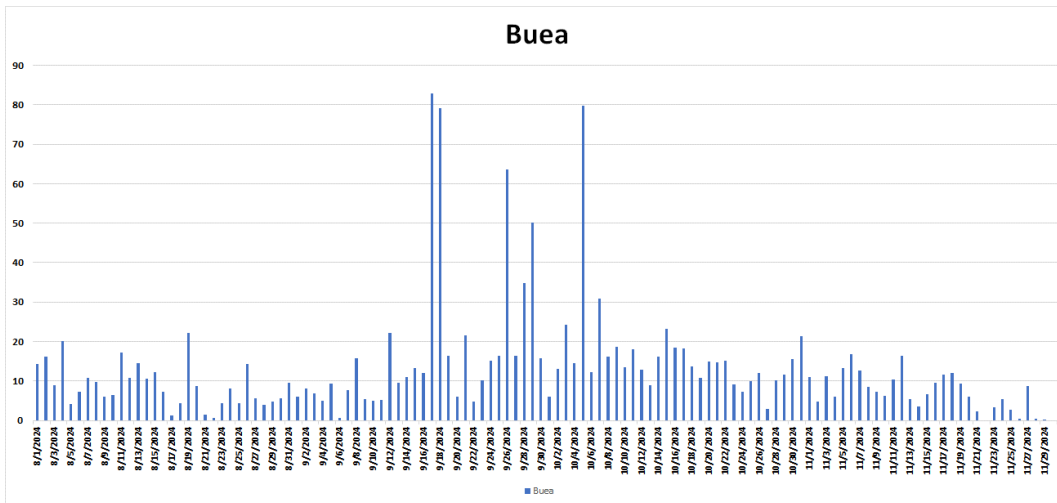
Crops	Technical Itinerary	Chronogramme																		
		July			August			September			October			November			December			
		D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	
Citrus (Grapefruit, Mandarin, Pomelo)	fruits Lemon, Orange, Pomelo)	Fertilisation	█																	
		Setting up the Plantation																		
		Land preparation	█																	
		Planting				█														
		Maintenance (clearing, weeding, Defoliation etc..)							█											
		Phytosanitary treatment										█								
		Fertilisation	█																	
Cocoa (New plantation)	Setting up the Plantation																			
	Land preparation	█																		
	Planting				█															
	Entretien (desherbage)							█												
	Phytosanitary treatment							█												
	Fertilisation							█												
Cocoa (Old plantation)	Maintenance (clearing, pruning, harvesting, etc.)	█																		
	Phytosanitary treatment (Fight against black spot)	█																		
	Phytosanitary treatment (lutte anti capsid)													█						
	Harvesting				█															
Coffee (New plantation)	Setting up the Plantation																			
	Land preparation	█																		
	Planting				█															
	Entretien							█												
	Phytosanitary treatment							█												
	Fertilisation							█												
Coffee (Old plantation)	Maintenance (clearing, pruning)	█																		
	Fertilisation	█																		
	Phytosanitary treatment													█						
	Harvesting				█															

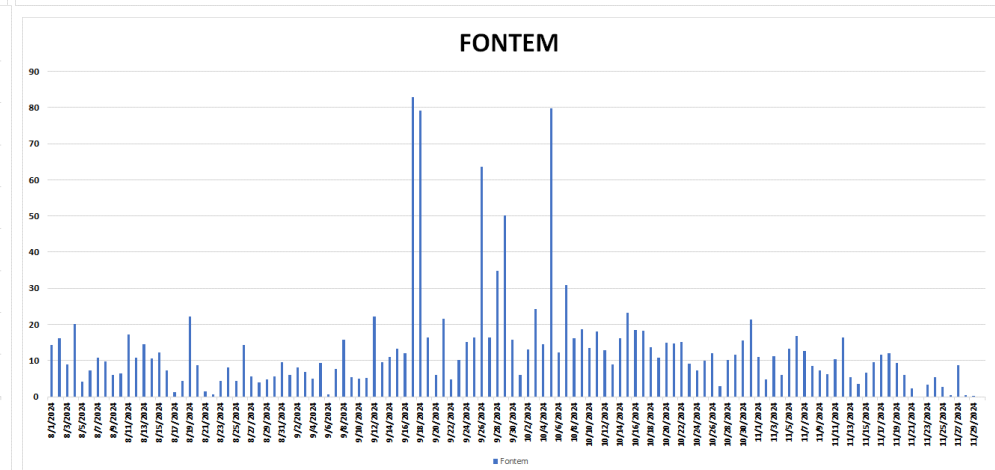
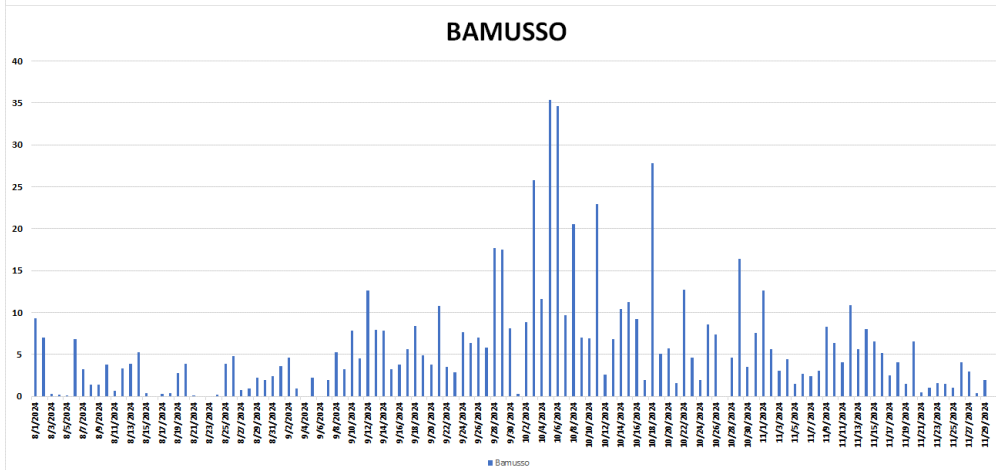
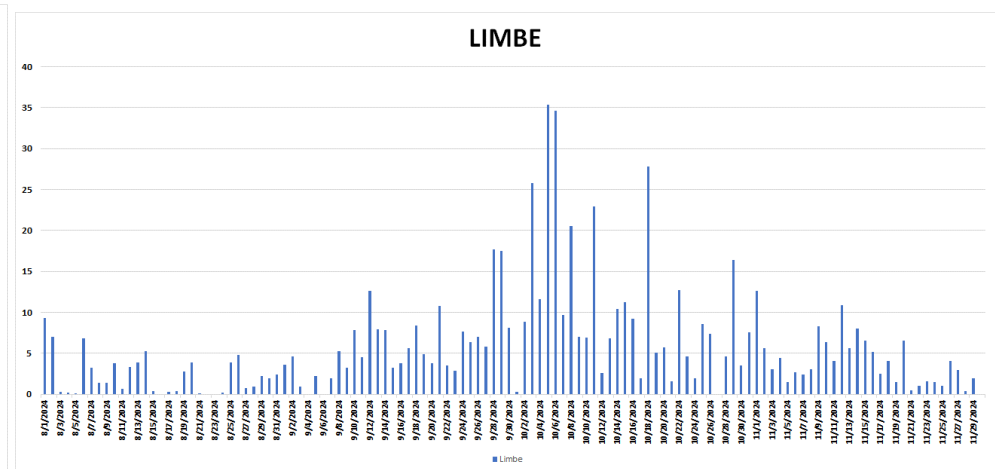
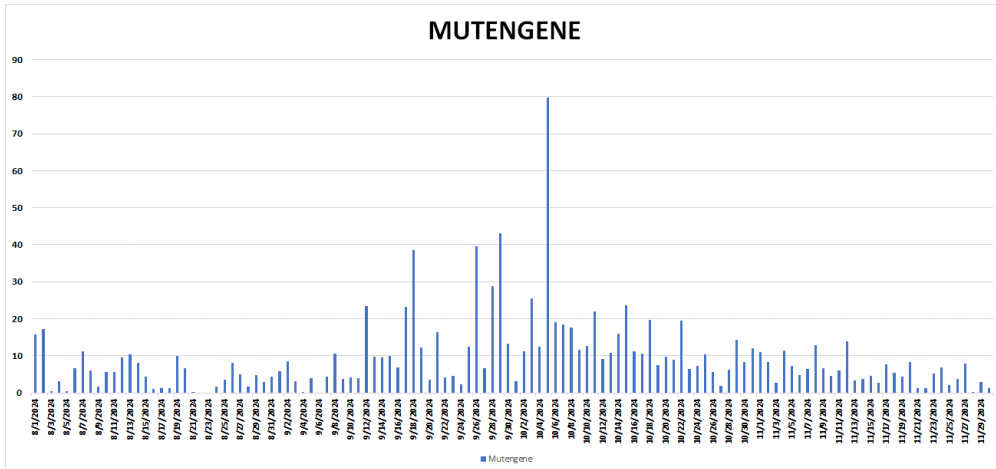
## 5. FORECAST FROM AUGUST 1ST TO NOVEMBER 28TH 2024 LITTORAL REGION

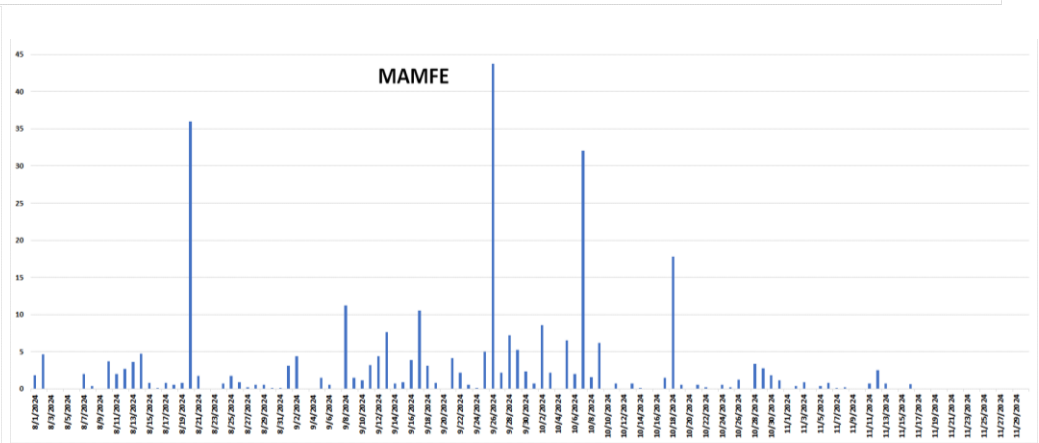
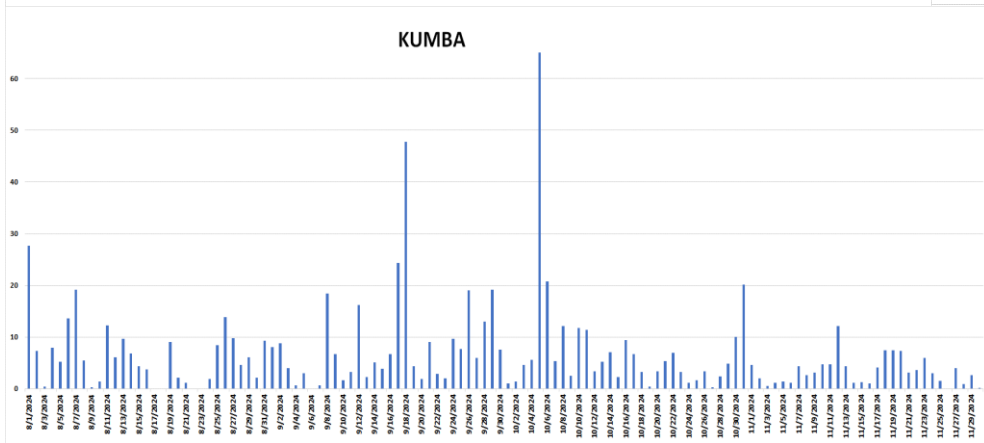
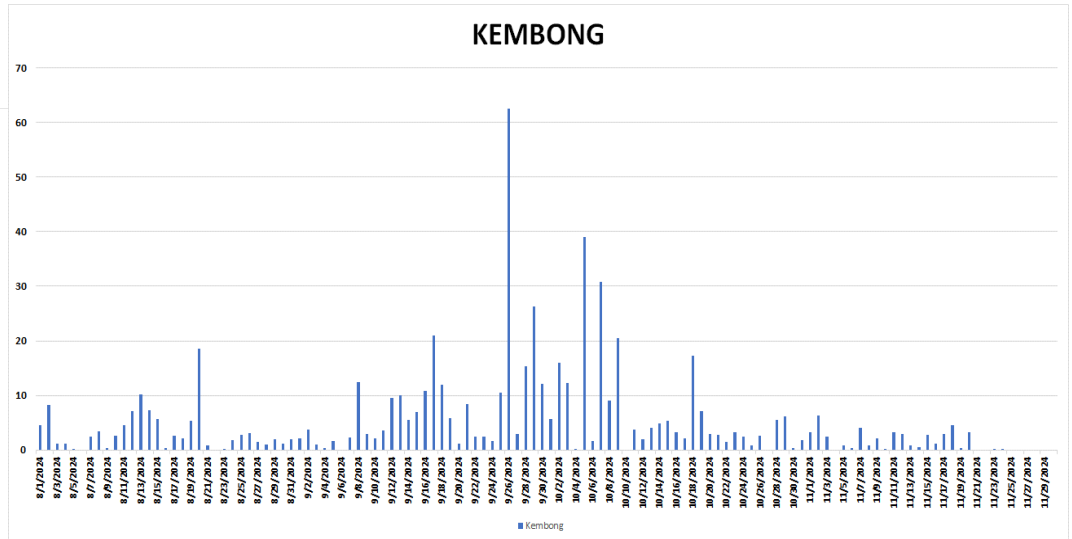
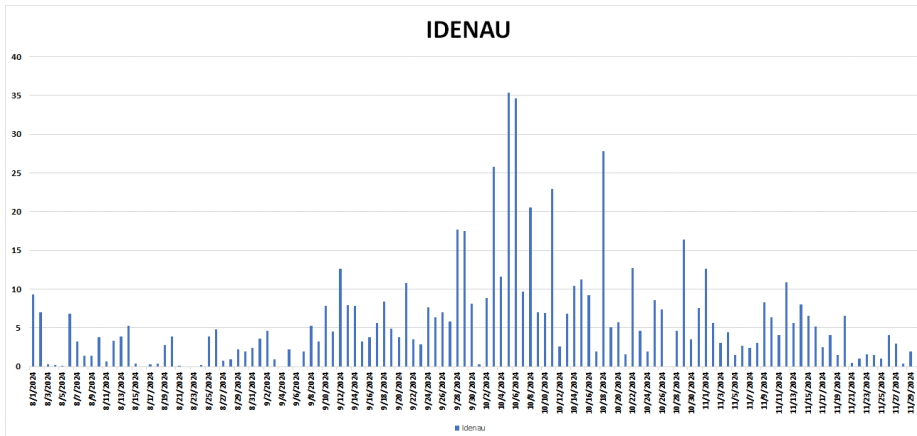


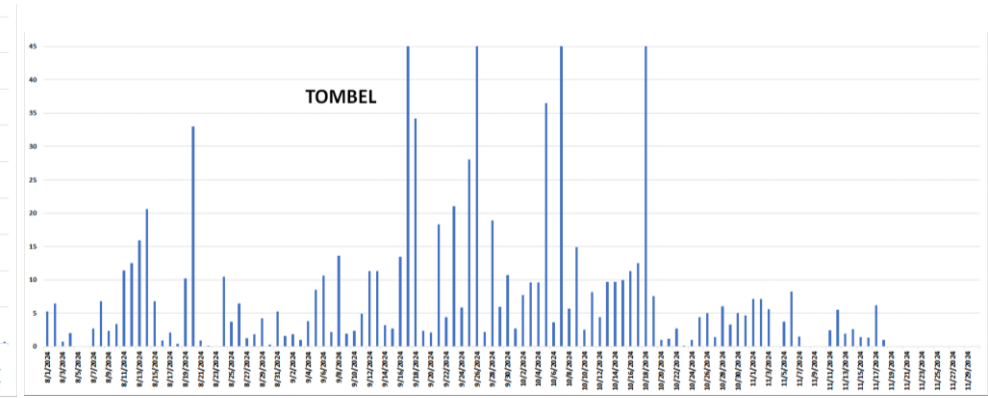
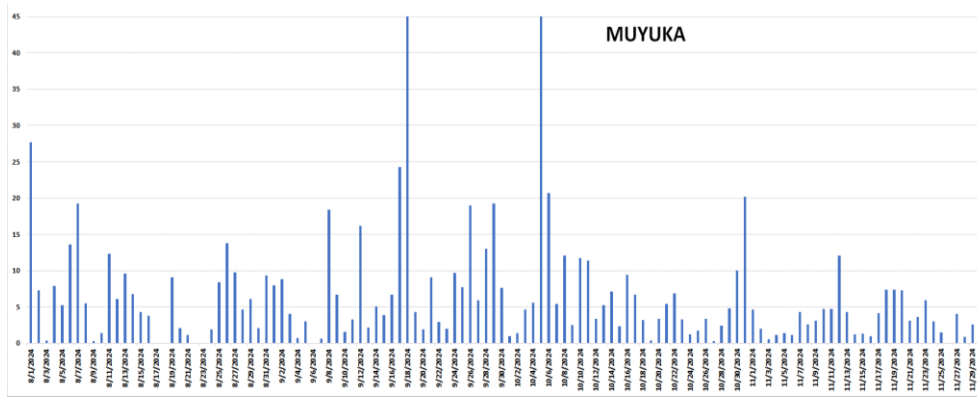


**SOUTH WEST REGION**

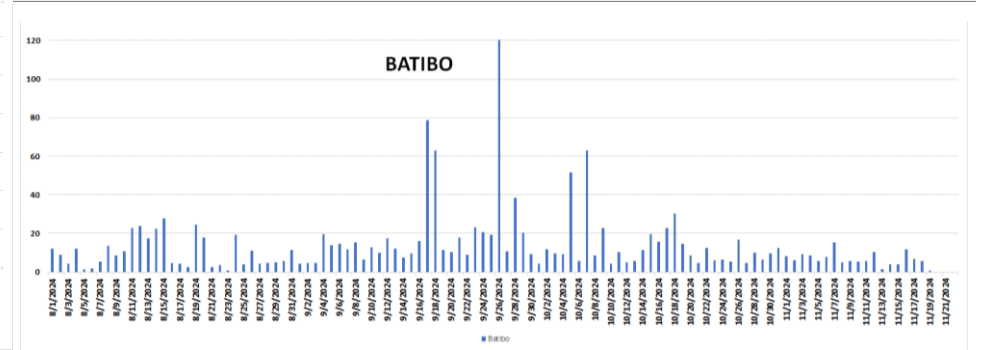
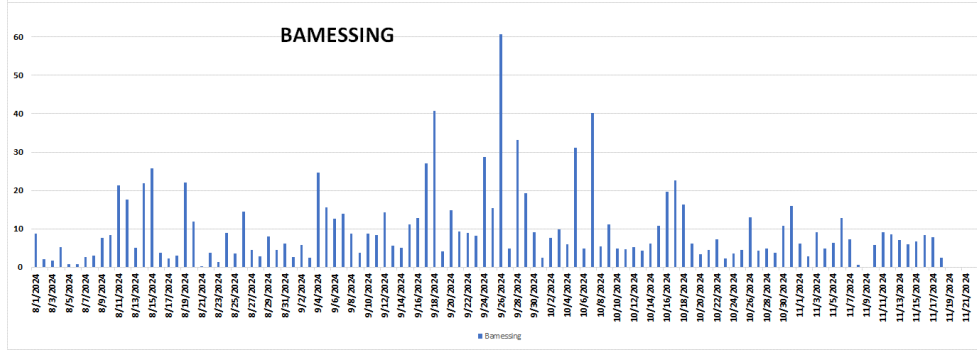
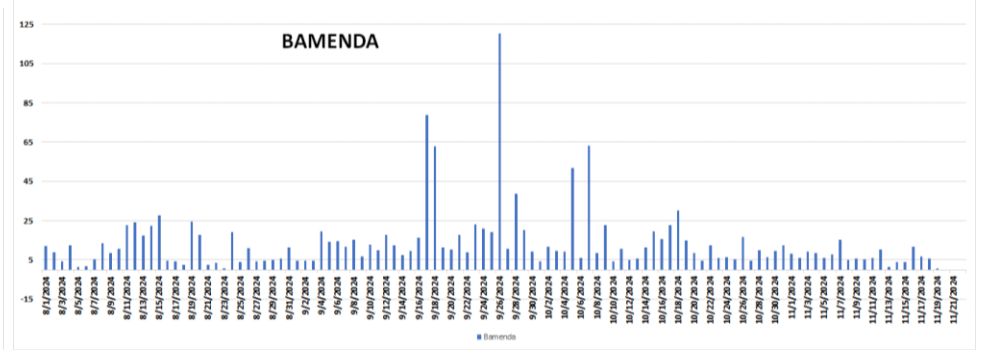
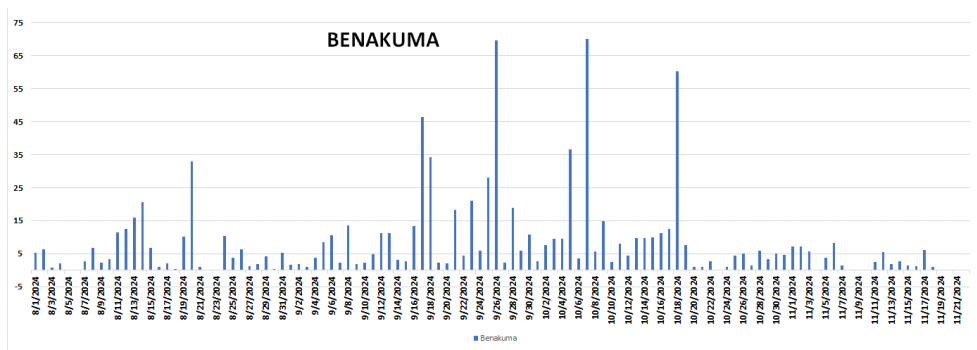


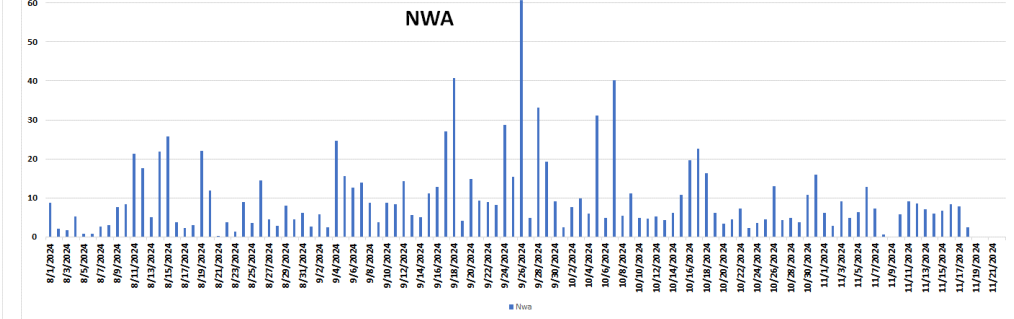
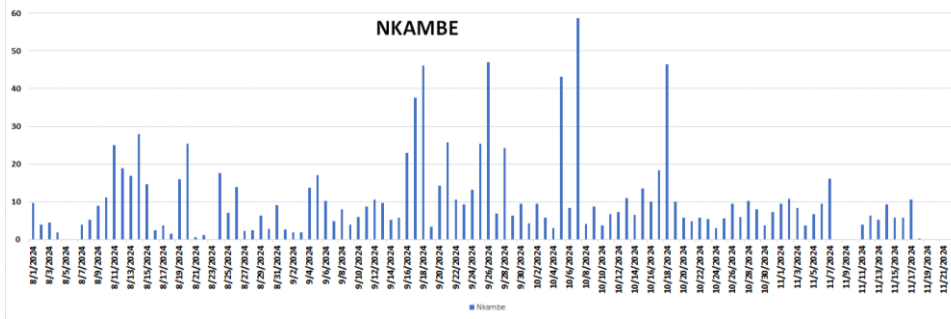
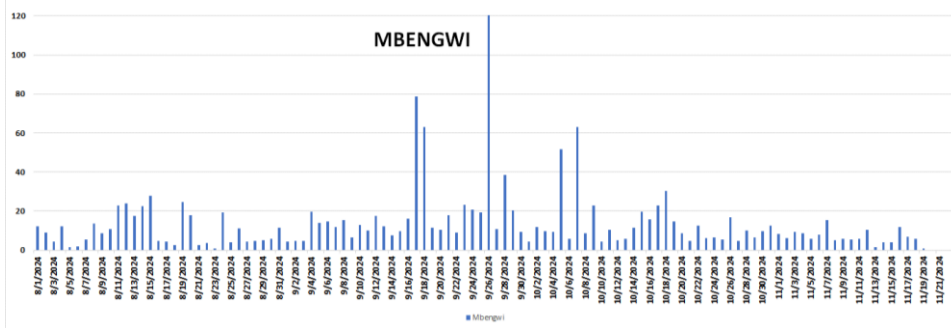
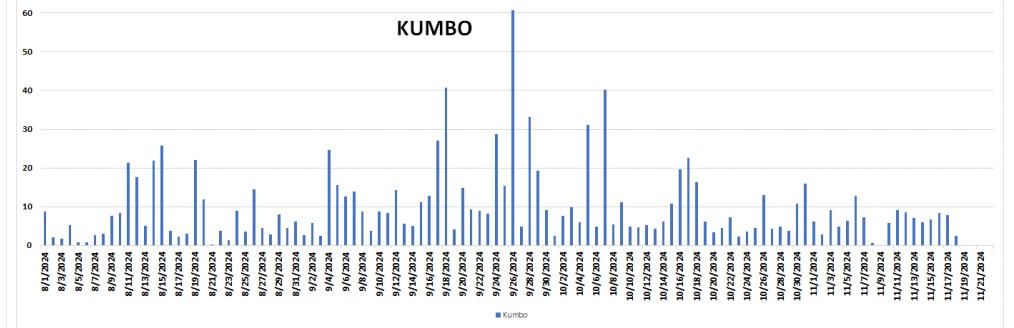
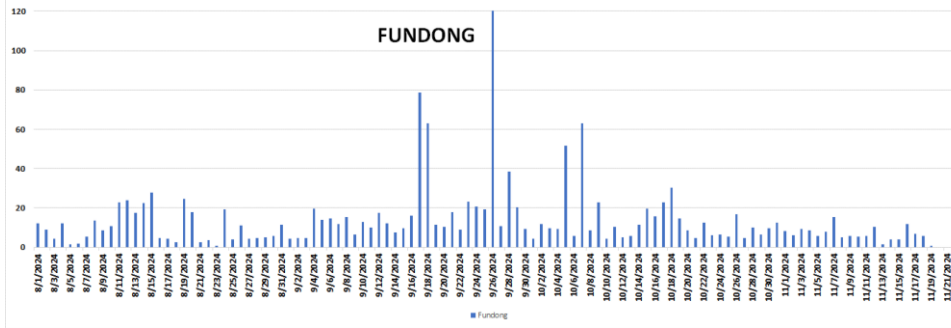


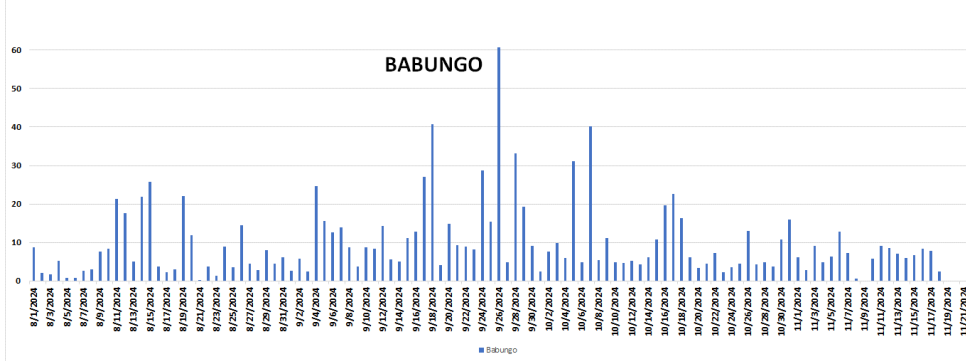
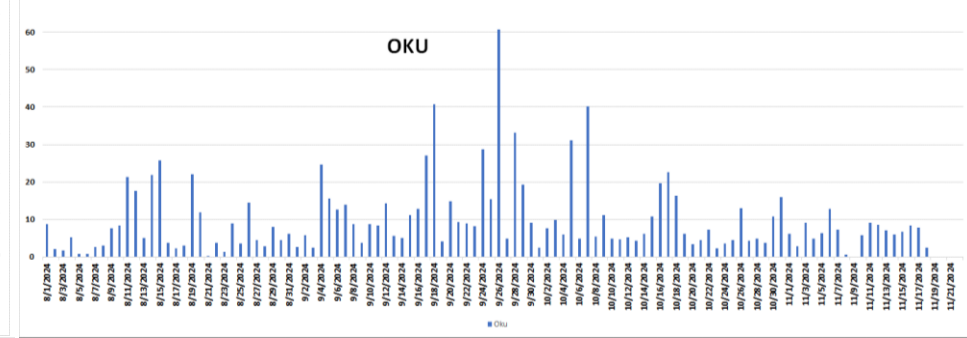
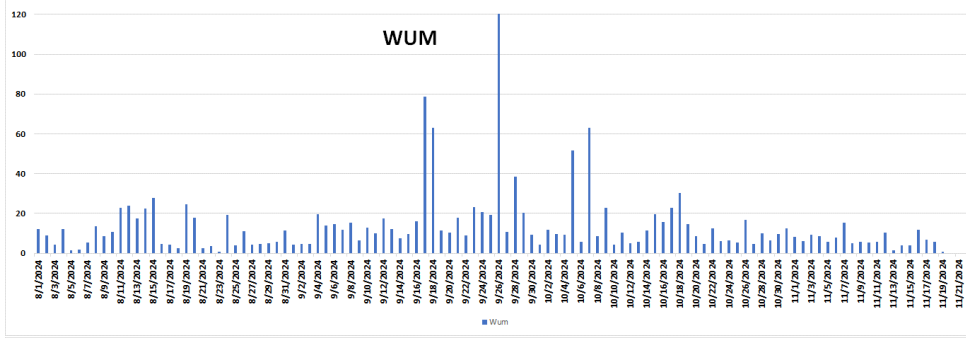
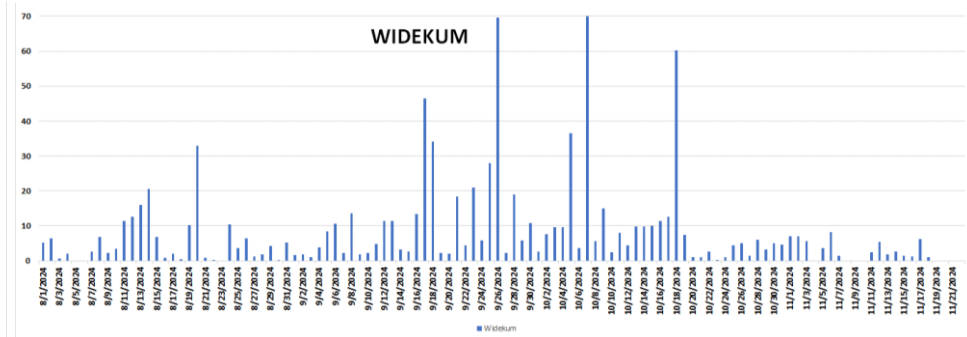
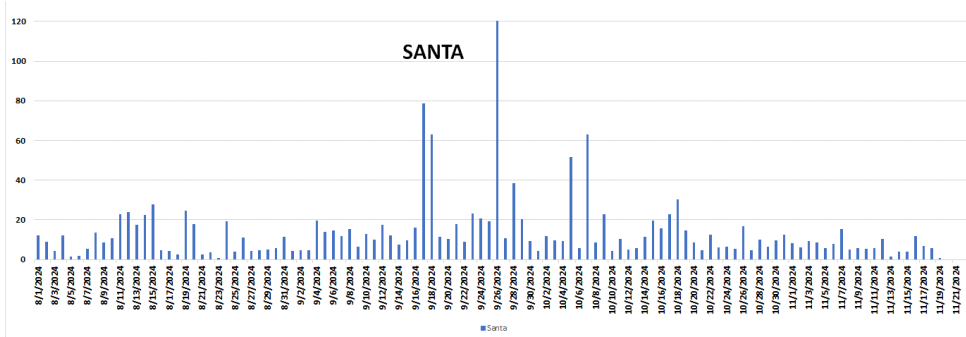




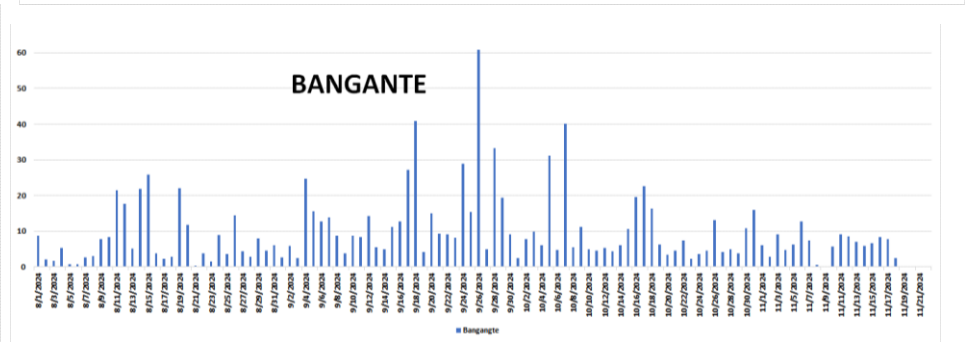
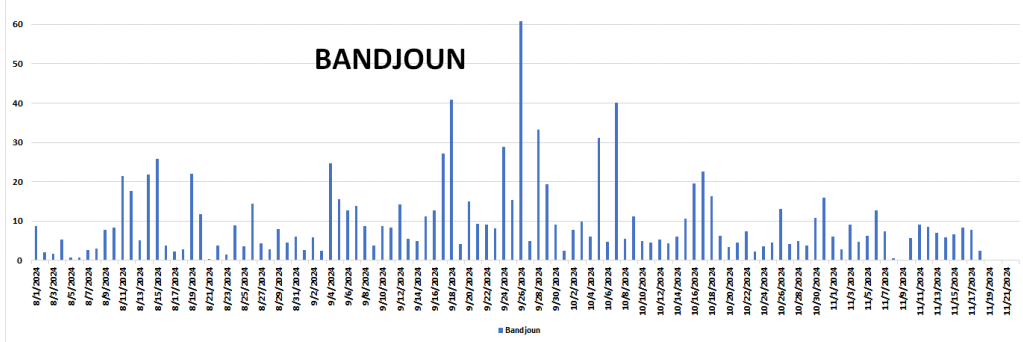
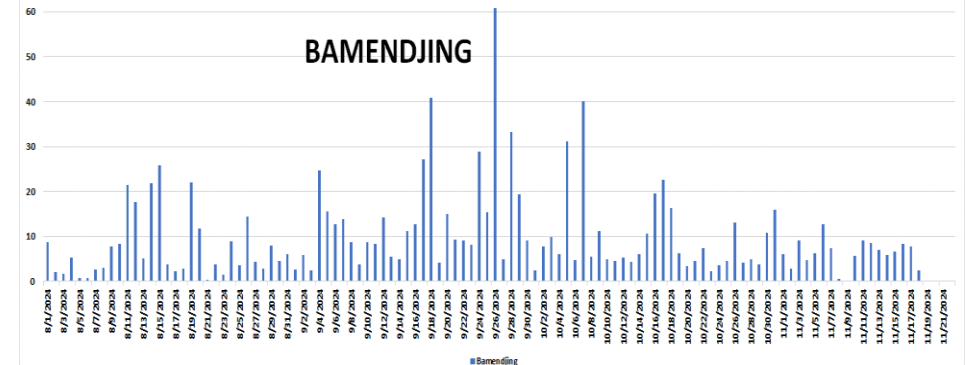
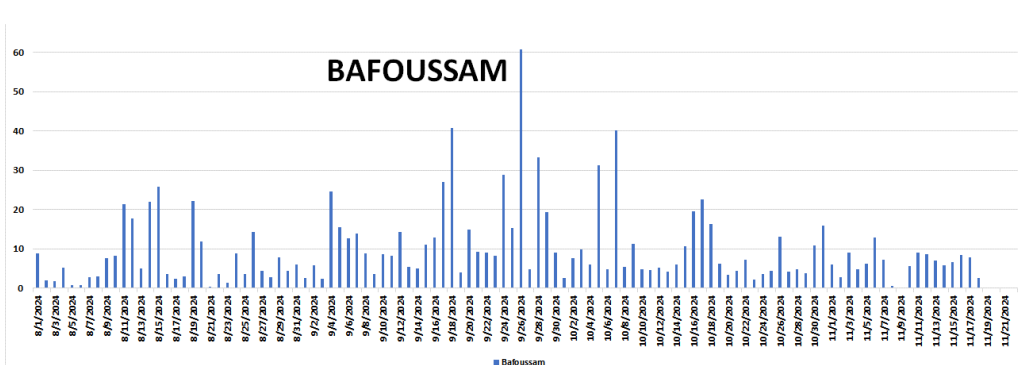
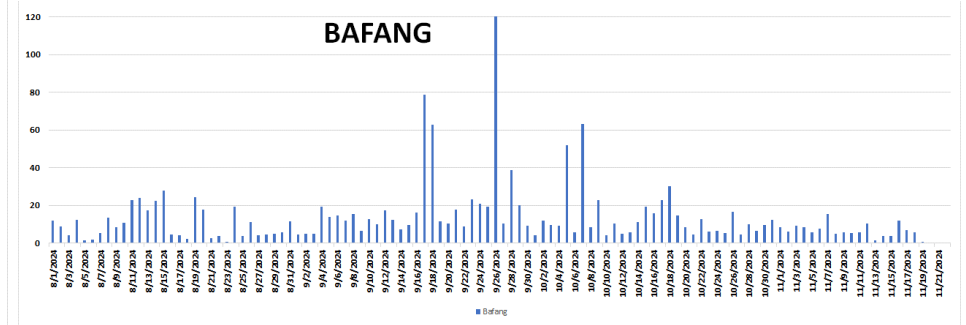
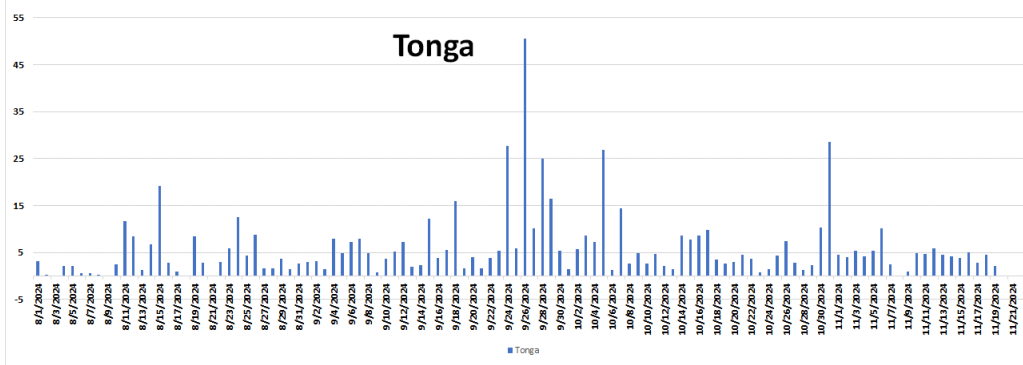
## NORTH WEST

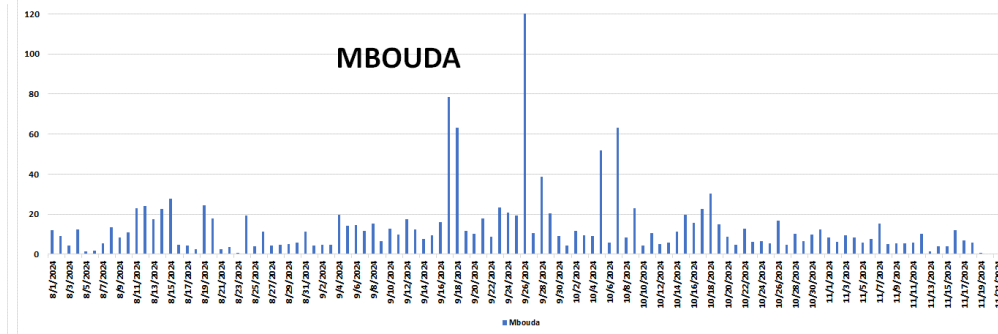
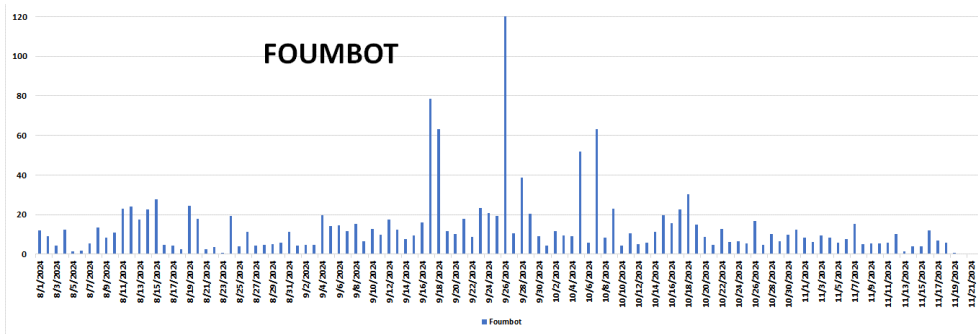
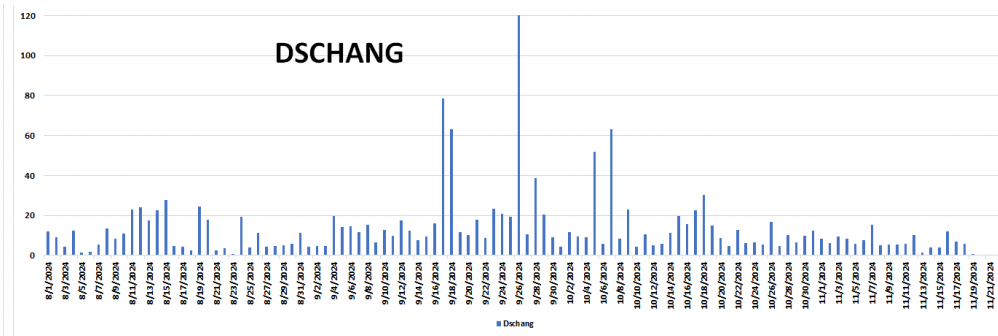
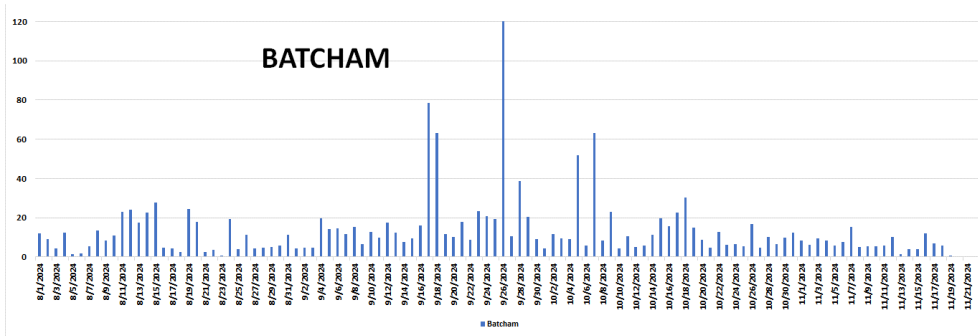




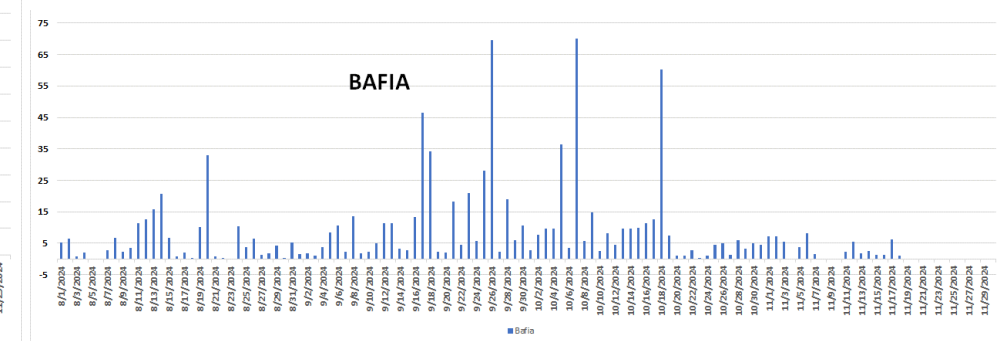
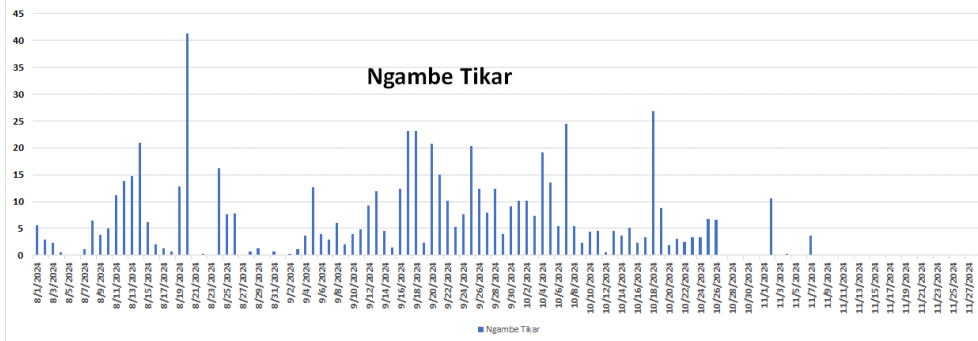


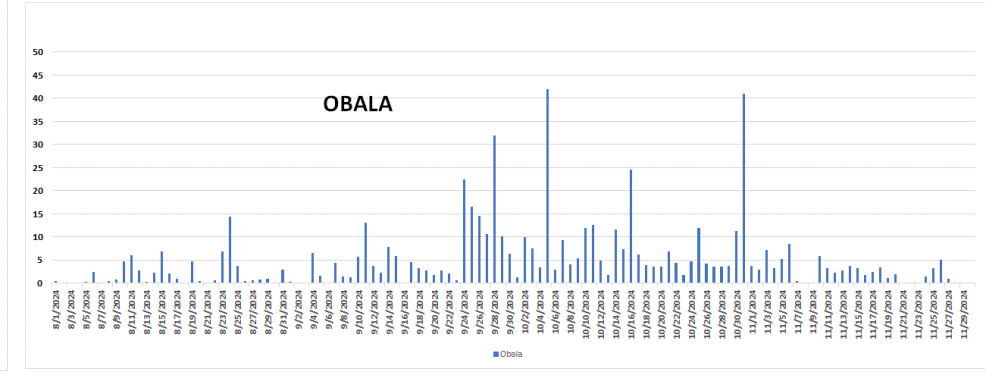
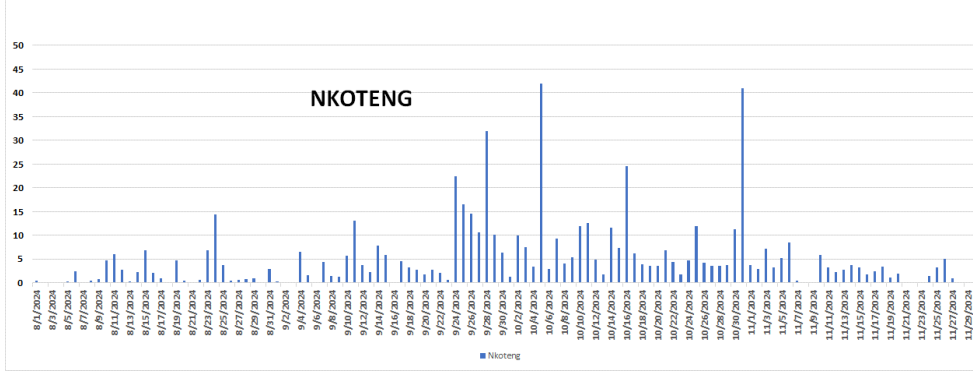
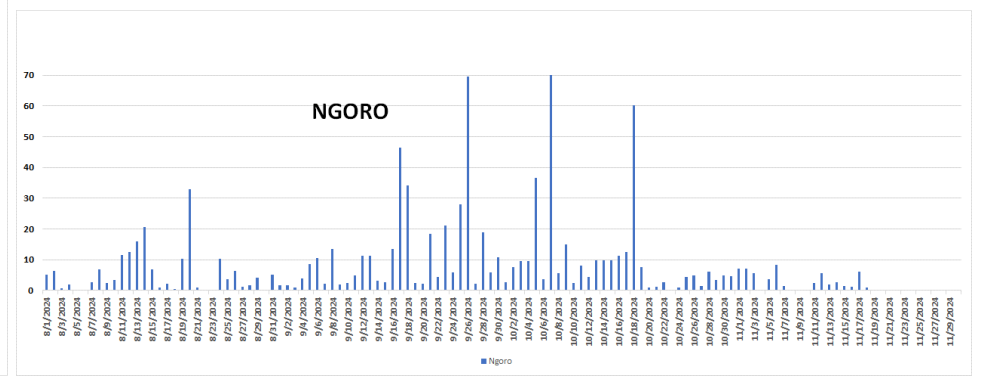
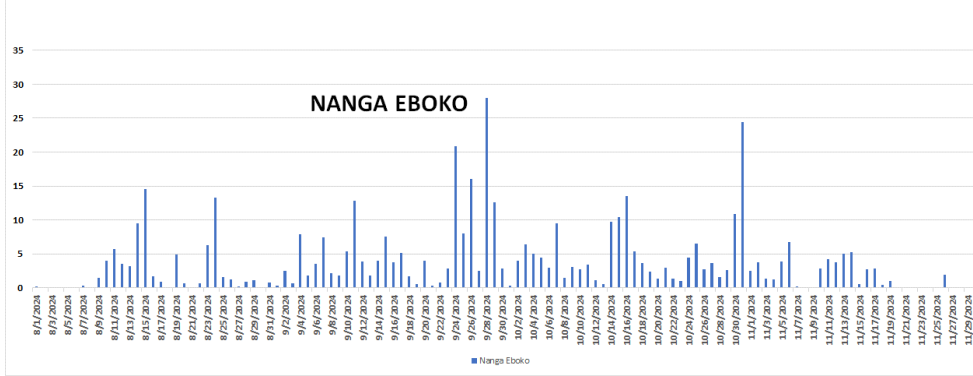
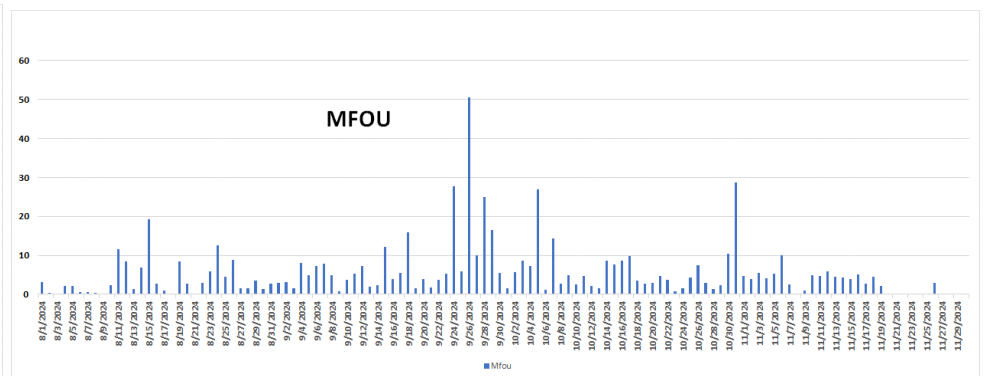
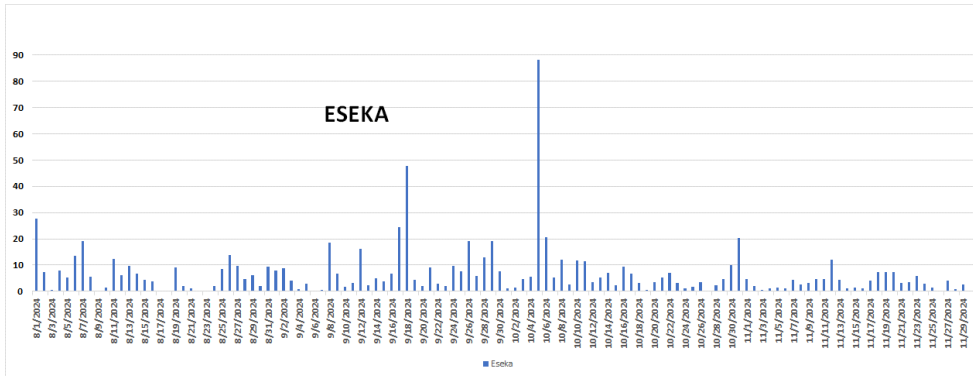
# WEST REGION

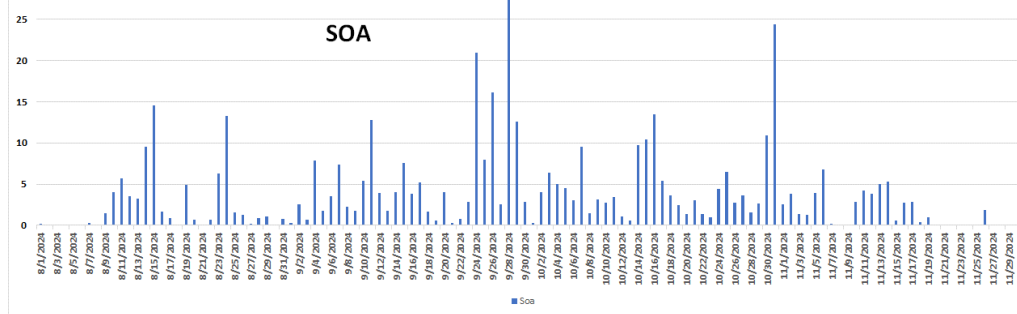
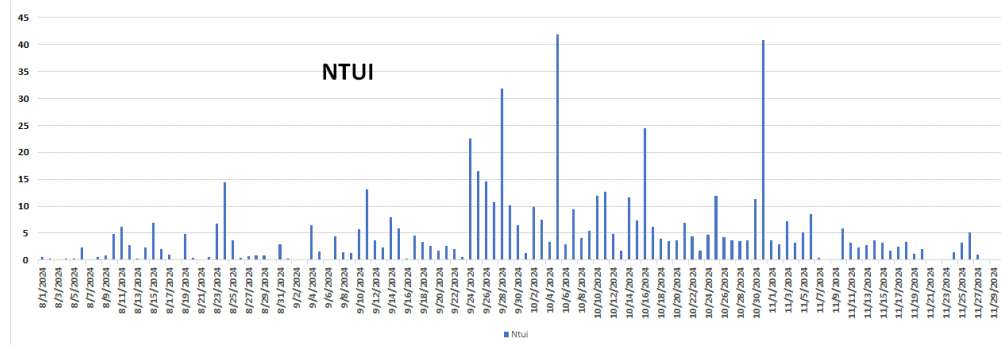
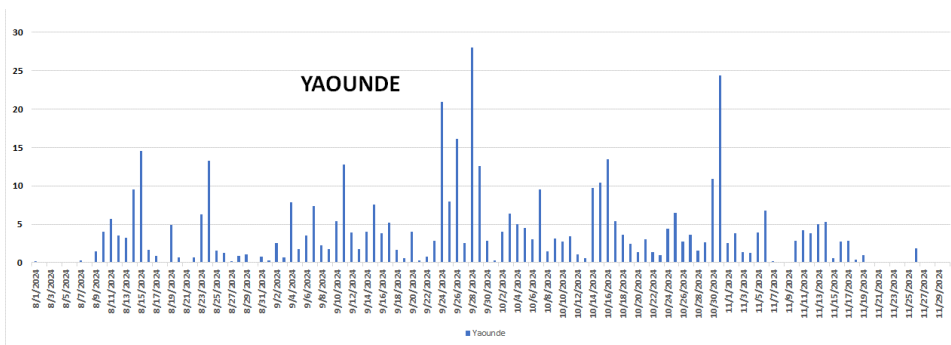




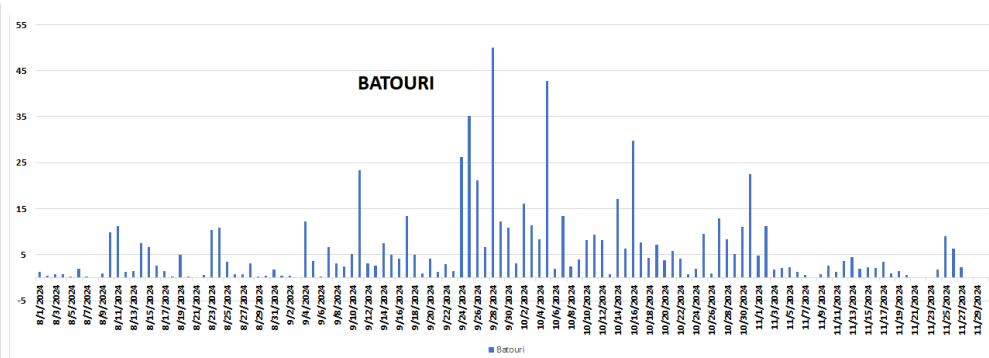
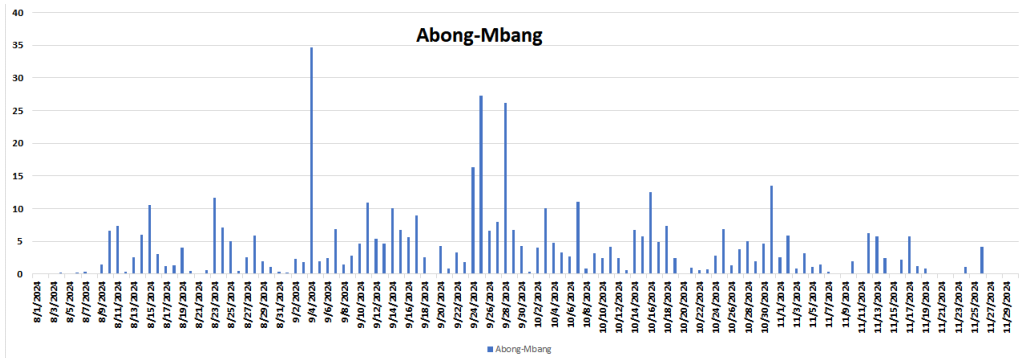
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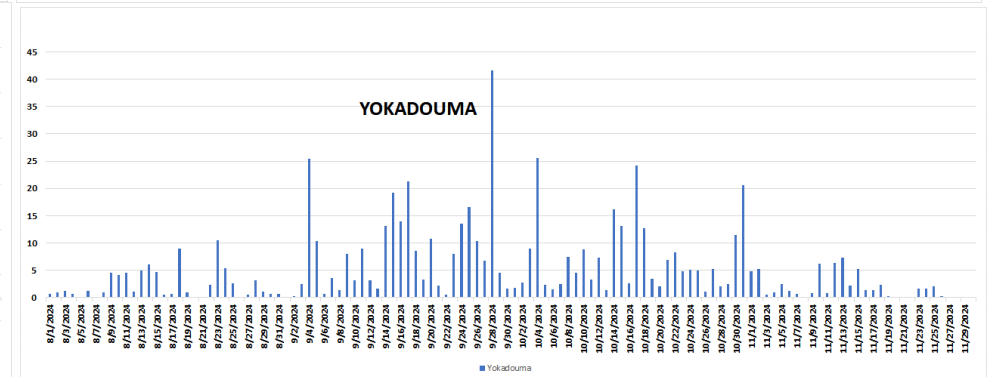
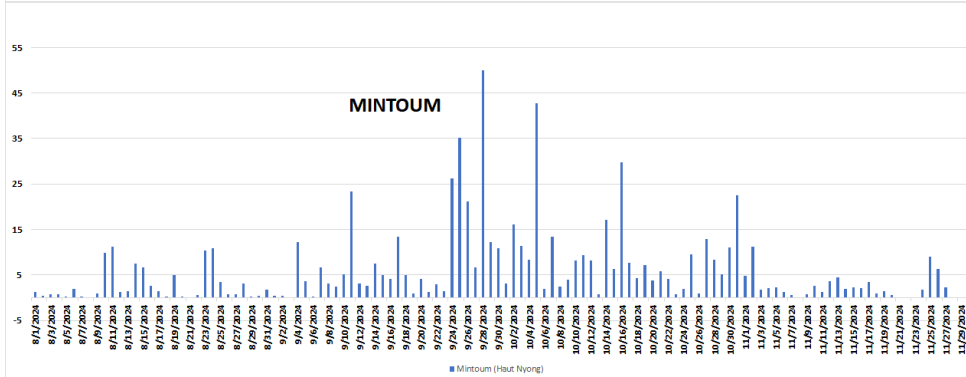
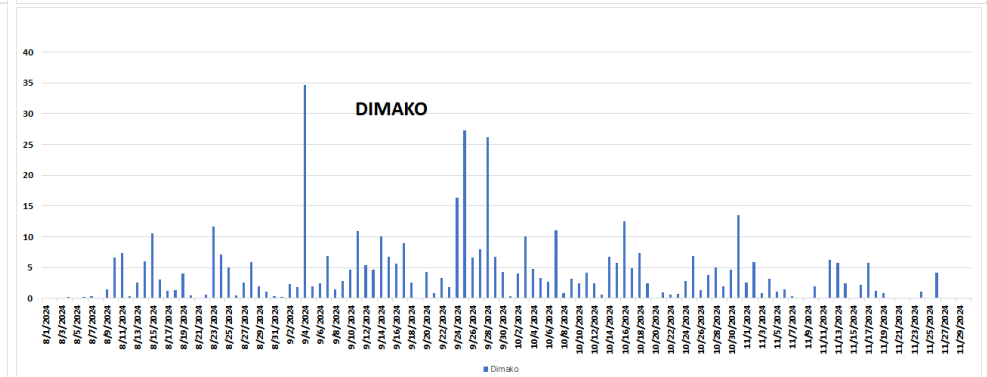
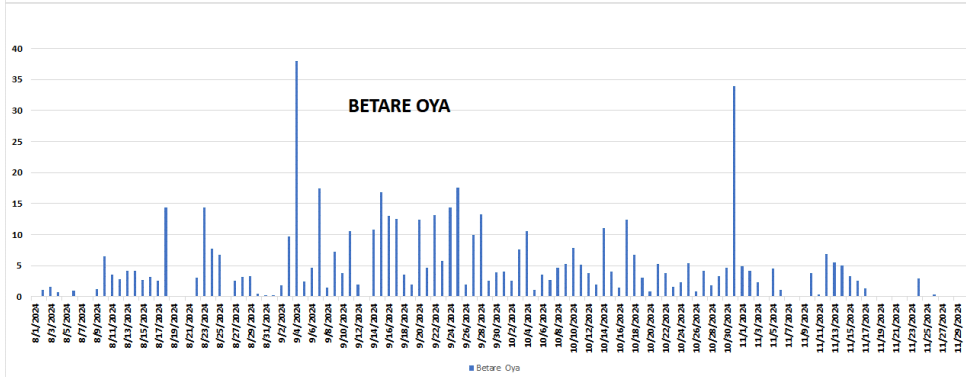
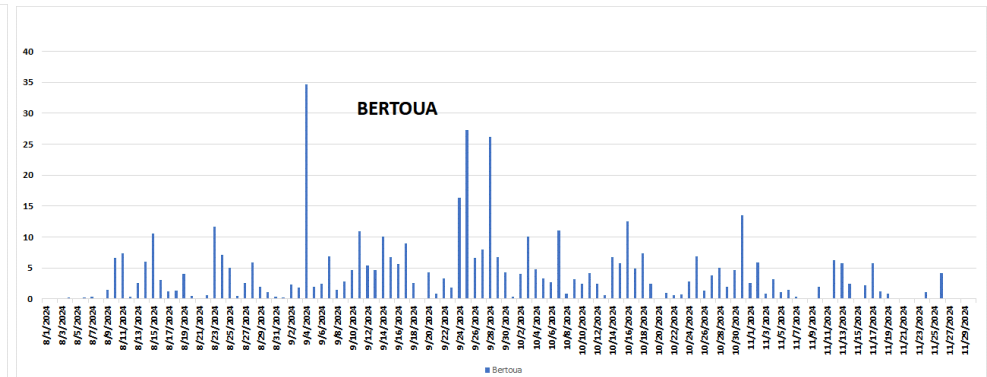
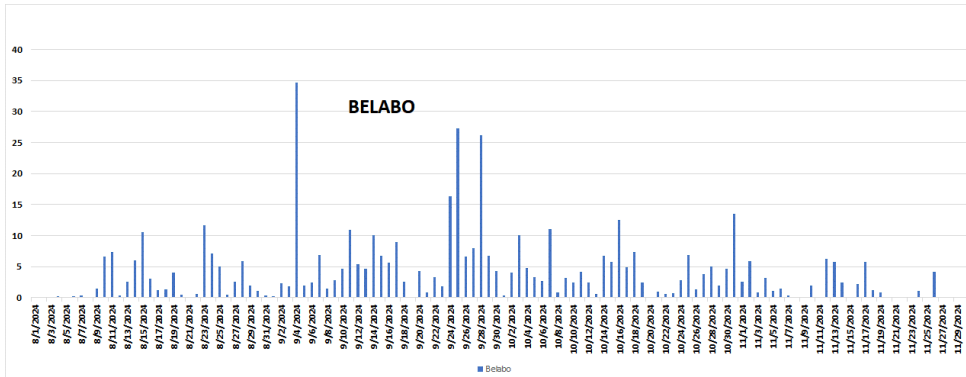




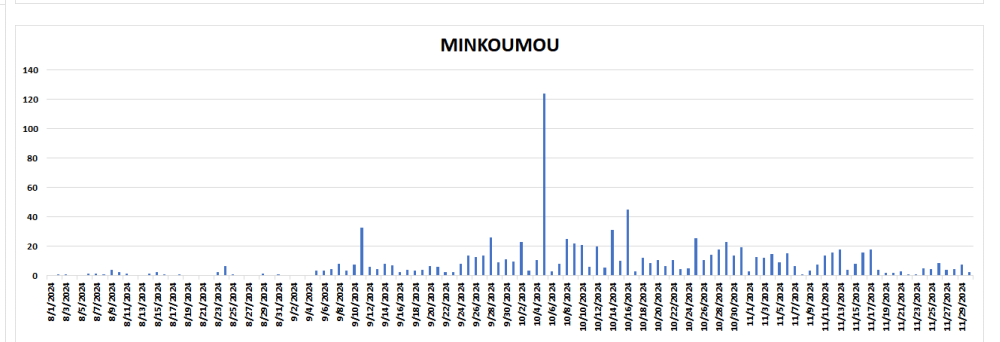
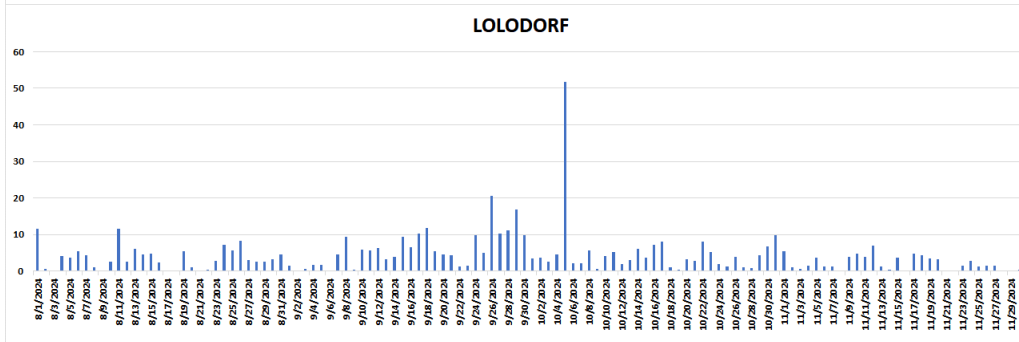
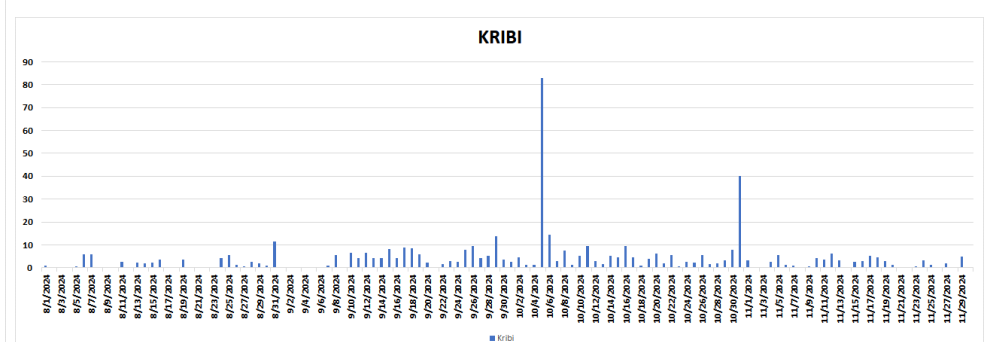
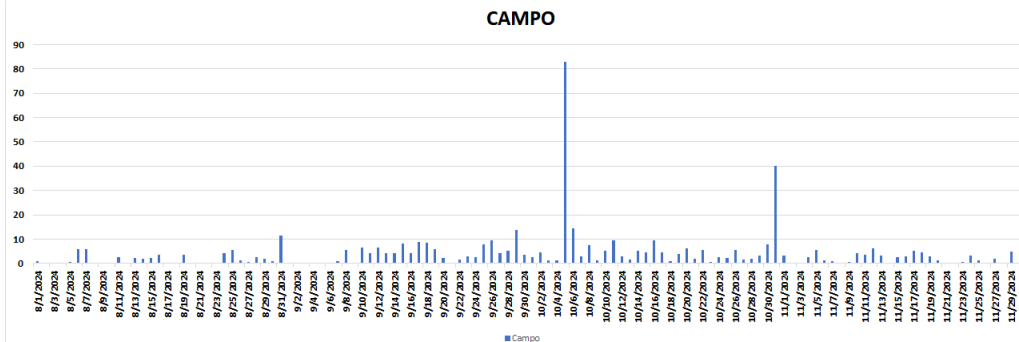
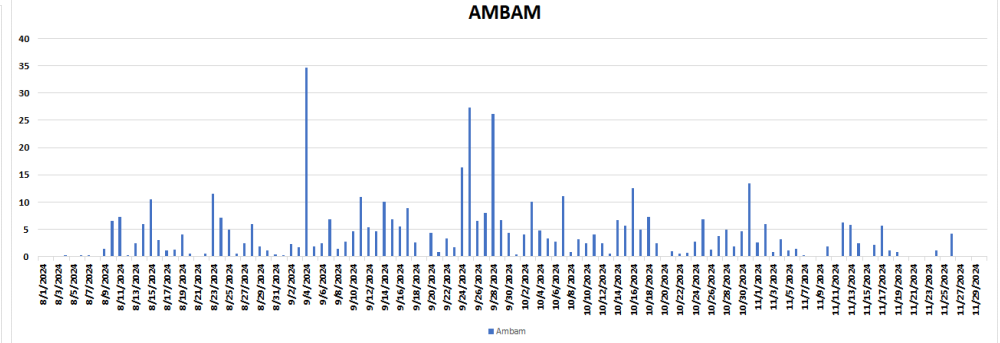
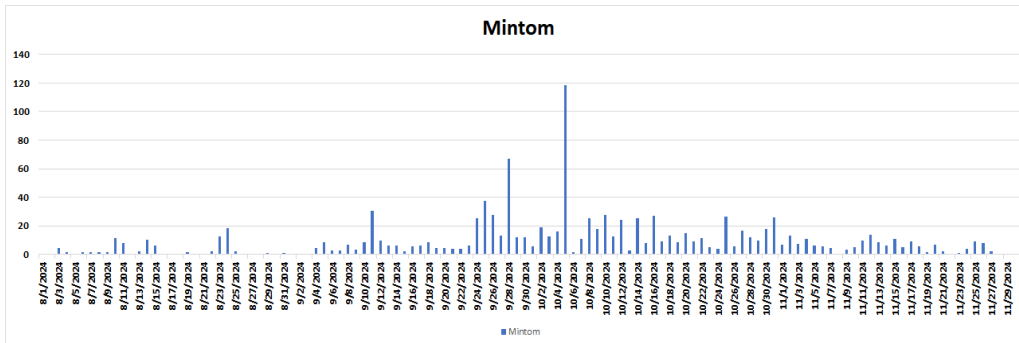


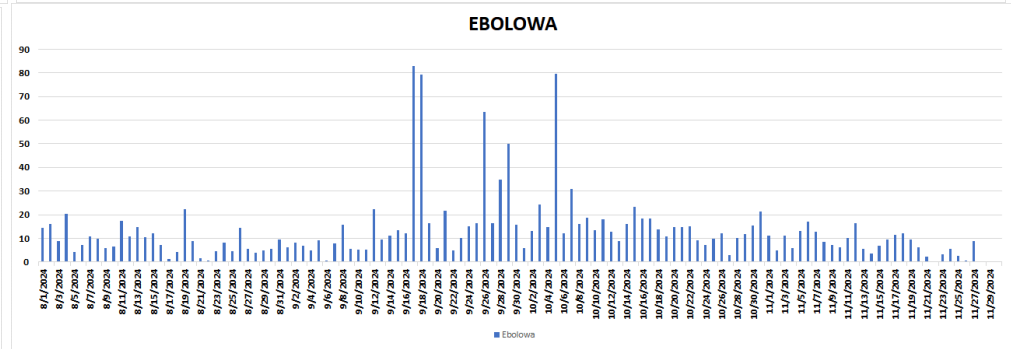
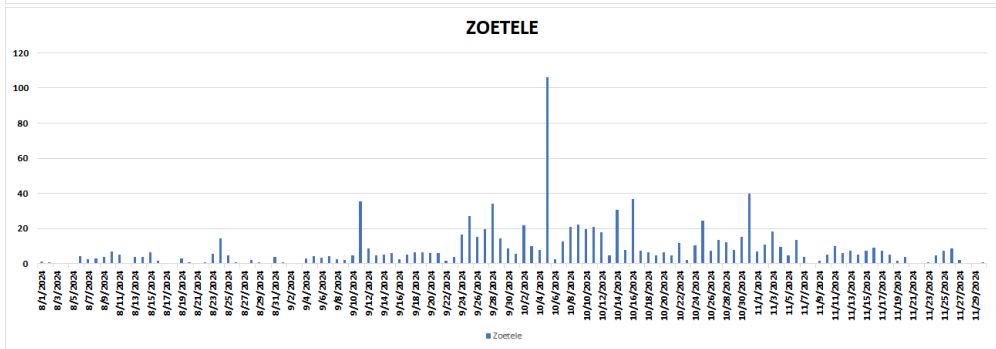
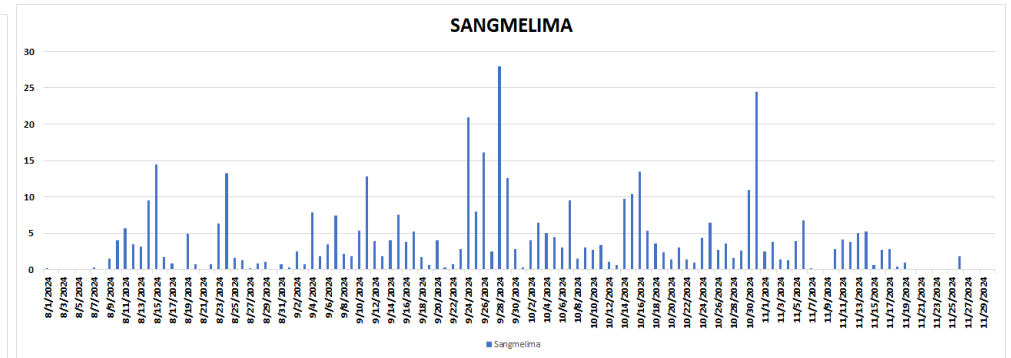
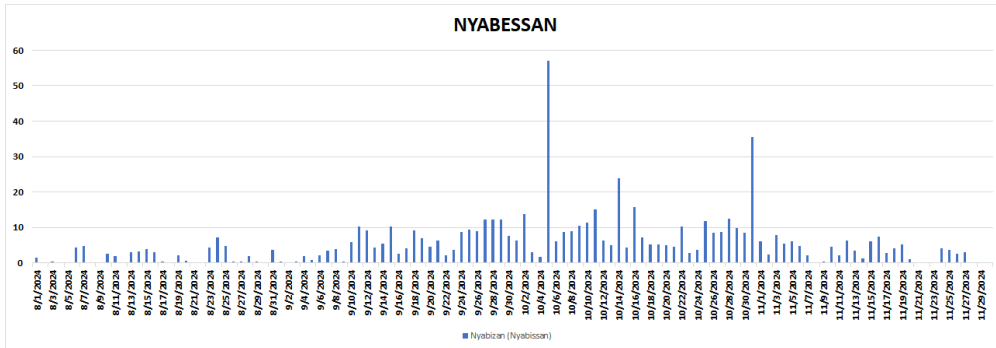
**EAST**





# SOUTH REGION





## APPENDIX : PRODUCTION TEAM

### Supervision

**H.E Mr. Gabriel MBAIROBE**, Minister of Agriculture and Rural Development (MINADER).

**Prof. Dr. Ing. AMOUGOU Joseph Armathé**, Director General, National Observatory on Climate Change (NOCC) and Lecturer in the Department of Geography at the University of Yaounde I, Cameroon.

**Eng. FORGHAB Patrick MBOMBA**, Deputy Director General, National Observatory on Climate Change (NOCC).

### Production

#### Team ONACC

**Dr. BATHA Romain Armand Soleil**, Head of the Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA) ;

**ZOUH TEM Isabella**, Head of Geomatics Department;

**Dr. MEYONG René Ramsès**, Assistant Researcher Officer N°1 at the Department of Production and Dissemination of Climatological Services and Alerts (DPDSCVA);

**NDJELA MBEIH Gaston Evarice**, Assistant Researcher Officer N°2 at the Department of Production and Dissemination of Climatological Services and Alerts (DPDSCVA);

**OBENEBANGHA BATE MBI**, Researcher Officer, NOCC, Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA);

**Dr. KIMING Ignatius NGALA**, Technical staff, NOCC, DPDSCVA;

**MONTE DJOMO Neily**, Technical staff at NOCC, Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA);

**SOUGA BOYOMO Thomas Magloire**, Technical staff at NOCC, Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA) ;

**Dr. KEYETAT Marie Laure**, Technical staff, NOCC, DPDSCVA;

**ABUBAKAR UNUSA**, Technical staff at NOCC, Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA) ;

**FAI DALHATU TIRNYUY**, Technical staff at NOCC, Department of Production and Dissemination of Climatological Watch and Alert Services; (DPDSCVA) ;

**Eng. BIKONO Pascal Freddy**, Assistant Researcher Officer N°2 at the NVM Department;

**NDOPING Irene Manenkeu NSEM-ARREY**, Technical staff at NOCC / Department of Integrated Observations and Impact Assessment of Climate Change;

**MESSI AMOUGOU Max**, Assistant Researcher Officer N°1 at the Geomatics Department;

**ANABA OLOMO Muriel Frédérique**, Assistant Researcher Officer N°2 at the Geomatics Department;

**Frank Parfait NAMEKONG**, Communications and Public Relations Officer.

#### Team MINADER

**Eng. MBAIRANODJI André**, Director of Agricultural Surveys and Statistics (DESA) ;

**Eng. MESSI Simon**, Director of Professional Agricultural Organisations and Agricultural Support (DOPA) ;

**Eng. TELEP YEDE Daniel**, Deputy Director of Agricultural Extension (SDVA/DOPA) ;

**Eng. FOUNADOUDOU**, Head of the Information and Early Warning Unit (CIAR/DESA) ;

**Eng. BELPORO DOKO Franck**, Executive (CIAR/DESA);

**Eng. GBANE DEKE Sidonie**, Executive (CIAR/DESA)