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The role of FAO and WFP in overcoming constraints to food security and agricultural resilience in West Africa: the case of Guinea-Bissau

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Se vedi un affamato non dargli del riso,
insegnagli a coltivarlo

- Confucio

ABSTRACT

This thesis analyses the challenges affecting food security in West Africa, with a focus on Guinea-Bissau. It examines the role of the Food and Agriculture Organization (FAO) and the World Food Programme (WFP) in improving the implementation of the agri-food system and ensuring food security in the region.

The first chapter provides a conceptual framework for understanding food security, its measurement, and the trends in West Africa. It also outlines the objectives and strategic outcomes of the FAO and WFP in the region.

The second chapter delves into the specific context of Guinea-Bissau. It explores the country's agricultural potential, the historical impact of the civil war on the agri-food system, and the importance of key crops like cashew nuts and rice. The chapter highlights the interdependencies between these crops and their influence on the local economy.

The final chapter examines the efforts of the FAO and WFP in Guinea-Bissau. It explains how these UN agencies have implemented programs and initiatives to address the challenges of political instability and economic constraints, with the goal of ensuring food security. The chapter assesses the results of their evaluations and highlights the positive outcomes, such as a reduction in the prevalence of undernourishment and an increase in agricultural productivity, particularly in rice yields.

The thesis underscores the potential for sustainable improvements in food security, even in the face of ongoing socio-political difficulties. It emphasizes the importance of adaptive strategies and partnerships with local communities in driving this positive change.

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LIST OF ABBREVIATIONS

AfDB	African Development Bank
CAADP	Comprehensive Africa Agriculture Development Programme
CaLP	Cash Learning Partnership
CARD	Coalition for African Rice Development
CEMAC	Economic and Monetary Community of Central Africa
CERF	Central Emergency Response Fund
CPF	Country Programming Framework
CSA	Climate-Smart Agriculture
CSO	Civil Society Organization
CSP	Country Strategic Plan
CSP	Country Strategic Plan
DEA	Department of Export Agricultural
DEGURBA	Degree of Urbanization
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
EEMP	Emergency Economic Management Programme
ELCSA	Escala Latinoamericana y Caribeña de Seguridad Alimentaria
ETLS	Ecowas Trade Liberalisation Scheme
EU	European Union
FAO	Food and Agriculture Organization
FIES	Food Insecurity Experience Scale
GAIN	Global Alliance for Improved Nutrition
GDP	Gross Domestic Product
GFSI	Global Food Security Index
GHI	Global Hunger Index
GOANA	Grand Offensive pour la Nourriture et l'Abondance
HDI	Human Development Index
HFIAS	Household Food Insecurity Access Scale
HHS	Household Hunger Scale
ICT	Information and Communication Technologies

IDP	Internally Displaced Person
IFAD	International Fund for Agricultural Development
IFC	Industry Foundation Classes
IMF	International Monetary Fund
IPC	Integrated food security Phase Classification
IPPM	Integrated Production and Pest Management
LEWIE	Local Economy Wide Impact. Evaluation
MFA	Armed Forces Movement
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organizations
OECD	Organization for Economic Co-operation and Development
P4P	Purchase for Progress
PAIGC	Partido Africano da Independência da Guiné e Cabo Verde
PAU	WAEMU Agricultural Policy
PoU	Prevalence of Undernourishment
PRSP	Poverty Reduction Strategy Paper
PSRSA	Plan for the Agricultural Sector
PtoP	Protection to Production
RCN	Raw Cashew Nuts
REOWA	Regional Office for Resilience, Emergency and Rehabilitation in West Africa
RTDP	Roots and Tubers Development Programme
SDG	Sustainable Development Goals
SNR	National Rice Development Strategy
SPFS	Special Programme for Food Security
SRI	System of Rice Intensification
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNDG-WCA	United Nations Development Group for Western and Central Africa
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund

UNOWA	United Nations Office for West Africa
URCA	Urban–Rural Catchment Areas
WAEMU	Western African Economic and Monetary Union
WB	World Bank
WBG	World Bank Group
WECARD	West and Central African Council for Agricultural Research and Development
WFF	World Food Forum
WFP	World Food Programme
WHO	World Health Organization

INTRODUCTION

Food security is a crucial issue affecting millions of people around the world, and Guinea-Bissau is an emblematic example of how historical, political and economic factors can affect access to food. In this small West African country, approximately 77 % of the population (FAO, 2023) suffers from severe or moderate food insecurity, families face a daily struggle for subsistence, often due to a history marked by conflict and political instability. Agricultural production, crucial for food security, has been severely compromised, making the intervention of international organizations such as FAO (Food and Agricultural Organization) and WFP (World Food Programme) urgent.

In this context, this thesis aims to answer the following research question: what are the effects of FAO and WFP initiatives on food security in Guinea-Bissau, considering the unique challenges the country faces? The focus of this thesis is to analyze the strategies and interventions implemented by the FAO and WFP, and how they have sought to address food security issues.

It argues that through strategic interventions, adaptive approaches and partnerships with local communities, these organizations have made remarkable progress in improving food security indicators, even in the face of political instability and economic constraints.

This argument builds upon existing literature on food security in fragile states and humanitarian interventions in challenging environments. While scholars such as Laroche-Dupraz (2013), have extensively examined food security challenges in developing countries and others such as Temudo (2019) and Kohl (2020) have analyzed the factors affecting food security in Guinea-Bissau, there remains a gap in understanding the role and the operation strategies to overcome the constraints in this country. This thesis positions itself at the intersection of food security studies, development economics, and policy analysis. As one of the world's poorest countries, affected by political instability and limited infrastructure, Guinea-Bissau presents a compelling case study for understanding humanitarian interventions in extreme conditions. This research addresses this knowledge gap and shows how, even in the face of severe adversity, humanitarian agencies can make meaningful progress in improving food security.

The relevance of this research lies in its potential to shape the future of food security and agricultural production in Guinea-Bissau, while providing broader lessons applicable to similar contexts. By examining the results of different interventions, this study highlights the most effective programs implemented by FAO and WFP and identifies those with limited impact. This critical analysis provides a basis for understanding which interventions and strategies are best suited to specific socio-economic and political environments, particularly those characterized by fragility and resource constraints. Lessons learned from the case of Guinea-Bissau can serve as a valuable reference for countries facing similar challenges, allowing for more targeted and effective food security interventions. Ultimately, this research contributes to global efforts to improve the implementation of food security and agri-food systems by providing evidence-based recommendations for optimizing humanitarian and development initiatives in complex environments.

This thesis examines the critical link between food security in Guinea-Bissau and the country's reliance on cashew nut and rice production, both of which are highly susceptible to market fluctuations and climate challenges. Despite significant hurdles posed by political instability and economic constraints, the FAO and WFP have achieved notable successes in improving food security. Indicators such as a reduction in undernourishment and a 15% increase in rice yields in targeted areas highlight this progress. Furthermore, these organizations have significantly expanded their reach, with their programs benefiting 270,451 individuals in 2023, representing a 47.1% increase from 2019. Through initiatives like school feeding, nutrition support, and agricultural development, the FAO and WFP have effectively addressed immediate food needs while working to build long-term resilience. This thesis will explore how these positive outcomes, driven by adaptive strategies and partnerships with local communities, underscore the potential for meaningful progress in food security, even amidst ongoing socio-political challenges.

To conduct this research, several sources were used, including academic articles, international agency reports and statistical data taken from official website life FAOStat, World Bank, International Monetary Fund and non-governmental organizations certified operating in the field of agricultural production and humanitarian assistances concerning food security. In addition, five interviews were conducted with members of FAO and

WFP: four online (through online platforms such as Teams, Google Meet and WhatsApp) and one in-person, in the FAO headquarter located in Rome. These interviews provided valuable and transparent information on the strategies and challenges faced by the organizations, enriching the analysis with direct perspectives from those working in the field.

The thesis is divided into three main chapters. The first section discusses the concept of food security, its measurement methods, and trends in West Africa, with a focus on the roles, goals, and strategies of FAO and WFP. The second chapter shifts to Guinea-Bissau, offering an in-depth analysis of its agricultural potential, the historical impact of the civil war (1998-99) on food systems, the interventions of FAO and WFP in the post-conflict context and it also delves about the significance of key crops like cashew nuts and rice to the local economy. The final chapter examines the efforts of FAO and WFP in Guinea-Bissau, where staff members of the UN agencies were interviewed to analyze key issues that limited their interventions or that are good, through detailing their programs, international cooperation, and their ability to maintain food security amid political and economic challenges. The final parts of the chapter examine the results of the evaluation of the operations and offer a panoramic view of future implications and recommendations, especially the need for agricultural diversification.

CHAPTER I

Food security progress and challenges in West Africa in the last 20 Years

This chapter examines the historical context and evolution of food security in West Africa from 2000 to the present. By analyzing the concept of food security, regional trends and the factors influencing both improvements and declines in food security in the region, this section provides a crucial foundation for understanding the role and contexts in which the Food and Agriculture Organization (FAO) and the World Food Programme (WFP) operate.

The chapter begins with an examination of the concept of food security, its four pillars and the tools used to measure it. It then examines trends in West Africa, focusing on the significant improvement in food security from 2000 to 2016 and the subsequent decline since 2017. The former period is crucial for understanding the current food security challenges in West Africa, as it represents the most recent era of significant improvement before the start of the decline. It highlights the capacities and potential factors of the region for positive change under favorable conditions and showcases effective strategies in agricultural development and policy implementation, many of which have been supported by international organizations such as the Food and Agriculture Organization (FAO) and the World Food Programme (WFP). The contrast between this period of improvement and the subsequent decrease since 2017 highlights the fragility of food security gains, and the complexity of the factors influencing them. By analyzing this period of progress, we can identify which interventions were most effective and provide valuable insights into how they might be adapted to address current challenges (such as climate shocks, regional conflicts and global economic disruptions). This analysis is particularly relevant for understanding the evolving role of FAO and WFP in the region as they continue to adapt their strategies to address food insecurity. Therefore, the historical analysis is essential to address the research question on the role of the agencies in countering political corruption that threatens food security and the resilience of agri-food systems in West Africa. Examining periods of progress and regression in food security provides insights into the challenges faced by these

organizations, particularly in contexts of political instability and corruption. Moreover, it highlights key factors, including political, economic and environmental elements, that have shaped food security landscape of the region. Understanding these historical dynamics is crucial for assessing the effectiveness of FAO and WFP interventions. It allows their efforts to be contextualized within broader regional challenges, in particular the impact of political corruption on food security initiatives.

1.1. The concept of Food Security

The worldwide definition of food security was given for the first time at the World Food Summit in 1996 and it was defined as the condition of having access to "sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"[1] in economic, social and physical terms. The concept of food security may refer not only to individuals, but also to other actors such as country, a group of people or a regional area. To be considered food secure, the actor must simultaneously meet four main dimensions, which are listed below in hierarchical order.[2]

1. Availability: refers to the actual presence of sufficient quantities of food on a regular and consistent basis. It comprises food production, imports and food aid.
2. Accessibility: refers to the ability to purchase, physically and financially, adequate amounts of nutritious food. This includes having enough income to purchase foods that meet their dietary needs and preferences and having the ability to physically access food stores and markets on a regular basis.
3. Stability: refers to the condition of always having access to an adequate amount of food, without the risk of losing that access due to sudden shocks such as loss of income or events such as a sudden increase in food prices. An actor's food security depends on a steady flow of labor and income to access food.
4. Utilization: concerns how the body makes the best use of the various nutrients assimilated with food. This includes proper biological use of food through adequate

[1] Prior to 1996, various definitions of food security existed, but they failed to address certain aspects. It was not until the formal adoption of the Right to Adequate Food in 1996 that a comprehensive definition of food security was established within the context of national food security.
[2] The hierarchical order implies that meeting the first condition is imperative for fulfilling the subsequent conditions.

diet, clean water, sanitation, and healthcare to reach a state of nutritional well-being. (World Bank, 2023).

The four-dimensional model emphasizes that food security is not just about food production, but encompasses a range of interrelated factors, including economic access, stability of supply and proper nutrient utilization. This integrated approach informs the various strategies adopted by FAO and WFP, guiding their interventions from agricultural development and improved market access to nutrition education and emergency food assistance.

Measuring the degree of food security can be particularly challenging, especially in regions where data availability is limited due to lack of transparency, political instability, or inadequate infrastructure for data collection and analysis. Despite these barriers, some scales or measurement methods used by FAO and WFP, or other related agencies manage to calculate food security levels very reliably. In fact, depending on the analysis to be conducted, different methods can be used. This study will refer only to the data from the Food Insecurity Experience Scale (FIES) and Integrated Food Security Phase Classification (IPC) method to ensure consistency and comparability across different contexts, as it is an internationally validated and standardized measure adopted by the international institutions. Indeed, the Food Insecurity Experience Scale (FIES) is currently the only method for assessing food security at the household or individual level that ensures global comparability of measurements, due to its ability to be calibrated against an international reference standard (FAO, 2020). Unlike the FIES, which focuses on household or individual experiences of food insecurity, the IPC examines a broader range of factors that contribute to food insecurity, including livelihood disruption, displacement, disease outbreaks, and natural disasters.

The Integrated Food Security Phase Classification is an important tool which provides a comprehensive analysis of the severity and causes of acute and chronic food insecurity. The IPC classifies the severity of food insecurity into five phases, ranging from minimal (Phase1) to famine (Phase 5), based on a convergence of evidence from various indicators and analytical methods (see table 1). This approach allows for a more holistic understanding of food security situations and enables better coordination of strategic response planning among governments, UN agencies, and other humanitarian organizations. (Coates et al., 2007).

Table 1. Model of the Integrated Food Security Phase Classification (IPC)

Phase 1 - Minimal	Households can meet food and non-food needs without difficulty.
Phase 2 - Stressed	Households meet minimum food needs but struggle with non-food expenses.
Phase 3 - Crisis	Households face food gaps or use crisis strategies to meet minimum needs.
Phase 4 - Emergency	Households experience severe food gaps or use extreme coping strategies.
Phase 5 – Famine/ Catastrophe	Households face extreme food shortages, leading to starvation and death.

On the other hand, the FIES aims to provide a more accurate picture of food insecurity at individual and household levels, filling the limitations of analysis left by the PoU method. Indeed, previously, the Food and Agriculture Organization and other agencies used the prevalence of undernourishment (PoU) to monitor food insecurity in different regions. This approach determined how much food was available in each country each year, and what proportion of the population might not have access to that food. While the PoU method was useful for monitoring broad regional and national trends, it was not accurate in identifying the specific individuals and areas facing malnutrition. To address and better monitor the data, the FAO launched the Food Insecurity Experience Scale in 2013, which is now used in 150 countries, and addresses the need for a simple, flexible and cross-culturally comparable global instrument.

The FIES methods consists of 8 questions asking respondents how often they have experienced conditions indicating lack of access to food in the last 12 months. The unit of analysis can be either individuals or households. In the latter case the respondent is an adult, usually the person most responsible for preparing meals or most knowledgeable about the household's access to food. Surveys are carried out by means of probability sample and conducted on a regular basis, usually annually. The samples selected are nationally representative or targeted at specific geographical areas or population groups of interest. Sampling strategies involve stratification to ensure adequate coverage of urban and rural areas, as well as any other subgroups relevant to

the analysis. To ensure the reliability and comparability of results over time and across geographical areas, data are collected through face-to-face or telephone/tablet interviews by specially trained researchers, using strict sampling procedures and standardized protocols. Then, the responses to each question are scored, and the sum of the scores reflects the level of food insecurity.

After having calculated the results of the empirical surveys, the FIES classifies the results into three categories according to the different levels of food insecurity: (1) food secure, (2) moderately food insecure and (3) severely food insecure. The first category represents minimal problems of access to food, the second some insecurity due to limited resources, and the third extreme and frequent experiences of food insecurity, including whole days of food deprivation. (FAO Statistics, 2018).

A sample of the FIES model is presented below, showing the questions asked, the labels associated with them, and the respective levels of food insecurity determined by positive responses.

Table 2. Model of the Food Insecurity Experience Scale

Questions	Label	Domains of FI construct	Assumed severity of Food Insecurity
Q1 *You were worried you would not have enough food to eat?*	WORRIED	Uncertainty and worry about food	MILD
Q2 *You were unable to eat healthy and nutritious food?*	HEALTHY	Inadequate food quality	MILD
Q3 *You ate only a few kinds of foods?*	FEWFOOD	Inadequate food quality	MILD
Q4 *You had to skip a meal?*	SKIPPED	Insufficient food quantity	MODERATE
Q5 *You ate less than you thought you should?*	ATELESS	Insufficient food quantity	MODERATE
Q6 *Your household ran out of food?*	RUNOUT	Insufficient food quantity	MODERATE
Q7 *You were hungry but did not eat?*	HUNGRY	Insufficient food quantity	SEVERE
Q8 *You went without eating for a whole day*?	WHLDAY	Insufficient food quantity	SEVERE

In addition to the IPC and the FIES, there are other tools for measuring food insecurity that are worth mentioning, although this study will refer to the above because of their global applicability and standardized approach. These other instruments include the Global Food Security Index (GFSI)[3], the Household Hunger Scale (HHS)[4], the Household Food Insecurity Access Scale (HFIAS)[5], and the *Escala Latinoamericana y Caribeña de Seguridad Alimentaria* (ELCSA)[6] which are scales based on empirical surveys that collect information on households' access to adequate food, their experience of hunger and the strategies they use when food is scarce.

Below is a summary scheme showing how the different types of tools are used, including their measurement range, focus and key feature.

[3] The GFSI, produced by The Economist Intelligence Unit, evaluates national-level food security based on affordability, availability, quality, and safety of food.
[4] The HHS focuses on severe food insecurity experiences, making it suitable for cross-cultural contexts.
[5] The HFIAS measures a spectrum of food insecurity conditions from mild to severe, assessing household access to food.
[6] ELCSA is tailored for the Latin American and Caribbean context, assessing both quantitative and qualitative aspects of food access and the psychosocial impacts of food insecurity.

Table 3. Model of the different tools of measuring food security

Measure	Measurement Range	Focus	Key Feature
IPC	5 phases	Acute food insecurity	Standardized across countries
FIES	8 levels	Severity of food insecurity	Globally comparable
GFSI	0-100 score	National food security	Considers affordability, availability, quality
HHS	6 points scale	Severe household hunger	Simple, cross-cultural measure
HFIAS	27 points scale	Household food access	Captures anxiety about food access
ELCSA	Variable versions	Household food security	Tailored for Latin America and Caribbean

The concept of food insecurity is often interchanged with the concept of hunger, even though they refer to different conditions. Indeed, according to the FAO's definition, hunger is characterized as the distressing physical sensation resulting from insufficient intake of dietary energy. Hunger becomes chronic when a person consistently fails to consume enough calories to maintain a "normal, active, and healthy life" which corresponds to at least 1800 Kcal per day[7]. It is also important to differentiate the concept of hunger from undernutrition. The latter means lacking healthy diets, key nutrients like protein, vitamins and minerals, regardless of calorie intake. It stems from inadequate diet quality or quantity. Therefore, undernutrition is a type of malnutrition caused by unbalanced or insufficient diets. The occurrence of hunger and malnutrition implies that the affected individual, group or region is food insecure. In synthesis, while food

[7] The minimum energy requirement depends on the analyzed country, and it may vary from 1.660 to 2.959 calories a day per person (all requirements for each country are available on FAO website: www.org.fao).

insecurity examines nutrition availability constraints at socioeconomic level, hunger looks at the bodily impacts of insufficient calories on a person.[8] (FAO, 2024).

1.2. The role of FAO and WFP

Ensuring global food security is a complex challenge influenced by many factors, including corrupt governance, political instability, economic crises, civil conflicts, climate shocks, market dynamics and unfavorable agricultural conditions. Overcoming these political, social, economic and cultural barriers requires the concerted efforts of many actors, including international organizations, non-governmental organizations (such as UNICEF, Save the Children and Oxfam) and regional organizations (such as the European Union and the African Union). This study will focus primarily on the role and strategies of the Food and Agriculture Organization (FAO) and the World Food Programme (WFP) because of their global reach, specialized expertise and significant impact on food security initiatives worldwide.

It's important to note that several UN agencies are involved in addressing food security and related issues, such as the International Fund for Agricultural Development (IFAD), which focuses on rural poverty reduction and agricultural development; the United Nations Development Programme (UNDP), which works on sustainable development goals, including zero hunger; and the United Nations Environment Programme (UNEP), which addresses environmental factors affecting food production.

However, the FAO and the WFP are the main agencies tasked with reducing individual and household food insecurity while ensuring the effectiveness of resilient agri-food systems that are not undermined by local political elites. The FAO's role in improving agricultural productivity and food systems, combined with the WFP's

[8] The Global Hunger Index (GHI) is the tool used to measure hunger levels at global, regional, and national scales. It considers four key indicators: undernourishment (the proportion of the population with insufficient daily calorie intake), child wasting (the percentage of children under 5 years old who have low weight for their height, reflecting acute undernutrition), child stunting (the percentage of children under 5 years old who have low height for their age, indicating chronic undernutrition), and child mortality (the mortality rate of children under 5 years old). Each indicator is scored on a scale from 0 to 100, with 0 representing no hunger and 100 representing the most severe hunger. These standardized scores are then combined to calculate the final GHI score. The GHI scale is divided into five severity levels: low (≤9.9), moderate (10.0-19.9), serious (20.0-34.9), alarming (35.0-49.9), and extremely alarming (≥50.0). A famine situation is declared only when the index reaches the "Extremely Alarming" level.

expertise in emergency food assistance and hunger alleviation, provides a comprehensive view of both long-term and immediate strategies to combat food insecurity. In addition, the two organizations often work closely together, providing a unique perspective on coordinated international efforts to ensure global food security.

Although the two UN agencies share the same ultimate goal of ensuring food security, they operate in different ways. The FAO focuses primarily on long-term agricultural development, policy guidance, and capacity building, while the WFP specializes in immediate food assistance and emergency response. The FAO's role encompasses providing technical expertise, collecting and analyzing data on global food and agriculture, and developing international standards for food safety and agricultural practices. On the other hand, the WFP is positioned at the intersection of the FAO and the UN, and its main activities involve delivering food aid in crisis situations such as natural disasters and conflicts, implementing school feeding programs in developing countries, and providing cash-based transfers to support local food markets. Therefore, the WFP can be considered as the "operational arm" as it maintains administrative links with the Food and Agriculture Organization while being subject to joint oversight in terms of policy formulation, project approval and budget allocation. This dual governance framework reflects the multifaceted role of the programme in navigating the complex interplay between international development, humanitarian assistance and food security. (Simon, 2012).

In the next section an overview of how they have been created and their specific objects will be analyzed.

1.1.1. History of the UN agencies

The very first roots of the FAO go back to 1943 when the Second World War was not yet over, and representatives from 44 countries met in the small town of Hot Springs, in the US state of Virginia, with the intention of creating an international body dedicated to agriculture and foodstuffs. Indeed, the Great Depression of the 1930s, the world wars and the problems of food surpluses and deficits had brought to the fore the need for international coordination in this crucial sector: in various nations agriculture was not protected with duties and subsidies, and in many poor countries there was not enough to

eat. This new agency would have as its main objective the fight against hunger and the modernization of agricultural techniques, so as to promote food self-sufficiency as far as possible. The FAO (Food and Agriculture Organization) was officially founded on 16 October 1945 in Quebec, Canada, with 42 countries signing its constitution. Initially, the headquarters were established in Washington D.C., but in 1951 it was moved to Rome, Italy, where it is now the permanent headquarters.

Over the years, FAO has broadened its scope to include forestry, fisheries and rural development. It has become a point of reference for data and statistics in the field and contributes to international food security policies.

However, in the 1950s and 1960s, new challenges related to global food security emerged. Developed countries were faced with the problem of agricultural surpluses, while many developing countries continued to struggle with food shortages. This situation called for a more direct and operational approach than that offered by the FAO.

It was in this context that, in 1961, George McGovern, an American with food aid experience and director of the US Food for Peace programme, and Josué de Castro, the first president of the FAO Council, created a specific programme for food emergencies.[9] The idea was to provide a mechanism through which developed countries could manage their agricultural surpluses effectively while helping food insecure countries, but without damaging local agricultural markets or disrupting international trade dynamics.

This proposal led to the creation of the World Food Programme in 1963 as a strategic response to the changing challenges of global food security. The WFP was conceived as an operational complement to the FAO, focusing on the direct distribution of food aid, providing food assistance in emergencies.

The first WFP emergency faced was the earthquake in Iran in September of that year, followed by a hurricane in Thailand and the Algerian refugee crisis in Morocco and Tunisia.

In 1965, the WFP was confirmed as a permanent programme of the United Nations. Since then, the organization has continued to evolve, adapting to global food security challenges.

[9] United Nations General Assembly Resolution 1496 (XV), which was adopted on October 27, 1960. This resolution laid the groundwork for the establishment of the World Food Programme (WFP) by recognizing the need for a multilateral food aid program.

WFP works in close collaboration with FAO and other UN agencies, focusing mainly on emergency food assistance and development support through nutrition and resilience building programmes.

Today, WFP is the world's largest humanitarian organization working on hunger and food security, operating in more than 80 countries worldwide. In 2020, the organization received the Nobel Peace Prize for its efforts in fighting hunger, contributing to peace in areas of conflict and preventing the use of hunger as a weapon of war.

FAO and WFP, while having different tasks, work side by side for a common goal: to ensure enough food for all and to improve the lives of people around the world. This collaboration reflects the evolving international response to food security challenges, combining FAO's technical and policy expertise with WFP's operational and emergency approach.

1.1.2. FAO's and WFP's strategic objectives

The FAO, which now includes 194 UN members plus the European Union and two associate members (Tokelau and Faroe Islands)[10], has five strategic goals:

1) to eradicate hunger, food insecurity, and malnutrition;
2) to increase the productivity and sustainability of agriculture, fisheries, and forestry;
3) to reduce overall rural poverty;
4) to make agri-food systems inclusive;
5) to improve the resilience of agricultural systems.

These strategic objectives are supported by various activities, including the development of technical programs by specialized agencies, research, data monitoring, publication of reports and yearbooks, educational programs with seminars and training activities, and the development of specific programs for specific countries. Since its creation as a permanent specialized agency of the United Nations in 1945, the FAO has been active in 130 countries, introducing reforms, international conventions, and various

[10] These are territories or regions that have been granted associate membership. The Faroe Islands, an autonomous territory within the Kingdom of Denmark, and Tokelau, a dependent territory of New Zealand participates FAO activities and benefits from its resources and expertise, likely in specific capacities, but do not have the same level of involvement or voting rights as full member nations.

specialized programs (such as responsible fishing, plant genetic resources, and systems against animal and plant epidemics), including the World Food Programme.

More recently, given the high levels of political instability and governance constraints affecting less developed African countries, FAO's new focus has shifted more towards the governance landscape, recognizing that complex challenges affect key areas such as food security, nutrition, livelihoods and sustainable resource management are deeply linked with issues of political instability and weak governance structures.

The FAO's updated strategy now places a strong emphasis on addressing these underlying governance challenges. First, it aims to develop more adaptive and inclusive governance structures that can better respond to local needs and changing circumstances. This involves working with governments to create more flexible and responsive institutions that can effectively manage food and agricultural systems.

Secondly, the FAO is focusing on improving coordination among diverse stakeholders. This means bringing together government agencies, local communities, private sector actors, and international organizations to collaborate more effectively on food and agriculture issues. By fostering better communication and cooperation, the FAO hopes to create more cohesive and impactful interventions. To enhance its global governance role, the FAO is now taking a more strategic approach to policy issues. It is identifying key policy challenges at national, regional, and multilateral levels, allowing it to target its efforts more effectively. (OECD, 2023). This shift in focus aims to ensure that the FAO's strategic objectives are applied more effectively across all 130 countries where it operates. By addressing fundamental governance issues, the organization hopes to create a more stable foundation for implementing its programs. The ultimate goal is to achieve more sustainable and lasting improvements in food security, agricultural sustainability, and rural development.

This new approach recognizes that technical solutions alone are not sufficient to address the complex challenges facing global food systems. By focusing on governance, the FAO aims to create the enabling environment necessary for its technical interventions to have maximum impact and longevity.

On the other hand, the WFP since it focuses more o the actions on place, works in 120 developing countries, most of them in Africa but also Central and Latin America and Asia. (WFP, 2024). In 2022, this UN agency sets a new strategic plan after the

consequences of Covid-19, on the demographic increase (especially in Africa) and on the deteriorating of climate conditions which bring the agri-food systems less resilient, more pollutants and also more expensive to improve.

The recent strategic plan (2022-2025) outlines five strategic objectives:

1) Crisis response: Ensure people can meet their urgent food and nutrition needs.
2) Improve nutrition: Promote better nutrition, health, and education outcomes.
3) Achieve food security: Support smallholder farmers and food systems.
4) Support SDG implementation: Partner with governments to achieve Zero Hunger.
5) Partner for SDG results: Enhance global partnerships to support SDG implementation.

As mentioned above FAO's strategic objective, it is evident that the WFP's approach complements the FAO's work by focusing on immediate food needs and building pathways to food security. While the FAO concentrates on long-term policy and structural changes in food and agricultural systems, the WFP provides direct assistance and implements programs that can bridge the gap between emergency response and sustainable development.

For example, the WFP's school feeding programs not only address immediate hunger but also contribute to the FAO's goals of reducing rural poverty and creating more inclusive food systems. Similarly, the WFP's support for smallholder farmers aligns with the FAO's objectives of increasing agricultural productivity and sustainability.

The WFP's emphasis on partnerships, particularly in supporting SDG implementation, also aligns with the FAO's new focus on governance and stakeholder coordination. Both organizations recognize that addressing complex food security challenges requires collaborative efforts across multiple sectors and levels of government.

In conclusion, the FAO and WFP provide a comprehensive approach to global food security, combining policy expertise, technical assistance, and direct food aid to address both immediate needs and long-term challenges in the global food system.

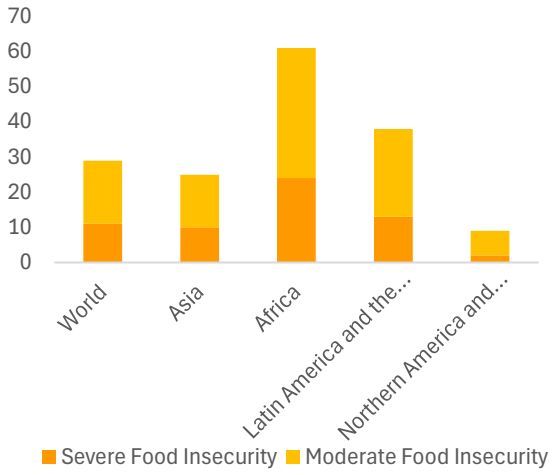
1.3. Western Africa trends

Food insecurity is a pervasive global challenge affecting 28,93% of the countries in the world in 2023. (FAO, 2024) However, some geographical areas are dramatically more affected than others, reflecting deep differences in natural resource availability, climatic and environmental conditions, levels of economic and infrastructural development, and complex political, social and cultural dynamics. The last events have had a strong impact on food security outcomes, such as the global recovery from COVID-19, escalating climate issues, Russia-Ukraine and Israel-Palestine conflicts that have affected economic stability leading to elevated inflation, tighter monetary policies and reduced fiscal support. Moreover, recent statistics conducted by OECD, FAO, UNICEF and World Bank (2023) show no overall improvement in the last recent years (since 2016) in food security, and in some areas, it is worsening.

In 2022 and 2023[11], the global prevalence of moderate or severe food insecurity remained static for the second consecutive year, following a sharp increase from 2019 to 2020. According to FIES results, an estimated 29.6% of the world's population, equating to 2.4 billion people, faced moderate or severe food insecurity, meaning they lacked access to adequate food. While progress was made in reducing hunger in most subregions of Asia and Latin America, the situation in all subregions of Africa continued to deteriorate.

[11] The data for 2023 is currently being compiled and will be fully available by the end of 2024

Figure 1: Percentage of food insecurity (FAO, 2023)



Graph (a): level of moderate and severe food insecurity across world's regions

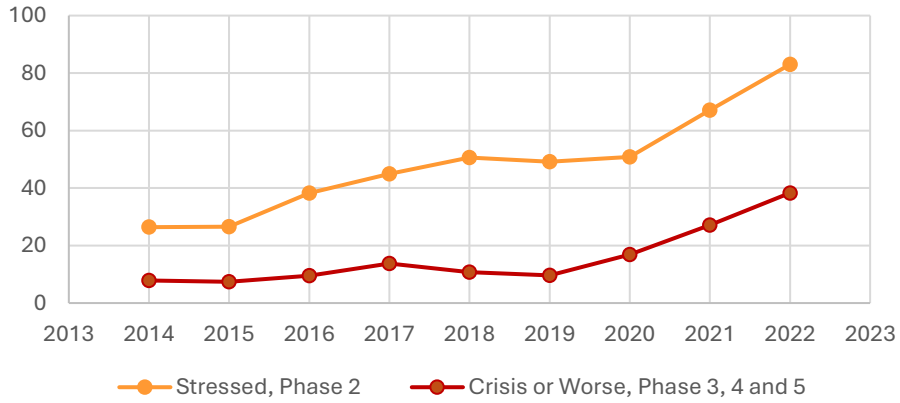
Graph (b): level of moderate and severe food insecurity in 2017,2019 and 2020 across Africa's subregions

As illustrated in graph (a), Africa stands out as the region facing the most severe challenges, with 24% of its population experiencing severe food insecurity and 60,9% facing moderate food insecurity. Latin America and the Caribbean are still above the food security average and Europe and North America registered very low food insecurity percentage. Figure (b) depicts the evolution of overall food insecurity, including both moderate and severe levels, in different regions of the African continent over the last five years. As the statistics show, the situation has deteriorated significantly since 2020, the year of the pandemic. While there was a general improvement from 2017 to 2019, the situation took a drastic turn after 2020. The percentage of food insecurity increased alarmingly in all regions, indicating a serious deterioration in the overall food security landscape.

Excluding Middle Africa due to the lack of reliable and transparent data for 2017 and 2019 due to the ongoing conflicts in the region, Western Africa, which includes Gambia, Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Burkina Faso, Togo, Benin, Nigeria, Niger and Mali and extends from Cape Verde in the west to Mauritania in the east, experienced the largest increase in food insecurity. The level of reported food insecurity in the region increased from 60.5% in 2017 and 68.3%

in 2018 to a dangerous 88.4% last year, representing an overall increase of almost 50%. This alarming rise in food insecurity affects nearly 400 million people in West Africa, at the point that FAO (2023) defined this situation "at unprecedented levels". The graph below illustrates the evolution of data in the region from 2014 to 2022, this time using the IPC method. The statistics confirm that the overall increase in food insecurity in the last years has increased notably, and that people in Phase 2 passed from being 30 million in 2024 to 83 million in 2022.

Figure 2: Food insecurity population in West Africa (2014-2022, in millions)



Source: graph created based on data taken from IPC, 2023

In addition, despite the people facing food insecurity, the majority of people who could not afford a healthy diet in 2022 were concentrated in this region, where 712 million (85%) of people were unable to meet the nutritional and food safety standard. Indeed, as mentioned, a fundamental aspect of achieving food security objectives also include the utilization pillar, that is the consumption of a healthy diet. In this region, as it will be discussed in the next section, the common diet is based exclusively on rice and nuts, lacking the consumption of nutritional foods which include grains, legumes, nuts, a rich variety of fruits and vegetables, eggs, dairy, poultry and fish, and minimal red meat. Consistent consumption of a healthy diet at all stages of life is essential to prevent various forms of malnutrition, ranging from stunting and wasting in children to micronutrient deficiencies, overweight or obesity. (FAO, IFAD, UNICEF, WFP and WHO, 2023).

In addition, data has revealed a clear link between urbanization and food security, thanks to the new international classification of the degree of urbanization (DEGURBA)[12]. The statistics show that as the degree of urbanization increases, food security improves at global, regional and sub-regional levels. This trend is evident in the 2022 data, which for the first time allows food security to be measured and compared by degree of urbanization. The results show the following disparities: in rural areas[13], about 35% of the population is food insecure, compared to 29% in peri-urban areas[14] and 26% in urbanized areas[15]. This difference highlights the challenges rural communities face in accessing adequate food. The food security gap between urban and rural areas is the result of several interconnected factors. Rural areas often suffer from limited economic opportunities, infrastructure deficits and greater vulnerability to the effects of climate change on agriculture. These regions tend to have less diversified labor markets, resulting in lower incomes and reduced purchasing power for food. Poor transport networks and inadequate storage facilities in rural areas can hamper food distribution and preservation. In addition, rural communities that rely heavily on agriculture are more vulnerable to climate-related disruptions in food production.

In contrast, urban areas benefit from economic diversity, proximity to markets and better infrastructure. Cities such as Lagos and Abidjan offer a wider range of employment opportunities, potentially leading to higher incomes and better access to food. Urban dwellers have easier access to diverse food markets and more efficient supply chains. In addition, better transport and storage facilities in cities facilitate more effective food distribution. However, as urbanization accelerates in West Africa, the challenges for large cities are growing as population growth leads to increased demand for food and puts pressure on agri-food systems to increase production, processing and distribution capacities.

In addition to the rural population, the FIES data (2023) highlights other significantly affected groups in West Africa, revealing persistent gender inequalities.

[12] The Degree of Urbanization (DEGURBA) classification is an analytical tool developed by Eurostat and the OECD for the purpose of distinguishing areas based on population density and urban characteristics. It is based on a grid of 1 square kilometers cells and considers various factors such as population counts and spatial distribution to ensure accurate representation of urban, suburban, and rural landscapes.
[13] According to URCA, to be considered as rural area it needs to be >2 hour from a town or city
[14] Peri-urbans areas are defined to be <1 hour to a large city
[15] Urbanized areas may include from large cities (>1 million people) to towns (20-50 thousand people)

Across the region, adult women are more likely to be food insecure than men. The gender gap in food insecurity widened significantly in 2020 and 2021 as a result of the COVID-19 pandemic. During this period, women in West Africa were more affected by job and income losses and took on a greater share of unpaid care responsibilities. Women in rural areas faced even higher levels of food insecurity, as job and income losses were more severe for them than for men, especially in agri-food systems. In 2022, the gender gap in food insecurity reached significant levels in West Africa, with a higher percentage of women experiencing moderate or severe food insecurity compared to men.

1.4. History of increase in food security in West Africa from 2000 to 2016

Before the recent deterioration, food security in West Africa had seen a remarkable improvement between 2000 and 2015, with a 60% reduction in undernourishment. (FAO,2020). In particular, food accessibility (pillar two) had doubled, while food utilization (pillar four) had benefited from a more diversified and energetic diet, with a reduction in the consumption of cereals, roots and tubers (World Bank, 2016). In 2016, however, the situation began to deteriorate. Indeed, examining the last two decades is important because it allows to understand the recent improvement in food security and the new challenges that many African developing countries have had to face, which have led to a deterioration. Understanding the factors that contributed to the development of the resilience of agri-food systems in West Africa until 2016, and why they were no longer sufficient to compensate from 2017 until now for the new challenges, offers a perspective for understanding the new strategies of FAO and WFP and how to overcome the political, social and economic obstacles.

Since the 2000s, many West African countries have adopted neoliberal policies and strategies to increase imports, international trade and market-oriented interventions to improve food security and increase food availability. The reasons of why there was an internationalization process is due to a combination of internal pressures and external influences. Indeed, these countries have faced persistent challenges in achieving food security through domestic production alone, due to issues such as climate variability, limited agricultural infrastructure and inadequate access to modern agricultural technologies. Many factors need to be analyzed to understand the increase in food

security in West Africa between 2000 and 2016, and the fundamental role played by increased imports. The need to boost imports was driven by the region's significant demographic growth during this period, with the population increasing by more than 50% (from 230 million in 2000 to 350 million in 2015) (UN, 2019). The agri-food systems and production methods at that time could not produce enough food for the growing population, necessitating external sources to meet the rising demand.

Urbanization also played a key role in the growth of food imports, as countries with higher urban populations registered higher imports. In the early 2000s, many people moved to big cities, leading to a decline in rural agricultural production. Urbanization brought changes in food consumption patterns, with urban populations preferring to ready-to-eat (e.g. cereals bar) and easily accessible foods over the fresh, unprocessed products common in rural areas. Consequently, cities became large consumers of imported food, increasing the country's overall dependence on imports (Reardon et al., 2019).

These demographic and urbanization trends, combined with the challenges in domestic production, set the stage for the adoption of neoliberal policies and increased reliance on imports. In this context, neoliberal policies that emphasized market-oriented solutions and increased international trade were seen as potential remedies to chronic food shortages and price instability.

The FAO played a significant role in this shift. While traditionally focused on boosting domestic agricultural production, the FAO began advocating for more market-based approaches to food security in Western Africa. The organization promoted the idea that food imports could be an effective tool to ensure adequate food supplies, especially in countries facing agricultural challenges. This approach aligned with the broader structural adjustment programs promoted by international financial institutions like the World Bank and International Monetary Fund. These programs encouraged trade liberalization and reduced government intervention in agriculture, often as conditions for loans and financial assistance. As a result, many Western African governments reduced agricultural subsidies, loosened trade restrictions, and implemented policies that made it easier to import food. The adoption of these neoliberal policies and the increased emphasis on food imports were presented as ways to address immediate food shortages and price volatility.

The rise in food imports and international trade prompted Western African governments to debate whether this approach was the best for enhancing food security or if the risks outweighed the benefits. While the liberalization process generally brought positive effects and improved food security from 2000 to 2016, it is important to analyze the negative factors and risks. This analysis will highlight how these risks should have been mitigated and how strategies from the FAO and WFP successfully minimized risks and maximized benefits.

Some experts argued that the liberalization of international trade could improve food security by increasing the availability of a diverse range of food products and making local agri-food systems more resilient to disruptions caused by climate or domestic policies but under certain conditions and precautions that needed to be addressed. However, according to the analysis of various FAO case studies, these liberalization policies needed to be accompanied by additional measures to mitigate the risks that international trade could pose to developing countries. These risks included negative impacts on vulnerable groups, such as small-scale farmers, low-income households, women and children, who may find it difficult to compete in open markets. In addition, fluctuations in global food prices could affect the affordability and accessibility of food for consumers. Another negative effect that western African countries needed to mitigate of international trade was import dependency. Countries that were heavily dependent on food imports faced challenges in ensuring a stable and secure food supply, especially if they lacked a comparative advantage in food production. Trade disruptions led to food shortages and affected the availability of food on domestic markets.

To mitigate these adverse effects on trade and food security, FAO and WFP played crucial roles in implementing policies, programmes, and strategies. Their approach was not merely to provide temporary solutions but to address the root causes of food insecurity and build long-term action plans over the last two decades. The first strategic plan began with the implementation of the Comprehensive Africa Agriculture Development Programme (CAADP) in 2003, which aimed to stimulate agricultural growth, improve food security, and strengthen the resilience of local food systems (NEPAD, 2003). This initiative set a target for African countries to allocate 10% of their national budgets to agriculture, aiming to achieve a 6% annual growth in the sector (Badiane et al., 2011). Many additional initiatives have been launched to address the

evolving challenges faced by each country in the region. These programmes were designed to be dynamic and adaptable, with no fixed end date, in order to respond continuously to the changing needs of the region (e.g. coups d'état in some countries, climate shocks in others, rapid demographic growth in others, 2008 crisis worldwide). As a result, some of them which will be analyzed in the next section are still ongoing today, adapting to the new challenges that are emerging.

These initiatives promoted by FAO and WFP, focused on developing social protection programs that improved farmers' access to critical resources such as land, water, seeds and agricultural inputs, thereby increasing their productivity and food production capacity. In addition to providing resources, the projects included extensive training programmes to equip farmers with the knowledge and skills needed to adopt sustainable farming practices, modern agricultural techniques and efficient resource management strategies. This capacity-building approach was complemented by efforts to facilitate the transfer of appropriate technologies and innovations to enable smallholders to optimize their operations, increase yields and adapt to changing market conditions. For example, the "From Protection to Production" (PtoP) project, launched by FAO in response to the 2008 food crisis, played a critical role in addressing food insecurity among vulnerable populations, particularly in West Africa. Since its establishment, the project has evolved to combine robust data collection with practical interventions, focusing on the evaluation and improvement of social protection programmes. Initially, PtoP focused on assessing the impact of cash transfers on food security. Over time, it expanded to include CASH+ interventions, which complement cash transfers with productive assets, agricultural inputs and training.

Through in-depth research methods, including the LEWIE model[16], PtoP has consistently demonstrated that these interventions contribute to long-term food security and reduce the negative impacts of international trade. As trade barriers were lowered, many developing countries experienced an influx of cheaper imported food, often undercutting local producers. By providing cash transfers and productive assets, the

[16] The Local Economy-Wide Impact Evaluation (LEWIE) model is a detailed economic tool used to assess the impacts of development interventions on local economies by integrating data from households, businesses, and other economic agents within a specific locality. It utilizes a general equilibrium framework to simulate how changes in one sector affect others, allowing policymakers to anticipate the direct, indirect, and induced effects of interventions like agricultural programs, infrastructure projects, and social protection initiatives.

project enabled vulnerable farmers to invest in their farming activities, improve productivity and better compete with imports. This support helped maintain local food production, preserve dietary diversity and develop agri-food systems. The impact of PtoP went beyond the direct beneficiaries. By strengthening local food systems and stimulating agricultural markets, the project contributed to broader food security in the targeted regions. In addition, its capacity-building initiatives enabled local policymakers and programme managers to design and implement more effective food security strategies. This multi-pronged approach proved particularly effective in countries such as Ghana, demonstrating tangible improvements in food security and resilience among vulnerable communities.（Brooks, et.al 2015）.

As mentioned above, one of the main risks in opening barriers and focusing on liberal trade policies was the dependence on external suppliers. According to this perspective, the long-term risks of international trade were expected to exceed the benefits, especially for vulnerable populations. Proponents believed that domestic production could better protect small-scale farmers, preserve traditional agricultural practices, and ensure a more stable food supply amid global market fluctuations. This vision was based on the idea that food sovereignty in West Africa could enhance food security, stimulate rural economies, and reduce poverty (Patel, 2009). While some countries were able to avoid dependence on foreign importers and still improve agricultural techniques to increase food security, others became vulnerable. In these cases, FAO and WFP played a crucial role in developing *ad hoc* programmes for those countries that became strictly dependent on international trade and didn't have the capacity to develop their own supply chain.

Ghana, for example, adopted liberalization trade strategies and was able to increase imports to supplement domestic production by financing food imports through rising export revenues from products like cocoa beans, palm oil, oil, and gold. By opening its markets, Ghana gained access to a wider variety of food products at potentially lower costs, stabilizing food prices and improving availability. Additionally, increased competition from imports spurred domestic agricultural innovation and productivity improvements (Andam et al., 2017).

However, the negative impact of dependence on imports was evident in Senegal, which suffered significantly during the 2007-08 food price crisis. To adopt liberal policies effectively, conjunctive programs were necessary, which Senegal failed to

implement. Agriculture and food imports were not compensated by exports, leading to a deficit in the food production and agriculture sector. Instead of focusing on exports, the government opted for food sovereignty strategies, notably the "Grand Offensive pour la Nourriture et l'Abondance" (GOANA). This initiative aimed to boost domestic food production and reduce import dependency in response to the global food crisis. The FAO and WFP played crucial roles in the GOANA project, significantly contributing to its implementation and effectiveness. The FAO implemented agricultural development projects, including introducing drought-resistant crop varieties and establishing farmer field schools to disseminate improved cultivation techniques. These efforts directly contributed to Goana's goal of increasing domestic food production. Additionally, the FAO assisted in developing a comprehensive land-use mapping system for more efficient agricultural planning and resource allocation.

The WFP implemented the innovative "Purchase for Progress" (P4P) initiative, directly procuring food from local smallholder farmers, creating a stable market for Goana participants, and boosting domestic production. The WFP also launched a pilot project for a weather-based crop insurance scheme, protecting farmers against climate-related risks and supporting Goana's goal of attracting private investment in agriculture (WFP, 2015).

These examples illustrate that while liberalizing trade and promoting policies that foster imports are important, they need to be complemented by other policies, such as export promotion in Ghana's case or national programs in Senegal's case. In particular, the actions and strategies of the FAO and WFP were crucial in ensuring the implementation of national plans drawn up by the Senegalese government. Despite opposing liberal market policies, the government promoted programs ostensibly designed to support local agricultural production and attract foreign investment. The FAO and WFP provided training programs and resources to lower-middle peasants, helping to develop the agricultural sector, adopt resilient techniques, diversify diets, and recover from the economic crisis (Hrabanski, 2011).

One example illustrating the divergence between free-trade policies and protectionism in West Africa occurred in Mali. The country transitioned from severe to moderate food security, reporting a reduction in undernourishment of less than 50% by 2015. The government, which opposed the ideology of food imports and focused on developing food sovereignty, launched the "Rice Initiative" in 2008. This initiative aimed

to boost cereal production, particularly rice, at the national level. Mali's approach aligned with the principles of food sovereignty, involving significant state intervention such as allocating land for rice cultivation, rehabilitating irrigation systems, and providing subsidized inputs like fertilizers and high-yield seed varieties. However, these input subsidies and innovative technologies relied on international markets, including imports of fertilizers to enhance harvests. Thus, the Rice Initiative encapsulated the tension between protectionist objectives and liberal methods in West African agricultural policy.

1.5. FAO and international cooperation

To mitigate the risks of import dependency and trade interruptions, FAO and WFP agencies have implemented targeted strategies involving international cooperation with different regional and international organizations. This cooperation aimed at developing, together with regional organizations, the agri-food systems in the region since the national government alone were not sufficient and many times constituted political fragility without guaranteeing transparency in the monetary aids given by FAO or WFP. This international cooperation at regional level was necessary because the challenges facing West African food security were increasingly complex and interconnected, transcending national borders. Unlike previous isolated programs, this approach focused on fostering deep collaboration between FAO, WFP, and regional bodies like ECOWAS and WAEMU.

A particularly important initiative that has contributed to improving food security in West Africa is FAO's Regional Office for Resilience, Emergency and Rehabilitation in West Africa/Sahel (REOWA), established in Dakar in 2006. This program has worked closely with two key regional institutions: the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU). This regional cooperation model differs from previous programs by emphasizing integration and tailored strategies that account for the unique socio-economic and political contexts of West African countries. For instance, the synergy between REOWA, ECOWAS, and WAEMU has enabled a more nuanced approach to policy formulation and implementation, addressing both immediate food security needs and long-term resilience building (FAO, 2018). This collaborative effort has been particularly crucial in

navigating the complex landscape of West African food systems, where issues such as climate variability, political instability, and rapid urbanization intersect. By fostering partnerships between UN agencies, regional economic bodies, and local stakeholders, this approach has enhanced the capacity to respond to crises while simultaneously working towards structural improvements in agricultural productivity and food distribution networks (OECD/FAO, 2021).

FAO's resilience plan covers all countries in West Africa and some in the Sahel (e.g. Chad), providing a comprehensive approach to regional food security challenges. In contrast, ECOWAS initially comprised 15 member states[17] during the period of food security growth, but saw the withdrawal of four countries - Niger, Burkina Faso, Mali and Guinea - due to concerns about ECOWAS's effectiveness in addressing regional security threats and political transitions (BBC News, 2024). The WAEMU, by contrast, focuses on an even narrower group of West African states that share the CFA franc[18], including Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo (WAEMU, 2023). This monetary union facilitated more integrated economic policies and coordinated agricultural strategies among its members.

[17] Benin, Burkina Faso, Cape Verde, Ivory Coast, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo

[18] The CFA franc is a currency used in several African countries that are part of two monetary unions, West African Economic and Monetary Union (WAEMU) and Economic and Monetary Community of Central Africa (CEMAC). It is pegged to the euro and guaranteed by the French Treasury, facilitating stability in trade and finance within these regions.

Figure 3: Members states covered by REOWA, ECOWAS and WAEUMU

a. Regional Office for Resilience, Emergency and Rehabilitation in West Africa/Sahel (REOWA)

b. Economic Community of West African States (ECOWAS)

c. *West African Economic and Monetary Union (WAEMU)*

The aim of REOWA was to enable the Food and Agriculture Organization to link and coordinate its plans and strategies at the regional level with the FAO office in the countries of West Africa, in order to ensure the quality and consistency of FAO's interventions in the region, and to ensure that its plans are implemented. The collaboration between REOWA, ECOWAS and WAEMU has created a differentiated approach to food security in the region. REOWA's broad geographical coverage enabled it to coordinate efforts across different political and economic contexts, while ECOWAS and WAEMU provided a framework for regional integration and policy harmonization. This synergy has been crucial in developing comprehensive strategies to increase agricultural productivity, improve food distribution networks and build resilience to food crises.

Moreover, REOWA's collaboration beyond with ECOWAS, WAEMU, also with other UN agencies and NGOs (such as UNDG-WCA[19], UNOWA[20], UN Integrated Strategy for the Sahel, Cash Transfers CALP[21], Emergency Preparedness and Response, Disaster Risk Reduction Task Force, and Humanitarian Communication initiatives like "Mali focus" and "Guinea +") played a pivotal role in bolstering food security during this period. This multifaceted cooperation enabled REOWA to contribute significantly to policy formulation, integrate interventions, and develop comprehensive resilience strategies tailored to the needs of different countries and populations.

Among its activities, REOWA focused on distributing agricultural inputs and livestock, promoting community gardens, and providing nutrition education, including on-site cooking classes conducted by WFP staff. Moreover, REOWA played a key role in promoting natural resource management and overseeing FAO's regional resilience strategies, including disaster risk reduction efforts critical to the development of the 2012 Response Programme to the Sahel crisis. In 2013, FAO managed numerous projects across 13 West African countries, emphasizing resilience building and disaster risk reduction, with a total investment of USD 90 million supported by donors collaborating with FAO to assist vulnerable communities.

WAEMU's participation in FAO's resilience program has been instrumental in facilitating policy harmonization, financial support and regional coordination.

[19] United Nations Development Group-West and Central Africa
[20] United Nations Office for West Africa
[21] Cash and Livelihoods Programming

WAEMU's single currency, the CFA franc, simplified financial transactions for multi-country projects and reduced currency-related complications. WAEMU and ECOWAS jointly led regional forums that convened key stakeholders in food security, fostering collaborative analysis and action. WAEMU's initiatives in trade facilitation, data sharing, and resource mobilization directly supported REOWA's objectives, resulting in more streamlined project implementation and coordinated responses to food security challenges among WAEMU member states.

However, the impact of these initiatives varied across the region. WAEMU member states generally benefited from streamlined project implementation and coordinated responses to food security challenges. In contrast, non-WAEMU states within the broader ECOWAS framework faced additional challenges such as currency fluctuations and less harmonized agricultural policies, which may have led to disparities in project outcomes. This dichotomy underscores the complex relationship between regional economic integration and broader food security and resilience goals in West Africa. (OECD, 2018).

1.5.1. The role of ECOWAS

The Economic Community of West African States (ECOWAS) is a regional economic union made up of fifteen countries in West Africa and it played a pivotal role for the improvement of food security. It was established on 28 May 1975 with the Treaty of Lagos to foster and promote economic integration in the region after the period of decolonization. The primary objective of the organization was to achieve "collective self-sufficiency" (ECOWAS, 1975) for its member states by creating a single, large trading bloc through economic cooperation. ECOWAS was founded on the principle that economic integration could accelerate the economic and social development of West African countries, many of which faced similar challenges in the post-colonial era. Over time, ECOWAS's mandate expanded beyond its initial economic focus to include political cooperation and conflict resolution, reflecting the complex interplay between economic development and regional stability. Between 2000 and 2015, ECOWAS played

a crucial role in improving food security across West Africa through a multidimensional approach.

Cooperation between the ECOWAS and the FAO began in 2002 with the ECOWAS-FAO Cooperation Programme, which provided technical assistance in areas such as agricultural policy formulation, crop intensification and pest management (FAO, 2010). This partnership led to the implementation of projects such as FAO's Special Programme for Food Security, which introduced improved farming techniques and technologies to smallholder farmers across West Africa. The synergy between these collaborative efforts and ECOWAS's broader agricultural policies contributed to a reported 3.7% annual growth in agricultural productivity across the region between 2000 and 2014, outpacing population growth and improving overall food availability (ECOWAS Commission, 2015).

Three years later, in 2005, FAO and ECOWAS launched their Regional Agricultural Policy (ECOWAP[22]), which served as a basis for coordinating efforts to increase agricultural productivity and improve food availability in the region. ECOWAS focused on promoting sustainable agricultural practices, supporting smallholder farmers and facilitating intra-regional trade in agricultural products. The organizations worked to ensure the alignment of agricultural policies among member states and encouraged investment in rural infrastructure and irrigation systems to increase crop yields and reduce vulnerability to climate-related shocks. All these mentioned cooperations among ECOWAS member states, along with liberal trade policies and strategic partnerships with the Food and Agriculture Organization and the World Food Programme, significantly strengthened food security efforts in West Africa during this period. According to data, agricultural production in West Africa tripled between 1980 and 2010, with countries such as Burkina Faso, Ghana and Benin ranking among the top 10 agricultural performers in the world during this period (FAO, 2012).

Beyond agricultural policies, the ECOWAS Trade Liberalisation Scheme (ETLS)[23], which was established to promote regional integration, has also played a key

[22] The program was lunched along with the New Partnership for Africa's Development (NEPAD) initiative, aimed at fostering economic integration and development within West Africa.

[23] The ECOWAS Trade Liberalisation Scheme was created in 1979 to promote economic integration and free trade among West African states, but it became particularly relevant from 2000 as member countries increasingly implemented and enforced its protocols, leading to significant growth in intra-regional trade and economic development.

role in improving food security. The programme eliminated tariffs on agricultural products and reduced non-tariff barriers, facilitating a more efficient flow of food commodities across borders (ECOWAS, 2007). This increase in intra-regional trade has allowed surplus producing areas to supply deficit areas more effectively. This has contributed to improved food availability and price stability throughout the region.

In 2011, a new Strategic Plan for the Agricultural Sector (PSRSA) was developed to address the issue of food import dependency and promote changes in trade policies. This plan referenced the concept of food sovereignty, marking a shift in thinking. However, it remained largely a theoretical vision rather than a practical strategy. Despite these intentions, governments continued to focus on traditional export-led agricultural models, with limited implementation of plans to support local agriculture and short food supply chains. In response to these challenges, and partly supported by regional initiatives promoted by ECOWAS and the FAO, smallholder farmers in Atacora began to shift to local products, particularly cassava. The production of gari, a cassava-based food, emerged as a promising alternative. The growing popularity of gari was due to its low cost, ease of transport and nutritional value, which now contributes significantly to calorie intake in Benin. The Roots and Tubers Development Programme (RTDP), funded by international organizations and the Beninese government, supported this transition. Although the programme's long-term impact was limited by a lack of sustained support, it laid the foundations for future developments in cassava and gari production. The emergence of gari as a key product for both nutrition and rural economic development demonstrated the potential of local solutions in line with ECOWAS and FAO strategies. Gari provided food security benefits, especially during periods of scarcity, and its local production helped to buffer against external price shocks that often-affected imported cereals.

In addition, ECOWAS's collaboration with the WFP led to the creation of the Regional Emergency Food Security Reserve in 2013, a mechanism designed to respond rapidly to food crises through a combination of physical food stocks and financial resources (WFP, 2014).

Cooperation between FAO, with WFP's on-site programmes, and the regional organization ECOWAS has therefore been crucial in mitigating the risk of import dependency and the challenge of trade disruptions in the event of a crisis. In the aftermath of the 2008 crisis, these organizations worked together to strengthen domestic production

capacity, thereby protecting the region from international market volatility and potential trade disruptions. These partnerships facilitated the implementation of targeted programs and policies that contributed to significant improvements in agricultural productivity and food availability across the region.

However, the shift in thinking towards food sovereignty, as exemplified by the PSRSA, remained largely theoretical. Despite the introduction of new concepts and policies, governments continued to prioritize exportation in the agricultural sectors, with limited implementation of plans to support local agriculture and short food supply chains. This discrepancy between theoretical policy shifts and practical implementation highlights the ongoing challenges in achieving the full potential of locally oriented, resilient agricultural sectors in West Africa. While international cooperation has been critical to progress, the region hasn't been able to fully develop its own survival systems, leading to worsening and increasing risks from 2017 to the present.

1.6. Factors contributing to the decline in food security since 2017

The decline in food security in West Africa from 2017 onwards is due to a complex interplay of worsening and emerging factors. While climate challenges have been present for some time, they have become more severe and frequent. Whether shocks fuels world hunger by negatively affecting the four pillars of food security: availability, access, utilization and stability of access to food. The region has experienced significant disruptions in rainfall patterns, leading to both persistent droughts and sudden, destructive floods. These extreme weather events have reduced crop productivity and livestock fertility, destabilizing traditional agricultural practices. In Nigeria, for example, flooding in 2023 affected nearly 1.5 million hectares of land, including more than 400,000 hectares of cropland, severely affecting food production. New biological threats, such as the fall armyworm infestation that spread to all West African countries by 2018, have reduced crop yields by up to 50% in severely affected areas. (GNAFC, 2024). The decrease in production also has led to higher food prices, making access to food even more difficult, especially for urban dwellers and the poorest, who will inevitably suffer from malnutrition if they cannot afford basic foods. Moreover, with the world's population expected to reach 10 billion by 2050, a 50% increase in global demand for agricultural products compared

to today's levels are likely to intensify the use of natural resources, which are already heavily exploited. Indeed, economic factors have played a critical role in exacerbating food insecurity in West Africa, with currency devaluations having a significant impact on food affordability. The devaluation of the CFA franc in 2018 led to a significant increase in food import costs for francophone countries, averaging 15% (IMF, 2019). This situation has been further complicated by the changing role of regional economic institutions.

The West African Economic and Monetary Union, which had played a stabilizing role in maintaining food security until 2016, faced increasing challenges in coordinating effective responses to these economic shocks. The WAEMU's ability to manage monetary policy and promote regional integration became fragile as member states faced divergent economic pressures (OECD, 2020). The union's efforts to maintain price stability and promote intra-regional trade were undermined by external economic shocks and internal policy disagreements.

Currency volatility extended beyond the CFA zone, with countries such as Nigeria experiencing a significant depreciation of the national currency, the naira. The Central Bank of Nigeria's decision to unify the exchange rate and remove fuel subsidies in 2023 had significant consequences, driving up inflation not only in Nigeria but also in neighboring countries that rely on Nigerian imports (World Bank, 2023). This move led to a sharp increase in the prices of essential commodities, including food, across the region.

Economic challenges have been exacerbated by rising global food prices and supply chain disruptions. West African countries, many of which are net food importers, were particularly vulnerable to these global price fluctuations. For example, the FAO Food Price Index showed a dramatic increase in global food prices between 2020 and 2022, with particularly large increases in cereals and vegetable oils, which are staples in West African diets (FAO, 2023).

One of the main factors that have had a negative impact on the decline in food security over the past few years has been political factors. The expansion of violent extremist groups in the Sahel and Lake Chad Basin[24] has led to unprecedented displacement, with

[24] Although the Sahel and Lake Chad Basin are not part of West Africa, the resulting instability has had significant spillover effects on West African countries. For instance, the influx of displaced persons into Nigeria has strained local resources and exacerbated food insecurity in the region.

more than 9.7 million people expected to be dislocated by 2023. These criminal groups highly put at risk the politicization of food aid and its distribution has sometimes exacerbated tensions and conflict in fragile areas. Reports from humanitarian organizations have highlighted instances where food aid has been instrumentalized by various political actors, including non-state armed groups, further complicating food security efforts (UNHCR, 2023).

The political landscape has been further affected by a series of coups in Mali (2020, 2021), Chad (2021), Burkina Faso (2022) and Niger (2023). The political landscape in West Africa has been significantly disrupted by a series of coups in Mali (2020, 2021), Chad (2021), Burkina Faso (2022) and Niger (2023), leading to economic sanctions imposed by ECOWAS. These sanctions have had a negative impact on Western countries, especially those without direct access to the sea. In fact, they have had to face an increase in the cost of food imports, leading to a worsening of food insecurity (ECOWAS, 2023). Political instability and weak governments have hindered the implementation of long-term agricultural development strategies, with frequent changes in leadership in countries such as Mali and Burkina Faso leading to policy inconsistencies and a lack of continuity in agricultural programmes (FAO, 2023). The FAO highlights that export bans and trade restrictions have fragmented regional markets, reducing the ability of food surplus areas to effectively supply deficit areas, while inconsistent agricultural policies and reduced investment in rural infrastructure further undermine food systems (FAO, 2022; FAO, 2023). As a result, these policy challenges have not only disrupted food supply chains but also hampered regional food security initiatives such as ECOWAP, leading to a severe decline in food security gains over the past decade and an increase in the number of food insecure people from 30.3 million in April 2019 to 35.3 million in April 2024 (CILSS, 2024).

1.7. Conclusions

This chapter has provided a broad historical overview of food security in West Africa, discussing its evolution from 2000 to the present. It has highlighted the complex interplay

of factors that have influenced food security in the region, such as economic policies, climate change, political instability and international cooperation.

The analysis has shown that significant progress has been made in food security between 2000 and 2016. Key to this progress was the adoption of neoliberal policies that promoted increased trade and market-oriented interventions, which helped to address immediate food shortages and price volatility. The cooperation between FAO and WFP with regional western African organization like WAEMU and ECOWAS were crucial in mitigating the risks coming from the international trade. The main challenge was to avoid dependency on imports and to prevent the underdevelopment of the local agri-food system. Although in some countries these risks have had an impact, as in Senegal, the two UN agencies with the regional organizations were able to implement targeted strategies and programs that focused on enhancing agricultural productivity, improving access to resources for smallholder farmers, and building resilience in local food systems. The collaboration facilitated a more integrated approach to food security, addressing both immediate needs and long-term structural challenges.

The conclusions show that the most significant plan was FAO's Regional Office for Resilience, Emergency and Rehabilitation in West Africa/Sahel (REOWA), which proved to be one of the most effective initiatives in improving food security. The success of this programme underscored the critical importance of international cooperation, especially the synergy between FAO, WFP and regional bodies such as ECOWAS and WAEMU.

However, the chapter also highlighted the serious challenges that have emerged since 2017. The decline in food security underlines the fragility of the gains made and the actual challenges facing the region. Indeed, climate change has emerged as a critical factor, with more frequent and severe weather events disrupting agricultural crops and food supply chains. Political instability, including a series of coups in several countries, has further complicated efforts to maintain and improve food security. Economic factors, such as currency devaluations and global price increases, have made food less affordable for many West Africans.

Moreover, the expansion of violent extremist groups in the Sahel and Lake Chad Basin has led to unprecedented displacement, further impacting food resources and complicating aid distribution. The politicization of food aid in some areas has exacerbated tensions and conflicts, highlighting the complex interplay between food security and broader socio-political issues. These challenges have exposed the limitations of the

previous approaches to food security, particularly those dependent on imports and external support.

As analyzed, while the role of FAO, WFP with the international cooperation was crucial in mitigating the risks, the agencies are implementing new strategies to address the new challenges to return to the period of improvement registered until 2017.

The next chapter explores a detailed case study of Guinea-Bissau. As a member of both ECOWAS and WAEMU, Guinea-Bissau provides a good perspective and it allows to carefully examine the practical implementation and impact of FAO and WFP interventions.

Indeed, it will explore the role of these agencies, and it will address the specific political, economic and environmental challenges in Guinea-Bissau providing insights into their strategies for improving food security and building resilient agri-food systems with the challenges of corruption and instability.

CHAPTER 2

Food security challenges in Guinea-Bissau

Guinea-Bissau is a small country in West Africa with high levels of food insecurity and low development of agri-food systems. Moreover, its economy is mostly based on the production of cashew nuts, many foods like rice and cereals are very expensive because they are imported, mostly from Portugal, and the country is affected by a low economy and a strong political instability, where the government doesn't intervene to improve country's challenges. (BIT, 2024). This chapter seeks to examine how the interplay of socio-economic factors, political instability, and agricultural practices impacts food security in Guinea-Bissau. The food security challenges in Guinea-Bissau stem from a complex web of interconnected issues, including political fragility, over-reliance on cashew exports, insufficient rice production, and systemic poverty. These factors collectively create a volatile environment where food security is constantly at risk. Examining these factors is relevant to understand the role of FAO and WFP and how they need to overcome such barriers that hinder the enhancing of food security in the country.

While existing research has explored individual aspects of Guinea-Bissau's agricultural and economic challenges, this analysis aims to provide a comprehensive understanding of how these factors interconnect. It builds upon previous studies on cashew production, rice cultivation, and political instability in West Africa, positioning itself at the intersection of these fields to offer a holistic view of food security in Guinea-Bissau. The reasons of why analyzing the food security trends, the development food production and implementation in this specific country are several and relevant.

Its small size allows for a comprehensive analysis of key factors affecting food security, from population growth and urbanization to climate shocks and political instability. Unlike larger countries with more complex dynamics, Guinea-Bissau provides a manageable "sample" to examine these issues in detail. [25]

Moreover, the country is a member of both the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU), [26]and this provides an opportunity to explore the challenges and opportunities

[25] The methodological approach adopted integrates theoretical contributions with a personal interpretation
[26] Guinea-Bissau became a member of ECOWAS in 1975 and a member of WAEMU in 1997.

that arise from international cooperation between the FAO, WFP and other regional organizations. This aspect of the study sheds light on the dynamics of multilateral efforts to address food security issues.

Other factors of the importance of analyzing this country are its recent history and the civil war of 1998-1999. Indeed, the civil war and the subsequent political instability led to the current unstable government having a devastating impact on the country's economy, especially about agricultural production. Frequent government changes and endemic corruption have severely disrupted agri-food systems and local food systems. (WB, 2014).

Moreover, this country is highly dependent on the production of just two products, rice and cashews, and this highlights another critical food security issue: the importance of agricultural diversification. This dependence leaves Guinea-Bissau vulnerable to market fluctuations and climate risks. For these reasons, the case of Guinea-Bissau represents a challenging setting for FAO's and WFP's missions to ensure food security in the face of political barriers and instability. For the UN agencies it is a challenge to implement targeted strategies and interventions to prevent further erosion of agri-food systems, build the resilience of vulnerable farming communities and address the underlying political issues affecting hunger. (FAO, 2023).

Examining this situation offers insights into how UN agencies can promote greater crop diversity to enhance both food security and economic stability. Guinea-Bissau's case powerfully demonstrates the political barriers that can hinder food security programs. The lack of stable governance makes it extremely difficult to implement long-term strategies or maintain consistent progress. However, this challenging context also provides valuable lessons on how UN agencies can navigate and overcome such obstacles.[27]

This chapter argues that Guinea-Bissau's food security is precariously balanced on the twin pillars of cashew production and rice cultivation, both subject to significant volatility due to market forces and climatic conditions. The civil war and the post recovering have had strong impact on the political instability, exacerbating these challenges, hindering the development of robust agricultural policies and infrastructure and the implementation of WFP and FAO plans. Moreover, the informal credit systems linking cashew and rice

[27] This statement is based on personal interpretation based on reports, case study and literature review analyzed for this dissertation

economies create cycles of debt that impact smallholder farmers' ability to achieve food security.

This chapter will provide a detailed understanding of the complex factors shaping Guinea-Bissau's food production landscape and the ongoing efforts to enhance agricultural resilience in the country, which exemplifies many of the food security challenges facing West African nations. It begins with a sociopolitical and economic overview of the country, providing essential context for understanding the current agricultural landscape. Then it analyzes the historical background, in particular with the civil war 1998-199. This conflict has significantly influenced the nation's development and food production systems. Consequently, the analysis focuses on the war's impact on key agricultural outputs. It explores how the conflict disrupted farming practices, altered land use patterns, and affected market dynamics. The chapter identifies critical factors that have contributed to Guinea-Bissau's post-war agricultural challenges, including environmental, technological, and institutional issues. The last section of the chapter will analyze the characteristics and the role of cashew nuts, which is the main production activity of this country, and the role of rice.

2.1. General Overview

Guinea-Bissau is a small country[28] in West Africa, bordered by Senegal to the north, Guinea to the south and east, and the Atlantic Ocean to the west. A former Portuguese colony, it gained independence in 1973 and was internationally recognized the following year. The name 'Bissau' (the name of the capital) was added to distinguish it from neighboring Guinea[29], a former French colony.

Although Portuguese is the official language, it is spoken by only 14% of the population. The majority use African languages, mainly Kriol, a Creole language based on Portuguese. In terms of religion, the population is divided mainly between animists and Muslims, with a Christian minority.

[28] The country covers an area of approximately 36,125 square kilometers, making it one of the smaller countries in Africa and has a total population of about 2 million people. (World meter, 2024).

[29] The use of "Guinea" for both countries stems from the historic name for the region, which European explorers referred to as "Guinea", believed to derive from the Berber word "Akal n-Iguinawen" meaning "land of the black people". (WAVS, 2021).

Figure 4: Territory of Guinea-Bissau

The country's demographic and social situation is critical. Guinea-Bissau has one of the highest infant mortality rates in the world, and life expectancy is less than 60 years for both men and women. The literacy rate is 57% of the population.

Economically, Guinea-Bissau is one of the 20 poorest and least developed countries in the world. According to the Human Development Index[30] 2024, it ranks 179th out of 193 countries analyzed.[31] Although the country is rich in natural resources such as oil, bauxite and phosphates, it lacks the infrastructure and financial resources to exploit them. The economy is mainly based on agriculture and fishing, sectors that remain underdeveloped.

The country's geography plays a crucial role in understanding its agri-food systems. The territory is predominantly flat, with no significant mountains. This conformation, potentially favorable to extensive agriculture, has not led to the development of advanced agri-food systems due to a variety of socio-economic and historical factors, which will be analyzed below.

Indeed, although the flood plains offer good agricultural potential, the lack of modern irrigation systems, advanced technology and adequate transport infrastructure severely

[30] The Human Development Index (HDI) is a composite statistic used to measure a country's overall achievement in three key dimensions of human development: life expectancy, education, and standard of living.

[31] The HDI in not calculated only for Monaco and North Korea.

limits productivity. Major rivers such as the Cacheu, Corubal and Geba, although navigable, are not used to their full potential for transport and irrigation.

The hot and humid climate, with rainfall concentrated in a few months, would require advanced water management and storage systems to ensure consistent agricultural production. However, widespread poverty and lack of resources prevent the implementation of such solutions, making agriculture highly dependent on seasonal rainfall and vulnerable to climate change. The coasts, washed by the Atlantic Ocean, are high and rugged and rich in mangroves. The latter, together with the Bissagos Islands (an archipelago of 88 islands a few kilometers from the mainland), offer considerable opportunities for fishing, shellfish and mollusk farming and sustainable aquaculture.

However, the development of large-scale projects is hampered by a lack of technical knowledge and access to finance for the purchase of appropriate equipment. (BIT, 2024). Inadequate infrastructure is another challenge. The lack of well-equipped ports[32], an efficient cold chain and adequate road links between fishing grounds and inland markets hinders the development of an efficient fish supply chain.

The 1998-1999 civil war had a devastating impact on the country's food systems and economy. The few existing infrastructures were destroyed, farming communities were dislocated, and political instability increased. These factors discouraged foreign investment[33] and the development of large-scale agricultural projects that could have improved food production. (Worl Bank, 2023). To understand agricultural development and current food security in detail, it is important to analyze the historical context, particularly the civil war, which had a significant impact.

[32] The port of Bissau, Guinea-Bissau's primary seaport, is characterized by its relatively shallow draft and limited infrastructure, which restricts its capacity to accommodate larger vessels and efficiently handle cargo, thereby impacting the country's trade and economic development.

[33] Foreign investment was notably affected by the conflict, with major investors like the European Union and the World Bank halting or withdrawing their support due to the instability. This retreat left a significant gap in the funding needed for agricultural development and reconstruction efforts.

2.2. Historical context and civil war

Guinea-Bissau gained independence from Portugal in 1974, following years of armed struggle led by the *Partido Africano da Independência da Guiné e Cabo Verde* (PAIGC)[34] under the leadership of Amilcar Cabral[35]. The fight for independence began in 1963 and by 1973, much of the territory had been liberated. In December 1973, the National Assembly unilaterally declared independence, but it wasn't until the *Revolução dos cravos* (Carnation Revolution)[36] in Portugal in 1974 that this independence was recognized. The Carnation Revolution, a coup led by the Armed Forces Movement (MFA) in Portugal, overthrew the Estado Novo regime (how it was called the authoritarian regime of Salazar), ending colonial rule over Guinea-Bissau and other Portuguese colonies. Guinea-Bissau subsequently became a United Nations member state.

After the independence, Guinea-Bissau faced severe political instability. The PAIGC (Partido Africano da Independência da Guiné e Cabo Verde) was the dominant political force and Luis Cabral (brother of Amilcar Cabral who was assassinated), a leader within the PAIGC, became the country's first president. However, in 1980, João Bernardo Vieira, a military commander from the independence struggle and a member of the PAIGC, led a coup that ousted Cabral and took power himself. Although Vieira became president, the PAIGC remained the dominant party in the government. (BIT, 2024).

In 1991, Guinea-Bissau introduced multiparty politics, allowing new political parties to form and compete in elections. Despite this, the PAIGC continued to exert significant influence over the country. However, growing dissatisfaction within the military eventually led to a rebellion in 1998, led by Brigadier General Ansumane Mané[37]. Mané had been dismissed by Vieira over accusations of arms smuggling to Senegalese rebels, which sparked the military uprising. This rebellion escalated into a civil war, during which Mané, a former ally of Vieira from within the military ranks, became a

[34] PAIGC was a leftist political party that played a crucial role in the independence movements of Guinea-Bissau and Cape Verde, advocating for liberation from Portuguese colonial rule and subsequently shaping the political landscape of both nations.
[35] Cabral was a revolutionary leader and intellectual who co-founded the PAIGC and was instrumental in the independence movements of Guinea-Bissau and Cape Verde.
[36] The Revolução dos Cravos was a largely nonviolent military coup that occurred in Portugal on April 25, 1974, which overthrew the Estado Novo regime. This revolution not only restored democracy in Portugal but also triggered a rapid process of decolonization, leading to the independence of several African colonies.
[37] Brigadier General Ansumane Mané was a high-ranking military officer in Guinea-Bissau who led a coup in 1998, becoming the de facto leader during the civil war. His rule was marked by conflict and instability, and he was eventually ousted and killed in 2000.

central figure in opposing Vieira's government, challenging both his leadership and the PAIGC's dominance.

The conflict, started in 1998 and lasted 11 months, was primarily fought in the capital, Bissau, resulting in numerous casualties, widespread destruction, and over 300,000 refugees (in a country with a population of barely 1.1 million). (WIDER, 1999) The civil war was fueled by a combination of factors, including Vieira's authoritarian rule, military marginalization, and the involvement of neighboring countries like Senegal and Guinea, which sent troops to support Vieira's government. This foreign intervention deepened divisions within Guinea-Bissau, as many perceived it as an infringement on national sovereignty.

The conflict ended in 1999 with a peace agreement signed in Abuja, Nigeria, under ECOWAS supervision. ECOWAS deployed peacekeeping troops and scheduled new elections to ensure democratic processes. However, the agreement was short-lived. Vieira was overthrown in May 1999, and the country has since faced numerous coup attempts, with four successful coups and 16 others attempted, plotted, or alleged.[38]

As already mentioned, analyzing the conflict is relevant to understand the evolution of food inputs and the food security until now. The aftermath of Guinea-Bissau's 1998-1999 civil war had profound and lasting impacts on the country's food security and agri-food systems, for the long-term effects. The conflict, which resulted in widespread destruction and displacement, severely disrupted agricultural production and food distribution networks. (Temudo and Abrantes, 2015). In the immediate post-war period, agricultural output fall by 20%, dealing a significant blow to a sector that had previously accounted for 51% of GDP and 90% of exports (IMF, 1999). This decline was particularly devastating for a country where agriculture employed 82% of the workforce (World Bank, 2000). The war's aftermath saw a sharp increase in food insecurity, with many rural communities struggling to resume farming activities due to damaged infrastructure, loss of livestock, and the presence of landmines in agricultural areas (Gomes, 2009). Urban areas, particularly the capital Bissau, faced severe food shortages as supply chains were disrupted and markets destabilized. The displacement of over 300,000 people (more than a quarter of the population) put additional strain on food

[38] Four successful coups were in 2003, 2012, 2014, and an attempted coup in 2008, reflecting the country's fragile political situation and tensions between civilian and military leadership.

resources in areas receiving internally displaced persons and refugees (UNHCR, 2000). The conflict's impact on food security was compounded by the destruction of storage facilities[39], irrigation systems, and rural roads, making it difficult for farmers to store, process, and transport their produce. This led to increased post-harvest losses and reduced market access for smallholder farmers. The breakdown of extension services and agricultural support systems further hindered the recovery of the agricultural sector, leaving many farmers without access to seeds, fertilizers, and technical assistance.

The fishing sector, an important source of protein and livelihoods for coastal communities, also suffered due to damaged boats and equipment, as well as disrupted market access. This reduction in fish availability further compromised dietary diversity and nutritional security, particularly for vulnerable populations (FAO, 2002).

Moreover, the political fragility also reflected in foreign investments. For instance, the 2012 coup led to the suspension of international aid and disrupted ongoing agricultural projects, including a World Bank-funded program aimed at improving rice production in the eastern region (World Bank, 2013). The frequent changes in government also resulted in shifts in agricultural priorities and strategies, preventing the implementation of consistent, long-term policies necessary for sector growth (Barry et al., 2007).[40] The weakened state institutions, hollowed out by years of conflict and instability, struggled to implement effective agricultural policies or provide adequate support to farmers (Kohnert, 2010). The Ministry of Agriculture, chronically underfunded and lacking in technical capacity, was unable to provide essential extension services to rural communities. A study by Temudo (2011) found that in the Cubucaré region[41], only 15% of farmers had any contact with agricultural extension agents in the five years following the conflict. The breakdown of rural infrastructure further compounded these issues. Many rural roads remained in disrepair years after the conflict, hindering farmers' access to markets. A survey conducted in 2005 found that 60% of rural communities had no access to all-weather roads, significantly increasing transportation costs and post-harvest

[39] The main ones were grain silos and warehouses, which were crucial for preserving and distributing essential food supplies.

[40] Each new administration focused on different crops, programs, and initiatives. For example, some governments may have prioritized increasing rice production, while others emphasized cashew nut exports.

[41] The Cubucaré region is a rural area in Guinea-Bissau distinguished by its lush, fertile landscapes that support a variety of agricultural activities, including the cultivation of rice, cashews, and other staple crops, reflecting its importance to the country's agrarian economy.

losses (IFAD, 2006). The weakness of rural financial systems further hampered agricultural development. Most farmers lacked access to credit, limiting their ability to invest in improved seeds, fertilizers, or equipment. A survey by the African Development Bank (2015) found that less than 5% of rural households had access to formal financial services, severely constraining agricultural productivity and resilience.

2.3. FAO and WFP interventions after the civil war

After the conflict, the government implemented an Emergency Economic Management Programme (EEMP) supported by the World Bank and IMF, aiming to increase GDP through agricultural production. The results were initially positive: cashew nut production increased from 75,000 tons in 2003 to 93,000 tons in 2004, leading to an overall GDP increase of 2.2%. However, this plan was not ultimately successful as the economy remained vulnerable due to its dependence on cashew nuts. Moreover, no significant improvements were made to infrastructure (transportation, electricity, communications), which limited agricultural production. In response to these challenges, in 2004, the IMF, World Bank, and the African Development Bank (ADB) proposed a new programme: the Poverty Reduction Strategy Paper (PRSP). This initiative also involved interventions and aid from FAO and WFP. The PRSP, designed to address the damages caused by the conflict, was based on two main pillars:

(I) Enhance governance to improve the effectiveness of development policies and programs aimed at poverty reduction.

(II) Promote agricultural production and rural sectors.

These pillars were determined through consultation between the World Bank and local authorities, based on the country's priority needs. The aim was to improve institutional capacity to make Guinea-Bissau self-sufficient in the agricultural sector, ensuring food security and boosting the national economy. According to the World Bank, the priority was to focus on key areas and be more selective in resource allocation to maximize impact on poverty reduction.

To achieve the first pillar, initial steps included organizing transparent and democratic elections: parliamentary elections in 2004 and presidential elections in 2005. Other measures involved improving dialogue among the executive, legislative, and judiciary

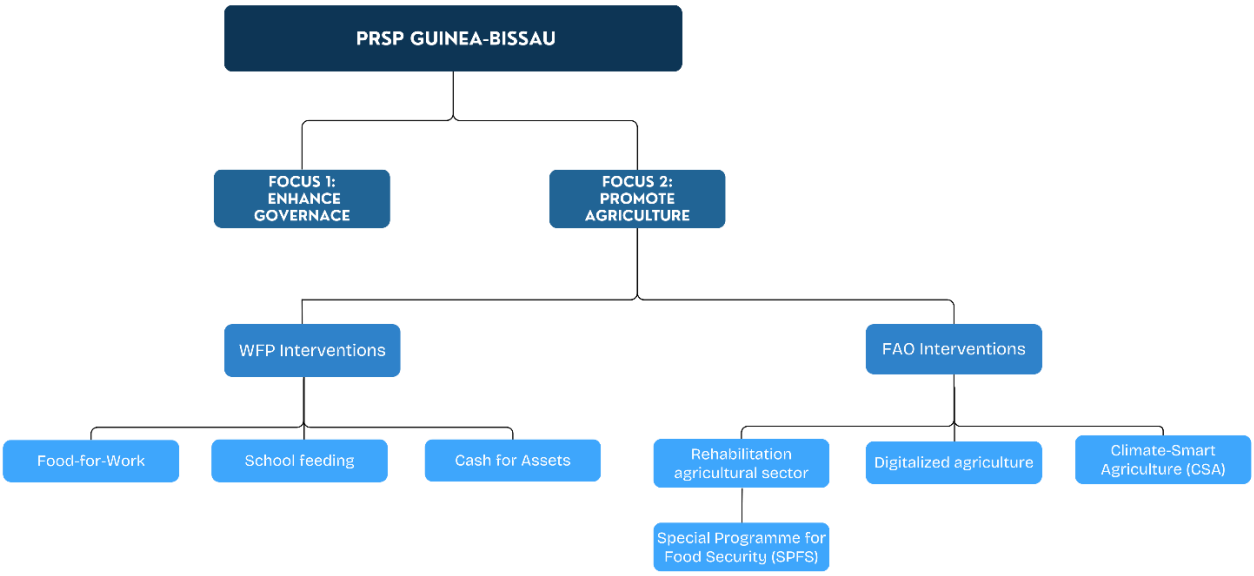
bodies. Additionally, efforts were made to strengthen public financial management, promote decentralization, and implement anti-corruption measures.

However, to understand the current food security challenges and opportunities in Guinea-Bissau, it is crucial to examine the actions of FAO and WFP from the post-conflict period until now. The second pillar of the PRSP played a fundamental role, as the main incentives were supported by FAO initiatives and primarily WFP interventions on the ground.

The main objectives of the second priority area were to ensure food security and the rational management of food resources, to improve the living conditions of the rural population, particularly in the north and east (as they are the poorest), and to increase and diversify agricultural exports. The aim was to "ensure the continuity of their post-conflict rehabilitation and social reintegration activities" by increasing agricultural production, particularly rice and horticulture, and increasing the income of the population. (Worl Bank, 2004).

The figure below helps to understand the PRSP plan with the interventions and plans of FAO and WFP. However, although there have been more projects or interventions, the most relevant in terms of challenges to be overcome and beneficiaries are analyzed in this section. Analyzing the programs is essential for understanding what went wrong and what worked well. A more in-depth evaluation of these aspects will be provided in the next chapter.

Figure 5: PRSP-FAO-WFP initiatives in Guinea Bissau post conflict



Source: graph created based on data from FAO and WFP reports, 2000-2022

In the years immediately following the civil war, from 1999 to 2005, the focus was on post-conflict recovery, with both FAO and WFP focusing on emergency situations, particularly WFP's emergency programmes in support of internally displaced persons (IDPs). These programmes ensured that basic nutritional needs were met, preventing a deeper humanitarian crisis at a time when the country's infrastructure and food production capacity were severely compromised. At the same time, FAO implemented the "Rehabilitation of the Agricultural Sector" project, which focused on restoring rice and vegetable production through the distribution of seeds, tools and technical assistance to farmers, while rehabilitating irrigation systems, which are crucial for agricultural productivity.

WFP played the most important role through the implementation of two major successful programmes: the food-for-work programme in 2004 and the school feeding programme in 2008. The latter provided school feeding to about 28 000 distributing 1,4777 tons of food to students while the food-for work reached 18,900 people and rehabilitated 300 km of roads to reach rural areas. Both projects were very crucial in Guinea-Bissau in the years post the conflict since they provided food access and increased food security to the most vulnerable groups, especially for those living in the northern and eastern regions which are the most insecure. Moreover, these programs, beyond providing food, also provided

new forms to develop agri-food systems and employment to many people. However, there were some risks or challenges to the full implementation of such programmes, such as climate shocks, lack of infrastructure, lack of technical knowledge or corruption.

To address these risks, the project team developed a careful plan with three main components. First, they provided strong technical assistance to improve local skills and knowledge. This meant sending in many experts to train local staff and provide guidance throughout the project. Second, they used systems for managing money and buying supplies that had worked well in other projects in the country. This helped avoid financial mistakes and ensured that resources were used properly. Thirdly, wherever possible, they used methods of getting work done that had been successful before. This made the project run more smoothly and reliably. The team kept a close eye on these risks throughout the project, and their plan seemed to work well. There were no major problems during the project. This shows that the team did a good job of anticipating potential problems and finding ways to prevent them. Their careful planning and actions contributed to the success of the project. (WB, 2018).

After the implementation of the food-for-work and school feeding, Guinea-Bissau started to stabilize and a new phase of transition to development. In particular, in 2006 FAO launched the “Special Programme for Food Security” (SPFS) as a part of rehabilitation of the agriculture sector. Indeed, the aim of this program was to intensify the food production by improving farming techniques, better managing the water and irrigation systems and diversifying crops. The goal was to enhance food security by increasing the efficiency and resilience of local agriculture. Between 2011 and 2015, the focus of FAO and WFP shifted towards building resilience in the face of environmental and economic challenges. Indeed, FAO launched the “Integrated Production and Pest Management” (IPPM) program from 2012 to 2015 which it was particularly important in promoting environmentally sustainable farming practices, as it encouraged the reduction of pesticide use and the adoption of integrated pest management techniques, which were safer for both the environment and the health of the population.

However, as it was analyzed in the previous section, Guinea-Bissau is located in an area where climate disasters are very frequent, and this is what happened in 2013 when the country was affected by a drought crisis. The latter severely impacted the food security of the country, and in response, the UN agencies collaborated to enhance the resilience of rural communities in Guinea-Bissau to climatic shocks by introducing drought-resistant

crop varieties, improving water management systems, and supporting community-based projects that strengthened food security and livelihoods (WFP, 2016).

In this situation, the FAO and WFP collaborated jointly with the WHO and UNICEF and the initiatives were funded by the Central Emergency Response Fund (CERF). Their approach was notable for its emphasis on gender-sensitive analysis, ensuring that beneficiary selection and outcome evaluation incorporated a gender perspective.

The project's success surpassed initial expectations. One key achievement was a significant boost to household incomes, with participating families seeing their earnings from agricultural sales increase by over 10%.

A cornerstone of the initiative was its focus on knowledge transfer and capacity building. In four regions (Oio, Bolama, Biombo, and Quinara) the project trained 100 individuals as expert trainers in vegetable production techniques. These trainers then shared their expertise with an impressive 34,000 additional producers, both men and women, creating a ripple effect of agricultural knowledge throughout the target communities.

Building on this foundation, FAO and WFP's efforts in Guinea-Bissau from 2016 to 2020 focused on innovation and sustainability to further strengthen the country's food systems (WFP, 2018). Indeed, with the increasing of the climate change issue, it was necessary to develop climate-smart agriculture (CSA) practices to be responsive to environmental shocks in a way that such as crisis don't affect that much food security. With this project some sustainable practices were implemented in Guinea-Bissau which remove greenhouse emissions and enhance productivity and resilience. Among the CSA measures there are the use of organic manure which is commonly used in vegetable production and involves creating compost from plant residues, animal waste, and household materials. This practice enhances soil fertility, improves water retention, and reduces the need for synthetic fertilizers, thus lowering greenhouse gas emissions. Other CSA techniques and the Solar-powered drip irrigation systems to improve water availability during droughts and the *zai* technique, primarily used for cereal crops in plateau areas, involves digging small pits to collect rainwater. These pits, often enriched with organic matter, help maintain soil moisture, reduce erosion, and improve crop yields in drought-prone regions.

In 2017, WFP introduced the "Cash for Assets" program, already examined in the first chapter, which provided cash transfers to rural households in exchange for their participation in projects that improved local infrastructure and agricultural productivity. (WFP, 2017).

In the final years leading up to 2024, the COVID-19 pandemic posed new challenges, prompting WFP to expand its food assistance efforts, reaching 700,000 beneficiaries by 2022. This expansion was crucial in mitigating the pandemic's impact on food security, particularly for vulnerable populations who faced additional hardships due to the economic disruptions caused by the pandemic.

Building on this examination of FAO and WFP's work in Guinea-Bissau, it's crucial to differentiate between their strategies and operations. Strategies for both organizations involve high-level planning and setting long-term objectives to improve food security and agricultural productivity. For instance, FAO's strategy included the "Special Programme for Food Security" (SPFS) launched in 2006, which aimed to intensify food production by improving farming techniques and water management. WFP's strategic approach is evident in its school feeding program initiated in 2008, designed to address both immediate nutritional needs and long-term educational goals. Operations, in contrast, are the practical, day-to-day activities that implement "these strategies. For WFP, this meant distributing 1,477 tons of food to 28,000 students as part of the school feeding program. FAO's operations included training 100 individuals as expert trainers in vegetable production techniques, who then shared their knowledge with 34,000 additional producers. The success of both agencies in Guinea-Bissau has depended on how well their strategies were conceived and how effectively their operations were executed on the ground, as seen in the positive outcomes of these' initiatives despite challenges like climate shocks and infrastructure limitations.

Annex 1 provides a concise analysis of the timeline of FAO and WFP activities in the country.

All these programmes and initiatives carried out by FAO, WFP and, in some cases, with the support of other international organizations and NGOs, help to understand that the UN agencies have been working in the country since the beginning and have reached some beneficiaries, but the population still suffers from high levels of food insecurity. The following section will analyze the statistical data and the relevant factors that hinder the achievement of some programmes. The historical framework of these plans will be useful for the next chapter to understand what can be improved and how to overcome the challenges explained below.

2.4. Food security in Guinea-Bissau

Guinea-Bissau faces significant challenges in ensuring food security for its population. The country is the third country[42] in western Africa that suffers more of food insecurity with 77,8% of the total population being moderate or severe food insecure. (FAO,2023). In recent years, additional factors have compounded these existing issues, further destabilizing the nation's food security. The COVID-19 pandemic, the climate events, and the ongoing conflict between Russia and Ukraine have all contributed to increasing levels of food insecurity and have posed significant obstacles to the effective functioning of agri-food systems in Guinea-Bissau (FAO, 2022).

To analyze the statistics of food security in the country, IPC and FIES methos (explained in the first chapter) are used.

According to the former analysis, the population of Guinea-Bissau is distributed across various phases of food insecurity. The data from August 2024 indicates that 73% of the country population (about 1,299,716 individuals) are classified in Phase 1 (Minimal), while 20% of people fall into Phase 2 (Stressed). Moreover, 7% of the Guinean Bissauans fell into Phase 3+.

Table 4. IPC (in %) for Guinea Bissau in August 2024

Phase 1 - Minimal	73
Phase 2 - Stressed	20
Phase 3 - Crisis	7
Phase 4 - Emergency	7 (included in Phase 3+)
Phase 5 – Famine/ Catastrophe	7 (included in Phase 3+)

Source: graph created based on data from Integrated Food Security Phase Classification and the Cadre Harmonisè, 2024

[42] The first country being more food insecure in West Africa is Sierra Leone with 89,2% of the total population being moderate or severe food insecure, while the second country in the ranking is Liberia with 81,2% of the total population.

The FIES provides further insight into the levels of food insecurity experienced by the population. According to this scale, about 80% of the total population is food insecure. (FAO, 2023) and more than 80% is unable to afford healthy diets. According to this scale, 32% of the population is severe food insecure while 77,8% is moderate or severe food insecure (see Table 5.) The table is on percentage among the population that suffers from food insecurity.

Moreover, the prevalence of undernourishment in Guinea-Bissau has shown a concerning trend over the past two decades. As of the most recent data, 32.2% of the population is undernourished, a significant increase from 16.4% in 2004 (FAO, IFAD, UNICEF, WFP and WHO, 2023).

Table 5. FIES for Guinea Bissau 2023

Assumed severity of Food Insecurity	People food insecure (in %)
MILD	22,2
MODERATE	45,8
SEVERE	32

Source: graph created based on data from Food and Agriculture Organization, 2023

The data in the two tables differ because they use distinct tools to measure food insecurity. Table 5 (FIES) uses the Food Insecurity Experience Scale, which is a survey-based approach that captures individuals' personal experiences of food insecurity, assessing how frequently they face difficulties in accessing sufficient food. On the other hand, Table 4 (IPC) relies on the Integrated Food Security Phase Classification, a comprehensive analytical tool that assesses the overall food security situation by integrating various factors like food availability, access, utilization, and coping mechanisms. The IPC classification system uses multiple indicators to place populations into phases ranging from food security (Phase 1) to famine (Phase 5), making it a more systemic assessment compared to the individual experience focus of FIES.

Despite these differences, both tables represent the severity and extent of food insecurity in Guinea-Bissau. From the data it can be evaluated that FIES focuses on the proportion

of people affected at different severity levels, with 77.8% of the population facing moderate to severe food insecurity. The IPC table, on the other hand, shows the overall food security status of the population, with 14% of people in critical phases (crisis or worse) and a larger portion under stress (20%). Together, these tools provide a comprehensive picture of food insecurity, with FIES highlighting individual hardships and IPC assessing broader food system vulnerabilities.

An additional factor contributing to food insecurity in Guinea-Bissau is the increasing cost of healthy diets. Over the past five years, the average cost of a healthy diet has risen from $2.95 per day in 2017 to $3.73 in 2022 (World Bank, 2023). This decrease is explained by the fact that in the aftermath of Guinea-Bissau's civil war, paradoxically presented a period of relative improvement in food security compared to the current situation. This rise in undernourishment rates underscores the deteriorating food security situation in the country.

This price increase has had a direct impact on food accessibility, with the percentage of the population unable to afford a healthy diet. This dietary pattern reflects the country's agricultural focus and economic reliance on cashew production, but it also raises significant concerns about food security and nutritional adequacy. The heavy dependence on this crop creates a precarious situation, exposing the nation to various risks that threaten its food security. This limited dietary diversity can lead to micronutrient deficiencies, particularly affecting vulnerable groups such as children and pregnant women. The expansion of cashew plantations for export may also reduce land available for other food crops, potentially decreasing overall food diversity and availability.[43]

2.5. Influent socio-economic and political factors

Guinea-Bissau faces still nowadays significant challenges in developing its agricultural systems and ensuring food security due to complex social, political and economic factors. It is useful to analyze these challenges and study their impact on agricultural production because these are the challenges that FAO and WFP must address (the focus of the next chapter) in order to ensure food security.

[43] The methodological approach adopted integrates theoretical contributions with a personal interpretation.

The first factor that hinders the increase of food security is the country's fragile political situation, characterized by frequent leadership changes, high staff turnover and weak institutions (World Bank, 2022). This instability directly impacts agricultural policy continuity and implementation, as well as the allocation of resources to rural development programs. The government's limited technical capacity, scarce resources, and non-innovative technology impede effective agricultural planning and support. The World Bank's Country Policy and Institutional Assessment indicates that both public administration quality and sector transparency fall below regional western averages, further complicating efforts to modernize the agricultural sector (World Bank, 2022). The country has an unstable political landscape, characterized by authoritarian tendencies and human rights violations under President Umaro Sissoco Embaló[4445] and this has created several challenges for agricultural development and food security initiatives.

Indeed, one of the most pressing issues is the erosion of democratic institutions, highlighted by incidents such as the military's invasion of the judiciary buildings and the persecution of opposition leaders (like journalists, activities against the regime). These actions undermine the stability needed for long-term agricultural planning and investments because without policy continuity it is difficult to implement and sustain consistent agricultural strategies. The lack of a stable governance hinders the achieving of initiatives aimed at improving agricultural productivity and ensuring food security which become frequently derailed or abandoned, leaving the rural population vulnerable to food shortages (Kohl, 2020).

In the recent time, the political situation took a dramatic turn due two events. One is the attack on the government in February 2022 which increased political intentions and led to the deployment of an ECOWAS military peace force. While this intervention was aimed at stabilizing the country, it has raised concerns about national sovereignty and the

[44] Umaro Sissoco Embaló is the current president of Guinea-Bissau, having assumed office in 2020. He is a former military general who came to power through a disputed election process that was criticized by international observers as lacking in transparency and fairness.

[45] Under Embaló's leadership, Guinea-Bissau has faced a deteriorating political landscape marked by authoritarian tendencies and human rights violations. Embaló has consolidated his power by centralizing decision-making authority and marginalizing opposition voices, weakening democratic checks and balances. There have also been reports of the government cracking down on dissent, including through arbitrary arrests, detentions, and the suppression of peaceful protests and critical media coverage. Furthermore, Embaló has undermined the independence and effectiveness of key institutions like the judiciary, parliament, and civil society organizations. Credible allegations of extrajudicial killings, torture, and other abuses by security forces under Embaló's watch have also raised significant human rights concerns.

potential for external influences to complicate the implementation of agricultural policies tailored to Guinea-Bissau's specific needs. (ICG, 2022).

The other event was the dissolution of parliament in May 2022 and the subsequent delay in elections. This situation hampers the legislative process, which is crucial for passing and implementing agricultural reforms and food security policies.

The political fragility of Guinea-Bissau is closely intertwined with its economic challenges, including low incomes, poor government services, and a poorly diversified economy based on cashew. The prevalence of corruption and alleged narco-trafficking[46] involving high-ranking officials diverts resources and attention from critical sectors like agriculture and rural development (Kohnert, 2019). The state has limited presence in rural areas, few or any inadequate infrastructure, electricity is very rare making food production very hard. Farmers in remote regions often lack access to essential support, including extension services, credit facilities, and market information, which are crucial for improving productivity and ensuring food security (FAO, 2020).

One more aspect having an impact of agriculture production is the system of property rights, which are very weak. While property rights regulations are legally defined, their implementation and protection are inadequate, creating substantial challenges for farmers and agricultural development. The state's ownership of all land, as reported by the African Development Bank, limits private property rights and restricts farmers' ability to use land as security for loans or make long-term investments in their farms. This system of state-granted concessions creates uncertainty for agricultural producers, potentially discouraging improvements in land productivity and sustainable farming practices (Carrillo & Jarillo, 2021). The corrupt, non-transparent, and inefficient legal and administrative system further complicates property registration and ownership. For smallholder farmers, this can mean difficulty in securing and maintaining their land rights, leading to potential disputes and insecurity. Such uncertainty can discourage farmers from investing in soil conservation, irrigation systems, or other long-term improvements that could enhance agricultural productivity and food security (Temudo & Abrantes, 2020). The vulnerability of property rights in Guinea-Bissau, exemplified by

[46] Guinea-Bissau has long been characterized as a "narco-state," with the country serving as a major transit point for drug trafficking between Latin America and Europe. Corrupt officials at the highest levels of government have been implicated in facilitating and profiting from this illicit trade. This narco-trafficking activity has diverted significant resources and attention away from addressing the country's pressing development challenges.

the military's occupation of the bar association building in 2021, extends to agricultural lands. This insecurity can lead to land grabbing, forced evictions, or arbitrary reallocation of agricultural lands, disrupting food production and rural livelihoods (Lundy, 2018).

The limited participation of civil society in political processes, particularly in rural areas, hampers the advocacy for stronger property rights and more effective agricultural policies. The highly centralized dialogue between the state and citizens means that the voices and needs of rural farmers are often underrepresented in policy discussions and decision-making processes (Kohl, 2022).

In addition to the political turmoil, Guinea-Bissau's agri-food systems and food security are significantly impacted by the low government expenditure and the inadequate education system. Government expenditure in Guinea-Bissau is very low, particularly in comparison to other West African Economic and Monetary Union (WAEMU) countries. Guinea-Bissau has the lowest public spending level within WAEMU, with average government spending at just 21% of GDP, approximately 4 percentage points below the WAEMU average (World Bank, 2022). This limited the government's ability to invest in critical agricultural infrastructure, research and development, and support programs for farmers. The volatility and overall decline in government spending since 2000 have further complicated long-term planning and sustainable investment in the agricultural sector (IMF, 2021)

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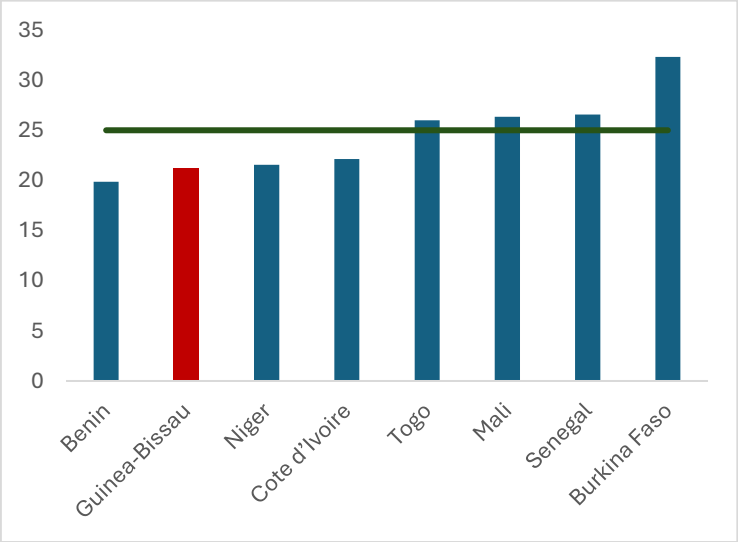
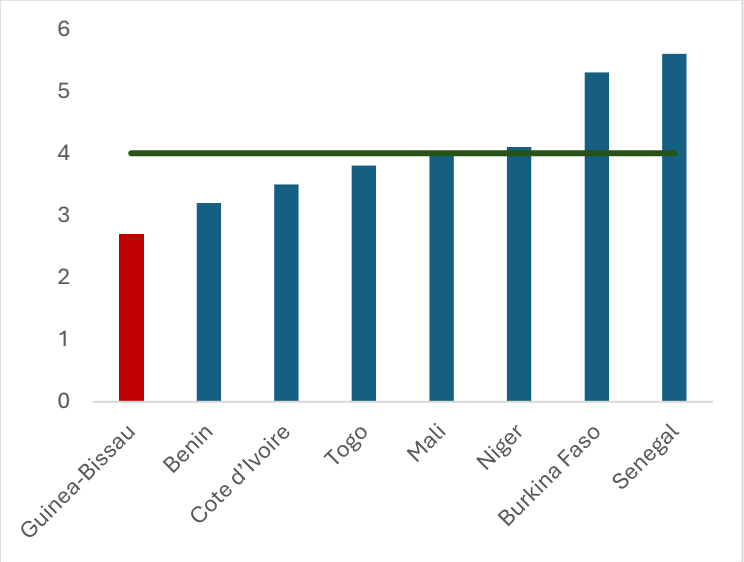
Figure 6: WAEMU Government expenditure



Source: graph created based on data from International Monetary Fund, 2024

The education sector is crucial for developing a skilled agricultural workforce but suffers from chronic underfunding as well. Also in this sector, Guinea-Bissau registers the lowest government expenditure on education is the lowest in the WAEMU region. Even though the recent data shows marginal improvement, they still indicate a comparatively low level of investment, with education spending at 2.7% of GDP in 2020 (World Bank, 2022). Indeed, in Guinea Bissau, the schools are built in inadequate infrastructure and bad conditions, the teachers are not enough qualified and there is a scarce amount of learning materials, such as books, particularly in rural areas where agriculture is predominant. Indeed, the education sector depends mainly on foreign investments (such as NGOs, FAO, WFP, EU). (BIT, 2024).

Figure 7: WAEMU Education Spending



Source: graph created based on data from International Monetary Fund, 2024

2.6. The role of cashew nuts

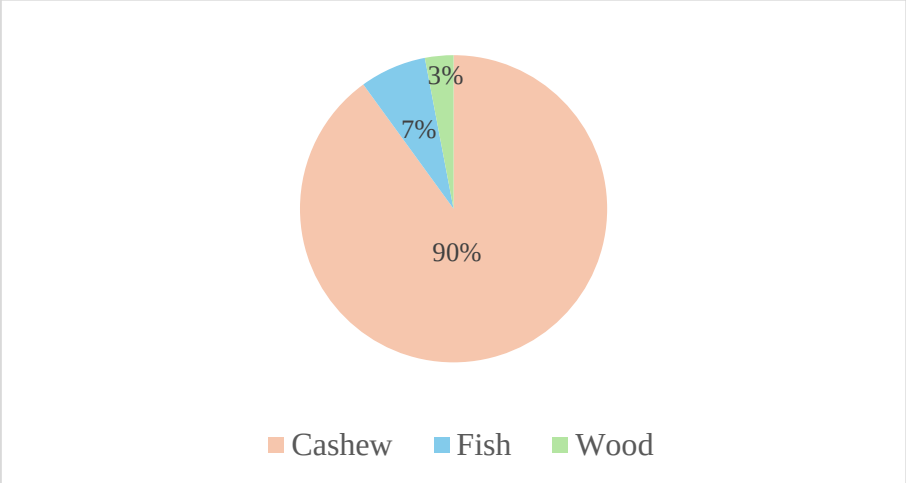
Cashew nuts are the main source of income for producers in Guinea-Bissau engaging at least 40% of households, accounting for 90% of the country's exports and providing income to 80% of the population. [47]Households are abandoning rice production in favor of a much easier cashew income. The majority of exports go to Asian countries,

[47] Approximately 10% of GDP is derived from cashew farming, while the estimate of 25% represents the total value of RCN (Raw Cashew Nuts) exports.

particularly China, India, and Vietnam, as they have large cashew processing industries due to the internal demand for cashews in Asian markets, both for domestic consumption and for re-export after processing (WBG, 2024).

Guinea-Bissau is one of the top producers of cashew nuts worldwide, this production is supplanting other crops. According to the Raw Cashew Nuts (RCN) market, it is the fifth-largest producer and is a price-taker[48] facing increasing international demand. The country's total annual exports are rising, reaching 230,000 tons in 2021 (the average is 180,000-200,000 tons). While 90% of cashew nuts are exported, the small remaining portion is processed by local artisans. These artisanal processors transform the cashews and sell them for domestic consumption.

Figure 8: Guinea's Bissau exports in 2023



Source: graph created based on data from World Bank, 2023

From data analysis, it is possible to say that recent years have seen significant growth in the value of cashew exports from Guinea-Bissau. In 2022, exports reached a value exceeding 200 million US dollars, marking a substantial 42% increase from the previous year. The most significant rise occurred between 2021 and 2022, with export values surging from approximately 150 million to 210 million US dollars. The sharp increase in export values from 2021 to 2022 can be largely attributed to the global economic recovery following the initial shock of the pandemic. In 2020, Guinea-Bissau's cashew sector, like many export-oriented industries worldwide, faced significant

[48] A "price taker" is a market participant that accepts the prevailing market price for a good or service because their individual actions are too small to influence the overall market price

challenges due to COVID-19 related disruptions in global supply chains and reduced demand. Table 9 below illustrates the trajectory of cashew nuts exports (volume in thousands of tons) from 2013 to 2023, according to the IMF statistics, also taking into account the prices in US dollars.

According to the statistics, it is evident that the cashew nuts industry affects food security as the IFC reports, it does it through four main macroeconomic channels Firstly, it injects liquidity into the hands of producers, directly affecting their purchasing power for food and other necessities. Secondly, due to producers' high propensity to consume, it influences the overall price level in the economy, potentially affecting food affordability. Thirdly, as the main provider of foreign exchange through exports, it plays a crucial role in the country's ability to import food and agricultural inputs. Lastly, it serves as a significant source of fiscal revenue, potentially funding government programs related to food security and agricultural development.

To explain more in detailed, the actual effect of how these four factors affect the agri-food system, it is important to analyze the evolution, the actors involved and the government's role in the production of this popular product. (IFC, 2017).

The evolution of cashew production in Guinea-Bissau is closely tied to the country's agricultural and economic policies. Native to Brazil, cashew trees were introduced during the Portuguese colonial period, but significant production only emerged post-independence. In the early years following independence in 1973, agricultural policies prioritized achieving self-sufficiency in food production through centrally planned initiatives. These included managed extension services, construction of storage facilities, and the introduction of new seed varieties.

The expansion of cashew production began in the 1980s, facilitated by changes in marketing arrangements that allowed for increases in producer prices and broadened private sector involvement in intermediation and exports. This shift was part of broader economic reforms implemented in the mid-1980s, including the liberalization of producer prices, exchange rate adjustments, and the transformation of national logistics and storage enterprises. These measures aimed to address slow economic growth and rising smuggling and parallel activities. The reforms had a significant impact on the agricultural sector, with producer prices for cashew, palm kernel, rice, and groundnuts increasing by about 65 percent, and agricultural exports doubling in less than a year. This rapid growth in cashew production was further supported by favorable natural conditions, including

adequate rainfall and rich soils. Moreover, the low-maintenance nature of cashew trees made them an ideal crop for the country's landowners, who have traditionally been low-skilled, capital-scarce, and risk-averse. (IFC, 2017).[49]

The structure of cashew production and trading in Guinea-Bissau is organized into three distinct layers:

- Base layer: This consists of many mostly small family farmers who grow and harvest cashew nuts. Land ownership is typically based on ethnic traditions, with community leaders having customary authority to assign land.
- Intermediary layer: This comprises a range of intermediaries who buy from producers and sell to exporters. This layer includes diverse groups operating along nationality lines, including Guinea-Bissau nationals, Mauritanians, Senegalese, Conakry-Guineans, Lebanese, and more recently, Chinese traders. Competition among intermediaries is intense.
- Export layer: A small number of exporters dominate this layer, with three enterprises from India controlling more than 80 percent of the market. Only a small part of the product is processed domestically.

Cashew nut production in Guinea-Bissau is strongly influenced by several interacting factors, contributing to a complex and precarious economic context. One of the main elements of this complexity is the seasonal nature of the cashew market, with the harvesting and marketing period running from late March to August.[50] This seasonality brings significant challenges to the country's economy, particularly with regard to the availability of cash, in turn affecting food security. In fact, it is important to understand that during the cashew season, the entire economy focuses on the harvesting and sale of the product, creating an income cycle that is quickly exhausted by the end of the season. In the following months, until the start of the new season, there is a severe liquidity crisis that affects the entire supply chain, making it difficult for producers and other market actors to meet their financial needs. This lack of liquidity is further aggravated by the limited accessibility of formal credit, due to the high level of informality in the country's economy.

[49] All the previous information about cashew nuts origins and market expansions were taken from IFC 2017 and elaborated

[50] This period encompasses the harvesting season, when the nuts mature and are collected, and aligns with the dry season ideal for processing and marketing, ensuring optimal quality and supply.

During an interview, a WFP member highlighted that a key policy barrier to overcome for FAO and WFP, to improve food security, is the government's critical role in the cashew market. The government intervenes by officially announcing the start of the season and setting a minimum reference price for transactions. However, this intervention often lacks transparency and real enforcement, which can create uncertainty and negatively affect the market. The heavy taxation of the sector reflects its importance for the national economy, but it also contributes to keeping cashew prices high. (IFC, 2017).

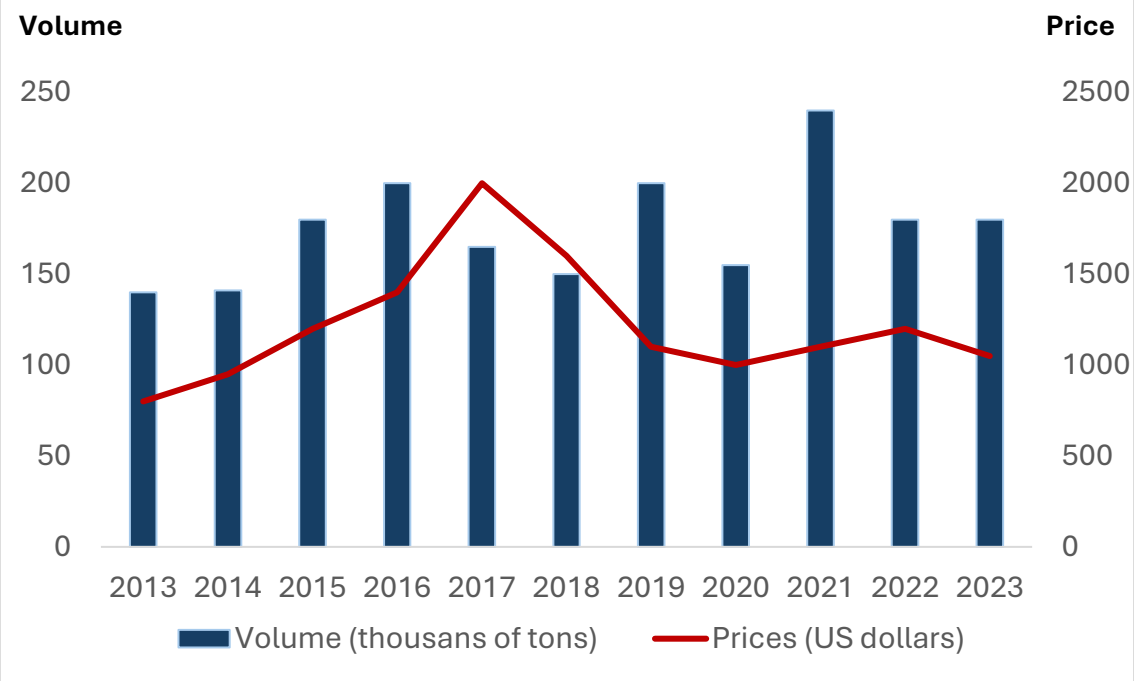
The cashew market in Guinea-Bissau is characterized by complex dynamics that significantly impact the country's economy and food security. As the primary export commodity and a major source of income for approximately half of all households, cashew production and pricing play a crucial role in shaping the economic landscape and living conditions for a large portion of the population. The inherent seasonality of the market, combined with recurrent liquidity crises and occasional government intervention, creates a volatile environment for cashew prices. This volatility is amplified by growing international demand, particularly from China, the United States and the European Union. This increasing global demand for cashews has contributed to periods of price increases in recent years. While rising cashew prices have the potential to improve farmers' incomes and their ability to purchase food and other necessities, the situation is far more nuanced than it appears at first glance. According to a study conducted by Alvarez Pereira et. al in 2022, the cashew market in Guinea-Bissau is subject to significant price fragmentation, as evidenced by the wide gap between farm-gate and export prices. This gap fluctuates dramatically both within and between seasons, influenced by various factors including market frictions, government policies and global market conditions. For example, the gap between export and farmgate prices was particularly large in 2018, likely due to a lack of adequate government policy. The COVID-19 pandemic exacerbated this trend in 2020, resulting in the largest price gap observed in recent years. In 2021, disagreements between exporters and the government over taxes and regulations led to high intra-seasonal variability, with farmgate prices increasing significantly after April. (Alvarez Pereira et. al, 2022). As already mentioned, the cashew sector in Guinea-Bissau involves various stakeholders, including exporters, intermediaries of varying sizes, and approximately 70,000 producer households. Exporters, operating in a competitive market, finance the bulk of operations in the supply chain but often face challenges in accessing credit, which

can limit market efficiency. This financial constraint is particularly evident at the beginning of the cashew season, potentially suppressing farmgate prices during this critical period.

While higher cashew prices can benefit producers in the short term, they also introduce significant risks. There's a potential for foreign importers to withdraw from the market if prices become unsustainable, which could lead to a sudden price collapse and a loss of stock value. This highlights the delicate balance required in the global cashew trade and the vulnerability of Guinea-Bissau's economy to external market forces. In addition, the fragmented prices for cashew production may be at the expense of food crops. This shift can reduce local food availability and diversity, potentially affecting the country's overall food security. The World Food Program has noted that 'price volatility can have a strong impact on food and nutrition security, particularly for low-income households' (WFP, 2019). In Guinea-Bissau, where cashew production is so important to the livelihoods of many households, this volatility introduces significant uncertainty into household incomes, making long-term food security planning difficult.

Given the complexity of the global cashew market and Guinea-Bissau's position within it, implementing direct price controls would be extremely challenging and potentially counterproductive. Instead, the focus should be on developing strategies to mitigate price volatility and its impact, such as improving market information systems, increasing access to credit for producers and exporters, and diversifying the economy. Another critical factor to consider is that Guinea-Bissau mainly exports unprocessed cashew nuts rather than the more valuable cashew kernels. This limited value addition limits the country's ability to generate additional revenue from its cashew production. Investing in local processing capacity could potentially contribute to more stable incomes and improved food security outcomes by creating additional employment opportunities and reducing the economy's vulnerability to commodity price fluctuations. (Alvarez Pereira et. al., 2022).

Figure 9: Cashew nuts exports in USD for thousands of tons from 2013 to 2023



Source: graph created based on data from International Monetary Fund, 2024

The graph of cashew nut exports from Guinea-Bissau between 2013 and 2023 vividly illustrates the volatility and challenges facing the country's cashew sector. Export volumes, shown by the blue bars, demonstrate an overall increasing trend, peaking at nearly 250 thousand tons in 2021. This growth underscores the expanding role of cashew production in Guinea-Bissau's economy. However, export prices, represented by the red line, reveal a different picture. Prices rose steadily to a peak of around $2,000 in 2017, then fell sharply until 2020, with a slight recovery thereafter. Based on the graph, it can be reached the statement that this price volatility has a direct impact on farmers' incomes and the country's economic stability. The graph clearly shows that higher export volumes don't always correlate with higher prices, as evidenced by the fact that the volume peak in 2021 does not coincide with the price peak in 2017. This price increase was caused by a combination of strong global demand. In response, the government launched a campaign on 31 March 2017, introducing policy measures aimed at optimizing the cashew harvest and trade. Among these measures, the government set an initial reference price of 500 CFA francs[51] per kilogram, double that of the previous year, and implemented market regulations, licensing controls and export monitoring. However, this intervention

[51] US$1 = CFA Franc 602

also exposed contradictions in government management. The data also captures external shocks, such as the dip in both volume and price in 2020, likely due to the COVID-19 pandemic. The subsequent recovery in export volumes demonstrates the sector's resilience and the strong global demand for cashews. However, the persistent price fluctuations underscore the need for strategies to stabilize farmer incomes and enhance Guinea-Bissau's position in the cashew value chain.

Indeed, based on the analysis' interpretation although the government has shown that it can intervene in critical situations, the lack of transparency and inefficiency on other occasions has undermined the confidence of market participants and introduced uncertainties that have complicated long-term planning. For example, the initially proposed restrictions on foreign intermediaries created confusion, and the inconsistent handling of licenses and controls prevented effective stabilization of the market. This ambiguity in government action is also reflected in the impact on food security. While rising prices have temporarily improved incomes and access to food for many households, over-reliance on the cashew market and lack of consistent support for agricultural diversification have left the country vulnerable to future shocks. In response to this crisis, FAO and WFP stepped in with targeted interventions and strategies to address these issues. The FAO focused on supporting the diversification of agricultural production to reduce the country's reliance on cashews. This was crucial in addressing the root causes of food insecurity, as the over-dependence on cashews left the population vulnerable to market shocks. Meanwhile, the WFP launched several initiatives to alleviate the immediate food crisis. These included providing cash assistance to food-insecure households, distributing specialized nutritious foods to children and vulnerable groups, and supporting the government in developing a more robust social protection system. The WFP's efforts were particularly focused on regions most affected by food insecurity, ensuring that the population could meet their immediate food needs while also working on long-term resilience strategies. the cashew market in Guinea-Bissau presents a complex interplay of local and global factors that significantly impact the country's economic stability and food security. According to an interview of a WFP member[52] stated that while high cashew prices can provide short-term benefits to producers, the volatility

[52] As stated in the introduction, the methodology of this thesis included also 4 interviews to FAO and WFP members. For privacy reasons the name will be not mentioned in this dissertation.

and fragmentation in the market introduce considerable risks. He argued that addressing these challenges requires a multifaceted approach that considers the needs of all stakeholders in the supply chain, from smallholder farmers to international buyers. Strategies to enhance market efficiency, improve access to credit, diversify agricultural production, and invest in local processing capabilities could help create a more resilient and equitable cashew sector in Guinea-Bissau, ultimately contributing to improved economic stability and food security for its population.

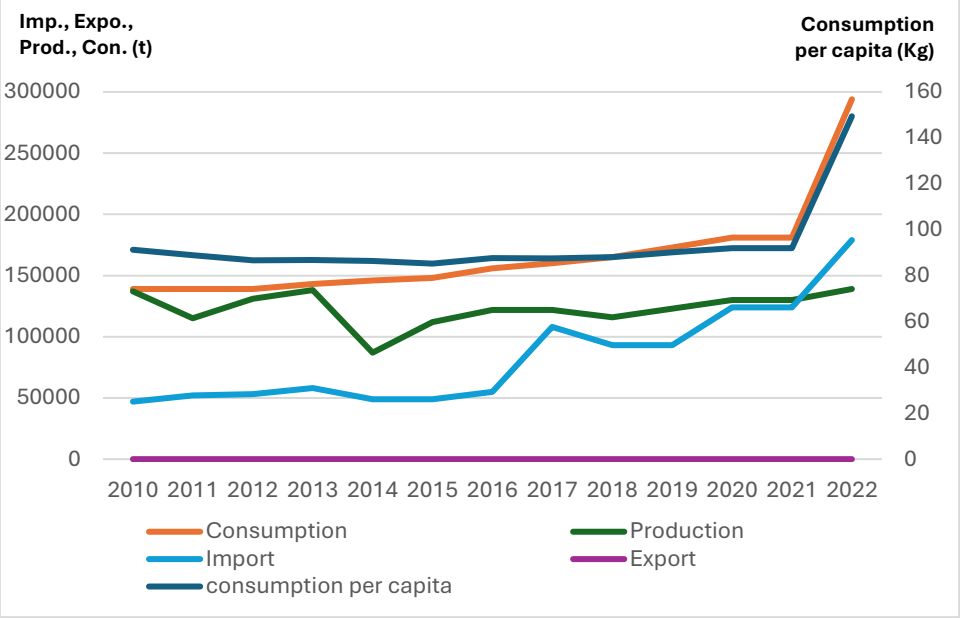
2.7. The role of rice

Rice is a central element in the diet of the Guinea-Bissau population and occupies a prominent position in the national dietary habits. According to data provided by the Department of Export Agricultural Statistics (DEA), this cereal constitutes a significant percentage, 75%, of the daily caloric intake of Bissau-Guineans (DEA, 2023). In indeed, Guinea-Bissau stands out as one of the countries with the highest per capita consumption of rice in the West African region, registering an annual consumption of 130 kg per person (FAOSTAT, 2023). Despite the predominance of domestic consumption, Guinea-Bissau has also recently begun to emerge as a rice exporter, albeit on a limited scale. Indeed, the country despite has registered growing trends in rice production relies significantly on rice imports especially from countries like China, Vietnam, Pakistan, Thailand, Senegal, India, Brazil and Portugal. and this makes the price more expensive as consequences of transportation cost and high-demand global commodity. (FAO, 2023). Guinea-Bissau faces a crucial issue: domestic rice production is not sufficient to meet the consumption needs and actual demand of the population, leading the country to rely heavily on imports to fill the national rice supply deficit. The graph below shows the consumption of rice, its imports and the production. As data from the Coalition from African Rice Development (CARD) illustrate, rice consumption in Guinea-Bissau has shown a steady increase over the years, rising from 139,000 tons in 2010 to 294,000 tons in 2022, more than doubling in just over a decade. This substantial growth in consumption aligns with the country's high per capita rice intake mentioned earlier. The per capita consumption also increased notably, from 91.27 kg in 2010 to 149.39 kg in 2022, further emphasizing the central role of rice in the Bissau-Guinean diet. Domestic rice production has fluctuated over the years

but generally shows an upward trend. It increased from 137,000 tons in 2010 to 139,000 tons in 2022, with some significant variations in between. The highest production recorded was 138,000 tons in 2013, while the lowest was 87,000 tons in 2014, indicating vulnerability to factors such as weather conditions or agricultural policies. The graph shows that rice exports are null. The data indeed clearly demonstrates that Guinea-Bissau's domestic rice production is insufficient to meet the country's consumption needs, necessitating a heavy reliance on imports.[53] In 2022, for example, the data shows that (I) consumption: 294,000 tons (II) production: 139,000 tons (III) imports: 179,000 tons. This stark disparity between production and consumption highlights the significant shortfall in domestic rice supply. The production of 139.000 tons covers less than half of the total consumption of 294.000 tons. To bridge this substantial gap, Guinea-Bissau imported about 179.000 tons of rice. (CARD, 2022).

[53] Official data from sources such as FAOstat and Statista indicate that rice production in Guinea-Bissau has steadily increased, with figures rising from 165,103 tons in 2017 to 245,890 tons by 2023. According to this data, rice production should be sufficient to meet the needs of the population. However, these figures are widely considered too high and do not accurately reflect the reality on the ground. Many local experts and stakeholders report significant rice shortages, indicating a disconnect between official production statistics and actual food availability. This disparity underscores the urgent need for more reliable and accurate data to guide food security policies and ensure that the true needs of the population are met. Accurate data is crucial to addressing the underlying gaps in agricultural production and preventing the underreporting of food scarcity issues.

Figure 10: Rice trends in Guinea-Bissau from 2010 to 2022



Source: graph created based on data from Coalition from African Rice Development, 2023

The reasons behind this production insufficiency are multiple and complex. Firstly, the rice value chain in Guinea-Bissau has numerous critical issues that undermine its efficiency and productivity. Other challenges include the low yield of production systems, often due to obsolete farming techniques and lack of access to modern inputs such as fertilizers and improved seeds (World Bank, 2022). In addition, inadequate infrastructure and post-harvest processing techniques contribute to significant product losses, further reducing the amount of rice available for consumption (FAO, 2022).

Another critical factor is inefficient rice markets within the country. Fragmented supply chains, lack of adequate transport infrastructure and limited storage capacity contribute to price distortions and distribution inefficiencies (UNDP, 2023). Furthermore, poor connections between different actors in the value chain hinders effective and synergistic collaboration that could lead to significant improvements in rice production and marketing. Furthermore, as mentioned above, another factor influencing the low productivity of rice is the limited capacities of rice farmers and workers in the sector due to the low education rate. All these factors accentuate the difficulties and barriers for FAO and WFP to develop strategic plans to ensure food security. In order to understand who the UN should address; it is important to analyze who is involved in the agri-food process. The rice value chain in Guinea-Bissau involves a wide range of actors, each with a specific but interconnected role. The public sector is represented by the government,

research and development institutions and strategic development partners and plays a key role in setting policy and providing technical and financial support. The private sector, including input suppliers, importers, transporters, traders, financial institutions and service providers, is crucial to the operation and efficiency of the supply chain. No less important is the role of civil society, with producer organizations, women's and youth associations, and traders' associations contributing to the resilience and sustainable development of the sector (African Development Bank, 2022). Considering the socio-economic importance of rice for the population, accentuated by the rapid population growth, the government of Guinea-Bissau has made increasing domestic agricultural production one of its strategic priorities. In a long-term perspective, Guinea-Bissau aspires not only to self-sufficiency but also to become a net exporter of rice in the sub-region by 2027.

In order to realize these objectives taking into account the uncertainties of the international market and the country's abundant natural resources, the Government of Guinea-Bissau has developed a 10-year National Rice Development Strategy (SNR) covering the period 2015-2025, in collaboration with the FAO. It aims to focus national efforts towards achieving self-sufficiency in rice production and, subsequently, the development of a competitive export sector (FAO, 2015).

Despite the previously mentioned challenges, Guinea-Bissau has many climatic, geographical and socio-historical factors favorable to rice production in the country.
Firstly, annual rainfall ranges from 1100 mm in the north to 2500 mm in the south of the country, creating ideal conditions for the cultivation of different rice varieties (National Meteorological Service of Guinea-Bissau, 2023). This abundance of water resources, combined with favorable temperatures, potentially allows two growing cycles per year, significantly increasing the potential productivity of the sector (Agronomic Research Institute of Guinea-Bissau, 2022). Furthermore, the flat Guinean territory represents another strength, as the Rio Gêba valley, the Oio region or the Rio Cumbidjã valley each present around 20 thousand hectares of potential for rice cultivation.[54]

[54] The country is crisscrossed by a network of waterways that offer ample possibilities for irrigation and cultivation. Notable among these are the Rio Gêba valley, which extends into the Bafata and Gabú regions, with a potential irrigable area of about 25,000 hectares, and the Corubal river valley, which runs through much of the Gabú region (Ministry of Agriculture of Guinea-Bissau, 2022). In addition, the OIO region,

Moreover, historical and social factors must also be taken into account. Although political instability is still marked and significant challenges remain, Guinea-Bissau is struggling to regain constitutional stability after the post-conflict years. This has led to increased interest from international donors. Organizations such as the World Bank, the FAO and the European Union have expressed their willingness to support agricultural development projects, with a particular focus on the rice sector (World Bank, 2023).
Finally, a particularly promising aspect is the existence of a strong domestic demand for local rice. Recent studies show that Bissau-Guinean consumers have a clear preference for local rice varieties, appreciating their taste and nutritional qualities (National Agricultural Research Institute, 2022). This preference provides a significant incentive for local farmers and could act as a catalyst for investment in rice processing and marketing.

2.8. Interdependencies between cashew nuts and rice

A study conducted by Professor Alvarez Pereira and other scholars, reveals that the rural economy of Guinea-Bissau exhibits a profound interdependence between rice and cashew nuts manifested through informal credit systems and trading practices. This relationship is particularly evident in the months preceding the cashew harvest season, typically from November to March, when many producers face acute liquidity constraints. During this critical period, a significant proportion of cashew farmers, estimated at 37.8% in the 2020 season, resort to informal loans, predominantly in the form of rice, from local intermediaries. These intermediaries, often operating small shops selling imported rice, function as both lenders and buyers in the cashew supply chain. The loan arrangements, while technically illegal under national legislation, are deeply entrenched in the local economy, with 93.1% of indebted producers receiving rice loans. The repayment terms typically require producers to settle their debts with raw cashew nuts at the onset of the harvest season, usually at unfavorable exchange rates, on average, 1 kg of rice is repaid

watered by the Mansoa River, has a potential of about 19,000 hectares of mangrove paddy fields, while the Rio Cumbidjã valley offers an additional 22,000 hectares of land suitable for rice farming.

with 1.26 kg of cashew nuts[55]. As the study of Alvarez Pereira et. al reveal, this system creates a cycle of debt and obligation, particularly affecting vulnerable producers who rely on these loans for basic sustenance. The interdependence is further complicated by the implicit or explicit trading obligations that accompany these loans, effectively limiting producers' market choices and potentially forcing them to sell their cashews at suboptimal prices. This practice is estimated to impact approximately 14% of the overall marketable cashew production. The system's pervasiveness is underscored by regional variations in farmgate prices, with some regions like Quinara receiving prices up to 33% lower than others, highlighting the potential welfare gains that could be achieved through more efficient market mechanisms. Moreover, the interdependence between rice and cashew is not merely transactional but also social, with long-term trust relationships forming between producers and intermediaries. These relationships, while providing a form of financial security for producers, also reinforce dependency and potentially hinder the development of formal financial services in rural areas. The complexity of this rice-cashew nexus reflects broader economic vulnerabilities in Guinea-Bissau's agricultural sector, including limited access to formal credit, market inefficiencies, and the challenges of consumption smoothing in a predominantly cashew-based economy. (Alvarez Pereira et.al., 2022).

2.9. Conclusions

The situation in Guinea-Bissau poses an immense challenge to the West African country's food security. Its violent history, particularly the devastating effects of the 1998-1999 civil war, has had long-lasting and far-reaching effects on its agricultural sector and broader food production systems. Indeed, the conflict has disrupted several aspects that affect food production, such as agricultural practices, decimated critical infrastructure and displaced over 300,000 people severely undermining the country's ability to produce, distribute and access food.

Subsequent political instability, marked by a series of coups and frequent changes of government, has aggravated these problems and prevented the implementation of consistent, long-term agricultural policies and strategies needed for recovery and

[55] Data are from 2022

development. This fragile governance landscape has also discouraged foreign investment and disrupted the continuity of development projects, hampering efforts to rebuild and strengthen the agricultural sector.

In addition, Guinea-Bissau relies on only a few export commodities and local production, in particular cashew nuts and rice, and this has left the country highly exposed to fluctuations in global markets and climate shocks, further exacerbating food insecurity. Weak institutions, inadequate infrastructure and limited access to technology, finance and extension services have also constrained the agricultural sector's ability to increase productivity and resilience. These complex, related challenges have been exacerbated by the country's low levels of government spending on both agriculture and education. Chronic lack of funding in these critical areas has hindered the development of effective agricultural policies, the training of a skilled workforce, and the implementation of long-term strategies to address food insecurity. The result is persistently high levels of food insecurity, with a significant proportion of the population experiencing moderate to severe food shortages.

These political, economic and social challenges have been analyzed to understand the obstacles that FAO and WFP must overcome to ensure food security. With this in-depth understanding of the context, the next chapter shifts the focus to an analysis of the specific strategies and programs that the organizations are using to address these complex challenges and promote sustainable food security in Guinea-Bissau. By conducting interviews with key members of these UN agencies and closely examining their initiatives, valuable insights can be gained into the effectiveness and limitations of their efforts in the context of the country's volatile political, economic, and environmental landscape. Analyzing the approaches taken by the FAO, WFP, and other development partners provides important lessons on the most effective strategies to address food insecurity in fragile, conflict-affected states like Guinea-Bissau, where intersecting challenges create a particularly complex environment.

CHAPTER 3

Results achieved by the implementing programs

In the context of global food security challenges, Guinea-Bissau provides a compelling case study of the complexities faced by developing countries. With its heavy reliance on cashew nut exports and persistent malnutrition problems, this West African country illustrates the intricate relationship between agriculture, economic vulnerability and food security. The Food and Agriculture Organization (FAO) and the World Food Programme (WFP) have been at the forefront of efforts to address these challenges, implementing a range of programmes aimed at both immediate relief and long-term resilience-building. This chapter seeks to critically examine the current landscape of food security programming in Guinea-Bissau, with a particular focus on the strategies and interventions implemented by FAO and WFP. The central research question guiding this analysis is How effective are current food security programmes in Guinea-Bissau in addressing immediate needs while promoting long-term resilience and sustainable development?

The argument presented here is that while significant progress has been made, particularly through initiatives such as the Country Strategic Plan (CSP) 2019-2024, the path to sustainable food security in Guinea-Bissau remains challenging. This chapter argues that the success of these programmes depends not only on their design, but also on their ability to adapt to the country's unique socio-economic, political and environmental context.

Crucially, the analysis in this chapter draws heavily on primary data collected through interviews with five experts working in the field of food security in Guinea-Bissau or West Africa. While these interviews provide valuable insights into the realities on the ground, it is important to acknowledge the nature of these data. The perspectives offered by these experts, while informative, should be considered alongside official reports and quantitative data for a comprehensive understanding. Integrating these expert views with available data provides a more complete picture of the situation since this combined approach strengthens the overall assessment and its potential impact. The result is an analysis that is both nuanced and based on measurable outcomes and therefore it increases the validity of the findings and their potential application. Indeed, this analysis is very important for future implementations. In addition to highlighting the opportunities and lessons learned in Guinea-Bissau to improve food security, this analysis provides valuable

lessons for other countries facing similar challenges, offering insights into how international organizations can adapt their strategies to local contexts and evolving global pressures. Throughout this analysis, the chapter will draw upon a combination of data from official reports, insights from expert interviews, and relevant literature to provide a nuanced understanding of the food security situation in Guinea-Bissau. By doing so, it aims to contribute to the broader discourse on effective strategies for achieving sustainable food security in developing nations.

This chapter is structured to provide a comprehensive overview of the current food security landscape in Guinea-Bissau. It begins by examining the implementation challenges faced by FAO and WFP, including infrastructural deficiencies and political instability. The analysis then is about the evaluation of program results, highlighting successes in areas such as school feeding and nutrition support. Finally, the chapter explores the critical need for agricultural diversification, examining potential crops and strategies that could reduce Guinea-Bissau's economic vulnerability and enhance food security.

3.1. The Country Strategic Plan (CSP)

As already mentioned in chapter 1, FAO focuses on long-term agricultural development, policy support, and capacity building, while WFP specializes in emergency food assistance and resilience-building interventions. In Guinea-Bissau, these agencies work closely together to implement joint programs that address both immediate food needs and underlying structural issues. After the conflict, many plans have been implemented, but not the two UN agencies are changing their approach developing strategic plans explicitly made for Guinea-Bissau that can respond to the new challenges of Covid 19, Ukraine Russian war, frequent climate events and decreasing of rainy seasons. Indeed, to have a complete view of the current situation in the country, the interviews with FAO member, WFP personal operating in Guinea-Bissau, and other people working in the sector on food security in this region have been essential. Building upon the historical context and initiatives outlined in the previous chapter, the focus now is on the current landscape of food security programs in Guinea-Bissau. The WFP, in complementation with the FAO, has decided to implement the Country Strategic Plan (CSP) 2019-2024, an initiative

targeted for Guinea-Bissau, that includes the implementation of the most successful programs. This comprehensive strategy represents a significant evolution in WFP's approach, drawing on lessons learned from past interventions and aligning with the country's challenges and opportunities. The CSP aims to address the persistent issues of food insecurity and malnutrition while fostering long-term resilience and sustainable development. It builds upon earlier successful initiatives such as the school feeding and food-for-work programs, integrating them into a more cohesive and forward-looking framework. Moreover, the CSP also incorporates innovative elements like climate-smart agriculture practices and cash-based transfers, reflecting a growing emphasis on adaptability and local empowerment. As we delve into the specifics of this plan and other concurrent programs by FAO and other partners, we will examine how these strategies are designed to overcome the historical barriers to food security in Guinea-Bissau and pave the way for a more resilient and self-sufficient agricultural sector. To achieve these ambitious goals, the WFP has structured the CSP around specific, measurable objectives. These strategic outcomes provide a clear roadmap for addressing the multifaceted challenges of food insecurity in Guinea-Bissau, encompassing both immediate needs and long-term development goals. The CSP is structured in five strategic outcomes to achieve by the end of 2024, each targeting a crucial aspect of food security and nutritional well-being to achieve in Guinea-Bissau.

- Strategic Outcome 1: Populations in Guinea-Bissau affected by crises are able to meet their essential food and nutrition needs in response to shocks.
- Strategic Outcome 2: School-age children in Guinea-Bissau have access to nutritious meals throughout the academic year.
- Strategic Outcome 3: Vulnerable populations in Guinea-Bissau, especially children, women, adolescent girls of reproductive age, and individuals living with HIV, experience improved nutritional outcomes in alignment with national targets by 2024.
- Strategic Outcome 4: Smallholder farmers in Guinea-Bissau, with a focus on women and youth, achieve enhanced livelihoods and increased household income by 2024.
- Strategic Outcome 5: National institutions and policymakers in Guinea-Bissau strengthen their capacity and accountability in formulating, implementing, and

monitoring evidence-based food security and nutrition policies and programs by 2030.

While these strategic outcomes represent a complete approach to improving food security in Guinea-Bissau, translating them into effective action on the ground has presented both challenges and opportunities. The operational process has provided valuable insights into the practical realities of implementing this plan, highlighting areas of success as well as obstacles that have required innovative solutions. The following section details the challenges that WFP and FAO have faced in implementing the programs that constitute the CSP, and how the two UN agencies have responded to these constraints.

3.2. Implementation challenges and responses

To better understand the challenges and operational strategies used by FAO and WFP to strengthen the implementation of agri-food systems and food security in line with the guidelines of the CSP, five interviews were conducted to gain a full understanding and transparent overview of the situation in Guinea-Bissau. The interviewees represented a diverse range of expertise and roles within international organizations operating in the country and were conducted 4 online and one on-site in FAO headquarter. The interviewed members were the following:

1. a Programme Associate in Vulnerability Analysis and Mapping from the World Food Programme operating in Guinea-Bissau;
2. an IT Technical expert from WFP operating directly in Guinea-Bissau;
3. a global youth action member from the World Food Forum (WFF) working across West Africa;
4. a FAO agronomist specializing in West African agriculture;
5. and an Italian researcher collaborating with WFP who is currently in Guinea-Bissau.

This wide-range group of experts provided invaluable insights into the implementation of food security programs, the challenges faced on the ground, and potential strategies for improving agricultural practices and food availability in the country. The discussions addressed several topics impacting food security in Guinea-Bissau, with all interviews primarily focusing on the same key themes. The covered themes included the significant

infrastructure challenges, particularly the poor road conditions and limited electricity access, which hamper the distribution of food and agricultural inputs, the political instability and its impact on program implementation and the complex dynamics surrounding government cooperation and bureaucracy. Moreover, the interviews also delved into Guinea-Bissau's agricultural dependence on cashew nuts and the pressing need for crop diversification to enhance food security and economic stability. Lastly, one more topic covered in some interviews was the role of technological advancements and their role in improving food security, alongside the challenges in data collection and verification in the local context.

The results of the interviews confirmed the challenges of implementing the programs discussed in the previous chapter, but also revealed new issues that arose during the interventions.

The main problem reported as the most challenging is the lack of infrastructures. Indeed, according to the interview n.5 (for the complete interviews see Annexes below) the lack of paved roads emerges as a primary concern, with the respondent consistently highlighting the poor condition of the streets, particularly outside the capital, Bissau. During the six-month rainy season from May to October, many dirt roads become impassable due to flooding, severely impacting the transportation of food, goods, and agricultural inputs. This not only affects the implementation of programs but also limits market access for farmers.

As reported by the researcher who is cooperating with the WFP and is currently in Guinea-Bissau:

> The main problem is the roads, which are a real disaster. The centre of Bissau is paved, but there are only four streets. Once you leave the centre, the roads are all dirt, full of potholes and now, during the rainy season, full of puddles and mud, it's a real disaster to get around. Also, apart from the four streets in the centre that are lit, the rest of the streets have no streetlights, so the streets are completely dark, and it gets complicated to get around. As soon as you leave Bissau, things get worse. I have not travelled much now because it is the rainy season, and it is very dangerous to move around. In fact, that is another problem in the country. There is only one paved road, a sort of motorway that connects some parts but not all regions. All the other roads are dirt roads, so during this time of the year they flood, which affects the roots

> and trees fall. This is a huge problem for transporting food and other goods.[56]

This argument about the lack of infrastructure is confirmed by the interviews n.2 who stated "Moreover, another big issue in implementing the WFP's programs are the roads' conditions. They are very bad and in the rainy seasons can be dangerous. However, this doesn't stop WFP operations, just make it longer to travel" explaining that the lack of good road infrastructure, even if it doesn't limit WFP's operations, has a longer-term impact.

In fact, the interviews revealed that WFP has adopted some solutions to respond to the road problem, such as the use of 4x4 vehicles, which are very useful, and working with international organizations (ECOWAS, WAEMU, EU) to invest in the development of new roads. In addition, to address poor road conditions and transport shortages, WFP also conducts market-based interventions and retail assessments to improve the supply chain. These efforts aim to ensure a continuous supply of food by identifying constraints and reducing delivery costs, especially during the rainy seasons. What can be deducted, based on the interviews and on the studies of the previous chapters, is that the use of temporary measures, such as 4x4 vehicles and market-based interventions, demonstrates practical adaptability in the face of challenges. However, these approaches only address the symptoms of a deeper issue: the severe lack of infrastructure. Poor road conditions, particularly during the rainy season, continue to disrupt program implementation and economic activities. While these short-term solutions help maintain operations, they do not resolve the underlying problem. Without significant, long-term investment in infrastructure, the reach and effectiveness of these programs will remain limited, affecting their potential for lasting change.

As mentioned above, in addition to roads, another issue of lack of infrastructure raised by respondents was electricity shortages, particularly outside the capital, Bissau. As noted by the interview n.5, "electricity and water are non-existent" in rural areas. Moreover, according to the member of WFF during the third interview:

[56] A.M. Personal interview with the author. 05/09/2024.

> Another challenge is the lack of electricity in rural areas, which affects cold storage and food processing. Without reliable electricity, it's difficult to preserve mangoes and other perishable goods, leading to significant post-harvest losses.[57]

This unreliable supply hampers food storage, making it difficult to maintain cold chains for perishables, and causing significant food spoilage. Indeed, a main issue still linked to the lack of infrastructure that emerged from the interview, but not analyzed in the previous chapter is the conservation of food. Because of the frequent power cuts, foods that need to be stored at low temperatures (like yogurt) are spoiled, and frozen products cannot be eaten because they have to be repeatedly defrosted and refrozen.

To mitigate the issues of food spoilage caused by unreliable electricity, WFP tries to implement strict quality control measures for all incoming food. A food inspector oversees food testing to ensure compliance with national standards, and the collaboration with the Ministry of Health provide laboratory testing in case of concern. In addition, working with transporters ensure the proper delivery of school meals and nutrition programs, stressing the importance of protecting food from diversion and spoilage. (WFP, 2023).

Based on the insights gained from the interviews, it can be assumed that the issue of electricity shortages, particularly in rural areas, presents a critical barrier to food conservation and cold chain management. Even though the WFP's quality control measures and collaborations with national authorities help mitigate some of the spoilage risks, Guinea-Bissau will suffer for a long time of food insecurity if not actions will be taken. Therefore, without substantial investment in reliable electricity infrastructure, especially in rural areas, these reactive measures will continue to be insufficient, and food spoilage will remain a persistent challenge that limits the success of agricultural and nutrition programs. The results of the interviews suggest that the country needs a government that cares about the country and encourages investment, especially in infrastructure.

Concerning the collaboration with the local government interviews have given different answers. The functioning of the government in Guinea-Bissau presents a complex and multifaceted challenge, as highlighted by various Respondents members. A

[57] WFF Youth Action member. Personal interview with the author. 18/10/2024

consistent theme is the significant role of bureaucracy and the government's general inefficacy, which contributes to slow and often ineffective project implementation.

According to the members of FAO and WFP, the government in Guinea-Bissau is frequently described as corrupt and largely non-functional. As remarked, the government is "non-existent" in terms of effective governance, with the current leadership being criticized for its corruption and lack of commitment to development. This view is supported by another respondent who highlighted that the president's actions often disrupt civic processes, such as the incident where he cut off electricity and internet to prevent a protest. (Interview n.5).

Despite these criticisms, there is a recognition that the government, while corrupt, still plays a role in formal processes. For instance, the WFP member of interview n.2 has stated that while the government does not actively support the implementation of programs, it provides necessary approvals. The WFP and other organizations find that government ministries only need to "give the OK" for projects to proceed. This situation is compounded by bureaucratic delays, which slow down the initiation and execution of crucial projects. As reported:

> With the collaboration of local government, WFP use to work with the minister of education, health and agriculture. The main problem is the bureaucracy to implement the projects since they take too long (…) However, this doesn't stop WFP operation, just make it longer to travel.[58]

The inefficiency of the government is evident in its handling of administrative tasks and its failure to address critical issues. The Italian researcher (interview n.5) noted that government officials often lack availability, with ministers being absent or changed frequently, which disrupts the continuity and effectiveness of projects. Therefore, what emerge is that while the government in Guinea-Bissau does not actively obstruct development efforts, its corruption, inefficiency, and bureaucratic delays create significant obstacles. The government's role is limited primarily to providing formal approvals rather than actively facilitating or supporting project implementation. However, especially for the achievement of the strategic outcome 4, FAO and WFP have aimed at capacity building for national institutions and local partners, aimed at strengthening their resilience to governance disruptions. For instance, the FAO has provided technical

[58] Mendes Jurarim, Domiciano Luis. Personal interview with the author. 02/09/2024

assistance to key government institutions, including the Ministry of Agriculture and Rural Development, to enhance policy formulation, strategic planning, and program implementation capacities. This has included support for the development of a national agricultural investment plan and efforts to improve agricultural statistics and market information systems (FAO, 2022). By strengthening the capacity of national partners, particularly at the local and regional levels, WFP aims to ensure that the supply chain, food security and emergency response remain robust even in times of political instability. WFP also works with local communities to build assets and resilience, reducing vulnerability to shocks such as climate change or sudden price increases. (WFP, 2019).

However, as highlighted by interview n.2 and n.4, collaboration with the governments is essential in some cases such as to data collection. As highlighted by the FAO agronomist, "In particular my sector, dealing with food and its cultivation, is in close contact with the political atmosphere that sometimes goes as far as the president"[59]. Indeed, he highlighted that it's difficult to get relevant data that are traceable the veracity of data, therefore sometimes the sharing of data it's based on the level of trust between FAO and the government. For instance, a very relevant example of which the data are not aligning as examined in the previous chapter, concern the rice production. According to FAOstat, Guinea-Bissau produces over 300,000 tons of rice annually, with a yearly consumption of around 290,000 tons, which should, in theory, be enough to meet the population's needs. However, there is a significant gap between the official production figures and the actual food availability in the country, as the real production does not even reach 140,000 tons (CARD, 2023, field data). Therefore, interviews n.2 and n.5 revealed that rice is the most imported product due to its status as a staple food, but many families cannot afford it because of high taxes and transportation costs.

In response to this challenge, WFP and FAO are actively working to diversify its sources of data. The most effective way has been to develop robust partnerships with civil society organizations (CSOs) in Guinea-Bissau to strengthen local governance and promote transparency. These CSOs, which often operate independently of the government, play a critical role in monitoring the programs and providing feedback on their effectiveness. By engaging these local actors, WFP and FAO ensure that its

[59] A.G. Personal interview with the author. 22/08/2024.

interventions are not only transparent but also aligned with the needs and priorities of the communities it serves. Moreover, as outlined in interview n.1:

> WFP Guinea-Bissau has benefited in the past from EU funding for monitoring food and nutritional security (FNS). This funding has enabled many SAN assessments to be carried out and the evolution of food and non-food prices to be monitored in 44 markets in Guinea-Bissau. I think it's a good thing to be working with the EU.[60]

This partnership model also empowers local CSOs by enhancing their capacity to hold local authorities accountable, thereby contributing to broader efforts to combat corruption within the country (African Development Bank, 2023).

Another aspect that was discussed during the interviews, as mentioned above, is the agricultural dependence on cashew nuts and the lack of crop diversification due to low or non-existent technical skills and capacities among local farmers. This issue will be analyzed in the following section as it requires more detailed analysis.

Finally, what emerged that has been very relevant to achieve the implementation of some programs is the good internet connection. While access is limited primarily to the wealthier sections of the society, the quality of service is generally reliable. As denoted in interview n.5:

> There are only two telephone companies, but they are very expensive, the telephone plans are much more expensive than the European companies and therefore only the elite of Guinea-Bissau can afford them. Even for me, as an Italian, it is very expensive.[61]

Despite the high costs, she acknowledged that "they work well, they pick up almost everywhere and except for some days, they work regularly."[62] This assessment is corroborated by the IT WFP member who stated, "For the moment internet connections are ok, it works perfectly everywhere. Internet is now a good tool to operate on the field."[63] This relatively stable internet infrastructure, albeit limited in accessibility, has significantly aided the implementation of FAO and WFP programs. The WFP member elaborated on how they leverage this connectivity:

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[60] Tine, Dome. Personal interview with the author. 12/09/2024
[61] A.M. Personal interview with the author. 05/09/2024
[62] A.M. Personal interview with the author. 05/09/2024
[63] Mendes Jurarim, Domiciano Luis. Personal interview with the author. 02/09/2024

> We use tools for digitizing the process in the field, I can ensure there are many activities that have been appropriate for WFP in the field, like school feeding that give food to the students in the schools and the resilience project for women and men giving them the ratios to the communities.[64]

This digital approach has enabled more efficient data collection, program monitoring, and communication between field teams and headquarters. Furthermore, it has facilitated the use of cash transfer programs in rural areas, as mentioned by the WFP member: "Sometimes we prefer distributing cash directly to the people that are in rural areas."[65] While internet access remains a privilege for many, its availability has undoubtedly enhanced the operational capabilities of international organizations working to improve food security in Guinea-Bissau.

The interviews reveal complex challenges in Guinea-Bissau that go beyond simple program implementation. They suggest that current interventions, while necessary, are only temporary and may hinder problem-solving, raising questions about the long-term sustainability and impact of these approaches. The reliance on temporary solutions and adaptive strategies highlights a critical point: the need for fundamental changes in Guinea-Bissau in both infrastructure, governance, and agricultural practices over the long term. Today, the country's landscapes are diverse. While the help of NGOs, international organizations and regional governments is essential to improve food security, there is a huge risk of dependency. The country cannot rely solely on aid from third parties, and although cash and food transfers are good, programs that can overcome all these socio-economic barriers are just as important as emergency responses, which is why the FAO and WFP also implement and invest in training programs that enable the population to become self-sufficient.

What has emerged from the interview is the need of a broader approach to food security in Guinea-Bissau and the population need to become reliant and independent. In order to achieve this outcome, the approach should address not just immediate food needs, but also underlying issues like poor infrastructure, weak governance, unreliable data, and outdated farming methods. Without tackling these core problems, even well-planned programs may struggle to make a lasting difference.

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[64] Mendes Jurarim, Domiciano Luis. Personal interview with the author. 02/09/2024
[65] Mendes Jurarim, Domiciano Luis. Personal interview with the author. 02/09/2024

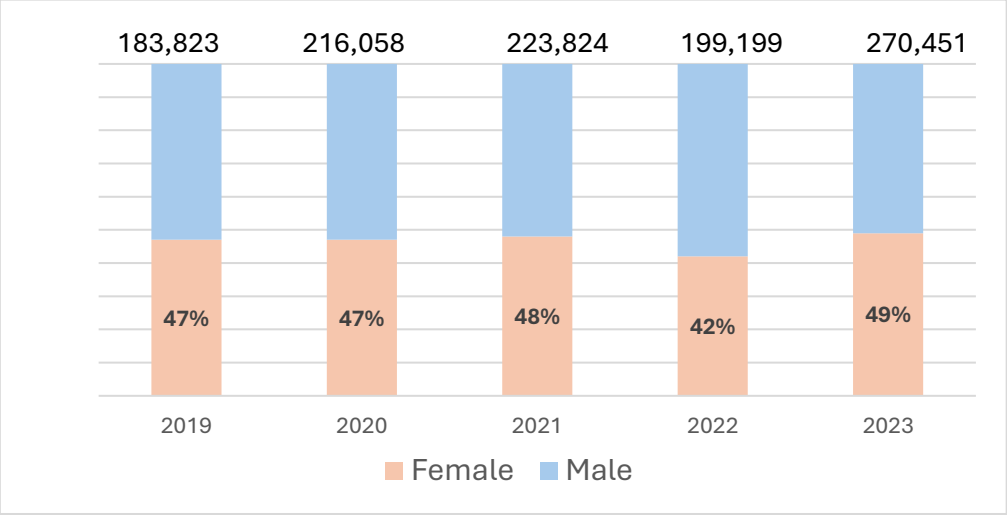
Despite these significant challenges, it's important to note that FAO and WFP have managed to implement their programs as discussed in the next section. Their ability to adapt to the local context, develop innovative solutions, and forge partnerships with local organizations has allowed them to make progress in improving food security and agricultural practices. These organizations have demonstrated resilience and creativity in navigating the complex landscape of Guinea-Bissau, implementing school feeding programs, supporting local farmers, and providing emergency food assistance when needed. While the road ahead remains challenging, the efforts of FAO and WFP have laid a foundation for future improvements and have made a tangible difference in the lives of many Guinea-Bissau citizens.

3.3. Evaluation results

According to the interviewed members and as the data result illustrate, the implementation of the Country Strategic Plan in Guinea-Bissau (2019-2024) and the other interventions on the field demonstrate a significant and growing impact on the country's vulnerable populations. The analysis, based on the findings of the interviews and the data from the FAO and WFP reports, shows that that their collaborative efforts, implemented through various programs including school feeding, nutrition support, and agricultural development, have shown a consistent reach and adaptation to changing circumstances.

The following table illustrates the yearly breakdown of beneficiaries, highlighting not only the total number of individuals reached but also the gender distribution of these interventions. In 2019, the programs benefited 183,823 individuals, which grew substantially to 216,058 in 2020, representing an initial 17.5% increase. The upward trend continued in 2021, with beneficiary numbers peaking at 223,824, a 21.8% increase from the 2019 baseline. Although there was a slight dip in 2022 to 199,199 beneficiaries, possibly due to operational challenges or shifts in program focus, the organizations rebounded strongly in 2023. The final year of this period saw an impressive jump to 270,451 beneficiaries, marking a 47.1% increase from the 2019 to 2023.

Figure 11: Total beneficiaries from WFP/FAO programs from 2019 to 2023



Source: graph created based on data from World Food Programme, 2024

The school feeding program in Guinea-Bissau has emerged as one of the most implemented initiatives in the country's efforts to improve food security and education. In 2023, this program reached nearly 179,000 children, demonstrating its extensive reach and impact. As highlighted by the WFP member interviewed, "WFP has actively operated in Guinea-Bissau," particularly in "school feeding that give food to the students in the schools." This program goes beyond merely providing daily nutritious meals; it serves as a catalyst for educational attainment and gender equity in a country where only 16% of children complete secondary education.

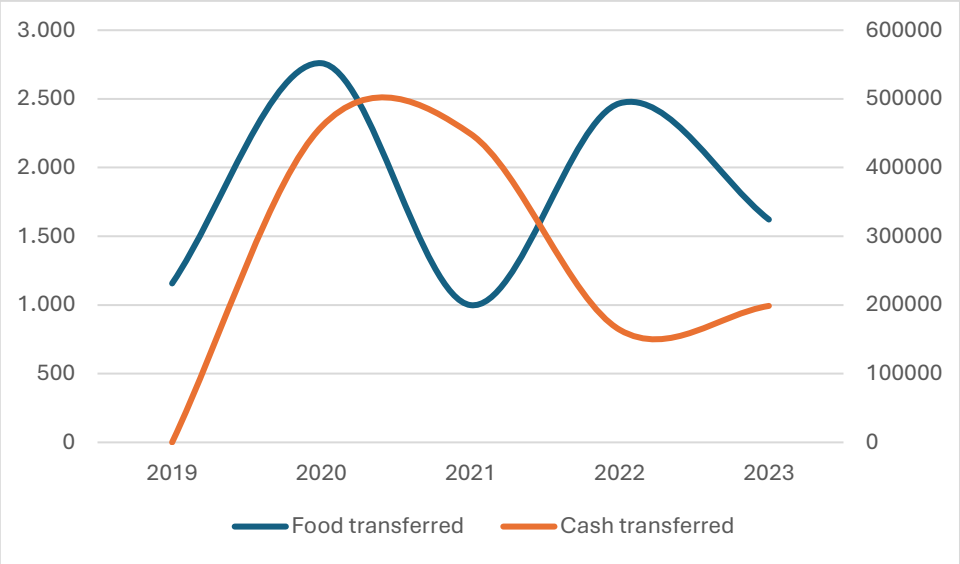
The program's strategic inclusion of take-home rations has been particularly effective in encouraging regular attendance, especially among girls and children with disabilities. This approach directly addresses the persistent gender disparities in education by reducing the opportunity costs for families who might otherwise prioritize boys' education. For children with disabilities, these rations serve as an essential support mechanism, helping to overcome significant barriers to accessing education in a resource-constrained environment.

The success of school feeding, along with cash and food transfers, can be attributed to their direct and immediate impact on beneficiaries. As the WFP member noted, "Sometimes we prefer distributing cash directly to the people that are in rural areas." These programs provide tangible, immediate benefits that are easily understood

and utilized by recipients. They also bypass many of the infrastructural challenges mentioned by Respondents, such as poor road conditions and lack of electricity in rural areas.

Figure 12 below illustrates the dynamics of food and cash transfers by the WFP in Guinea-Bissau from 2019 to 2023, revealing significant fluctuations in both forms of assistance. Food transfers, measured in metric tons (mt), show a volatile pattern, starting at around 1,100 mt in 2019, peaking sharply to nearly 2,800 mt in 2020, then declining to about 1,000 mt in 2021. There's a subsequent rebound to approximately 2,500 mt in 2022, followed by another decrease to about 1,600 mt in 2023. This variability likely reflects WFP's adaptive response to changing needs, including the impact of the COVID-19 pandemic and other crises. Cash transfers, measured in USD, display a different trend. Starting from zero in 2019, they rose dramatically to peak at around 500,000 USD in 2021, before declining to about 150,000 USD in 2022 and slightly increasing to about 200,000 USD in 2023. This trend aligns with WFP's reported expansion of cash-based interventions, particularly in response to crises like floods and forest fires, and as part of efforts to support vulnerable populations affected by food insecurity and malnutrition. (WFP, 2024).

Figure 12: Food in mt (LHS) and cash in USD (RHS) transferred in Guinea-Bissau 2019-2023



Source: graph created based on data from World Food Programme, 2024

As the results illustrate (shown in the table below), the CSP in Guinea-Bissau and the five related strategic outcomes have been successful, the more considering the political instability, climatic events and COVID-19 challenges.

In contrast, programs like climate-smart agriculture (CSA) and digitalized agriculture have faced more challenges in implementation and adoption. The WFF Global Youth Action member mentioned that while they are promoting climate-smart agriculture, its implementation faces significant obstacles. These include poor infrastructure, lack of electricity in rural areas, and limited technical knowledge among farmers. As the Respondent stated, the main problem are the skills and the education of the people, they don't have the technical knowledge and skills to produce and differentiate the agriculture."

Furthermore, the political instability and frequent changes in leadership, as mentioned by several respondents, make it difficult to implement and sustain long-term agricultural development programs. The immediate and tangible nature of school feeding, and cash transfer programs makes them more resilient to these political fluctuations compared to more complex and long-term initiatives like CSA or digitalized agriculture.

Table below (data taken from WFP report 2019-2023) is a good representation of the achievement for each strategic outcome and summarize the evaluation results during the last 5 years.

Table 4: Evaluation results in Guinea-Bissau

Strategic outcome 1 **Populations affected by crises meet essential food and nutrition needs in response to shocks**	• Supported over 7,600 people affected by floods and forest fires through cash-based transfers (2021) • Increased households with acceptable food consumption from 60% to 90% in affected areas (2021) • Improved households with acceptable food consumption from 73% to 95% through crisis response efforts (2023) • Provided cash-based transfers to more than 10,500 people affected by severe food insecurity, malnutrition, flooding, and forest fires (2023)
Strategic outcome 2 **School-age children have access to nutritious meals throughout the academic year**	• Reached 178,083 schoolchildren across 865 primary schools (2019) • Expanded to 186,133 schoolchildren in 874 schools (2021) • Provided meals to 179,000 schoolchildren in 852 schools, covering 50% of primary schools (2023) • Introduced take-home rations during COVID-19 school closures • Provided additional take-home rations to nearly 25,000 girls in grades 5 and 6, and 635 children with disabilities (2023)
Strategic outcome 3 **Vulnerable populations experience improved nutritional outcomes**	• Treated over 3,100 children aged 5-59 months for moderate acute malnutrition (2021) • Distributed specialized nutritious food to 20,000 children aged 6-23 months at risk of stunting (2021) • Expanded nutrition interventions from three to six regions, increasing beneficiaries by 35% (2023)

Strategic outcome 4 **Smallholder farmers achieve enhanced livelihoods and increased household income**	• Supported 25 communities in rehabilitating salinized rice fields and improving water access (2021) • Trained 150 farmers in 15 villages, increasing rice productivity fourfold (2022) • Strengthened resilience of over 48,000 smallholder farmers (52% women) through agricultural input provision (2023) • Purchased 1,224 metric tons of locally produced food from smallholder farmers for school feeding (2023)
Strategic outcome 5 **National institutions strengthen capacity in food security and nutrition policies and programs**	• Partnered with ministries to implement school feeding and smallholder support programs • Collaborated with the Ministry of Women, Family and Social Solidarity on cash-based transfers, building capacity in targeting, registration, and payment processes • Strengthened partnerships with international financial institutions and UN agencies for coordinated interventions

3.4. Agricultural diversification and future implications

Agriculture diversification is a critical factor for the future of Guinea-Bissau's economy and food security. Currently, the country's agricultural productivity is heavily dependent on rice and cashew nuts, making the economy vulnerable to market fluctuations and limiting opportunities for farmers to improve their livelihoods (World Bank, 2023). Diversifying into other crops can help mitigate these risks by creating alternative sources of income, enhancing food security, and making the agricultural sector more robust against external shocks (FAO, 2021). A broader range of food products can improve nutrition and reduce pressure on land resources used for monoculture farming. By fostering the resilience of its agri-food system and overall economy, diversification can reduce dependence on the cashew nut market (African Development Bank, 2021). As emerged during an interview, "Diversifying away from cashew nuts, which dominate the agricultural landscape, is crucial to reducing economic vulnerability and improving food security." Several potential crops have been identified for this diversification effort. Mangoes are highlighted as particularly promising, with one Respondent noting,

“Mangoes can be eaten fresh, processed into juices, or even dried, making them versatile and marketable.” Indeed, Mangoes, with an annual production of 9,000 metric tons as of 2022, show significant export potential (World Bank, 2023). Other suggested crops include rice, with a WFP Programme Associate recommending “investment in irrigation and mechanization to increase yields and reduce dependence on imports.”

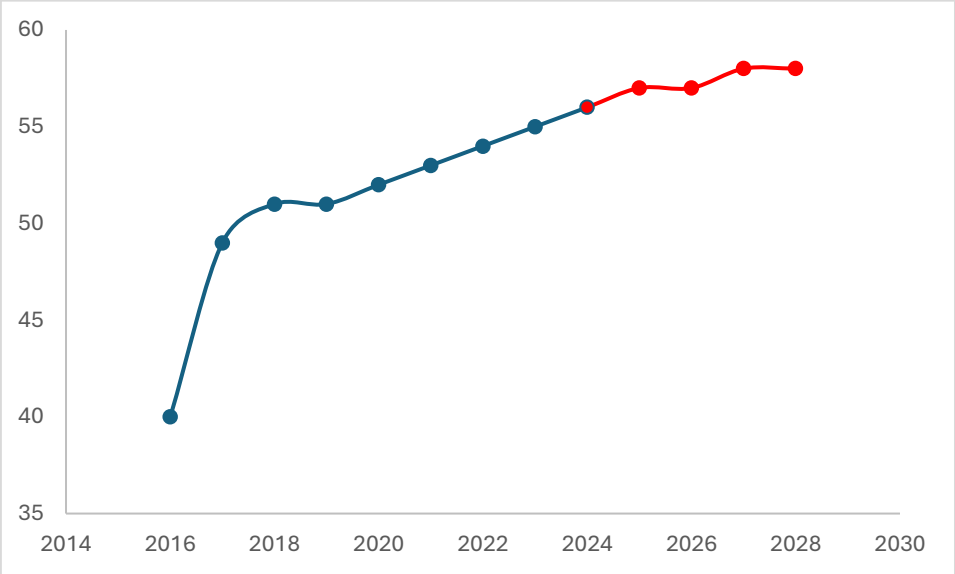
One product that can have more potential than other products, according to a member working in Guinea-Bissau, is cassava. Cassava is particularly valuable in Guinea-Bissau due to its adaptability to the country’s diverse climatic conditions. It is a hardy, drought-tolerant crop that can thrive in poor soils where other crops might fail, making it an ideal choice for the more arid regions of the country. Cassava’s resilience is especially important in Guinea-Bissau, where erratic rainfall and the threat of prolonged dry periods can severely impact agricultural production. By growing cassava, farmers can secure a reliable food source even in adverse conditions, which is crucial for ensuring food security. In Guinea-Bissau, cassava is already a staple food for many families, traditionally used in various forms such as boiled roots, cassava flour, and gari (a popular West African fermented food product). The widespread familiarity with cassava cultivation and processing among local farmers provides a strong foundation for expanding its production. Increasing cassava cultivation can help diversify income streams for farmers by allowing them to sell surplus produce in local and regional markets. Furthermore, cassava has a flexible harvest period, which means it can be stored in the ground and harvested when needed, offering a form of food security buffer during lean periods.

Additionally, cassava has significant potential for value addition, which can further boost the income of farmers. By investing in simple processing technologies, such as grating, drying, and milling, cassava can be transformed into higher-value products like flour, chips, or even industrial starch, which can be sold for a higher profit. The development of small-scale processing facilities in rural areas could create new economic opportunities and reduce post-harvest losses, which are common in regions where storage infrastructure is limited.

Expanding cassava production in Guinea-Bissau also aligns with the country’s broader agricultural development goals. Cassava’s ability to grow with minimal inputs, combined with its importance as a staple food, makes it a strategic *crop* for improving food security while reducing dependence on imported rice.

The graph below illustrates that the cassava production increased during the last years, and according to the forecast data until 2029, it will continue to rise.

Figure 13: Cassava Production from 2014 to 2024 and forecast until 2028



Source: graph created from data taken from Tridge and RLR, 2024

Moreover, as outlined by the FAO agronomist during the interview, beyond cassava, plantain is considered a viable crop for diversification. Its potential to create employment opportunities could be an important incentive for both economic growth and food security, although it requires labor-intensive efforts and infrastructure that are currently limited.

The World Food Programme has crafted a new strategic plan for Guinea-Bissau spanning 2023-2027, building on insights from its previous Country Strategic Plan (2019-2024). This fresh approach targets the nation's pressing food insecurity and malnutrition issues, with a focus on bolstering resilience among at-risk populations, enhancing crisis readiness, and broadening access to nutritious food options. In response to the growing threat of climate change and its effects on agricultural output, the updated plan places greater emphasis on adaptive strategies. It also aims to fortify rural livelihoods by backing smallholder farmers, with a particular focus on women and youth. The WFP intends to expand locally sourced school meal programs and enhance social safety nets to better address shocks and socioeconomic vulnerabilities. However, the organization faces

potential roadblocks, including political unrest, climate-related disasters like floods and droughts, and possible funding shortages. To counter these challenges, the WFP plans to enhance early warning mechanisms, diversify its funding streams, and strengthen ties with both governmental and international partners. The strategy also underscores the importance of gender-sensitive programming and inclusive approaches to ensure marginalized groups, including those with disabilities, are not overlooked. (WFP, 2023).

3.5. Conclusions

The analysis of food security programming in Guinea-Bissau reveals a complex landscape of challenges and opportunities. The Country Strategic Plan (CSP) 2019-2024, implemented by WFP in collaboration with FAO, has demonstrated significant progress in addressing immediate food needs while laying the groundwork for long-term resilience. The success of programs such as school feeding and nutrition support, evidenced by the increasing number of beneficiaries and improved food consumption scores, underscores the effectiveness of targeted interventions in improving food security outcomes. However, the path to sustainable food security in Guinea-Bissau remains fraught with obstacles. Infrastructure deficiencies, particularly poor road conditions and unreliable electricity supply, continue to hamper program implementation and economic development. Political instability and bureaucratic inefficiencies further complicate efforts to implement and sustain long-term agricultural development initiatives. The heavy reliance on cashew nut exports exposes the country to economic vulnerabilities, highlighting the critical need for agricultural diversification. The potential of crops such as cassava, mangoes, and plantains offer promising avenues for reducing this dependence and enhancing food security. However, realizing this potential will require overcoming significant challenges in technical knowledge, infrastructure, and market access.

Looking ahead, the new WFP strategic plan for 2023-2027 represents an evolution in approach, with increased emphasis on climate change adaptation, resilience-building, and support for smallholder farmers. The plan’s focus on expanding locally-sourced school meals and enhancing social safety nets demonstrates a commitment to addressing both immediate needs and underlying structural issues.

The success of future interventions will depend on their ability to navigate these complex challenges while fostering local capacity and sustainable development. As Guinea-Bissau strives to achieve food security, the lessons learned from current programs and the strategic shift towards resilience and diversification will be crucial in shaping effective, context-specific solutions for the years to come.

FINAL CONCLUSIONS

This thesis explored in detail the complex dynamics of food security in Western African countries with a focus on Guinea-Bissau, a country characterized by a history of conflict, political instability and economic vulnerability. Through an in-depth analysis of historical, socio-political and economic factors, it became clear that food security in Guinea-Bissau is influenced by a series of complex interrelationships, in which dependence on a few agricultural commodities, such as cashew nuts and rice, plays a crucial role. The civil war of the 1990s had a devastating impact on agricultural infrastructure and production practices, creating cycles of debt and vulnerability for small farmers. These factors, combined with adverse climatic conditions and inadequate agricultural policies, have contributed to persistent food insecurity.

Despite these challenges, the research revealed that targeted interventions can yield significant positive outcomes. The analysis of FAO and WFP operations revealed how these international organizations are trying to address food security challenges in Guinea-Bissau. Their strategies, which combine immediate humanitarian assistance with long-term development, are essential to improve the living conditions of vulnerable populations. Indeed, in the last 5 years FAO and WFP achieved to reach 270,541 beneficiaries, with an overall increase of 47%, and to reduce the gender gap from 2019. This progress demonstrates the potential for meaningful impact even in highly challenging environments.

However, it emerged that their effectiveness is hampered by factors such as political instability, low literacy and the lack of efficient production tools. The last chapter showed that the interventions have reached many beneficiaries, through school feeding programs while also implementing cash transfer and money transfer programs, which have increased food security. These successes highlight the importance of adaptive strategies and close collaboration with local communities.

Nevertheless, challenges persist. The recommendations made suggest the need for an integrated approach that promotes agricultural diversification, local capacity building and the creation of more robust agricultural policies, which can only be improved through investments in infrastructure, technology and education. Moreover, as highlighted by the interviews conducted, there is a strong need to develop also long-term strategies, otherwise it is impractical to improve food security and agri-food systems

implementation, as it is crucial for building long-term resilience in Guinea-Bissau's food systems.

The thesis highlighted the importance of continuing to monitor and evaluate existing policies and practices so that necessary changes and improvements can be made to ensure food security in Guinea-Bissau. Furthermore, the lessons learned from this case study can inform interventions in other fragile states facing similar food security challenges, contributing to broader efforts to combat global hunger and malnutrition.

ANNEXES

Annex 1

Timeline of FAO and WFP programs from the post conflict until 2023

1999-2005: Post-conflict recovery	
1999-2000	WFP Emergency Programme for food assistance to IDPs
2000-2003	FAO Agricultural Sector Rehabilitation Project to restore rice and vegetable production.
2003-now	WFP initiates the 'Food-for-Work' programme to rebuild rural infrastructure.
2006-2010: Transition to development	
2006	FAO launches the 'Special Programme for Food Security' (PSSA) focusing on sustainable intensification of agricultural production.
2008	WFP starts the 'School Feeding Programme' in the most vulnerable regions.
2009-2010	FAO implements the 'Cashew Production Improvement' project to diversify agricultural exports.
2011-2015: Focus on resilience	
2011-2013	WFP expands school feeding programme, reaching 200,000 children.
2012-2015	FAO launches the 'Integrated Pest and Production Management Programme' (IPPM) to reduce pesticide use.
2014	Joint FAO-WFP initiatives in response to the 2013 drought.
2016-2020: Innovation and sustainability	
2016-2018	FAO implements 'Climate Smart Agriculture' project to adapt to climate change.
2017	WFP introduces 'Cash for Assets' programme to support rural livelihoods.
2019-2020	FAO launches the 'Digitization of Agriculture' initiative to improve access to market information.
2021-2022: Response to COVID-19 and beyond	
2021-2022	WFP expands food assistance in response to the COVID-19 pandemic, reaching 700,000 beneficiaries.
2022-2024	FAO implements the 'Food Systems Transformation Programme' to improve the agricultural value chain.

Annex 2

All interviews were conducted with the written or verbal consent of the participants for the recording and use of the material. In the transcripts, some parts deemed irrelevant to the subject of the research were not reported.

Interview 1: Dome Tine - Programme Associate in Vulnerability Analysis and Mapping WFP member

This interview was conducted on 12 September 2024 using Microsoft Teams with a WFP staff member working in Guinea-Bissau. It lasted about 20 minutes. The interviewee then answered some questions in writing.

Interviewer: *What's your role in WFP?*
Respondent: *I am a Programme Associate in Vulnerability Analysis and Mapping (VAM), Monitoring & Evaluation and Data Analyst at the WFP office in Guinea-Bissau. I'm responsible for all aspects of vulnerability analysis and mapping (VAM), including food security analysis and monitoring, market monitoring and analysis, mapping and GIS, etc. I'm also in charge of implementing environmental and social safeguard activities for the projects.*
Interviewer: *What are some of the challenges that WFP has faced in implementing programmes in Guinea-Bissau?*
Respondent: *The World Food Programme (WFP) has faced several challenges in implementing its programmes in Guinea-Bissau. These include political and institutional instability. Guinea-Bissau has been marked by recurrent political crises, which affects coordination with the government, the continuity of programmes and the mobilization of resources. Also poor road infrastructure, the lack of reliable road and transport infrastructure in rural areas makes it difficult to reach the most vulnerable communities, especially during the rainy season when roads become impassable. Limited institutional capacity, local institutions, including those responsible for agriculture and humanitarian aid, often lack human and technical resources, making it difficult to manage and monitor WFP projects.*

Interviewer: *What were the main achievements? For example, what strategies have been successful in implementing the programme?*

Respondent: *To successfully implement our projects and programmes, we involve as many partners as possible, in particular NGOs, the private sector, government structures and the population itself. Working groups are also set up with UN agencies, NGOs and ministries to facilitate the implementation of our activities. This multi-partner approach has maximized impact and ensured better coordination between the various players involved, which is essential in a context of limited resources and logistical challenges in Guinea-Bissau. The involvement of NGOs, the private sector and local communities has helped to strengthen people's resilience by making them more self-reliant. In addition, by involving ministries and other state structures, the programmes benefit from a solid institutional anchoring, favoring their sustainability and local ownership. Inter-agency working groups have played a key role in sharing expertise and synchronizing efforts, avoiding duplication and optimizing resources. This strengthened collaboration also makes it possible to adapt interventions to local realities, better target beneficiaries, and respond to food and nutrition emergencies more effectively. Thanks to this inclusive approach, WFP projects have been able to achieve significant results, such as the regular distribution of food in schools, support for vulnerable households through CASH cash transfers (CBT) and support for local farmers.*

Interviewer: *Do you cooperate with international organizations such as WAEMU, ECOWAS, EU? If so, was it good?*

Respondent: *WFP Guinea-Bissau has benefited in the past from EU funding for monitoring food and nutritional security (FNS). This funding has enabled many SAN assessments to be carried out and the evolution of food and non-food prices to be monitored in 44 markets in Guinea-Bissau. I think it's a good thing to be working with the EU.*

Interviewer: *What are your expectations for food security in Guinea-Bissau in the coming years?*

Respondent: *Our expectations for food security in Guinea-Bissau are fully aligned with Sustainable Development Goal 2, which aims to eradicate hunger by 2030. We firmly believe that with greater investment and commitment from donors, it is possible to significantly reduce food insecurity in the country. Increased funding would make it*

possible to scale up support programmes for vulnerable communities, strengthening local farming systems to produce more sustainably and resiliently in the face of climate shocks. Additional funding would also enable the development of storage and distribution infrastructures, guaranteeing better access to food products, even in the most remote areas. Support from international partners would also play a key role in training farmers and introducing new agricultural technologies, which are essential for improving productivity and crop diversification. By working hand in hand with local authorities, NGOs and communities, we can not only meet immediate food needs, but also build more resilient systems in the long term, capable of coping with future crises and putting an end to hunger in Guinea-Bissau.

Interviewer: *Guinea-Bissau has a diet mainly based on cashew nuts. What other foods could be produced to promote agricultural diversification?*

Respondent: *In addition to cashew nuts, which are an important source of income for Guinea-Bissau, agricultural diversification is essential to improve food security and the resilience of the country's farming systems. Rice, which is already produced locally, could benefit from investment in irrigation and mechanization to increase yields and reduce dependence on imports. In addition, the development of market garden crops such as tomatoes, onions, auberges and peppers would improve nutritional diversity while stimulating the local economy by creating regional markets. The production of tropical fruits such as mangoes, bananas and papayas, in addition to citrus fruits, could be intensified, not only to enrich diets with vitamins and minerals, but also to develop export sectors with higher added value.*

Finally, promoting livestock farming, particularly poultry, goats and fish in coastal areas, would enhance food security by diversifying sources of animal protein. Integrated programmes to support small-scale producers in these sectors would strengthen the resilience of communities in the face of climate shocks, while meeting growing demand for more varied and balanced diets. Agricultural diversification would thus be a strategic lever for reducing food insecurity and strengthening the national economy.

Interview 1: Programme Associate in Vulnerability Analysis and Mapping WFP member

Interview 2: Domiciano Luis Mendes Jurarim – IT Operation Assistant at WFP

This interview was conducted on 2 September 2024 to an IT Operation Assistant at WFP operating in Guinea-Bissau. The interview lasted about 30 minutes and was conducted through Google Meet.

Interviewer: *Hello, nice to meet you and thank you for your availability. Are you currently in Guinea-Bissau*?
Respondent: *Yes.*
Interviewer: *What is your job in the WFP?*
Respondent: *I work for the technological sector of the WFP. Many information regarding in Guinea-Bissau. Many people think there is a war in Guinea-Bissau but people live well. It's like in northern African country. For the moment internet connection are ok, it works perfectly everywhere. Internet is now a good tool to operate on the field.*
Interviewer: *Which are the main operations?*
Respondent: *We use tools for digitizing the process in the field, I can ensure there are many activities that has been appropriate for WFP in the field, like school feeding that give food to the students in the schools and the resilience project for women and men*

giving them the ratios to the communities. Sometimes we prefer distributing cash directly to the people that are in rural areas. WFP has actively operated in Guinea-Bissau.

Interviewer: *Which have been the problems in achieving these operations?*

Respondent: *With the collaboration of local government, WFP use to work with the minister of education, health and agriculture. The main problems are the bureaucracy to implement the projects since they take too long. Moreover, another big issue in implementing the WFP's programs are the roads' conditions. They are very bad and in the rainy seasons can be dangerous. However, this doesn't stop WFP operation, just make it longer to travel.*

Interviewer: *Do you also collaborate with other institutions like ECOWAS and WAEMU?*

Respondent: *Sometimes yes. The last financial was 10 million dollars to buy the things and distribute them. Indeed, linked to the roads' problem, many international organizations are investing for the construction of the roads*.

Interviewer: *What are your expectations for the future? Do you think food security may improve in Guinea-Bissau?*

Respondent: *I think it depends a lot on the future elections. We are approaching on the elections that will happen in few months, we are not being aware of when it's going to happen*

Interviewer: *What about the cashew nuts, since it's the main produced food in the country?*

Respondent: *Yes, cashew nuts are very common. However, last year the production decreased because exportation was lower. This is due to the campaign delays and logistical challenges, which impacted the timely export of cashew nuts from Guinea-Bissau. However, the prices didn't increase so much.*

Interviewer: *What about the rice's prices?*

Respondent: *Yes, the prices of rice are increasing a lot. This is a big problem for the local population. Indeed, half of the rice we use it's imported, and this makes it very expensive due to taxes and commercial and trade policies.*

Interviewer: *What about diversifying agriculture production by cultivating new crops?*

Respondent: *It should be done, and this could surely improve food security in Guinea-Bissau. We have good lands for the cultivate items, we have enough water and the soils are good. However the main problem are the skills and the education of the people, they*

don't have the technical knowledge and skills to produce and differentiate the agriculture. In particular cassava it's a good incentive and offers a good potential for Guinea-Bissauan agri-food systems.

Interview 2. IT Technical of WFP operating in Guinea-Bissau

Interview 3: R.T. - Member of WFF Global Youth Action

This interview was conducted during the World Food Forum by FAO HQ on 18 October 2023. The Respondent is a WFF global youth action operating in West Africa. The interview lasted about 15 minutes.

Interviewer: *Thank you for taking the time to speak with me. Could you start by telling us a bit about your role within WFF Global Youth Action?*
Respondent: *Thank you for having me. I work with WFF Global Youth Action, where our focus is on agrifood investments and solutions that aim to create sustainable, long-term transformations in food systems. We are active across West Africa, including Guinea-Bissau, working with local communities to improve agricultural practices and enhance food security.*
Interviewer: *Can you elaborate on some of the projects you're working on in Guinea-Bissau specifically?*

Respondent: *Certainly. One of our key projects in Guinea-Bissau is promoting climate-smart agriculture. This approach aims to make farming systems more resilient to climate change by using sustainable practices. For example, we help farmers adopt techniques that reduce water use, improve soil health, and protect crops from unpredictable weather. Climate-smart agriculture is gaining traction because it helps improve yields and makes farming more resilient to unpredictable weather*.

Interviewer: *What kinds of obstacles are you encountering in trying to implement these projects?*

Respondent: *There are quite a few challenges, unfortunately. Infrastructure is a big one: the road conditions in Guinea-Bissau are poor, especially outside the capital, and during the rainy season, many areas become difficult to access. This slows down the transport of both agricultural inputs and food products. Another issue is the lack of electricity in rural areas, which affects not only the ability to store food but also the introduction of technology that could help farmers*.

Interviewer: *And how does the local government support these efforts?*

Respondent: *We face frequent changes in political leadership, which makes it hard to build consistent, long-term partnerships. That said, we work closely with local communities to ensure that our projects remain on track, even when higher-level support is slow or inconsistent*

Interviewer: *Are there any other crops or products you're focusing on to diversify agriculture in Guinea-Bissau?*

Respondent: *Diversifying away from cashew nuts, which dominate the agricultural landscape, is crucial to reducing economic vulnerability and improving food security.*

One crop that shows promise for diversification is the mango, which has the potential to thrive in local conditions and become an important source of both food and income. Mangoes can be eaten fresh, processed into juices, or even dried, making them versatile and marketable. This could help diversify farmers' income streams and reduce economic risks, especially since cashew prices can fluctuate. Mango cultivation could also open up opportunities for small-scale processing industries, creating jobs in rural areas.

Interviewer: *What other challenges are you facing in promoting agricultural diversification?*

Respondent: *Infrastructure is a major one, road conditions are poor, and during the rainy season, they can become impassable, making it difficult to transport agricultural products, including mangoes, to market. Another challenge is the lack of electricity in rural areas, which affects cold storage and food processing. Without reliable electricity, it's difficult to preserve mangoes and other perishable goods, leading to significant post-harvest losses*.

Interviewer: *How is WFF Global Youth Action addressing these infrastructure issues?*

Respondent: *We're working on community-based solutions to address some of these challenges. For instance, we promote low-cost technologies for food preservation, like solar drying, which can extend the shelf life of mangoes and other crops. We're also advocating for improved infrastructure through our partnerships with international organizations and governments. In the meantime, we use off-grid solutions like solar power for irrigation and processing, helping farmers stay productive even in areas with unreliable electricity.*

Interviewer: *What are your expectations for the future?*

Respondent: I *really don't know; I want to be optimistic. I think the key is to make long-term investments in infrastructure, technology, and education. The upcoming elections could play a significant role in shaping the future, either by accelerating reforms or creating more uncertainty. However, in the worst cases maybe anything will change, and the situation will remain the same.*

Interview 3: R.T. - WFF global youth action operating in West Africa

Interview 4: A.G. – Agronomist at FAO operating in West Africa

This interview was conducted with a FAO agronomist working in the banana industry across various regions of Africa and Latin America. It was conducted in Italian, lasted about 30 minutes and was organized on Google Meet. The transcript includes only the key points relevant to the thesis research.

Interviewer: *What is your role and what do you do at FAO?*
Respondent: *My background is in agronomy, and my interest lies in agri-food systems, looking at a broad range of cropping systems and agricultural practices. I am currently working within the World Banana Forum, an FAO initiative aimed at promoting sustainability and equity in the banana sector. As a multistakeholder platform that brings together both public and private actors from global banana value chains, the WBF primarily focuses on bananas that are exported to international markets. As far as West Africa is concerned, we work closely with Ghana, Cameroon*

and Côte d'Ivoire. Since the WBF is hosted within the Market and Trade Division (EST) of FAO, we also examine trade dynamics, supply chain aspects, and price fluctuations, aiming to respond to the specific needs of industry stakeholders, including producers, retailers, export/import companies, trade unions and even governments. As FAO, our goal is to bring everyone together to address the most pressing issues affecting the industry in a spirit of pre-competitive cooperation.

Interviewer: *So also collaborate with the governments of the countries, despite the transparency problems?*

Respondent: *Yes, considering the importance of banana production and trade to the economies of many developing countries, we frequently engage with government officials and ministries to achieve institutional impact. Over the years, we have built trusted relationships with the governments of several banana-producing nations, as well as with private actors such as producer associations/cooperatives, trading companies and retailers.*

Interviewer: *Do you encounter any challenges in operating in these countries?*

Respondent: *It can sometimes be challenging to get accurate data. FAO collects extensive data from member countries, and while there is a level of verification involved, there is also a reliance on the information provided by the countries. Projected trends over the years help identify discrepancies, and if something seems off, FAO can re-engage with the country or the relevant ministry to seek clarifications and make the necessary adjustments.*

Interviewer: *As an agronomist, what could be some products to diversify agriculture in Guinea-Bissau?*

Respondent: *Bananas are a staple food in several countries. In the northern hemisphere, we tend to consume the desert variety known as Cavendish, but in many tropical regions, including West Africa, people consume large quantities of plantain - a banana variety that is cooked - which plays a similar role to pasta for us Italians or rice for Asian countries. In Guinea-Bissau, if weather conditions are favorable, banana production could help diversify the agricultural economy and increase employment in the agricultural sector. Bananas thrive in tropical and sub-tropical climates. Banana production can be quite labor intensive and often lacks heavy mechanization. Moreover, in many countries, field tasks are typically divided by*

gender, with men carrying out fieldwork and women working in the packing station. In this regard, the WBF is committed to improving occupational health and safety (OHS) of workers in banana plantations, by mapping and assessing risk factors at work, with a special emphasis on gender-specific work-related risks.
Interviewer: *Do you also operate in the field?*
Respondent: *The WBF regularly conducts missions in banana-producing countries for capacity development activities and project coordination. However, over time, it seems that FAO's policy on missions has resulted in fewer and shorter missions.*
Interviewer: *Who do you communicate with in West Africa?*
Respondent: *We are in close contact with a wide range of local actors involved in banana production and trade in West Africa. We collaborate closely with local producer associations, trade unions and governments to improve the environmental, social and economic sustainability of the banana industry in the region.*

Interview 5: A. M. - Researcher collaborating with WFP

This interview was conducted n 5 September 2024 to an Italian researcher who is currently collaborating with the WFP, and she is currently in Guinea-Bissau. Due to her limited internet data, the interview was conducted by WhatsApp through vocal messages.

Respondent: *I would tell you we'd better write here, as I don't have wifi at home and I don't have much internet to make video calls unfortunately*
Interviewer: *Yes of course, no problem. So, first of all I wanted to ask you what you were doing specifically and your current role in Guinea Bissau*
Respondent: *So I am doing research in collaboration with WFP in the area of food and health, let's say the project wants to test different methods of preventing malaria and other diseases and the impacts they can have on food production in area. To understand which one can be the most effective, and how, we are using surveys where*

there are a lot of questions about hospitals, doctors and healthy foods, their production, where they come from.

Interviewer: *Well, that must be very interesting. To develop this project, what problems (if any) are you experiencing in Guinea-Bissau?*

Respondent: *I am in Bissau, the capital and the most developed city in the country, always within limits of course, but electricity and internet are there quite always. Then it can happen that there are some blackouts, in fact they happen almost once a week of varying duration, the blackouts can last from 10 minutes to half a day. As far as the internet is concerned, there are only two telephone companies, but they are very expensive, the telephone plans are much more expensive than the European companies and therefore only the elite of Guinea-Bissau can afford them. Even for me, as an Italian, it is very expensive. But they work well, they pick up almost everywhere and except for some days, they work regularly.*

Instead, the main problem are the roads, a real disaster. The centre of Bissau is paved, but there are only four streets. As soon as you leave the centre, the roads are exclusively dirt roads, full of potholes and now, during the rainy season, it's full of puddles and mud, it's a real disaster to get around. Furthermore, with the exception of the four streets in the centre that are lit up, the rest of the streets lack streetlights, so the streets are completely dark and it becomes complicated to get around.

Then, as soon as you leave Bissau, everything gets worse. I have not travelled that much now because it is the rainy season, and it is very dangerous to move around. In fact this is another problem in the country. There is only one paved road, a kind of highway that connects some parts but not all regions. All the other roads are dirt roads so during this season they flood, affecting the roots and trees fall. This is a giant problem for the transport of food and other goods. This season lasts 6 months, from May to October, so the problem persists for a wide range of time and causes serious damage. Furthermore, outside Bissau, in rural areas the houses are precarious, unstable so with one more gust of wind they are easily destroyed, or it rains in the house. Furthermore, in the areas outside the capital, electricity and water are non-

existent. That is, in some villages water has arrived but only thanks to NGOs that create wells and import pumps with clean water.

Interviewer: *What a disaster! What about government influence? What role does it play?*

Respondent: *The government exists but it is non-existent. It should be a democratic government; Guinea-Bissau is a semi-presidential republic. But the current president is very corrupt, he has paid, and everyone hates him. There is no improvement plan for the state, no project and he elect the ministers he wants. Like to tell you we had to do this project with the health minister, I have been here for two months now. The first month he was on holiday, we don't know where, and the second month they decided to change him, the president decided to appoint another one who we still don't know who he is, even this new one is perhaps on holiday...in short, we don't understand anything. Moreover, the president does as he likes and makes his own decisions. For example, here one day the citizens wanted to organize a protest demonstration, and the president found out about it that day and decided to cut the electricity and internet to the whole town so that the demonstration could not be organized. So, the government only has a negative influence*.

Interviewer: *On the other hand, apart from the roads, the lack of electricity and water and the corrupt government, are there other problems inherent to food security?*

Respondent: *A giant problem that is hardly ever talked about is food storage, both because of electricity and physical space. People who grow fruit and vegetables, or produce fish, then sell it, but those who can't sell it don't know how to store it, so it's a big problem. Then all the other products that are not fish meat and vegetables are all imported. Cheese doesn't exist, while pasta, rice, pulses and these things are all imported from Portugal usually and therefore cost a lot. In fact, it is difficult for the local population to afford to go to the supermarket and buy a canned product that is not sold on the street. Moreover, the refrigerator departments are unapproachable because with this frequency of blackouts, there are foods that go into the refrigerator but then with the lack of electricity the refrigerator shuts down and the product, despite having gone bad, continues to be sold in the supermarket. Frozen products are also at risk as they are continually thawed and frozen. This causes a lot of food waste. For all these reasons, it is very complicated to be able to develop the projects*

as unforeseen events happen every day between blackouts, floods or ministers not being available.

Interviewer: *According to the WFP reports, however, the data show that they manage to reach food security targets. How do they manage to overcome all these obstacles?*

Respondent: *WFP only needs government approval to develop programmes. The minister of agriculture and health, they approve all the projects without any problems but then they do not intervene. The funds are all private, the government only has to give the OK and it always gives it. As for how to overcome the obstacles, the WFP has more apparatus at its disposal than the local population has access to. In fact, despite the fact that unpaved roads lengthen the time it takes to deliver or implement programmes, the WFP uses machines and vehicles adapted to the roads such as 4x4s or jeep. Then, like in areas where there is no internet service, they use battery-powered radios and satellites to maintain communications in isolated areas where there is no access to the internet or telephone network.*

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