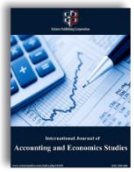
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Research paper



Functioning of Urban Food Markets in The Western Plateau Region of Togo, West Africa

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Abstract

Urban food markets play a strategic role in food supply, economic stability, and the promotion of local produce in Togo. This study analyzes he functioning of urban food markets located in the western part of the Plateaux region. A methodology based on documentary research, data collection, and data processing was adopted. A total of 150 food traders were surveyed in urban markets across four prefectures in the study area, representing 51.72% of the target population. The results reveal that the structure of these markets influences their operation. Strong competition is observed in the Amou-Oblo market, while it remains moderate to weak in Adéta, Badou, and Agou-Gadzépé. Institutional barriers are limited, except in Adéta. Furthermore, restricted access to credit, tax inequalities, and the lack of and poor condition of infrastructure hinder the commercial efficiency of these markets. To cope with these constraints and optimize their operations, traders adopt various strategies, including price negotiation, overloading vehicles, rigging measuring instruments, and resorting to alternative financing. The functioning of these markets remains limited, hindering their role in urban food security. The results of this research will form an essential basis for the development of public policies aimed at addressing the dysfunctions of urban food markets and sustainably consolidating food security in urban areas.

Keywords: *Use about five keywords or phrases in alphabetical order, separated by a Semicolon.*

1. Introduction

Food markets play a central role in the organization of urban food systems worldwide. They ensure the regular supply of agricultural products to cities and contribute to the economic, social, and nutritional stability of territories (Cook et al., 2024). In developing countries, these markets represent essential links in local food value chains, where formal and informal market forms are closely intertwined. (Reardon, et al. 2019).

In Africa, cities have experienced strong population growth over the past four decades (1980-2020) (Kemajou et al., 2020). This population growth is coupled with rapid urban expansion in sub-Saharan Africa, which, according to Ouattara et al. (2023), is placing increased pressure on food supply and distribution systems. Furthermore, food markets face constraints related to information, infrastructure, transaction costs, and regulation, which affect their performance and limit their contribution to food security (Houinsou et al., 2019).

In West Africa, urban food markets occupy a central place in the subsistence economy. They play a vital role in organizing food supply chains by ensuring the distribution of agricultural products between rural and urban areas (Zoma et al., 2022). These markets constitute key infrastructures for food security, as they facilitate not only the supply of food to urban populations but also the promotion of local production (Allen et al., 2018). However, their operation is frequently hampered by structural constraints, such as inadequate infrastructure, a lack of information, high transaction costs, and often deficient formal regulation, as well as diverse trading practices that influence the quality of trade and access to food (Houinsou et al., 2019). Furthermore, several recent analyses highlight that West African food systems have not recovered to a stable state after COVID-19. A systematic review shows that the pandemic has worsened food access and stability throughout the region (El Bilali et al., 2023). Since the COVID-19 pandemic, the resilience of urban food systems remains a priority in West African countries, where market disruptions, rising prices, and the vulnerability of local supply chains continue to affect household access to essential foodstuffs (Sawadogo & Ouoba, 2023).

In Togo, the western Plateaux region constitutes a strategic crossroads between agricultural production areas and urban consumption centers (INSEED Togo, 2022). This food production zone supplies staple foods for both rural and urban households. Home to many of the country's

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secondary cities, the region is experiencing sustained urban population growth, accompanied by a diversification of commercial activities. As an agricultural and urban area, the western Plateaux region represents a relevant territory for studying the structure of urban food markets and the behavior of the actors operating within them. However, research on markets in Togo's secondary cities, particularly in the western Plateaux region, remains scarce. Existing studies do not thoroughly explore the structure of urban food markets or the behavior of the traders operating within them. This gap limits the development of effective public policies for food security and improved trading conditions. Recent FAO analyses (2025) show that agricultural supply chains and markets are particularly vulnerable to external shocks, including post-pandemic economic fluctuations and increased climate variability. In this context, studying the functioning and sustainability of markets, especially urban markets, is an urgent priority for improving urban food security. It is therefore essential to deepen our understanding of the structure of these markets and their commercial dynamics within a context of rapid urban growth and economic transformations. With this in mind, the present study aims to analyze the functioning of urban food markets in the western Plateaux region, focusing on their structure, the behavior of traders, and the observed dysfunctions. The study of the functioning of urban food markets is part of a context in which West African states seek to strengthen food security, regional integration, and the fluidity of trade, and these dynamics can constitute a favorable framework for the modernization of agricultural markets, considered as a potential lever for inclusive growth. (OECD/CSAO, 2025).

In addition to the introduction, this study highlights a literature review, a methodology used is followed by a presentation of the results obtained, accompanied by their interpretation, which gives way to discussion and conclusion.

2. Literature Review

2.1. Structure of urban food markets

The structure of some urban food markets in secondary cities in Africa is being transformed by dynamics of governance, urbanization, and digital innovation. According to Karg (2025), diversifying supply sources is a strategic lever for strengthening the resilience of urban food systems to climatic, economic, and logistical shocks. Furthermore, Bayir et al. (2022) show that food systems contribute to strengthening local governance, inclusion, and sustainability. Market structure is also influenced by digital and financial innovations. Digital finance platforms improve transaction management, savings, and access to credit for producers and traders, thus consolidating their economic resilience (Kamwa, 2025). The integration of digital solutions into supply chains also strengthens traceability, optimizes flow planning, and facilitates adaptation to seasonal variations in supply (Fu et al., 2024). At the same time, open-air markets remain dominant in secondary cities. Hannah et al. (2022) show that, despite efforts to modernize distribution channels, open markets persist as central supply spaces for low-income households due to their accessibility and flexibility. However, their operation remains limited by numerous structural challenges that affect the sanitary quality of food and represent a risk to public health in cities (Nijhawan et al., 2023).

2.2. Behaviors of urban market traders to live

Urban food systems in secondary cities are rapidly evolving, influenced by urban dynamics and technological innovations. Traders are adapting their sourcing strategies based on local and regional product availability, seeking to diversify their sources (Riley & Crush, 2023). The adoption of digital financial services, particularly mobile money and digital platforms, contributes to improving traders' financial management, streamlining transactions, and facilitating access to savings and credit, potentially strengthening their economic resilience to economic disruptions and market shocks (Konte & Tetteh, 2022). Digital financial inclusion helps reduce gender inequalities by offering female traders potential access to financial instruments and digital tools, provided they have the necessary equipment, literacy, and other skills (Faton et al., 2025). These behaviors demonstrate that traders in secondary cities are adopting hybrid strategies, combining traditional know-how, collective participation, and the use of digital technology to optimize their operations.

3. Materials and Methods

3.1. Study area

The western part of the Plateaux region is a productive area. It enjoys a sub-equatorial climate of the Guinean type, with two dry seasons and two rainy seasons conducive to agricultural production (INSEED, 2019). Figure 1 shows the western part of the Plateaux region in its regional configuration and the bordering regions.

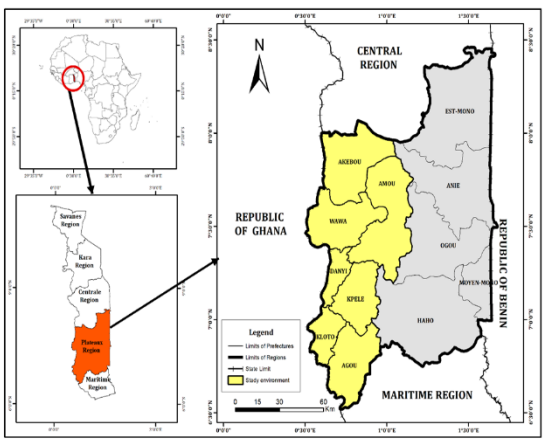


Fig. 1: Geographical Location of the Western Part of the Plateau Region.

Source: INSEED 2022 base map.

According to Figure 1, the western part of the Plateaux Region is bordered to the north by the Central Region, to the west by Ghana, to the east by the eastern part of the Plateaux Region, and to the south by the Maritime Region. The study area lies between latitudes 6°30' and 8°00' north and longitudes 0°30' and 1°10' east. Administratively, it comprises seven prefectures: Agou, Kloto, Kpélé, Danyi, Amou, Wawa, and Akébou (Kola, 2008). It covers an area of 7,509.8 km², representing 43.13% of the Plateaux Region and 13.26% of the national territory.

3.2. Methods

In this research, a methodology based on documentary research, observation, interviews, field surveys, and data processing was adopted.

3.2.1. Field observation

Field observation allowed us to appreciate the different activities and transactions that take place on the day of the bustling urban markets. The data collected through observation concerns the name and day of the urban markets, as well as the number of sellers of the targeted products in each market. This number was obtained through a systematic count carried out on the day the markets were held. The information collected is as follows:

- The name and day of the urban markets in the prefectures of Agou, Kpélé, Amou, and Wawa;
- The number of yam traders at the Agou-Gadzépé market (Agou);
- The number of rice traders at the Adéta (Kpélé) market;
- The number of maize and cowpea traders at the Amou-Oblo (Amou) market;
- The number of traders of cassava and its derivatives in the market of Badou and its surroundings (Wawa).

These counts were used to determine the sample of traders to be surveyed in each market and to identify the key resource people needed for individual interviews.

3.2.2. The interview

The interviews were conducted using an interview guide. These interviews involved key stakeholders in the food trade at the markets of Agou-Gadzépé, Adéta, Amou-Oblo, and Badou, municipal officials responsible for market management, and the president of the transport union in each prefecture. These discussions yielded qualitative and quantitative information on the functioning of the urban food markets, market management by the municipality, and the food transportation system. Furthermore, the methodological approach of this research relies on the collection of field data.

3.2.3. The collection of field data

The fieldwork involved preliminary fieldwork, sample selection, and the actual survey using questionnaires. The questionnaire survey was preceded by a preliminary survey.

- The preliminary field investigation

The main survey was preceded by a preliminary survey conducted from December 10 to 15, 2023, in each urban market of the selected prefectures. This phase allowed for the collection of qualitative and quantitative information from vendors of the targeted products, facilitating the refinement of the vendors' questionnaire. The questionnaire was administered to the target population using appropriate sampling methods.

- Sampling

To cover the entire region and ensure adequate representation, the choice was made to focus on the prefectures in the west of the Plateaux region, which produce more maize, rice, cowpeas, cassava, and yams. The food production data by prefecture in the western part of the Plateaux region, collected by the Directorate of Agricultural Statistics, Information Technology and Documentation in Togo (DSID) over 34 years (1990–2023), are presented in Table 1.

Table 1: Distribution of Food Production by Prefecture in the Western Plateaux Region in 1990 and 2023

PREFECTURES	Maize		Paddy rice		Yam		Cassava		Cowpea	
	Tonne	%	Tonne	%	Tonne	%	Tonne	%	Tonne	%
AGOU	427194	13.99	11484	2.94	567733	21.29	195178	4.47	16792	2.93
AKEBOU	275246	9.01	63802	16.32	376959	14.14	526447	12.06	63552	11.09
LOVE	737009	24.13	80669	20.63	511008	19.16	517193	11.85	178377	31.14
DANYI	286021	9.36	64791	16.57	167465	6.28	768200	17.60	65720	11.47
KLOTO	448962	14.70	17649	4.51	374198	14.03	819268	18.77	92913	16.22
KPELE	472351	15.46	92255	23.59	397855	14.92	320002	7.33	67977	11.87
WAWA	407871	13.35	60345	15.43	271197	10.17	1218753	27.92	87497	15.27
TOTAL	3054654	100	390995	100	2666415	100	4365041	100	572828	100

Source: DSID, 2024.

According to Table 1, between 1990 and 2023, in the western part of the Plateaux region, the Agou prefecture ranked first in yam production with 21.29% of the total, while the Kpélé prefecture ranked first for rice production with 23.59%. The Amou prefecture was the leading producer of maize and cowpeas in the area, with 24.13% and 31.14% of the total production, respectively. For cassava, the Wawa prefecture led with 27.92% of the total production. Thus, the Agou prefecture was selected for yams, the Kpélé prefecture for rice, the Amou prefecture for maize and cowpeas, and the Wawa prefecture for cassava. The choice of markets was based on purposive non-probability sampling, targeting the markets in the main towns of each selected prefecture. The chosen markets were Agou-Gadzépé in the Agou prefecture, Adéta in the Kpélé prefecture, Amou-oblo in the Amou prefecture, and Badou in the Wawa prefecture.

The target population consists of food product traders (wholesalers, semi-wholesalers, and retailers) in the selected markets. Systematic counting identified 290 traders of the targeted products across all the markets concerned. The distribution of all traders and those selling food products by market is shown in Table 2.

Table 2: Distribution of Traders According to Prefectures, Markets, and Selected Products

PREFECTURES	Markets	Average number of retailers (general)	Number of targeted food product traders
AGOU	Agou-Gadzépé (Yam)	880	51
KPELE	Adeta (Rice)	1300	120
LOVE	Amou-oblo (Maize and cowpeas)	262	84
WAWA	Badou (Cassava)	194	35
TOTAL		2636	290

Source: INSEED 2019 and Fieldwork, January 2024, in the western part of the plateau region.

From Table 2, the sample size is determined by the formula:

$$n = Z^2 \frac{P(1-P)}{m^2}$$

With:

- n =the sample size;
- margin of error;
- Z confidence level coefficient ;
- Proportion of food product traders in relation to all traders in the targeted markets (P/T) with T = total number of traders in the targeted urban markets and t = number of food product traders.

The margin of error (m) used for this study is 5%, equivalent to a confidence level (Z) of 1.96 and a precision of 95%. Based on the data in Table 2, the proportion of food product traders (P) is 0.11. From these data, the sample size (n) is determined using Schwartz's formula as follows:

$$n =. 1{,}96^2 \frac{0{,}11(1-0{,}11)}{0{,}05^2} = 150{,}43 \approx 150$$

Based on the sample size (n), the selection of surveyed traders was carried out using a stratified disproportionate probability method, primarily taking into account the type of food product sold and the trader's regular presence in the market to ensure the reliability of the collected data. The distribution of the sample by prefecture, market, and product is presented in Table 3.

Table 3: Distribution of the Sample of Traders by Prefecture, Urban Market, and Products

PREFECTURES	Markets and Products	Number of targeted food product traders	Sample of retailers
AGOU	Agou-Gadzépé ((Yam)	51	30
KPELE	Adeta (Rice)	120	30
LOVE	Amou-oblo (Maize and cowpeas)	84	60
WAWA	Badou (Cassava)	35	30
TOTAL		290	150

Source: Fieldwork, January 2024, in the western part of the plateau region.

According to Table 3, 150 traders were surveyed, representing 51.72% of food product vendors, broken down as follows: 30 yam vendors in the Agou-Gadzépé market, 30 rice vendors in Adéta, 30 maize vendors and 30 cowpea vendors in Amou-Oblo, and 30 cassava and cassava-based vendors in Badou. In the latter case, due to the small number of cassava vendors in the central market, the survey was extended to include vendors of cassava-based products. This step was followed by the main survey using a questionnaire.

- The investigation itself

The survey itself, conducted from December 26, 2023, to January 15, 2024, took place in the urban markets of the study area, with the support of experienced field interviewers. An individual questionnaire was administered to vendors via the KoboCollect application. This questionnaire comprised four sections, as follows: (i) Location; (ii) Sociodemographic characteristics of respondents; (iii) Market structure; (iv) Market behaviour. In total, 30 yam traders were interviewed at the Agou-Gadzépé market, 30 rice traders at the Adéta market, 30 maize traders and 30 cowpea traders at the Amou-oblo market, as well as 30 cassava and derived product traders at the Badou market.
This survey, conducted in the selected markets, provided the qualitative and quantitative data necessary for analyzing the functioning of urban markets. It also allowed the results to be generalized to the entire study area.

3.2.4. Processing survey data

The survey data were processed to generate the results. The analysis was performed using SPSS 27 (Statistical Package for the Social Sciences). Microsoft Excel 2019 was used to generate the tables and graphs of the results, while the writing and formatting of the report were done using Microsoft Word.

4. Results

4.1. Structure of food markets in the western part of the Plateaux region of Togo

4.1.1. Urban food trading, a feminized activity

Women play a significant role in Togo's economy, with a high concentration in the trade sector. This strong representation of women in trade is observed in both formal and informal commerce, including the food trade. Table 4 presents data by sex for food market participants in urban markets within the region.

Table 4: Distribution By Sex of Targeted Food Product Traders in the Main Urban Markets of the Area

Features	Terms and conditions	Agou-Gadzépé Market	Adéta Market	Amou-oblo Market	Badou Market
Sex	Male	0%	0%	0%	43.3%
	Female	100%	100%	100%	56.7%

Source: Fieldwork, January 2024, in the western part of the plateau region.

Table 4, illustrating the gender distribution of market participants in the four food markets of the study area, shows a predominance of women. In the Agou-Gadzépé, Adéta, and Amou-oblo markets, all participants are female (100%). This reflects the strong female dominance in these markets, where women play a central economic role. In contrast, the Badou market shows significant male participation (43.3%), although women still constitute the majority at 56.7%. This indicates a relative mix of male and female market participants in this market.
Overall, the picture highlights a strong involvement of women in market activities, except in Badou, where men are beginning to take a significant place.

4.1.2. Number of food traders and competitive intensity of markets

The number of traders is the fundamental element of the market structure. It allows us to determine the level of competition in the market. Table 5 presents the number of traders in general and the number of traders of targeted food products in the markets selected for the study.

Table 5: Distribution of Traders in General and Those Specializing in Food Products, According to Markets

Market names	Average number of retailers (general)	Number of targeted food product traders	Proportion of food product traders (%)
Agou-Gadzépé	880	51	5.8
Adeta	1300	120	9.2
Amou-oblo	262	84	32.1
Badou	194	35	18
Total	2636	290	65.1

Source: INSEED 2019 and Fieldwork, January 2024, in the western part of the plateau region.

Table 5 presents data on the four urban markets in the study, highlighting the average number of traders and the number of those specializing in food products. In Agou-Gadzépé, 51 out of 880 traders (5.8%) sell yams, reflecting low competition that could lead to an imperfect market. In Adéta, with 120 rice traders out of 1,300 (9.2%), competition is moderate, limiting the smooth functioning of the market. In Amou-Oblo, although small in size (262 traders), the large proportion of maize and cowpea vendors (84, or 32.1%) results in very high competition and increased rivalry among vendors. In Badou, 35 out of 194 traders (18%) focus on targeted products (cassava and its derivatives), which moderately limits competition and could lead to some market dysfunctions. In summary, competition is strong in Amou-Oblo (competitive or perfect markets), while it is moderate to weak in Agou-Gadzépé, Adéta, and Badou (imperfect markets), which can harm commercial efficiency.
The analysis of this table summarizes that in the urban markets selected for the study area, competition varies considerably from one market to another. The Amou-Oblo market exhibits atomistic (strong) competition, close to a perfect market, while the Agou-Gadzépé, Adéta, and Badou markets exhibit more moderate or weak (oligopolistic) competition, reflecting imperfect commercial efficiency in these markets.

4.1.3. Barriers to market access

- Institutional barriers are not very restrictive on market entry

Institutional barriers refer to the formal regulations governing the entry of new traders into markets. In the study area, these regulations fall under the jurisdiction of the municipalities, each responsible for managing the urban market within its territory: the municipality of Agou-Gadzépé manages the Agou market, that of Kpélé the Adéta market, that of Amou the Amou-Oblo market, and that of Badou the Badou market.
The conditions for accessing a stall are generally flexible and similar: submitting an application to the town hall, presenting identification (national identity card, voter registration card, or birth certificate), and paying the stall allocation fee, which varies depending on the market. This fee is 3,000 CFA francs in Agou-Gadzépé, 2,000 CFA francs in Amou-Oblo, 5,500 CFA francs in Badou, and only 1,000 CFA francs in Adéta, regardless of the type of stall (shop, shed, or open-air space). However, in Adéta, monthly fees vary depending on the type of setup: from 50,000 to 100,000 CFA francs for constructed shops (whose tenants contribute to the payment), and 200 CFA francs per square meter for makeshift sheds.
In summary, institutional barriers do not constitute real obstacles to the entry of traders, except in Adéta, where the costs associated with occupying spaces can generate some commercial dysfunction.

- Limited financial capacity of food traders

The financial capacity of food traders refers to their availability of equity capital to conduct their business. Within the framework of this market structure study, it is relevant to analyze the proportion of traders who do or do not have equity capital. The investigations reveal that the majority of traders (68.3%) have equity capital, while 31.7% do not. This overall trend in equity capital availability is also observable across the various markets, except the Amou-Oblo market. Figure 2 illustrates this distribution of traders according to the availability of equity capital and across the different urban markets studied.

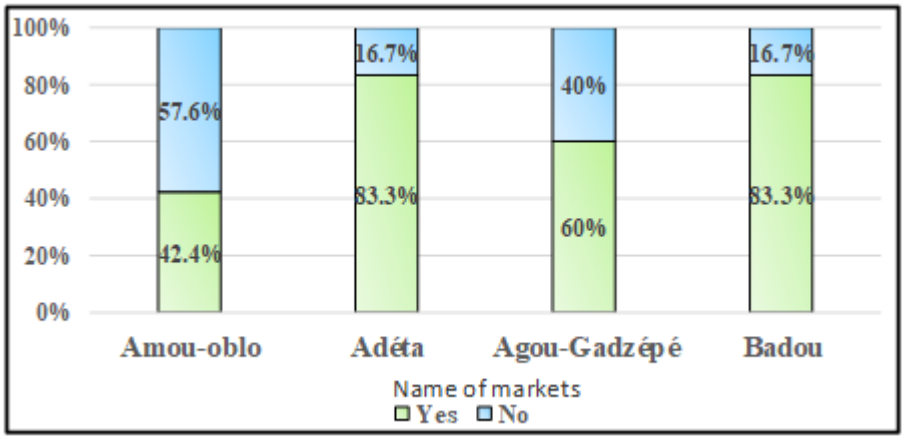


Fig. 2: Responses from Urban Market Traders Regarding the Availability of Equity Capital for Business Activities.

Source: Fieldwork, January 2024, in the western part of the plateau region.

This graph presents the responses of food traders in the four urban markets. In Amou-Oblo, the majority (57.6%) of traders report not having any equity capital, compared to 42.4% who do, revealing limited financial capacity and restricted market access. Conversely, in Adéta, 83.3% of traders have equity capital, reflecting financial autonomy conducive to commercial activities. In Agou-Gadzépé, 60% report having equity capital, while 40% do not, indicating an intermediate situation. In Badou, as in Adéta, 83.3% have equity capital, reflecting good financial independence. Figure 3 presents the results of the logistic regression model assessing the influence of sociodemographic characteristics on the probability of having equity. The results show that sex and marital status have a statistically significant influence on the dependent variable ($p = 0.047$ and $p = 0.039$, respectively). Men have a significantly higher probability of having equity compared to women (OR = 9.47; 95% CI: 1.02–245). In contrast, age, education level, and number of dependents do not show a significant effect, despite odds ratios that are sometimes high but accompanied by wide confidence intervals, reflecting a high degree of uncertainty due to the limited sample size. These results suggest that having equity is more influenced by social factors than by demographic or economic variables.

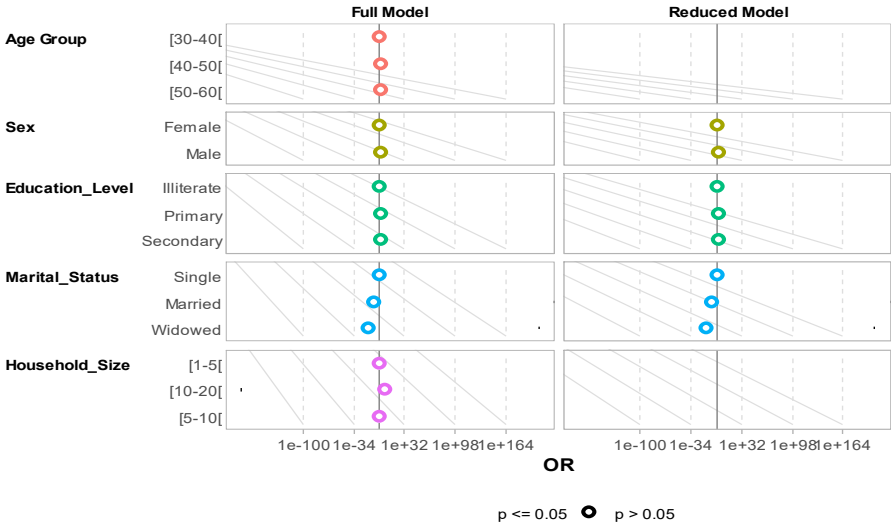


Fig. 3: Logistic Regression Analysis of Sociodemographic Predictors of Personal Funds.

Source: Fieldwork, January 2024, in the western part of the Plateaux region.

In the four markets studied, traders lacking equity capital resort to various sources of financing to ensure their working capital. According to the surveys, they turn to other sources of financing: loans from microfinance institutions (Amou-oblo 68.4%, Adéta 40%, Agou-gadzépé 25%, Badou 40%), tontines (Amou-oblo 89.5%, Adéta 60%, Agou-gadzépé 58.3%, Badou 60%), family support (Amou-oblo 47.4%, Adéta 60%, Agou-gadzépé 50%, Badou 20%), and purchases on credit from wholesalers (Agou-gadzépé 16.7%).

In summary, the markets of Amou-Oblo and Agou-Gadzépé suffer from limited access to equity capital, which hinders their proper functioning, while in Adéta and Badou, financial autonomy supports commercial dynamism.

- Competition based on price and relatively few social and relational barriers

Price competition involves traders attracting buyers by offering lower prices than their competitors, sometimes at the expense of fair-trading practices. It can result in market domination by wholesalers or certain retailers offering very low prices. However, surveys conducted in the markets of Amou-Oblo, Adéta, Agou-Gadzépé, and Badou indicate that this form of competition is not observed. Selling prices are generally uniform among traders, with only slight discounts possible after negotiation with customers.

Social and relational barriers refer to cultural, social, or relational obstacles that can limit new traders' access to markets or hinder business interactions. According to surveys, in the majority of markets (Amou-Oblo, Adéta, Agou-Gadzépé), over 70% of traders believe that these barriers do not affect their activities. Only small proportions (3.3% in Amou-Oblo and Agou-Gadzépé, 6.6% in Badou) acknowledge their existence, while the rest of the respondents are unaware of them.

In summary, the economic barriers reveal a dysfunction in certain markets (Amou market and Agou-Gadzépé market) in the study area, where the availability of equity capital is limited for some traders, with repercussions on the market functioning. On the other hand,

institutional, social, and relational barriers and price competition do not generally hinder the proper commercial functioning of research markets, except at Adéta, where institutional constraints generate a notable imbalance.

4.1.4. Food distribution networks: predominantly short supply chains

The distribution channel refers to all the steps linking production to consumption. Analyzing it allows us to assess market competition, as shorter channels are generally more advantageous than longer ones. Therefore, when studying the structure of urban markets, it is essential to examine the distribution channels of the targeted products.
The markets of Amou-oblo, Adéta, Agou-Gadzépé, and Badou have different supply circuits, as shown in Figure 4.

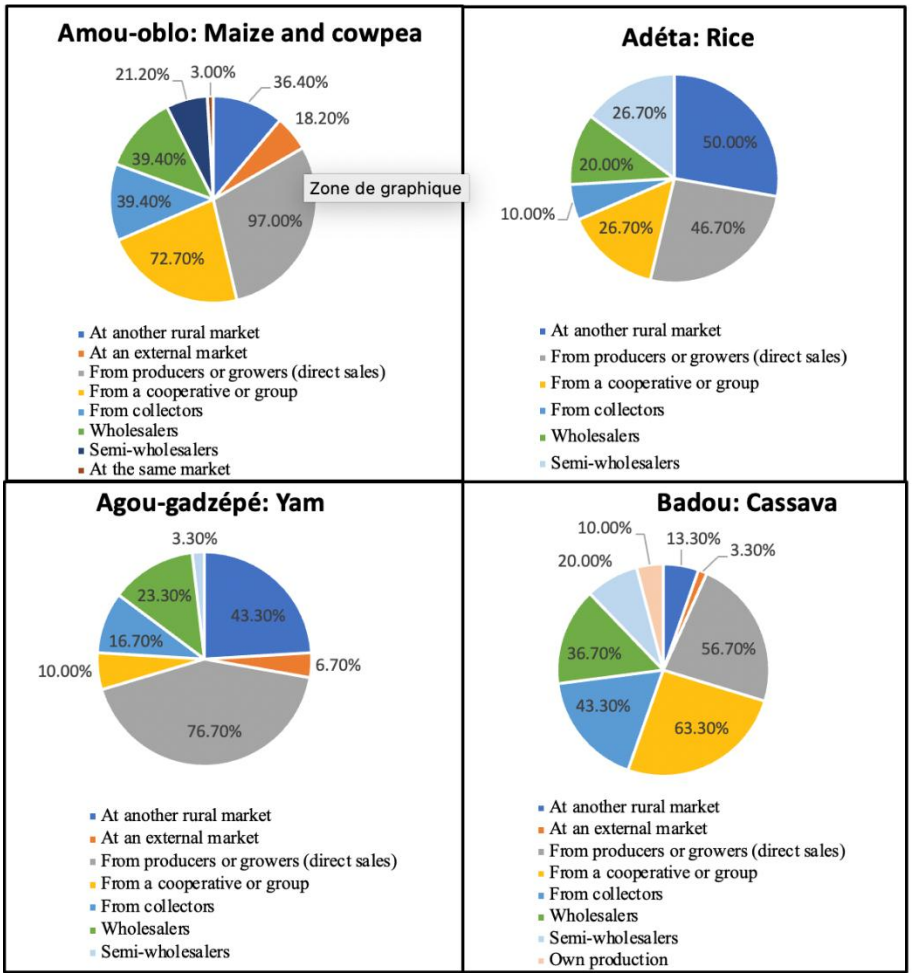


Fig. 4: Sources of Food Products Targeted in the Main Study Markets.

Source: Fieldwork, January 2024, in the western part of the plateau region.

Figure 4 highlights the main sources of supply in the markets of Amou-Oblo, Adéta, Agou-Gadzépé, and Badou. Direct purchase from producers dominates in Amou-Oblo (97%) and Agou-Gadzépé (76.7%), and remains significant in Badou (56.7%) and Adéta (46.7%). Supply through cooperatives is frequent in Amou-Oblo (72.7%) and Badou (63.3%), but limited in Adéta (26.7%) and Agou-Gadzépé (10%). Purchases from other rural markets are common in Adéta (50%), Agou-Gadzépé (43.3%), and Amou-Oblo (36.4%), but low in Badou (13.3%). Maize and cowpea traders in the Amou market obtain their supplies from the rural markets of Témédja, Hihiatro, Agadji, Ezimé, and Glélou. In Adéta, rice traders get their supplies from Kpélé-Elé, Bodzé, Goudévé, and Akata. Yam traders in Agou-Gadzépé get their supplies from Adéta, Anié, Amoussoucopé, Bassar, Bodzé, Kati, and Avétonou. In Badou, the supply markets are Badou Dzindzi, Okou, Doumé, Mangoassi, and Zobgégan. Supply via external markets is primarily used by traders in Amou-Oblo (18.2%), with other markets being less involved. Collectors are a significant source of supply in Badou (43.3%) and Amou-Oblo (39.4%), but are less frequently used in Adéta (10%) and Agou-Gadzépé (16.7%). Purchases from wholesalers are moderately distributed across the localities, ranging from 20% in Adéta to 39.4% in Amou-Oblo. Semi-wholesalers are more prevalent in Adéta (26.7%) and Amou-Oblo (21.2%), but less so in Agou-Gadzépé (3.3%). Purchases within the same market are marginal (3% in Amou-Oblo) and nonexistent elsewhere. Only Badou (10%) mentions its own production as a source of supply.
The marketing channels for food products in these markets are predominantly short, relying on direct purchases from producers and surrounding rural markets. Cooperatives and groups also play a significant role, while wholesalers, semi-wholesalers, and collectors are less involved. These short channels promote more affordable prices, leading to strong demand and a rational market.

4.1.5. Irregularities in the tax collection system

In the area studied, urban markets are managed by the municipalities, which handle collection through their agents. These agents are familiar with the spatial organization of the vendors. The majority of vendors in Amou-Oblo (100%), Agou-Gadzépé (100%), and Adéta (93.3%) buy their tickets from the collectors. In Badou, 60% use this method, 16.7% pay directly at the cashiers, and 23.3% are undecided.

Payment checks are carried out after tickets are distributed, but the system has shortcomings. Corruption is widespread: some vendors negotiate with collectors to pay less than the fee required for their stall size. For example, in Adéta, a vendor with a 6m² stall should pay 200 CFA francs on market day, but some pay only 100 CFA francs thanks to backroom deals. Furthermore, some vendors do not pay any fees: 9.1% in Amou-Oblo, 13.3% in Adéta, 13.3% in Agou-Gadzépé, and 33.3% in Badou. This situation results from corruption, the late arrival of collectors, and discrimination based on family ties.
This collection system suffers from irregularities that compromise equality before the law and promote tax evasion, thus harming the proper functioning of the market and fair competition.

4.1.6. Infrastructure services

Market structure analysis must include the availability, use, cost, and impact of physical and facilitating infrastructure on business activities. For this study, physical infrastructure primarily refers to transportation, storage, and internal market facilities, while facilitating infrastructure relates to financing and regulation.

- Transport infrastructure: predominance of road transport and deterioration of roads

Transport infrastructure plays a key role in urban food supply. It is therefore essential to study the modes and means of transport used by traders, as well as their condition, cost, and efficiency. According to surveys, road transport is the only mode of transport used (100% in all markets studied) for supplying food products in these cities.
The means of transporting food products from supply areas to markets vary: walking, bicycles, motorcycles, tricycles, taxis, minibuses, and trucks, as shown in Table 6.

Table 6: Means of Transport for Supplying Food to Urban Markets

Means of transport for supplying food to urban markets	Amou-oblo Market	Adéta Market	Agou Gadzépé Market	Badou Market
The trucks	21.20%	36.70%	6.7%	3.3%
The minibuses	42.40%	76.70%	36.7%	0%
Taxis	66.70%	53.30%	63.3%	76.7%
Tricycles	93.90%	63.30%	23.3%	63.3%
Motorcycles	78.80%	43.30%	23.3%	20%
Bicycles	21.20%	16.70%	63.3%	66.7%
Walking	24.20%	13.30%	6.7%	0%

Source: Fieldwork, January 2024, in the western part of the plateau region.

Table 6 presents the means of transport used to supply the markets of Amou-Oblo, Adéta, Agou-Gadzépé, and Badou, which are primarily dominated by tricycles, taxis, and motorcycles. Tricycles are widely used in Amou-Oblo (93.9%) and Adéta (63.3%). Taxis are used in all markets, especially in Badou (76.7%) and Agou-Gadzépé (63.3%). Motorcycles are common in Amou-Oblo (78.8%) but less so in Badou (20%). Heavy vehicles such as trucks (mainly in Adéta and Amou-Oblo) and minibuses (particularly in Adéta: 76.7%) are also used. Finally, light means such as cycling in Agou-Gadzépé (63.3%) and Badou (66.7%), and walking are less frequent in the Amou-Oblo market (24.2%), Adéta (13.30%), and the Badou market (6.7%).
Traders primarily use paved roads in Badou (86.2%), Agou-Gadzépé (76%), Adéta (60%), and to a lesser extent in Amou-Oblo (57.6%). Improved tracks are also used, especially in Badou (79.3%) and Amou-Oblo (69.7%). Unpaved tracks are very common in Amou-Oblo (84.8%), Agou-Gadzépé (68%), and Badou (62.1%), but less so in Adéta (23.3%). Unpaved and defective roads are heavily used by traders in Amou-Oblo (75.8%) and Agou-Gadzépé (44%), and marginally in Adéta (13.3%) and Badou (10.3%). These results reveal that Badou benefits from the best road infrastructure, followed by Adéta and Amou-Oblo. In contrast, the roads to Amou are in poor condition, making transport more difficult and expensive. The Agou-Gadzépé route combines several types of roads, but remains dependent on unpaved tracks, which also increases transport costs.
According to traders, the condition of the roads significantly influences transport costs. In Amou-Oblo, 51.5% consider the cost high, compared to 48.5% who consider it average. In Agou-Gadzépé, the perception of high costs is most pronounced (73.3%), with no traders finding them low. In Adéta, 60% consider the cost average, while 40% consider it high, with no one perceiving it as low. In Badou, 53.3% find the cost high, and 26.7% average. Surveys show that transport costs vary according to distance and product: they range from 1,000 to 3,500 CFA francs for a sack of maize, 1,000 to 1,500 CFA francs for cowpeas, 800 to 1,700 CFA francs for rice, 2,000 to 4,000 CFA francs for a calabash of yams, and 2,000 to 6,000 CFA francs for cassava. Thus, in Amou-Oblo and Agou-Gadzépé, the high cost could hinder trade or raise the prices of food products, while in Adéta and Badou, a more moderate perception promotes the accessibility of food products and the smooth functioning of commercial activities in these markets.

- Storage infrastructure: insufficient, with home storage predominating

In food marketing systems, storage infrastructure plays a crucial role in regulating flows. It is therefore important to analyze storage methods, preservation techniques, their costs, and their effects on market functioning. Surveys reveal that a majority of traders are unable to sell all their products in a single day: 48.5% in Amou, 70% in Adéta, 76.7% in Agou-Gadzépé, and 73.3% in Badou. Faced with this situation, the use of storage facilities becomes necessary. Figure 5 illustrates the main storage locations in these markets.

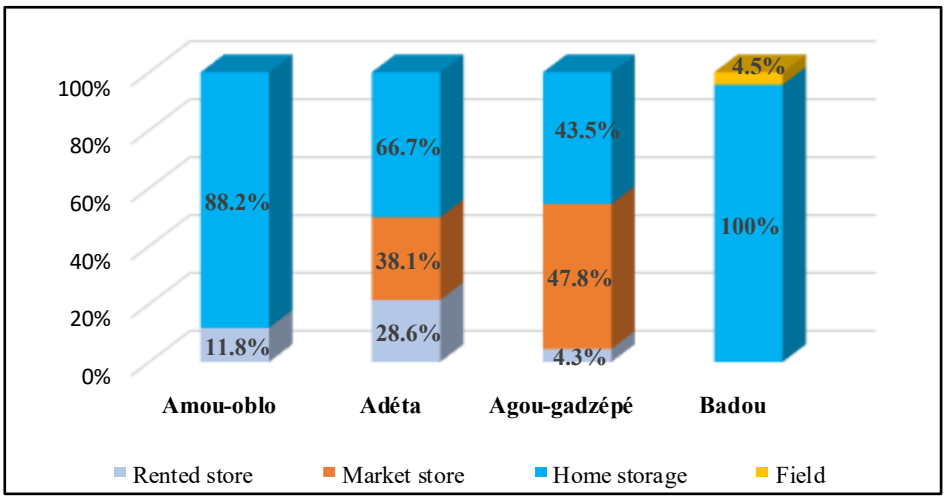


Fig. 5: The Different Methods of Food Storage in Different Markets.

Source: Fieldwork, January 2024, in the western part of the plateau region.

The figure illustrates storage methods in the markets of Amou-Oblo, Adéta, Agou-Gadzépé, and Badou. Some traders use several storage methods in different markets. In Amou-Oblo, storage is predominantly done at home (88.2%), as it is in Badou (100%), with a slight reliance on field storage (4.5%). In Adéta, traders store at home (66.7%), but also use rented shops (28.6%) and market stalls (38.1%). In Agou-Gadzépé, vendors adopt a mixed model: market stalls (47.8%), home storage (43.5%), and storage in rented shops (4.3%). The rental cost is considered average by 66.7% of traders in Agou-Gadzépé; 40% in Agou-Gadzépé, and 33.3% in Adéta consider it high.
Storage methods vary depending on the product: cereals (maize, cowpeas, rice) are stored in drums, barrels, or sacks (see photo plate 1-a); tubers are stored on mats on the ground, either in the field or in dedicated granaries. The photo plate illustrates a storage facility at the Adéta market.



Board Photo 1: Adéta Market Food Storage Store, Interior View (A) and Exterior View (B).

Source: Photo PKB Kolou, January 2024, in the western part of the plateau region.

According to surveys, 90.9% of traders in Amou-Oblo believe their preservation methods are effective, compared to 9.1% who disagree. In Adéta, opinions are divided: 56.7% consider them effective, while 43.3% doubt their effectiveness. In Agou-Gadzépé and Badou, 60% find these methods satisfactory, compared to 40% who consider them insufficient. These results reveal limited confidence in the effectiveness of preservation methods, particularly in Adéta, Agou-Gadzépé, and Badou.
In summary, the methods, means, and costs of storage have shortcomings that affect the proper functioning of the commercial system.

- Internal market infrastructure: limited access and precarious state of market facilities

The internal layout of markets, i.e., the sales spaces, plays a crucial role in the smooth running of commercial activities. In Amou-Oblo, 75.8% of traders report a lack of available spaces, compared to 24.2% who say the opposite. Conversely, Adéta (90%) and Agou-Gadzépé (100%) are characterized by ample availability. In Badou, the situation is more mixed: 63.3% find the spaces sufficient, while 36.7% consider them insufficient.
As for their condition, they are mostly outdoors or furnished with recycled materials by the traders themselves, as shown in photo plates 2, 3, 4, and 5.



Board Photo 2: Partial View of the Amou-Oblo Market Showing the State of the Sales Venues.

Source: Photo PKB Kolou, January 2024, in the western part of the Plateaux region.



Board Photo 3: Partial View of the Adéta Market Showing the State of the Sales Venues.

Source: Photo PKB Kolou, January 2024, in the western part of the Plateaux region.



Board Photo 4: Partial View of the Agou-Gadzépé Market Showing the State of the Sales Venues.

Source: Photo PKB Kolou, January 2024, in the western part of the Plateaux region.



Photo 5: Partial View of the Badou Market Showing the State of the Sales Venues.

Source: Photo PKB Kolou, January 2024, in the western part of the Plateaux region.

Except Adéta and Badou, the markets of Amou and Agou-Gadzépé are dominated by makeshift sheds, lacking any permanent structures. Only Adéta and Badou have modern sheds (see photo plates 3 and 5). Similarly, according to fieldwork, these four markets have toilets and drinking water points, but none have a first-aid post.

In summary, the scarcity of spaces in certain markets and the precariousness of the facilities demonstrate the inadequacy of the infrastructure for the smooth running of commercial activities. In addition to the physical infrastructure directly related to sales, other infrastructure

supports merchants in achieving their objectives. This includes facilitation infrastructure, particularly that related to financing and regulation.

- Financing infrastructure, limited access to credit

These are the institutions that provide financial support to traders by granting them loans. In the study area, two types are distinguished: formal institutions (microfinance) and informal ones (rotating savings groups, family support). Microfinance institutions grant loans repayable with interest over a given period, while rotating savings groups are small, unregulated groups of traders who decide to pool their savings to provide each other with financial assistance on a rotating basis (A. Zinsou-Klassou, 2007).

The study analyzes traders' sources of financing, the institutions involved, loan access conditions, loan duration, interest rates, and repayment terms. Surveys reveal that some traders lack equity capital, particularly in Amou-Oblo (57.6%), Agou-Gadzépé (40%), and Adéta and Badou (16.7% each). They therefore turn to loans, rotating savings and credit associations (ROSCAs), family support, or purchases on credit from wholesalers, as shown in Figure 6. Some traders turn to several sources of revenue at once to have working capital for their business.

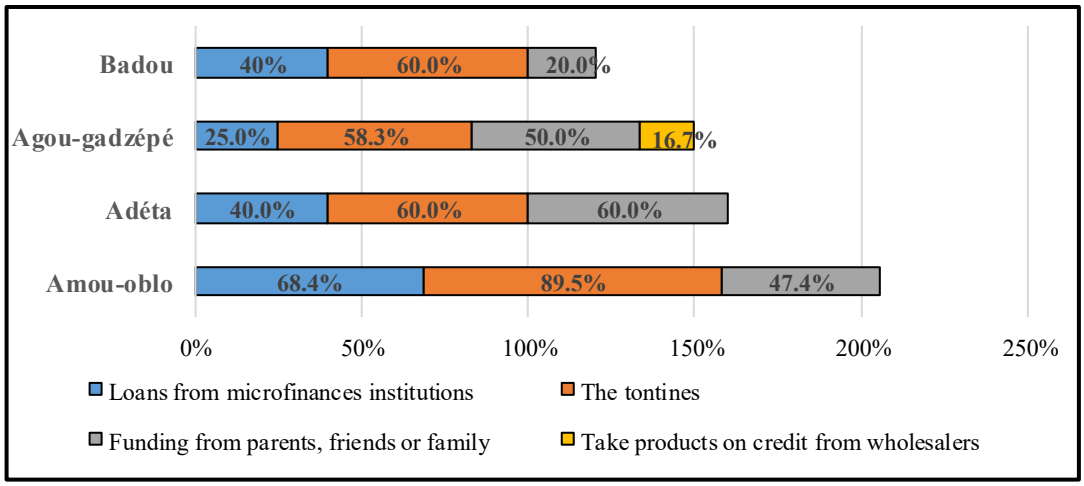


Fig. 6: Distribution of Female Traders in Different Urban Markets According to Their Sources of Funding for Commercial Activities

Source: Fieldwork, January 2024, in the western part of the plateau region.

Figure 6 presents the main sources of financing for traders in the markets of Badou, Agou-Gadzépé, Adéta, and Amou-Oblo. Rotating savings and credit associations (ROSCAs) are the most common source, especially in Amou-Oblo (89.5%), followed by Adéta and Badou (60% each), and then Agou-Gadzépé (58.3%). Financing from relatives is also common, particularly in Adéta (60%), Agou-Gadzépé (50%), and Amou-Oblo (47.4%), but less so in Badou (20%). Loans from microfinance institutions are frequent in Amou-Oblo (68.4%), Adéta, and Badou (40%), and less common in Agou-Gadzépé (25%). Purchasing on credit from wholesalers remains marginal, with a significant presence only in Agou-Gadzépé (16.7%). Overall, informal mechanisms (rotating savings groups, family assistance) are preferred for their accessibility, the absence of interest and guarantees required, unlike formal financing.

Access conditions for loans, repayment periods, interest rates, and collateral requirements limit traders' access to microfinance institutions. According to surveys, 100% of traders without equity (funds belonging to the traders themselves) resort to loans, but all emphasize that obtaining credit requires a minimum balance in the account and a designated contact person in case of debt. Repayment periods are short, generally between 6 months and 1 year and 6 months (Amou-oblo, Adéta, Badou: 100%; Agou-Gadzépé: 66.6%). Interest rates vary between 5% and 10% (Amou-oblo 92.3%, Agou-Gadzépé 33.3%, Badou 50%), followed by rates of 1% to 5%, and more rarely exceeding 10%, particularly in Adéta (50%). Repayment often begins between 1 and 3 months after obtaining the loan (Adéta and Badou: 100%), or between 3 and 9 months in Amou-oblo (69.2%) and Agou-Gadzépé. These unfavorable conditions explain the preference for rotating savings and credit associations (ROSCAs), which are more flexible. The institutions approached are: the Savings and Credit Cooperative of the Assemblies of God Church of Togo (COOPEC AD), the Federation of Savings and Credit Cooperative Units of Togo (FUCEC), the Federation of Village Association Savings and Credit Unions (FECECAV), Women and Associations for Economic and Social Gain (WAGES), Novissi, Assilassimé, and Dékawowo.

In short, the conditions for accessing microfinance loans limit their use by the majority of traders. Those with limited resources resort to them out of necessity. Most prefer to rely on their own funds, rotating savings and credit associations (ROSCAs), or family support to finance their businesses. This situation hinders the smooth operation of commercial activities in the markets.

- Regulatory infrastructure, lack of institutional regulation

The state intervenes as a regulator of the food trade, notably by harmonizing sales units and prices. However, surveys reveal a near-total absence of state institutions or traders' associations responsible for this regulation in the markets studied: Amou-oblo (60.6%), Adéta (96.7%), Agou-gadzépé (100%), and Badou (60%). This leads to a diversity of practices across the markets. Only Adéta stands out for its high standardization of units (93.3%) and prices (83.3%). Elsewhere, such as in Agou-gadzépé, Amou-oblo, and Badou, significant variability in prices and units of measurement is observed.

In short, the absence of a state or association-based regulatory body in these markets fosters a diversity of practices. Agou-gadzépé exhibits significant variability in prices and sales methods, as do Amou and Badou. This situation leads to imbalances and abuses, undermining fair trade and consumer protection. Only the Adéta market stands out for its clear standardization of measurements and prices.

4.2. Study of the behavior of the food market in the western part of the Plateaux region of Togo

Market behavior encompasses the strategies developed by traders to profit despite structural weaknesses. According to surveys, the majority of traders in Amou-oblo (87.9%) and Agou-gadzépé (93.3%) have implemented strategies to continue generating profits despite market weaknesses. In Adéta, responses are more divided (53.3%), while in Badou, only 46.7% adopt such strategies. The analysis of market

behavior in this study involves examining the strategies adopted by traders regarding purchasing, selling, transportation, storage, pricing, and access to credit.

4.2.1. Purchasing and sales strategies geared towards maximizing margins

Traders employ various strategies when purchasing goods in supply areas and reselling them in urban markets. According to surveys, when purchasing from supply areas, they use large units of measurement, negotiate prices down significantly, and sometimes cheat by overfilling containers (using custom-made containers). Although these practices are decreasing thanks to increased vigilance among producers, they persist. In the markets, traders use strategies to increase their profits: manipulating measurements (using smaller bowls), inflating prices due to buyers' lack of information, misleading product presentation (good appearance on the surface, poor quality underneath), and strategically attracting customers. These practices allow them to maintain a substantial profit margin.

4.2.2. Strategies for optimizing transport costs by food traders

Traders are aware of transport rates set by the state or transport companies, generally linked to the quantity transported and the condition of the roads. However, they develop strategies to reduce these costs and maximize their profits. According to surveys, negotiation with transport companies is very widespread, particularly in Amou-oblo (100%), Adéta (92.9%), Agou-Gadzépé (92.3%), and Badou (80%). Partnerships between traders for transport are also common, especially in Agou-Gadzépé (100%) and Amou-oblo (92.9%). Overloading vehicles is used moderately (Adéta market 35.7%, Amou-oblo market 46.6%, Badou market 50%, Agou-Gadzépé market 53.8%). Some strategies are specific to certain markets, such as increasing the number of bowls per bag in Amou-oblo and Adéta (78.6%) or ordering remotely without having to travel in Badou (70%), Amou-oblo (67.9%), and Agou-Gadzépé (53.8%). Buying for resale in the same market remains marginal (3.6% in Amou-oblo). These practices help optimize transportation costs in the markets studied.

4.2.3. Strategies for managing and reducing storage costs for food traders

In the markets, traders adopt various strategies to ensure the storage of their goods while reducing associated costs. According to fieldwork, they pool their resources to rent shops (Amou-oblo 45.5%, Adéta 80%, Agou-gadzépé 44.4%) or store their products near the market in shops or houses (Amou-oblo 81.8%, Adéta 30%, Agou-gadzépé 88.9%) to easily access their merchandise and limit transportation costs. In Badou, this strategy is less common because cassava, a perishable product, is sold quickly and often taken home. Low-cost delivery to quickly sell products is also common (Amou-oblo 72.7%, Adéta 30%, Agou-gadzépé 77.8%, Badou 50%), particularly for yams in Agou-gadzépé. Finally, the use of preservatives to maintain quality is common in Amou-oblo (95.5%) and Adéta (50%). These strategies help reduce storage costs, prevent losses, and increase income.

4.2.4. Price formation strategies in a context of weak regulation

Food prices are determined by quantity, quality, size, and season. The purchase price results from the bargaining power between the seller and buyer. Traders seek to reduce transaction costs (transport, storage, brokerage) to maximize their profits, a widespread practice (100% in Adéta, Agou-gadzépé, and Badou; 91.7% in Amou-oblo). In the absence of state or association regulation, each trader applies their own pricing strategies. Among these, misleading customers about quality is common in Adéta and Badou (~50%), somewhat less so in Amou-oblo (45.8%), and rare in Agou-gadzépé (13%). Price deception is also used, especially in Adéta (50%) and Amou-oblo (29.2%), but less so in Agou-gadzépé (4.3%) and Badou (25%). Convincing the buyer to pay is not widely practiced, mentioned only in Amou-oblo (4.2%).

4.2.5. Informal financing strategies in the face of formal credit constraints

In the commercial sector, traders seek low-interest loans to facilitate their operations. However, analysis of financing infrastructure in the markets studied reveals a clear preference for informal mechanisms (rotating savings groups, family support), which are considered more accessible and flexible than formal services (microfinance, cooperatives). The stringent conditions of formal loans (guarantees, high interest rates, short repayment periods) encourage traders to develop alternative strategies (see Figure 6).
Rotating savings and credit associations (ROSCAs), adopted by 100% of all markets, constitute the most common strategy. Some traders join several groups to increase their working capital and avoid formal loans. Family financial assistance comes in second place (Amou 66.6%, Adéta 50%, Agou-gadzépé 42.9%). Despite the constraints, some traders with no other alternatives resort to microfinance or even loan sharks (Amou-oblo 16.7%, Agou-gadzépé 14.3%).

5. Discussion

5.1. Analysis of the structure of urban food markets in the western part of the plateau region

The results show that the components of the market structure contribute overall to its dysfunction. The analysis reveals that the number of traders varies from market to market, thus influencing the type of competition. The Amou-Oblo market, where there are many traders, exhibits perfect competition. Conversely, the Agou-Gadzépé, Adéta, and Badou markets, with a limited number of traders, are characterized by moderate or weak competition, resulting in imperfect functioning. These findings are consistent with those of Klassou-Zinsou (2007), who, in her study of the peripheral markets of Lomé (Agoè-Assiyéyé, Adidogomé-Assiyéyé, and Akodésséwa markets), indicates that approximately 51.84% of the resellers there sell at least one of the food products studied, generating overall free and perfect competition. In the study area, field results also indicate that institutional, social, and relational barriers, as well as price competition, do not hinder commercial activities, with the exception of the Adéta market, where institutional barriers disrupt its smooth functioning. The main barrier remains economic: access to credit excludes the majority of traders from formal financing. They therefore turn to limited resources such as rotating savings and credit associations (ROSCAs) and family assistance, which impedes the smooth operation of their businesses. These results corroborate those of Mpanzu Balomba et al. (2011), who, in the Bas-Congo province, identified the lack of access to credit as the main obstacle to agricultural development. Recent research indicates that women running small and medium-sized enterprises (SMEs), including those in trade, face significant barriers to accessing formal credit and trade finance. These difficulties are linked to collateral requirements, a lack of or limited credit history, complex documentation procedures, and the inadequacy of available financial products (IFC, 2024). This lack of financing hinders their ability to invest in their businesses. Furthermore, Bigah (2024) shows that the dual

workload, including family and domestic responsibilities, limits the time and energy these women can dedicate to developing their businesses, pursuing training, or expanding their market opportunities. The IOM report (2024) shows that women traders remain highly vulnerable to various forms of violence, harassment, and intimidation, both in markets and along mobility corridors. This report also highlights that repeated checks, arbitrary evictions, demands for illegal payments or extortion, as well as travel restrictions imposed on female traders, directly compromise their income, increase their operating costs, and undermine their personal and economic security. Finally, factors such as lack of access to financial resources, time poverty, insecurity, and gender norms can combine to weaken women's bargaining power vis-à-vis suppliers, intermediaries, and local authorities, limiting their ability to obtain better prices, conditions, and social protections (IFC, 2024; IOM, 2024).

Funding comes primarily from family (60%), income from previous activities (39%), and the sale of personal assets (1%). In addition to economic barriers, access to land and insufficient information about these agricultural markets also constitute obstacles to entry. Fieldwork reveals that food marketing channels in markets in the western Plateaux region are predominantly short, relying on direct purchases from producers, cooperatives, groups, or rural markets. These short channels result in relatively low prices. These findings are supported by Diarra et al. (2017), who confirm that food marketing channels, whether processed or not, remain short in both rural and urban markets. Conversely, Kouna et al. (2021) identify three types of channels in the Sa'a district of Cameroon: a short channel (direct sales from producer to consumer), an intermediate channel (involving a reseller), and a long channel (involving street vendors and wholesalers before retailers). Recent research shows that, despite their advantages, short supply chains can prove vulnerable in current food systems due to climate shocks, limited infrastructure, and their dependence on a small number of suppliers. Tchonkouang (2024) shows that small farms, particularly smallholders or isolated rural communities, are especially vulnerable to climate disruptions: their strong dependence on local production and their limited connectivity to other sources of supply make any disruption riskier, suggesting that short food supply chains may be more exposed in these contexts. Studies by Charatsari (2024) highlight that short food supply chains (SFSCs) often rely on relatively small networks of actors, which can limit their capacity to absorb supply disruptions or external shocks. This underscores the structural dependence of some short food supply chains on a limited number of producers or intermediaries. The recent OECD/SWAC report (2025) emphasizes that logistical constraints such as limited transport infrastructure, insufficient storage capacity, and distribution difficulties constitute a major obstacle to the resilience of food supply chains in West Africa. These limitations particularly affect perishable products and can, consequently, weaken local short supply chains that depend on efficient transport and storage networks. These logistical constraints (transport, storage, infrastructure) hinder the resilience of food chains and, therefore, potentially of short supply chains.

Analysis of the tax collection system in these studied urban markets reveals unequal tax payments, leading to dysfunction and hindering competition. The unavailability or precariousness of stalls in some of these markets also demonstrates that the infrastructure is inadequate for commercial activity. The absence of state regulation or associations to oversee prices and sales practices (except in Adéta) fosters abuses and undermines fair trade. These findings align with the work of Klassou-Zinsou (2007), who highlighted the shortcomings of the collection system (corruption, underreporting, non-payment of taxes) and the vulnerability of the facilities. The lack of legislation governing the marketing of food products in Togo exposes prices to the laws of supply and demand, thus limiting the efficiency of food markets. The results show that food products are transported to the study markets by various means: walking, bicycles, motorcycles, tricycles, taxis, minibuses, and trucks. Traders in Adéta and Badou primarily use paved roads, while those in Amou-Oblo and Agou Gadzépé suffer from the poor condition of the roads, which makes transport difficult and expensive, thus increasing prices in these markets. These results confirm those of Kouassi (2017) in Côte d'Ivoire, where cars dominate transport to Abidjan, with walking and tricycles used for short distances. The poor state of the roads, especially during the rainy season, increases transport costs and particularly affects perishable products such as plantains, lengthening transport times. Fieldwork also shows that most traders in the four studied markets prefer to store products at home, using inadequate and expensive storage facilities (high rents), which disrupts market operations by increasing prices and degrading product quality. These findings differ from those of Klassou-Zinsou (2007), who indicates that in Lomé's peripheral markets, small quantities are stored outdoors in the market square, while large quantities are kept in rented warehouses or those built with relatively durable materials (concrete blocks, corrugated iron) around the market. However, storage conditions remain generally inadequate, as evidenced by product losses during this phase.

5.2. The behavior of traders in urban markets living in the western part of the plateau region

Faced with the shortcomings of market structures in these various markets, traders have implemented certain strategies to profit from their commercial activities. The results show that traders in the studied markets adopt diverse strategies for buying, selling, transporting, storing, pricing, and financing food products. When buying, they use large-capacity units, negotiate prices down, and offer custom pricing. In urban markets, they manipulate measurements, inflate prices, and misrepresent quality, while maintaining a welcoming atmosphere to attract customers. For transport, they negotiate with transporters (Amou-oblo 100%, Adéta 92.9%, Agou-Gadzépé 92.3%, Badou 80%), and form partnerships. with other traders for the transport of their goods (Agou-Gadzépé 100%, Amou-oblo 92.9%, Adéta 80%, Badou 80%), overload the vehicles (Agou-Gadzépé 53.8%, Badou 50%, Amou-oblo 46.6%, Adéta 35.7%), and increase the number of bowls per bag (Amou-oblo 78.6%, Adéta 78.6%). Some order products without traveling to the supply areas (Badou 70%, Amou-oblo 67.9%, Agou-Gadzépé 53.8%), while buying and reselling on-site at the market remains marginal (Amou 3.6%). Regarding product storage, they pool their resources to rent warehouses (Adéta 80%, Amou-oblo 45.5%, Agou-Gadzépé 44.4%), store goods near the market in warehouses, or at home. (Agou-Gadzépé 88.9%, Amou-oblo 81.8%, Adéta 30%), deliver products at affordable prices to quickly sell the merchandise (Amou-oblo 72.7%, Agou-Gadzépé 77.8%, Badou 50%, Adéta 30%) and use preservation products (Amou-oblo 95.5%, Adéta 50%). For price formation, they reduce transaction costs at the point of purchase and increase selling prices in the city markets (100% in Adéta, Agou-Gadzépé, Badou; 91.7% in Amou-oblo). Some deceive customers about product quality (Adéta 50%, Badou 50%, Amou-oblo 45.8%, Agou-Gadzépé 13%) and product price (Adéta 50%, Badou 25%, Amou-oblo 29.2%, Agou-Gadzépé 4.3%). Others try to convince the buyer to pay (Amou-oblo 4.2%). For financing their businesses, rotating savings and credit associations (ROSCAs) are the most common (100%). Some join several ROSCAs to increase their business capital and avoid taking out loans from microfinance institutions. Family members provide additional support (Amou 66.6%, Adéta 50%, Agou-Gadzépé 42.9%). Lacking resources, many resort to loans from microfinance institutions. Despite the constraints of obtaining loans (Amou-oblo 83.3%, Adéta 50%, Agou-Gadzépé 14.3%), sometimes by taking out several loans, and a few by turning to loan sharks (Amou-oblo 16.7%, Agou-Gadzépé 14.3%), these results confirm those of the work of P. Mpanzu Balomba et al. (2011) and I. Diarra et al. (2017). According to the work of P. Mpanzu Balomba et al. (2011), regarding agricultural pricing, although the farmer proposes an initial price, the transaction is generally concluded after haggling. The distance of villages from weekly markets often pushes producers to accept the proposed prices, especially to avoid returning home with unsold produce. This pressure is heightened when the products are heavy and perishable. The lack of standardized sales practices leads to lengthy bargaining and instances of cheating. To reduce production costs, farmers save seeds from their harvests, often of inferior quality, and rely on family labor or rotating

savings and credit associations (ROSCAs), thus limiting expenses. According to I. Diarra et al. (2017), buyers often dictate prices to producers, who sometimes sell at low prices due to an urgent need for cash or at the farm gate because of impassable roads, which weakens their bargaining power. In urban areas, prices vary according to product availability, with discounts offered for customer loyalty or bulk purchases. The results obtained in urban food markets in the western Plateaux region show that the predominance of short supply chains and the crucial role of women traders are part of broader dynamics of regional integration. These results are supported by the OECD/SWAC report (2019), which demonstrates that women's food trade is a pillar of informal economic integration in West Africa. According to this research, women, who constitute the majority of food traders, provide a crucial link between rural production areas and urban centers. Similarly, in the markets studied, these practices strengthen the local flow of food, despite weak infrastructure or limited access to credit. These results align with those of ECOWAS (OECD/CSAO, 2025), which describes these markets as essential for food supply, price stability, and market integration. In the context of the AfCFTA, these urban markets in the western part of the Plateaux region play a strategic role: the proximity between producers and traders, combined with translocal networks, contributes to the regular circulation of food products, supporting the objective of facilitating intra-African food flows (Odero et al., 2025). However, precarious storage conditions, a lack of regulation, and inadequate road infrastructure, particularly in Amou-Oblo and Agou-Gadzépé, limit their ability to fully integrate into regional trade corridors. It is at this level that regional food security programs, such as the FSRP, support actions that align with the identified needs in this region: improving market infrastructure, strengthening the resilience of supply chains, digitizing market information, and providing targeted support to women traders (World Bank, 2022; MAEP Togo, 2025).

6. Conclusion

The analysis of the functioning of urban food markets in the western Plateaux region of Togo highlights complex dynamics, influenced by both structural and behavioral factors. The components of the market structure contribute to the dysfunction of these markets, particularly through variations in the number of traders, which determine the type of competition: perfect in Amou-Oblo, limited in Agou-Gadzépé, Adéta, and Badou. Institutional, social, and relational barriers do not hinder activity (except in Adéta); the lack of equity capital and difficult access to credit remain the main constraints, pushing traders toward informal financing. Marketing channels are mostly short, promoting low prices and dynamic demand, but tax inequalities, a lack of infrastructure, the absence of regulation, and poor roads (in Amou-Oblo and Agou-Gadzépé) impede market efficiency. Finally, domestic storage, often precarious and costly, impacts prices and product quality, exacerbating the dysfunctions of the commercial system. Faced with structural weaknesses in these markets, traders in the urban food markets of the western Plateaux region adopt various strategies, including price negotiation during purchases, collaboration for transport and storage, and manipulation of sales methods, prices, and quality standards. They primarily finance their activities through rotating savings and credit associations (ROSCAs), family support, and sometimes microfinance loans, despite the constraints. These behaviors aim to maximize their profits despite the structural difficulties. Although adaptive, these strategies reflect structural instability and a low level of formalization of exchanges. These market studies play a vital role in the distribution of food products, but their operation remains hampered by numerous constraints. Improved regulations (harmonization of weighing standards, fair taxation, formalization of transactions, management of market spaces) and infrastructure (rural roads, storage areas, warehouses, market information platforms) would enhance the efficiency of urban food markets in the western Plateaux region. Such reforms would contribute to regional food security by stabilizing prices and improving product availability. They would also support more inclusive trade, facilitating women traders' access to formal credit, reducing their operating costs, and protecting their businesses against risks, a crucial lever for women's economic empowerment. Furthermore, improved governance and modernized infrastructure would increase market connectivity, facilitating the integration of short supply chains into cross-border food flows, thereby strengthening regional integration and the fluidity of trade within the AfCFTA framework. Finally, these advances would be directly consistent with the priorities of regional food security and resilience programs, such as the FSRP or ECOWAS initiatives, which aim to modernize food supply chains, improve market competitiveness, and support vulnerable actors, especially women traders.

They require targeted action from local and national authorities to remove the identified obstacles. Looking ahead, this study opens a new avenue for research. It would be relevant to evaluate the performance of these urban food markets based on market structure and vendor behavior.

Author Contributions

Conceptualization, PKBK; methodology, PKBK, DKA; software, PKBK, DKA; validation, KK-Z., JC; formal analysis, PKBK and DKA; investigation, PKBK; resources, PK; writing-original draft preparation, PKBK; writing-review and editing, PKBK, DKA; visualization, KZ, JC, and DKA; supervision, KZ, JC, and DKA; project administration, KZ-K., JC; funding acquisition, PKBK.All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

The data will be made available upon request.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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References

[1] Allen, T., Heinrigs, P., and Heo, I. (2018), "Agriculture, food and jobs in West Africa", West *African Papers*, (14), OECD Publishing.
[2] Bayir, B., Charles, A., Sekhari, A., & Ouzrout, Y. (2022). Issues and challenges in short food supply chains: A systematic literature review. *Sustainability*, 14(5), 3029. https://doi.org/10.3390/su14053029.
[3] Bigah, E. A. (2024). *La conciliation entre travail et vie personnelle des femmes en Afrique de l'Ouest : Cas du Togo* (Mémoire de maîtrise, Université du Québec à Rimouski).
[4] Charatsari, C., Lioutas, E. D., & De Rosa, M. (2024). Going Short and Going Digital: How Do Consumers View the Impacts of Digitalizing Short Food Supply Chains? *Sustainability, 16*(24), 11241. https://doi.org/10.3390/su162411241.
[5] Cook, B., Trevenen Jones, A., & Sivasubramanian, B. (2024). Nutritional, economic, social, and governance implications of traditional food markets for vulnerable populations in sub-Saharan Africa: A systematic narrative review. *Frontiers in Sustainable Food Systems*, 8(1382383), 1-13. https://doi.org/10.3389/fsufs.2024.1382383.
[6] Diarra, I., Dizoe, D. F., Sarka Coulibaly, G. L., & N'da, L. (2017). *Étude des opportunités de marché des cultures vivrières* (Rapport final, PRO-PLANTEURS & GIZ).
[7] El Bilali, H., Dambo, L., Nanema, J., Tietiambou, S. R. F., Guimbo, I. D., & Nanema, R. K. (2023). Impacts of the COVID-19 pandemic on agri-food systems in West Africa. *Sustainability, 15*(13), 10643. https://doi.org/10.3390/su151310643.
[8] Faton, C. Y., Nonvide, G. M. A., & Chabossou, A. F. (2025). *Digital financial inclusion and the reduction of gender inequalities in Africa.* Discover Global Society, 3, 25. https://doi.org/10.1007/s44282-025-00146-z.
[9] Food and Agriculture Organization (FAO). (2025). *Guidelines to increase the resilience of agricultural supply chains*. FAO. https://doi.org/10.1007/s44282-025-00146-z.
[10] Fu, J., Shahzadi, G., Bourlakis, M., & John, A. (2024). Promoting resilient and sustainable food systems: A systematic literature review on short food supply chains. *Journal of Cleaner Production*, 435, 140364. https://doi.org/10.1016/j.jclepro.2023.140364.
[11] Hannah, C., Davies, J., Green, R., Zimmer, A., Anderson, P., Battersby, J., Baylis, K., Joshi, N., & Evans, T. P. (2022). Persistence of open-air markets in the food systems of Africa's secondary cities. *Cities,* 124, 103608. https://doi.org/10.1016/j.cities.2022.103608.
[12] Houinsou, T. A., Nassihounde, C. B., Kpatoukpa, K. B., & Dossou Guedegbe, O. (2019). Circuits et performance de commercialisation des produits vivriers de la Dépression de la Lama (Communes de Toffo et Zogbodomey) au Sud-Bénin. *Afrique Science*, 15(3), 142–159
[13] IFC. (2024). *Banking on women who trade across borders: Barriers and opportunities to close the gender gap in trade finance*. International Finance Corporation.
[14] Institut national de la statistique et des études économiques et démographiques (INSEED). (2022). *Cinquième Recensement Général de la Population et de l'Habitat (RGPH-5)*
[15] Institut national de la statistique et des études économiques et démographiques (INSEED). (2019). *Annuaire statistique 2019 de la région des Plateaux*.
[16] International Organization for Migration (IOM). (2024). A *study on women in small-scale cross-border trade Benin, Ghana and Togo*. International Organization for Migration.
[17] Kamwa, K., U., K. (2025). Exploring Digital Financial DeterminantsEffect on Financial Inclusion and EconomicResilience: Insights from Sub-Sahara Africa. *Scientific Research Publishing*, 15(3), 695-717. https://doi.org/10.4236/tel.2025.153038.
[18] Karg, H., Bellwood-Howard, I., & Ramankutty, N. (2025). How cities source their food: spatial interactions in West African urban food supply. *Food Security,* 17(2), 439–460. https://doi.org/10.1007/s12571-025-01518-8.
[19] Kemajou, A., Konou, A.A., Jaligot, R., Chenal, J. (2020). Analyzing four decades of literature on urban planning studies in Africa (1980–2020). African Geographical Review, 40(4), 425–443. https://doi.org/10.1080/19376812.2020.1844025.
[20] Klassou-Zinsou, K. (2007). *L'importance des marchés périphériques dans l'approvisionnement de la ville de Lomé en produits vivriers* (Thèse de doctorat en géographie du commerce, Université de Lomé). Catalogue en ligne : Direction de la Bibliothèque et des Archives (DBA – Université de Lomé).
[21] Kola, E. (2008). Crise agraire et mutations rurales dans la zone d'économie caféière et cacaoyère du Togo (Thèse de doctorat unique en géographie humaine, Université de Lomé). Catalogue en ligne : Direction de la Bibliothèque et des Archives (DBA – Université de Lomé).
[22] Kouassi, M.A.H., Koffi, L.F.E., Aloko N.J. (2017). Transport Et Approvisionnement Des Produits Vivriers A Abidjan En Côte d'Ivoire. *European Scientific Journal*, 13(26), 212-228. https://doi.org/10.19044/esj.2017.v13n26p212
[23] Kouna B.M.S., Awono M.T., Menyengue E.F., Jakpou N.D.N., Mopi T.F. (2021). Le marché des produits vivriers et développement socio-économique dans l'Arrondissement de Sa'a (Région du Centre, Cameroun), *European Scientific Journal*, 17(16), 72–94. https://doi.org/10.19044/esj.2021.v17n16p72.
[24] Konte, M., Tetteh, G. K. (2022). Mobile money, traditional financial services and firm productivity in Africa. *Small Business Economics, 59*(4), 1843–1865. https://doi.org/10.1007/s11187-022-00613-w.
[25] Ministère de l'Agriculture, de la pèche, des ressources Animales et de la souveraineté alimentaire. (2025). *Mise en œuvre du Programme FSRP au Togo.* Gouvernement de la République Togolaise. https://agriculture.gouv.tg/projet/fsrp-prsa-togo/. Consulté 04/12/2025
[26] Mpanzu Balomba P., Lebailly P., Kinkela Savy, C. (2011). Les conditions de production et de mise sur le marché des produits vivriers paysans dans la province du Bas-Congo (R. D. Congo), *Les Cahiers de l'Association Tiers-Monde*, (26), 143–150.
[27] Nijhawan, A., Budge, S., Reddy, O., Bartram, J., & Howard, G. (2023). Environmental hygiene in outdoor food markets in Africa: a scoping review. *Journal of Water, Sanitation and Hygiene for Development, 13*(4), 276–288. https://doi.org/10.2166/washdev.2023.221.
[28] Odero, K., Ndong'a Kamelu, J., & Makochekanwa, A. (2025). *Pan-African and regional trade and policy for the food systems transition* (AFSTC Brief No. 09). African Food Systems Transformation Collective / African Climate Foundation.
[29] Organisation de coopération et de développement économiques (OCDE) & Club du Sahel et de l'Afrique de l'Ouest (CSAO). (2025). *Le commerce alimentaire intrarégional en Afrique de l'Ouest : Nouvelles données, nouvelles perspectives*. Cahiers de l'Afrique de l'Ouest. Éditions OCDE.
[30] Organisation de coopération et de développement économiques (OECD)/ Sahel and West Africa Club (SWAC). (2019), *Women and Trade Networks in WestAfrica.* OECD. https://doi.org/10.1787/7d67b61d-en.
[31] Ouattara, S., Tamboura, A. T., & Bamba, S. L. (2023). Marchés urbains et approvisionnement en produits vivriers dans la ville de Daloa, Côte d'Ivoire. *DaloGéo, revue scientifique spécialisée en Géographie*, (008), 164-174.
[32] Reardon T., Echeverria R., Berdegué J., Minten B., Liverpool-Tasie S., Tschirley D., Zilberman D. (2019). Rapid transformation of food systems in developing regions: Highlighting the role of agricultural research & innovations. *Agricultural Systems*, 172 (June 2019), 47–59. https://doi.org/10.1016/j.agsy.2018.01.022.
[33] Riley, L., & Crush, J. (Éds.). (2023). *Transforming Urban Food Systems in Secondary Cities in Africa*. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-93072-1.

[34] Sawadogo, N., & Ouoba, Y. (2023). COVID-19, food coping strategies and households' resilience: the case of informal sector in Burkina Faso. *Food Security: The Science, Sociology and Economics of Food Production and Access to Food, 15*(4), 1041–1056. https://doi.org/10.1007/s12571-023-01371-7.

[35] Tchonkouang, R. D., Onyeaka, H., & Nkoutchou, H. (2024). Assessing the vulnerability of food supply chains to climate change–induced disruptions. *Science of the Total Environment, 920*, 171047. https://doi.org/10.1016/j.scitotenv.2024.171047.

[36] World Bank. (2022). *Food Systems Resilience Program for Eastern and Southern Africa (FSRP): Project Information document*. World Bank Group.

[37] Zoma V., Dahani I., Sangli G (2022). Participation des marchés urbains au développement en Afrique. *Journal of Research in Humanities and Social Science*, 2022, 10 (5), 21-31.