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Analysing Small Holders' Groundnut Production and Its Post-Harvest Systems in Southern Benin

Félix KOUELO ALLADASSI[1*], Fifamè Marie-Pascaline HOUNKANRIN[1], Martinien Arcadius AHOGLE AGASSIN[1], Tobi Moriaque AKPLO[1], Carmelle Charlotte ZOUNDJI[2], Pascal HOUNGNANDAN[1].

1. Unité de Recherche en Microbiologie, Ecologie Microbienne et Conservation des Eaux et des Sols (UR-MEMCES) du Laboratoire Sciences du Sol (LSS), Faculté des Sciences Agronomiques de l'Université d'Abomey-Calavi (FSA/UAC).
2. Ecole de Gestion et Production Végétale et Semencière (EGPVS) de l'Université Nationale d'Agriculture (UNA).

* E-mail of the corresponding author: felix.kouelo@gmail.com

Abstract
Groundnut (*Arachis hypogaea* L.) farming is a vital value chain in the agricultural sector in Benin, contributing significantly to the country's economy and serving as an important source of income and nutrition for many smallholder farmers. However, there is limited information regarding the current state of groundnut production and the potential leverage points for improvement of its production in Benin. The objective of this study was to analyse groundnut production systems in southern Benin, with the aim of enhancing its productivity. To achieve this objective, groundnut farmlands' investigation was carried out using a semi-structured questionnaire in the Avlamey district with a sample of 73 groundnut farmers alongside participatory observation. The findings revealed that groundnut cultivation and post-harvest management systems in the Avlamey district are traditional, employing low technical tools and low level of input use. Groundnut cropping is predominantly carried out on inherited land with both monocropping (52%) and intercropping (48%). Groundnut seeds are acquired through purchase from the local market. Very few farmers engage in the drying and storage of groundnuts in bags. The major challenges faced by farmers include difficulty in accessing credit, pest damage in the field, high cost of seeds, expensive and irregular labour, and the absence of effective storage and preservation techniques. We recommend a rigorous identification and characterization of pests to implement efficient control methods, as well as the adoption of proper storage and preservation techniques. Furthermore, a comprehensive fertilisation plan should be developed to improve crop productivity.
Keywords: Groundnut, farming system, storage, conservation, productivity.
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1. Introduction

Agriculture is a highly promising sector for economic growth in developing countries (Menc 2020). The agricultural sector has a significant importance for strengthening the Beninese economy, contributing an average of 32.5% to the GDP, 75% to export revenue, 15% to state revenue, and providing approximately 70% of employment (Fao and Cedeao 2018). Consequently, it is considered a sector whose numerous potentials must be judiciously exploited to support national economic growth and effectively combat food insecurity and poverty (Fao and Cedeao 2018). In this context, several export crops must be considered. One such crop is groundnuts, a key component of the government's action plan and a primary leguminous and oil seed cultivated in Benin.

Groundnut is predominantly cultivated in various countries, particularly in Asia and some African countries, including Nigeria, Senegal, the Democratic Republic of Congo, and Benin (Jaillon-Riviere 2010). It is a versatile plant used in various ways. Groundnuts are consumed either as seeds (after shelling), as oil after industrial or artisanal crushing of the seeds), or in more refined forms derived from the groundnut market for culinary and confectionery purposes including butter, paste, flour, confectionery, etc. (Schilling 2001). They contain 48–50% fat, 26–28% protein, and are rich in fiber, minerals, and vitamins. In Benin, groundnut production represents about 40% of the total leguminous production (Mongbo and Floquet 2015). In Benin, groundnut cultivation is concentrated in the upper southern and the central departments of the country followed by the Northern departments. The Zou department in the upper south of the country has the highest average groundnut production with 1,854 tonnes groundnut seed (Adanguidi and Quenum 2005). Despite the low yield level (680 kg/ha on average), the Zou department records a surplus food balance for groundnuts, unlike other groundnut-producing departments (Adanguidi and Quenum 2005). The national average groundnut production is 129,778.61 tonnes per year with an annual growth rate of 1.73% (Kpenanvoun et al. 2017). However, groundnut production still struggles to meet the continually growing demand from artisanal agri-food units (Mongbo and Floquet 2015). Groundnut production in Benin remains inadequately documented, and the challenges associated with its

cultivation are not well understood. This lack of information hampers the development of sustainable solutions to enhance groundnut production. Despite the crop's significant role in Beninese agriculture, it has garnered insufficient research attention (Loko et al. 2020).

Given this context, it is essential to examine specific areas where groundnut production shows promise. For instance, with an estimated groundnut production of 2,185 tonnes on 687 hectares in 2017-2018, the Zogbodomey Commune ranked 5th in the Zou department (DSA/MAEP 2018) despite its considerable potential. To address these gaps, our study aims to provide an overview of the seed supply system, cultivation systems, post-harvest management of groundnuts, and the solutions proposed by stakeholders to overcome production constraints in this commune. By focusing on these areas, the results of this study will contribute to the development of improved cultivation techniques, enhancing crop yield. Additionally, it will propose effective storage and conservation methods, thereby better valorizing groundnut cultivation.

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2. Materials and Methods

2.1 Description of the Study Area

This study was carried out in the district of Avlamey, municipality of Zogbodomey. Zogbodomey is an agricultural commune in the Republic of Benin (West-Africa), located in the Zou Department in the southern part of the country (Fig. 1). It lies approximately 100 km north of Cotonou, Benin's largest city and economic hub. The area is renowned for its robust agricultural activities, focusing on the cultivation of maize, cassava, yams, and other staple crops. Additionally, the commune is involved in the production of oil palms, groundnuts, and various vegetables. Agriculture is the backbone of the local economy and is important for food security and livelihood. The region experiences a subequatorial climate characterized by high temperatures and significant humidity throughout the year. This climate features two distinct rainy seasons, from April to July and September to November, and two dry seasons, from December to March and a shorter one in August. Temperatures typically range from 24°C to 34°C, and relative humidity is generally high, especially during the rainy seasons, contributing to a lush and verdant environment. The dual rainy seasons allow for the possibility of multiple planting and harvesting cycles per year, increasing agricultural productivity. Despite its agricultural potential, Zogbodomey faces several challenges that impact agricultural productivity hindering the optimization of crop yields and affect the overall economic stability of the farming communities. The area features ferrallitic soils in the north, hydromorphic soils in the east and extreme west, vertisols in the south, and some tropical ferruginous soils in the west, with low to very low soil fertility (Azontode et al. 2016). The vegetation prevailed by savannas with multiple strata, dominated by species such as *Daniella laxiflora*, *Parkia biglobosa*, *Pericopus laxiflora*, *Vitex Domania*, *Andropogon*, *Hyparenia*, etc. It includes a classified forest located in Massi and Agrimey covering about 6,500 ha, gallery forests along watercourses: an artificially planted forest of Tectona grandis and Gmelina arborea, and a marshy forest in Lokoli. Various low-lying areas are distributed throughout the municipality. The area has extensive valleys, the Zou and Ouémé rivers, low-altitude plateau zones, and the depression zone of Lama (PDC 2006).

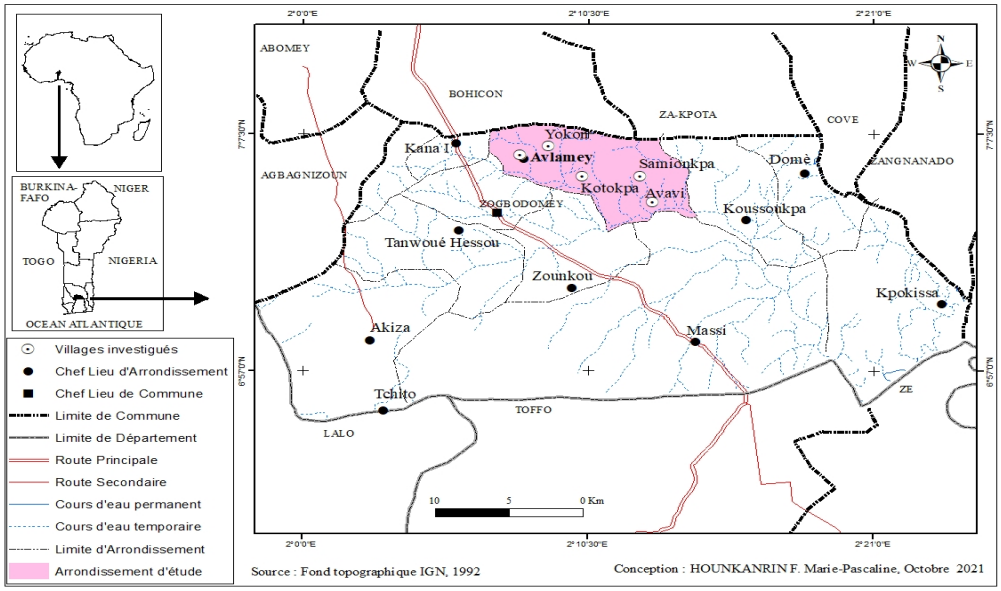

Figure 1. Study area.

2.2 Data collection

The sampling frame of groundnut farmers was drawn from a list of farmers obtained from the local agricultural extension service (Agence Territoriale de Développement Agricole - ATDA). A survey was conducted using a semi-structured questionnaire with a sample of 73 groundnut farmers randomly selected in Avamey district. Prior to survey administration, explicit permission was secured from the respective village chiefs and participants were formally included in the study following the acquisition of their verbal informed consent. The questionnaire allowed to collect data on socioeconomic resources, biophysical resources, system management, post-harvest management systems and production constraints. Farmers were asked to cite and rank the constraints faced in groundnut production using 10 stones as the weighing scale.

Table 1. Distribution of respondents by village.

Villages	Frequency	Percentage
Kotokpa	26	35.6
Avavi	23	31.5
Samionkpa	13	17.8
Avlamey centre	7	9.6
Yokon	4	5.5
Total	73	100

2.2 Statistical Analysis

The data collected during the survey were explored and analysed using descriptive statistics. To further explore and evaluate the various factors affecting groundnut production in the district, the Strengths, Weaknesses, Opportunities, and Threats (SWOT) matrix was used. This strategic planning tool enabled a detailed analysis of:

- Strengths: The internal attributes and resources that support successful groundnut production, such as favourable climatic conditions, skilled labour, and access to quality seeds.
- Weaknesses: The internal factors that may hinder production, including issues like inadequate storage facilities, lack of modern farming equipment, and limited financial resources.
- Opportunities: External factors that could be leveraged to enhance production, such as market expansion, government support programs, and technological advancements.
- Threats: External challenges that could negatively impact production, including market volatility, pest infestations, and adverse weather conditions.

By applying the SWOT matrix, the study provided a structured framework for understanding the internal and external factors influencing groundnut production. This analysis offered valuable insights that can help stakeholders develop strategies to capitalize on strengths and opportunities while addressing weaknesses and mitigating threats.

3. Results

3.1. Sociodemographic characteristics of groundnut farmers

Groundnut cultivation in Avlamey involves both men (86%) and women (14%), all belonging to the Fon ethnic group. The age of the farmers ranges from 22 to 72 years, with an average age of 39 years. Most of the farmers are married (96%). Their experience in groundnut cultivation varies from 3 to 46 years, with an average of 16 years. Among the surveyed farmers, 60.3% are illiterate (Table 2). Beyond agriculture, 22 farmers are artisans (Table 2).

Table 2. Description of socio-economic characteristics of farmers

Characteristics		Frequency (%) /average	Percentage
Gender	Female	10	13.70
Marrital status	Married	70	95.89
	Single	1	1.37
	Widow (er)	2	2.74
Age	Minimum	29	-
	Average	39	-
	Maximum	72	-
Level of Education	None	44	60.27
	Primary	25	34.25
	Secondary	2	2.74
	University	2	2.74
Source of income	Full time farmers	40	54.79
	Craftsman	22	30.14
	Trader	10	13.70
	Instructor	1	1.37
Experience in groundnut production	Minimum	3	-
	Average	16	-
	Maximum	46	-

3.2. Cropping System

The area of groundnut cultivation varies from 0.2 to 6 ha, with an average of 1.36 ha. About 44% of the farmers allocate a plot of 1 ha to groundnut cultivation, while 30% spare an area greater than 1 ha (1.5-6 ha). About, 26% of them cultivate an area of less than 1 ha (0.2-0.75 ha). Most of the farmers claimed to have increased the cultivated area over the years due to the profitability of the production. However, some have reduced the area due to extended drought spells. Apart from groundnut cultivation, farmers also engage in the cultivation of other crops such as maize, cowpea, soybean, cassava, cotton, sorghum, and horticultural crops such as chili and okra (Figure 2).

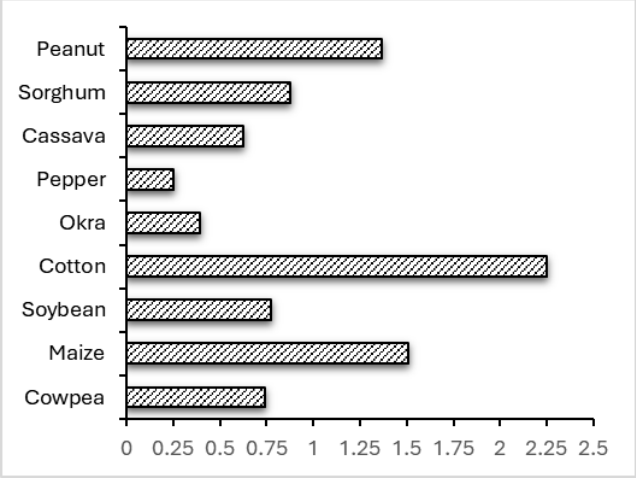

Figure 2: Average land size of crop cultivated.

3.3. Production factors

- *Land tenure*

Inheritance is the dominant land tenure system (Table 3). Farmers buy or lease additional plots to their inherited land to increase their farming area. Additionally, some of them gain access to land through donations. Land rental contracts are verbal with annual rates of 16,000 - 32,000 F CFA/ha/year depending on land demand in the area.

Table 3. Land access mode of surveyed farmers.

Land tenure	Number of farmers	Percentage
Inheritance	59	48.76
Location	37	30.58
Purchase	19	15.70
Gift	6	4.96

- *Financial capital*

Most of the farmers (95.89%) build the financial capital of agricultural production with their agricultural income from previous production. However, some of them compliment that with loan from microfinance institutions (26.02%) such as CLCAM, PEBCo-BETHESDA, village savings organization (34.25%), while other sources of finances include income from crafts (1.37%) and trade (2.74%).

- *Labour for groundnut production*

For various activities, farmers combined family and hired labours, with the latter used in large large-scale production, mainly for tasks such as ploughing, weeding, and harvesting.

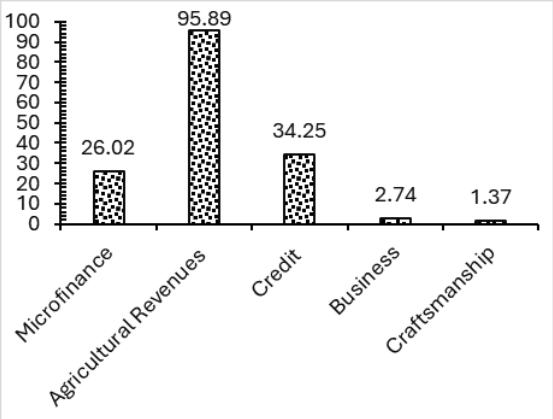

Figure 3: Sources of financial capital

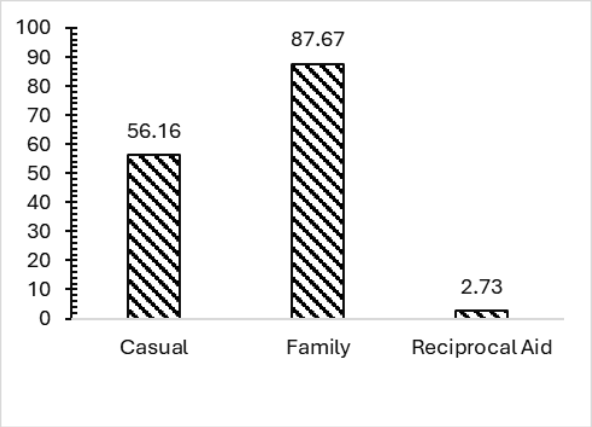

Figure 4: Source of Labour

- *Seed acquisition method*

Farmers use traditional seeds (Figure 5). purchased in the local market. Indeed, the majority (58%) directly purchases their seeds from the local markets of Bohicon or the nearest village market. Some farmers (14%) obtain their seeds through a loan system called "Avance," where locals provide them with seeds during planting season, either for payment after harvest and sale, or return of double amount of groundnut seeds provided.

Two measures are used: the local unit of 1kg “Togolo” and the basin equivalent to 50 kg of groundnuts. The price of a local unit varies from 400 F CFA to 1,200 F CFA with an average of 800FCFA. The basin price ranges from 8,000 F CFA to 40,000 F CFA, while the price of a bag containing three basins varies from 25,000FCFA to 53,000 FCFA.

Two groundnut varieties are grown in the study area, 'Kôga' (89%) and 'Kôgli' (37%). The “Kôga” variety is highly appreciated due to its number of seeds (3-4) per pod, especially by sellers of boiled or roasted groundnuts. The “Kôgli” variety is more appreciated for groundnut transformation technologies as it is more beneficial for groundnut oil groundnut paste production.

Figure 5: Groundnut seeds

- *Farming practices*

Groundnut is grown at the forefront of crop rotation due to its contribution to soil fertility replenishment. The farmers claim that the crop contributes to restore soil fertility for subsequent crop such as maize, sorghum and cotton. However, groundnut is not always grown in pure cultivation. About, 52% of them cultivate groundnuts in pure cultivation mainly due to climate change and the effects of herbicides. In the face of drought, groundnuts are more resistant than maize. According to their assertion, the herbicides used on groundnuts cultivation in mixed cropping with maize hinder maize growth. However, 48% of them associate groundnuts with either maize (100%), cassava (6%), or sorghum (3%). The association of maize with groundnuts is the most observed because it allows the farmers to have some maize ears for family consumption. The association with sorghum is less spread as that of maize-groundnut developed. However, the farmers engage in sorghum-groundnut intercropping find it more beneficial due to the excellent development of sorghum.

Soil preparation for groundnut production start at the beginning of main rainy season in middle-March, while those for the short rainy season start at the beginning of August. The plots are cleaned, cleared, and ploughed. For groundnut production, 96% of farmers make ridges, while 4% employs flat ploughing.

Groundnut seeding is done after the first rains in March for the main season and August for the short season. After this period, any groundnut planting would face a lack of water as the crop would no longer benefit from the necessary rainfall for its proper growth. Groundnut planting takes place depending on soil moisture, generally the following day after a rainy day. It can be done either on the day of ploughing, the day after, or a few days later. Farmers ensure that the soil has a minimal moisture but not a stagnant water that could lead to the rotting of the seedings. Planting is done in rows with two seeds per hole with a spacing of 20 cm between to seeding hole.

- *Pest and disease management*

Pest management practices in groundnut farming is primarily weed control. The use of chemical herbicides (52%) and manual weeding with hoe (48%) are two approaches for weed control observed. While some farmers conduct herbicides application either on the day before or on the day after sowing and hoe the farm after 20 days, other farmers apply herbicides 15 to 30 days after sowing and do not engage in any further hoeing. Farmers relying on manual weeding perform two weeding operations, the one first 15 days after sowing and the second about 65-70 after sowing. The herbicides used include Faaba soja, Glyfor g, Grifaber, Sharp, Nico+, Killer, and Phorsop, purchased from the local market. Some farmers also use phytosanitary products meant for cotton on groundnuts.

Only 52% of farmers claim to face attacks by certain pests. They encounter caterpillars, defoliating insects that consume the leaves of groundnut plants at the vegetative stage, and rodents that eat groundnuts in the field. There are also soil fauna including pod destructive, the whitefringed weevil (*Graphognathus* spp.), *Phyllophaga* larvae and other larvae of the family of Scarabaeidae often referred to as white grubs, have detrimental effects on groundnut pod by perforating the pods during their development stage. This also promotes the proliferation of mycotoxins like *Aspergillus* spp., causing darkening in the groundnut pod. Damage from these insects results in significant pod losses for the farmers. However, faced with these infestations, they are unaware of any methods to limit damage.

- *Fertilisation*

Most groundnut farmers do not apply fertilisers for groundnut cultivation. The main reason for this choice is the lack of information on groundnut fertilisation. Only a few farmers apply the mineral fertilisers received from the extension service for cotton production to groundnut production and very few apply organic manure.

- *Harvesting*

Harvesting takes place three to four months after planting. Farmers use different methods used by to recognize groundnut maturity (Figure 6). Indeed, some of the farmers uproot a groundnut plant in the last month, eat the seed, and when it is hard, this confirms maturity to the farmers. Moreover, others shake the plant, and if the groundnuts fall off easily, they consider the groundnut is mature. Furthermore, others recognize the maturity of groundnuts by the yellowing of the leaves that fall, or by the brown colour of the pods and the white colour of the seeds. After identifying maturity, the producer removes the groundnuts from the soil, and they are spread out on the plot for about three days. Then, they are picked up and stored in the barn. It should be noted that 28% of the farmers have already experienced significant losses due to premature germination of groundnuts caused by rainfall. In addition, the pests mentioned above can also contribute to significant post-harvest losses.

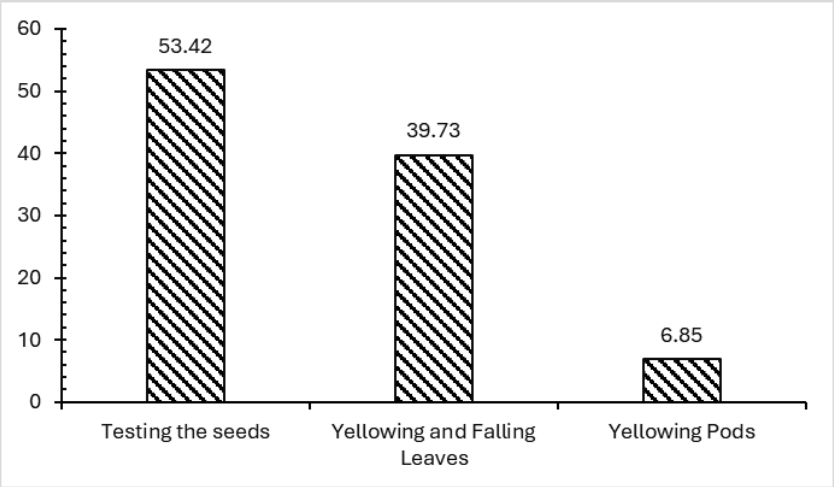

Figure 6: Maturity signs according to farmers

- *Post-Harvest Management of Groundnuts in the Avlamey District*

Only 25% of the farmers engage in groundnut drying. Most of the farmers do so to use the groundnuts as seeds for the next planting season. Thus, groundnuts are initially dried in the field after harvest by a few farmers and then at home. The drying duration varies from one farmer to the other and depends on daily sunlight. Nevertheless, the average drying period in the field is 9 days, while home drying takes approximately 17 days. The majority of farmers in do does not shell groundnuts. Only 2.73% of farmers shell the "Kôgli" variety of groundnuts before selling them to processors.

Storage is primarily done for the small season harvest used as seed for the next campaign. All farmers engaging in storage (23%) do so in their homes using sacks or by spreading the groundnuts on the ceiling. However, no products are used for seed conservation. Additionally, farmers have noted minimal rodent attacks on stored groundnuts. In response to this threat, they apply rodent control products purchased from the village market. These stored seeds are used three to four months later during the planting of the main season.

- *Constraints Related to Groundnut Production and Post-Harvest Management*

The survey data allowed us to analyse the groundnut production and post-harvest management system in the Avlamey district. We identified constraints that hinder the proper development of this crop in the area, both internally and externally (Table 4). Indeed, obstacles to groundnut cultivation in Avlamey are numerous, affecting both production and post-harvest management. In response to these challenges, farmers have developed local adaptation strategies (Table 5).

Table 4. Strengths-Weaknesses-Opportunities-Threats to Groundnut Cultivation in Avlamey

Strengths	***Weaknesses***
• **Availability of arable land** • **Farmers' experiences in groundnut production** **Use of farm-saved seeds**	• Lack of information on groundnut phytosanitary treatments • Absence of a cooperative or association of groundnut farmers in the district • Absence of a group sales policy • Lack of proper storage and conservation techniques
Opportunities	*Threats*
• **Transformation of groundnuts into oil, with increasing demand** • **Storage of groundnuts for sale during periods of scarcity**	• Lack of technical support from specialized technicians at ATDA • Impact of climate change

Table 5: Local Adaptation Strategies of farmers and proposed solutions

Constraints:	**Local Adaptation Strategies**	**Recommended Solutions**
Difficulty in accessing credit	Purchasing inputs on credit and selling the harvest directly	-
Difficulty in accessing labour	Paying half of the wages at the beginning and the remainder at the end of the work Regular supervision of work by the producer	Agricultural mechanization
Pest attack on crop and seed and seeds	Some farmers using cotton agrochemicals. Regular checking of stored groundnuts	Providing farmers with phytosanitary products suitable for crop treatments
Land tenure issues	Gradual acquisition of individual plots over time Signing commitments on the duration of parcel lease (e.g., 5 years).	-
Climate change causing drought	Adapting the cultural calendar to changes	-
Market challenges	Selling products to loyal and trustworthy clients	Group sales and establishment of a common pricing strategy

4. Discussion

The objective of this study was to analyse the production systems and post-harvest management of groundnuts with the aim of improving productivity.

4.1. Sociodemographic Characteristics and Land Access

The respondents' experience in groundnut production ranges from 3 to 46 years, with an average of 16 years. Similar results were obtained by Didagbe et al. (2015) in agroecological zones III and IV of Benin. In contrast, in the southern and central regions of Benin, groundnut production experience extends up to 68 years (Loko et al. 2020). The majority of farmers are predominantly illiterate, a common issue among farmers in Guinea and the

West African sub-region (Bah 2001 cited by Didagbe et al. 2015). The most common land tenure system is inheritance. The traditional land system, designed to make men the masters of agricultural land, does not significantly affect women's access to land. Women access land for their production through inheritance, from their deceased parents or husbands, or through borrowing or purchase. Women face no limitations in obtaining land titles.

4.2. Groundnut Cultivation

The average land allocated to groundnut cultivation is 1.36 ha. Similar results were obtained in agroecological zone III (Didagbe et al. 2015). However, a contradictory result from Naitormbaide in 2007 in Chad shows an average groundnut cultivation area of 3.9 ha. This disparity in results could be explained by the higher prioritization of groundnuts in Chad compared to Benin. Groundnuts are the second most important crop after cotton. Farmers partly finance the production of other crops with groundnut income, addressing food shortages during lean periods, purchasing rice or corn, and improving meal accompaniments (Kone et al. 2019). Groundnut cultivation also allows soil fertilisation before planting maize or cotton due to its nitrogen-fixing nature. Similar findings were reported in a study on the role of legumes in soil fertility, where groundnuts or cowpeas as cultural precedents increased the yield of sorghum and cotton (Bado 2002).

4.3. Financial capital, Labor, and Seed Access

Family labour is the primary workforce for farmers, particularly in central Benin (Didagbe et al. 2015). Wage labour is only necessary for large groundnut fields and is less utilized due to various constraints surrounding labour engagement, including high costs at the beginning of the season. In Avlamey district, the seed supply system remains informal. The majority of respondents purchase groundnut seeds in local markets. Some farmers use stored previous harvests as seeds or resort to loans due to financial constraints. Limited access to microcredit for groundnut production explains seed borrowing and the use of family labour in many cases. Agricultural income is the main source of financing for production but does not fulfil all production needs. In agroecological zone III, 98.05% of groundnut farmers face difficulties in accessing formal or informal credit (Didagbe et al. 2015), confirming the challenges groundnut farmers encounter in accessing microcredit. Groundnut farmers categorize varieties into two groups based on pod size. The "Kôga" variety is particularly favoured by wholesalers and sellers of boiled or roasted groundnuts, while the "Kôgli" variety is preferred by groundnut oil farmers and those making groundnut paste for cakes (klui-klui).

4.4. Cultural Practices in Groundnut Production

Nearly half of the farmers (48%) associate groundnuts with other crops such as maize, cassava, or sorghum, similar to findings in agroecological zones III and V (Didagbe et al. 2015). The association of groundnuts with other crops reduces weed growth in the field. Associating groundnuts with maize allows farmers to have some maize ears for family consumption and increases the yield of both crops by significantly improving protein and lipid production (Adjahossou et al. 2009).

To preserve land, farmers practice crop rotation, with groundnuts always leading due to their leguminous nature and drought resistance. After groundnut harvest, residues are buried to enrich the soil with nitrogen before plowing for the next crop. Ninety-six percent of farmers make ridges for groundnut cultivation to ensure proper development. The minimum tillage rule is not strictly followed, as excessive tillage can lead to soil degradation and structure destruction. Field maintenance activities typically involve weeding, with some farmers using herbicides while others rely on hoeing due to the negative effects of herbicides on groundnuts, hindering them from expressing their full potential.

In the Avlamey district, no farmers fertilise groundnuts due to a lack of information on fertilisation. Some apply the mineral fertiliser received for cotton to groundnuts, and very few use organic manure (Didagbe et al. 2015). However, inoculating groundnuts with Bradyhizobium strains could be a solution for groundnut fertilisation, as it improves crop yield (Didagbe et al. 2014). Few pests damage groundnut crops in the field, with prominent ones being defoliating caterpillars and soil insects. Despite agricultural advances and innovations, farmers lack knowledge on combating these pests.

4.5. Harvest and Post-Harvest Management

Groundnut harvesting occurs after maturity, typically three to four months after planting. Due to financial constraints, on-field selling is common, and few farmers store groundnuts. Groundnuts are dried for an average of nine days in the field and 17 days at home to avoid risks of rotting and mold formation during storage. Similar results in Ivory Coast show that groundnut drying takes one week in the field in the Korhogo and Bouaké regions and three days in Daloa (Manizan et al. 2018). Climate change poses a risk to field drying due to irregular

rainfall. Solar drying, recommended for cowpeas in Nigeria (Aviara et al. 2013), could be a solution for groundnuts as well.

After drying, unshelled groundnuts are directly stored in bags or on the ceilings of houses without preservatives. Ceiling storage presents a loss rate of 11.8% (Kotyn et al. 2018). Farmers report rodent damage on stored groundnuts, but losses are insignificant. Similar results show very low losses (3.7%) when groundnuts are stored in woolen bags without preservatives (Kotyn et al. 2018). In the Korhogo and Daloa regions of Ivory Coast, farmers face storage losses ranging from 2% to over 60% due to insects and molds (Manizan et al. 2018). Apart from using rodenticides purchased locally, like farmers in these regions of Ivory Coast, surveyed farmers lack effective means for pest control. However, certain plant extracts and essential oils, such as Ocimum gratissimum, Ocimum canum, Hyptissua veolens, Ageratum conyzoides, and Lantana camara, show strong antifungal potential against molds (Adjou et Soumanou 2013). Implementing these practices could contribute to effective integrated groundnut management during storage.

5. Conclusion

This study reveals the significance that farmers attribute to groundnuts due to their profitability. In Avlamey district, farming systems are traditional, employing traditional vegetative material, elementary tools, and a low level of input usage. Groundnuts are not fertilised, and no phytosanitary treatment is carried out against crop pests. The crop is produced by both men and women on inherited lands predominantly. Post-harvest management is minimally observed in the region, with storage structures mainly comprising bags, and seeds stored without preservatives. Agricultural income and loans from villagers are the primary sources of financing for groundnut production. Constraints faced by farmers are mainly related to the quality of vegetative material, the lack of specific inputs for the crop, inadequate agricultural equipment, and climate change. We suggest that research provides farmers with more productive varieties and develops appropriate phytosanitary products for the optimal productivity of groundnut cultivation.

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