

Assessment of Food Security Status among Women Cashew Farmers in Ogbomosho Agricultural Zone, Oyo State, Nigeria

Mustopha, F.B.^{1*}, Okunade, E. O.¹ and Akintonde, J. O.¹

¹*Department of Agricultural Extension and Rural Development, Ladoko Akintola University of Technology, Ogbomosho, Nigeria.*

Corresponding Author's email: Mustophaf@gmail.com

Abstract

Food insecurity remains a major concern across Africa, including Nigeria, where many households struggle to access sufficient and nutritious food. This study assessed the food security status of women cashew farmers in the Ogbomosho Agricultural Zone of Oyo State. A snowball sampling technique was used to select 150 respondents, and data were obtained through an interview schedule. Frequency counts, percentages and Weighted Mean Scores (WMS) were used to describe the socio-economic characteristics and food security levels, while Pearson Product-Moment Correlation tested the study hypothesis. The results show an average age of 53 years, indicating an aging farming population. Respondents had low average educational attainment (6 years) and relatively large average household size (7 members). Although cashew farming contributes to household livelihoods, both income and yield remain low. Food security analysis revealed that 61.3% of respondents were moderately food secure, 18.7% were food insecure, and 20.0% had high food security. Correlation results indicate significant relationships between annual income ($r = -0.448$; $p = 0.000$), yield per hectare ($r = -0.430$; $p = 0.000$) and food security status. The findings suggest that higher cashew earnings do not always guarantee improved food access, likely due to price volatility and rising living costs.

Keywords: Food Security, Women Farmer, Cashew Production, Livelihoods Oyo State, Nigeria.

1.0 Introduction

Food security remains a critical global concern, particularly in developing countries where large segments of the population are highly vulnerable to malnutrition and poverty. According to Aliaga and Chaves (2014), food security is achieved when everyone, at all times, has both physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. In Nigeria, the situation is particularly dire. The Federal Ministry of Budget and Economic Planning (2024) reports that more than 31.8 million Nigerians are currently suffering from acute food insecurity, with women and children being the most affected due to high levels of malnutrition.

Despite the challenges, agriculture still plays a pivotal role in enhancing household food security and economic stability. One notable crop in this context is cashew, which serves as a major agricultural activity supporting the livelihoods of many rural households (Yeboah *et al.*, 2023). Cashew farming has become an important source of income and a means to improve the standard of living for smallholder farmers (Chandran & Achuthan, 2024). With its increasing contribution to Nigeria's GDP and foreign exchange revenues, the cashew industry continues to emerge as not only a driver of economic empowerment but also a key element in achieving sustainable agricultural development (Peprah *et al.*, 2025). Over the past

decade, the export of cashew nuts has significantly grown due to rising global demand (Dubbert *et al.*, 2023).

Within this growing sector, women play a vital and increasingly recognized role. Cashew production provides opportunities for job creation and economic empowerment, especially for women, whose participation in the sector holds considerable promise for enhancing household food security. Faiez (2018) noted that households with women actively engaged in farming and income-generating activities are more likely to experience improved food security. Despite their central roles, women's contributions to food systems remain undervalued and underrecognized. In many developing nations, women face persistent challenges that limit their potentials, ranging from restrictive cultural norms and discriminatory legislation to fragmented and unequal labour markets (Quisumbing and Pandolfelli, 2009). These gender-based disparities hinder women's access to agricultural resources and services, ultimately affecting their productivity and the food and nutrition security of their households (Joe-Nkamuke *et al.*, 2019).

Given the importance of cashew farming to household economies in the Ogbomoso Agricultural Zone of Oyo State, Nigeria, and the indispensable role of women in the cashew sector, this study seeks to assess the food security status of women cashew farmers in the region. By doing so, the research provides valuable insights into the women's socio-economic characteristics and contributes to the understanding of the food security status of the women cashew farmers in the study area.

2.0 Materials and Methods

This research was carried out in the Ogbomoso Agricultural Zone of Oyo State, Nigeria, which is one of the state's four designated agricultural zones. The zone includes five Local Government Areas (LGAs): Ogbomoso South, Ogbomoso North, Oriire, Surulere, and Ogo-Oluwa. It is located around latitude 8.8° North and longitude 4.15° East, positioned on the Yoruba Plateau at an altitude of approximately 1,200 feet (366 meters) above sea level. A snowball sampling technique, which is a non-probability method suitable for reaching hard-to-access populations without a formal sampling frame, was used to select 150 respondents from the three blocks (Surulere, Oriire, and Ogo Oluwa LGAs) in the study area. The sampling followed a snowball approach beginning with 9 initial "seed" respondents (3 per block) identified through local agricultural extension agents. These seeds referred other women farmers within their networks. The referral process continued in waves until the target of 150 respondents was reached. At each stage, community informants verified respondents to ensure eligibility and maintain data integrity.

Data were collected using a well-structured questionnaire and interview schedule. The data were analyzed using both descriptive statistics such as frequencies, percentages, means, standard deviations, Weighted Mean Score (WMS), rank and the Pearson Product-Moment Correlation (PPMC). The food security status of women cashew farmers was assessed using the Household Food Insecurity Access Scale (HFIAS), developed by the Food and Nutrition Technical Assistance (FANTA) project. The HFIAS is a standardized tool consisting of nine occurrence questions that measure whether specific food insecurity conditions were experienced within the past 30 days. These questions were measured at the nominal level, with responses coded as Yes (1) or No (0). For each affirmative response, a follow-up question assessed the frequency of occurrence, measured on a four-point ordinal scale: Not at all (0), Sometimes (1), Often (2), and Very Often (3). The frequency scores for all nine

questions were summed to generate a continuous food insecurity score ranging from 0 (completely food secure) to 27 (severely food insecure).

3.0 Results and Discussion

3.1 Socio-economic Characteristics of the Women Cashew Farmers

The results presented in Table 1 indicate that the mean age of the respondents was approximately 53 years, with a standard deviation of 11.13, suggesting a gradually aging farming population. This trend may have implications for labour availability, farm productivity, and the long-term sustainability of cashew production. This finding aligns with the study by Pelemo *et al.*, (2020), which reported a mean age of 54.6 years among cashew farmers. About 72.7% of the women cashew farmers were married, 23.3% were widowed, and 4.0% were separated. This suggests a strong prevalence of family-oriented structures among the respondents. The result is consistent with Okunade *et al.*, (2015), who observed that the majority of rural women are married.

The mean years of formal education among respondents was approximately 6 years, with a standard deviation of 4.60. This indicates that most of the respondents had only basic education, which may limit their capacity to access, interpret, and adopt improved farming technologies and market information, potentially affecting both productivity and profitability. This observation is supported by Alabi *et al.*, (2019), who reported a similar mean of 6 years of formal education among cashew farmers in Ibarapa Central Local Government Area. The table further shows that the average household size was 7 members, indicating a relatively large household size. While this could enhance labour availability for farming activities potentially improving productivity it could also lead to increased food consumption and financial burdens, placing pressure on household resources and potentially affecting their food security status. This finding is consistent with Adejo *et al.*, (2023), who reported an average household size of 7 among cashew farmers in Kogi State.

The mean annual income of the respondents was ₦1,335,926.67, with a standard deviation of ₦1,156,150.42. This suggests that a majority of respondents earn relatively low income, possibly due to financial constraints that hinder reinvestment in farm inputs, technology adoption, and farm expansion. This result corroborates the findings of Pelemo *et al.*, (2020), who also reported low income among cashew farmers. Additionally, the mean annual cashew yield was 1,992.71 kg, with a standard deviation of 1,841.2 kg. This indicates low productivity among most women cashew farmers, with only a few achieving high yields. This could be as a result of the use of unimproved or inherited cashew varieties. This supports the findings of Ojo and Adekunle (2023), who identified factors such as low adoption of improved planting materials, small-scale farming operations, and limited farming experience as major contributors to low cashew productivity in Southwest Nigeria.

Table 1 Distribution of Women Cashew Farmers by Socioeconomic Characteristic

Socio-economic characteristics	Frequency	Percentage
Age (years)		
30 – 39	8.0	5.3
40 -49	47.0	31.3
50 -59	51.0	34.0
60 -69	24.0	16.0
>69	20.0	13.3
Marital Status		
Married	109	72.7
Separated	6	4.0
Widowed	35	23.3
Years spent schooling		
Primary	63	42
Secondary	46.5	31
No formal education	36.0	24
Tertiary	4.5	3
Household size		
2-4	6.0	4.0
5-7	100.95	67.3
8-10	39.0	26.0
>10	4.05	2.7
Primary source of Income		
Cashew farming	104	69.3
Civil servant	4	2.7
Artisans	6	4.0
Trading	36	24.0
Yield (kg)		
301 – 2300	105.0	70.0
2301- 4300	25.5	17.0
4301- 6300	13.5	9.0
>6300	6.0	4.0

Source: Field survey, 2024

3.2 Food Security Status of Women Cashew Farmers

Table 2 showed ranking of food security status of women cashew farmers in the study area and the results revealed that, the most pressing concern among women cashew farmers was worry that household members would not have enough food to eat in the past four weeks, ranked first with a Weighted Mean Score (WMS) of 1.35. This was followed by the issue of household members being unable to eat the kind of food they preferred due to lack of resources, ranked 2nd with a WMS of 1.25. The 3rd ranked concern, with a WMS of 1.21, was that household members had to eat foods they did not really want to eat because they could not afford alternatives. In contrast, the least-ranked experience was that household members went a whole day and night without eating due to lack of food, with a significantly lower WMS of 0.06. This indicates a significant level of food insecurity. This aligns with the findings of Ayeni and Adewumi (2023), who reported that 58.8% of cashew-farming households in Kogi State, Nigeria, fell below the daily recommended calorie intake of 2,450 kcal per capita.

**Table 2: Women Cashew Farmers' Access to Food
n =150**

Household Hunger Scale Indicator in the Past 4 Weeks	Very often (3)	Often2)	Sometime (1)	Not at all (0)	WMS	Rank
How often did you worry that your household will not have enough food to eat in the past 4 weeks?	25	36	55	34	1.35	1 st
How often did you and any of your household members not able to eat the kinds of food you preferred because of lack of resources in the past four weeks?	23	27	64	36	1.25	2 nd
How often did you and any of your household members have to eat a limited variety of foods due to lack of resource in the past 4 weeks?	13	26	73	38	1.09	4 th
How often did you or any household member have to eat some foods that you really did not want to eat because of lack of resources to obtain other types in the past 4weeks?	18	33	61	38	1.21	3 rd
How often did you or any household member have to eat a smaller meal than you felt you needed because there was no enough food, in the past four weeks?	7	33	68	42	1.03	6 th
How often did you or any household member have to eat fewer meals in a day because there was no enough food in the past 4 weeks?	11	31	61	47	1.04	5 th
How often was there no food to eat of any kind in your household because of lack of resources to get food, in the past 4 week?	9	13	57	71	0.73	7 th
How often did you or any household member go to sleep at night hungry because there was no enough, in the past 4 weeks?	9	8	30	103	0.49	8 th
How often did you or any household member go a whole day and night without eating because there was no enough food?	0	1	7	142	0.06	9 th

Field Survey, 2024**WMS: Weighted Mean Score****3.3 Level of Food Security Status of Women Cashew Farmers**

Table 3 presents the distribution of women cashew farmers by food security status in the study area. Based on the mean \pm 1 standard deviation, 61.3% of respondents had moderate food security, 18.7% had low while 20.0% had high food security. This indicates that while most women experience moderate food security, a considerable proportion still faces food insecurity, and relatively few enjoy high food security. The results suggest that although cashew farming supports livelihoods, it may not generate sufficient income to ensure full food security. These findings align with Ayeni and Adewumi (2023), who also reported varying levels of food insecurity among cashew-farming households in Kogi State,

highlighting the need for targeted interventions to boost income and productivity among women cashew farmers.

Table 3: Distribution of women cashew farmers by level of Food Security status

Food Security Status	Category	Frequency	Percentage
High	15.50 – 24.00	30	20.0
Moderate	3.08 – 15.49	92	61.3
Low	0.00 – 3.07	28	18.7

Source: Field Survey, 2024, Mean = 9.27 Std Dev = 6.20 Minimum = 0.00 Maximum = 24.0

3.4 Test of Hypothesis

H₀: There is no significant relation between the selected socio-economic characteristics of the women cashew farmers and food security status.

Results in Table 4 showed a negative but significant relationship between annual income ($r = -0.448$, $p = 0.000$) and average yield per hectare ($r = -0.430$, $p = 0.000$) with food security status. This indicates that higher income and farm yield are associated with lower food security among women cashew farmers. This counterintuitive finding which may be attributed to several factors, for example, cashew is a cash crop, increased production does not directly translate to improved household food availability, especially amid volatile food prices, inflation, and rising living costs. Market gluts from higher yields may reduce selling prices, limiting the farmers' purchasing power for nutritious food. Additionally, income may be diverted to non-food expenses, such as social functions, ceremonial clothing, or children's higher education, which are often prioritized by women during certain life stages.

Table 4: Correlation between Selected Socio-economic Characteristics and Household Food Security Status

Socio-economic Characteristics	Correlation coefficient	<i>p-value</i>	Decision	Remark
Age (years)	-0.112	0.174	Not significant	Accept H ₀
Year spent schooling (years)	0.038	0.643	Not significant	Accept H ₀
Household size	0.113	0.167	Not significant	Accept H ₀
Average yield per Hectare	-0.430*	0.000	Significant	Reject H ₀
Income per annum	-0.448*	0.000	Significant	Reject H ₀

Source: Computed data, 2024

4.0 Conclusion and Recommendations

The study concluded that women cashew farmers in the study area experience moderate levels of food security, with a significant proportion still facing food insecurity. Despite moderate farm yields and income, food security remains low, likely due to the nature of cashew as a cash crop, market volatility, and competing household expenses.

Based on the findings, it is recommended that women cashew farmers should cultivate food crops alongside cashew to reduce dependence on market purchases and improve household food security. They should also adopt better financial planning by prioritizing the use of

income from cashew sales for nutritious food and essential needs, rather than non-essential expenses such as social ceremonies.

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