Journal of Agriculture and Rural Development in the Tropics and Subtropics
Vol. 126 No. 1 (2025) 129–139

https://doi.org/10.17170/kobra-2025052211168 ISSN: 2363-6033 (online); 1612-9830 (print) – website: www.jarts.info

Gender disparities in agricultural land access and cashew farming participation in Kintampo South District, Ghana

Daniella Delali Sedegah

Department of Sustainable Development and Policy, School of Sustainable Development, University of Environment and Sustainable Development, Ghana

Abstract

This study examines gender disparities in access to agricultural land and participation, using a sample of 200 cashew farmers in the Kintampo South District of Ghana and descriptive statistical analysis. The study assesses land tenure status, benefits from cashew production and levels of participation by gender. The results suggest significant gender inequalities with male farmers experiencing greater access to land, property rights, and economic benefits than female farmers, who in most cases face deep-rooted systematic barriers in existing customary land practices. Against all odds and with limited control over resources, women are actively involved in cashew farming. The Theory of Access (ToA) and the FAO's Factors and Institutions Framework were used to conceptualise these inequalities. The research highlights the urgent need for gender-responsive land policies, improved access to credit and agricultural extension services, and structural reforms that promote equitable participation in agricultural value chains, especially at the production level. The research contributes to the understanding of the socio-economic dynamics affecting gender roles in agriculture, particularly in the Ghanaian community context of cashew farming.

Keywords: cash crop farming, gender disaggregated data, gendered land tenure system

1 Introduction

Sustainable Development Goal 5 (Gender Equality) aims to implement reforms that provide women with equitable access to productive resources such as land and other assets. Taking this target as a reference, this study examines access to and ownership of land among women and its productive use for cashew (*Anacardium occidentale*) farming in the Kintampo South District of Ghana. Toulmin (2009) posits that societies that restrict women's rights have male-centred family institutions and power structures that govern women's access to and ownership of resources. Women's access to land and security of tenure are by customary law typically granted women secondary rights (Hilhorst, 2000; Bortei-Doku, 2002; Sarpong, 2006). In Ghana, Otsuka *et al*. (2003) find that secure land tenure is a crucial determinant of agricultural investment decisions for both men and women. They are more inclined to plant and maintain tree crops when their land rights are secure, thereby increasing long-term agricultural productivity. Land confers social and economic power, especially in rural society. Men control this power and women are denied land ownership due to existing gender beliefs that women should not own property (Quansah, 2012). However, more than half of the agricultural labour force consists of women who are engaged in food production, processing and storage (Allen *et al*., 2018).

In Ghanaian society, the land tenure system is largely customary. It is accessed and controlled largely by men through stool land (controlled by the chief) or through the family and lineage system. The Akan-speaking communities in Ghana practice matrilineal inheritance, where property is transferred from a brother to his sister's son and patrilineal succession systems, where property transmission is through the male line (Brempong, 2020). Women in matrilineal communities have greater access to and control over land compared to women in patrilineal communities. Women transfer land through direct purchase or inheritance, marriage, or contractual agreements (Rünger, 2006). Poor, illiterate rural women are denied access to their husband's land after his death because they are unaware of their basic right to his property. The practice of polygamy also complicates the situation of property division (Bayisenge *et al*., 2015).

* Corresponding author: ddsedegah@uesd.edu.gh

Published online: 3 June 2025 – Received: 29 April 2024 – Accepted: 14 May 2025

Where women have the opportunity to acquire land, they face financial barriers due to the huge costs involved. Additionally, they may have to deal with the complexity of the competition, bargaining, and negotiating processes (Afutu-Kotey & Adjei-Homes, 2009). For women, access to land and the security of their tenure is crucial because they are essential resources for food production and other livelihoods (Doss & Meinzen-Dick, 2020). Women's control over land would have a positive impact on the household's ability to provide for its members, as well as its ability to earn a living. In this study, access to land is defined as "the right to obtain and use the property to garner benefits."

Studies (Bayisenge *et al*. 2015; Leslie, 2017) have shown that women and men in Ghana have different access to and control over land. According to Owusu (2008) and Yankson & Kala (2007), women in Ghana are gaining more access to land, yet it is sometimes difficult for them to have effective control over the land through ownership in perpetuity/tenure. According to Aasoglenang *et al*. (2013), women in northern Ghana are sometimes gifted with land but are not permitted to sell or buy it; instead, they must practice sharecropping. Although they do not own the land, they have access to it for farming and control over cash crops such as shea (Vitellaria paradoxa) and Dawadawa (Parkia biglobosa) trees. There is a general belief in northern Ghana that if women are allowed full access and control over land, they will undermine the status of men (Aasoglenang *et al*. 2013). Quansah (2012), in the Cape Coast metropolis, indicates a gender gap in land ownership. Men who participated in the study, according to Quansah (2012), stated that women were not allowed to own land because they were expected to get married off and not return to claim the land. Despite these cultural stereotypes, some women have managed to acquire access to agricultural land for food and cash crop cultivation. Matsuura *et al*. (2023) discuss how gender dynamics affect the distribution of agricultural resources, showing that women often face more obstacles than men in obtaining land tenure, securing credit, and undertaking long-term ventures in agriculture. They find that these gender inequalities have a potentially negative impact on household welfare.

Women are increasingly involved in cash crop production, particularly cashew growing. Cashew is Ghana's second most valuable cash crop by export value (MoFA, 2017), and the Bono East Region is one of the main cashew producing regions in the country (African Cashew Initiative, 2010). Few studies (Aasoglenang *et al*., 2013; Leslie, 2017) have documented gender roles in the cashew value chain, and most studies have focused on cashew producers, where men are typically the heads of household.

The contribution of this study lies in its examination of gender disparities in access, ownership, and involvement in agricultural land and cashew production in the Kintampo South District, Bono East Region, Ghana. It provides insights into the land tenure status and the disparities between male and female farmers' land access, ownership, and benefits derived from cashew cultivation. The localised focus of the study provides a micro-level insight into the interplay between gender, customary practices, and cash crop cultivation, adding to the limited literature on region-specific cash crops. It also emphasises how cultural frameworks shape women's rights to land and their participation in agricultural activities, contributing to the broader discussion on land rights and gender inequality in Ghana. By applying the Theory of Access (ToA) alongside the FAO Framework on Factors and Institutions, the study provides a theoretical lens for understanding how structural and customary factors interact and affect women's access to agricultural resources. The objectives of this study are:

i. To analyse the land tenure status of agricultural land ownership on the gender of farmers;
ii. To examine the participation of men and women in cashew farming;
iii. To identify the gendered differences in the benefits derived from cashew farming.

2 Literature review and theory

The underpinning theories of the study are the Theory of Access (TOA) and the Framework of Factors and Institution. The former is useful in explaining key variables, and the latter is useful in specifying constructs in the data-gathering instrument used for the study. Therefore, a synergistic fusion of their theoretical assumptions helped to properly situate this study.

2.1 Theory of Access

The Theory of Access (ToA), developed by Ribot & Peluso (2003), distinguishes between access and ownership, emphasizing that access refers to the ability to benefit from resources without necessarily owning them. In rural Ghana, access to land is vital for livelihoods, but barriers contribute to poverty (Azumah & Noah, 2023). Ownership, as described by Doss *et al*. (2015), involves legal entitlement and decision-making powers over land, including selling or leasing.

Access is shaped by power dynamics and restricted by political, economic, and cultural influences, particularly patriarchal structures in Africa (Azumah & Noah, 2023). Sub-

Saharan Africa's dependence on agriculture makes land crucial (Mbow, 2020). Women's land ownership enhances household decision-making (Deere *et al*., 2013), yet traditional frameworks and policies favor men (Fonjong & Gyapong, 2022). Chigbu *et al*. (2019) highlight the diversity in women's land experiences, stressing the need to address disparities. Limited land access hinders women's economic empowerment in their communities.

2.2 *Framework on Factors and Institutions That Affect Women's Access to Land Rights*

The Framework on Factors and Institutions That Affect Women's Access to Land Rights developed by FAO (2002) framework outlines key factors influencing women's access to land rights, including custom and religion, legal systems, domestic status, economy, and education. Women in matrilineal systems generally have greater decision-making power over land than those in patrilineal systems (Matsuura *et al*., 2023). In Malawi, landholding structures significantly affect gender equity in land reforms (Berge *et al*., 2014), with patrilineal systems typically granting men greater control, marginalizing women's land rights. Even when women own land, managerial rights are often restricted, leading to unequal labor division and reduced farm output (Kang *et al*., 2020; Twyman *et al*., 2015). Legal ownership alone does not ensure empowerment due to underlying informal power dynamics. Women landowners also face barriers such as limited access to quality inputs, technology, and markets, which negatively affect agricultural productivity (Agarwal & Mahesh, 2023). These challenges stem from resource inequalities rather than inherent gender differences (de la O Campos *et al*., 2016). Closing the gender gap in agricultural productivity benefits both men and women (Torkelsson & Onditi, 2018). Mukasa *et al*. (2015) show that reducing this gap can help economically empower female-managed households. Fig. 1 illustrates the factors shaping women's land access, highlighting their impact on gender disparities in land tenure and cash crop production, particularly cashew farming.

3 Materials and methods

This section outlines the research design, data collection, and analysis methods employed in the study to explore

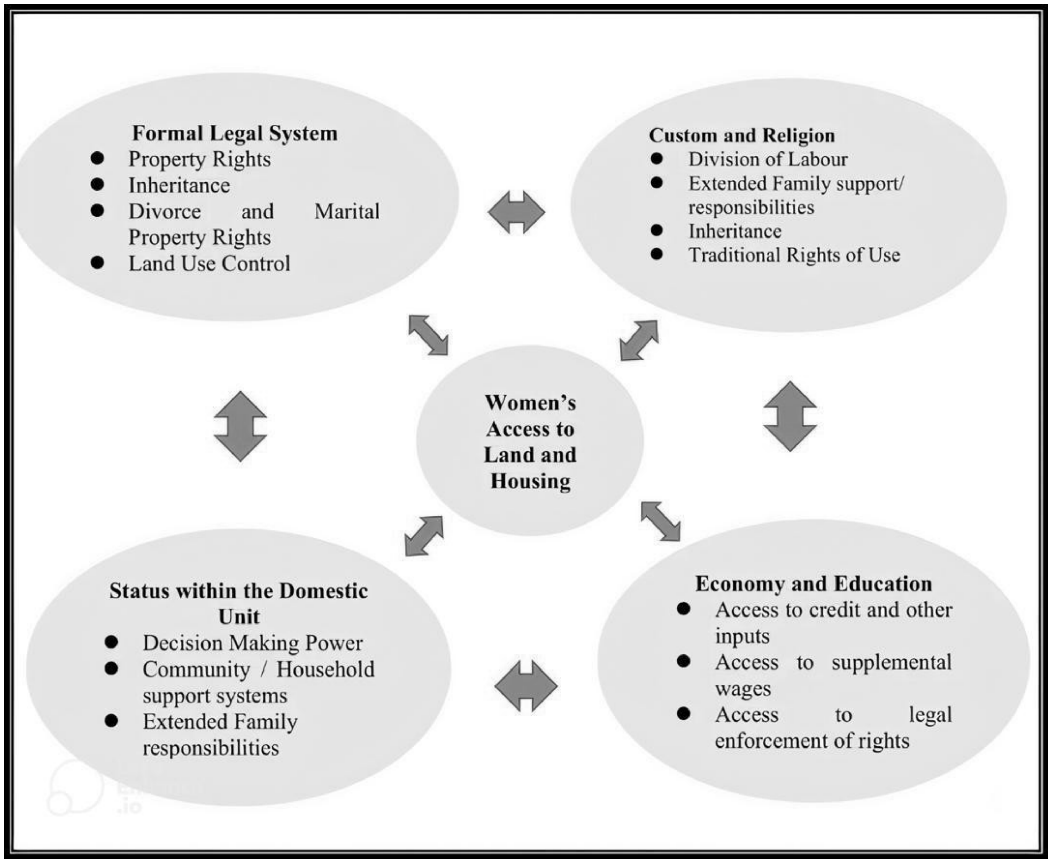

Fig. 1: *Framework on Institutions and Factors That Affect Women's Access to Land Rights.*
Source: *FAO (2002)*

gender differences in access to and ownership of agricultural land and participation in cashew farming in the Kintampo South District, Bono Region, Ghana.

Informed consent was obtained from all the respondents who participated in the research. The consent process was conducted verbally to ensure that respondents appreciated the study's objectives, their rights to withdraw or partake in the research without any repercussions and the nature of their participation. Verbal consent was deemed appropriate due to the varying levels of literacy. This enabled and allowed respondents to ask questions before agreeing to participate and maintain ethical standards to ensure compliance. Approval for this research was obtained from the Ethics Review Board of the University of Environment and Sustainable Development, Somanya, Ghana. This adherence to ethical research practices demonstrates the study's respect for participant autonomy.

3.1 Study design

The study adopted a descriptive statistical study design to investigate the factors associated with agricultural land and participation in cashew farming for livelihood enhancement in the Kintampo South District, Ghana. Cashew is an important cash crop that could potentially improve the livelihoods of the farmers engaged in its cultivation (Reddy *et al*., 2018). The Bono East Region is recognised as one of Ghana's significant cashew-growing areas (Yeboah *et al*., 2023), making the location a suitable choice for a study in cashew farming. The study used a combination of survey questionnaires administered face-to-face to cashew farmers and desk research to acquire data. A complete list of cashew farmers, referred to as the district cashew farmers' register, was used as the sampling frame, ensuring that every cashew farmer had an equal chance of being selected. The sampling method used was stratified random sampling, where the population was divided into four distinct zones, and 200 respondents were selected using random number representation from each zone to ensure representation across different areas within the district. To prevent multiple respondents from the same family and to enhance the representativeness of the sample, the 200 respondents were randomly selected from different families listed in the district cashew farmers' register. The rigorous random sampling methods employed for this study ensured that the respondents were representative of the broader population of cashew farmers in the district. The collected data is presented in a descriptive-analytic procedure comprising mean scores, standard deviations and percentages. The Analysis of Variance (ANOVA) model analysis software was employed in the estimations of each construct of land tenure, participation, and benefit accrual on the gender of farmers. ANOVA determines statistically significant differences between groups (Connelly, 2021), male and female cashew farmers in the Kintampo South District for this study.

3.2 Study setting

The study was conducted in the Kintampo South District of the Bono East Region (as shown in Fig. 2) of Ghana, with an estimated total population of 93,600 persons as of the last census (Ghana Statistical Service, 2014). The district is located in Ghana's transitional ecological zone, covering an area of approximately 1,775 km^2. Agriculture is the predominant occupation in the area, which employs about 72.7 % of the workforce and accounts for about 60 % of household income due to the abundance of rich land and favourable climatic conditions (MOFA, 2020). The main crops cultivated are cassava (*Manihot esculenta*), plantain (*Musa paradisiaca*) and cocoyam (*Colocasia esculenta*).

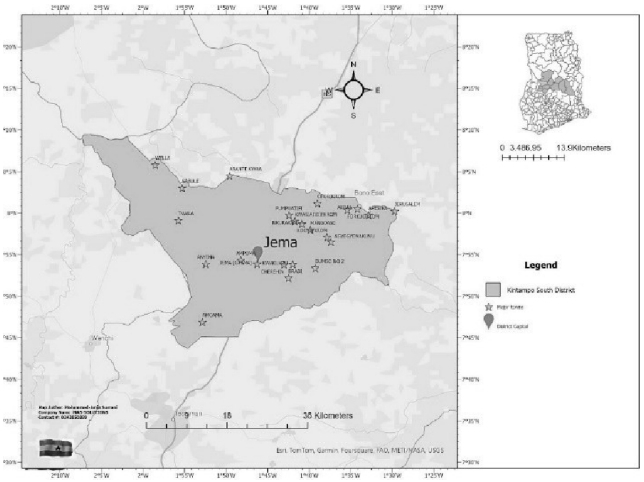

Fig. 2: *Map of Kintampo South District.*
Source: *Author's construct (2024)*

3.3 Customary practices related to gender and agricultural production in the study area

The Kintampo South District operates within a predominantly customary land tenure system, which influences access to and control over agricultural land, particularly along gender lines, shaping the dynamics of agricultural production in the region. Customary land practices in Ghana are entrenched in sociocultural norms that often privilege men in land ownership and decision-making (Kuusaana *et al*., 2013). Similar to other parts of Ghana, the customary land system is determined by kinship associations, communal ownership, and the authority of chiefs and clan heads (men), all of which have an impact on how land is accessible and

managed. The two major ethnic groups in the study area are the Bonos and the Mos. However, there is also a sizable farming immigrant community of Dagombas, Dagaabas and Konkomba ethnic groups (Nettey *et al*., 2010). Except for the Bono ethnic group, which follows a matrilineal system of inheritance, the other ethnic groups in the study area practice a patrilineal system.

The patrilineal system provides women access to resources such as land, through their relationships with male relatives (fathers, brothers, or husbands). Although the matrilineal system in the Bono ethnic group provides women with greater access to land because inheritance is based on maternal lineage, women's land rights do not translate into full control and ownership because male family members are given decision-making power through socio-cultural norms (Britwum *et al*., 2014). Men, therefore, have greater control over resources such as land, irrespective of the system in place.

4 Results

4.1 Demographic Characteristics of the Respondents

The demographic analysis of 200 respondents (58.5 % males, 41.5 % females) highlights significant gender disparities across age, education, occupation, family size, and household headship as presented in Table 1.

4.2 Descriptive and multiple comparison of indicators

The differences in the constructs of the model were examined. The eta squared measure of effect size commonly used in ANOVA models, was used to investigate differences between the indicators and gender. Eta squared measures the proportion of variance associated with each main effect and interaction effect in a model that seeks differences between indicators. Table 2 demonstrates the differences between the components in the model that were usually intermediated. Gender is paired with each of the indicators for agricultural land tenure system variables. The result showed an eta squared value between 0.000 and 0.100, suggesting that the indicators have small to moderate effects on gender. Agricultural land tenure system indicators (land size, land ownership, type of land tenure, right over land, and use of land) showed a small effect size. The effect of gender on the size of the agricultural land tenure system is large, while the effect size on participation is quite small. A medium effect size was recorded for type of farming and a main source of income. The benefit indicator revealed a larger effect difference of 0.100 for livelihood, 0.055 for improved living standards, and 0.052 for employment. The p-value (0.000) for the three-dimensional measurement (land tenure system, participatory and benefits) is much less than the output of the ANOVA table. This lends credence to the conclusion that gender is relevant in predicting land tenure system, participating in cashew crop farming and benefiting from cashew crop farming.

4.3 Hypothesis testing for the direct difference between gender and land tenure status

The first objective of the study was to determine the existence of significant differences in the agricultural land tenure status between males and females. Three (3) direct sub-hypotheses were tested to establish the hypothesis formulated. The general hypothesis therefore stated;
H0: There is no difference in agricultural land tenure status by gender;
H1: There is a difference in agricultural land tenure status by gender.

The results revealed statistically significant gender differences. Cropping patterns differed by gender ($t = 3.45$, $p = 0.001$), as did participation in cashew-only farming ($t = 2.98$, $p = 0.004$) and in combined cashew and other crop systems ($t = 2.76$, $p = 0.006$). Years of experience in cashew cultivation also showed a gender-based difference ($t = 3.22$, $p = 0.002$), along with the type of farming practiced ($t = 3.15$, $p = 0.003$) and major source of income ($t = 3.50$, $p = 0.001$). These findings reveal the significant role of gender in shaping agricultural participation and livelihoods. As presented in Table 3, the results suggest a significant difference between gender and cropping pattern, participation in cashew cultivation, years of farming cashew crop, type of farming and major source of income.

4.4 Hypothesis testing for the direct difference between gender and Participation in Cashew Farming

The second objective of the study was to determine the difference between gender relations and cash crop farming outcomes (cropping pattern, participation in cashew farming, years of farming, type of farming, and major source of income. Using the independent T-test, the hypothesis stated;
H0: There is no difference in Participation in Cashew Farming by gender;
H1: There is a difference in Participation in Cashew Farming by gender.

The findings of the study indicate a statistical significance between cropping patterns and gender, as evidenced by a t-value of 3.45 and a p-value of 0.001. This suggests the presence of a substantial difference between gender and the crop-

Table 1: *Gender-segregated demographic information and standard deviation (SD) of respondents.*

	Male (n=117)		Female (n=83)		
Demographic	%	SD	%	SD	*Inference*
Age group					
18–25	42.7	11.5	36.1	10.8	Diverse experiences among individuals; females are slightly more clustered in age.
26–35	29.1	10.9	35.2	12.7	Males have a more uniform age distribution, while females show greater variability, indicating differing life choices.
36–50	25.6	13.2	28.7	10.3	Males show a broader age range; females are more homogenous.
Above 50	2.6	15.0	0.0	0.0	Greater diversity in male ages; no representation of females in this category.
Marital status					
Married	49.6	10.7	43.1	0.0	Females have a more uniform marriage age, reflecting cultural norms.
Single	27.2	14.2	33.0	8.2	Males have a more diverse age range in this category, while females are more uniform.
Divorced/separated	23.3	11.0	23.8	4.3	Less variation among divorced females suggests a common age pattern, while males have more dispersion.
Education					
Non-literate	18.5	6.7	54.9	12.4	Higher variability for females suggests socio-economic barriers in education.
Basic	29.9	7.3	25.3	12.1	Greater variability for females indicates differing educational opportunities.
Secondary/technical/vocational	37.6	7.4	19.8	11.9	The lower percentage and wider distribution for females indicate structural barriers in vocational education.
Tertiary	14.0	8.9	0.0	0.0	The lack of variability for females suggests fewer pursuing higher education.
Main occupation					
Farmer	12.1	10.5	32.8	6.6	Males have broader experiences in farming; females are more consistent.
Trader	31.3	11.0	35.7	9.1	Males display greater diversity in trading experiences compared to females.
Civil/Public Servant	13.8	8.5	14.6	7.1	Similar experiences in civil service roles for both genders.
Artisan	5.2	10.5	0.0	0.0	High variability among males; lack of females in artisan roles.
Private business operator	36.9	10.0	16.9	6.5	Males have a broader range of experiences in private business compared to females.
Family size					
2–5	51.3	10.0	28.7	7.4	Males show a wider range of family sizes; females are more clustered.
6–8	27.4	10.0	37.3	9.3	Both genders experience larger family sizes, but males have more variability.
9–10	12.0	10.5	21.7	10.8	Diverse family sizes indicate varying socio-economic conditions.
Above 10	9.4	27.0	12.3	0.8	High variability for males and fewer females in larger families.
Head of household					
Yes	85.0	42.0	75.2	20.0	Males show a wide age range; females are more consistent in age.
No	15.0	41.0	25.8	19.5	Similar trends as "Yes," reflecting traditional gender roles.

Table 2: *Gender segregation in land tenure and land use.*

	Male (%)	*Female (%)*
Size of the land		
Less than 0.405 ha	27.3	26.6
0.405 – 2.023 ha	4.6	14.7
2.024 – 4.045 ha	12.5	6.9
4.046 – 8.094 ha	15.9	16.8
Above 8.084 ha	39.6	35.0
Ownership status		
Yes	70.5	64.5
No	29.5	35.3
If owned, means of acquiring land		
Outright Purchase	62.9	67.4
Inherited	37.1	32.5
If not owned, the type of land		
Statutory Land	21.5	21.0
Customary Land	6.8	11.4
Sharecropping	1.2	3.1
If customary land, right over the land		
Transfer Right	100	100
User Right	0.0	0.0
If you have transfer rights, enjoy your land		
Right to sell with approval	82.5	57.4
Right to sell without approval	17.5	42.6

Source: Field data

ping pattern of cashews. Consequently, H_0 is rejected, and it is concluded that a significant difference exists between the mean scores of the cropping pattern for males and females, as reflected in Table 4.

The hypothesis also holds that the type of cashew farming differs among genders. The results demonstrated (t = 3.15, p = 0.003), thereby substantiating the hypothesis and furnishing statistically significant evidence to infer that the nature of cashew farming, and consequently the scale of production, varies between males and females.

The hypothesis that the primary source of income for males and females differs is substantiated by the empirical evidence, which demonstrated a statistically significant outcome (t = 3.50, p = 0.001). This finding serves to reinforce the conclusion that the primary sources of income for male and female cashew farmers exhibit marked disparities.

The findings of the study show that respondents generally agree that cashew farming provides key economic benefits, though perceptions vary by gender. On employment, the average score was 3.49, with male respondents expressing stronger agreement (3.70) compared to females (3.20). Regarding livelihood security, there was a high overall agreement (mean score of 4.10), with males again rating this benefit higher (4.45) than females (3.60). For cashew farming as a source of capital for other investments, the overall response was more neutral (mean score of 2.87), with males (2.95) slightly more positive than females (2.75). Lastly, on whether cashew farming improves living standards, the average score was 3.54, with males (3.75) reporting higher agreement than females (3.25). These results highlight notable gender disparities in the perceived economic benefits of cashew cultivation.

4.5 Hypothesis testing for the direct difference between gender and benefits in cashew production

The final objective of the study was to ascertain the existence of a significant discrepancy in the benefits derived from cashew production between males and females. The four direct sub-hypotheses encompass employment, livelihood, source of capital to support other investments, and improvement of living standards. The independent T-test was employed. The equal variance assumption was employed due to the observed similarity in the standard deviations (1.110 and 1.404). The third hypothesis is thus stated in general terms:

H0: There is no difference in the benefits of cashew production according to gender;

H1: There is a difference in the benefits of cashew production according to gender.

According to the first indicator, which is the provision of employment, the t-test indicated a statistically significant difference between genders, with a t-value of (3.450) (p = 0.001). This finding indicates that male and female farmers' perceptions of the employment benefits of cashew farming differ.

In the domain of livelihood security, the analysis yielded a t value of (4.054) (p = 0.000), thereby providing substantial evidence that cashew farming contributes differently to the livelihood security of male and female farmers.

With regard to the third indicator, namely the capacity of cashew farming to provide capital for other investments, the t-test yielded a t-value of (3.200) (p = 0.002), suggesting a statistically significant gender disparity in perceptions of cashew farming as a source of capital for subsequent investments.

Finally, the t test yielded a t value of (2.948) (p = 0.004), indicating a statistically significant improvement in living standards. The positive t value indicates that male farmers report higher improvements than their female counterparts, and the statistically significant p value confirms that

Table 3: *Gender segregation of farmers involved in cashew production.*

	Male		*Female*		*Total*	
	No.	*%*	*No.*	*%*	*No.*	*%*
Cropping pattern						
Mixed cropping	85	72.60	45	54.20	130	65.00
Mono cropping	32	27.40	38	45.80	70	35.00
Participation in cashew cultivation						
Cashew farming only	60	51.2	32	38.6	92	46.0
Cashews + other food and cash crops	57	48.7	51	61.4	108	54.0
Years of farming cashew crop						
Less than 1 year	4	3.4	2	2.4	6	3.0
1–3 years	26	22.2	19	22.9	45	22.3
4–7 years	31	26.5	18	21.7	49	24.1
8–10 years	24	20.5	13	15.7	37	19.3
Over 10 years	32	27.4	31	37.3	63	31.3
Type of farming						
Commercial use	84	71.8	47	56.6	131	65.6
Subsistence use	33	28.2	36	43.4	69	34.4
Major source of income						
Food crop farming	88	72.5	54	65.1	142	71.0
Cashew farming	20	17.1	13	15.7%	33	16.5
Animal farming	9	7.7	16	19.3	25	12.5

Source: Field data

Table 4: *Descriptive statistics on the gender differences in benefits from cashew cultivation.*

	Number			*Mean*			*Std. Deviation*		
	Total	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*
Cashew farming provides employment	200	117	83	3.70	3.20	3.49	1.329	1.215	1.409
Cashew farming provides livelihood security	200	117	83	4.45	3.60	4.10	1.345	1.100	1.500
Cashew provides capital to support other investments	200	117	83	2.95	2.75	2.87	1.307	1.329	1.284
Cashew farming improves living standards	200	117	83	3.75	3.25	3.54	1.379	1.404	1.256

the benefit in terms of living standards is not equivalent between male and female farmers.

4.6 Correlational assessment of perceived benefits from cashew farming on livelihood outcomes

As shown in Table 5, the analysis of correlations among cashew farming benefit constructs reveals significant positive relationships. Employment benefit is strongly associated with livelihood security (r = 0.412), while capital from cashew farming correlates highly with employment benefit (r = 0.712). Improved living standards show a notable correlation with livelihood security (r = 0.487), and capital support for investments has a modest yet significant link to improved living standards (r = 0.221). Despite these correlations, no multicollinearity issues are detected. The findings confirm that cashew farming positively impacts employment, livelihood security, investment capital, and living standards, regardless of gender.

5 Discussion

5.1 Gender disparities in land tenure and access

The results indicated gender disparities in agricultural land tenure practices. As previous literature suggests, greater access to larger plots and ownership rights was generally

Table 5: *Correlation analysis.*

Constructs	*Mean*	*SD*	*1*	*2*	*3*	*4*
Cashew farming provides employment	3.33	1.329	1.000			
Provides livelihood	4.05	1.345	0.412**	1.000		
Capital to support other invest	2.85	1.308	0.712**	0.480**	1.000	
Improve living standard	3.34	1.380	0.350	0.487**	0.221*	1.000

*, **:Correlation is significant at the 0.05 and 0.01 level (2-tailed), respectively.

higher for men than for women in the study area. This affirms patriarchal land tenure systems as a major constraint for women in agriculture (Bortei-Doku, 2002; Toulmin, 2009). The results support the Theory of Access (ToA) by Ribot & Peluso (2003), which argues that social, political, and economic structures determine access to land not solely by legal entitlement. Through indirect means such as marriage or inheritance, women may acquire land. However, they may face restrictions in transfer or long-term investments on the land (Aasoglenang *et al*., 2013). The study findings are consistent with research by Owusu (2008) and Yankson & Kala (2007), which indicate that while women in Ghana are gaining access to land, their struggle for full ownership and control persists. These work conditions reinforce gendered inequalities in land tenure, thereby limiting women's agricultural productivity.

5.2 Gendered participation in cashew farming

The findings highlight gender disparities in cashew farming, with men engaging in commercial cultivation while women primarily farm at a subsistence level. Prior studies confirm these differences in agricultural participation (Doss & Meinzen-Dick, 2020; Matsuura *et al*., 2023). Men benefit from better access to extension services, inputs, and financial resources, enabling high-value cash crop farming (Agarwal & Mahesh, 2023). Statistical analysis shows men often have larger landholdings and ownership rights, positioning them for commercial farming, whereas women face constraints that lead to mixed cropping (Mukasa *et al*., 2015). These disparities align with research suggesting that sociocultural norms limit women's ability to participate in commercial agriculture (Quansah, 2012; Leslie, 2017).

5.3 Economic benefits from cashew farming

Concerning cashew farming benefits, the study's hypothesis testing revealed a gendered difference where men report significantly higher economic gains, including employment opportunities, investment capital and livelihood security, compared to women. These findings align with studies by Chigbu *et al*. (2019) and Torkelsson & Onditi (2018), which highlight gender inequalities in land tenure and how they translate into economic disparities. This is evident in women's limited access to land ownership and decision-making power that restricts their ability to fully benefit from cashew farming. As highlighted by Fonjong & Gyapong (2022), this is further compounded by limited access to technology, markets and financial services. The gender gap in profit accumulation therefore underpins the assertion that legal ownership is not enough; access to credit, institutional support and capacity-building initiatives are critical to closing the gender gap in agricultural productivity (de le O Campos *et al*. 2016).

6 Conclusion and policy implications

The study's findings highlight persistent gender disparities in participation in cashew farming, access to land and economic benefits in Kintampo South District. These inequalities, fuelled by socio-cultural norms, inheritance systems and economic constraints, disadvantage women in agricultural production. To address these inequalities, policy interventions should prioritise the following:

i. Gender-responsive agricultural policies: Develop and implement policies that facilitate women's access to credit, inputs and extension services to increase their participation in commercial agriculture.
ii. Legal reforms: Strengthen women's land rights through legal reforms that recognise inheritance rights and protect property.
iii. Capacity building initiatives: Targeted training and provision of resources to promote women's engagement in cash crop agriculture.
iv. Market access programmes: Develop market linkages that ensure women farmers can sell their produce at competitive prices and engage in value-added processing.
v. Data-driven decision-making: Introduce gender-disaggregated data to inform policy and programme design. By removing these barriers, policymakers and stakeholders can promote gender equality in the agricultural value chain and enhance women's participation in and benefits from commercial agriculture, thereby supporting inclusive agricultural development.

Conflict of interest

The author has no conflicts of interest to disclose.

Declaration of funding

The author received no financial support for this research, authorship, and/or publication of this article.

References

Aasoglenang, A. T., Kanlisi, S. K., Naab, F. X., Dery, I., Maabesog, R., Maabier, E. B., & Naa-Obmuo, P. (2013). Land access and poverty reduction among women in Chansa in the northwestern region of Ghana. *International Journal of Development and Sustainability*, 2(2), 1580–1596.

Afutu-Kotey, R. L., & Adjei-Holmes, A. (2009). *Land Policies and Women's Access to Land*. Accra: WILDAF.

Agarwal, B., & Mahesh, M. (2023). Does the landowner's gender affect self-cultivation and farm productivity? An analysis for India. *The Journal of Development Studies*, 59(5), 758–777.

Allen, T., Heinrigs, P., & Heo, I. (2018). *Agriculture, Food and Jobs in West Africa*. Technical Report 14 OECD Publishing. doi: 10.1787/dc152bc0-en.

Azumah, O. K., & Noah, S. (2023). Land Rights in Ghana. *Open Journal of Social Sciences*, 11(6), 20–32.

Bayisenge, J., Höjer, S., & Espling, M. (2015). Women's land rights in the context of the land tenure reform in Rwanda–the experiences of policy implementers. *Journal of Eastern African Studies*, 9(1), 74–90.

Berge, E., Kambewa, D., Munthali, A., & Wiig, H. (2014). Lineage and land reforms in Malawi: Do matrilineal and patrilineal landholding systems represent a problem for land reforms in Malawi? *Land Use Policy*, 41, 61–69.

Bortei-Doku-Aryeetey, E. (2002). Behind the norms: Women's access to land in Ghana. In C. Toulmin, P. L. Delville, & S. Traoré (Eds.), *The Dynamics of Resource Tenure in West Africa* (pp. 86–97). Portsmouth, NH: Heinemann.

Brempong, N. A. (2020). *Elite Succession Among the Matrilineal Akan of Ghana*. Routledge.

Britwum, A. O., Tsikata, D., Akorsu, A. D., & Ako, M. A. (2014). Gender and land tenure in Ghana: a synthesis of the literature.

Chigbu, U., Paradza, G., & Dachaga, W. (2019). Differentiations in Women's Land Tenure Experiences: Implications for Women's Land Access and Tenure Security in Sub-Saharan Africa. *Land*, 8(2), 22. doi: 10.3390/land8020022.

Connelly, L. M. (2021). Introduction to Analysis of Variance (ANOVA). *Medsurg Nursing*, 30(3).

Deere, C. D., Oduro, A. D., Swaminathan, H., & Doss, C. (2013). Property rights and the gender distribution of wealth in Ecuador, Ghana and India. *The Journal of Economic Inequality*, 11(2), 249–265.

Doss, C., & Meinzen-Dick, R. (2020). Land tenure security for women: A conceptual framework. *Land Use Policy*, 99, 105080.

Fonjong, L. N., & Gyapong, A. Y. (2021). Plantations, women, and food security in Africa: Interrogating the investment pathway towards zero hunger in Cameroon and Ghana. *World Development*, 138, 105293.

Food and Agriculture Organization (2002). *Gender and Access to Land*. Rome, Italy: FAO.

Ghana Statistical Service (2014). Ghana Living Standards Survey Round 6: Poverty Profile in Ghana (2005-2013).

Hilhorst, T. (2000). Women's Land Rights: Current Development in Sub-Saharan Africa. In C. Toulmin, & J. Quan (Eds.), *Evolving Land Rights, Policy and Tenure in Africa*. London: DFID/IIED/NRI.

Initiative, A. C. (2010). Analysis of the Cashew Sector Value Chain in Côte d'Ivoire.

Kang, M., Schwab, B., & Yu, J. (2020). Gender differences in the relationship between land ownership and managerial rights: Implications for intrahousehold farm labor allocation. *World Development*, 125, 104669.

Kuusaana, E. D., Kidido, J. K., & Halidu-Adam, E. (2013). Customary land ownership and gender disparity-evidence from the Wa municipality of Ghana. *Ghana Journal of Development Studies*, 10(1-2), 63–80.

Leslie, A. (2017). Gender and land rights in Ghana: A review. *Journal of Gender Studies*, 26(3), 300–315.

Matsuura, M., Chanda, O., Umetsu, C., Kodama, W., & Islam, A. H. M. S. (2023). Gender matters in farm investment: Implications for land tenure security and household welfare. *Institute of Developing Economies Discussion Paper*, (No. 902).

Mbow, C. (2020). Use it sustainably or lose it! The land stakes in SDGS for sub-Saharan Africa. *Land*, 9(3), 63.

Ministry of Food and Agriculture (2017). Agricultural sector progress report.

Ministry of Food and Agriculture (2020). 2019 Agricultural Sector Progress Report. Presented at 2020 Agricultural Sector Review (ASR), Accra, Ghana.

Mukasa, A. N., Salami, A. O., Kayizzi-Mugerwa, S., & John, C. (2015). Gender productivity differentials among smallholder farmers in Africa: A cross-country comparison, . (231).

Nettey, O. E. A., Zandoh, C., Sulemana, A., Adda, R., & Owusu-Agyei, S. (2010). Clustering of childhood mortality in the Kintampo Health and Demographic Surveillance System in Ghana. *Global Health Action*, 3(1), 5258.

de la O Campos, A. P., Covarrubias, K. A., & Patron, A. P. (2016). How does the choice of the gender indicator affect the analysis of gender differences in agricultural productivity? Evidence from Uganda. *World Development*, 77, 17–33.

Otsuka, K., Quisumbing, A. R., Payongayong, E., & Aidoo, J. B. (2003). Land tenure and the management of land and trees: the case of customary land tenure areas of Ghana. *Environment and Development Economics*, 8(1), 77–104.

Owusu, G., Yankson, P. W. K., & Obeng-Odoom, F. (2008). Indigenes' and migrants' access to land in peri-urban areas of Accra, Ghana. *International Development Planning Review*, 30(2), 177–198.

Quansah, E. S. T. (2012). Land tenure system: Women's access to land in a cosmopolitan context. *Ogirisi: A New Journal of African Studies*, 9, 141–162.

Reddy, A. A., Rani, C. R., Cadman, T., Reddy, B. S., & Reddy, G. P. (2018). Cashew cultivation in Ghana and its impact on rural livelihoods. *African Journal of Agricultural Research*, 13(16), 825–835.

Rünger, M. (2006). Governance, Land Rights and Access to Land in Ghana – A Development Perspective on Gender Equity, . 5th FIG Regional Conference, Accra, Ghana, March 8-11, 2006.

Sarpong, G. A. (2006). Improving women's access to land in Ghana: The role of customary land tenure systems. *Land Use Policy*, 23(3), 332–340.

Torkelsson, A., & Onditi, F. (2018). Addressing gender gaps in agricultural productivity in Africa: comparative case studies from Tanzania, Malawi and Uganda. *Journal of Sustainable Development Law and Policy*, 9(1), 34–57.

Toulmin, C. (2009). *Securing land and property rights in sub-Saharan Africa: The role of local institutions* volume 26. Land Use Policy.

Twyman, J., Useche, P., & Deere, C. D. (2015). Gendered perceptions of land ownership and agricultural decision-making in Ecuador: who are the farm managers? *Land Economics*, 91(3), 479–500.

Yankson, P., & Kala, M. (2008). *Access to Land, Tenure Security and Growth within the Informal Economy in the Urban and Peri-Urban Areas of Ghana*. Technical Report Technical Publication No. 82 Institute of Statistical, Social and Economic Research (ISSER), University of Ghana, Legon.

Yeboah, P. A., Guba, B. Y., & Derbile, E. K. (2023). Smallholder cashew production and household livelihoods in the transition zone of Ghana. *Geo: Geography and Environment*, 10(1), e00120.