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**Therese Mukamakuza, Dr Nason Vundi & Prof. Esther  
Mombo**

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# Land Ownership Structure and Women's Agricultural Productivity in The Eastern Province of Rwanda

<sup>1\*</sup>Therese Mukamakuza, <sup>2</sup>Dr Nason Vundi & <sup>3</sup>Prof. Esther Mombo

\*Email of the Corresponding Author: [mukamakuza@gmail.com](mailto:mukamakuza@gmail.com)

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## Abstract

Land ownership plays a foundational role in shaping agricultural productivity, particularly for women who comprise a significant portion of the rural farming population. Secure land tenure enhances access to credit, promotes long-term investment, and strengthens decision-making power, making it a critical factor for sustainable agricultural development. Despite progressive reforms in Rwanda such as the 2005 Organic Land Law and the Land Tenure Regularization (LTR) program women in the Eastern Province continue to face practical barriers to land access, control, and utilization. These barriers, often rooted in socio-cultural norms and weak institutional enforcement, undermine the transformative potential of legal reforms. This study assessed the influence of land ownership structures on women's agricultural productivity in the Eastern Province of Rwanda using a mixed-methods design. Quantitative data were collected from 327 women in agricultural cooperatives across seven districts. The study evaluated dimensions such as land tenure security, use of land as collateral, and control over agricultural decisions. Findings revealed that 86.3% of respondents agreed that secure land tenure significantly influenced productivity, while 73.8% identified credit access via land collateral as a key investment motivator. Additionally, 81.4% linked income from agricultural produce to secure ownership, and 82.6% cited rental income as an economic benefit. Women with formal land titles in Rwanda achieve higher yields, better decision-making, and greater financial autonomy, though cultural norms and administrative gaps hinder full benefits. Addressing these requires reforms that strengthen women's land control, credit access, and gender-responsive governance.

**Keywords:** *Land ownership, women farmers, agricultural productivity, Rwanda, land tenure security, gender equity*

## 1.1 Background to the Study

Agricultural land tenure policies play a crucial role in shaping women's agricultural productivity, especially in the rural areas of Eastern Province, Rwanda, where women form a significant share of the farming population. Despite their central role in agriculture, women's productivity remains suppressed by insecure land tenure, limited decision-making power, and lack of access to agricultural credit and extension services (Bayisenge, 2018). These limitations restrict their ability to invest in improved farming techniques, access input markets, and scale production. Stribe (2021) emphasizes that secure land ownership and clear tenure rights are foundational for empowering women and enhancing their agricultural contributions. In this context, land ownership structure emerges as a key determinant of whether women can translate effort into measurable productivity gains.

Rwanda has made significant progress in developing gender-inclusive land tenure reforms, especially through the Land Tenure Regularization (LTR) program, which has led to widespread issuance of joint land titles to married couples (USAID, 2023). Legal milestones such as the 2005 Organic Land Law and the 2013 Matrimonial Regimes Law have laid the foundation for stronger land rights for women. These reforms have improved formal access to land and helped close the ownership gap, but practical constraints persist, particularly in rural districts of the Eastern Province. Implementation gaps, socio-cultural resistance, and weak enforcement mechanisms still allow male-dominated customs to undermine legal protections (Bayisenge, 2018; Kamande & Bahati, 2019). This study, therefore, focuses on examining how these mixed legal and customary systems shape actual land access and, by extension, agricultural productivity for women.

While women in Eastern Province contribute disproportionately to agricultural labor, with a participation rate of 77 percent compared to 58 percent for men (NISR, 2023), they continue to face productivity constraints linked to insecure tenure. Women who lack formal land documentation often struggle to obtain credit, are excluded from extension programs, and have limited bargaining power in household decision-making. This creates a scenario where legal reforms, though ambitious, are not fully realized in practice, resulting in a disconnect between tenure rights and actual agricultural outcomes. Mutisi (2015) and Musahara and Huggins (2019) highlight those issues such as inheritance disputes and discrimination against widows and divorced women continue to restrict women's control over land. These local realities underscore the importance of looking beyond legal frameworks to assess real-world access and use of land, particularly in the agriculturally intensive Eastern Province.

The relationship between land ownership and women's agricultural productivity is grounded in theories that emphasize the intersection of resource access, institutional structures, and gendered power dynamics. At the core is the premise that secure land tenure enhances agricultural efficiency by increasing incentives for investment, improving access to credit, and enabling long-term land use planning (Deininger et al., 2021; Wehrmann et al., 2023). This study draws on perspectives from gender and development theory, particularly the efficiency approach, which argues that reducing gender-based constraints in resource ownership can lead to measurable improvements in productivity and household welfare (Elson, 1999; Njuki, Kruger & Starr, 2013). Women's ability to own and control land directly influences their capacity to make decisions on crop selection, technology adoption, and income utilization, all of which are critical to optimizing agricultural output (Ali, Deininger & Goldstein, 2014).

Additionally, the study is informed by property rights theory, which posits that clearly defined and enforceable land rights form the institutional basis for productive land use and resource stewardship (Bu & Liao, 2022; Gong et al., 2023). When women hold secure, legally recognized land rights, they are more likely to undertake soil conservation, adopt inputs, and access formal financial services—all essential components of sustainable agricultural development (Shen, Gan & Chen, 2024). Tenure insecurity limits women's ability to invest, restricts access to extension services, and reinforces male-dominated decision-making. Thus, land ownership serves as both a legal and economic asset, playing a critical role in empowering women and fostering inclusive development in agrarian economies like Rwanda.

Moreover, previous research on Rwanda's land tenure reforms has often been generalized and limited in scope. Studies by Ali *et al.* (2017), Bayisenge (2018), and Singirankabo and Willem Ertzen (2020) focus heavily on the success of land registration programs but offer little insight into

how land security affects actual productivity measures such as crop yields, investment behavior, and access to agricultural inputs or services. They also fall short of accounting for different categories of women, such as widows, female-headed households, or those in informal unions, whose experiences may vary significantly. By narrowing the focus to the Eastern Province and using a disaggregated lens, this study aims to provide a clearer understanding of how land ownership structure affects different women's productivity outcomes in agriculture.

Ultimately, this study contributes to filling the empirical and policy gap in understanding how land tenure structures directly impact women's agricultural productivity in Eastern Rwanda. As the country aspires toward inclusive economic growth and middle-income status (Rwigema, 2021), recognizing and addressing the limitations faced by rural women farmers is imperative. Despite Rwanda's progressive land laws, persistent socio-cultural practices undermine women's land control, necessitating targeted, evidence-based strategies. This study examines the real impact of land rights on women's agricultural outcomes across various ownership types and household contexts.

## **2.0 Literature Review**

While Rwanda has undertaken progressive legal reforms, including the 2006 land policy and the promotion of joint land ownership through the Land Tenure Regularization Program, implementation gaps remain pronounced in rural districts. Policies such as the Agricultural Gender Strategy (AGS) have been introduced to enhance women's participation, but in practice, traditional land allocation systems and community-level resistance to gender-equal land rights continue to impede meaningful outcomes (de Dieu & Zaaiman, 2019). These persistent disparities suggest that legal reforms alone are insufficient without a deeper structural shift in land ownership practices and enforcement mechanisms, particularly in rural areas where agriculture forms the backbone of livelihood.

If these issues are not addressed, the underutilization of women's agricultural potential will continue to undermine national development goals. Exclusion from secure land ownership perpetuates a cycle of low investment, low productivity, and limited economic empowerment. This not only marginalizes women economically but also reduces the overall efficiency and sustainability of Rwanda's agricultural sector. Given the heavy reliance on women's labor in food production, their continued disempowerment threatens national food security and hinders progress toward inclusive economic transformation and gender parity in agriculture.

While existing literature has explored Rwanda's land reforms at a national level, few studies have isolated the specific impacts of land ownership structures on women's productivity outcomes in Eastern Province. Research by Kamande and Bahati (2019) and Polavarapu (2018) has focused broadly on legal reforms, but they fall short of analyzing how ownership confirmation, access, and control over land directly influence productivity indicators for rural women. The lack of localized, disaggregated data makes it difficult to craft targeted policy responses that account for variations among female-headed households, widows, or those in informal unions. This study responds to that gap by examining how land ownership structures shape women's agricultural productivity in Eastern Rwanda.

The study sought to examine how land ownership structures influence women's agricultural productivity in the Eastern Province of Rwanda. It specifically focused on rural areas where agriculture is the main economic activity and where women constitute the majority of the



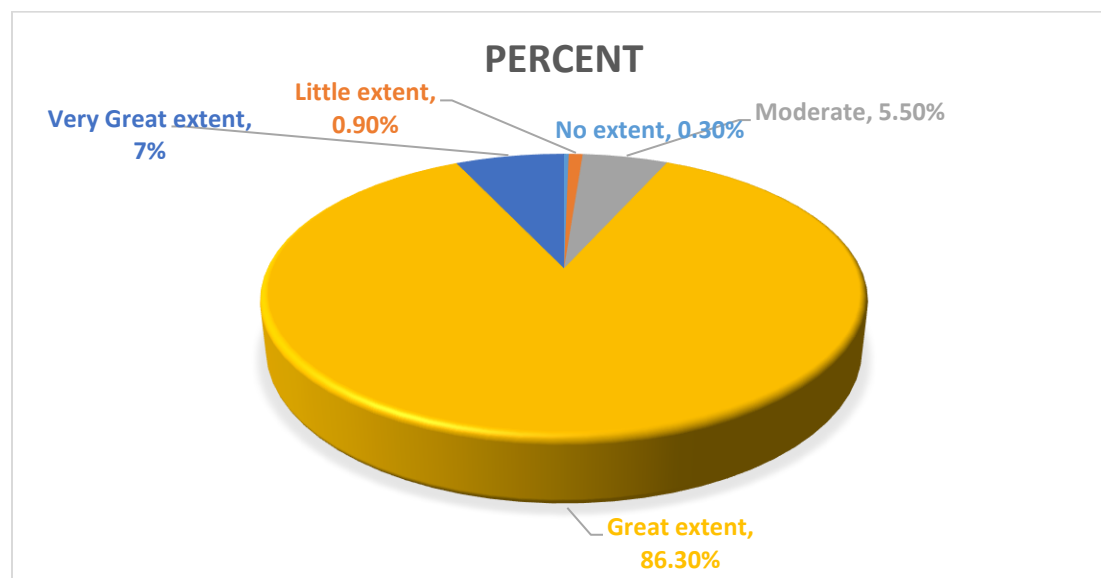
agricultural workforce. By concentrating on this region, the study aimed to assess the extent to which current land tenure policies facilitate or hinder women's ability to engage productively in agriculture. The scope was limited to women actively involved in agricultural cooperatives across seven districts, allowing for a focused analysis of how formal and informal land tenure arrangements impact productivity at the grassroots level. Urban land dynamics and non-agricultural land uses were excluded to maintain a clear emphasis on the rural agricultural context relevant to the study's objectives.

### 3.0 Research Methodology

This study adopted a quantitative research design within a positivist paradigm to investigate the influence of land ownership structure on women's agricultural productivity in Rwanda's Eastern Province. Using structured questionnaires, data were gathered from 327 women in agricultural cooperatives across seven rural districts, capturing information on ownership status (formal, informal, customary), tenure security, land use as collateral, and productivity indicators such as yields and income. Stratified sampling ensured demographic and regional representation, while a pilot in Kamonyi District yielded a Cronbach's alpha of 0.80, confirming instrument reliability. Data analysis through SPSS combined descriptive statistics to outline trends with inferential tests to explore relationships between land tenure and productivity, generating evidence to guide gender-responsive land reform and rural development policy.

### 4.0 Findings

To understand the impact of land ownership structures on agricultural productivity, respondents assessed the influence of these policies. This evaluation was critical for identifying how ownership policies affect farmers' access to resources, investment, and adoption of innovations. The findings, which reveal insights into the alignment of these policies with the needs and challenges faced by farmers in Eastern Rwanda, are summarized in Figure 1;



**Figure 1: Perceived Impacts of Agricultural Land Ownership on Agricultural Productivity**

The findings from Figure 1, derived from responses of 325 participants, indicate a strong consensus regarding the impact of land ownership policies on agricultural productivity. A significant majority, 280 respondents (86.3%), believe that these policies affect productivity to a

great extent. Additionally, 23 respondents (7.0%) feel that the impact is very great. In contrast, only a minimal proportion of respondents perceive a limited effect: 1 respondent (0.3%) indicated no impact, and 3 respondents (0.9%) felt the impact is minimal. The remaining 18 respondents (5.5%) acknowledged a moderate extent of influence. This distribution of responses highlights the prevailing view that secure and clearly defined land ownership policies are crucial for enhancing agricultural productivity. The high percentage of respondents who attribute a significant impact to these policies suggests a broad recognition of their importance in facilitating agricultural investments and practices.

The findings of this study closely align with the Gender Analysis Framework, which emphasizes the ways in which gender roles, access to resources, and institutional norms influence development outcomes. A core concept within this framework is the differentiation between practical gender needs, which relate to the immediate necessities required for women to perform their socially assigned roles, and strategic gender needs, which address the underlying structural inequalities and power dynamics that limit women's long-term empowerment (Anditi *et al.*, 2022). In the context of Eastern Rwanda, the study revealed that although women are central to agricultural labor, their potential to increase productivity remains restricted. Key constraints include insecure land tenure, insufficient control over land-based decisions, and marginal participation in resource allocation processes. These findings reinforce the importance of land tenure policies that simultaneously respond to short-term agricultural needs and address deeper structural barriers to gender equity.

The access and control profile, a critical component of the Gender Analysis Framework, was particularly useful in assessing who has access to and who controls key agricultural resources. The study found that Rwanda's national land reforms, including the Land Tenure Regularization program, have increased women's formal access to land through mechanisms such as joint titling. However, actual control over land use, management decisions, and distribution of benefits remains predominantly in the hands of male household members. Women often possess joint or customary titles, yet lack decision-making authority regarding land-based investments or sales. This disparity between formal access and substantive control aligns with the framework's assertion that legal recognition alone is insufficient. Effective development interventions must also address entrenched social hierarchies and intra-household power relations that limit women's autonomy (Walby, 1990; Yeatman, 1990).

Another dimension of the framework, the activity profile, proved highly relevant in this study. It documents the division of labor along gender lines and revealed that women in Eastern Province carry the primary burden of agricultural labor. Responsibilities such as planting, weeding, and harvesting are predominantly undertaken by women, yet these contributions are often unacknowledged in land ownership structures. Focus group discussions confirmed that although women perform the majority of physically demanding tasks, they are rarely consulted in decisions related to credit access, agricultural sales, or land improvement. These patterns reflect Burton's (1987) concept of the mobilization of masculine bias, in which institutional and familial systems attribute value and control to male actors while marginalizing the economic contributions of women.

Despite Rwanda's progressive land laws, institutional bias continues to shape unequal outcomes. For instance, although the 2005 Organic Land Law mandates joint titling for married couples, implementation at the local level often diverges from national policy. In many cases, land titles are issued in the husband's name alone, or disputes arise during inheritance and succession

processes that disadvantage women (Kamande and Bahati, 2019). These findings support the work of Britton (2016) and Wajcman (2009), who argue that gendered norms are embedded not only in social practices but also in the very design and administration of formal institutions. As a result, gender-sensitive laws may be undermined during execution, weakening their intended impact.

This study reveals that gender roles in Eastern Rwanda are evolving, with younger women challenging traditional land allocation norms and seeking individual land ownership. However, progress is hindered by structural barriers such as limited financial access, low legal literacy, and resistance from community leaders. These findings highlight the need to adapt the Gender Analysis Framework to reflect shifting gender dynamics and the impact of policy change and economic transformation, as emphasized by Kvande (2007).

### Key Motivators for Investment in Agriculture

Table 1 provides a detailed overview of the key motivators for investment in agriculture, based on responses from 325 participants. The data highlights four primary factors influencing agricultural investment: the ability to use land as collateral and increased access to investment capital, general income streams through agricultural produces, improved crop produce, and rental income/property income. These factors were assessed to understand their impact on farmers' investment decisions and provide insights into how land ownership policies influence agricultural productivity.

**Table 1: Key Motivators for Investment in Agriculture**

Key Motivators	Not at all	Small extent	Moderate	Great extent	Very great extent	Mean	Std. Dev
Able to use land as collateral and increased access to investment capital	3 (0.9%)	5 (1.5%)	11 (3.4%)	66 (20.1%)	240 (73.8%)	4.68	0.72
General of income streams through agricultural produces	2 (0.6%)	2 (0.6%)	5 (1.5%)	51 (15.5%)	265 (81.4%)	4.8	0.56
Improved crop produce	1 (0.3%)	3 (0.9%)	12 (3.7%)	49 (14.9%)	260 (79.9%)	4.8	0.61
Rental income/property income	3 (0.9%)	6 (1.8%)	9 (2.7%)	38 (11.6%)	269 (82.6%)	4.77	0.69

The findings reveal that the ability to use land as collateral and increased access to investment capital is a significant motivator for agricultural investment. With 240 respondents (73.8%) rating this factor as having a "very great extent" impact, the mean score of 4.68 and a standard deviation of 0.72 indicate a strong consensus on the importance of land as collateral for accessing capital. This high level of agreement underscores the critical role that secure land tenure plays in enabling farmers to obtain the necessary financial resources for investment and development.

The factor of general income streams through agricultural produce was rated by 265 respondents (81.4%) as having a "very great extent" impact on investment decisions, with a mean score of 4.80 and a standard deviation of 0.56. This indicates that the potential for generating consistent income from agricultural outputs is a significant motivator for women's investment in farming. Similarly, improved crop produce was identified by 260 respondents (79.9%) as having a "very great extent"

influence on agricultural investment decisions, with a mean score of 4.80 and a standard deviation of 0.61, underscoring the importance of yield improvements as a driver for productivity-related investments.

In addition, rental income or property income was cited by 269 respondents (82.6%) as having a "very great extent" influence on investment, with a corresponding mean of 4.77 and a standard deviation of 0.69. This demonstrates that income derived from land leasing or property use constitutes a significant incentive for increased agricultural investment among women landholders. Collectively, these findings reveal that multiple income-generating avenues tied to land ownership structure are crucial for motivating sustained agricultural development.

These results align with prior quantitative studies which affirm the link between secure land tenure and agricultural investment. For instance, Akinyemi and Mushunje (2019) emphasize that secure land tenure is essential for accessing financial resources and making long-term investments. Deininger et al. (2017) similarly argue that stable land rights form the basis for enhanced farm productivity through improved credit access and input utilization. The current study corroborates these findings, with 73.8% of respondents identifying the ability to use land as collateral as a key investment motivator, supported by a mean score of 4.68 and standard deviation of 0.72. This evidence confirms that secure land tenure not only facilitates access to credit but also encourages capital allocation toward farming activities that boost productivity and rural livelihoods.

However, this study also highlights ongoing challenges, particularly in practical implementation issues related to land reforms. These challenges resonate with findings from South Africa, where despite efforts to improve land access, agricultural productivity remains constrained by implementation gaps. Akinyemi and Mushunje (2019) note that although policies aim to enhance land access, practical issues often undermine their effectiveness. This is reflected in the current study's results, which indicate that while land ownership policies are generally viewed positively, significant practical challenges persist.

The findings of this study align with global literature emphasizing the central role of secure land tenure in stimulating agricultural investment. Unlike European studies such as Zullo *et al.* (2021), which focus on the negative impacts of urban land conversion on agricultural productivity, this study highlights how secure land tenure within existing rural settings enhances productivity by encouraging long-term investments. A significant 73.8% of respondents in Eastern Rwanda identified the ability to use land as collateral and access investment capital as primary motivators for agricultural development, supported by a high mean score of 4.68 (SD = 0.72). This aligns with Bedi *et al.* (2020), who found that motivational factors, such as resource access and financial stability, are crucial for encouraging farmers' adoption of improved agricultural practices. The findings here reinforce the view that secure land rights form a vital foundation for investment and innovation in agriculture, particularly among women in rural contexts.

Further contextual support is found in studies by Darmawan *et al.* (2023), who emphasized the importance of structured community-based management systems like Bali's Subak in improving agricultural outcomes. Though focused on traditional governance, their findings parallel this study's results, where respondents stressed that tenure security, like Subak's community structure, provides the stability needed for long-term improvements. Similarly, Khoshnava *et al.* (2020) and Ranjan *et al.* (2019) noted that financial, infrastructural, and policy-related factors significantly influence agricultural motivation. This is echoed in the current study's findings, with respondents assigning a high mean score of 4.80 (SD = 0.56) to improved income from agricultural production



as a motivator. These economic drivers, alongside policy-backed land rights, demonstrate the interconnected nature of secure tenure, financial access, and investment behavior in sustaining productivity.

In contrast to Jambor and Szerletics (2022), who found a decline in motivation due to dependency on subsidies in parts of Europe, this study highlights that secure land tenure and financial empowerment are stronger motivators in Eastern Rwanda. Unlike Pechrová et al. (2018), who emphasized personal motivations in the Czech Republic, this research underscores the importance of structural factors such as legal land security and access to capital. Qualitative data revealed that women with secure tenure are more likely to invest in long-term agricultural improvements, supporting Akinyemi and Mushunje (2019) and Deininger et al. (2017), who argue that secure tenure systems are essential for boosting productivity and sustaining rural livelihoods. Thus, land tenure security is crucial for economic development and transformative agricultural investment in such contexts.

## **5.0 Conclusion**

This study concludes that land ownership structure is a critical determinant of women's agricultural productivity in the Eastern Province of Rwanda. The findings demonstrate that secure and clearly defined land tenure significantly enhances women's ability to invest in agriculture, access credit, and derive diverse income streams from land-based activities. With 86.3% of respondents acknowledging a strong influence of land tenure on productivity, and over 80% affirming land's role in enabling collateral, crop yield, and rental income, the evidence points to the central role of tenure security in empowering women economically.

Nonetheless, persistent structural barriers—such as patriarchal inheritance systems, informal tenure arrangements, and weak enforcement of gender-sensitive laws—continue to limit women's control over land and agricultural decisions. These constraints undermine the intended benefits of progressive legal reforms like joint titling and land regularization. Therefore, while Rwanda has made commendable progress in formalizing women's land rights, the transition from statutory recognition to actual economic empowerment remains incomplete. Bridging this gap requires an integrated approach that combines legal reform with institutional accountability, gender-responsive land governance, and targeted investment in rural women's agricultural capacities. Addressing these challenges is essential not only for advancing gender equity but also for strengthening agricultural productivity and achieving inclusive rural development.

## **6.0 Recommendations**

The study recommends strengthening gender-responsive land tenure reforms that prioritize secure and formal land ownership for women in the Eastern Province of Rwanda. It emphasizes the need to simplify and decentralize land registration systems to enhance accessibility for rural women and ensure their inclusion in land governance structures. The study further recommends that empowerment initiatives incorporate legal literacy, access to agricultural inputs, and microcredit services tailored to women's needs. Additionally, engaging male counterparts in gender-transformative dialogues is encouraged to support equitable decision-making in land matters. By addressing structural, cultural, and economic barriers, these recommendations aim to enhance women's agricultural productivity and contribute to sustainable rural development.

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