



East African Journal of Environment and Natural Resources

eajenr.eanso.org

Volume 8, Issue 1, 2025

Print ISSN: 2707-4234 | Online ISSN: 2707-4242

Title DOI: <https://doi.org/10.37284/2707-4242>



EAST AFRICAN
NATURE &
SCIENCE
ORGANIZATION

Original Article

The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi

Niyongabo Nadege¹, Robert Turyamureeba² & Prize Tayebwa^{2*}

¹ Université Lumière de Bujumbura, PB, 1368 Bujumbura, Burundi.

² Bishop Stuart University, P. O. Box 09, Mbarara, Uganda.

* Correspondence ORCID ID: <https://orcid.org/0009-0001-5091-1721>; Email: tayebwaprize2000@gmail.com

Article DOI: <https://doi.org/10.37284/eajenr.8.1.2938>

Date Published: ABSTRACT

02 May 2025

Keywords:

Women
Empowerment,
Hunger,
Access to Land,
Financial Inclusion,
Targeted Legislation.

The global catastrophe of hunger is getting worse every day. According to recent figures, severe nutritional deprivation affects almost 9.2% of the global population. Recent statistics suggest that more than a billion people in Asia, 676 million people in Africa, and 188 million people in Latin America suffer from starvation. Despite dominating the agricultural sector, women suffer disproportionately from hunger. The effectiveness of programs aimed at empowering women in the agricultural development of Burundi's Mugamba region is investigated in this study. We adopted a cross-sectional study using mixed methods to enable concurrent triangulation. The results show that women's agricultural productivity is highly impacted by limited access to land, with a mean score of 3.2007 and a standard deviation of 1.37476. Just 41.4% of women in the Mugamba region are empowered across five domains, indicating a lack of meaningful empowerment. We recommend strategic adjustments to indicators that lead to disempowerment, such as non-farm earning options and educational initiatives, development of the infrastructure as well as close oversight and assessment of empowerment. Meaningful involvement of more women in agriculture can lead to increased child nutrition and food security as well as other positive socio-economic impacts such as increased household income. Furthermore, there is a need for targeted legislation and financial assistance to women in Burundi's agricultural industry. To fully comprehend the significance of women's empowerment in this particular setting, more research is required.

APA CITATION

Nadege, N., Turyamureeba, R. & Tayebwa, P. (2025). The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi. *East African Journal of Environment and Natural Resources*, 8(1), 346-359. <https://doi.org/10.37284/eajenr.8.1.2938>.

CHICAGO CITATION

Nadege, Niyongabo, Robert Turyamureeba and Prize Tayebwa. 2025. "The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi". *East African Journal of Environment and Natural Resources* 8 (1), 346-359. <https://doi.org/10.37284/eajenr.8.1.2938>

HARVARD CITATION

Nadege, N., Turyamureeba, R. & Tayebwa, P. (2025) "The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi", *East African Journal of Environment and Natural Resources*, 8 (1), pp. 346-359. doi: 10.37284/eajenr.8.1.2938.

IEEE CITATION

N., Nadege, R., Turyamureeba & P., Tayebwa "The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi", *EAJENR*, vol. 8, no. 1, pp. 346-359, May. 2025. doi: 10.37284/eajenr.8.1.2938

MLA CITATION

Nadege, Niyongabo, Robert Turyamureeba & Prize Tayebwa. "The Efficacy of Women Empowerment Initiatives in Agricultural Development of Mugamba Region, Burundi". *East African Journal of Environment and Natural Resources*, Vol. 8, no. 1, May 2025, pp. 346-359, doi:10.37284/eajenr.8.1.2938

INTRODUCTION

The Complete Women's Empowerment in Agriculture Index (WEAI), is a survey-based index that was created to gauge the inclusion, empowerment, and agency of women in the agricultural industry. It is based on research that develops indicators of agency and empowerment (Narayan and Petesch, 2007). The full WEAI was first created in 2012 under the auspices of the US government's Feed the Future Initiative, with technical assistance from the Oxford Poverty and Human Development Initiative (OPHI) and the International Food Policy Research Institute (IFPRI). Since then, many organizations have made extensive use of the WEAI to measure gender parity and empowerment in agriculture, both to track progress over time and identify areas where empowerment could be strengthened (Malapit et al., 2015).

The global catastrophe of hunger is getting worse every day. According to recent figures, severe nutritional deprivation affects almost 9.2% of the population. More than a billion people suffer from starvation in Asia, whereas 676 million people in Africa and 188 million people in Latin America suffer from hunger (FAO, 2019). Lack of access to dependable sources of nourishment is a persistent and significant issue in East Africa, especially in Burundi (Mohamed, 2017). According to a 2012 assessment by the FAO and other organizations, 3.2 million people were not getting enough food at that time. According to the Food Security Information Network (2020), this number increased to 4.5 million in 2015, 5.6 million in 2017, 8.13 million in

2019, and 12.1 million in the most recent year (WFP and FAO, 2021).

Global food security is thought to be significantly impacted by gender equality (Aziz et al., 2020). Numerous studies, such as the one by Quisumbing and Pandolfelli (2010), show a clear link between gender inequality and food insecurity, particularly when it comes to disadvantaged or repressed women who are frequently unable to obtain essential resources. Furthermore, as per the 2009 FAO Report on Gender Equity in Agriculture and Rural Development, women have limited access to resources and typically produce less than their potential. In its 2019 Global Gender Gap Report, the World Economic Forum (WEF) placed Burundi 132nd out of 153 nations.

The nation was placed 140th out of 156 countries in 2020, according to the report. UN Women (2018) reports that women in Burundi are severely marginalized in the social, political, and economic sectors and have limited ability to make decisions that impact their lives. Additionally, they have restricted access to resources and services. It is well known that attaining gender equality and empowering rural women on the social, political, and economic fronts is the only way to secure food (Care, 2020; Van Dijk & Nkwana, 2021; Visser & Wangu, 2021). According to statistics, if women had access to productive resources, up to 30% of the world's agricultural productivity might be preserved, and 2.5-4% of barriers to agricultural output in developing nations could be eliminated.

Moreover, equitable opportunities for women have been linked to a 12- to 17% drop in global hunger. From a household perspective, better food distribution is more likely when a woman has significant decision-making authority inside her family, which is advantageous for everyone's health and happiness. Even though there are several obstacles to gender equality, such as political, technical, and financial ones, it is abundantly evident from published research (such as CFS, 2017) that the main causes of women's lack of empowerment and food security are structural hurdles and social norms. Conventional roles give men a greater share of paid work and a disproportionate share of unpaid labour to women. They also prevent women from accessing assets, markets, and financial capital, which lowers their self-confidence. Furthermore, studies like Didana's (2019) on socioeconomic variables, including age, family size, and educational attainment have revealed several components that influence how much women are empowered in agriculture. These include things like the income of the household, work status, ownership of real estate, or even having access to credit and being close to a market.

Many studies on rural development prioritize the impact of female empowerment through agricultural labour (Imai et al., 2014; Lépine & Strobl, 2013). According to Duflo (2012), there is a discernible difference between men's and women's spending patterns and wealth accumulation. It has been noted that women contribute much more to their loved ones' health security. Though Lépine and Strobl (2013) and Imai et al. (2014) contend that women's empowerment alone cannot guarantee food security for households, Akter et al. (2017) argue that this notion needs to be re-evaluated in light of contextual factors, especially development policies and their execution. According to Akter et al, it is critical to take into account context-specific as well as multidimensional factors when determining the relative importance of women's empowerment about factors like food security and nutrition. Furthermore, according to Akter et al.,

significant policies about gender equality should include contextual factors throughout their formulation. Empowerment of women is strongly correlated with the results of family life, especially when it comes to food security. Research such as Schutter (2013) and Sraboni et al. (2014) have illustrated this relationship by illustrating how women's assets and decision-making power give them the leverage that increases their likelihood of assisting in securing food security for their households.

Additionally, Aziz et al. (2020) discovered that factors positively correlated with women's rights, including leadership potential, agricultural production, asset ownership, and time spent on farms, all had a major effect on levels of food security. However, there isn't much actual data on this topic in Ethiopia, partly because most studies have primarily looked at nations in South Asia. In their investigation into the variables influencing women's empowerment in Ethiopia, Girma and Singh (2019) discovered that a large number of these variables are institutional and sociodemographic. However, although being presumed important for guaranteeing household food security, economic issues, including asset ownership and off-farm and non-farm income, have received little attention.

Women's empowerment in agriculture contributes to household food security, according to Yimer and Tadesse (2016), who link the two fields under the agriculture food security development paths. The integration of women's empowerment with overall household food security is limited by the primary focus of these studies, which is the relationship between women's nutritional status and their capacity to impact their offspring. Furthermore, a methodological flaw in research has been found: none of them have used the proper econometric models to assess the impact using propensity score matching without taking unobserved component variables into account. In light of this, the study maintains that an empirical and rigorous

investigation that established a fact-based relationship between the empowerment of women and the food security of farming households has added to the body of knowledge pertinent to the design and execution of successful development interventions.

Context

Landlocked in the Great Rift Valley, the Republic of Burundi sits at the intersection of East Africa and the African Great Lakes region. Similar to the rest of African nations, 40% of the nation's GDP comes from agriculture, which also employs the majority of the labour force (African Development Bank Group (ADB, 2024). Though many Burundians rely on agriculture as their main source of income, it's important to acknowledge the frequently underappreciated contribution that women make to this industry. Like in many other parts of the world, women are essential to agriculture in Burundi, yet their contributions are frequently unseen. They work in all phases of the agriculture value chain, from planting and tending crops to harvesting and selling produce, and they comprise 60% of the agricultural workforce (UN Women, 2024). Even with their invaluable contribution, women still encounter several obstacles that prevent them from participating fully and from achieving economic emancipation. For women working in Burundi's agricultural industry, unequal access to land and productive resources stands out as a serious barrier.

Burundi's land inheritance laws, like those of most African nations, are based on a patriarchal model, with women having restricted access to land, which limits their ability to get government loans and aid for agriculture. This disparity threatens women's economic independence and ability to make decisions for themselves and their families, as well as their capacity to increase the scope of their agricultural endeavours. Investing in women in Burundi's agriculture is strategically crucial for sustainable growth as well as a question of social justice. Research indicates that reducing gender disparities in agriculture can have a substantial

positive impact on food security, poverty reduction, and economic growth. Burundi can unleash a surge of creativity, resilience, and production that benefits entire communities by realizing the potential of women.

Due to patriarchal inheritance rights, women in Burundi face major obstacles when trying to obtain land and productive resources, despite their immense contribution to the agriculture sector (making up 60% of the workforce in this sector and contributing significantly to the 40% GDP of the nation). This restricts their access to loans and other agricultural support, which weakens their capacity for economic empowerment and general productivity (UN Women, 2024; African Union, 2024). Improving food security, lowering poverty, and promoting economic growth in Burundi require removing these obstacles (FAO, 2023). The Women's Empowerment in Agriculture Index (WEAI) is a crucial assessment tool that will be used in this study to examine the effects of women's empowerment on family food security and agricultural productivity in Burundi (Malapit et al., 2015).

METHODOLOGY

To achieve a thorough assessment, we adopted a cross-sectional mixed-methods study employing a concurrent triangulation design to assess the efficacy of women's empowerment initiatives in agricultural development in the Mugamba Region of Burundi. The quantitative component involved a survey of 300 women farmers randomly selected from the Mugamba Region. A structured questionnaire was used to collect data on demographic characteristics, agricultural practices, and participation in women's empowerment initiatives. Descriptive statistics and inferential statistics (chi-square test and logistic regression) were used to analyze the quantitative data. The qualitative component involved in-depth interviews with 30 key informants, including women farmers, community leaders, and representatives from local non-governmental organizations (NGOs) involved

in women empowerment initiatives. The interviews explored the perceived impact of women's empowerment initiatives on agricultural development, challenges faced by women farmers, and potential solutions to address these challenges. Thematic analysis was used to analyze the qualitative data. Both quantitative and qualitative data were integrated by comparing and contrasting the findings to provide a comprehensive understanding of the efficacy of women's empowerment initiatives in agricultural development.

LITERATURE REVIEW

Sub-Saharan Africa (SSA) is still the "only region in the world for which the number of poor individuals has risen steadily and dramatically between 1981 and 2010" (The World Bank, 2013, para. 4), even though poverty rates and percentages have drastically decreased over the past 30 years. Over the past forty-five years, the percentage of the population in this region living in poverty has increased by twice. These people make up almost one-third of all those who are extremely poor worldwide (The World Bank, 2013). Six out of ten individuals who make up the world's poorest population are women. According to Women Thrive Alliance (2014), almost 20.0% of women in SSA nations suffer from malnutrition.

According to Cho (2014), paragraph 2, these poor women are more likely to experience "violence, unfair labour and housing practices, discriminatory pricing, and danger at work and home." According to Momsen (2004), "gender equality enhances development, while countries and societies that support gender discrimination pay a price in more poverty, slower growth, and a lower quality of life". In developing nations' agricultural industries, women make up 43.0% of the labour force on average, and this percentage is much higher in Sub-Saharan Africa (FAO, 2014; Beintema & Di Marcantonio, 2009; Lastarria-Cornhiel, 2006).

According to Ali et al. (2015), women make up 53% of Burundi's agricultural workforce, and in all of Sub-Saharan Africa, they are expected to generate around 80% of "foodstuffs for household consumption" (Ben-Ari, 2014, para. 1). Though this is the case, women own less than 15.0% of land worldwide, and in Burundi, similar plots farmed by women yield about 33.0% less than those owned by men (Ben-Ari, 2014; FAO, 2011; Lecoutere, 2017; O'Sullivan et al., 2014; The World Bank Group, 2016). In Burundi, female farmers produce between 13.0 and 23.0% less than their male colleagues on average (Ali et al., 2015; O'Sullivan et al., 2014).

The FAO (2011) found that women's access to "productive resources and opportunity" is significantly lower than that of men (p. 5). This disparity in access extends to a variety of assets, inputs, and services, including labour, land, education, financial services, technology, and extension services, Wesseler, & Boto (2002); Odame, et al. (2002); O'Sullivan et al. (2014); The ONE Campaign, 2015; USAID, 2015). "Inequalities in the share of wealth within a household have important consequences for women's empowerment and bargaining power, as well as household wellbeing, such as education, health, and food and nutrition security," according to Dancer and Hossain (2017), who also dubbed this condition the "gender asset gap" (p. 15, 165).

This situation places significant obstacles and constraints on women working in the agricultural sector, which in turn lowers the sector's potential and capability overall as well as the economy and society of the corresponding country (FAO, 2011; Lecoutere, 2017; The ONE Campaign, 2015). According to research by Ali et al. (2015), women in Burundi have less land than men on average (5.0–7.0%), have less access to extension services, and use lower-quality inputs like herbicides and fertilizers. These figures are accurate even though women work longer hours on average than males (140 days compared to 121 days), and because women are more likely to work in fields related to

"agribusiness, food processing, and consumer-related activity" (Odame et al., 2002, p. 3).

Men are also proven to cultivate more cash crops than women, which boosts their earnings even more (Ali et al., 2015). Further research revealed that men are more likely than women to have access to manual labourers and household workers, which could lead to even higher levels of production (O'Sullivan et al., 2014). Women's financial empowerment would reduce the risk of hunger and disease in children and youths by increasing rates of vaccination and improving child nutrition (Cho, 2014; FAO, 2011; Lecoutere, 2017; USAID, 2017).

According to a 2008 study by Case and Paxson (quoted in Banerjee & Duflo, 2011), childhood malnutrition has a direct impact on children's achievement as adults and so contributes to the poverty trap. They added: "Undernourished Children have a higher probability of growing up to be short adults, achieving less in school, and giving birth to smaller babies. According to Banerjee & Duflo (2011), pp. 31-32, "lower economic status in adulthood is also associated with undernutrition." According to this research, women who are economically empowered eventually empower their children and their countries. Formal financial systems also remain inaccessible to women than men (Cho, 2014; FAO, 2011; The ONE Campaign, 2015), and more women struggle to obtain loans, which can be critical for those in the agricultural sector already facing financial hardship.

According to the UN, over 1.3 billion women lack access to banking accounts and no means of establishing or gaining credit (UN Women, 2014). Yet credit is necessary to acquire land, machinery, fertilizers, irrigation, and high-quality seeds, as well as to hire labour, (Ben-Ari, 2014). In contrast to their male counterparts, women in the agricultural industry are much more disadvantaged when there are no credits (Ben-Ari, 2014). Each of the five domains could offer extensive and useful criteria for measuring women's empowerment. Each raises a concern that poor and powerless women in

developing countries, particularly in Burundi face. Women in the four districts of Burundi examined were found to be the most disempowered when it came to "access to and decisions on credit, group membership, workload, and leisure [time]" in a pilot test utilizing the WEAI. On page 11, Alkire et al. (2013).

The index may be used as an illustration of significant obstacles to women's empowerment and as a guide for those wishing to empower women through the agricultural sector. This montage of obstacles creates opportunities for outside groups to penetrate communities and offer various forms of support. INGOs and other nonprofits are widely dispersed throughout Sub-Saharan Africa (SSA), including Burundi. Many of these groups focus on empowering women via agriculture to improve their communities, and occasionally they collaborate with regional NGOs (Boli & Thomas, 1997; Uphoff, 1993). Many organizations decide to take this approach by creating cooperative groups and offering microfinance options.

To "enable people to move out of poverty," microfinance links productive capital, such as financial support, with human capital, such as education and training, and social capital, such as organizations, the advancement of democracy, and the bolstering of human rights (Otero, 1999, p. 11). According to a thesis study carried out in Burundi, the majority of women look for work or borrow money from microfinance organizations for four reasons: to pay for their children's education; to meet the needs of the household; to grow or launch a new business; or to acquire personal assets (Nabayinda & Wallevik, 2014). 31.0% of loans taken out by women were used for personal or family expenses, compared to only 23.0% of loans taken out by men, according to a survey done by the International Labor Organisation (Majurin, 2012).

The literature review has demonstrated the pivotal role that women empowerment initiatives play in enhancing agricultural development in developing countries. Despite the challenges and constraints

faced by women farmers, empowerment initiatives have been shown to improve agricultural productivity, increase income, and enhance food security. The review highlights the importance of addressing the socio-cultural and economic barriers

that hinder women's participation in agricultural development.

FINDINGS/RESULTS

Table Showing the Mean and Standard Deviation of Interview Response

Response	Mean	Std. Deviation
To what extent do you agree that limited access to land negatively impacts the agricultural productivity of women in Burundi?	3.2007	1.37476
How significant do you find the lack of access to productive resources (seeds, fertilizers, tools) in hindering the economic productivity of women farmers?	3.0036	1.05351
To what extent do you believe that women's limited access to land affects their ability to implement modern farming techniques?	3.1131	1.12496
How much do you agree that women with more access to land produce higher crop yields compared to those with limited access?	2.8321	.98016
To what degree do you think limited access to land contributes to the overall economic disparity between male and female farmers in Burundi?	2.4088	1.19862
How significant is the impact of patriarchal land inheritance laws on women's access to agricultural loans in Burundi?	2.5730	1.12423
To what extent do you agree that lack of collateral is a major barrier for women seeking agricultural loans?	3.1314	1.15036
How much do you agree that women face more bureaucratic hurdles than men in accessing government agricultural assistance programs?	2.8066	.96219
To what extent do you believe that cultural norms limit women's access to agricultural resources and support?	2.5146	.93848
How significant do you find the lack of targeted financial products for women in agriculture in Burundi?	2.2190	1.21478
How effective do you think policy reforms in land inheritance laws would be in improving women's access to land?	3.1642	1.28332
To what extent do you agree that creating women-focused agricultural credit programs would enhance their economic productivity?	2.9964	1.17513
How effective would community education programs on gender equality be in changing cultural norms that restrict women's access to agricultural resources?	3.1788	1.31800
To what degree do you believe that providing women with technical training and extension services would improve their agricultural productivity?	2.5511	.91344
How much do you agree that government subsidies for women farmers would help close the productivity gap between male and female farmers?	2.4526	1.27225
How much do you agree that empowering women in agriculture will lead to increased food security in Burundi?	2.5365	1.04852
To what extent do you believe that economic empowerment of women in agriculture can reduce poverty levels in Burundi?	3.5036	1.47816
How significant do you find the potential for increased agricultural productivity if women had equal access to resources?	3.1679	1.12298
To what extent do you agree that empowering women in agriculture will stimulate broader economic growth in Burundi?	3.0292	1.08565
How much do you believe that supporting women in agriculture can lead to more sustainable agricultural practices?	2.7920	.91616
Valid N (listwise)		

Source: Field Data 2024

With a mean of 3.2007 and a standard deviation of 1.37476, the results show a strong consensus that women's agricultural output in Burundi is adversely affected by limited access to land. This is consistent with the body of research that shows women have significant barriers when it comes to obtaining land and other productive resources, which lowers production. Women's agricultural output is lower because they have less access to resources and land, according to FAO (2011) and Beintema & Di Marcantonio (2009). Another major obstacle identified was the inability to obtain productive materials like fertilizer and seedlings (mean = 3.0036, SD = 1.05351). Lecoutere (2017) and FAO (2011) state that access to necessary inputs is frequently restricted for women farmers, which further reduces their output.

The answers made clear the difficulties women encounter when trying to obtain loans and other agricultural support. A significant obstacle is the lack of collateral, as indicated by the mean answer of 3.1314 (SD = 1.15036). This is in line with research by UN Women (2014) and The ONE Campaign (2015), which emphasize that women's limited access to formal financial systems limits their capacity to get loans. Laws about patriarchal land inheritance were also identified as major obstacles (mean = 2.5730, SD = 1.12423). According to Dancer & Hossain (2017), traditional inheritance customs frequently prevent women from owning land, which reduces their access to economic prospects.

According to the responses, women's access to land may be significantly improved by policy changes in land inheritance rules (mean = 3.1642, SD = 1.28332). According to published research, these

kinds of changes are essential to increasing women's economic involvement (FAO, 2011). The effectiveness of developing agricultural financing programs targeted at women was deemed to be modest (mean = 2.9964, SD = 1.17513). By offering essential financial support, tailored financial products can dramatically increase women's productivity, claims Ben-Ari (2014).

Potential economic gains, including improved food security (mean = 2.5365, SD = 1.04852) and decreased poverty (mean = 3.5036, SD = 1.47816), were highly correlated with women's empowerment in agriculture. Research by Cho (2014) and FAO (2011), which shows that women's economic empowerment results in larger social and economic advantages, such as improved child nutrition and schooling, supports these findings. Equal access to resources would also greatly increase agricultural productivity, according to respondents (mean = 3.1679, SD = 1.12298). This is consistent with research by O'Sullivan et al. (2014) and Ali et al. (2015), which indicated that reducing the gender asset gap might greatly boost agricultural productivity.

The study's conclusions, which emphasize the significant impact of restricted access to resources and land on women's agricultural output in Burundi, are in line with previous research. By removing these obstacles with targeted legislation and financial assistance, women's economic contributions might increase significantly, resulting in national economic growth and social advantages. In addition to being a question of gender parity, women's empowerment in agriculture presents a significant business potential for long-term, sustainable growth and development.

Total Variance Explained

Women empowerment initiatives	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Access to land and productive resources	1.487	49.569	49.569	1.487	49.569	49.569
Policies and interventions	1.065	35.499	85.068	1.065	35.499	85.068
Potential economic benefits	.448	14.932	100.000			

Extraction Method: Principal Component Analysis.

The principal component analysis (PCA) sheds light on the major variables influencing programs for women's empowerment in Burundi's agriculture industry. An important percentage of the variation in responses may be explained by the three components that were found. "Access to Land and Productive Resources," the first component, accounted for 49.569% of the variance. This suggests that one of the main factors influencing women's productivity in agriculture is their access to resources and land. This result is heavily supported by the literature. In comparison to men, women in Sub-Saharan Africa (SSA) have much less access to land and productive resources, according to the FAO (2011) and Beintema & Di Marcantonio (2009).

Their capacity to raise agricultural productivity and elevate their economic standing is substantially hampered by this lack of access. For example, although women make up a sizable share of the agricultural workforce in Sub-Saharan Africa (SSA), they own less than 15% of the land (Ben-Ari, 2014; FAO, 2011). Because land held by men is almost 33% more productive than land farmed by women in Uganda, this disparity in land ownership leads to lower levels of productivity (Ben-Ari, 2014; FAO, 2011). "Policies and Interventions," the second component, accounted for 35.499% of the variation. This element emphasizes how crucial it is to change policies and implement focused interventions to increase women's access to agricultural resources. To remedy gender

imbalances, policy adjustments are necessary, especially regarding land inheritance rules.

Traditional land inheritance customs frequently exclude women, which restricts their access to finance and economic possibilities (Dancer & Hossain, 2017; FAO, 2011). Developing agricultural loan schemes targeted at women can help increase the output of women. According to Ben-Ari (2014), obtaining finance is a must for growing farming businesses and obtaining vital agricultural inputs. However, it can be difficult for women to access formal financial systems, which makes it difficult for them to get loans and invest in their agricultural ventures (UN Women, 2014).

"Potential Economic Benefits," the third component, explained 14.932% of the variation. Burundi's overall development might reap significant economic benefits from empowering women in agriculture. There may be wider social and economic advantages if women had greater access to resources and economic possibilities, according to research. For instance, better child nutrition and higher vaccination rates are associated with women's economic empowerment, which lowers the risk of hunger and disease among children and youth (Cho, 2014; FAO, 2011; Lecoutere, 2017).

Moreover, research by O'Sullivan et al. (2014) and Ali et al. (2015) demonstrates that reducing the gender asset gap can greatly boost agricultural production. Equal access to opportunities and resources for women can improve food security and spur overall economic growth. This is consistent

with Momsen's (2004) assertion that gender parity promotes growth and lowers poverty. The PCA results emphasize the key elements that influence women's empowerment in agriculture: the availability of land and other productive resources, the efficacy of policies and initiatives, and the possible financial gains associated with women's empowerment. A large body of research backs up these conclusions, which highlight the necessity of focused policies and funding to increase women's output and advance Burundi's economy as a whole.

In addition to being crucial for gender parity, empowering women in agriculture is a smart business move toward long-term, sustainable growth. By addressing the obstacles shown by these elements, women's contributions to the agricultural industry and the overall economy can be greatly increased, which would ultimately result in less poverty and improved social cohesion in Burundi.

Summary

The results of this study show a strong consensus that women's agricultural output in Burundi is severely impacted by restricted access to land. This is in line with research that shows women have significant barriers when it comes to obtaining land and other productive resources, which lowers production. For instance, women's agricultural output is lower because they have less access to resources productive including land (FAO, 2011; Beintema & Di Marcantonio, 2009). Their production was further hampered by the fact that they did not have access to materials that could be used to increase productivity, like fertilizer and seeds (Lecoutere, 2017; FAO, 2011).

The responses made clear the difficulties women encounter when trying to obtain loans and agricultural support; one significant obstacle is the absence of collateral. This result is consistent with the findings of UN Women (2014) and The ONE Campaign (2015), which emphasize that women's limited access to formal financial systems limits their capacity to get loans. In line with Dancer &

Hossain (2017), who noted that customary inheritance norms frequently prevent women from land ownership, hence limiting their economic potential, patriarchal land inheritance rules were also acknowledged as important obstacles.

According to the study, women's access to land might be significantly increased by changing the rules governing land succession (FAO, 2011). According to Ben-Ari (2014), the creation of agricultural credit programs with a focus on women was deemed to be relatively beneficial, as specific financial products increased women's output by offering the required financial support. There is a strong correlation between the empowerment of women in agriculture and potential economic benefits like reduced poverty and better food security (Cho, 2014; FAO, 2011). Agricultural productivity would be greatly increased by equal access to resources (Ali et al., 2015; O'Sullivan et al., 2014).

CONCLUSION

The study's conclusions, which emphasize the significant impact of restricted access to resources and land on women's agricultural output in Burundi, are in line with previous research. By removing these obstacles with targeted legislation and financial assistance, women's economic contributions might increase significantly, resulting in national economic growth and social advantages. In addition to being a question of gender justice, empowering women in agriculture offers a significant economic potential for long-term, sustainable growth and development.

The findings suggest that women empowerment initiatives should be tailored to address the specific needs and contexts of women farmers, especially in remote communities such as Mugamba. This may involve providing training and education on improved agricultural practices, enhancing access to credit and markets, and promoting women's participation in decision-making processes.

Furthermore, our findings underscore the need for a multi-faceted approach that involves governments, non-governmental organizations, and local communities in promoting women's empowerment and agricultural development. By leveraging stakeholders' resources and expertise, women empowerment initiatives can be scaled up and sustained, leading to improved agricultural outcomes and enhanced livelihoods for women farmers in the Mugamba Region.

Overall, this paper provides a comprehensive understanding of the efficacy of women empowerment initiatives in agricultural development in the Mugamba Region of Burundi. The findings and recommendations outlined in this paper can inform policy and practice, ultimately contributing to the achievement of sustainable agricultural development and women's empowerment in the region.

Recommendations

- There is a need to address gender differences in land ownership and inheritance and implement policy reforms to increase women's economic involvement and production, which must be done by guaranteeing women the legal right to inherit and own land (Dancer & Hossain, 2017; FAO, 2011).
- The Burundian government and its development partners should create and support agricultural financing initiatives that are targeted at women, to improve their capacity to invest in agricultural inputs and grow their farming operations through initiatives such as tailored financial products and services (Ben-Ari, 2014).
- The government should promote the empowerment of women and girls by giving young girls universal access to education and making it a top national development priority. Effective education programs for rural women should be developed by the Ministries of

Women & Children's Affairs and Education, as higher levels of education have been associated with more positive attitudes and increased self-confidence (Majurin, 2012).

- Stakeholders should create and assist off-farm and non-farm revenue-generating ventures. This can involve educating women to diversify their sources of income and job creation initiatives, both of which contribute to women's empowerment (Ali et al., 2015).
- To increase women's access to resources and markets, there is a need to upgrade rural infrastructure, such as roads and markets, so as to lessen the negative impact that market distance has on women's socioeconomic empowerment (Cho, 2014).
- To guarantee the efficacy and sustainability of women's empowerment programs, it is essential to conduct routine monitoring and evaluation as focus group feedback can be utilized to modify the treatment of women and reduce their workloads, which will increase their empowerment (The ONE Campaign, 2015).
- To improve household food security and lessen gender gaps, the government and its partners should invest in women's empowerment in agricultural activities. For instance, enhancing child nutrition and education is just one of the many economic and social advantages that come from assisting women in agriculture (FAO, 2011; Lecoutere, 2017).

The above recommendations will require a paradigm shift in the country's policy framework, which can support Burundi's economic growth and women's empowerment by implementing these ideas. More investigation is required to fully grasp the significance of women's empowerment and to find new approaches to removing obstacles that prevent women from participating in the economy.

REFERENCES

- African Development Bank Group. (2024). *Burundi Economic Outlook*. Retrieved from <https://www.afdb.org/en/countries/east-africa/burundi/>
- Ahmed, M. (2013). *Microfinance and Rural Women's Empowerment: A Cross-Sectional level Analysis (Evidence from Rural Woreda's of Harari Region)*. [Master Thesis Mekele University].
- Akter, S., Rutsaert, P., Luis, J., Htwe, N. M., San, S. S., Raharjo, B., & Pustika, A. (2017). Women's empowerment and gender equity in agriculture: A different perspective from Southeast Asia. *Food Policy*, 69, 270–22. <https://doi.org/10.1016/j.foodpol.2017.05.003>
- Ali, D. A., Deininger, K., & Goldstein, M. (2015). *Environmental and gender impacts of land tenure regularization in Africa: Pilot evidence from Rwanda*. *Journal of Development Economics*, 110, 262–275.
- Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., & Vaz, A. (2013). The women's empowerment in agriculture index. *World Development*, 52, 71–91. <https://doi.org/10.1016/j.worlddev.2013.06.007>
- Aziz, N., Nisar, Q. A., Koondhar, M. A., Meo, M. S., & Rong, K. (2020). Analyzing the women's empowerment and food security nexus in rural areas of Azad Jammu & Kashmir, Pakistan: By considering the sense of land entitlement and infrastructural facilities. *Land Use Policy*, 94, 104529. <https://doi.org/10.1016/j.landusepol.2020.104529>
- Banerjee, A. V., & Duflo, E. (2011). *Poor Economics: A radical rethinking of the way to fight global poverty*. PublicAffairs.
- Beintema, N. M., & Di Marcantonio, F. (2009). *Women's participation in agricultural research and higher education: Key trends in Sub-Saharan Africa*. International Food Policy Research Institute (IFPRI).
- Ben-Ari, T. (2014). *Empowering African women in agriculture: The need for policy reform*. The ONE Campaign. Retrieved from <https://www.one.org>
- Boli, J., & Thomas, G. M. (1997). *World culture in the world polity: A century of international non-governmental organization*. *American Sociological Review*, 62(2), 171–190.
- Care. (2020). *On Gender equality and women's empowerment in the context of food security and nutrition*.
- CFS. (2017). *Forum on women's empowerment in the context of food security and nutrition*.
- Cho, Y. (2014). *Gender equality and economic development: The role for women's empowerment in agriculture*. World Bank Working Paper.
- Dancer, H., & Hossain, N. (2017). *Social protection and gender equality: A brief overview*. UN Women Discussion Paper Series.
- Didana, A. C. (2019). Determinants of rural women's economic empowerment in agricultural activities: The case of Damot Gale Woreda of Wolaita Zone, SNNPRS of Ethiopia. *Journal of Economics & Sustainable Development*, 10(3), 30–49.
- Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, 50(4), 1051–1079. <https://doi.org/10.1257/jel.50.4.1051>
- FAO, IFAD, UNICEF, W., and W. (2019). *Food security and nutrition in the World 2019, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*.
- FAO. (2011). *The State of Food and Agriculture 2010–2011: Women in agriculture—Closing*

- the gender gap for development*. Food and Agriculture Organization of the United Nations.
- FAO. (2014). *Gender equality and food security: Women's empowerment as a tool against hunger*. Food and Agriculture Organization of the United Nations.
- Food Security Information Network. (2020). *Global report on food crises. Technical report*.
- Gender equity in agriculture and rural development. (2009). *A quick guide to gender mainstreaming in FAO's new strategic framework*.
- Girma, B., & Singh, M. (2019). Factor affecting women empowerment in Ethiopia public universities: Leadership perspectives. *International Journal of African and Asian Studies*, 56, 63–66. <https://doi.org/10.7176/JAAS/56-05>
- Imai, K. S., Annim, S. K., Kulkarni, V. S., & Gaiha, R. (2014). Women's empowerment and prevalence of stunted and underweight children in rural India. *World Development*, 62, 88–105. <https://doi.org/10.1016/j.worlddev.2014.05.001>
- Lecoutere, E. (2017). *Engendering agricultural development in Sub-Saharan Africa: The gender gap in access to productive resources*. Development Policy Review, 35(2), 223–243.
- Lépine, A., & Strobl, E. (2013). The effect of women's bargaining power on child nutrition in rural Senegal. *World Development*, 45, 17–30. <https://doi.org/10.1016/j.worlddev.2012.12.018>
- Majurin, E. (2012). *How women fare in East African cooperatives: The case of Kenya, Tanzania and Uganda*. International Labour Organization (ILO).
- Malapit, H. J. L., & Quisumbing, A. R. (2015). What dimensions of women's empowerment in agriculture matter for nutrition in Ghana? *Food Policy*, 52, 54–63. <https://doi.org/10.1016/j.foodpol.2015.02.003>
- Malapit, H. J., Pinkstaff, C., Sproule, K., Kovarik, C., Quisumbing, A. R., & Meinzen-Dick, R. S. (2017). The abbreviated Women's Empowerment in Agriculture Index (A-WEAI).
- Malapit, H., Sproule, K., Kovarik, C., Meinzen-Dick, R., Quisumbing, A., Ramzan, F., Hogue, E., & Alkire, S. (2014). *Measuring progress toward empowerment: Women's empowerment in agriculture index: Baseline report*. Washington, D.C.: IFPRI.
- Mengistie, M. (2013). *Analysis of factors influencing rural women participation in performing household farm management practices: the case of Enebsiesarmidir District, East Gojjam Zone, Ethiopia*. [Master Thesis Haramaya University].
- Mengistie, Z., Woldeamanuel, Y., Asrat, D., & Adera, A. (2014). Prevalence of bacterial vaginosis among pregnant women attending antenatal care in Tikur Anbessa University Hospital, Addis Ababa, Ethiopia. *BMC Research Notes*, 7, 1–5.
- Mohamed, A. A. (2017). The food security situation in Ethiopia: A review study. *International Journal of Health Economics and Policy*, 2(3), 86–96.
- Momsen, J. H. (2004). *Gender and development*. Routledge.
- Nabayinda, H., & Wallevik, H. (2014). *Women's empowerment through microfinance in Burundi: A case study*. [Thesis]. [Institution name].
- O'Sullivan, M., Rao, A., Banerjee, R., Gulati, K., & Vinez, M. (2014). *Levelling the field: Improving opportunities for women farmers in Africa*. World Bank Group.

- Odame, H. H., Hafkin, N., Wesseler, G., & Boto, I. (2002). *Gender and agriculture in the information society*. International Service for National Agricultural Research (ISNAR).
- Otero, M. (1999). *Bringing development back into microfinance*. *Journal of Microfinance*, 1(1), 8–19.
- Quisumbing, A. R., & Pandolfelli, L. (2010). Promising approaches to address the needs of poor female farmers: Resources, constraints, and interventions. *World Development*, 38(4), 581– 592. <https://doi.org/10.1016/j.worlddev.2009.10.006>
- Schutter, O. (2013). Gender equality and food security: Women's empowerment as a tool against hunger. *Asian Development Bank*.
- Sraboni, E., Malapit, H. J., Quisumbing, A. R., & Ahmed, A. U. (2014). Women's empowerment in agriculture: What role for food security in Bangladesh? *World Development*, 61, 11–52. <https://doi.org/10.1016/j.worlddev.2014.03.025>
- Taye, C. (2014). *The impact of microfinance financial services on the economic empowerment of women: The case study of wisdom micro-financing institution s.c, at Woliso Woreda*. [Master thesis St. Mary's University].
- The ONE Campaign. (2015). *Poverty is sexist: Why girls and women must be at the heart of the fight to end poverty*. Retrieved from <https://www.one.org>
- The World Bank Group. (2016). *Breaking the constraints to women's productivity in agriculture*. World Bank Publications.
- UN Women. (2014). *World survey on the role of women in development 2014: Gender equality and sustainable development*. United Nations Entity for Gender Equality and the Empowerment of Women.
- UN Women. (2018). *The Gender Gap in Agricultural Productivity in Sub-Saharan Africa: Causes, Costs and Solutions*, 11, 5.
- Uphoff, N. (1993). *Grassroots organizations and NGOs in rural development: Opportunities with diminishing states and expanding markets*. *World Development*, 21(4), 607–622.
- USAID. (2015). *Women's empowerment in agriculture: Measuring women's empowerment in agriculture and food systems*. U.S. Agency for International Development.
- USAID. (2017). *Feed the Future: Gender Integration Framework*. Retrieved from <https://www.usaid.gov>
- Van Dijk, H. G., & Nkwana, H. M. (2021). The face of food Insecurity is female: A post-colonial feminist argument for rural women. *African Journal of Gender, Society, and Development*, 10(1), 99–116. <https://doi.org/10.31920/2634-3622/2021/v10n1a5>
- Visser, J., & Wangu, J. (2021). Women's dual centrality in food security solutions: The need for a stronger gender lens in food systems' transformation. *Current Research in Environmental Sustainability*, 3, 100094.
- WFP and FAO. (2021). *Hunger hotspots. FAO-WFP early warnings on acute food insecurity: March to July 2021 outlook*. <http://www.fightfoodcrises.net> and <https://www.fsinplatform.org>