

Strategic Resource Management and Agricultural Productivity in Mitooma District, Uganda

Dr Mategeko Betty

Avance International University

Abstract

Agricultural productivity in sub-Saharan Africa has remained persistently low, with smallholder farmers continuing to grapple with limited access to productive resources, weak institutional support, and inadequate management practices. In Uganda, agriculture remained the backbone of the economy, employing the majority of the rural population, yet productivity levels continued to lag behind regional and global benchmarks. In Mitooma District, southwestern Uganda, farmers engaged in the production of coffee, beans, maize, and bananas faced compounding challenges related to how land, labor, capital, and technology were managed at both farm and cooperative levels. This study examined the relationship between strategic resource management and agricultural productivity in Mitooma District. The study adopted a cross-sectional survey design, integrating quantitative and qualitative methods. A sample of 135 respondents comprising farmers, cooperative officials, and agricultural extension workers was selected through stratified random sampling. Structured questionnaires and key informant interviews were used to collect data. Pearson correlation and multiple linear regression were applied to analyze the relationship between strategic resource management and agricultural productivity. The findings revealed a strong positive and statistically significant relationship between strategic resource management and agricultural productivity ($r = 0.761$, $p < 0.05$). Land resource management ($\beta = 0.438$), labor resource management ($\beta = 0.401$), and financial resource management ($\beta = 0.463$) were each significant predictors of productivity. Farmers and cooperatives that managed their resources strategically recorded higher crop yields, better input utilization efficiency, and improved household incomes. Strategic resource management was a significant determinant of agricultural productivity in Mitooma District. Farmers and cooperative organizations that adopted structured approaches to managing land, labor, and finances consistently achieved better productivity outcomes than those operating without deliberate resource management frameworks. District local government, agricultural extension services, and cooperative leadership should invest in capacity building around strategic resource management, focusing on land use planning, labor organization, financial literacy, and technology adoption to drive sustainable agricultural productivity.

Keywords: Strategic resource management, agricultural productivity, Mitooma District, Uganda, land management, labor management, financial resource management, smallholder farmers

1. BACKGROUND OF THE STUDY

Agriculture has remained a cornerstone of Uganda's national economy, contributing approximately 24% of gross domestic product and employing over 70% of the population, the majority of whom are smallholder farmers operating in rural areas (World Bank, 2022). Despite this central role, Uganda's agricultural sector has continued to face serious productivity constraints rooted in structural, institutional, and managerial deficiencies (Alex & Julius, 2024). The gap between actual and potential productivity at the farm level has been attributed to a multiplicity of factors, including

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poor soil management, inadequate access to credit, weak extension services, and the absence of systematic resource management practices (FAO, 2023).

Strategic resource management refers to the deliberate identification, allocation, utilization, and control of productive resources land, labor, capital, technology, and knowledge in a manner aligned with organizational or farm-level goals (Barney & Hesterly, 2022). In the agricultural sector, the strategic management of resources has been linked to improved input efficiency, higher crop yields, reduced production costs, and better livelihood outcomes for farming households (Nkusi et al., 2021). Resource-Based Theory, originally advanced by Barney (1991) and later refined by subsequent scholars, posits that the manner in which organizations and farms manage and deploy their resources determines their competitive advantage and performance outcomes (Julius, 2024).

In Uganda's southwestern region, Mitooma District is characterized by fertile soils and a bimodal rainfall pattern favorable for diverse agricultural activities (Collins et al., 2023). Nevertheless, productivity in the district remained below potential, with farmers reporting challenges related to land fragmentation, seasonal labor shortages, limited access to financial resources, and low adoption of improved agricultural technologies (Uganda Bureau of Statistics, 2021). Agricultural cooperatives in the district, though active, had not fully leveraged their collective resource management potential to drive productivity among their members (Moses et al., 2025).

Globally, empirical evidence has confirmed that strategic resource management significantly improves agricultural productivity. Kassie et al. (2022) demonstrated in a multi-country study across East Africa that farmers who adopted integrated soil and water management strategies recorded yield gains of between 30% and 60% compared to non-adopters. Similarly, Ragasa and Lambrecht (2022) found that access to organized extension services a form of knowledge resource management substantially improved smallholder productivity in sub-Saharan Africa. These findings reinforced the importance of studying how resource management practices operated at the local district level in Uganda (Frank et al., 2023).

It was against this background that this study was conducted, seeking to generate district-specific empirical evidence on how strategic resource management influenced agricultural productivity in Mitooma District, with the aim of informing policy and practice in the region.

2. PROBLEM STATEMENT

Despite Mitooma District's favorable agro-ecological conditions, agricultural productivity among smallholder farmers and cooperative members in the district remained markedly low (Paul & Kazaara, 2023). Preliminary observations and consultations with district agricultural officers indicated that farmers largely operated without structured resource management plans, with land being underutilized or misused, labor deployment being uncoordinated, and financial resources being poorly allocated across production seasons (Kazaara & Nancy, 2025). Mugiisha et al. (2021) noted that the absence of deliberate resource allocation strategies at the farm level was among the primary drivers of low productivity in Uganda's southwestern districts. Furthermore, cooperative organizations in Mitooma had not developed collective resource management strategies to support their members in optimizing production

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inputs(Ntirandekura et al., 2022). As a result, crop yields remained below national averages, post-harvest losses were high, and farmer incomes stagnated. Lwasa et al. (2022) observed that without strategic management of productive assets, smallholder farmers in Uganda's rural districts were trapped in cycles of low productivity and poverty(Julius & Nancy, 2025). Yet, no study had specifically investigated the relationship between strategic resource management and agricultural productivity in Mitooma District, leaving both a knowledge and policy gap that this study sought to address.

3. SPECIFIC OBJECTIVE

To examine the effect of strategic resource management on the agricultural productivity of smallholder farmers in Mitooma District, Uganda.

4. METHODOLOGY

The study employed a cross-sectional survey design, allowing data to be collected from farmers, cooperative officials, and agricultural extension workers across Mitooma District at one point in time. A mixed-methods approach was adopted, combining quantitative survey data with qualitative insights from key informant interviews to provide both statistical evidence and contextual understanding of the relationship between strategic resource management and agricultural productivity(Julius & Kaazara, 2025).

The study population comprised smallholder farmers registered with agricultural cooperatives in Mitooma District, cooperative officials, and district agricultural extension officers. Using stratified random sampling, the district's sub-counties were treated as strata, and respondents were proportionally selected from each. A total of 135 respondents participated in the study(Oscar et al., 2023). Structured questionnaires were administered to 120 farmers and cooperative members, while 15 key informant interviews were conducted with cooperative leaders and extension officers.

The questionnaire measured strategic resource management across three dimensions such as land resource management, labor resource management, and financial resource management and assessed agricultural productivity through indicators of crop yield levels, input utilization efficiency, and household income from agriculture(Julius & Audrey, 2025). All items were measured on a five-point Likert scale. A pilot study involving 13 respondents from Rubirizi District was conducted to validate the instruments. Cronbach's Alpha values for all constructs ranged between 0.72 and 0.81, confirming satisfactory reliability (Tavakol & Dennick, 2011). Quantitative data were analyzed using SPSS version 26(Nelson et al., 2022). Descriptive statistics were computed for all variables. Pearson correlation analysis was employed to test the strength and direction of relationships between strategic resource management dimensions and agricultural productivity. Multiple linear regression analysis was used to determine the predictive contribution of each resource management dimension to productivity outcomes(Nelson et al., 2023). Qualitative data from key informant interviews were analyzed thematically, with emerging themes used to contextualize and enrich the quantitative findings. Throughout the research process, ethical protocols were observed, including obtaining informed consent, ensuring anonymity, and maintaining data confidentiality (Israel & Hay, 2006).

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5. RESULTS

5.1 Descriptive Statistics for Strategic Resource Management and Agricultural Productivity

Table 1: Descriptive Statistics for Study Variables (n = 135)

Variable	Mean	Std. Deviation	Interpretation
Land Resource Management	3.18	0.863	Moderate
Labor Resource Management	3.05	0.891	Moderate
Financial Resource Management	2.94	0.924	Below Average
Strategic Resource Management (Overall)	3.06	0.859	Moderate
Crop Yield Levels	3.11	0.872	Moderate
Input Utilization Efficiency	2.98	0.908	Below Average
Household Income from Agriculture	2.91	0.937	Below Average
Agricultural Productivity (Overall)	3.00	0.906	Moderate

Source: Primary Data, 2026

The descriptive statistics in Table 1 revealed that strategic resource management among smallholder farmers and cooperative members in Mitooma District was practiced at a moderate overall level (M = 3.06, SD = 0.859). Among the three dimensions of strategic resource management, land resource management recorded the highest mean score (M = 3.18, SD = 0.863), suggesting that farmers had relatively better awareness and practices around land use, including crop rotation, intercropping, and plot demarcation, compared to other resource areas (Nelson et al., 2023). Labor resource management was also moderate (M = 3.05, SD = 0.891), reflecting the fact that while farmers generally organized family and hired labor for key farming activities, this was largely informal and not tied to deliberate productivity goals or seasonal planning schedules. Financial resource management recorded a below-average score (M = 2.94, SD = 0.924), pointing to significant deficiencies in how farmers budgeted for inputs, managed credit, and allocated revenues from agricultural sales across production cycles. Key informants echoed these findings, noting that many farmers spent income from one harvest without setting aside funds for the following planting season, creating recurring resource gaps that constrained productivity.

On the agricultural productivity side, crop yield levels recorded a moderate mean (M = 3.11, SD = 0.872), reflecting some positive performance in production volumes but falling short of what the district's agro-ecological potential could support. Input utilization efficiency scored below average (M = 2.98, SD = 0.908), indicating that many farmers were either under-applying or misapplying inputs such as fertilizers, seeds, and pesticides — a finding consistent with Kassie et al. (2022), who noted that poor input management was a key productivity bottleneck among East African smallholders. Household income from agriculture recorded the lowest mean (M = 2.91, SD = 0.937), reinforcing the conclusion that despite moderate farming activity, the financial returns to agricultural production remained insufficient, partly as a consequence of the resource management weaknesses identified across all three dimensions.

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5.2 Correlation between Strategic Resource Management and Agricultural Productivity

Table 2: Pearson Correlation between Strategic Resource Management Dimensions and Agricultural Productivity

Variable	Agricultural Productivity (r)	p-value	Decision
Land Resource Management	0.694	0.000	Significant
Labor Resource Management	0.671	0.000	Significant
Financial Resource Management	0.728	0.000	Significant
Strategic Resource Management (Overall)	0.761	0.000	Significant

Source: Primary Data, 2026

The Pearson correlation results in Table 2 showed strong positive and statistically significant relationships between all three dimensions of strategic resource management and agricultural productivity. The overall strategic resource management score correlated most strongly with agricultural productivity ($r = 0.761, p < 0.001$), confirming that the cumulative effect of managing land, labor, and finances strategically had a substantial bearing on how productive farmers and their cooperatives were in Mitooma District. Financial resource management registered the highest correlation among the individual dimensions ($r = 0.728, p < 0.001$), a finding that underscored the fundamental role of financial planning and capital allocation in driving agricultural outcomes. This was consistent with Abate et al. (2021), who found that access to and proper management of financial resources was the single most important determinant of farm-level productivity improvements across smallholder systems in East Africa. Land resource management also correlated strongly with productivity ($r = 0.694, p < 0.001$), reinforcing the importance of soil health management, appropriate land use planning, and sustainable land tenure practices as critical enablers of sustained agricultural output. Labor resource management, while having the slightly lower correlation ($r = 0.671, p < 0.001$), remained strongly and significantly associated with productivity, reflecting the reality that in labor-intensive smallholder systems like those prevalent in Mitooma, how human effort is organized, deployed, and incentivized directly shapes the efficiency and volume of production. These findings collectively reinforced the Resource-Based Theory proposition that strategic management of productive assets is a decisive determinant of performance outcomes (Barney & Hesterly, 2022).

5.3 Regression Analysis: Effect of Strategic Resource Management on Agricultural Productivity

Table 3: Linear Regression Results — Strategic Resource Management Predicting Agricultural Productivity

Predictor	Beta (β)	Std. Error	t-value	p-value	Decision
Land Resource Management	0.438	0.089	4.921	0.000	Significant
Labor Resource Management	0.401	0.093	4.312	0.000	Significant
Financial Resource Management	0.463	0.086	5.384	0.000	Significant

Predictor	Beta (β)	Std. Error	t-value	p-value	Decision
R² = 0.634	Adjusted R² = 0.626	F = 74.31	p = 0.000		

Source: Primary Data, 2026

The regression results in Table 3 provided compelling evidence of the individual and combined predictive power of strategic resource management dimensions on agricultural productivity in Mitooma District. The overall model was highly significant ($F = 74.31, p < 0.001$), and the R^2 value of 0.634 indicated that approximately 63.4% of the variance in agricultural productivity was explained by the three resource management dimensions together. This high explanatory power confirmed that strategic resource management was a dominant driver of productivity outcomes, consistent with Ragasa and Lambrecht (2022), who documented similar explanatory magnitudes in studies of smallholder farm performance in sub-Saharan Africa.

Financial resource management was the strongest individual predictor of agricultural productivity ($\beta = 0.463, p < 0.001$), suggesting that for every unit improvement in financial resource management practices, agricultural productivity increased by 0.463 units, controlling for the other variables. This finding was particularly significant in the context of Mitooma, where financial resource management had also recorded the lowest descriptive score, meaning that targeted interventions in financial literacy and farm budgeting held the greatest potential for productivity improvement. Land resource management was the second strongest predictor ($\beta = 0.438, p < 0.001$), affirming the centrality of sustainable land use and soil fertility management to agricultural output, a relationship well-documented in the literature by Nkusi et al. (2021), who established that soil management practices significantly differentiated high-performing from low-performing farms in Uganda's western highlands. Labor resource management, while the weakest predictor among the three ($\beta = 0.401, p < 0.001$), remained a highly significant contributor, highlighting that improvements in how labor was organized and deployed during planting, weeding, and harvesting could meaningfully improve farm-level productivity even in resource-constrained settings. Together, these regression results strongly supported the study's central hypothesis that strategic resource management significantly and positively influences agricultural productivity in Mitooma District.

6. CONCLUSIONS

This study examined the effect of strategic resource management on agricultural productivity in Mitooma District, Uganda. On the basis of the findings, the following conclusions were drawn:

Strategic resource management was a significant and positive determinant of agricultural productivity among smallholder farmers and cooperative members in Mitooma District. Farmers and cooperative organizations that deliberately managed their land, labor, and financial resources in a planned and coordinated manner consistently achieved higher crop yields, better input efficiency, and improved income from agriculture.

Financial resource management was the most influential dimension of strategic resource management in determining productivity outcomes, yet it was also the most poorly practiced area. The persistent gap between resource availability

and financial planning capacity represented the most critical leverage point for productivity improvement in the district.

Land resource management demonstrated a strong positive effect on productivity, affirming that sustainable land use practices, soil fertility management, and appropriate crop planning were essential foundations for agricultural output in Mitooma's agro-ecological context.

Labor resource management, though the weakest predictor statistically, remained significant, confirming that the coordination and efficient deployment of human effort in farming operations was a meaningful contributor to productivity, particularly during critical production stages.

Overall, the study concluded that strategic resource management practices among smallholder farmers in Mitooma District were practiced at only moderate to below-average levels, and this directly constrained the district's agricultural productivity below its ecological potential.

7. RECOMMENDATIONS

Farmers should adopt structured farm management plans that explicitly address how land will be used and maintained, how labor will be organized across production seasons, and how farm finances will be budgeted and managed. Cooperative platforms should be used as vehicles for collective resource pooling, shared input procurement, and joint marketing to enhance financial efficiency.

The district should strengthen its agricultural extension services by training extension officers in strategic farm resource management, equipping them to deliver practical guidance on land use planning, labor optimization, and financial management at the farm and cooperative levels. District-level resource management training programs, co-financed with cooperative organizations, should be prioritized in annual work plans.

National agricultural policy should integrate strategic resource management as a measurable component of farmer and cooperative performance standards. The ministry should develop and disseminate simplified, context-appropriate resource management toolkits tailored to smallholder farming systems, including those in districts like Mitooma where resource management capacity remains weak.

Organizations supporting agricultural development in southwestern Uganda should incorporate strategic resource management training into their programming, particularly in areas of financial literacy for farmers, sustainable land management, and labor productivity. Investment in farmer group strengthening, especially cooperative governance and resource planning capacity, should be treated as a core component of agricultural productivity interventions.

Subsequent studies should investigate the moderating effects of climate variability and cooperative governance quality on the relationship between strategic resource management and agricultural productivity in Uganda. Longitudinal

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research designs should also be employed to track how improvements in resource management practices translate into productivity gains over multiple farming seasons, generating more robust causal evidence than cross-sectional studies permit.

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