Harnessing Gender Roles in the Dairy Value Chain to Improve its Productivity in the Southwestern Milkshed of Uganda

Brenda Kakungulu
Agribusiness Management, Makerere University, Kampala, Uganda
Chief Executive Officer and Co-founder, Bris Agro Safaris (U) LTD
kakungulubrenda@gmail.com

Reagan Mulungi Mwenyi
Students Affairs in Higher Education, Missouri State University
Agribusiness Education Officer, Bris Agro Safaris (U) LTD
rm642s@MissouriState.edu

Samuel Ikendi
University of California Agriculture and Natural Resources/Cooperative Extension
University of California, Merced
5200 N. Lake Rd, Merced, CA 95343
sikendi@ucmerced.edu

Morris Natwijuka
Agribusiness Management, Makerere University, Kampala, Uganda
Programs Director and Co-founder, Bris Agro Safaris (U) LTD
morisrays111@gmail.com

Apollo Arinda
Agribusiness Management, Makerere University, Kampala, Uganda
Agribusiness Consultant – Beekeeping, Bris Agro Safaris (U) LTD
arindaapollo@gmail.com

Leninmarx Muhe
Animal Science, Makerere University, Kampala, Uganda
Extension and Community Outreach Officer – Animal Husbandry, Bris Agro-Safaris (U) LTD
mlenin2019@gmail.com

Florence Namirembe
Agribusiness Management, Makerere University, Kampala, Uganda
Finance Specialist, Bris Agro Safaris (U) LTD
mirembeflorah22@gmail.com

Criton Ahabwe
Agribusiness Management, Makerere University, Kampala, Uganda
Agribusiness Consultant – Poultry, Bris Agro-Safaris (U) LTD
ahabwe.cri2019@gmail.com

Harnessing Gender Roles in the Dairy Value Chain to Improve its Productivity in the Southwestern Milkshed of Uganda

Introduction

The dairy sector in Uganda is vital in economic development (Lukuyu et al., 2021; Sugino et al., 2023), however, its growth is affected by prevailing gender dynamics, which influence access to resources and decision-making power. Although there is active women involvement in dairy production and marketing, the upscale of dairy enterprises often results in a shift of decision-making power to men (Nagasha et al., 2024). The prevailing gender dynamics indicate that, despite having equitable access to resources, women and youth are often excluded from making critical financial decisions. Conflicts of interest frequently arise when men prioritize selling milk for profit while women prefer using it for home consumption (Gallina, 2016). Such tensions highlight the complexities of gender roles within the dairy value chain and emphasize the need for interventions that promote equitable resource allocation and decision-making (Galiè et al., 2022; Waiswa & Jolly, 2021). Understanding the unique roles of dairy production actors contextualizes development initiatives and facilitates the development of approaches that can address the issues in the dairy sector. This study investigated the factors that shape existing gender roles and constraints encountered within the dairy sector. By challenging prevailing social and cultural biases, the research seeks to enhance productivity and promote inclusive agricultural practices in line with the AAAE research value of "examining social dynamics in human and life sciences" (AAAE, 2023, p. 11) to facilitate equitable participation of men, women, and youth in various activities along the value chain.

Theoretical/Conceptual Framework

This study is grounded in the theory of identity intersectionality, which posits that every individual possesses multiple social identities that interact to create unique experiences of oppression and privilege (Tavenner et al., 2025). In the context of livestock research, this theory is instrumental in understanding the complexities of gender roles within the dairy value chain. By analyzing the impact of overlapping identities, such as gender, age, and social class, on individuals' access to and control over resources, it becomes evident that women and youth (boys and girls) in rural communities often encounter compounded barriers. These barriers not only stem from their gender but also their age, significantly limiting their participation in dairy production and marketing. The paper also analyzes the role of gender dynamics in influencing the dairy value chain participation and assigned activities. The gender dynamics framework explains how traditional gender norms dictate roles within the dairy sector, often relegating women and youth to lower-value tasks, perpetuating inequity (Fernandez, 2023).

Methods

This abstract was part of a larger mixed methods study that utilized a combination of both qualitative and quantitative data collection techniques to investigate gender roles along the dairy value chain within Mbarara district, the Southwestern milk shed of Uganda. Initially, the research team identified and contacted two key informants in the district. Based on their guidance, Bubaare Sub County was chosen from which Rwobuyenje village was chosen to examine the different gender roles in intensive dairy production, and Kaiba village provided insights into gender roles in extensive dairy settings, while Mbarara town was selected to explore labor division by gender in the post-production phase. The team employed a pre-designed questionnaire administered in an interview format. Simultaneously, qualitative observations were conducted to gain a deeper understanding of the distinct roles performed by individuals of different genders in their natural settings. Following the identification of common trends in the data from both surveys and observations, the team requested the key informants to select up to sixty individuals for the next phase of the study. In this phase, structured interviews were conducted with 60 participants who were conveniently selected including 40 dairy farmers from Rwobuyenje and Kaiba villages, 18 dairy operators in Mbarara town, and two from the dairy processing plants. These interviews aimed to perform member checking, thereby obtaining detailed insights into participants' experiences with the labor division and ensuring an accurate representation of their responses from the surveys. Data are presented as descriptives.

Results

Most respondents (50%) were aged between 50-65 years while 45% were within the 18-49 age range, indicating a need to promote youth participation in the dairy value chain. Marital status indicated that 53% were married, and formal education was notably low, with 65% having completed only 0-11 years of school. Notably, 93% of respondents had been engaged in dairy production for twenty years, with 45% classified as casual laborers employed by established dairy operations. The subdivision of gender roles was evident with family labor constituting 63% of the workforce. Women and girls were primarily responsible for tasks like milk marketing (78%), watering animals (77.5%), shed cleaning (65%), and feeding (57.5%); Men dominated critical activities including herding (95%), milking (100%), milk delivery to markets (92.5%), payment collections (87.5%), contractual agreements (100%), feed purchase (77.5%), deworming (100%), grass cutting (75%). Both men and women equally kept dairy records (50%).

The study also revealed a stark contrast in technology usage, while 30% of farms employed advanced machinery, the majority relied on rudimentary tools. Cultural constraints significantly hindered women's access to technology, with 70% of respondents acknowledging prevailing biases that discourage their use of power-driven machinery. In access to main resources, men had 55% access to land and women had 35%, men had 70% access to dairy cattle and women had 17%, men had 42% access to dairy equipment and women had 35%, however, access to credit was 55% for combined men and women. Nevertheless, men maintained greater control over the same vital resources such as land (82%), dairy cattle (87%), income from sales (77%), and credits (80%). Two main reasons were provided for differences in control over resources. Women, 57% said, religious beliefs that a man is the household head, and men, 49% said, a low knowledge of women on animal husbandry practices. On gender-specific constraints, men said expensive dairy technology (52%) and high interest rates on credit from lenders (28%); while women said domestic workload (30%) and limited access to extension (19%) hinder the smooth operation of the dairy enterprises.

Conclusion/Implications/Recommendation

This study explored the distinct roles, challenges, and needs of women and men in the dairy value chain, revealing that while both genders had access to resources, their levels of control varied significantly. In many family units, there was either reduced or joint control over resources, indicating complex power dynamics in resource management. The findings underscored that opportunities exist for both women and youth (boys and girls) to engage in various activities along the dairy value chain, which can diversify employment and livelihood options. Also, despite women's active participation in production, men maintained greater access to agricultural extension services and financial resources. Both genders faced significant barriers to accessing credit and advanced technology, which adversely affected their overall productivity. The deeply entrenched financial decision-making power held by men presents challenges to any initiatives aimed at empowering women. Interventions must address this power imbalance to enhance the effectiveness of empowerment strategies (Galiè et al., 2022; Nagasha et al., 2024; Tavenner et al., 2025).

This study recommends the implementation of co-education extension programs, accounting for the domestic responsibilities of women and labor demands placed on men. Well-designed livestock extension education programs influence knowledge exchange between extension service providers and livestock farmers improving livestock productivity (FAO, 2022; Ikendi et al., 2025). Extension education can focus on a variety of emerging issues in dairy production including heat stress (Nguyen et al., 2020); feeding (Babigumira et al., 2018). Similary, to support access to credit, financial providers need to develop affordable credit packages, with lower collateral requirements like group loan schemes (Ninsiima et al., 2023) including financial literacy (Nuwagaba et al., 2024). Such initiatives would facilitate investment by both women and youth in dairy farming. Additionally, the observed gender division of labor may be linked to limited access to advanced technology. Increased investment in agricultural technologies is essential to enhance production and facilitate equal distribution of domestic responsibilities. Women's roles in the society are being recognized and appreciated and therefore this study suggests that more opportunities and resources should be given to women to achieve gender equity in a dairy value chain.

References

American Association for Agricultural Education (AAAE). (2023). *AAAE research values*. Retried from: https://aaea.wildapricot.org/National-Research-Values

Babigumira, B., Nabukalu, R., Masaba, J., Egadu, G., Mulindwa, H., Oluka, J., & Kugonza, D. (2018). Growth characteristics of Sahiwal x Zebu F1 crossbred cattle in Uganda. *International Journal of Livestock Research, 8*(5), 43–48. http://doi.org/10.5455/ijlr.20180226064352

Fernandez, L. (2023). Unveiling gender dynamics: An in-depth analysis of gender realities. *International Journal of Science Review, 5*(3), 61–70. https://doi.org/10.54783/influencejournal.v5i3.182

Food and Agriculture Organization (FAO) (2022). *Africa sustainable livestock 2050: Awareness of livestock sector policies, laws and One Health in local animal health services – Snapshot from a survey in six sub-regions in Ethiopia, Kenya and Uganda*. https://doi.org/10.4060/cb9984en

Galiè, A., Njiru, N., Heckert, J., Myers, E., & Alonso, S. (2022). Gendered barriers and opportunities in Kenya's informal dairy sector: enhancing gender-equity in urban markets. *Gender, Technology and Development*, *26*(2), 214–237. https://doi.org/10.1080/09718524.2022.2084491

Gallina, A. (2016). *Gender dynamics in dairy production in Kenya: A literature review*. CCAFS Working Paper no. 182. Copenhagen, Denmark. https://hdl.handle.net/10568/77727

Ikendi, S., Owusu, F., Masinde, D., Oberhauser, A., & Bain, C. (2025). Livestock extension education: A livelihoods revitalization strategy in rural Uganda. *Journal of Agriculture Education,* 66(1), Article 50. https://doi.org/10.5032/jae.v66i1.2465

Lukuyu, B., Maina, K., Namutebi, P., Allen, M., Nanyenya, W., Faitwa, W., & Chrisbonus, O. (2021). *An assessment of livestock production systems and local feed resources, used to inform feed utilization and livestock production in the Mbarara District of Uganda*. Nairobi, Kenya: ILRI.

Nagasha, J. I., Ocaido, M., Rajala, E., Chiwona-Karltun, L., & Hatab, A. (2024). Gender-based approaches for improving milk safety, value addition, and marketing among smallholder livestock farmers. *Frontiers in Sustainable Food Systems 8*, 13920. https://doi.org/10.3389/fsufs.2024.1392020

Nguyen, T. T., Pryce, J. E., De Haas, Y., Moran, J., Ojango, J. M., Mrode, R., ... & Kugonza, D. R. (2020). *Instant Insights: Heat stress in dairy cattle*. Burleigh Dodds Science Publishing.

Ninsiima, R., Bulyaba, R., & Makosa, D. (2023). Determinants of participation in agricultural group guarantee loans: A case of smallholder farmers in Eastern Uganda. *Journal of Food, Agriculture, Nutrition and Development*, *23*(4), 23039–23060. https://doi.org/10.18697/ajfand.119.22365

Nuwagaba, E. L., Garuzooka, J. F., & Bakeizimba, E. (2024). Adult learning and investment practices of persons with disability in informal microfinance groups in Uganda. *Indonesian Journal of Disability Studies*, *11*(2), 333–350. https://doi.org/10.21776/ub.ijds.2024.11.2.12

Sugino, Y., Bugeza, J., Bahame, D., Byaruhanga, J., Shimazaki, H., Anzai, M., …, & Makita, K. (2023). Structure and milk hygiene of dairy cooperative value chains in an intensive production area of Uganda—A bottleneck of intervention. *Frontiers in Sustainable Food Systems*, *7*, 1110915. https://doi.org/10.3389/fsufs.2023.1110915

Tavenner, K., Crane, T. A., Bullock, R., Galiè, A., Campos, H., & Katothya, G. (2025). An intersectional approach to agricultural research for development (AR4D). In J. Njuki, A. H. Tufan, V. Polar, H. Campos, and M. Morgan-Bell, (Eds.), *Gender, power, and politics in agriculture: Revisiting theory and practice* (pp. 167–191). Springer.

Waiswa, D., & Jolly, A. (2021). Implications of gender discrimination for household food security among small holder dairy farmers in Nakaloke, Mbale District, Uganda. *Research Journal of Agriculture and Forestry Sciences, 9, 2.* https://www.isca.me//Archive/v9/i2/1.ISCA-RJAFS-2020-033.pdf