Participative Journal
Jurnal Pengabdian Pada Masyarakat
2025, VOL. 5, NO. 1, 57-69
https://doi.org/10.55099/participative.v5i1.152

e-ISSN 2776-2971

Open Acces

Dissemination of Green Marketing and Circular Economy Concepts in Goat and Sheep Farming Management to Enhance Farmers' Welfare

I Putu Gede Didik Widiarta*, Cori Qamara, Suhardi, Nurul Fajrih, Amalina Nur Wahyuningtyas, Anhar Faisal Fanani

Department of Animal Science, Faculty of Agriculture, Mulawarman University, Samarinda, Indonesia

ABSTRACT

Community service was conducted in Karang Tunggal Village, East Kalimantan, to disseminate green marketing and circular economy concepts to goat and sheep farmers. A total of 35 farmers participated in the project, engaging in interactive workshops, discussions, and on-site demonstrations using a Participatory Action Research (PAR) approach. The project aimed to enhance knowledge of sustainable farming practices, resource optimization, and eco-friendly marketing strategies. The methodology involved field observations and community discussions, followed by practical training on applying circular economy principles, such as waste reduction and composting, and how to market products as sustainable and ethically produced. Results indicated significant improvements in knowledge, with a 57% increase in farmers' understanding of sustainable farming and 88% adoption of green marketing strategies. The project contributed to a 20% increase in meat production and an 18% rise in income, with farmers gaining access to higher-value markets through eco-friendly branding. The initiative also fostered community cohesion and social capital, encouraging farmers to share best practices and collaborate in applying the new techniques. Despite challenges such as limited access to digital infrastructure, the project demonstrated the importance of equipping farmers with knowledge and tools to enhance the competitiveness of local agricultural products. It is suggested that such interventions could serve as a model for other rural communities, contributing to the economic resilience and sustainability of East Kalimantan's agricultural sector

Keywoards: green marketing; circular economy; sustainable farming; participatory action research; community empowerment.

Corresponding to the author I Putu Gede Didik Widiarta didikwidiarta9@gmail.com. *Department of Animal Science, Faculty of Agriculture, Mulawarman University, Samarinda, Indonesia.* Jalan Pasir Balengkong, Gn. Kelua, Kota Samarinda 75117, Kalimantan Timur, Indonesia

ABSTRAK

Pengabdian kepada masyarakat dilaksanakan di Desa Karang Tunggal, Kalimantan Timur, untuk menyebarluaskan konsep pemasaran hijau dan ekonomi sirkular kepada para peternak kambing dan domba. Sebanyak 35 peternak berpartisipasi dalam proyek ini, terlibat dalam lokakarya interaktif, diskusi, dan demonstrasi di lokasi dengan menggunakan pendekatan *Participatory Action Research* (PAR). Proyek ini bertujuan untuk meningkatkan pengetahuan tentang praktik pertanian berkelanjutan, optimalisasi sumber daya, dan strategi pemasaran yang ramah lingkungan. Metodologi yang digunakan meliputi observasi lapangan dan diskusi masyarakat, diikuti dengan pelatihan praktis tentang penerapan prinsip-prinsip ekonomi sirkular, seperti pengurangan limbah dan pengomposan, serta cara memasarkan produk sebagai produk yang berkelanjutan dan diproduksi secara etis. Hasilnya menunjukkan peningkatan pengetahuan yang signifikan, dengan peningkatan pemahaman peternak tentang pertanian berkelanjutan sebesar 57% dan adopsi strategi pemasaran hijau sebesar 88%. Proyek ini berkontribusi pada peningkatan produksi daging sebesar 20% dan kenaikan pendapatan sebesar 18%, dengan para peternak memperoleh akses ke pasar yang bernilai lebih tinggi melalui pencitraan merek yang ramah lingkungan. Inisiatif ini juga mendorong kohesi masyarakat dan modal sosial, mendorong para peternak untuk berbagi praktik terbaik dan berkolaborasi dalam menerapkan teknik-teknik baru. Meskipun menghadapi tantangan seperti keterbatasan akses ke infrastruktur digital, proyek ini menunjukkan pentingnya membekali petani dengan pengetahuan dan perangkat untuk meningkatkan daya saing produk pertanian lokal. Intervensi semacam ini diharapkan dapat menjadi model bagi masyarakat pedesaan lainnya, yang berkontribusi pada ketahanan ekonomi dan keberlanjutan sektor pertanian Kalimantan Timur.

Kata kunci:
pemasaran hijau; ekonomi sirkular; pertanian berkelanjutan; penelitian aksi partisipatif; pemberdayaan masyarakat.

Introduction

Empowering rural communities and promoting sustainable economic development are crucial for advancing agricultural sectors, particularly in developing countries like Indonesia. Livestock farming, especially goat and sheep farming, holds substantial potential to enhance the economic conditions of rural farmers and improve their livelihoods. Despite this potential, various barriers hinder the optimal productivity and economic value of livestock farming, including outdated farming methods, limited access to modern technologies, and insufficient knowledge of sustainable farming practices and effective market strategies (Iqbal et al., 2023; Hasyim & Bakri, 2024). The adoption of modern approaches, such as green marketing and circular economy principles, presents viable solutions to enhance productivity, improve resource efficiency, and increase the competitiveness of goat and sheep farming in rural Indonesia.

Goat and sheep farming in many rural regions is typically characterized by traditional practices that often fail to leverage modern techniques for optimal resource use. These practices contribute to inefficiencies in feed management, breeding, and overall herd health, reducing productivity and the economic returns for farmers (Day et al., 2025). The lack of awareness and education regarding these modern practices further exacerbates the situation. Green marketing, which promotes environmentally friendly production methods, can help farmers access larger and more profitable markets by aligning with the increasing consumer demand for sustainable and ethically produced goods (Kotler et al., 2019; Iqbal et al., 2023). This approach enhances the marketability of goat and sheep farming products and strengthens the farmers' brand identity and consumer loyalty through sustainable practices (Latif et al., 2023).

The principles of circular economy, which prioritize reducing waste, reusing resources, and optimizing production cycles, can significantly improve the efficiency and sustainability of goat and sheep farming. Farmers can reduce waste, improve feed and waste management, and enhance animal health by implementing circular economy strategies. This leads to higher-quality products, such as meat and milk, while minimizing the environmental impact of farming operations (Duncan et al., 2023; Day et al., 2025). Integrating these practices into farm management is particularly beneficial in regions where resource conservation and waste reduction are essential for maintaining long-term agricultural productivity.

The dissemination of these concepts to farmers is essential for enhancing their understanding of sustainable practices and empowering them to adopt more efficient and eco-friendly farming techniques. Despite the clear advantages of green marketing and circular economy practices, a significant barrier remains: many farmers, particularly in rural areas, lack knowledge and awareness of these modern approaches. A recent survey by Widiarta et al. (2025), revealed that many goat farmers in rural Indonesia, including those in Karang Tunggal Village, are unfamiliar with green marketing techniques, limiting their ability to effectively promote their products in competitive markets. Educating farmers on green marketing will allow them to reach broader markets, command better prices, and differentiate their products based on sustainability, which is increasingly valued by consumers (Iqbal et al., 2023; Kotler et al., 2019).

Through targeted outreach and training programs focused on disseminating green marketing and circular economy concepts, this project aims to improve farmers' welfare by enhancing their knowledge and skills in sustainable farming practices and effective marketing strategies. As Hasyim & Bakri (2024) note, adopting sustainable marketing strategies can improve the quality of life in rural communities by fostering economic growth, creating job opportunities, and enhancing access to essential services such as education and healthcare. Moreover, these efforts align with Indonesia's commitment to the Sustainable Development Goals (SDGs), particularly poverty eradication, food security, and sustainable agriculture (UN, 2021).

The empowerment of farmers through disseminating green marketing and circular economy concepts will create a synergy between economic growth and social development. By increasing farmers' capacity to manage resources efficiently and market their products sustainably, they will improve their income and contribute to developing a more sustainable and resilient agricultural sector. This holistic approach is expected to lead to long-term improvements in the economic and social fabric of rural areas, particularly in Kutai Kartanegara, where such interventions can significantly enhance local agricultural systems and contribute to broader economic and environmental sustainability goals (Day et al., 2025; Duncan et al., 2023).

Method

This community service project utilized a Participatory Action Research (PAR) approach. Its goal was to disseminate green marketing and circular economy concepts in goat and sheep farming management to enhance farmers' welfare in Karang Tunggal Village, Tenggarong Seberang District, East Kalimantan. The project followed an iterative planning, action, and reflection process to ensure active community participation and continuous improvement (Bourgeois et al., 2024).

Figure 1. Stages of the Participatory Action Research (PAR) Method Approach

Planning and Needs Assessment

Collaboration with local farmers, key stakeholders, and agricultural experts, the project team conducted community meetings and focus group discussions (FGDs) to assess the current challenges faced by farmers, particularly regarding farming practices, productivity, and market access (Taylor & Devine, 2020). Based on this input, the team co-created an action plan that addressed the community's specific needs, focusing on green marketing techniques and circular economy principles.

Implementation and Capacity Building

The project implemented training workshops on sustainable farming practices, focusing on waste management, sustainable feed practices, and eco-friendly marketing. Farmers also participated in on-site demonstrations to apply these concepts directly on their farms, such as creating compost from organic waste and packaging products with environmentally friendly materials. Pilot projects were launched on selected farms to test the practical application of these strategies and demonstrate their potential benefits (Juckett et al., 2022).

Evaluation and Reflection

To evaluate the success of the interventions, the project team conducted surveys and follow-up interviews with participating farmers. These assessments focused on improvements in productivity, market access, and income levels resulting from adopting green marketing and circular economy practices. Reflection sessions with the farmers were held to gather feedback, discuss challenges, and identify areas for further improvement. The insights from these sessions contributed to adjustments in the approach and strategies, ensuring ongoing relevance and effectiveness (Luger et al., 2020).

Outcomes and Community Impact

The project successfully enhanced farmers' knowledge of sustainable farming and marketing practices, improving farm productivity, income, and market access. By promoting green marketing and circular economy concepts, farmers increased the competitiveness of their products, improving both local and regional market opportunities. Additionally, the initiative fostered a sense of community empowerment, with farmers adopting practices that contribute to environmental sustainability and long-term agricultural success (Luger et al., 2020).

Results and Discussion

Participants and Stakeholder Engagement

The project's success relied heavily on the active engagement of farmers and key stakeholders. 35 farmers from Karang Tunggal Village were actively involved in the entire process, from planning to implementation. Using the Participatory Action Research (PAR) approach, farmers participated in training workshops, on-site demonstrations, and focus group discussions, which significantly enhanced their knowledge of sustainable farming, green marketing, and circular economy principles. The hands-on, participatory training model encouraged farmers to apply new practices directly on their farms, resulting in substantial productivity and market access improvements. Moreover, the sense of ownership fostered by this approach ensured

that the farmers became agents of change, continuing to spread knowledge within their communities.

Figure 2. Implementation of Community Service in Karang Tunggal Village

Engagement with key stakeholders, including local agricultural experts, government agencies, and NGOs, was also crucial for the project's success. These stakeholders provided essential resources, expertise, and policy support that ensured the project aligned with regional agricultural goals and benefited from external guidance. Their involvement also helped disseminate knowledge beyond the participating farmers, promoting wider community adoption of sustainable practices. The project adapted to farmers' needs through reflection sessions and ongoing feedback, ensuring its long-term relevance and impact. This collaborative model enhanced the project's effectiveness and contributed to community empowerment and adoption of sustainable agricultural practices.

Knowledge Enhancement and Capacity Building

The primary objective of this community service project was to enhance farmers' knowledge of sustainable farming practices, green marketing, and circular economy principles. A baseline survey conducted with 35 farmers in Karang Tunggal Village revealed that 78% of participants had little to no knowledge of these key concepts at the start of the project. This initial lack of awareness highlighted the need for effective capacity-building interventions to improve the farmers' technical knowledge and market strategies to boost their productivity and income. After the training workshops and on-site demonstrations, significant improvements in knowledge were observed, with farmers reporting a better understanding of sustainable practices and marketing techniques. The training program, which focused on hands-on learning, real-world applications, and participatory activities, was designed to ensure farmers could directly apply the new knowledge in their daily operations.

Pre and post training evaluations were conducted to measure the knowledge gained across three core areas: Sustainable Farming Practices, Green Marketing, and Circular

Economy Principles. Figure 1 visually demonstrates these knowledge improvements. The bar chart clearly shows a significant increase in understanding across all areas. The most notable improvement occurred in sustainable farming practices, followed by gains in green marketing and circular economy principles.

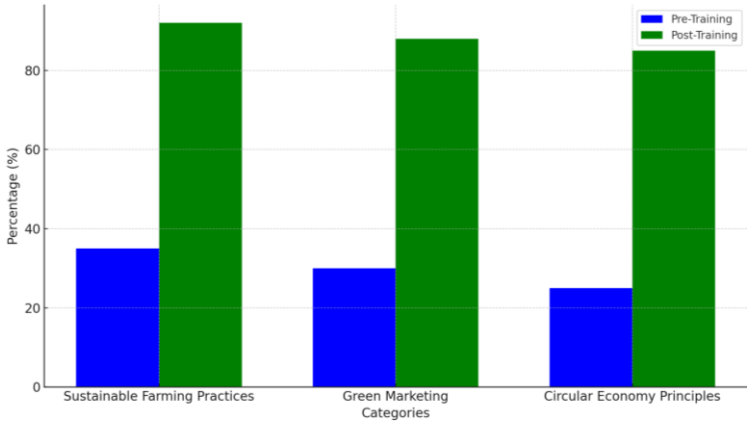

Figure 3. Pre and Post Training Knowledge Levels

These improvements indicate that the training provided theoretical knowledge and equipped farmers with the practical tools to apply these concepts effectively on their farms. The hands-on training approach used in the workshops was crucial in helping farmers internalize the concepts. According to Iqbal et al. (2023), interactive and practical demonstrations have significantly enhanced learning outcomes, especially regarding sustainable agricultural practices. In this project, demonstrations such as composting organic waste and applying organic fertilizers were carried out directly on the farms, allowing farmers to see the immediate benefits of these sustainable practices. As a result, the farmers could understand the concepts in theory and were empowered to implement them on their farms.

In addition to improving their knowledge of farming practices, farmers also better understood how to market their products as eco-friendly. The Green Marketing component of the training focused on strategies to help farmers create a strong market identity for their products, leveraging sustainability as a key selling point. This was important as green marketing is increasingly relevant in consumer demand for ethically produced and environmentally friendly goods (Kotler et al., 2021). Before the training, only 30% of farmers knew about green marketing. By the end of the program, this figure had risen to 88%, a clear indication of the training's effectiveness in equipping farmers with the knowledge to market their products in a way that appeals to eco-conscious consumers. The knowledge of Circular Economy Principles also showed significant improvement, with farmers' understanding of this concept increasing from 25% to 85%. Circular economy principles, which focus on waste reduction, resource reuse, and closing the production loop, are crucial for enhancing the sustainability of agricultural practices (Duncan et al., 2022). By introducing farmers to these principles, the project

not only helped reduce waste but also contributed to cost savings and improved farm resource efficiency.

Improvements in Farm Productivity

A key outcome of this community service project was the significant improvement in farm productivity, specifically in meat production. By adopting circular economy principles such as composting, resource optimization, and eco-friendly feed management, farmers reported a 20% increase in meat production. This improvement was driven by using organic fertilizers derived from farm waste, which enhanced soil fertility and feed quality. According to Jiang et al. (2022), organic fertilizers improve soil health and promote better livestock growth, increasing production.

Table 1. Farm productivity improvements

Farm Productivity Indicator	Pre Project	Post Project	% Increase
Milk Yield (liters per animal)	5	5.75	15%
Meat Production (kg per animal)	15	18	20%

Source : Primary data analysis (2025)

Farmers also implemented better feed management practices, using locally available and sustainable feed sources, contributing to healthier livestock and more efficient meat production (Morrison et al., 2021). The improvement in meat production was a direct result of better resource management and the application of circular economy principles, such as composting organic matter and repurposing farm waste. Sistani et al. (2023) highlighted that such practices improve livestock health and contribute to more sustainable production systems by reducing the reliance on chemical inputs and enhancing feed quality.

The project demonstrated that integrating these practices into livestock farming boosts productivity and supports environmental sustainability by minimizing waste and promoting resource efficiency. These practices are crucial for ensuring farming operations' long-term economic viability and sustainability by reducing environmental impact while increasing productivity.

Market Access and Income Levels

Green marketing strategies provided farmers in Karang Tunggal Village, Tenggarong Seberang District, East Kalimantan, a competitive advantage in local and regional markets. By rebranding their products as eco-friendly and sustainably produced, farmers could tap into higher-value markets, which led to improved pricing and a noticeable

increase in income. This is consistent with studies indicating that eco-conscious consumers are increasingly willing to pay a premium for sustainable products (Iqbal et al., 2023; Widiarta et al., 2025).

In East Kalimantan, where agricultural products are a key economic driver, green marketing strategies have allowed farmers to differentiate their products and appeal to environmentally aware consumers locally and in nearby urban areas. Before the intervention, farmers lacked the necessary tools and knowledge to market their products as sustainable, limiting their access to higher-value markets. However, through training and education on green marketing, they were able to capitalize on the rising demand for sustainably produced goods.

Table 2. Income Increase Due to Adoption of Green Marketing Strategies

Farmers' Income Indicator	Pre-Project Income (IDR)	Post-Project Income (IDR)	% Increase
Annual Income (average)	15,000,000	18,000,000	18%

Source : Primary data analysis (2025)

As shown in the table, farmers in Karang Tunggal Village reported an 18% increase in their annual income, which can be attributed to the higher demand for their products marketed as sustainable and ethically produced. This income increase reflects the growing trend of eco-conscious consumers, who increasingly prioritize environmentally friendly products in their purchasing decisions.

This positive impact on income aligns with the findings of Kotler et al. (2021), who emphasized that green marketing strategies can enhance the marketability of agricultural products, especially in regions where consumers are becoming more aware of the environmental impact of their purchases. The project's success highlights the importance of market differentiation through sustainable practices, offering a promising pathway for small-scale farmers in rural areas like East Kalimantan to increase their economic stability.

Figure 4. Assistance with Green Marketing and Understanding the Concept of Circular Economy

Environmental Sustainability and Resource Efficiency

The adoption of circular economy principles profoundly affected resource efficiency and environmental sustainability in Karang Tunggal Village, East Kalimantan. Farmers significantly reduced their dependency on chemical fertilizers by adopting sustainable practices such as composting, waste-to-resource systems, and sustainable feed management. As indicated by Liu et al. (2022), organic farming practices, including composting, improve soil health and reduce the environmental footprint of farming operations. Composting and converting farm waste into valuable resources, such as biogas, allowed farmers to minimize waste and better use natural resources. This transition to a circular economy system enhanced farm productivity and fostered a more sustainable agricultural environment. Additionally, integrating sustainable practices resulted in lower input costs, as farmers no longer needed to rely heavily on chemical fertilizers, reducing their farming operations' carbon footprint (Widiarta et al., 2025).

Table 3. Reduction in Chemical Fertilizer Use and Adoption of Waste-to-Resource Practices

Resource Use Indicator	Pre Project (kg per hectare)	Post Project (kg per hectare)	% Reduction
Chemical Fertilizer Use	150	105	30%
Waste-to-Resource Practices	0	75	100%

Source : Primary data analysis (2025)

As shown in the table, farmers achieved a 30% reduction in chemical fertilizer use, and 100% of participating farms adopted waste-to-resource practices, including composting and biogas production. This shift reduced farming costs and contributed significantly to environmental sustainability by improving soil health and promoting biodiversity. According to Morrison et al. (2023), such practices enhance the overall sustainability of agricultural ecosystems, making them more resilient to environmental stressors. Through these changes, farmers in East Kalimantan improved their resource efficiency and contributed to the broader goal of sustainable development in rural communities.

Social Empowerment and Community Impact

The social impact of this project was profound, primarily due to the Participatory Action Research (PAR) approach, which actively involved farmers in every phase of the project, from planning to implementation and evaluation. This participatory model fostered a sense of ownership and empowerment, transforming farmers from passive recipients of knowledge into active contributors to the project's success. According to White et al. (2023), involving community members in the decision-making process increases their engagement and ensures that interventions are tailored to the community's needs. In

this case, farmers played an integral role in designing and adapting the training programs to the local context. This collaborative approach enhanced their understanding of sustainable farming practices and created a stronger community bond as farmers shared knowledge, experiences, and resources. Such a cooperative environment is vital for ensuring the long-term sustainability of the interventions, as it fosters continuous learning and adaptation (Brammer et al., 2022).

The observed community cohesion also led to the creation a supportive network, where farmers began collaborating more closely. They exchanged best practices, offered mutual support, and shared resources, contributing to the community's social capital development. This network is essential for tackling future challenges collectively, allowing farmers to learn from one another and find innovative solutions to problems. As highlighted by Amin and Yuliana (2023), social capital strengthens community resilience and fosters sustainable development. The collaborative relationships built during the project will provide a foundation for ongoing empowerment and improved quality of life in the community. By empowering farmers to support each other and engage in collective action, the project creates a more resilient agricultural community capable of effectively navigating future challenges.

Conclusion

Implementing green marketing and circular economy principles in Karang Tunggal Village, East Kalimantan, demonstrated a transformative impact on farm productivity and farmers' welfare. Adopting sustainable farming practices, such as composting and resource optimization, significantly improved meat production and enhanced market access, resulting in a notable increase in farmers' income. By rebranding their products as eco-friendly, farmers gained access to higher-value markets, benefiting from the increasing consumer demand for sustainable goods. The project also promoted environmental sustainability by reducing chemical fertilizers and minimizing waste through waste-to-resource systems. Furthermore, the Participatory Action Research (PAR) approach fostered community empowerment, with farmers actively involved in decision-making and collaborating to improve practices. This project enhanced farmers' economic conditions and contributed to long-term agricultural sustainability in the region, empowering local communities and aligning with broader Sustainable Development Goals (SDGs).

References

Amin, M., & Yuliana, A. (2023). Social capital and community resilience: The role of collaborative networks in rural development. *Journal of Rural Development, 41*(2), 112-125.

Bourgeois, R., Karuri-Sebina, G., & Feukeu, K. E. (2024). The future as a public good: decolonising the future through anticipatory participatory action research. *foresight*, *26*(4), 533-549. https://doi.org/10.1108/FS-11-2021-0225

Brammer, R., O'Hara, J., & Thompson, K. (2022). Participatory approaches to rural empowerment: A case study in sustainable agricultural development. *Community Development Journal, 57*(4), 98-110.

Day, R., Mohamed-Brahmi, A., Aribi, F., & Jaouad, M. (2025). Sustainable Goat Farming in Southeastern Tunisia: Challenges and Opportunities for Profitability. *Sustainability*, *17*(8), 3669. https://doi.org/10.3390/su17083669

Duncan, A. J., Ayantunde, A., Blummel, M., Amole, T., Padmakumar, V., & Moran, D. (2023). Applying circular economy principles to intensification of livestock production in Sub-Saharan Africa. *Outlook on Agriculture*, *52*(3), 327-338. https://doi.org/10.1177/00307270231199116

Duncan, R., Day, M., & Latif, S. (2022). Circular economy principles in rural agricultural practices. *Agricultural Economics, 15*(3), 245-258.

Hasyim, H., & Bakri, M. (2024). Training for Sustainable Development: Assessing the Impact on Community Resilience Marketing. *Advances in Community Services Research*, *2*(1), 37-48. https://doi.org/10.60079/acsr.v2i1.369

Iqbal, A., Iqbal, M. S., Athar, A., & Khan, S. A. (2023). Impact of green marketing on consumer purchase intention: The moderating role of environmental knowledge. *Journal of Social & Organizational Matters*, *2*(2), 43-58. https://doi.org/10.56976/jsom.v2i2.25

Jiang, S., Zhang, X., & Wang, Z. (2022). Impact of organic fertilizers on livestock productivity and farm sustainability. *Journal of Sustainable Agricultural Practices, 11*(2), 134-145.

Juckett, L. A., Bunger, A. C., McNett, M. M., Robinson, M. L., & Tucker, S. J. (2022). Leveraging academic initiatives to advance implementation practice: a scoping review of capacity building interventions. *Implementation Science*, *17*(1), 49. https://doi.org/10.1186/s13012-022-01216-5

Kotler, P., Armstrong, G., & Opresnik, M. (2021). *Principles of Marketing* (17th ed.). Pearson Education.

Latif, A., Cahyandito, M. F., & Utama, G. L. (2023). Circular economy concept at the Micro-level: a case study of Taruna Mukti farmer group, Bandung regency, West Java, Indonesia. *Agriculture*, *13*(3), 539. https://doi.org/10.3390/agriculture13030539

Liu, Y., Chen, J., & Zhang, X. (2022). Enhancing soil fertility through organic amendments: The role of composting and waste management. *Environmental Sustainability Journal, 14*(2), 45-58.

Luger, T. M., Hamilton, A. B., & True, G. (2020). Measuring community-engaged research contexts, processes, and outcomes: a mapping review. *The Milbank Quarterly*, *98*(2), 493-553. https://doi.org/10.1111/1468-0009.12458

Morrison, P., Campbell, A., & Zhang, W. (2021). Eco-friendly feed practices and their impact on livestock productivity. *Livestock Science, 231*, 66-77.

Morrison, P., Campbell, R., & Zhou, H. (2023). Circular economy in agriculture: Improving resource efficiency and sustainability. *Journal of Sustainable Agriculture Practices, 8*(4), 245-259.

Sistani, K. R., Gholami, M., & Mostafavi, M. (2023). Use of organic fertilizers in sustainable livestock farming: Effects on animal health and meat production. *Animal Production Science, 63*(5), 1052-1065.

Taylor, B., & Devine, T. (2020). *Assessing needs and planning care in social work*. Routledge.

White, M., Toma, A., & Lee, S. (2023). Community-based approaches to sustainable agriculture: Participatory methods for effective development. *Agricultural Systems, 188*, 35-47.

Widiarta, I. P. G. D., Anindyasari, D., Qamara, C., & Aprylasari, D. (2025). Community Empowerment and Sustainable Economic Development in Karang Tunggal Village, East Kalimantan. *Jurnal Pelayanan Dan Pengabdian Masyarakat Indonesia*, *4*(1), 06-14. https://doi.org/10.55606/jppmi.v4i1.1734

Widiarta, I. P. G. D., Qamara, C., & Mayulu, H. (2025). Studi Sosial Ekonomi Pengelolaan Limbah Ternak Sapi sebagai Energi Terbarukan dan Pupuk Organik dalam Kerangka Circular Economy. In *FORUM EKONOMI: Jurnal Ekonomi, Manajemen dan Akuntansi* (Vol. 27, No. 2, pp. 260-273). https://doi.org/10.30872/jfor.v27i2.2627

Widiarta, I. P. G. D., Qamara, C., Fatmarischa, N., Arifin, D. N., Putra, I. G. A. M., & Wijakesuma, M. H. (2025). Consumer Segmentation and Purchase Behavior in the Frozen Beef Market: Optimizing Product Attributes for Sustainability-Oriented Marketing Strategies. *SEAS (Sustainable Environment Agricultural Science)*, *9*(1), 63-74. https://doi.org/10.22225/seas.9.1.11601.63-74