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DEVELOPING SUSTAINABLE PREMIUM BEEF PRODUCTION THROUGH LOCAL INNOVATION: A CONCEPTUAL STUDY OF MYGYU

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Abstract: *The beef industry in Malaysia is hindered by continued import dependence, production constraints and growing demand for differentiated meat products. The home-grown premium beef initiative MyGyu offers a valuable case for exploring how innovation could help domestic value creation. This is a conceptual paper that proposes a framework for linking local innovation to sustainable premium beef production in Malaysia. Recent literature on agricultural innovation, precision livestock farming, sustainable production and food value chains is the basis for conceptualising local innovation as production technology, product development and supply-chain innovation. Sustainable production means economic, environmental and social dimensions. Three theoretical propositions argue that local innovation can contribute to profitability and domestic value creation, more efficient resource management, and inclusive industry participation. Local production alone does not dictate environmental superiority, food affordability or commercial viability. These outcomes must be measured and tested empirically. The paper presents an integrated conceptual basis to evaluate MyGyu beyond its substitute to imported premium beef. It also highlights priorities for*

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producers and policy makers, such as quality assurance, traceability, farm-level performance assessment and industry-research collaboration.

Keywords: *Local Innovation; Premium Beef; Sustainable Production; Economic Sustainability; Food Security*

Introduction

Sustainable livestock production has become increasingly important as economies seek to strengthen food-system resilience, agricultural competitiveness and domestic production capabilities. The country's beef sector is still largely dependent on imports. The official supply and utilisation statistics indicate that domestic production only covers a small proportion of the national beef requirements (Department of Statistics Malaysia, 2026). These structural conditions motivate efforts to improve production capacity, product quality and the competitiveness of locally produced beef. Premium beef localization offers an additional development pathway. MyGyu is a Malaysian premium beef initiative still in its infancy, and tied to local crossbreeding and production efforts. A recent account describes the project as an initiative to foster "a unique local alternative to a market long dominated by imported premium meat" (Azmi, 2025). Such positioning may offer pathways to differentiation, higher value agricultural activity and local knowledge. However, the local origin of a premium product does not per se mean economic, environmental or social sustainability.

Responsible innovation in livestock systems is discussed (Eastwood et al., 2021), as is precision monitoring and animal welfare (Papakonstantinou et al., 2024) and the potential of production technologies to reduce emissions (McNicol et al., 2024). Less attention has been devoted to integrating these perspectives into a focused conceptual explanation of domestic premium beef localization in Malaysia. This paper therefore aims to develop a conceptual framework to comprehend the potential contribution of local innovation to sustainable premium beef production through MyGyu. The relationships we propose are theoretical in nature, intended to guide future empirical evaluation, rather than to state observed results.

Literature Review

Local Innovation in Premium Beef Production

Local innovation is the development or adaptation of technologies, products and organisational arrangements to domestic production conditions. Innovations in livestock systems include better breeding, feeding and health management, digital monitoring, differentiated product development, and coordination along the value chain. Eastwood and colleagues (2021) make the case for responsible agricultural innovation that considers the needs of diverse stakeholders and alternative development pathways rather than productivity alone. Thus, the relevance of innovation depends on the compatibility with producer capabilities, local resources and market institutions.

Precision livestock farming shows these opportunities. Applications for welfare monitoring and farm management are reported by Papakonstantinou et al. (2024) and technologies for data-driven livestock decisions by Chapagaee et al. (2024). Bretas et al. (2024) reviewed precision approaches to grazingland management. For MyGyu, production technology could help with consistent husbandry and quality control; product innovation could create a recognisable domestic premium category; and supply-chain innovation could improve traceability,

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processing coordination and market access. These are possible mechanisms and not proven MyGyu-specific effects.

Sustainable Premium Beef Production

Sustainability is treated as a multidimensional outcome. Economic sustainability concerns long-run viability, including profitability, production efficiency, stable demand and domestic value addition. Premium positioning can support higher unit revenues but also carries quality-control, capital and operating costs. The term sustainability in the environmental sense describes the use of resources, greenhouse gas emissions, waste and land use. The model by McNicol et al. (2024) shows the potential of precision farming to reduce emissions, but this potential in terms of magnitude and direction depends on the respective production system as well as the degree of implementation of technologies. Sustainability in the social sense covers aspects such as employment, participation of producers and farmers, skills development, animal welfare and fair opportunities for all actors in the value chain. Papakonstantinou et al. (2024) focus on welfare-related applications and challenges of livestock technologies. A sustainable premium beef program should therefore prove its success not only in the marketplace, but also in responsible production practices and in real benefits to local participants. These dimensions may involve trade-offs: technologies may increase productivity, but they may also impose costs or exclude producers who cannot afford to adopt.

MyGyu and Malaysia's Premium Beef Industry

MyGyu is a suitable environment to explore the differentiation of local premium beef. Public reporting is focused on local breeding and premium product development, but there is still limited systematic evidence on its production costs, environmental impacts, and market performance (Azmi, 2025). Its food security role should not be confused with general national self-sufficiency: a premium niche product can improve domestic capabilities and supply diversification without making much difference to access to affordable protein. Its commercial prospects are likely to be determined by market credibility, consistency of quality, traceability and consumer willingness to pay. MyGyu is treated as a contextual application within the existing framework rather than an empirically validated sustainability success.

Conceptual Framework Development

Instead of collecting primary data, this study employs a conceptual synthesis. The selection of constructs is guided by recent literature on responsible livestock innovation, precision farming, sustainability assessment and domestic product differentiation . Local innovation is the explanatory construct, explained by production technology, product development and supply-chain innovation. The result is sustainable premium beef production. It includes economic, environmental and social sustainability. The framework does not assume that these outcomes move together.

Local Innovation for Sustainable Production

Production technology can improve decisions about breeding, feeding, health monitoring and operational efficiency. Product development can create a distinctive identity, based on consistent quality and believable attributes. The innovation in the supply chain can improve information exchange, traceability and coordination between farms, processors and retailers. Eastwood et al. (2021) point to the need for responsible innovation pathways, while Bretas et al. (2024) and McNicol et al. (2024) demonstrate why technologies in livestock management are worth investigating. The mechanisms improve MyGyu sustainability depending on adoption costs, managerial capability, scale and market conditions.

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Economic, Environmental and Social Sustainability

The economic returns include lower unit costs, reliable premium quality, margins for the producer and domestic value addition. Environmental outcomes can include feed and water efficiency, waste management, and emissions intensity, which should be assessed using farm-level measurements and, where possible, life-cycle approaches. Social outcomes could include skilled employment, farmer inclusion, training, welfare practices and knowledge transfer. Perrin et al. (2023) emphasise that sustainability assessment should be embedded in innovation design rather than being assumed as a by-product of technological change.

Proposed Conceptual Relationships

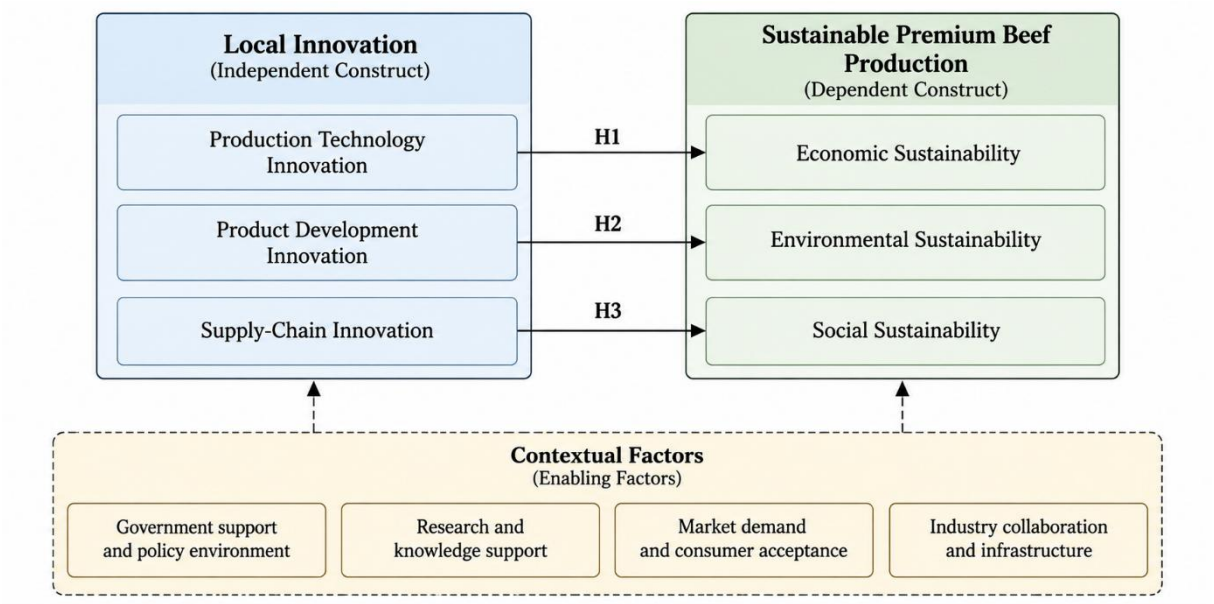


Figure 1: Proposed Conceptual Framework for Sustainable Premium Beef Production (MyGyu)

Source: Author's conceptual development based on literature review

Figure 1. The proposed conceptual framework on the relationship between local innovation and sustainable premium beef production in Malaysia, contextualised with MyGyu. The framework defines local innovation as the independent construct with three dimensions: production technology innovation, product development innovation and supply-chain innovation. Innovation in production technology is focused on breeding techniques, animal husbandry, feeding strategies and the efficiency of production. Product development Innovation is about consistency of premium quality, differentiation of product and creation of a unique local brand reputation. Supply chain innovation means progress in traceability, distribution efficiency, and collaboration among industry stakeholders. These dimensions together are potential mechanisms for local innovation to enhance the development of Malaysia's premium beef industry.

The framework also identifies sustainable premium beef production as the dependent construct, which includes economic, environmental and social sustainability. Economic sustainability relates to the efficiency of production, profitability, domestic value addition and market competitiveness. Environmental sustainability means the best use of resources, responsible livestock management, waste reduction and environmental performance. Social sustainability is about involving local farmers, creating jobs, transferring knowledge and developing the

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community. The proposed framework suggests that local innovation may have a positive impact on the three sustainability dimensions through the promotion of production capabilities, improvement in resource management and support for inclusive industry development.

The framework further outlines four contextual enablers: government support and policy environment, research and knowledge support, market demand and consumer acceptance, and industry collaboration and infrastructure. These factors could enable local innovation uptake and efficiency and encourage sustainable production practices. Government policies and institutional support can encourage technology development, and collaboration in research helps to transfer knowledge and technical progress. Consumer acceptance and market demand are important factors in the commercial viability of locally produced premium beef and industry collaboration improves coordination along the livestock value chain. However, these contextual factors are described as potential enabling conditions, not as formally specified moderating variables.

Thus, the framework proposes three conceptual relationships between local innovation and sustainability dimensions of MyGyu production. Proposition 1 (P1) states that local innovation has a positive impact on economic sustainability, Proposition 2 (P2) states that it has a positive relation with environmental sustainability and Proposition 3 (P3) states that it has a positive contribution to social sustainability. These propositions offer a theoretical basis for understanding how the localisation of innovation-driven premium beef can support sustainable livestock development in Malaysia. The framework is conceptual and the suggested relationships need to be empirically validated in future research.

Discussion

The proposed framework suggests MyGyu can be a platform to create a unique Malaysian premium beef category, not just copy imported Wagyu. The strategic relevance is the combination of localised production, differentiation of product and value chain coordination. There is potential for economic benefits if consistent quality and credible branding can support a price premium, but high input costs and limited scale could threaten commercial viability. Therefore, the profitability should be evaluated based on the data on production costs, quality of the output and demand. Environmental claims require similar care. Local supply chains might be different from imported ones, but transport distance is only one part of the overall impacts. Production footprints can be dominated by feed sourcing, land use and animal productivity and management. The potential identified by McNicol et al. (2024) supports the evaluation of efficiency assisted by technology, rather than assuming that all technology lowers emissions. Social benefits, too, depend on whether small producers, workers and surrounding communities share in industry development.

Besides, the framework sheds light on what MyGyu could contribute to food security. Premium beef localisation could enhance domestic knowledge, diversification and resilience, but may be out of reach of price-sensitive consumers. It should therefore be a complement to, rather than a substitute for, broader policies that address affordable nutrition and domestic livestock capacity. The distinction prevents conflating success in the premium product market with food security at the national level.

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Implications and Recommendations

Theoretical Implications

This study contributes to the existing literature by combining local innovation and sustainability perspectives within the framework of the emerging premium beef industry in Malaysia. The conceptual framework proposed here advances understanding of sustainable livestock production through the role of production technology, product development, and supply-chain innovation in achieving economic, environmental and social sustainability. Different from traditional models that focus on production efficiency, this framework emphasises the importance of innovation-led value generation, sustainable utilisation of resources, and equitable industry growth. Moreover, the study provides a conceptual framework to comprehend the role of the locally developed premium beef products such as MyGyu in enhancing domestic agricultural competitiveness and contributing to wider sustainability objectives.

Practical and Policy Implications

The proposed framework offers practical insights for livestock producers, industry stakeholders and policy makers seeking to bolster Malaysia's premium beef industry. In particular, livestock producers should focus on technological improvements, consistency in product quality and efficiency in the supply chain to improve competitiveness and long-term economic viability. There is also a need for collaboration between research institutions, agricultural agencies and industry participants to promote knowledge transfer, technical expertise and adoption of innovation. Targeted financial incentives, support for research and development, and improved livestock infrastructure can promote the development of locally produced premium beef. Besides, setting the right quality assurance, traceability and sustainability standards can enhance consumer confidence and help market positioning of MyGyu as a unique Malaysian premium beef product.

Recommendations for Future Research

Future research should empirically test the proposed conceptual framework by investigating the links between local innovation and the economic, environmental and social sustainability of premium beef production. Quantitative approaches, especially Structural Equation Modelling, could be used to test the suggested relationships by collecting data from livestock producers, industry stakeholders and supply chain factors. Qualitative studies including in-depth interviews with MyGyu producers, agricultural experts and policy makers will help to provide additional insights on the opportunities and challenges of local premium beef development.

Further studies should also examine how consumers perceive, are willing to pay for and prefer to purchase locally produced premium beef versus imported alternatives. Special attention should be given to product quality, halal certification, traceability, perceived value and customer trust. Comparative economic studies can also compare the production costs and profitability and compare the market competitiveness with imported high-quality beef. Environmental studies such as life-cycle assessment can also provide evidence of the efficiency of resources use and the amount of greenhouse gas emissions and environmental impacts of high-quality beef production in the domestic market. Finally, it is suggested to conduct longitudinal studies on the impact of technological advancement, market acceptance and policy support on the long-term sustainability and commercial development of MyGyu in the livestock industry in Malaysia.

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Conclusion

This study proposes a conceptual framework of local innovation in sustainable premium beef production in Malaysia. Specifically, the framework is developed within the context of MyGyu and covers three dimensions of local innovation namely production technology, product development and supply-chain innovation and their interrelations with economic, environmental and social sustainability. In summary, sustainable premium beef production requires more than mere production of technological change and products. It also requires production to be economically viable, to use resources in a responsible manner and to be inclusive.

The study also points to MyGyu's potential to boost Malaysia's domestic livestock industry by adding value through innovation, establishing itself in the premium market and decreasing the dependence on imported premium beef. However, the local development of premium beef should not be viewed as an import substitution strategy, but rather as an opportunity to develop a competitive and sustainable domestic premium beef industry. From a policy perspective, collaboration between livestock producers, research institutions, industry stakeholders, and government agencies is essential to facilitate the use of technologies, improve product quality, and ensure the long-term growth of the industry.

These relationships have been conceptualized and have not been empirically verified. Therefore, future research will have to verify the given framework within the scope of quantitative and qualitative research. With regard to content, this study aims to explore the significance of local innovation for the sustainable development of Malaysia's premium beef industry and to support domestic value creation and the sustainability of agriculture.

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References

Bretas, I. L., Dubeux, J. C. B., Cruz, P. J. R., Oduor, K. T., Queiroz, L. D., Valente, D. S. M., & Chizzotti, F. H. M. (2024). Precision livestock farming applied to grazingland monitoring and management—A review. *Agronomy Journal, 116*, 1164–1186. https://doi.org/10.1002/agj2.21346

Eastwood, C. R., Edwards, J. P., & Turner, J. A. (2021). Review: Anticipating alternative trajectories for responsible Agriculture 4.0 innovation in livestock systems. *Animal, 15*, Article 100296. https://doi.org/10.1016/j.animal.2021.100296

Losacco, C., Pugliese, G., Forte, L., Tufarelli, V., Maggiolino, A., & De Palo, P. (2025). Digital transition as a driver for sustainable tailor-made farm management: An up-to-date overview on precision livestock farming. *Agriculture, 15*(13), Article 1383. https://doi.org/10.3390/agriculture15131383

Marchegiani, S., Gislon, G., Marino, R., Caroprese, M., Albenzio, M., Pinchak, W. E., Carstens, G. E., Ledda, L., Trombetta, M. F., Sandrucci, A., Pasquini, M., Deligios, P. A., & Ceccobelli, S. (2025). Smart technologies for sustainable pasture-based ruminant systems: A review. *Smart Agricultural Technology, 10*, Article 100789. https://doi.org/10.1016/j.atech.2025.100789

McNicol, L. C., Bowen, J. M., Ferguson, H. J., Bell, J., Dewhurst, R. J., & Duthie, C.-A. (2024). Adoption of precision livestock farming technologies has the potential to mitigate greenhouse gas emissions from beef production. *Frontiers in Sustainable Food Systems, 8*, Article 1414858. https://doi.org/10.3389/fsufs.2024.1414858

Neculai-Valeanu, A.-S., Sanduleanu, C., & Porosnicu, I. (2025). From tradition to precision: Leveraging digital tools to improve cattle health and welfare. *Frontiers in Veterinary Science, 12*, Article 1549512. https://doi.org/10.3389/fvets.2025.1549512

Papakonstantinou, G. I., Voulgarakis, N., Terzidou, G., Fotos, L., Giamouri, E., & Papatsiros, V. G. (2024). Precision livestock farming technology: Applications and challenges of animal welfare and climate change. *Agriculture, 14*(4), Article 620. https://doi.org/10.3390/agriculture14040620

Pelton, R. E. O., Kazanski, C. E., Keerthi, S., Racette, K. A., Gennet, S., Springer, N., Yacobson, E., Wironen, M., Ray, D., Johnson, K., & Schmitt, J. (2024). Greenhouse gas emissions in US beef production can be reduced by up to 30% with the adoption of selected mitigation measures. *Nature Food, 5*(9), 787–797. https://doi.org/10.1038/s43016-024-01031-9

Perrin, A., Yannou-Le Bris, G., Angevin, F., & Pénicaud, C. (2023). Sustainability assessment in innovation design processes: Place, role, and conditions of use in agrifood systems. A review. *Agronomy for Sustainable Development, 43*, Article 10. https://doi.org/10.1007/s13593-022-00860-x

Tran, D., Schouteten, J. J., Gellynck, X., & De Steur, H. (2024). How do consumers value food traceability? A meta-analysis. *Food Control*, Article 110453. https://doi.org/10.1016/j.foodcont.2024.110453

Gresse, A. U., & van Marle-Köster, E. (2026). Precision livestock farming technologies to support sustainable beef cattle production: A South African perspective. *South African Journal of Animal Science, 56*(6), 226–240. https://doi.org/10.17159/sajas.v56i06.01

Jin, S., Matsuoka, Y., Yue, M., Jones, G., & Frewer, L. J. (2024). Does information about environmental considerations affect Chinese and UK consumers' purchase intentions for traced foods? A path analysis. *Environment, Development and Sustainability, 26*, 32287–32318. https://doi.org/10.1007/s10668-024-05097-0

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DOI: 10.55573/IJAFB.117001

Nugrahaeningtyas, E., Lee, J.-S., & Park, K.-H. (2024). Greenhouse gas emissions from livestock: Sources, estimation, and mitigation. *Journal of Animal Science and Technology, 66*(6), 1083–1098. https://doi.org/10.5187/jast.2024.e86

Wongpiyabovorn, O., Wang, T., Menendez, H., & Yago, A. L. (2025). Precision livestock farming technologies in beef cattle production: Current and future. *Choices, 40*(2), 1–8. https://doi.org/10.22004/ag.econ.358371

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