

Reconstructing the Business Model Canvas to Promote Sustainability in Community-Based Businesses

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ABSTRACT. The transformation of the national and regional economic structure has positioned micro, small, and medium enterprises (MSMEs) as key drivers of local economic growth; however, many still rely on conventional business models that neglect sustainability aspects. This study aims to reconstruct the *Business Model Canvas* (BMC) for tofu-based community industries in Depok and Bogor to integrate social and environmental dimensions within business practices. Using a descriptive qualitative approach and a case study design, data were collected through in-depth interviews, participatory observations, and focus group discussions with tofu producers, community leaders, and relevant stakeholders, complemented by secondary data from official reports and literature. The analysis employed thematic interpretation supported by the *Triple Bottom Line* framework to identify potential restructuring of BMC components. The findings reveal that existing tofu businesses focus mainly on production and direct sales with limited innovation, weak waste management, and dependence on imported soybeans. The reconstructed BMC emphasizes green partnerships, waste-to-product innovation, eco-branding, and digital marketing strategies that enhance economic resilience and social inclusion. The integration of environmental costs and benefits within the cost and revenue structure demonstrates that sustainability can generate new economic value rather than financial burdens. In conclusion, this study provides a strategic framework for sustainable community-based businesses, contributing to the development of inclusive and environmentally responsible local economies.

Keyword: Business Model Canvas; Community-Based Industry; Sustainable Business

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INTRODUCTION

Changes in the national and regional economic structure have accelerated the role of micro, small, and medium enterprises (MSMEs) as the main drivers of the local economy. In Depok City, the number of MSMEs increased from around 162,388 units in 2016 to 219,238 units in 2021 (Dinas Koperasi dan UMKM Jawa Barat 2024). This increase indicates that MSMEs have great growth potential, but often the business models used are still conventional and do not take into account the dimension of sustainability. Frameworks such as the Business Model Canvas (BMC) have long been used as a strategic tool for designing business models, but many critics say that BMC does not explicitly include social and environmental aspects. In the context of long-term community-based businesses, the integration of sustainability dimensions is crucial. Therefore, this study aims to reconstruct the BMC to be more responsive to sustainability challenges in the MSME sector.

The cities of Depok and Bogor are two satellite cities of the capital that have community-based economic potential, particularly in the processed food sector. In Depok, the food and beverage sector has seen a steady increase in the number of MSMEs (Depok POS 2023). In Bogor City, there is a tofu agro-industry in Kayumanis Village, Tanah Sareal District, which shows business feasibility criteria with an NPV of IDR 554,345,382 and an IRR of 39.83% in one example of a tofu business (Arief et al., 2020). The tofu processing industry not only creates jobs but also has the potential to be an economic pillar for local communities. Constraints such as limited capital, technology, and waste management are obstacles to truly sustainable business development. The research focused on community-based tofu processing in both cities as the research locus.

In practice, community-based tofu processing businesses still mostly use business models that focus only on production and marketing, without systematically considering environmental and social welfare aspects. A study in Kalikidang Village, Banyumas Regency, found that tofu MSMEs face a decline in product quality due to a lack of technology and good distribution (Kurniawati et al., 2024). In Bogor City, the Tansa tofu SME faced challenges in the production process due to limited equipment and raw material quality (Prihadi et al., 2025). In the household-scale tofu industry in other locations, the use of up to 200 kg/day of soybean raw materials to produce 1,200 pieces of tofu per day shows that the scale of the business can be quite large but is not necessarily accompanied by sustainable management (Alisah et al., 2025). If environmental aspects, such as waste, and social factors, such as community inclusion, are not taken into account, the potential of the business could be threatened in the long term. There is a need to reconstruct the business model to take into account all dimensions of sustainability.

Reconstructing the BMC is a strategic solution to overcome these challenges. In this reconstruction, the blocks in the BMC, such as Value Proposition, Customer Segments, Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partners, and Cost Structure, need to be redesigned to incorporate the triple bottom line (people-planet-profit) principle. Thus, community social capital, environmental sustainability, and economic profitability must be integrated. For example, key partners could include local communities and waste management agencies, key activities could include processing tofu waste into by-products, and the value proposition could include sustainability aspects. Thus, the reconstructed business model is expected to strengthen the competitiveness of tofu-processing MSMEs in Depok and Bogor while providing social and environmental benefits.

This study aims to reconstruct the Business Model Canvas for the community-based tofu processing industry in Depok and Bogor. The main focus of the study is to develop a business model framework that is oriented towards sustainability and in line with local socio-economic characteristics. The results of this study are expected to contribute to the development of adaptive, inclusive, and sustainable community business strategies, particularly in the tofu commodity. In addition, the findings of this study can also be used as policy recommendations for local governments in designing more effective interventions for community-based tofu businesses. The sustainability of the tofu processing industry is not only guaranteed from an economic perspective, but also from a social and ecological perspective.

METHODS

This study uses a qualitative descriptive approach with a case study research design. This approach was chosen to provide an in-depth understanding of the form and process of reconstructing *the Business Model Canvas* in the community-based tofu processing industry (Daud *et al.*, 2025). The research was conducted from February to July 2025 to allow sufficient time for comprehensive data collection and analysis. The research locations were Depok City and Bogor City, which are areas with rapid growth in small and medium enterprises in the processed food sector. The research focused on community-scale tofu business actors, as this sector is considered representative of the dynamics of traditional business models and the potential for applying sustainability principles (Pramularso *et al.*, 2022).

The data sources in this study consist of primary data (Bella *et al.*, 2021) and secondary data (Faizal *et al.*, 2020). Primary data were obtained through in-depth interviews, participatory observation, and focus group discussions (FGD) with tofu entrepreneurs, community administrators, and relevant stakeholders, such as representatives of local governments and MSME assistance institutions. Secondary data was obtained from official local government documents, statistical reports, scientific publications, and data from the Central Statistics Agency (BPS) related to MSMEs and the food industry sector. Informants were selected using purposive sampling, considering the respondents' direct involvement in the production process, business management, and strategic decision-making at the community level. This approach was chosen to obtain rich, relevant, and contextual data (Theofadilla and Handoyo 2024).

Data analysis was conducted using a thematic analysis approach (Kristia 2019) combined with the *Business Model Canvas* framework (Joyce and Paquin 2016) and the *Triple Bottom Line* sustainability principle (Huriyati *et al.*, 2023). The analysis stages included data reduction, data presentation, and conclusion drawing. The data obtained from interviews and observations were analyzed systematically to identify existing business model components and the potential for reconstruction that integrates economic, social, and environmental aspects. The results of the analysis were then presented in the form of a modified BMC block mapping to suit the sustainability context of the community-based tofu industry in Depok City and Bogor City. This approach is expected to produce an adaptive, inclusive, and applicable business model.

RESULT AND DISCUSSION

This study shows that the community-based tofu processing industry in Depok City and Bogor City is still dominated by micro and small businesses. It is known that the business conditions are run by the majority of families or community groups with an average of 3-10 workers. Production activities focus on manual processes with a daily production capacity of between 800 and 1,200 pieces of tofu per business unit. Based on field observations, business actors still use a traditional business model that is oriented towards production and direct sales to consumers. The managerial structure is simple, with decision-making centered on the business owner, so that business innovation is still limited.

Further findings show that the *value proposition* aspect in the initial BMC still largely focuses on affordable prices and the fresh taste of tofu. Meanwhile, the distribution channels and customer relations aspects are still informal through traditional markets, food stalls, and social relations within the community. This approach is relatively effective in maintaining the local market, but it is not strong enough for broader market expansion. There has been no optimal use of digital technology, so promotion and sales are still limited to certain areas. This condition has implications for slow business growth and limited added value.

In terms of *key resources*, it is known that businesses are highly dependent on imported soybeans and simple production equipment. Human resources mostly come from family members or local residents, with production skills passed down from generation to generation. Meanwhile, *key activities* are focused on processing soybeans into tofu and direct distribution to the market. *Key partnerships* are limited to soybean suppliers and local retailers. These findings show that the business model is not yet oriented towards cross-sector collaboration that can support long-term sustainability.

The cost structure of the initial BMC was dominated by the costs of soybean raw materials, energy (electricity and firewood), and labor. Meanwhile, *revenue streams* only came from the sale of raw tofu products. There was no product diversification or additional monetization strategies. This resulted in relatively thin profit margins for businesses, which were highly vulnerable to fluctuations in raw material prices. In addition, social and environmental aspects were not systematically taken into account in cost and revenue calculations.

In terms of sustainability, the study found that most businesses do not yet have adequate waste management systems. Liquid waste from the production process is discharged directly into the surrounding environment without further treatment, causing potential water pollution and unpleasant odors. In addition, solid waste such as tofu pulp has not been optimally utilized, even though it has economic potential as animal feed or raw material for derivative products. This condition shows that environmental aspects are not a major concern in their business model structure.

From a social perspective, the tofu processing businesses in both cities have provided local economic benefits by absorbing community labor. However, there is no strong community institutional structure to support business sustainability. Community involvement is limited to that of workers without a role in strategic decision-making. This indicates a great opportunity to strengthen the social dimension of the business model through partnerships, community cooperatives, or joint ownership schemes. Therefore, the initial BMC needs to be reconstructed to systematically integrate social and environmental sustainability aspects. The description of the initial identification of *the business model canvas* is presented in Table 1.

Table 1. Initial Business Model Canvas

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
1. Soybean suppliers 2. Local retailers	1. Tofu production 2. Distribution 3. Sales	1. Fresh tofu products, 2. Affordable prices, 3. Consistent taste	1. Traditional markets 2. Food stalls, 3. Household consumers	1. Informal relationships based on trust
	Key Resources		Chanel	
	1. Imported soybeans, 2. Water, 3. Labor 4. Family, 5. Equipment		1. Direct sales, 2. Social relations 3. Local market	
Cost Structure		Revenue Streams		
1. Raw materials, 2. Fuel 3. Labor, 4. Transport		1. Sales of raw tofu		

Source: Primary Data (2025)

Based on this identification, it appears that the initial business model structure does not yet reflect the principles of sustainability, especially in the social and environmental dimensions. Waste management has not been integrated into business activities, even though tofu waste has potential added value. The cost structure only takes into account basic operational components, while social and environmental costs (such as waste treatment and community training) have not been calculated as part of the long-term strategy (Hartini *et al.*, 2023). This makes the business highly dependent on daily sales margins that are vulnerable to market fluctuations (Ropiudin and Syska 202).

The BMC reconstruction focuses on adding sustainability elements that are aligned with *the cost structure* and *revenue streams*. Specifically, waste management can be transformed into economic *benefits* through product diversification (e.g., animal feed from tofu pulp or biogas from liquid waste). Community involvement in the value chain will strengthen the social structure of the community and expand partnerships. Thus, this reconstruction is expected to create a more resilient, inclusive business model that supports sustainable local economic development. Information regarding improvements from the previous BMC is presented in Table 2.

Table 2. BMC Reconstruction

Key Partners	Key Activities			Customer Segments
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		Value Propositions	Customer Relationships	
<ol style="list-style-type: none"> Soybean suppliers, Livestock farmers, Environmental agencies, Industry and SME agencies, Local communities, Universities, <i>Green finance</i> institutions. 	<ol style="list-style-type: none"> Tofu production, Waste treatment into value-added products, Management of emissions and wastewater, Environmental education, Green digital promotion. 	<ol style="list-style-type: none"> Fresh, high-quality, and environmentally friendly tofu, Derivative products from waste (animal feed, liquid fertilizer, biogas), Green business image (green branding). 	<ol style="list-style-type: none"> Community-based relationships, Green customer loyalty programs, Consumer education on the positive environmental impact of product consumption. 	<ol style="list-style-type: none"> Local and regional markets, Restaurants, Environmentally conscious consumers, farmers (by-products), Green communities, Sustainable product markets.
	Key Resources		Chanel	
	<ol style="list-style-type: none"> Soybean raw materials, Water sources, Waste processing technology, Alternative energy sources (biogas), Community human resources, Environmental monitoring system. 		<ol style="list-style-type: none"> Direct sales, Traditional markets, Digital marketing, <i>Eco-marketplace</i>, Partnerships with farmers and waste processors. 	
Cost Structure		Revenue Streams		
<ol style="list-style-type: none"> Raw materials, energy, labor, Waste management costs (environmental costs), Community training, Digitalization, Environmental certification costs. 		<ol style="list-style-type: none"> Sales of raw tofu, Sales of derivative products (feed, biogas, organic fertilizer), Environmental program incentives (CSR, green incentive schemes) Potential carbon credits. 		
Environmental Cost		Environmental Benefit		
<ol style="list-style-type: none"> Liquid and solid waste treatment costs, Emissions management costs, Simple wastewater treatment plant installation, Environmental management training, Maintenance of environmentally friendly equipment. 		<ol style="list-style-type: none"> Waste and emission reduction, Energy cost savings through biogas utilization, Enhanced green business image, Potential environmental incentives, Contribution to local environmental quality. 		

Source: Primary Data (2025)

The reconstruction of the Business Model Canvas (BMC) with a focus on environmental and social aspects reflects strategic efforts to transform conventional business models into sustainability-oriented models (Aini 2025). In the context of tofu processing in Depok City and Bogor City, the *Key Partners* block has been strengthened by including environmental support actors such as waste

banks, waste management communities, and environmental agencies. The existence of these strategic partners is important because the tofu production process generates liquid and solid waste that has the potential to pollute the environment if not managed properly. This partnership is not just a business relationship, but a form of collective responsibility in maintaining the sustainability of the local ecosystem. This collaborative approach also strengthens the social legitimacy of business actors in the eyes of the surrounding community.

In the *Key Activities* and *Key Resources* blocks, the BMC reconstruction focuses on the implementation of efficient and environmentally friendly production processes. The main activities are not only limited to processing soybeans into tofu, but also include the separation of organic and inorganic waste, wastewater recycling, and the development of derivative products from tofu pulp. The use of waste as animal feed or organic fertilizer is one form of tangible *environmental benefit*. On the other hand, the procurement of waste processing equipment and filtration systems is a form of *environmental cost* that must be taken into account economically. The use of sustainable resources strengthens the competitiveness of small and medium-sized enterprises, while creating a more inclusive value chain (Sohu *et al.*, 2024).

The reconstruction of the *Value Proposition* block shows a paradigm shift from simply offering food products (tofu) to offering high-value-added products through the principle of *green products*. Business actors emphasize that tofu products are produced using clean production practices, low waste, and attention to ecological balance. This sustainability value not only creates market differentiation but also builds consumer trust in local products. In the long term, this added value can increase competitiveness and expand market reach to more environmentally conscious consumer segments (Prihatiningrum *et al.*, 2024). Sustainability value becomes a strategic instrument to strengthen *market positioning*.

The *Cost Structure* and *Revenue Stream* blocks are important parts of the BMC reconstruction that focus on sustainability. *Environmental costs* include investments in waste treatment technology, maintenance of environmentally friendly facilities, and training costs for workers in waste management. However, these costs are offset by *environmental benefits* in the form of water use efficiency, reduced waste disposal costs, and potential additional income from the sale of compost, biogas, or other derivative products. The integration of environmental aspects into the cost structure and revenue streams shows that sustainability is not merely a financial burden, but a source of new economic value (Joyce and Paquin 2016).

The *Customer Segment*, *Channels*, and *Customer Relationship* blocks have also undergone strategic adaptation. The target consumers include not only the general public but also environmentally conscious communities, health-conscious consumers, and green economy actors. Distribution channels have been expanded through digital platforms that highlight *eco-branding* and sustainability narratives. Relationships with customers are built based on transparency in the production process, involvement of local communities, and education about the importance of consuming sustainable products. This approach strengthens the company's image as a *green business* and creates long-term customer loyalty (Viciunaite and Alfnes 2020). The reconstruction of the BMC not only adapts the business model to market dynamics but also embeds sustainability values as the foundation of an adaptive business strategy.

CONCLUSION

The reconstruction of *the Business Model Canvas* (BMC) in the community-based tofu processing industry in Depok and Bogor shows that the conventional business model, which focuses on production and sales, has not been able to address sustainability challenges. The results of the study emphasize the need to integrate the *triple bottom line* principles (economic, social, and environmental) into all BMC blocks to create a balance between profitability and social-environmental responsibility. This transformation involves strengthening cross-sector partnerships, utilizing waste into value-added products, applying environmentally friendly technologies, and establishing *green branding*. The reconstructed BMC is not only a business planning tool but also a strategic instrument to improve local economic resilience, strengthen social cohesion, and improve environmental quality in a sustainable manner.

Business actors are advised to implement sustainability-oriented BMCs gradually with the support of public policies and environmental incentives from local governments. Collaboration between communities, academics, green financial institutions, and government agencies needs to be strengthened to ensure the long-term success of this business model. In addition, the digitization and transparency of production processes need to be improved to expand the market and build consumer confidence in environmentally friendly local products. This approach is expected to create an inclusive, innovative, and highly competitive community business ecosystem in support of Indonesia's green economic development agenda.

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