

Business Model Canvas (BMC) Analysis of Rumah Pangan PNM at PNM Purwokerto Branch

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Community-based food security initiatives require sustainable and inclusive business models to ensure long-term impact and social empowerment. Rumah Pangan PNM Purwokerto Branch was established as a social enterprise program aimed at strengthening local food resilience while empowering women through community participation. This study aims to analyze the existing business model of Rumah Pangan PNM using the Business Model Canvas (BMC) framework and to formulate strategic development directions to enhance its sustainability and social impact. This research employs a qualitative descriptive approach within an interpretive paradigm. Data were collected through in-depth interviews, focus group discussions, observations, and document analysis involving program managers, institutional partners, and community members, and were analyzed using thematic and BMC-based analytical techniques. The results indicate that the existing model has implemented all nine BMC elements in an interconnected manner, with strong value propositions rooted in community empowerment, institutional collaboration, and the provision of nutritious local food. However, the model remains highly dependent on a limited number of institutional off-takers, lacks product diversification, and has restricted market reach. This study proposes a development framework emphasizing customer segment expansion, value-added product innovation, digital-based distribution channels, partnership strengthening, and resource optimization. These findings demonstrate that BMC can effectively support the transformation of community-based food initiatives into more adaptive and sustainable social enterprises, contributing to both economic viability and social empowerment.

Keywords: Business Model Canvas, social enterprise, food security, women empowerment, community-based business.

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1. Introduction

Leadership transitions in democratic countries generally bring significant implications for changes in public policy direction and government programs. Indonesia, as a country with a presidential system, periodically experiences such political and administrative dynamics. The transition of leadership from President Joko Widodo to President Prabowo Subianto marks the beginning of a new era of national development through the launch of the strategic program known as Asta Cita. This program consists of eight priority agendas designed to address the nation's fundamental challenges and to realize the vision of Indonesia Emas 2045 as a sovereign, just, and prosperous nation (1) These eight objectives include strengthening Pancasila ideology, democracy, and human rights; enhancing national defense and independence; creating quality employment; developing human resources; promoting downstream industrialization; fostering village-based development; reforming politics, law, and bureaucracy; and harmonizing social life with environmental sustainability, culture, and interfaith tolerance (1).

One of the strategic pillars of the Asta Cita agenda is the strengthening of national food security. Food security is a vital element in ensuring public welfare and serves as a fundamental foundation for national self-reliance. Current conditions indicate that Indonesia's food sector continues to face various challenges,

including price volatility, limited distribution networks, high levels of post-harvest food loss and waste, a lack of real-time supply chain data transparency, and dependency on food imports (2). Furthermore, insufficient collaboration among key stakeholders—namely government institutions, private sectors, farmers, and logistics actors—has resulted in suboptimal implementation of food supply chain strengthening programs (Kementerian Koordinator Bidang Perekonomian, 2025). This situation suggests that food security initiatives require more integrated, adaptive, and cross-sectoral collaborative approaches(3,4).

The urgency of strengthening such collaboration has also been emphasized by President Prabowo Subianto, who has urged the Ministry of State-Owned Enterprises (BUMN) to reinforce synergies with various strategic ministries and agencies within the Merah Putih Cabinet 2024–2029. These collaborations aim to accelerate the implementation of national priority programs, including downstream industrialization, infrastructure development, food price stabilization, and the advancement of human resources and sustainable energy toward achieving Indonesia Emas 2045. In this context, the role of state-owned enterprises becomes increasingly crucial—not only as business entities but also as agents of socio-economic development (Kementerian BUMN, 2025).

PT Permodalan Nasional Madani (PNM), as one of Indonesia's state-owned enterprises, contributes to the strengthening of national food security through a social initiative known as Rumah Pangan PNM. One of the concrete implementations of this program is the establishment of Rumah Pangan PNM in Kampung Madani PNM, Langgongsari Village, Cilongok District, Banyumas Regency, on February 26, 2025 (Patria, 2025). This initiative functions as a social enterprise that not only focuses on providing nutritious food for local communities but also empowers housewives through productive economic activities such as catfish farming and active participation in local food distribution (CNN Indonesia, 2025; Patria, 2025). This program aligns with government initiatives such as the National Nutrition Kitchen and the Free Nutritious Meal Program, both of which require sustainable food supplies from local producers (BIMTEK Diklat Nasional, 2025; Patria, 2025).

As part of its Social and Environmental Responsibility (TJSL), Rumah Pangan PNM in this area manages the cultivation of approximately 120,000 catfish through communal ponds operated by 60 rural women who are members of the Mekaar program and BUMDes (Kumparan, 2025). The harvest is distributed to the National Nutrition Agency as a local supplier, thereby strengthening food self-sufficiency while simultaneously creating sustainable economic opportunities for the community (Kumparan, 2025; Mahadi, 2025). In addition, Rumah Pangan PNM has established partnerships with the Jimmy Hantu Foundation, which acts as an offtaker for the harvest, ensuring market certainty for program beneficiaries (Patria, 2025).

Nevertheless, the implementation of Rumah Pangan PNM is not without challenges. These include fluctuations in raw material prices, dependency on third parties for distribution, shifting consumer preferences, and limited market access. Such challenges necessitate an analytical framework capable of providing a comprehensive understanding of the sustainability and effectiveness of the implemented business model. One relevant approach is the Business Model Canvas (BMC) developed by Osterwalder and Pigneur (2009). The BMC offers a visual and systematic framework for mapping nine core business components, ranging from value propositions and customer segments to cost structures (5).

Although the BMC has been widely applied across various business sectors, studies specifically examining its application to Rumah Pangan PNM—particularly in the Purwokerto region—remain very limited. In fact, comprehensive business model mapping is essential to ensure program sustainability, enhance operational effectiveness, and formulate strategic recommendations for the future development of community-based enterprises(6,7). Therefore, analyzing the Business Model Canvas of Rumah Pangan PNM Purwokerto

Branch is highly relevant for evaluating its contribution to achieving the food security targets of the Asta Cita agenda, as well as supporting the success of the Free Nutritious Meal Program through the provision of healthy, nutritious, and sustainable local food supplies (BIMTEK Diklat Nasional, 2025).

2. Literature Review and Problem Statement

Risk management, collaboration, and sustainability constitute three major conceptual frameworks that are highly relevant for analyzing the continuity and performance of community-based business models such as Rumah Pangan PNM. Risk is defined as the effect of uncertainty on organizational objectives (ISO 31000, 2018), which may manifest in various forms, including operational, financial, marketing, market-related, and human resource risks (8). In food-based social enterprises, these risks emerge throughout the entire value chain, from production to distribution. Therefore, a systematic risk management approach—covering communication, identification, analysis, evaluation, treatment, monitoring, and reporting—is essential to ensure business sustainability (9,10). At the same time, collaboration theory emphasizes that cross-sectoral cooperation among multiple actors is a strategic response to limited resources, information, and organizational capacity (3,11,12). Through collaboration, organizations can improve efficiency, strengthen competitiveness, and expand their social impact (4). This is particularly important in food security initiatives, which involve complex and interdependent systems requiring strong coordination among stakeholders (Kementerian Koordinator Bidang Perekonomian, 2025). Sustainability theory further highlights the importance of integrating economic, social, and environmental dimensions into business practices (13,14). A sustainable business model does not merely pursue short-term profits but seeks to create long-term social value while minimizing environmental degradation (Wirawan, 2025). In this regard, the Business Model Canvas (BMC) developed by Osterwalder and Pigneur (2009) is widely recognized as a strategic tool for mapping how organizations create, deliver, and capture value. The BMC consists of nine interrelated components that enable organizations to visualize their business logic holistically while identifying potential vulnerabilities and strategic opportunities. However, most existing studies still treat risk management, collaboration, and sustainability as separate analytical dimensions, rather than integrating them into a unified business model framework.

This separation limits the ability to understand how these dimensions interact dynamically in real-world community-based enterprises. In the case of Rumah Pangan PNM, which involves multiple stakeholders such as PNM, Mekaar customers, BUMDes, the Jimmy Hantu Foundation, and the National Nutrition Agency, complex actor relationships introduce diverse risks, competing interests, and sustainability challenges (CNN Indonesia, 2025; Kumparan, 2025; Patria, 2025). Previous research on small and medium enterprises and social businesses has largely focused on technical feasibility, financial viability, and market potential (7,15–17), often overlooking social risks, collaborative governance challenges, and long-term sustainability issues. Consequently, a significant research gap remains, namely the lack of studies that systematically integrate risk analysis, multi-stakeholder collaboration, and sustainability principles into the Business Model Canvas framework, particularly in the context of community-based food social enterprises such as Rumah Pangan PNM. Therefore, this study aims to address this gap by examining how the BMC can function not only as a business mapping tool but also as an instrument for identifying risks and evaluating sustainability dimensions. Based on this gap, the research questions are formulated as follows: How is the Business Model Canvas implemented in Rumah Pangan PNM Purwokerto within the contexts of risk, collaboration, and sustainability? and How can strategic business model development for Rumah Pangan PNM be formulated through the BMC approach to strengthen local food security and empower economically vulnerable communities?

3. Method

This study employs a qualitative descriptive research design grounded in an interpretive paradigm. The interpretive paradigm assumes that social reality is subjective and socially constructed through human experiences, meanings, and interactions. This paradigm is particularly appropriate for this research because the study does not aim to test hypotheses or measure variables statistically, but rather to explore and interpret how the elements of the Business Model Canvas (BMC) are understood, implemented, and experienced by the actors involved in Rumah Pangan PNM, Purwokerto Branch (18). Through this approach, the researcher seeks to capture the meanings attributed by participants to their business practices, partnerships, and strategic decisions.

The research adopts a naturalistic qualitative descriptive approach, which allows phenomena to be examined in their real-life contexts without manipulation or experimental control (18). This approach is suitable because the data in this study are narrative, contextual, and experiential in nature. Quantitative or experimental methods would not adequately capture the complexity of social interactions, perceptions, and values embedded in community-based enterprises.

To ensure the rigor and trustworthiness of the findings, this study applies the criteria of credibility, transferability, dependability, and confirmability. Data validity is strengthened through source triangulation, method triangulation, and member checking (18,19). Triangulation allows the researcher to cross-check information obtained from different informants and data collection techniques, thereby reducing bias and enhancing the reliability of the interpretations.

The research subjects were selected using purposive sampling, a technique that enables the researcher to intentionally choose participants who possess relevant knowledge, experience, and involvement in the phenomenon under investigation (18). The participants consisted of founders, managers, and operational administrators of Rumah Pangan PNM Purwokerto who are directly responsible for strategic decision-making and daily business operations. This selection ensured that the data collected were rich, relevant, and aligned with the research objectives.

The study was conducted at Rumah Pangan PNM located in Langgongsari Village, Cilongok District, Banyumas Regency, from August 2025 until the completion of the data collection process. Primary data were obtained through semi-structured interviews, FGDs, and direct observations (Afiyanti, 2008), while secondary data were collected from monthly financial reports, transaction records, internal documents, and official publications related to Rumah Pangan PNM.

The analytical framework of this study is based on the nine components of the Business Model Canvas, namely: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure (5). These components were used as the main analytical categories for organizing and interpreting the data. In addition, the analysis incorporates the dimensions of risk management, collaboration, and sustainability to provide a more comprehensive understanding of the business model.

Data analysis followed an interactive model involving data reduction, data display, and conclusion drawing. This process was iterative, meaning that the researcher continuously moved back and forth between data collection and analysis to refine interpretations and ensure analytical depth. The findings were then interpreted contextually, taking into account the social, economic, and institutional settings in which Rumah Pangan PNM operates. This approach allows the study to generate nuanced insights into how the BMC functions in practice, particularly in relation to managing uncertainty, fostering multi-stakeholder collaboration, and sustaining long-term social impact.

Table 1. Summary of Existing Business Model Canvas Analysis

Aspect	Description	Key Findings
Customer Segments	Badan Gizi Nasional, Jimmy Hantu Foundation, Nasabah Mekaar, Kelompok Wanita Tani, BUMDes, masyarakat umum, UMKM	High dependence on institutional offtakers; potential for segment diversification
Value Propositions	Healthy local food, women empowerment, community-based production, support for MBG and national food security	Strong integration of social and economic values
Channels	Direct distribution, BUMDes network, social media, community forums	Limited digital commercialization
Customer Relationships	Educational, personal, community-based, partnership-oriented	High loyalty, but not systematized
Revenue Streams	Sales of fresh catfish (lele)	Single income source, low margin
Key Resources	Ponds, BUMDes land, community labor, TJSL funding, PNM reputation	Strong institutional and social capital
Key Activities	Catfish cultivation, training, mentoring, distribution, nutrition education	Strong social orientation
Key Partnerships	PNM, BUMDes, Badan Gizi Nasional, Jimmy Hantu Foundation, KWT, UMKM	Collaborative ecosystem is a major strength
Cost Structure	Feed, seeds, training, monitoring, operations	Feed dominates cost structure

4. Results and Discussion

Result

The development of the Business Model Canvas (BMC) for Rumah Pangan PNM at the Purwokerto Branch was conducted based on an analysis of the existing business model, identified weaknesses, and potential opportunities for improvement. The primary objective of this development is to enhance business sustainability, expand market reach, strengthen social impact, and improve operational efficiency. The revised BMC maintains the social character of Rumah Pangan PNM while adopting a more adaptive approach to market demands.

Customer Segment

In the developed model, customer segments are expanded and defined in a more specific manner. In addition to retaining key partners such as the National Nutrition Agency (Badan Gizi Nasional) and the Jimmy Hantu Foundation, new segments are directed toward culinary MSMEs, catering services, food stalls, village cooperatives, as well as household consumers in Purwokerto and its surrounding areas. This segmentation strategy aims to reduce dependence on a single primary offtaker and to create a more stable and diversified market base. Comparison of the Existing Business Model Canvas and the Developed BMC of Rumah Pangan PNM, Purwokerto Branch.

Table 2. Comparison between the Existing Business Model Canvas (BMC) and the Developed BMC for the Customer Segment

No.	Aspect	Existing Model	Developed Model
1.	Market Focus	Focused on institutional partners and assisted community groups.	Expanded to commercial and retail sectors; not only supplying the National Nutrition Agency, but also serving food stalls, home-based catering businesses, and grocery shops.
2.	Customer Types	National Nutrition Agency, Jimmy Hantu Foundation, Mekaar clients, Women Farmer Groups (KWT), and Village-Owned Enterprises (BUMDes).	Additional segments include pecel lele MSMEs, school catering businesses, village cooperatives, and household consumers as retail buyers.
3.	Demand Pattern	Large-scale demand concentrated on a single offtaker.	More evenly distributed demand across segments; MSMEs typically purchase 5–10 kg per day, while household consumers purchase 1–2 kg per week.
4.	Market Dependency	High dependence on one main partner.	Lower dependency; when institutional orders decline, retail and MSME sales continue to operate.
5.	Business Stability	Tends to fluctuate following partner policies.	More stable and sustainable; daily sales from food stalls and regular customers help maintain cash flow even without large orders.

Value Proposition

The development of the value proposition is not limited to the provision of fresh, healthy, and nutritious catfish, but also extends to processed catfish-based products such as nuggets, meatballs, shredded catfish, and crackers. These processed products offer added value in the form of longer shelf life, ease of consumption, and broader consumer appeal. In addition, social values—such as women’s empowerment, the utilization of local resources, and contributions to food security—remain the core identity of Rumah Pangan PNM.

Table 3. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Value Proposition

No.	Aspect	Existing Model	Developed Model
1.	Product Type	Provides only fresh catfish as the main product.	More diversified products; in addition to fresh catfish, processed products such as catfish nuggets, catfish meatballs, shredded catfish, and catfish crackers are developed.
2.	Product Added Value	Limited added value as the product is sold only as raw material.	Higher added value through processing; fresh catfish is sold at IDR 18,000/kg, while catfish nuggets can be sold at IDR 35,000–40,000 per pack.

No.	Aspect	Existing Model	Developed Model
3.	Shelf Life	Short shelf life and must be sold immediately.	Longer shelf life; products such as shredded catfish and nuggets can be stored for several weeks under refrigeration.
4.	Social Product Identity	Social identity is not strongly emphasized in marketing activities.	Social identity is strengthened by labeling products as “Women Empowerment Mekaar Products” or “Local Food Security Products.”
5.	Quality Assurance and Trust	Lacks clear product legality and standard certification.	Strengthened through the acquisition of PIRT and halal certification, as well as nutrition-labeled packaging to enhance consumer trust.

Channels (Distribution Channels)

The distribution channels are developed by combining conventional and digital pathways. In addition to direct distribution to institutional partners and through Village-Owned Enterprises (BUMDes), marketing activities are expanded through more structured social media usage, WhatsApp Business, digital catalogs, and local marketplaces. For MSME segments and regular customers, a periodic ordering system and delivery services are introduced to simplify transactions and improve efficiency.

Table 4. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Channels

No.	Aspect	Existing Model	Developed Model
1.	Type of Distribution Channels	Relies on direct distribution and BUMDes.	More diverse channels; in addition to BUMDes, sales are conducted through marketplaces, WhatsApp Business, and social media.
2.	Market Reach	Limited to nearby areas and regular partners.	Broader reach; consumers from outside the village can place orders via WhatsApp or local marketplaces.
3.	Sales Pattern	Manual and conventional.	More modern and flexible; online ordering supported by digital catalogs and a pre-order system.
4.	Channel Function	Functions solely as a sales channel.	Dual function as both a sales and promotion–education medium; for example, Instagram is used for product promotion as well as nutrition education.
5.	Distribution Efficiency	Less efficient due to reliance on direct, face-to-face transactions.	More efficient and faster; orders are consolidated via WhatsApp and delivered according to a scheduled delivery system.

Customer Relationships

In the developed model, customer relationships are directed toward building long-term loyalty. The approach includes regular communication, the provision of information on product availability and harvest schedules, as well as education on nutrition and food safety. In addition, Rumah Pangan PNM may establish

a loyalty or regular-customer program, particularly for MSMEs and village cooperatives, to foster more stable and mutually beneficial relationships.

Table 5. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Customer Relationships

No.	Aspect	Existing Model	Developed Model
1.	Relationship Pattern	Personal and informal.	More structured and sustainable; regular communication schedules are established with loyal customers through WhatsApp Broadcast.
2.	Form of Interaction	Occurs only during transactions or direct meetings.	Occurs periodically and in a two-way manner; customers receive weekly information on stock availability, harvest schedules, and promotions.
3.	Relationship Objective	Focused on product distribution.	Focused on loyalty and partnerships; MSMEs are positioned as regular customers through a weekly subscription system.
4.	Customer Feedback	Not systematically documented.	Better managed; simple satisfaction surveys are conducted via Google Forms or WhatsApp messages.
5.	Customer Involvement	Passive as buyers.	Active as partners; MSME customers are given opportunities to provide input on product size, taste, and packaging of processed products.

Revenue Streams

In the developed model, revenue streams are no longer derived solely from the sale of fresh catfish, but also from processed catfish-based products, sales through digital platforms, and potential income from aquaculture and food processing training programs. This diversification aims to create more stable revenue streams and reduce dependence on a single primary source.

Table 6. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Revenue Streams

No.	Aspect	Existing Model	Developed Model
1.	Main Revenue Sources	Derived solely from the sale of fresh catfish.	More diversified; e.g., fresh catfish, catfish nuggets, catfish meatballs, and shredded catfish.
2.	Revenue Pattern	Unstable, dependent on harvest cycles and large orders.	More stable and regular; e.g., catering MSMEs purchase catfish or processed products on a weekly basis.
3.	Revenue Dependency	Highly dependent on a main offtaker.	More independent; when orders from major partners decline, retail and MSME sales continue.
4.	Product Selling Value	Relatively low due to raw product sales.	Higher selling value through processed products; e.g., fresh catfish at IDR 18,000/kg, catfish nuggets at IDR 35,000–40,000 per pack.

No.	Aspect	Existing Model	Developed Model
5.	Additional Revenue Sources	No non-product-based income.	Newly developed; e.g., aquaculture training, food processing training, and sales of liquid fertilizer derived from pond waste.

Key Resources

Key resources in the developed model include the adoption of more efficient aquaculture technologies such as biofloc systems, food processing equipment, cold storage facilities, and enhanced human resource capacity in production, processing, and digital marketing. The Rumah Pangan PNM brand identity is also strengthened as an intellectual asset to reinforce market positioning.

Table 7. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Key Resources

No.	Aspect	Existing Model	Developed Model
1.	Physical Resources	Simple cultivation ponds, BUMDes land, village halls.	Enhanced with technology and facilities, such as biofloc ponds, storage freezers, and processing equipment (mixers, steamers, sealers).
2.	Human Resources	PNM team, Mekaar clients, and Women Farmer Groups (KWT) with basic skills.	Capacity strengthened through training in modern aquaculture, basic HACCP/PIRT, packaging, and digital marketing.
3.	Intellectual Resources	“Rumah Pangan” concept, partner networks, customer data.	Strengthened as brand assets; e.g., “Women Empowerment Products” branding, production SOPs, and digital catalogs.
4.	Technological Resources	Minimal use of technology.	More adaptive; e.g., WhatsApp Business, stock spreadsheets, pre-order systems, and scheduled social media content.
5.	Financial Resources	CSR (TJSL) funding and revenue from fresh catfish sales.	More diversified; additional income from processed product sales, training activities, and MSME partnerships.

Key Activities

Key activities are expanded beyond catfish cultivation and mentoring to include processed food production, packaging, digital content management, online marketing, and quality control. Training activities, previously focused on empowerment, are broadened toward entrepreneurship, food processing, and basic financial recording.

Table 8. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Key Activities

No.	Aspect	Existing Model	Developed Model
1.	Main Activity Focus	Focused on catfish cultivation and harvesting.	Broader and more integrated; e.g., catfish is processed into nuggets, meatballs, and shredded products.
2.	Mentoring Pattern	General and unscheduled mentoring.	More structured; e.g., monthly training schedules on cultivation, processing, and entrepreneurship.
3.	Production Activities	Produces only raw products (fresh catfish).	Produces both raw and processed products; some catfish are packaged, while others are processed into ready-to-sell products.
4.	Marketing Activities	Passive, waiting for orders.	More active and planned; e.g., weekly promotions on Instagram, digital catalogs, and pre-order systems.
5.	Quality Control	No written quality standards.	More standardized; e.g., SOPs for hygiene, weighing, packaging, and stock recording.

Key Partnerships

Partnerships are expanded by involving relevant government agencies, such as the Fisheries Office and the Health Office, for technical support and certification. Collaboration with village cooperatives, local logistics providers, marketplaces, and food-processing MSMEs strengthens the value chain. Certification institutions (PIRT and halal) also become strategic partners to enhance consumer trust.

Table 9. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Key Partnerships

No.	Aspect	Existing Model	Developed Model
1.	Type of Key Partners	Limited to institutional partners and local communities.	More diverse and strategic; continued collaboration with the National Nutrition Agency and BUMDes, with additional partners such as the Fisheries Office and village cooperatives.
2.	Partner Roles	Primarily as buyers and facility providers.	More active and mutually reinforcing; e.g., the Fisheries Office provides technical training, while cooperatives support distribution.
3.	Technical Support	Limited and informal.	More structured; e.g., biofloc cultivation training, food processing, and packaging support from relevant partners.
4.	Market Access	Relies heavily on major partners as offtakers.	Broader market access through cooperatives, MSMEs, and digital platforms.

Cost Structure

The cost structure in the developed model is oriented toward efficiency and sustainability. In addition to cultivation costs, allocations are made for packaging, digital marketing, processing equipment, product certification, and human resource development. The adoption of more efficient aquaculture technology is expected to reduce feed costs and improve productivity.

Table 10. Comparison of the Existing Business Model Canvas (BMC) and the Developed BMC: Cost Structure

No.	Aspect	Existing Model	Developed Model
1.	Main Cost Types	Dominated by cultivation costs (feed, seeds, fish medicine, pond maintenance).	More diverse; includes processing, packaging, and digital marketing costs in addition to cultivation.
2.	Expenditure Focus	Focused solely on production.	Focused on production and value enhancement; e.g., procurement of nugget processing equipment and packaging sealers.
3.	Cost Efficiency	Limited consideration of long-term efficiency.	More efficient and planned; e.g., biofloc systems to reduce feed consumption.
4.	Human Resource Development Costs	Minimal and incidental.	Allocated on a regular basis; e.g., training in modern aquaculture, MSME development, and digital marketing.
5.	Cost Orientation	Short-term and operational.	Long-term and sustainable; e.g., investment in freezer equipment for processed product storage.

Discussion

The research findings indicate that Rumah Pangan PNM at the Purwokerto Branch has established a relatively strong foundation as a social business model. Its primary strength lies in its ability to integrate economic objectives with social missions, particularly women’s empowerment and the strengthening of local food security. This integration is reflected in the active involvement of Mekaar clients and Women Farmer Groups (KWT) throughout the production process, mentoring activities, and distribution stages.

Nevertheless, the existing business model still exhibits several limitations. The high dependence on a single primary offtaker, namely the National Nutrition Agency, poses potential risks in the event of policy changes or budget reallocations. In addition, marketing channels remain limited and have not fully utilized digital potential. Production capacity is also constrained by the number of cultivation ponds and the operational capacity of the managing groups.

1. Customer Segment

In the customer segment element, the existing model focuses primarily on institutional partners and assisted groups, resulting in a relatively narrow market that depends heavily on a single source of demand. The developed model expands customer segments to include culinary MSMEs, catering services, village cooperatives, and household consumers. This adjustment diversifies the market, reduces dependency on a single partner, and improves demand stability. With broader segmentation, Rumah Pangan PNM gains greater opportunities to access a more consistent and sustainable market.

2. Value Proposition

Within the value proposition element, the existing model emphasizes the provision of fresh catfish as the main product. In the developed model, the offered value is expanded through the introduction of processed catfish-based products, the strengthening of the product’s social identity, and enhanced quality assurance through certification. This development not only increases the economic value of

the products but also reinforces the image of Rumah Pangan PNM as a social enterprise contributing to women's empowerment and local food security.

3. Channels

In terms of channels, the existing model relies primarily on direct distribution, BUMDes, and limited use of social media. The developed model adopts more structured digital channels, such as WhatsApp Business, digital catalogs, and local marketplaces. This shift enables broader market reach, accelerates transaction processes, and improves distribution efficiency. Channels are no longer limited to sales functions but also serve as platforms for promotion and education.

4. Customer Relationships

Customer relationships in the existing model are largely personal and informal. In the developed model, customer relationships are structured with a long-term orientation. Regular communication, loyalty programs, and feedback mechanisms are implemented to strengthen customer retention. This approach positions customers not merely as buyers, but as partners actively involved in product development.

5. Revenue Streams

The revenue streams element in the existing model depends heavily on fresh catfish sales. In the developed model, income sources are diversified through processed products, digital sales channels, and potential training services. This diversification contributes to more stable revenue flows and reduces reliance on a single product type. Furthermore, product processing increases overall selling value.

6. Key Resources

Key resources are strengthened through the addition of improved aquaculture technology, food processing equipment, storage systems, and enhanced human resource capacity. While the existing model relies mainly on basic facilities and traditional skills, the developed model incorporates not only physical resources but also intellectual assets such as branding, standard operating procedures (SOPs), and digital systems. These improvements enhance the professionalism of the enterprise.

7. Key Activities

Key activities, which were previously focused solely on cultivation and harvesting, are expanded to include product processing, packaging, digital marketing, and quality control. This transformation indicates that Rumah Pangan PNM has shifted from being merely a raw material producer to a manager of value-added products. Training activities are also redirected toward strengthening entrepreneurial capacity among assisted groups.

8. Key Partnerships

Key partnerships in the existing model are limited to institutional partners and local communities. In the developed model, partnerships are expanded to include relevant government agencies, cooperatives, processing MSMEs, and certification institutions. These partnerships function not only as operational supporters but also as enablers of market access, product quality improvement, and business sustainability.

9. Cost Structure

Finally, in the cost structure element, the existing model is dominated by basic production costs such as feed and seeds. In the developed model, the cost structure becomes more complex, encompassing processing, digital marketing, training, and certification expenses. Although the variety of costs increases, the orientation shifts from short-term operational spending to long-term investment. These investments aim to improve efficiency, enhance product quality, and strengthen competitiveness.

On the other hand, significant development opportunities remain open. Diversifying customer segments toward culinary MSMEs, catering services, village cooperatives, and retail markets can enhance revenue

stability. The development of processed catfish products, such as nuggets, shredded catfish, and meatballs, has the potential to increase added value and extend product shelf life. Strengthening distribution channels through digital marketing, structured promotion, and improved ordering systems can further expand market reach. In addition, enhancing customer relationships through regular communication and simple information systems can improve customer loyalty.

From the perspective of resources and activities, increasing human resource capacity in modern aquaculture, food processing, and marketing emerges as a key priority. This development not only affects product quality but also improves the overall professionalism of business management. Therefore, the development of the Business Model Canvas for Rumah Pangan PNM at the Purwokerto Branch is not merely technical in nature but also strategic. It is designed to establish a more stable, adaptive, and sustainable business model while preserving the social values that define the core identity of Rumah Pangan PNM.

5. Conclusion

This study aimed to analyze the application and development of the Business Model Canvas (BMC) in Rumah Pangan PNM Purwokerto Branch as a community-based food security and women empowerment initiative. The findings show that the existing business model has been implemented in a structured and interconnected manner across the nine BMC elements. The core strengths of the model lie in its collaborative ecosystem, strong institutional partnerships, and social value creation through women's empowerment and community-based food production. These results demonstrate that the research objectives have been achieved, particularly in mapping the existing business model and formulating development strategies based on BMC analysis.

The findings are consistent with the theoretical framework proposed by Osterwalder and Pigneur (2009), which emphasizes that business models must integrate value creation, value delivery, and value capture. However, this study extends previous BMC applications by highlighting its relevance in social enterprise contexts, where economic goals coexist with social and empowerment objectives. The model also aligns with sustainable development perspectives that stress the integration of economic viability, social inclusion, and community-based resource management. Unlike conventional profit-oriented models, Rumah Pangan PNM demonstrates that social impact and economic sustainability can be pursued simultaneously through collaborative mechanisms.

Several significant phenomena were identified. First, the strong dependence on institutional off-takers provides market stability but also creates vulnerability to policy and budget changes. Second, the high level of community participation strengthens social legitimacy and operational continuity, even when profit margins remain relatively low. Third, the limited diversification of products and revenue streams constrains long-term scalability. These patterns indicate the importance of strategic development through market diversification, product innovation, and digital-based distribution.

Practically, this research contributes by offering a structured framework for developing inclusive and sustainable business models in community-based food systems. It provides guidance for policymakers, development agencies, and social enterprises in designing empowerment-oriented business strategies. Scientifically, this study enriches the limited empirical literature on the application of BMC in social and community-based enterprises, particularly in the context of food security.

Nevertheless, this study has several limitations. It relies primarily on qualitative data, which may involve subjective interpretations. The analysis is confined to a single case, limiting the generalizability of the findings. In addition, this study does not quantitatively measure economic performance or empowerment

outcomes. Future research is therefore encouraged to adopt mixed-method or quantitative approaches, explore other commodities, and examine the role of digitalization in improving market access and business sustainability. In conclusion, the development of the Business Model Canvas not only addresses the weaknesses of the existing model but also opens new opportunities for Rumah Pangan PNM to strengthen its role as a provider of nutritious food and a driver of community empowerment. This enhanced model is expected to support long-term sustainability and broader socio-economic impact.

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