

Research Article

Strategic Model to Support Sustainability for Local Food Industry in West Sumatra, Indonesia

Dian Hafizah*, Rini Hakimi, and Devi Analia

Agribisnis, Social Economics of Agriculture Department, Universitas Andalas, Indonesia

ORCIDDian Hafizah: <https://orcid.org/0000-0002-3280-6805>**Abstract.**

West Sumatra is a region in Indonesia with a high supply of local food sources at reasonable costs, such as cassava, purple sweet potatoes, white sweet potatoes, and taro. However, it turns out that local food sources have not been widely utilized. This study aims to formulate a sustainability strategy for the development of the local food industry. The research method used is a focus group discussion with the government and business actors in the local food industry in West Sumatera. The strategies created will consider the strengths, weaknesses, opportunities, and threats faced by the local food industry using a SWOT analysis. Results classified 8 items under strengths, 9 under weakness, 10 under opportunities, and 8 under threats. Based on this, a strategy will be formulated which is a combination of the part of SWOT area that consists of 2 SO strategies, 2 WO strategies, 2 WT strategies, and 2 ST strategies.

Keywords: sustainability, SMEs, local food, SWOT

Corresponding Author: Dian Hafizah; email: dianhafizah@agr.unand.ac.id

Published: 8 October 2024

Publishing services provided by Knowledge E

© Dian Hafizah et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the 4th ICONISS Conference Committee.

1. Introduction

Food issues become very important to be raised and discussed with increasing demand for sufficient food with better food quality [1]. The existence of local food as one of the main sources of community food needs to be maintained and improved. This is because local food can be easily accessed by the community because it is cultivated around the environment. This is in line with the thought that Sustainable consumption and production is about doing more and better with less [2].

Advantages of local food are consist of distribution channels reach consumers is relatively short, the price to be paid to get it is relatively cheap compared to other food sources [3]. Also local food is lower in cost and minimizing food lost [4]. Even so, in reality, the use of local food as a source of family food is still limited. Likewise, the use of local food commodities for industrial needs is still very low.



Local food can be defined as all food that is processed and consumed by the local community in accordance with the local potential and wisdom of an area. Based on this understanding, usually local food is processed from local raw materials, local technology and local knowledge that develop in a certain area. In addition, local food has been adapted to the preferences of local consumers and sangar related to the development of local culture [5].

The government supports the development of the use of commodities classified as local food in the community. Especially with the growing demand for food products that consider sustainability and health, the development of local food products based on the surrounding environment is a necessity [6].

One of the efforts carried out by the government is to encourage business actors to use local food as raw materials in the processing of the products they produce. In addition, the government encourages the creativity of business actors to create food products made from local food commodities with the aim that the use of local food can be widely used in the community [7]. However, of course, support from the government will not continue, it takes the ability of oneself to survive in the local food industry. It is hoped that this government assistance will only be in the form of motivation at the beginning and then after developing, the local food industry can be sustainable and increasingly developed in the community [8].

The definition of sustainability is explained by focusing on current fulfillment without compromising the ability of future generations to meet their needs [9]. Basically, there are three pillars of the concept of sustainability, namely from the economic, environmental and social sides [10]. The assumption of sustainability is that developing a sustainable strategy will encourage longevity in the company or its industry [11].

The local food industry that has a continuing strategy must be able to answer appropriately the need to redesign business and the economy as well as the opportunities and risks that may be caused in the short term [12]. Sustainability demands are also presented by consumers who are dissatisfied with the long-term damage to both the uneven economy and the environment caused by the company's focus on short-term profits [13].

The local food industry in West Sumatera is mostly in the form of small and medium-sized enterprises [14]. For this reason, a strategy is needed that needs to be formulated to see the sustainability of the local food industry in the future. One of the analysis tools used is to use a SWOT analysis.

Based on the description above, the purpose of this study is to identify the strengths, weaknesses, opportunities and threats faced by the local food industry based on three pillars that consist of social pillars, economics pillars and environmental pillars. The second objective is to formulate a sustainability strategy of the local food industry in West Sumatera in the future by considering the strengths, weaknesses, opportunities and threats possessed by the local food industry in West Sumatera.

2. Research Methods

The research method used is to conduct a focus group discussion with representatives of the West Sumatera provincial food service and business actors in the local food industry in West Sumatera. Primary data and secondary data were used for this study. To collect primary data, questionnaires and interview guides are required.

Data analysis for the first purpose is to do descriptive qualitative. The data collected is then categorized to identify the strengths, weaknesses, threats and opportunities possessed by the local food industry in West Sumatera. For the second purpose that is to design the sustainability strategy of the local food industry is prepared in accordance with the SWOT analysis. The content of each area in SWOT is formulated by analyzing the results of interviews conducted with experts [15].

3. Result and Discussion

To explain the first objective, namely, to identify the strengths, weaknesses, opportunities and threats faced by the local food industry based on three pillars that consist of social pillars, economics pillars and environmental pillars. It can be described as follows. However, before that it is necessary to explain a general description of small industries in West Sumatra. The characteristics of a small business such as, In the form of an individual business and has not been legally incorporated, aspects of business legality are weak, the organizational structure is simple with a non-smelly division of labor, most do not have financial statements and do not separate personal wealth from company wealth, low quality management and rarely have a business plan, limited human resources (HR), and the owner has a strong inner bond with the company so that all obligations of the company are also the obligations of the owner. This condition results in weak business network and limited ability to penetrate and diversify the

market, economies of scale are too small to make it difficult to reduce costs, and very thin profit margins.

Based on this overview researcher has to identify strengths, weaknesses, opportunities and threats that separating in three pillars consist of :

3.1. Social pillars

Strength:

- The industry already has knowledge about the processing of local foodstuffs
- Utilize local resources

Weakness:

- Limited knowledge
- Lack of innovation and creation of local food processing
- Still using traditional technology
- Lack of promotion

Threat:

- Knowledge related to local food processing is not passed on to the next generation
- Supply of raw materials from suppliers is not continuous
- Promotion of industrial products made from flour and imports is very intensive

Opportunity:

- Supplier location close to the production site
- Establish a good relationship with suppliers
- Already Have Loyal Customers

3.2. Economic pillars

Strength:

- Short distribution of raw materials reduces the cost of supplying raw materials
- Low raw material prices
- Profitable

Weakness:

- Financial management is not yet professional
- Limited capital

- Production is sometimes not continuous

Threat:

- Unable to access financial institutions
- The existence of substitution products made from wheat flour and imported products
- Limited subscribers

Opportunity:

- Capital assistance and access to financial institutions from the government
- There are still large market opportunities for the creation of the local food industry in the future
- Supported by product improvements, the local food industry will be more developed in the future

3.3. Environmental pillars

Strength:

- Raw materials are abundant and easy to obtain
- Support the empowerment of local farmers
- Zero Waste

Weakness:

- Still small scale
- Still mixed in the factory environment with housing

Threat:

- Climate change to reduce the production of local food raw materials
- The existence of massive land conversion

Opportunity:

- There is support from the government related to improving technology, and training
- Support environmental sustainability
- A thriving local food industry will encourage the realization of food security

The second objective is to formulate a sustainability strategy of the local food industry in West Sumatera in the future by considering the strengths, weaknesses, opportunities and threats possessed by the local food industry in West Sumatera. For this purpose the strategy is presented in the form of in the Table 1.

TABLE 1: Strategic model of strengths, weaknesses, opportunities and threat to support sustainability of the local food industry in West Sumatra, Indonesia.

| | | |
|---|--|---|
| | <p>Strength: The industry already has knowledge about the processing of local foodstuffs Utilize local resources Short distribution of raw materials reduces the cost of supplying raw materials Cheap raw material prices Profitable Raw materials are abundant and easy to obtain Support the empowerment of local farmers Zero Waste</p> | <p>Weakness: Limited knowledge Lack of innovation and creation of local food processing Still using traditional technology Lack of promotion Financial management is not yet professional Limited capital Production is sometimes not continuous Still small scale Still mixed between the factory environment and housing</p> |
| <p>Opportunity: 1. Supplier location close to the production site 2. Establish a good relationship with suppliers 3. Already Have Loyal Customers 4. There is support from the government related to improving technology, and training 5. Support environmental sustainability 6. The growing local food industry will encourage the realization of food security 7. Capital assistance and access to financial institutions from the government 8. There are still large market opportunities for the creation of the local food industry in the future 9. Supported by product improvements, the local food industry will be more developed in the future 10. Opportunities for government assistance in marketing by holding bazaars and exhibitions</p> | <p>Aggressive strategy (using force to seize opportunities) 1. Using government support to process abundant and easily obtainable raw materials to improve processing technology and provide training so that the local food industry is more developed and realizes food security (O4, O5, S2, S6) 2. Utilizing the potential benefits of local food industry business so that the local food industry is more developed by accessing financial institutions and other capital assistance with facilitation from the government (O7, O8, O9, S1, S2,S5)</p> | <p>Turnaround strategy (seize opportunities to overcome weaknesses) 1. Utilizing government support in the form of support for access to financial institutions to overcome capital problems and increase the use of technology from traditional to modernization (O4,O7, W1,W3,W6,W8) 2. Increase market share by participating in bazaars organized by the government (O2, O6,O8,O9, W2,W4,W7) 3. Expansion of market share through exhibitions and bazaars organized by the government will enlarge the business in the future (O3, O8, O9,W2, W7)</p> |
| <p>Threat: Knowledge related to local food processing is not passed on to the next generation Supply of raw materials from suppliers is not continuous Promotion of industrial products made from flour and imports is very intensive Climate change to reduce the production of local food raw materials The existence of massive land conversion Unable to access financial institutions The existence of substitution products made from wheat flour and imported products loyal consumer are limited</p> | <p>Diversification strategy Make cooperation contracts with farmers to ensure the availability of a stable supply of raw materials (T2, T3, S1,S3, S4,S5) A profitable local food industry will prevent land conversion because farmers are still passionate about planting their land with local food commodities (T5, T6, S6, S7, S8)</p> | <p>Defensive strategy Business actors must continue to increase knowledge related to modern processing technology and pass it on to the next generation (T1,T2,T5, W1,W2,W3) The supply of raw materials from suppliers that are not continuous has an impact on production which is also not continuous minimized by contracting cooperation with several suppliers so that they complement each other (T2,T3,T5, W6, W7, W8, W9)</p> |

Based on the Table 1, several strategies can be used as options to develop a model to support sustainability of the local food industry in West Sumatra. There are several categories of strategies that can be classified, including: aggressive strategies that use strength to take advantage of the opportunities created. The strategy includes combining opportunities 4 and 5 with strength 2 and 6. Based on this combination created a strategy such as : Using government support to process abundant and easily obtainable raw materials to improve processing technology and provide training so that the local food industry is more developed and realizes food security. The role of the government is to encourage business actors to get the latest technology carried out to improve more modern processing technology so that local products produced are more updated with market demand that refers to the latest market tastes. Second is Utilizing the potential benefits of local food industry business so that the local food industry is more developed by accessing financial institutions and other capital assistance with facilitation from the government. This is by utilizing and facilitating business actors' access to fund and capital providers.

The next strategy is to utilize strength to avoid threats (diversification strategy). The basis of the creation of this strategy is that to solve the problems that arise, it is necessary to form cooperatives that will help business actors to share with each other related to solving their problems, so the strategy offered is Make cooperation contracts with farmers to ensure the availability of a stable supply of raw materials. It is based on a combination of threat 2 and Threat 3 as well as strength 1, 3, 4 and 5. The second thing that can be done is to prevent land conversion by continuing to grow profitable local food commodities in the form of a strategy A profitable local food industry will prevent land conversion because farmers are still passionate about planting their land with local food commodities.

Turnaround strategy is a strategy created by overcoming weaknesses while taking advantage of opportunities. The strategies offered include Utilizing government support in the form of support for access to financial institutions to overcome capital problems and increase the use of technology from traditional to modernization. Second is to increase market share by participating in bazaars organized by the government and third, expansion of market share through exhibitions and bazaars organized by the government will enlarge the business in the future.

The last strategy for this model is defensive strategy that define as avoiding threats and overcoming weaknesses that arise. They are Business actors must continue to

increase knowledge related to modern processing technology and pass it on to the next generation.

The supply of raw materials from suppliers that are not continuous has an impact on production which is also not continuous minimized by contracting cooperation with several suppliers so that they complement each other.

The development of the local food industry to realize a sustainable local food industry is still needed support from the government. The support provided by the government includes better access to financial institutions, access of business actors to a wider market and limited provision of technology. The empowerment and improvement of the ability of human resources owned by the industry also plays an important role in the sustainability strategy for the development of the local food industry in West Sumatera.

A sustainable local food industry will provide multiplier effect for farmers who producing raw materials in the environment around the industry and together will increase the utilization of local food within the community. The ultimate goal to be achieved is the successful diversification of food in society and improving the country's food security.

4. Conclusion

Based on the identification carried out to achieve the first objective, it was concluded that there are still many weaknesses found in the local West Sumatra food industry, including small industries in a broad sense have the following characteristics such as small industry is a small-scale industry both in the size of capital, the amount of production and its labor. Capital gains generally come from unofficial sources such as family savings, loans from relatives, because of the small scales, the nature of the management is centralized. And, The existing workforce is generally composed of family members or close relatives of an informal nature of labor relations with technical qualifications that are as-is or developed while working. Also, the equipment used is simple with low output capacity anyway.

As for the second objective, a strategy has been developed which is expected to be suitable for carrying out the sustainability of the development of the local food industry in West Sumatra which involves all important stakeholders such as industry players themselves, suppliers and the role of the government.

Acknowledgment

This research was funded by Andalas University in accordance with the Applied Research Scheme Research Contract (RT) Number T/3/UN.16.19/PT.01.03/Pangan-RT/2023. Fiscal year 2023.

References

- [1] Kuwornu JKM, Khaipetch J, Gunawan E, Bannor RK, Ho TDN. The adoption of sustainable supply chain management practices on performance and quality assurance of food companies. *Sustain Futur.* 2023;5(December 2022):100103. <https://doi.org/10.1016/j.sftr.2022.100103>.
- [2] Liu Y, Wood LC, Venkatesh VG, Zhang A, Farooque M. Barriers to sustainable food consumption and production in China: A fuzzy DEMATEL analysis from a circular economy perspective. *Sustain Prod Consum.* 2021;28:1114–29.
- [3] Kemmerling B, Schetter C, Wirkus L. The logics of war and food (in)security. *Glob Food Sec.* 2022;33(October 2021):100634.
- [4] Perdana T, Kusnandar K, Perdana HH, Hermiatin FR. Circular supply chain governance for sustainable fresh agricultural products: minimizing food loss and utilizing agricultural waste. *Sustain Prod Consum.* 2023;41(May):391–403.
- [5] Kang H, Roggio AM, Luna-Reyes LF. Governance of local food systems: current research and future directions. *J Clean Prod.* 2022;338(January):130626.
- [6] Hajimirzajan A, Wahdat M, Sadegheih A, Shadkam E, El Bilali H. An integrated strategic framework for large-scale crop planning: sustainable climate-smart crop planning and agri-food supply chain management. *Sustain Prod Consum.* 2021;26:709–32.
- [7] Deprá MC, Dias RR, Zepka LQ, Jacob-Lopes E. Building cleaner production: how to anchor sustainability in the food production chain? *Environ Adv.* 2022;9(May):100295.
- [8] Le TT, Kieu XH, Behl A, Pereira V. Building up more sustainable food supply chains: implications for sustainable development. *J Clean Prod.* 2022;378(June):134650.
- [9] Araújo RG, Chavez-Santoscoy RA, Parra-Saldívar R, Melchor-Martínez EM, Iqbal HM. Agro-Food Systems and Environment – Sustaining the Unsustainable. *Curr Opin Environ Sci Heal*; 2022. p. 100413.
- [10] Polzin SS, Lusk JL, Wahdat AZ. Measuring sustainable consumer food purchasing and behavior. *Appetite.* 2022;180(August 2022):106369.

- [11] Apak ÖC, Gürbüz A. The effect of local food consumption of domestic tourists on sustainable tourism. *J Retailing Consum Serv.* 2022 Nov;2023:71.
- [12] Hamwi M, Lizarralde I, Legardeur J. Demand response business model canvas: A tool for flexibility creation in the electricity markets. *J Clean Prod.* 2021;282:282.
- [13] Folwarczny M, Otterbring T, Ares G. sustainable food choice as an impression management strategy. *Shipin Kexue.* 2022;5(3):1–7.
- [14] Köhler S, Bager S, Pizzol M. Sustainability standards and blockchain in agro-food supply chains: synergies and conflicts. *Technol Forecast Soc Change.* 2022;185(October):122094.
- [15] Tohidimoghadam A, PourSaeed A, Bijani M, Samani RE. Rural sustainable livelihood resilience to climate change: A strategic analysis. *Environ Sustain Indic.* 2023;20(May):100292.