



Food Resilience Strategy Based on Local Wisdom in Deli Serdang Regency

Riska Amalia Lubis^{1*}, Yusrizal², Rahmi Syahriza³, Maryam Batubara⁴
Universitas Islam Negeri Sumatera Utara

Corresponding Author: Riska Amalia Lubis rahmayanti051193@gmail.com

ARTICLE INFO

Keywords: Food Security,
Local Wisdom, Strategy

Received : 17 June

Revised : 21 July

Accepted: 23 August

©2023 Lubis, Yusrizal, Syahriza, Batubara: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This research aims to discover how the primary priority strategy for local wisdom-based food security can be found in Deli Serdang by presenting the internal and external conditions that have been carried out so far. Additionally, the researcher also outlines some urgent measures that need to be implemented to better direct the local wisdom-based food security strategy. The method used is qualitative, employing SWOT analysis and QSPM. The number of respondents who filled out the questionnaire consisted of 5 respondents each from farmers, local communities, as well as traditional and religious figures, and 5 respondents from expert professionals. Based on the SWOT analysis, the strategy quadrant obtained after being processed in the IFE and EFE matrices falls under Quadrant I. This indicates that the strategy used is a progressive strategy. This strategy implies that local wisdom-based food security in Deli Serdang possesses strength and potential. Furthermore, the QSPM analysis yielded the result that the primary priority strategy to be pursued is to focus on preserving local wisdom-based food security to turn it into an international-scale business opportunity.

INTRODUCTON

Indonesia's agrarian economy relies heavily on agriculture, with a substantial population and workforce engaged in the sector (Ismail, 2018). Despite being a developing nation, the agricultural sector is vital for livelihoods, especially in rural areas (Syahputra, 2020), where challenges like low education, skills, and productivity persist (Butar-Butar, 2017). Food security, a fundamental human right, depends on access to capital. The government introduced the Food Security Credit (KKP) to aid farmers, as rice, a staple for over 95% of Indonesians, holds strategic importance (Surya, 2021). However, Indonesia's food security, as per the Global Food Security Index (GFSI), weakened in 2020, with an index of 59.2 in 2021. GFSI highlights affordability, availability, nutrition, and resource resilience as critical indicators, indicating challenges in infrastructure, nutrition, and environmental policies (Katadata, 2022).

Neglecting biodiversity and local wisdom weakens national food security. Authors like Francis Wahono et al. stress their critical role in a nation's survival, affecting food supply and indigenous communities (Wahono, 2013). Over 103 food crops are crucial for global security, with 73 contributing significantly. Indonesia uses over 940 wild plants for medicine, 100 as carbs, 100 legumes, 450 fruits, 250 veggies (Zainuddin, 2017).

To preserve cultures, respecting traditions is vital. Local wisdom-based food security aims to prosper communities. Misunderstanding local customs leads to misguided development and poverty (Jasila, 2009). Cultivating local wisdom empowers rural-based policymaking, aiding health, agriculture, education, and resource management. Empowering farmers with local wisdom faces government challenges (Juarini, 2016). Strengthening this transforms weaknesses into equal welfare, mitigating rural poverty.

Farmers, despite producing food, often face malnutrition. Food security is a concern, leading Indonesia to import food. What hinders self-reliance? Food Law mandates government action for all Indonesians' food security (Sasongko, 2006). The Indonesian government actively enhances rice production and stabilizes prices. Ensuring sufficient affordable food, particularly rice, is a key agricultural policy goal. Scarcity risks economic, social, and political instability. Policies include irrigation development, subsidized resources, farming loans, and pricing protection (Dispertan, 2018).

Import policies aim to maintain affordable rice prices for consumers and meet growing domestic demand. Despite intervention, rice self-sufficiency achieved in 1984 was temporary. Indonesia's rice production deficit has persisted for over three decades, necessitating imports (Sudaryanto et al., 2019). Despite significant contributions from agriculture, forestry, and fisheries to local income, North Sumatra Province faces food security issues due to high

population density. Abundant agricultural production doesn't guarantee security, as population growth outpaces supply, resulting in food insecurity (BPS, 2019).

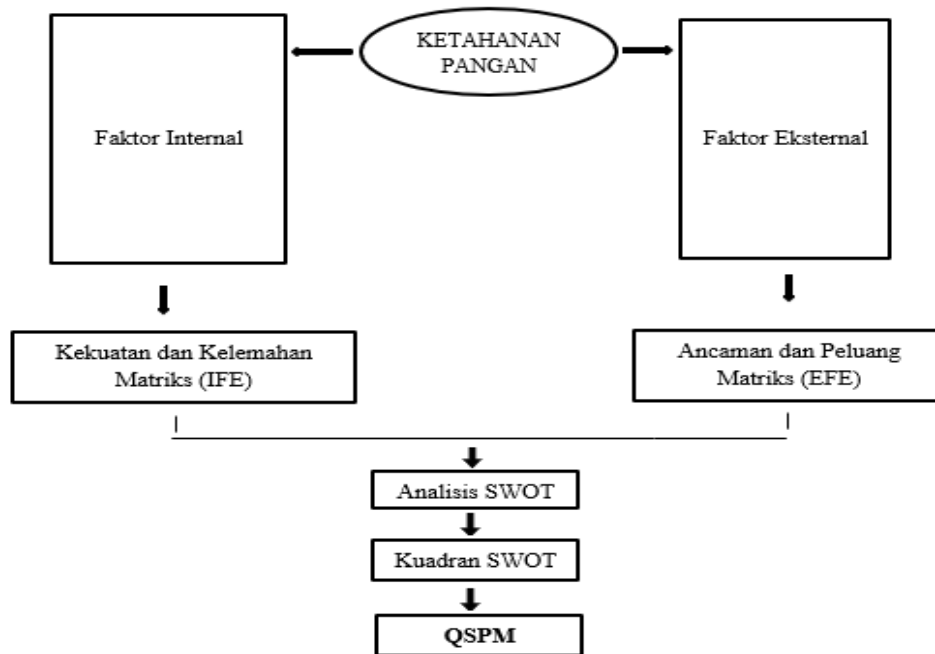
The data above reveals that a significant portion of Deli Serdang's rice fields utilizes irrigation, with a majority utilizing the irrigated type. The agricultural sector in Deli Serdang contributes significantly to the region's surplus rice production. Furthermore, the area excels in cultivating various other crops, setting it apart from many other regions in North Sumatra. Deli Serdang's rice production consistently increases each year, with the 2021 production reaching 489,766 tons. Additionally, cassava and maize production show a similar upward trend, while soybean production remains relatively low due to factors like land conversion (BPS, 2021).

To preserve cultural heritage, the government must support local agricultural traditions, as demonstrated by local wisdom-based food security. Without understanding customs and potential, development efforts are in vain (Jasila, 2009). Deli Serdang exhibits diverse local wisdom due to its varied ethnicities and religions. The region hosts Melayu (20%), Karo (45%), Javanese (40%), Minang, and Chinese (1% each), reflected in languages spoken (Northsumatrainvest.id). Karo's Merdang Merdem tradition, expressing gratitude for a fruitful harvest, showcases cultural diversity. Amid modernization, strategies for locally rooted food security are imperative (BPS, 2021).

The profound weaknesses outlined above drive the need for an in-depth exploration of strategies that can uphold local wisdom-based food security. This background motivates a deeper investigation into strategies for achieving food security rooted in local wisdom. Thus, this research seeks to address the complexities of "Local Wisdom-Based Food Security Strategies in Deli Serdang Regency."

LITERATURE REVIEW

The conceptual framework is a model that explains the relationship between a theory and important known factors in a specific problem. Based on the diagram below, it can be explained that the sequence to be followed in this research is to understand internal and external factors. From internal factors, the researcher will identify needs and weaknesses that will be reflected in the IFE matrix. On the other hand, from external factors, threats and opportunities that will be reflected in the EFE matrix will be identified. This will then be followed by a SWOT analysis. The following is the section of the conceptual framework in this study.



Picture 1. Framework Theory

METHODOLOGY

The research methodology employed in this study is Qualitative Methodology. Qualitative analysis, generally directed towards data from focus questionnaires, observations, and interviews, follows the characteristics described by van den Hoonaard: simultaneous data collection and analysis, note-taking during and after data collection, simplification of data through coding, writing reasoned interpretations, and developing concepts and connections with existing literature. Qualitative research aims to comprehensively depict a subject from the perspective of those being studied. It focuses on ideas, perceptions, opinions, or beliefs of the individuals involved, emphasizing description and explanation using language. (Nawawi, 2002) The analysis methods used in this research are SWOT Analysis and QSPM (Quantitative Strategic Planning Matrix).

The choice of SWOT Analysis is due to its ability to highlight strengths, reduce weaknesses, leverage opportunities, and anticipate threats, making it crucial for a company's sustainability. As for QSPM analysis, it prioritizes alternative strategies derived from the SWOT Analysis. These two methods are interconnected as SWOT Analysis is just one step in business planning. To proceed with more in-depth analysis for decision-making, QSPM is necessary to rank the various strategies generated from SWOT by Total Attractiveness Score (TAS), identifying the most suitable strategy for implementation under specific conditions.

The research for this thesis was conducted progressively, encompassing planning, preparation, pre-research, and core research activities involving the

distribution of questionnaires and conducting interviews with key figures such as traditional leaders, religious figures, farmers, and local community members in Deli Serdang. The research was conducted offline and took place from January 2023 until completion.

Primary data, obtained from original sources in the field or research location, is directly related to the discussed issue. Secondary data, already collected and processed by others, typically in published form, is used for literature review and background research on local wisdom-based food security strategies and the use of QSPM method.

Purposive sampling was employed to select informants, involving individuals with specific expertise or positions that facilitate exploration of the social context. (Sugiyono, 2015). Data analysis involves organizing, categorizing, synthesizing, pattern recognition, and identifying important insights, leading to decision-making and storytelling. Before reaching the QSPM stage, two analyses were performed to select the best strategies for inclusion in the QSPM matrix: Internal-External (IE) Matrix analysis and SWOT analysis. The steps of data analysis from start to finish are described as follows. (Moleong, 2011).

RESULT AND DISCUSSION

Research Location

Deli Serdang Regency is situated between 2°57" - 3°16" North Latitude and 98°33' - 99°27' East Longitude, positioned at the crossroads within the West Pacific Trench region, covering an area of 2,497.72 square kilometers (249,772 hectares), which constitutes 3.34% of North Sumatra Province's total area.

Administratively, Deli Serdang Regency is divided into 22 sub-districts, 389 villages, and 14 urban neighborhoods. The distances between each sub-district's capital and the central government center of Deli Serdang Regency, Lubuk Pakam, vary from 4 to 61 kilometers. The farthest sub-district capitals from the regency's center are Sibolangit and STM Hulu, located at distances of 61 and 51 kilometers, respectively.

Analysis of SWOT for Local Wisdom-Based Food Security Strategy in Deli Serdang Regency

This section provides a detailed explanation of the internal and external factors influencing Local Wisdom-Based Food Security in Deli Serdang Regency.

Current strengths in the effort to maintain food security in Deli Serdang Regency include the significant role of human resources, specifically the community members who possess agricultural land, rice fields, and livestock. In terms of local wisdom, the Deli Serdang community demonstrates a resilient attitude, as seen in their self-reliant approach to selling their harvest when

government support is lacking. The community also actively preserves traditional customs, such as the "merdang merdem" ritual, which celebrates the end of the rice planting season. Furthermore, another strength lies in the high sense of solidarity between the community members, agricultural authorities, related industries, as well as the farmers' motivation to adopt modern technologies like the combine harvester.

However, there are several weaknesses that need to be addressed to strengthen food security. Firstly, declining land productivity due to the conversion of agricultural land into palm oil plantations and settlements. The lack of facilities and infrastructure, such as rice granaries and heavy machinery, also poses a challenge to sustainable production. Additionally, inadequate institutional management such as farmer groups and insufficient government commitment to support food security are also issues to overcome.

Nevertheless, opportunities to maintain food security are substantial. The quality and quantity of rice produced are capable of meeting demand, and there is significant potential for the development of rice fields in Deli Serdang Regency. Support from the central government in providing farmer support facilities can also enhance food production.

On the other hand, threats to food security encompass fluctuations in production costs, declining interest of the younger generation in agriculture, and attacks from plant pests as well as climate change. Appropriate measures need to be taken to address these threats.

In this context, several priority strategies are proposed, including maintaining the spirit of cooperation and solidarity, motivating farmers to adopt technology, focusing on preserving local wisdom as a business opportunity, enhancing farmers' capacity to embrace technology, and maximizing the potential of rice fields to increase food availability. In conclusion, this provides a brief overview of the results of a SWOT analysis and the priority strategies for building locally-based food security in Deli Serdang Regency.

CONCLUSION AND RECOMMENDATIONS

Based on the research findings and discussions, the local wisdom-based food resilience strategy in Deli Serdang Regency is positioned in Quadrant I, combining strengths and opportunities. The recommended strategy is a progressive approach involving both internal and external factors, along with the urgency of addressing them. Current strengths include Human Resources with a resilient attitude during harvest, the preservation of Local Wisdom through the Merdang Merdem tradition, high levels of cooperation and solidarity, as well as the motivation of farmers in adopting new technologies. On the other hand, there are weaknesses such as declining land productivity,

conversion of agricultural land, insufficient facilities and infrastructure, the need for improved institutional management, and financial limitations.

As for opportunities, they encompass increased rice demand, central government support, potential for agricultural land development, and financial institution services. However, there are also threats such as fluctuating input and output prices, waning interest of the younger generation in agriculture, substitute products, attacks from plant pests, and climate change. The results from the QSPM Method indicate that the top priority strategy is to maintain locally-rooted food resilience as an international business opportunity. The Deli Serdang District Agriculture Office should take the lead in preserving local wisdom, especially the Merdang Merdem tradition, as a means to enhance paddy field productivity and collaboration among relevant stakeholders.

ADVANCED RESEARCH

Further research endeavors can amplify the enhancement of local wisdom-based food resilience in Deli Serdang. A comprehensive exploration of traditional farming practices, such as the Merdang Merdem tradition, could unravel valuable insights. Additionally, investigating climate-resilient farming techniques aligned with local wisdom, and bridging the knowledge gap between generations for sustainable practices, are pivotal. Advancements could involve strengthening market access and value chains, establishing community-based seed banks, and assessing policy support. Scrutinizing the socioeconomic impacts, gender dynamics, and collaborating with indigenous communities will provide a holistic perspective. Lastly, a longitudinal study focusing on the sustainability of local wisdom integration is essential to cultivate enduring and effective strategies for sustainable agriculture.

ACKNOWLEDGMENT

I extend my heartfelt appreciation to Universitas Islam Negeri Sumatera Utara for their unwavering support and encouragement throughout my research journey. The academic and research facilities provided by the university have been instrumental in conducting this study. I am deeply grateful to the faculty members for their guidance and insights that have enhanced my understanding. This acknowledgment would be incomplete without recognizing the valuable interactions and knowledge-sharing with fellow students. My experience at this institution has been truly rewarding and has contributed significantly to my academic growth.

REFERENCES

- BPS. 2015. Produksi Padi Tahun 2015.
<https://www.bps.go.id/brs/view/id/1272>
- Butarbutar, Gesty Romaito. 2017. Analisis Faktor-Faktor Yang Mempengaruhi Pendapatan Usaha Industri Makanan Khas Di Kota Tebing Tinggi. JOM Fekon Vol. 4 No.1.
- Disperten. (2018). Rencana Strategis Penelitian dan Pengembangan Sumberdaya Lahan Pertanian
- Jasila, Ismi. 2009, Pengaruh Kredit Ketahanan Pangan Terhadap Efisiensi usahatani Tebu Di Kabupaten Situbondopropinsi Jawa Timur, Tesis, Program Magister Pertanian, Institut Pertanian Bogor , Jawa Barat.
- Juarini. 2016. *Kondisi dan kebijakan pangan di Indonesia*. Jurnal Dinamika Sosial Ekonomi UPN Veteran Yogyakarta. Vol 7 No 2. Desember.