FOOD SECURITY STRATEGY BASED ON LOCAL WISDOM IN DELI SERDANG DISTRICT

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Abstract

This study aims to find out how the main priority strategy for food security based on local wisdom in Deli Serdang is by presenting the internal and external conditions that have been carried out so far., In addition, the researchers also explained several handling urgencies that needed to be implemented so that local wisdom-based food security strategies could be more focused. The method used is a qualitative method using SWOT analysis and QSPM. The number of respondents who filled out the questionnaire was 5 respondents from farmers, the surrounding community, and traditional and religious leaders, and 5 respondents from experts. Based on the results of the SWOT analysis, the strategy quadrants obtained after being processed in the IFE and EFE matrices are in Quadrant I. This indicates that the strategy used is a progressive strategy. This strategy means that food security based on local wisdom in Deli Serdang has strengths and opportunities. Furthermore, in the QSPM analysis, the results show that the main priority strategy that must be carried out is to focus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale.

Keywords: Food Security, Local Wisdom, Strategy

INTRODUCTION

Indonesia is an agricultural country, meaning that agriculture plays an important role in the overall national economy. This can be shown from the large number of residents and workers who live and work in the agricultural sector or from national products originating from agriculture (Ismail, 2018). Indonesia is one of the developing countries with the agricultural sector as a source of livelihood for the majority of the population. Thus, most of the population depends on the agricultural sector (Syahputra, 2020).

Food is the most important basic human need. Therefore, the fulfillment of food is part of individual human rights. Fulfillment of food is also very important as a basic component to realize quality human resources. One important and facilitating factor in achieving food security is the availability of capital for farmers. Therefore, the government launched a credit scheme in the form of a Food Security Credit (KKP).

According to data from the Global Food Security Index (GFSI), Indonesia's food security in 2020 will weaken compared to the previous year, and in 2021 the index will drop to 59.2. The GFSI measures food security in countries from four major indicators, namely food affordability, availability, nutritional quality and food safety, and natural resources and resilience. According to the GFSI assessment, Indonesia's food agriculture infrastructure is still below the global average. Nutritional standards and diversity of staple foods are also still considered low. Indonesia's natural resources are also considered to have poor resilience because they have not been protected by strong political policies, and are vulnerable to disasters related to climate change, extreme weather, and environmental pollution (Katadata, 2022).

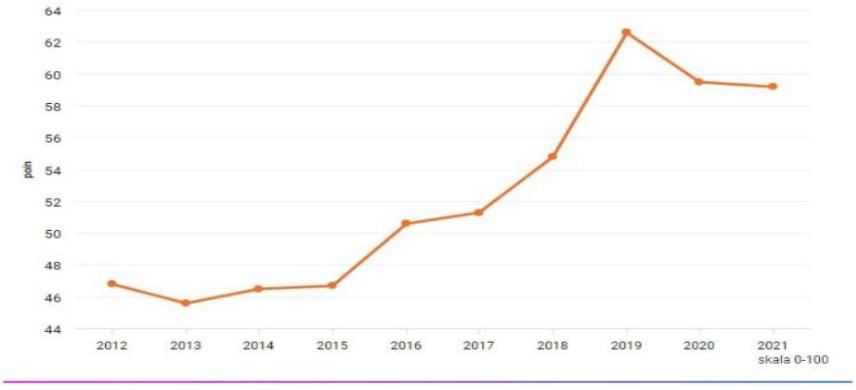


Figure 1
Indonesia's Food Security Index According to the Global Food Security Index

There are more than 103 types of food plants that are cultivated and function as essential for global food security. There are 73 species of food plants, each of which contributes 5% or more to a country's food. In Indonesia, people use more than 940 wild species as traditional and modern medicinal plants, as well as 100 plant species as a source of carbohydrates, not less than 100 species of nuts, 450 fruits, and 250 species of vegetables, including mushrooms, which are part of the community's menu. everyday (Zainuddin, 2017).

What is ironic is that farmers are food producers, but sometimes they lack food – more precisely, malnutrition. This is where food security emerges as a big issue for farmers. Accompanying this are the many efforts to import food from the government. Then, where is the mistake so that we are not 'sovereign' in this matter of food? In fact, in Law Number 7 Concerning Food, it is stated that the government and the community should create 'food security' for all Indonesian people (Sasongko, 2006). Therefore, it is not surprising that the Indonesian government's intervention is very large in efforts to increase rice production and price stability.

North Sumatra Province is included in one of the regions with poor food security in Indonesia, whereas in North Sumatra's GRDP data for 2018 to 2019 the agricultural, forestry, and fisheries sectors provide the largest contribution to their regional original income, however, this does not guarantee good food security. good for North Sumatra Province, because of the large population in North Sumatra Province. The more the population, the greater the demand for food. The population growth which continues to increase every year cannot be balanced by the amount of food production. This is what makes food security in North Sumatra Province said to be poor, even though the amount of agricultural production is abundant. The following is the GRDP data for North Sumatra Province by Expenditure Component.

Table 1
GRDP of North Sumatra Province by Expenditure Component 2018-2019 (Billion Rupiah)

Component Expenditure	On The Basis of Current Prices		On the Basis of Constant Prices	
	2018	2019	2018	2019
Household consumption	306,071.86	333,511.72	225.907.47	237,688.14
LNPRT consumption	5,258.70	5,708.82	4515.28	4,683.87

Government Consumption	43,740.45	46012.72	31050.20	30,933.13
Gross Fixed Capital Formation	182,367.64	198,592.88	128,952.21	135149.53
Inventory Changes	13119,11	9047.44	10958.43	7,797.44
Export of Goods and Services	210,230.99	239,233.56	189,848.62	194,957.79
Less Import of Goods and Services	189,066.74	203698,78	150,276.35	147,434.43
GRDP	**571,722.01**	**628,394.16**	**440,955.85**	**463,776.46**

Source: BPS North Sumatra

Based on the data above, it can be seen that the largest component of North Sumatra Province expenditure is household consumption, this is due to the large population in North Sumatra Province. A total of 14,262,147 people. To overcome the problem regarding food security, the North Sumatra Provincial Government established Deli Serdang Regency as one of the food storage areas in North Sumatra, based on the natural resources owned by Deli Serdang Regency, including marine resources, agriculture, plantations, air, forests, mining and tourism (BPS, 2019).

This is also in line with the GRDP of Deli Serdang Regency at current prices according to the business field issued by the Deli Serdang Central Statistics Agency as follows:

Table 2
GRDP of Deli Serdang Regency Based on Current Prices According to Business Field 2020-2022 (Million Rupiah)

GRDP Business Field	Year		
	2020	**2021**	**2022**
A. Agriculture, Forestry, and Fisheries	1 151 911.73	1 221 416,15	1 361 828,88
B. Mining and Quarrying	77 015,27	82 451.08	92 021.42
C. Processing Industry	3 419 798.45	3 622 242.38	3 901 456.89
D. Procurement of Electricity and Gas	13 778,19	14 426.85	15 677,36
E. Water Procurement, Waste Management, Waste and Recycling	4 906.15	5 275,40	5 369,36
F. Construction	1 797 382,74	1 901 442,24	2 061 163.74
G. Wholesale and Retail Procurement; Car and Motorcycle Repair	1 930 742,74	2 050 652.60	2 262 699.71
H. Transportation and Warehousing	859 135,27	821 181,23	1 117 857,94

Source: BPS Deli Serdang Regency

The table above shows that the agriculture, forestry and fisheries sector is one of the components that has a GRDP figure that continues to increase from 2020 to 2022 and is considered to make agriculture, forestry and fisheries one of the government's focus points to improve community food security. This is in line with the area of rice fields in Deli Serdang Regency which consists of the area of paddy fields based on sub-districts and types of irrigation in Deli Serdang Regency which are divided into irrigated and non-irrigated land as follows:

Table 3
Paddy Field Area by District and Type of Irrigation in Deli Serdang Regency (Hectares) (M2)

Subdistrict	Paddy Field Area by District and Type of Irrigation in Deli Serdang Regency (Hectares) (M2)		
	Irrigation	Non-Irrigation	Total
	2015	2015	2015
Gunung Meriah	474.00	10.00	484.00
STM Hulu	433.00	237.00	670.00
Sibolangit	650.00	0.00	650.00
Kutalimbaru	300.00	900.00	1200.00
Pancur Batu	197.00	387.00	584.00
Namo Rambe	697.00	189.00	886.00
Biru-Biru	983.00	24.00	1007.00
STM Hilir	1115.00	0.00	1115.00
Bangun Purba	50.00	15.00	65.00
Galang	1040.00	18.00	1058.00
Tanjung Morawa	2028.00	481.00	2509.00
Patumbak	215.00	245.00	460.00
Deli Tua	7.00	7.00	14.00
Sunggal	1553.00	863.00	2416.00
Hamparan Perak	1789.00	4438.00	6227.00
Labuhan Deli	1575.00	2825.00	4400.00
Percut Sei Tuan	3800.00	1496.00	5296.00
Batang Kuis	0.00	1032.00	1032.00
Pantai Labu	1081.00	3283.00	4364.00
Beringin	1774.00	937.00	2711.00
Lubuk Pakam	1528.00	52.00	1580.00
Pagar Merbau	2163.00	8.00	2171.00

Source: North Sumatra BPS, data from Deli Serdang Regency

The data above shows that of the total area of 40899.00 M2 paddy fields in Deli Serdang Regency, most of the paddy fields used irrigation irrigation covering an area of 23547.00 M2 and 17442.00 M2 non-irrigated irrigation. The agricultural sector is one of the sectors that is viewed by Deli Serdang Regency because it is able to become a rice surplus area in North Sumatra.

This can be seen from the estimated food crop production table as follows:

Table 4
Estimation of Production of Food Crops by Type of Plant in Deli Serdang Regency (Tons) in 2017-2021

Plant Type	Year				
	2017	2018	2019	2020	2021
Paddy Field	446,114	448,463	423,689	425,588	489,766
Field Rice	794	1,339	1,646	1,546	998.32
Corn	72,125	72,310	87,923	81169	105,878.63
Cassava	121,304	253,301	187,435	152,543	155,624.39
Sweet Potato	4,559	2,990	2,446	1659	2,376.49
Peanuts	345	293	264	270	197.93
Soybeans	1,242	790	148	1,573	40.95
Mung beans	301	165	139	476	141,12

Source: North Sumatra BPS, data from Deli Serdang Regency

It can be seen from the table above that the production of food crops for all types of food crops in Deli Serdang Regency from 2017-2021 continues to increase every year. The highest production was for lowland rice in 2021, namely 489,766 (tons), which always experienced an increase from previous years. This is due to the wider area of paddy rice planting land compared to other types of crops (BPS, 2021).

The following table shows the harvested area of food crops by type of plant in Deli Serdang Regency from 2018 to 2021:

Table 5
Area of Harvested Food Crops by Type of Plant in Deli Serdang Regency (Ha) in 2018-2021

Plant Type	Year			
	2018	2019	2020	2021
Paddy Field	79,741	74,481	75.105	81,995.50
Field Rice	363	445	501	388.00
Corn	14,962	16,000	16,001	17185.30
Cassava	7.129	4,985	4,443	4,846.30
Sweet potato	243	189	134	134.00

Peanuts	307	262	214	186,20
Soybeans	792	124	1,081	30.00
Mung beans	144	117	397	120,10

Source: North Sumatra BPS, Data from Deli Serdang Regency

From the data above, it can be seen that the total harvested area of food crops in Deli Serdang Regency has increased every year, this type of paddy rice plant has the largest harvested area among several other types of plants, namely in 2018 it reached 79,741 (Ha) and in 2021 it reached 81,995.50 (Ha) This shows that the area of land for lowland rice plants is quite extensive in the area. While the smallest harvested area is the type of soybean plant, namely in 2018 it reached 792 (Ha) and in 2021 it reached 30.00 (Ha), it can be concluded that the increase and the size of the amount of agricultural production of food crops every year is supported by the increase in the total area of agricultural land each year in Deli Serdang Regency.

Thus to improve food security in the Deli Serdang Regency area, apart from government policies and related agencies, it is also necessary to have support from the local community to realize this as one of the actors to realize good food security based on local wisdom (BPS, 2021). These fundamental weaknesses are described in the following discussion and are described in detail in theoretical studies. This condition prompted the author to conduct a more in-depth study of what strategies should be carried out to maintain food security based on local wisdom.

REVIEW OF LITERATURE

Food Security Strategy

The availability of food that can be accessed by various parties is able to help maintain national economic stability in the midst of global dynamics. Therefore, food security needs to be the focus to be improved by realizing food sovereignty and self-reliance. Currently, there are lots of additional food ingredients made by non-Muslims who do not understand halal food ingredients, so we have to be careful, especially if we act as producers. A food producer must pay attention to every ingredient used. Take a look and find out what the material is made of. Many animal-based foods are forbidden, while plant-based foods are generally permitted. Slaughter of animals must be done in a good way and mention the name of Allah when slaughtering (Yasin, 2019).

Food Production

Production in Islamic economics is every form of activity carried out to realize benefits or add to them by exploring economic resources provided by Allah SWT so that they become benefits, to meet human needs, therefore production activities should be oriented to the needs of the wider community.

The production system is a series that is inseparable from the principles of production and factors of production. The principle of production in Islam means to produce something that is lawful which is the accumulation of all production processes starting from the source of raw materials to the types of products produced in the form of goods and services. The factors of production mean everything that supports the success of production such as natural factors, labor factors, capital factors, and management factors. Understanding the product can not be separated from the needs.

Local Wisdom

According to Wahyu in Mukti, local wisdom is defined as unique local knowledge originating from local culture or society which can be used as a basis for decision-making at the local level in the fields of agriculture, health, food supply, education, natural resource management and various other activities within the community (Mukti, 2010).

Local wisdom is an idea that arises and develops continuously in a society in the form of customs, rules/norms, culture, language, beliefs, and daily habits so that it can be utilized continuously, improving the quality of the environment so that the quality of life of the population is getting better (Pratiwi, 2017).

This basis is also strengthened by the hadiths and verses of the Al-Qur'an which accommodate this, for example, the expression: "What is good for Muslims is good in the sight of Allah SWT." Thus, something that according to Muslims contains good values, is believed it can be accommodated in Islamic law. Ulama then formulated the categorization of *'urf, 'urf sahihah,* and *'urf* vanity. Of course, with certain standards that refer to Islamic law. The literature on Islamic law displays many examples of *'urf* which have been accommodated as part of the practice of Islamic law, including during the time of the Prophet himself, such as buying and selling salam which was justified by the Prophet after moving to Medina and he observed that the practice of buying and selling had become part of Islamic law practice Muslims in Medina.

According to Al Yasa' Abubakar, many of the thoughts of the *madhhab* priests are attempts to accept and absorb the customs of the people around them and then become part of fiqh. Sometimes, the interpretation of a text by scholars is influenced by their customs or culture so that its meaning is not something that is universal and then applied to other places or regions (Abubakar, 2016).

Relationship between Food Security and Local Wisdom

Food security and local wisdom are two things that cannot be separated. Each region generally has traditions related to food management, starting from how to fulfill supplies to consumption. Traditions which are part of local wisdom are one of the strategies in maintaining food availability throughout the year. The continuity of tradition can be seen in the values that form the basis for community groups and are reflected in daily behavior. One of the applications of local wisdom is in the characteristics of the agricultural sector for the management of food crops in various regions. This is proof that local wisdom can contribute to Indonesia's food security.

RESEARCH METHOD

The research methodology used in this study is the Qualitative Methodology. Qualitative analysis is generally directed at data from focus questionnaires, observations, and interviews with the characteristics described by van den Hoonaard, namely: carrying out data collection and analysis simultaneously, writing notes during and after data collection, encoding to simplify data, writing reasoning on data, and develop the concepts and connections of the analysis results with the existing literature. Qualitative research aims to obtain a complete picture of a matter from the point of view of the human being studied. Qualitative research deals with the ideas, perceptions, opinions, or beliefs of the people being studied. This type of research does not compare variables but rather focuses on solving problems using descriptions or explanations using sentences about the research being conducted (Nawawi, 2002). Meanwhile, the analysis used in this research is SWOT analysis and QSPM (Quantitative Strategic Planning Matrix).

Basically, SWOT analysis is an acronym or abbreviation of 4 words namely strengths, weaknesses, opportunities, and threats. This SWOT analysis is one of the

methods used to evaluate strengths, weaknesses, opportunities, and threats in a business speculation.

QSPM is namely a method for determining the priority of alternative strategies obtained from SWOT analysis. QSPM uses inputs from stage 1 analysis to determine the relative attractiveness (attractive relativeness) of the implementation of alternative strategies, which are used in stage 3 (stage 3) of the formulation strategy analysis framework. QSPM inputs from stage 1 analysis and matching results at stage 2 which provide information for further analysis through QSPM stage 3. A more complete definition of QSPM is a recommended tool for strategists to evaluate alternative strategic choices objectively, based on internal key success factors -externals that have been identified previously (Rangkuti, 1997).

The reason researchers chose SWOT analysis is that SWOT analysis can be the main cause in the continuity of a company. This is because this analysis will produce various recommendations to highlight strengths, reduce weaknesses, take advantage of existing opportunities, and anticipate threats that may arise in the future. As for the QSPM analysis, the researcher chose to use this analysis because this QSPM method is a method for determining the priority of alternative strategies obtained from SWOT analysis. So, the two are interconnected because the SWOT analysis is just one stage of business planning, and to continue a separate, more in-depth special analysis for making decisions, the QSPM Method is needed so that the varied strategies resulting from the SWOT analysis, can be sorted from the TAS Value (The highest Total Attractiveness Score is the best strategy to implement in a certain condition.

RESULTS AND DISCUSSION

Description of SWOT Analysis Results in a Food Security Strategy Based on Local Wisdom in Deli Serdang Regency

To maintain food security, there are several strategies presented to maintain existing local wisdom, this was explained by the Head of the Agriculture Service, Rahman Saleh Dongoran, as follows:

"One of the strategies we are implementing is to provide motivation and training for farmers to provide enthusiasm and knowledge about agriculture so that they are able to increase crop yields. The government has also provided various assistance to farmers for

production activities and capital assistance for farmers who need assistance. Besides that, there is our annual activity as a form of local wisdom called merdang-merdem which we carry out quite lively every year" (Dongoran, 2023).

Mr. Dongoran also realized that government assistance was still considered unable to fully support all existing farmers. Therefore, farmers will continue to work together and help each other in agricultural activities and help maintain the overall food security of the community.

Mr. Dongoran explained again about food security in Deli Serdang Regency and its relationship with local wisdom as follows:

> "Deli Serdang Regency has many ethnic groups, religions, and customs. Actually, there is a lot of local wisdom in Deli Serdang, but to maintain food security, which has been carried out regularly until now, it is *Merdang Merdem*, which I really appreciate. This is the culture of the *Karo* tribe, but all groups and tribes participate in the merrymaking of the *Merdang-Merdem* traditional party. Usually, the people have a party in the square, then go to the rice fields as a stage of the event. The point is that the activity was very lively. *Merdang-Merdem* has also been registered as a cultural heritage. So this tradition, the local wisdom of merdang-merdem has been recognized nationally." (Dongoran, 2023).

The internal factors that exist in maintaining food security are as conveyed by Mr. Burhanuddin as the Head of the Agricultural Extension Division, namely:

> "The internal factor in maintaining food security in Deli Serdang is the people who trust and look after each other. Mutual cooperation when in the fields, so the family spirit is very strong in the rice fields. As for its relation to local wisdom, many people perform rituals according to various customs in Deli Serdang, which are generally aimed at facilitating farming and increasing crop yields" (Burhanuddin, 2023).

Furthermore, Mr. Burhanuddin explained the external factors that exist in maintaining food security based on local wisdom in Deli Serdang. The results of the interview are as follows:

> "In the future, there will be opportunities from outside that can be captured by farmers, where I feel the demand for rice will continue to increase and the hope is for the development of paddy fields to maintain food security stability in the future." (Burhanuddin, 2023).

The People's Business Credit Program (KUR) is one of the government's programs to increase access to financing for Micro, Small, and Medium Enterprises which is channeled through financial institutions with a guarantee pattern.

The efforts made so far in maintaining food security were explained by Mami Mariani the head of the RT in Deli Serdang Regency as follows:

> "We hope that there will be more farmers who provide rice barns, so that more local people who farm will participate in preserving local wisdom every time the harvest season arrives, so the amount of land will not decrease and the expected amount of harvest will continue to be sustainable." (Mariani, 2023)

It is hoped that in the future there will be more farmer groups in Deli Serdang Regency. It is hoped that local wisdom will still exist in the community. In addition, Mr. Mesdianto also provided an explanation regarding government support for the community through the Agriculture and Fisheries Service regarding the food security program in Deli Serdang Regency as follows:

> "We who are members of *Poktani* have been given seminars and training related to the food security program where we were taught how to develop agricultural land and how important this agricultural land is to maintain food security. We really understand and hope that in the future, especially the younger generation, they will be interested in becoming one of the farmers and reviving agriculture, in this case rice in particular." (Mesdianto, 2023)

In his interview, Mr. Mesdianto explained that in September 2022 the government had carried out food diversification activities in Galang District where in this activity the farmers saw how the quality of public consumption should increase.

Mr. Ali Mansyurdin as BKM Al-Hidayah Mosque Deli Serdang explained how the targets and achievements in the community in the local wisdom-based food security program in Deli Serdang Regency:

"In the future, I hope that Poktani will grow and be able to become a forum for farmers to work together and help each other in this food security program. Because the more Poktani that appear, the more people who will become farmers. Where this will become a vessel for preserving the local wisdom of the community and it is hoped that this will be able to bring local wisdom along with the times." (Mansyurdin, 2023)

In his interview, Mr. Mansyurdin had high hopes for the younger generation to be more enthusiastic about fighting and willing to make farming their future aspirations. The interest of the younger generation in agriculture is increasing and there are successors in implementing local wisdom in the future.

SWOT Analysis Weight Calculation and Rating

Based on Table 4.1 it can be seen that the relative weight value is in accordance with the theory, namely the total number per category is one. This weight calculation will later be used as a reference to find out how the current internal and external conditions are. Then, in table 4.2 it is explained about the urgency of handling which is averaged as a reference for how to deal with internal and external problems first in the future.

Table 6
Weight Calculation (Current Condition)

Strategic Factors	Respondents					Total Weight	Average Weight	Relative Weight
	1	2	3	4	5			
Strength								
1. Human Resources who have the nature of *Tawakkal* when the harvest season arrives	4	5	4	5	4	22	4,4	0.206
2. The majority of the community participates in preserving Local Wisdom through *Merdang Merdem*	6	5	5	5	5	26	5,2	0.172
3. From 2014 to 2018, *Merdang Merdem* was recorded and included in the National Cultural Heritage (Warbudnas)	5	4	5	4	5	23	4,6	0.142
4. *Ta'awun* attitude and high solidarity among agricultural apparatus and related agencies.	6	5	4	5	5	25	5	0.137
5. The high motivation of farmers in their development through technology transfer.	6	6	6	5	5	28	5,6	0.206
Total						**124**	**24,8**	**1**
Weakness								
1. Land productivity is decreasing.	4	4	4	4	5	21	4,2	0.206
2. The conversion of paddy fields.	4	4	4	5	6	23	4,6	0.137
3. Incomplete facilities and infrastructure.	2	3	4	3	2	14	2,8	0.137
4. Farmer institutional management is still lacking.	5	4	3	5	5	22	4,4	0.172
5. Weak Financial Ability.	4	5	4	5	5	23	4,6	0.206
Total						**103**	**20,6**	**1**
Opportunity								
1. Increasing demand for rice.	4	5	5	4	5	23	4,6	0.137
2. Full support from central government policy.	2	2	3	4	2	13	2,6	0.206

3. There is potential for the development of paddy fields.	4	4	5	4	4	21	4,2	0.172
4. The existence of financial institution services.	4	5	5	5	4	23	4,6	0.206
Total						**80**	**16**	**1**
Threat								
1. Fluctuations in the prices of inputs and production output.	4	3	2	3	4	15	3,2	0.353
2. Declining interest of the younger generation in agriculture.	3	2	3	4	5	17	3,4	0.172
3. The emergence of substitute products.	3	2	3	2	3	13	2,6	0.206
4. Attack of plant-disturbing organisms.	3	5	5	6	5	24	4,8	0.137
5. There is a climate change.	5	5	5	5	5	25	5	0.132
Total						**94**	**19**	**1**

Table 7
Calculation of Rating (Urgency of Handling)

Strategic Factors	Respondents					Total Weight	Average Weight
	1	2	3	4	5		
Strength							
1. Human Resources who have the nature of *Tawakkal* when the harvest season arrives	4	4	4	4	3	19	3,8
2. The majority of the community participates in preserving Local Wisdom through *Merdang Merdem*	3	4	2	4	3	16	3,2
3. From 2014 to 2018, Merdang Merdem was recorded and included in the National Cultural Heritage (Warbudnas)	4	4	4	3	3	18	3,6
4. *Ta'awun* attitude and high solidarity among agricultural apparatus and related agencies.	4	3	4	3	3	17	3,4
5. The high motivation of farmers in their development through technology transfer.	4	4	4	4	4	20	4
Total						**90**	**18**
Weakness							
1. Land productivity is decreasing.	3	3	3	2	3	14	2,8
2. The conversion of paddy fields.	3	4	3	3	4	17	3,4
3. Incomplete facilities and infrastructure.	2	3	2	3	2	12	2,4

4. Farmer institutional management is still lacking.	4	4	4	4	4	20	4
5. Weak Financial Ability.	3	3	3	3	3	15	3
Total						**78**	**15,6**
Opportunity							
1. Increasing demand for rice.	4	4	4	4	4	20	4
2. Full support from central government policy.	2	2	4	3	2	13	2,6
3. There is potential for the development of paddy fields.	4	4	4	4	3	19	3,8
4. The existence of financial institution services.	4	4	3	4	4	19	3,8
Total						**71**	**14,2**
Threat							
1. Fluctuations in the prices of inputs and production output.	3	3	3	3	4	16	3,2
2. Declining interest of the younger generation in agriculture.	3	2	2	4	4	15	3
3. The emergence of substitute products.	3	2	3	2	3	13	2,6
4. Attack of plant-disturbing organisms.	4	3	3	2	4	16	3,2
5. There is a climate change.	4	4	4	3	3	18	3,6
Total						**78**	**15,6**

Ranking Weight and Rating

Next, make a weight ranking and rating to see how the current condition is assessed. The results from highest to lowest can be seen in Table 8.

Table 8
Current Condition Assessment Ranking

No	Score	Strength Indicator	Evaluation
1	5,6	The high motivation of farmers in their development through technology transfer	Very Good
2	5,2	The majority of the community participates in preserving Local Wisdom through Merdang Merdem	
3	5	*Ta'awun* attitude and high solidarity among agricultural apparatus and related agencies	
4	4,6	From 2014 to 2018, Merdang Merdem was recorded and included in the National Cultural Heritage (Warbudnas)	
5	4,4	Human Resources who have the nature of Tawakkal when the harvest season arrives	
		Weakness Indicator	
1	4,6	Weak Financial Ability.	Very weak
2	4,6	The conversion of paddy fields.	
3	4,4	Farmer institutional management is still lacking.	
4	4,2	Land productivity is decreasing.	
5	2,8	Incomplete facilities and infrastructure.	Weak
		Opportunity Indicator	
1	4,6	The existence of financial institution services.	Very Opportunity
2	4,6	Increasing demand for rice.	
3	4,2	There is potential for the development of paddy fields.	
4	2,6	Full support from central government policy.	
		Threat Indicator	
1	5	There is a climate change.	Highly Threatened
2	4,8	Attack of plant-disturbing organisms.	
3	3,4	Declining interest of the younger generation in agriculture.	
4	3,2	Fluctuations in the prices of inputs and production output.	Threatened

5	2,6	The emergence of substitute products.	

Likewise, the same thing is done on rating rankings to see the urgency of handling. The ranking results are listed in table 9.

Table 9
Handling Urgency Ranking

No	Score	Strength Indicator	Evaluation
1	4	The high motivation of farmers in their development through technology transfer.	Very Good
2	3,8	Human Resources who have the nature of Tawakkal when the harvest season arrives	
3	3,6	From 2014 to 2018, Merdang Merdem was recorded and included in the National Cultural Heritage (Warbudnas)	
4	3,4	Ta'awun attitude and high solidarity among agricultural apparatus and related agencies.	
5	3,2	The majority of the community participates in preserving Local Wisdom through Merdang Merdem	
		Weakness Indicator	
1	4	Farmer institutional management is still lacking.	Very weak
2	3,4	The conversion of paddy fields.	
3	3	Weak Financial Ability.	
4	2,8	Land productivity is decreasing.	
5	2,4	Incomplete facilities and infrastructure.	
		Opportunity Indicator	
1	4	Increasing demand for rice.	Very Opportunity
2	3,8	The existence of financial institution services.	
3	3,8	There is development potential	
4	2,6	Full support from central government policy.	
		Threat Indicator	
1	3,6	There is climate change.	Highly Threatened
2	3,2	Fluctuations in the prices of inputs and production output.	
3	3,2	Attack of plant-disturbing organisms.	
4	3	The declining interest of the younger generation in agriculture.	Threatened
5	2,6	The emergence of substitute products.	

IFE (Internal Factor Evaluation) and EFE (External Factor Evaluation) Matrix

Next, the researcher will present the final results of calculating the weights and ratings based on an assessment of the current conditions and the urgency of handling them. from the indicators of strengths, weaknesses, opportunities, and threats as previously explained which details the calculations. These indicators are presented in the IFE and EFE matrices. The table below shows the overall total score based on strength and weakness indicators. Referring to Table 10, the value of each indicator is 2.866 for the strength indicator and 2.531 for the weakness indicator.

Table 10
IFE Matrix

No	Strength Indicator	Weight	Relatively	Ratings	Score
1	Human Resources who have the nature of *Tawakkal* when the harvest season arrives	4,4	0.206	3,5	0.721
2	The majority of the community participates in preserving Local Wisdom through Merdang Merdem	5,2	0.172	4	0.688
3	From 2014 to 2018, Merdang Merdem was recorded and included in the National Cultural Heritage (Warbudnas)	4,6	0.142	3	0.426
4	Ta'awun attitude and high solidarity among agricultural apparatus and related agencies.	5	0.137	2,8	0.383
5	The high motivation of farmers in their development through technology transfer.	5,6	0.206	3,15	0.648
	Total	**24,8**	**1**		**2,866**
No	**Weakness Indicator**				
1	Land productivity is decreasing.	4,2	0.206	3	0.618
2	The conversion of paddy fields.	4,6	0.137	2,5	0.342
3	Incomplete facilities and infrastructure.	2,8	0.137	3,5	0.479
4	Farmer institutional management is still lacking.	4,4	0.172	3	0.516
5	Weak Financial Ability.	4,6	0.206	2,8	0.576
	Total	**20,6**	**1**		**2,531**

Source: processed by researchers (2023)

In Table 11, the value of each indicator is 2.423 for the opportunity indicator and 3.187 for the threat indicator.

Table 11
EFE Matrix

No	Opportunity Indicator	Weight	Relatively	Ratings	Score
1	Increasing demand for rice.	4,6	0.137	3,5	0.479
2	Full support from central government policy.	2,6	0.206	2,6	0.535
3	There is potential for the development of paddy fields.	4,2	0.172	4	0.688
4	The existence of financial institution services.	4,6	0.206	3,5	0.721
	Total	**16**	**1**		**2,423**
No	**Threat Indicator**				
1	Fluctuations in the prices of inputs and production output.	3,2	0.353	3,2	1.129
2	The declining interest of the younger generation in agriculture.	3,4	0.172	3,4	0.584
3	The emergence of substitute products.	2,6	0.206	2,6	0.535
4	Attack of plant-disturbing organisms.	4,8	0.137	3	0.411
5	There is climate change.	5	0.132	4	0.528
	Total	19	**1**		**3,187**

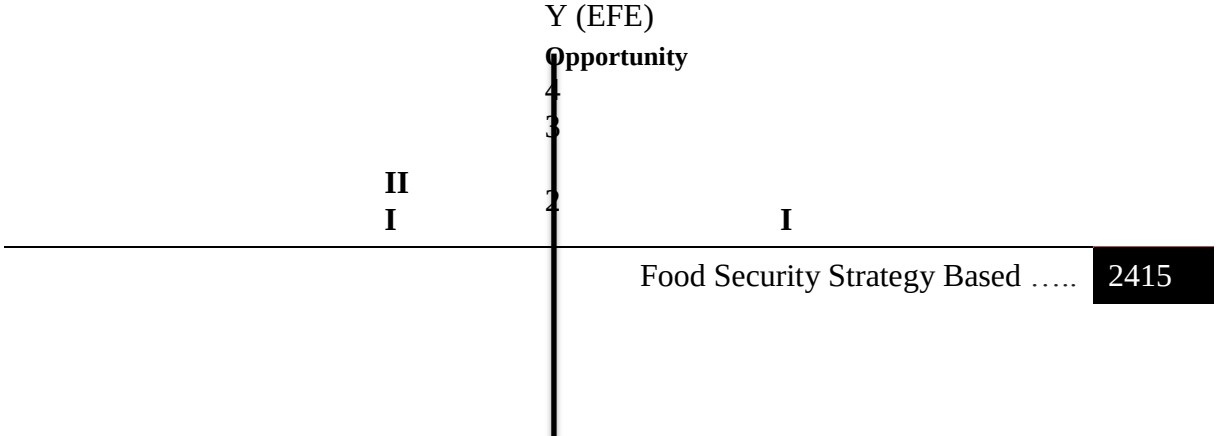
SWOT Quadrant

From the final score, IFE (Internal Factor Evaluation) and EFE (External Factor Evaluation) calculations are also carried out, with the formula:

IFE value (Score of Strength - Score of Weakness) = 2.866 - 2.531 = 0.335

EFE value (Opportunity - Threat Score) = 2.423 - 3.187 = 0.764

Based on the results of the IFE and EFE calculations above, a position for SWOT analysis can be determined, namely at quadrant I (Positive, Positive). As shown in Figure 2 below:



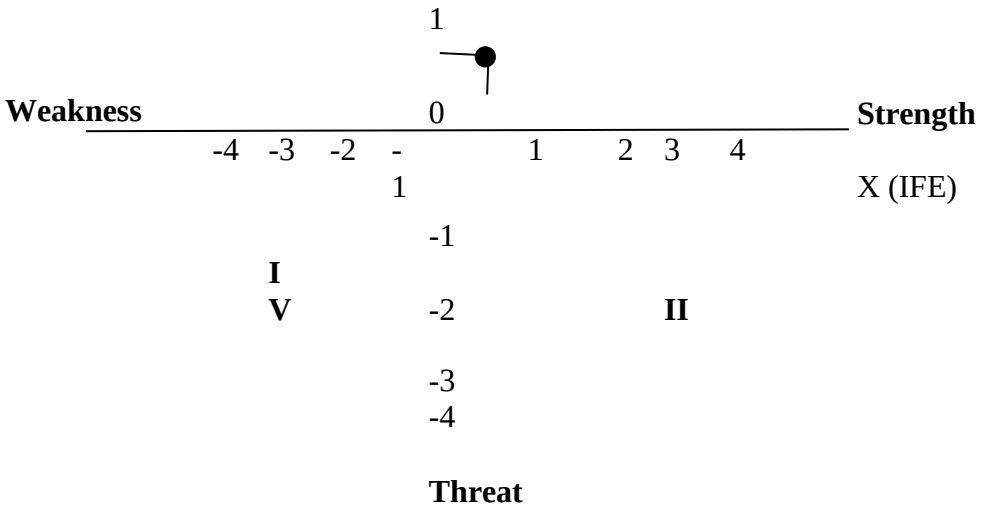


Figure 2
Positioning Results of SWOT analysis

The quadrant above shows that the MSME development strategy in Medan City is in the fourth quadrant I, namely between strengths and opportunities indicating that an organization is strong and has opportunities. That is, the strategy recommendations given are progressive, Local Wisdom-based Food Security in Deli Serdang is in prime and stable condition so it is very possible to continue to expand, increase growth, and achieve maximum progress.

Even though it is in good condition and has opportunities, there are a number of big challenges such as the community's interest in continuing to carry out hereditary traditions so it is estimated that the wheels of the organization will experience difficulties in continuing to rotate if only relying on the previous strategy. After knowing the right type of strategy, it is necessary to do an analysis using the SWOT matrix to find alternative strategies that can be implemented in accordance with these factors. This matrix serves to determine the right strategic alternatives based on internal and external factors. From the SWOT matrix above, several alternative strategies can be implemented in the Local Wisdom-based Food Security Strategy in Deli Serdang, namely:

SO Strategy (Strength – Opportunity)

a) Maintaining a high attitude of Ta'awun and Solidarity between agricultural apparatus and related agencies so that Deli Serdang Regency is able to maintain food security.

b) Continue to motivate farmers in realizing food security with technology transfer in

order to increase the demand for rice.

c) Focus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale.

d) Increase the ability of farmers to adopt appropriate technology to increase the productivity of rice crops.

e) Increase the potential of paddy fields so that food availability increases.

WO Strategy (Weakness – Opportunity)

a) Increase the productivity of land which is decreasing so that food availability increases.

b) Improving institutional management that is still lacking so that villages have a role in the pace of development of the region itself.

c) Completing incomplete facilities and infrastructure so that they get full support from central government policies.

ST Strategy (Strength – Threats)

a) Utilizing land potential and consuming local food to support food emphasis.

b) Increasing the development of farming businesses by involving local wisdom in the Deli Serdang area.

c) Implementing a single policy on the basic price of rice so that rice price stability becomes the main policy.

WT Strategy (Weaknesses – Threats)

a) Improving knowledge and technology in the development of food production in order to avoid substitute goods.

b) Strengthen and facilitate village development in order to increase the declining productivity of land.

Results of the Priority Strategy in the Food Security Strategy Based on Local Wisdom in Deli Serdang Regency

Table 12
QSPM Weight Calculation

No	Internal Strategic Factors	Respondents Strategy 1					Respondents Strategy 2					Respondents Strategy 3					Respondents Strategy 4					Respondents Strategy 5					Total	Average	Weight
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
1	Strategic location	2	3	3	3	3	3	2	3	2	2	4	4	4	4	3	3	3	4	4	4	2	2	3	3	3	76	3.04	0.071
2	Ta'awun HR	4	3	4	3	3	4	4	3	4	4	3	4	4	3	3	4	4	4	4	3	3	4	3	3	3	88	3.52	0.078
3	Large land	2	2	1	1	2	4	3	4	4	4	4	4	4	3	4	3	4	3	3	3	4	4	3	3	4	80	3,2	0.083
4	The community participates in preserving Local Wisdom	3	3	3	4	4	4	3	3	3	4	3	3	4	4	4	4	3	3	3	4	3	3	4	4	4	86	3,44	0.072
5	High Farmer Motivation	3	4	4	3	3	4	4	3	4	4	3	4	4	4	4	4	4	4	4	3	3	4	3	3	3	90	3,6	0.126
6	Farmer institutional management is still lacking	4	3	3	3	4	3	3	3	4	3	3	4	4	4	4	3	3	3	4	4	3	2	3	2	1	80	3,2	0.082
7	Land use change	2	2	1	1	2	4	3	4	4	4	4	4	3	4	4	3	4	3	3	3	4	4	3	3	4	80	3,2	0.167
8	Lack of facilities and infrastructure	3	4	4	3	3	4	4	3	4	4	4	4	4	4	4	4	4	4	4	3	3	4	3	3	3	91	3.64	0.089
9	Weak financial capabilities	3	4	4	3	3	4	4	3	4	4	4	4	4	3	4	4	4	4	4	3	3	4	3	3	3	90	3,6	0.161
10	Decreasing land productivity	3	3	4	4	3	3	4	4	4	3	4	4	4	3	4	4	3	3	3	2	2	2	3	3	4	83	3,32	0.071
		Total																									**844**	**33,76**	**1**
	External Strategic Factors																												
11	The level of demand for rice	2	3	3	3	4	4	3	3	2	4	3	3	4	4	4	2	3	3	4	2	3	2	3	3	3	77	3,8	0.071
12	Government support	3	3	4	4	3	2	1	3	4	3	3	4	4	4	4	4	4	2	1	1	3	3	3	3	4	77	3,8	0.078
13	Paddy field development	3	4	3	3	3	4	3	4	4	4	4	4	3	3	4	2	2	1	1	2	3	3	3	3	3	76	3,4	0.083

	potential																												
14	There are financial institutions	4	3	4	3	3	4	4	3	4	4	3	4	3	3	3	3	4	4	3	3	2	1	1	2	1	76	3,4	0.072
15	There is a policy from the central government	4	3	3	3	2	2	3	1	3	4	3	3	4	4	4	3	2	3	4	4	3	2	3	3	3	76	3,4	0.126
16	Input and output fluctuations	3	3	3	2	2	4	4	4	3	3	3	4	4	3	4	1	1	2	4	3	3	3	3	3	2	74	2,9	0.082
17	Interests of the younger generation	3	4	3	3	3	4	3	4	4	4	4	4	3	3	4	2	2	1	1	2	3	3	3	3	3	76	3.04	0.167
18	Plant pests	2	1	1	2	1	3	2	2	1	1	4	3	4	4	3	3	4	3	3	3	2	4	3	4	4	67	2.68	0.089
19	Climate change	3	3	3	2	2	4	4	4	3	3	4	4	3	4	4	1	1	2	4	3	3	3	2	1	1	71	2.84	0.161
20	Substitutes appear	3	4	3	3	3	4	3	4	4	4	4	4	3	3	4	2	2	1	1	2	3	3	3	3	3	76	3.04	0.071
		Total																									**746**	**32,33**	**1**

Source: processed from filling out a questionnaire (2023)

Then, the researchers calculated in the QSPM matrix in Table 11, The AS value is taken from the average weight value and multiplied by the weight value. The total TAS value was added up based on the strategies presented in the table, namely 5 strategies. Of the alternative strategies that get the largest total attractiveness score, it means that it is the most attractive/suitable for implementation.

Table 13
QSPM Matrix

No	Main factor	Weight	Alternative Strategy									
			Strategy 1		Strategy 2		Strategy 3		Strategy 4		Strategy 5	
			US	BAG	US	BAG	US	BAG	US	BAG	US	BAG
	Strength											

1	Strategic location	0.071	2,8	0.198	2,4	0.170	3,8	0.269	3,6	0.255	2	0.142
2	*Ta'awun* HR	0.078	3,4	0.265	3,8	0.296	3,4	0.265	3,8	0.296	3,2	0.249
3	Large land	0.083	1,6	0.132	3,8	0.315	3,8	0.315	3,2	0.265	3,6	0.298
4	The community participates in preserving Local Wisdom	0.072	3,4	0.244	3,2	0.230	3,6	0.259	3,4	0.244	3,6	0.259
5	High Farmer Motivation	0.126	3,4	0.428	3,8	0.478	3,8	0.478	3,8	0.478	3,2	0.403
	Weakness											
1	Farmer institutional management is still lacking	0.082	3,4	0.278	3,2	0.262	3,8	0.311	3,4	0.278	2,2	0.180
2	Land use change	0.167	1,6	0.267	3,8	0.634	3,8	0.634	3,2	0.534	3,6	0.601
3	Lack of facilities and infrastructure	0.089	3,4	0.302	3,8	0.338	4	0.356	3,8	0.338	3,2	0.284
4	Weak financial capabilities	0.161	3,4	0.547	3,8	0.611	3,8	0.611	3,8	0.611	3,2	0.515
5	Decreasing land productivity	0.071	3,4	0.241	3,6	0.255	3,8	0.269	3	0.213	2,8	0.198
	Opportunity											
1	The level of demand for rice	0.071	3	0.213	3,2	0.227	3,6	0.255	2,8	0.198	2,8	0.198
2	Government support	0.078	3,4	0.265	2,6	0.202	3,8	0.296	2,4	0.187	3,2	0.249
3	Paddy field development potential	0.083	3,2	0.265	3,8	0.315	3,6	0.298	1,6	0.132	3	0.249
4	There are financial institutions	0.072	3,4	0.244	3,8	0.273	3,2	0.230	3,4	0.244	1,4	0.100
5	There is a policy from the central government	0.126	3	0.378	2,6	0.327	3,6	0.453	3,2	0.403	2,8	0.352
	Threat											
1	Input and output fluctuations	0.082	2,6	0.213	3,6	0.295	3,6	0.295	2,2	0.180	2,8	0.229
2	Interests of the younger generation	0.167	3,2	0.534	3,8	0.634	3,6	0.601	1,6	0.207	3	0.501
3	Plant pests	0.089	1,4	0.124	1,8	0.160	3,6	0.320	3,2	0.284	3,4	0.302
4	Climate change	0.161	2,6	0.418	3,6	0.579	3,8	0.611	2,2	0.354	2	0.322
5	Substitutes appear	0.071	3,2	0.227	3,8	0.269	3,6	0.255	1,6	0.113	3	0.213
		2		**5,792**		**6,888**		**7,391**		**5,884**		**5,852**

Information:

Strategy 1: Maintaining a high attitude of *Ta'awun* and Solidarity between agricultural apparatus and related agencies so that Deli Serdang Regency is able to maintain food security.

Strategy 2: Continue to motivate farmers in realizing food security with technology transfer in order to increase the demand for rice.

Strategy 3: Focus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale.

Strategy 4: Increase the ability of farmers to adopt appropriate technology to increase the productivity of rice crops.

Strategy 5: Increase the potential of paddy fields so that food availability increases.

So, the strategy alternative that has the highest total attractiveness value is the number strategy 3 with a TAS value of 7.391.

Table 14
QSPM Matrix Analysis Results Strategy Sequence

Order	Strategy	BAG Value
1	Focus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale.	7,391
2	Continue to motivate farmers in realizing food security with technology transfer in order to increase the demand for rice.	6,888
3	Increase the ability of farmers to adopt appropriate technology to increase the productivity of rice crops.	5,884
4	Increase the potential of paddy fields so that food availability increases.	5,852
5	Maintaining a high attitude of *Ta'awun* and Solidarity between agricultural apparatus and related agencies so that Deli Serdang Regency is able to maintain food security.	5,792

Source: Processed by researchers (2023)

Results of SWOT Analysis on Local Wisdom-Based Food Security Strategies in Deli Serdang Regency

The following describes in detail the internal and external conditions of Local Wisdom-Based Food Security in Deli Serdang Regency

Current Strength

The realization of good local wisdom-based food security cannot be separated from the existence of good human resources. In maintaining food security in Deli Serdang Regency, human resources play an important role in it. Communities that own plantations, rice fields, and livestock contribute a major influence on the resilience that occurs.

Current Weakness

In the context of weakness, there are a number of current shortages that need to be underlined for the sake of food security based on local wisdom. First, the decreasing productivity of land is caused by the decreasing area of rice fields in the Deli Serdang area. Second, in line with the first point, many paddy fields have been converted into agriculture other than rice. Besides that, the rice field area is decreasing because the owner traded it and used it as a residence and other buildings.

Third, inadequate facilities and infrastructure for continuous production. Fourth, a lack of institutional management that farmers have. Fifth, the local government's lack of commitment to maintaining food security.

Current Opportunities

There are so many opportunities to maintain food security in the future. This can be viewed from the quality and quantity of rice produced by farmers can meet the existing demand, in the future the opportunity for increased demand for rice will also increase as well. Besides that, there is support from the central government to provide facilities and infrastructure to support farmers to meet the demand for food for the community.

Current Threat

The threat that is currently happening is that the biggest trigger is fluctuations in output prices and production inputs where the prices of production materials purchased by farmers often increase, in which condition it becomes difficult for farmers to buy raw materials. And for farmers, it becomes difficult to increase output prices when people's purchasing power decreases.

Another urgency that is feared will occur is environmental damage caused by the large number of people who sell and make the village that should be beautiful become crowded and lose its beauty. Therefore, individuals who exist and are involved

in it must instill high social values and norms so that beauty is maintained. Access to close urban areas is feared to cause changes in the socio-cultural ties of the community to decline. It is hoped that the people in the agro-tourism area will retain social and cultural ties.

Priority Strategy in Local Wisdom-Based Food Security Strategy in Deli Serdang Regency

To find the top priority strategy, further data processing is required using the QSPM method. And after being processed by presenting 5 priority strategies. The 5 priority strategies presented are: a) Maintaining a high attitude of Ta'awun and Solidarity between agricultural apparatus and related agencies so that Deli Serdang Regency is able to maintain food security; b) Continue to motivate farmers in realizing food security with technology transfer in order to increase the demand for rice; c) Focus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale; d) Increase the ability of farmers to adopt appropriate technology to increase the productivity of rice crops; e) Increase the potential of paddy fields so that food availability increases.

CONCLUSION

Referring to the results of the research and discussion, it can be concluded according to the formulation of the problem as follows: The results of the SWOT analysis show that the food security strategy based on local wisdom in Deli Serdang Regency is in Quadrant I, namely between Strengths and Opportunities and the recommended strategy given is a progressive strategy. The strategies used so far include internal and external factors, as well as the urgency of handling them, namely: a) Current Strengths; b) Current Weaknesses; c) Current Opportunities; d) Current Threats: Fluctuations in input and production output prices, decreased interest of the younger generation in agriculture, emergence of substitute products, attacks by plant-disturbing organisms and climate change.

The results of the QSPM method show that the main priority strategies that need to be implemented are ffocus on preserving food security based on local wisdom so that it becomes a business opportunity on an international scale. Local wisdom that is considered

good must be upheld by farmers and government agencies, in this case, the Deli Serdang Regency Agriculture Service in carrying out agricultural activities. considered capable of increasing the productivity of paddy fields and increasing the attitude of ta'aawun among related parties and this strategy must be adjusted so that its application for food security can be more effective.

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