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EMPOWERMENT STRATEGY FOR RICE FARMERS' INSTITUTIONS IN RIAS VILLAGE, SOUTH BANGKA REGENCY USING SWOT - QSPM APPROACH

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ABSTRACT

The purpose of this research is to formulate an empowerment strategy for rice farmer institutions in Rias Village, South Bangka Regency. The research method is qualitative. The sampling technique is done purposively, and data is collected through interviews. Strategy analysis and formulation are conducted using the SWOT-QSPM approach. Through the SWOT-QSPM analysis, priority strategies are formulated to improve the performance and capacity of farmer groups in managing agricultural enterprises and expanding markets. The SWOT-QSPM recommendations include the development of collaboration, productivity enhancement of rice, optimization of information technology, financial strengthening, risk management, and continuous evaluation.

Keywords: Empowerment Strategy, Rice Farmer Institution, SWOT, QSPM.

INTRODUCTION

The agricultural sector and farmers play a crucial role in providing food, creating employment opportunities, contributing to economic growth, and aiding in poverty alleviation. Farmers are the primary producers of food in Indonesia, and their agricultural production is vital for supplying staple foods for the Indonesian population and meeting domestic food needs. Farmers not only create job opportunities for themselves but also for other agricultural workers such as farm laborers and small-scale farmers working on agricultural land. By creating these employment opportunities, farmers can improve their quality of life and reduce unemployment rates in rural areas. Additionally, the role of farmers is significant in boosting Indonesia's exports by producing, processing, and shipping commodities to international markets, thereby contributing significantly to the country's foreign exchange earnings.

Therefore, the government protects farmers' rights, enhances their education levels, and improves their welfare through the establishment of Law No. 19 of 2013 (UU/19/2013) concerning the Protection and Empowerment of Farmers. This law regulates aspects of farmers' protection and empowerment, including planning, protection, empowerment, financing, and

funding of agricultural activities, as well as involving community supervision and participation in protecting and empowering farmers. In its implementation, the law is based on principles of sovereignty, independence, benefit, integration, transparency, efficiency, fairness, and sustainability.

Farmers play a central role in Indonesia's economy but still face various challenges. According to the Directorate General of Food Crops, Ministry of Agriculture (2021), some of the issues include the increasing conversion of agricultural land, relatively high production costs, and suboptimal levels of production and productivity. Additionally, the selling price of harvests is low because most farmers sell unprocessed wet rice, the quality of crop yields is suboptimal, and limited post-harvest handling and processing lead to low competitiveness. Minimal capital, including issues with a banking system that is not supportive enough, and agricultural insurance that does not cover all agricultural commodities, are also problems faced by farmers. The adoption of agricultural technology also faces obstacles such as weak technology transfer, inappropriate application of technology, and environmentally unfriendly technological advancements. Many farmers still have low formal education, and economically, the average farmer experiences poverty and inefficiency in work. Climate change is a difficult problem to tackle, while institutional issues include suboptimal functionality, lack of organizational awareness, slow organization, lack of farmer organization independence, and low regeneration of farmers.

According to the South Bangka Regency Agriculture, Food, and Fisheries Office in 2021, rice productivity in South Bangka Regency is still low due to uneven infrastructure such as irrigation networks, roads, and bridges leading to agricultural land. Other issues include low soil fertility, some rice fields bordering protected and production forests, and competitiveness being hampered by limited use of certified superior rice seeds, inadequate seed sources, uncontrolled plant pest attacks, and lack of attention to post-harvest handling, which negatively impacts grain quality. Farmer institutions generally do not function well. In terms of policies or local government support, it is still not optimal in absorbing farmers' harvests entirely, and many farmers have difficulty accessing agricultural insurance. Climate change also causes flooding problems in rice fields when rainfall is high. As a result, the selling price of grain at the farmer level becomes unstable overall.

Empowering farmer institutions is necessary to protect and empower them in facing challenges. The hope is that farmers can develop their institutions to strengthen and advocate for their interests, aligned with their cultural values, norms, and local wisdom (Permentan / 67 / PERMENTAN / SM.050 / 12 / 2016). Empowering farmer institutions begins with direct empowerment to farmers. Farmer empowerment includes various efforts to improve their skills in running agricultural businesses, through training, non-formal education, extension services, and assistance. It also includes developing agricultural product marketing systems, land consolidation, ensuring the availability of knowledge, technology, and information easily, and strengthening farmer institutions (UU/19/2013). The goal of empowering farmer institutions is to increase farmers' bargaining positions, giving them a strategic position in managing agricultural systems in rural areas with limited land and low capital (Wahyuni, 2017).

Minister of Agriculture Regulation No. 67/PERMENTAN/SM.050/12/2016, which regulates Farmer Institution Development, explains that farmer institutions consist of Farmer Groups, Farmer Group Associations, Agricultural Commodity Associations, and the National Agricultural Commodity Council. Farmer institutions function as educational platforms that mobilize or use local resources, including labor, capital, information, and knowledge, to promote sustainable agricultural business growth and independent farmer institutions. Farmer institutions play a role in advocating for various member interests in building business

cooperation, acting as a channel for member interests and needs related to agricultural businesses, and serving as a communication channel between farmers and the government. Farmer institutions also help address issues faced by members in farming.

Empowerment of Farmer Groups is carried out by all community components so that the institution functions as a learning platform for its members, aiming to improve knowledge and skills in farming. Farmer Groups are expected to become a place to strengthen cooperation among farmers within and between farmer groups and with other parties. As a production unit, Farmer Groups are directed to have the ability to make decisions in determining profitable production development (Permentan / 67 / PERMENTAN / SM.050 / 12 / 2016).

Analyzing the strategy of empowering Farmer Groups is crucial to increasing agricultural productivity and farmer welfare. SWOT and QSPM analysis is widely used in management sciences because both are very useful tools in formulating appropriate business strategies. SWOT and QSPM can help farmer groups formulate strategies to optimize existing potential (Akyune, Syarfi, & Usman, 2023). SWOT is an acronym for Strengths, Weaknesses, Opportunities, and Threats. SWOT analysis can help farmer groups identify internal and external factors affecting organizational performance, enabling them to formulate strategies to optimize existing potential. Meanwhile, QSPM stands for Quantitative Strategic Planning Matrix, which can be used to evaluate alternative strategies that have been formulated. QSPM is an analysis method that combines the results of SWOT analysis with key success factors to evaluate the alternative strategies that have been formulated. In this context, QSPM analysis can help farmer groups select the most effective and efficient strategy to achieve organizational goals.

LITERATURE REVIEW

The SWOT matrix is a crucial strategic analysis tool for organizations as it helps in gaining a comprehensive understanding of the organization's position in its external and internal environment. The importance of the SWOT matrix lies in its ability to provide a holistic view of the organization's situation, guide strategic decision-making, plan appropriate actions, and improve organizational performance and competitiveness in a continuously changing environment. The results of strategy formulation based on internal and external factors are as depicted in the IFE and EFE matrices (Riyanto et al., 2021).

The QSPM matrix is a strategic analysis tool used to compare and evaluate alternative strategies identified in the SWOT analysis. QSPM integrates key factors from the SWOT matrix with their priority weights, thereby helping the organization determine which strategy is most effective to implement (Akyune et al., 2023).

The QSPM matrix assists organizations in making more structured and measurable strategic decisions. By using this matrix, organizations can better evaluate alternative strategies, prioritize the most effective strategies for implementation, and allocate resources more efficiently to achieve their strategic goals (Akyune et al., 2023).

To date, research on strategy formulation using SWOT and QSPM methods has been widely conducted by various practitioners, both academic and non-academic. This research spans various fields including SMEs and farmer groups, as demonstrated by Abidin et al. (2023); Akyune et al. (2023); Dwiastuty et al. (2020); Laksmi et al. (2017); Mustofa and Mulyatno (2019); Riaviola et al. (2022); Rusadi et al. (2020); Siddiq and Faqih (2020); Wulandari and Suprapti (2023); and Zulkifli and Novia (2021).

METHODS

The type of research used is qualitative research. The research population and sample are rice farmer groups, including the South Bangka Regency local government, Village Government, Agricultural Extension Center, banking, and farmer group associations. The research variable is the empowerment strategy of rice farmer institutions analyzed using the SWOT-QSPM approach. To make it more operational, the variable is broken down into several institutional aspects/fields, which are then detailed into parameters that will be the instruments for data collection and analysis. Data collection in this study uses interview methods. Then analysis is conducted with the following steps:

a. Internal Factor Evaluation (IFE) Matrix Analysis

The steps to create the IFE Matrix are as follows:

1. Compile a list of dominant internal factors in the form of strengths and weaknesses identified from interviews.
2. Sum the value of each factor based on the interview results with respondents, using weights of 4 (very important), 3 (important), 2 (less important), and 1 (not important).
3. Assign a rating to each internal factor. This rating is based on the total value divided by the number of respondents.
4. Calculate the weight of each factor. This weight shows the extent to which the factor significantly affects organizational success. Both strengths and weaknesses can be given higher weights if they have a significant impact. The total weight of all factors must equal 1.0.
5. The score is obtained by multiplying the weight of each factor by its rating.
6. The organization's total score is obtained by summing the scores of each factor.

Table 1: Internal Factor Evaluation (IFE) Matrix

No	DOMINANT INTERNAL FACTORS	TOTAL	WEIGHT %	RATING	WEIGHT X RATING
	STRENGTH				
1.	Strength 1.....				
2.	Strength 2.....				
3.	Strength 3.....				
4.	etc.....				
	WEAKNESS				
1.	Weakness 1.....				
2.	Weakness 2.....				
3.	Weakness 3.....				
4.	etc.....				
TOTAL SCORE			**1,00**		

b. External Factor Evaluation (IFE) Matrix Analysis

The steps to create the EFE Matrix are as follows:

1. Compile a list of dominant external factors identified from interviews.
2. Sum the values for each factor based on the interview responses, with weights assigned as 4 (very important), 3 (important), 2 (less important), and 1 (not important).
3. Assign a rating to each external factor. This rating is based on the total value divided by the number of respondents.

4. Calculate the weight for each factor. This weight indicates how significantly the factor affects the organization's success. Both opportunities and threats can be given higher weights if they have a significant impact. The total weight for all factors must equal 1.0.
5. The score is obtained by multiplying the weight of each factor by its rating.
6. The organization's total score is obtained by summing the scores of all the factors.

Table 2: External Factor Evaluation (IFE) Matrix

No	DOMINANT EXTERNAL FACTORS	TOTAL	WEIGHT %	RATING	WEIGHT X RATING
	OPPORTUNITY				
1.	Opportunity 1.....				
2.	Opportunity 2.....				
3.	Opportunity 3.....				
4.	etc.....				
	THREAT				
1.	Threat 1.....				
2.	Threat 2.....				
3.	Threat 3.....				
4.	etc.....				
TOTAL SCORE			**1,00**		

c. SWOT Analysis

The steps to create a SWOT Matrix are as follows:

1. Compile a list of the main strengths that the organization possesses internally.
2. Compile a list of the main weaknesses that exist within the organization's internal environment.
3. Compile a list of the main opportunities that originate from the organization's external environment.
4. Compile a list of the main threats that come from the organization's external environment.
5. Align the "internal strengths" with "external opportunities" and note the results as SO (Strengths-Opportunities) Strategies.
6. Align the "internal weaknesses" with "external opportunities" and note the results as WO (Weaknesses-Opportunities) Strategies.
7. Align the "internal strengths" with "external threats" and note the results as ST (Strengths-Threats) Strategies.
8. Align the "internal weaknesses" with "external threats" and note the results as WT (Weaknesses-Threats) Strategies.
9. The alignment or formulation of strategies as mentioned above is conducted through interviews and discussions with respondents.

Table 3: SWOT Matrix

Internal / **External**	**Strengths**	**Weakness**
	1. Strengths 1..... 2. Strengths 2..... 3. Strengths 3..... 4. etc.....	1. Weakness 1..... 2. Weakness 2..... 3. Weakness 3..... 4. etc.....
Opportunity	**S-O Strategies**	**W-O** Strategies

1. Opportunity 1..... 2. Opportunity 2..... 3. Opportunity 3..... 4. etc.....	S-O 1..... S-O 2..... etc.....	W-O 1..... W-O 2..... etc.....
Threat	**S-T Strategies**	**W-T Strategies**
1. Threat 1..... 2. Threat 2..... 3. Threat 3..... 4. etc.....	S-T 1..... S-T 2..... etc.....	W-T 1..... W-T 2..... etc.....

d. QSPM Matrix Analysis

Steps to create a QSPM Matrix according to Kusumah and Suryana (2018) are as follows:

1. List the strengths, weaknesses, opportunities, and threats into the QSPM matrix (from IFE, EFE, SWOT matrices).
2. Assign weights to strengths, weaknesses, opportunities, and threats according to the weights in the IFE and EFE matrices.
3. Develop alternative strategies to be evaluated according to the strategies in the SWOT matrix.
4. Assign Attractive Scores (AS) on a scale of 1 to 4. The scale details are as follows: 1 indicates not important, 2 indicates somewhat important, 3 indicates important, and 4 indicates very important. If there is no impact on the considered alternative strategy, it is not given a score (AS).
5. Calculate the Total Attractive Scores (TAS) by multiplying the weight with the AS score.
6. Sum the total TAS.
7. The strategy considered the most optimal is the alternative strategy with the highest TAS value.

Table 4: *QSPM Matrix*

Key Factors	Bobot	Alternative Strategies															
		S-O 1		S-O 2		W-O 1		W-O 2		S-T 1		S-T 2		W-T 1		W-T 2	
		AS	TAS	AS	TAS	AS	TAS	AS	TAS	AS	TAS	AS	TAS	AS	TAS	AS	TAS
Strength																	
Strength 1.....																	
Strength 2.....																	
Strength 3.....																	
etc.....																	
Weakness																	
Weakness 1.....																	
Weakness 2.....																	
Weakness 3.....																	
etc.....																	
Opportunity																	
Opportunity 1.....																	
Opportunity 2.....																	
Opportunity 3.....																	
etc.....																	
Threat																	
Threat 1.....																	
Threat 2.....																	
Threat 3.....																	
etc.....																	
		Total		**Total**		**Total**		**Total**		**Total**		**Total**		**Total**		**Total**	

RESULTS

a. Respondent Characteristics

The respondents interviewed include both farmer group members and non-farmer group members. For the farmer groups, interviews were conducted with 15 group leaders, including those from the Farmer Group Association (Gabungan Kelompok Tani or Gapoktan). Interviews with the group leaders were conducted to focus on the most relevant and important information. This approach was expected to facilitate data collection and analysis, ensuring efficiency in the research. Therefore, the position of group leader was considered primary due to their role and insights deemed sufficient to represent the group in the context of the study.

Additionally, respondents were also drawn from non-farmer groups, such as the Agriculture, Food, and Fisheries Office of South Bangka Regency, the Rias Agricultural Extension Center, Bank Sumselbabel Toboali Branch, and the Head of Rias Village. The focus on respondent characteristics based on their positions is because these individuals have in-depth knowledge and understanding of the operational aspects, strategies, and internal dynamics of the farmer groups. This knowledge includes insights into decision-making processes, issues faced, and ways to address challenges, which may not be possessed by regular members.

Specifically, the selection of respondents from the Department of Agriculture, agricultural extension center, and village head aims to obtain a comprehensive and diverse perspective on the situation and needs of the agricultural sector. Respondents from the Department of Agriculture provide valuable insights into government policies, support programs, and regulations affecting the agricultural sector, ensuring that the analysis includes policy perspectives and institutional support. The agricultural extension center, which interacts directly with farmers, offers technical and practical knowledge about operational challenges, best practices, and training needs, providing a deep understanding of field conditions. Meanwhile, the village head has a holistic view of social, economic, and cultural dynamics at the community level, as well as how agricultural initiatives can be integrated with local needs and priorities. By involving these three types of respondents, the QSPM analysis can obtain rich and varied information that covers policy, technical, and social aspects, leading to more accurate strategic decisions and positive impacts on agricultural development and farmers' welfare.

b. IFE and EFE Matrix

1. IFE Matrix

The IFE (Internal Factor Evaluation) Matrix is a strategic analysis tool used to evaluate internal factors affecting an organization's performance. This matrix helps organizations identify and assess their internal strengths and weaknesses, and assigns weights or scores to each factor. The IFE Matrix is used as part of SWOT analysis to develop appropriate strategies for the organization based on a thorough understanding of internal and external factors affecting their performance. The results of the Dominant Internal Factor Analysis using the IFE Matrix can be seen in the following table:

Table 5: Results of IFE Matrix Analysis on Dominant Internal Factors

No	DOMINANT INTERNAL FACTORS	TOTAL	WEIGHT %	RATING	WEIGHT X RATING
	STRENGTHS				
1	Farmer groups are formed through a growth process	24	0,07	4,00	0,27
2	Expertise/experience in farming	24	0,07	4,00	0,27
3	Farmer groups have started to collaborate	19	0,05	3,17	0,17
4	Farmer groups have accessed various sources of capital	19	0,05	3,17	0,17
5	Infrastructure support	24	0,07	4,00	0,27
6	Own land	20	0,06	3,33	0,19
7	Production facilities	24	0,07	4,00	0,27
8	Natural conditions support	23	0,06	3,83	0,25
	WEAKNESSES				
1	Low rice paddy productivity	22	0,06	3,67	0,23
2	Increasing production costs	21	0,06	3,50	0,21
3	Limited use of information technology	18	0,05	3,00	0,15
4	Insufficient agricultural machinery (rotating)	23	0,06	3,83	0,25
5	Average land area per farmer is 0.75 ha/person	17	0,05	2,83	0,14
6	Limited certified rice seeds	19	0,05	3,17	0,17
7	Post-harvest handling is not optimal	22	0,06	3,67	0,23
8	Institutional development is generally not well-functioning	19	0,05	3,17	0,17
9	Product diversification is generally not implemented	18	0,05	3,00	0,15
	TOTAL	**356**	**1,00**		**3,54**

Source: Research Results, Data Processed, 2024

The IFE Matrix provides a comprehensive overview of the dominant internal factors that constitute the strengths and weaknesses of an organization. On the strength side, several aspects received high weights and ratings. For example, the formation of farmer groups through a growth process has a weight x rating of 0.27, indicating that this formation process is considered very significant and strong as an organizational strength. Additionally, expertise and farming experience also received the same weight x rating, highlighting the importance of skilled and experienced human resources in the success of the organization.

Other strengths such as infrastructure support, ownership of land, production facilities, and supportive natural conditions also received high ratings in this matrix. This indicates that the organization has solid strengths in terms of infrastructure, resources, and an environment that supports the sustainability of their agricultural activities.

On the weakness side, the IFE Matrix highlights several aspects that need attention for organizational improvement and development. For instance, low rice paddy

productivity, increasing production costs, and less optimal use of information technology are points that received significant weight x rating as weaknesses. Additionally, the lack of agricultural machinery used by farmers on a rotational basis, limited availability of certified rice seeds, and suboptimal post-harvest handling are also areas requiring further attention and improvement.

From this IFE Matrix, it can be concluded that the organization has significant strengths in several key aspects but also has weaknesses that need to be addressed to improve performance and competitiveness in the agricultural market. With a deep understanding of these internal factors, the organization can develop more effective strategies to achieve its goals and vision moving forward.

2. EFE Matrix

The EFE (External Factor Evaluation) Matrix is a strategic analysis tool used to evaluate external factors affecting the performance of farmer groups. This matrix helps organizations identify and assess external opportunities and threats that can impact the organization's success and strategies. The EFE Matrix is one of the steps in SWOT analysis that helps organizations design strategies suitable for their external environment conditions. The results of the Dominant External Factor Analysis using the EFE Matrix can be seen in the following table:

Table 6: Results of the EFE Matrix Analysis on Dominant External Factors

NO.	DOMINANT EXTERNAL FACTORS	TOTAL	WEIGHT %	RATING	WEIGHT X RATING
	OPPORTUNITIES				
1.	Potential new land of 991 Ha	21	0.07	3.50	0.23
2.	Support from the Department of Agriculture/BPP	24	0.08	4.00	0.31
3.	Modern agricultural technology	23	0.07	3.83	0.28
4.	Banking funding (KUR) / cooperatives	19	0.06	3.17	0.19
5.	Market opportunities in Babel are very broad	22	0.07	3.67	0.26
6.	Partnership for agricultural machinery from outside the province	17	0.05	2.83	0.15
	THREATS				
1.	Credit guarantees for Small Businesses burden farmers	20	0.06	3.33	0.21
2.	Pests and diseases are not fully controlled	21	0.07	3.50	0.23
3.	Climate change	21	0.07	3.50	0.23
4.	High market competition from outside the province	20	0.06	3.33	0.21
5.	Uneven infrastructure (irrigation, roads, bridges)	23	0.07	3.83	0.28
6.	Low soil fertility	19	0.06	3.17	0.19
7.	Regional government not optimally absorbing farmers' harvest	19	0.06	3.17	0.19
8.	Many farmers struggle to access agricultural insurance	20	0.06	3.33	0.21
9.	Unstable selling prices of harvested grain	24	0.08	4.00	0.31

NO.	DOMINANT EXTERNAL FACTORS	TOTAL	WEIGHT %	RATING	WEIGHT X RATING
	TOTAL	**313**	**1.00**		**3.51**

Source: Research Results, Data Processed, 2024

The EFE Matrix presented provides a comprehensive view of the dominant external factors that are opportunities and threats for farmer groups. On the opportunities side, several aspects received relatively high weight x rating scores. For instance, support from the Department of Agriculture/BPP has a weight x rating of 0.31, indicating that support from the government or related institutions can be a significant opportunity for the organization to grow. Additionally, modern agricultural technology also received a high rating with a weight x rating of 0.28, showing great potential for adopting the latest technology to enhance agricultural efficiency and productivity.

Other opportunities such as potential new land, broad market opportunities, partnerships for agricultural machinery, and access to banking/KUR also received fairly positive evaluations in this matrix. This indicates that the organization has strong opportunities to leverage external environmental potential to achieve its strategic goals.

On the threats side, the EFE matrix also identifies several factors that could be obstacles or risks for the organization. For example, the unstable selling price of harvested grain has a weight x rating of 0.31, indicating that price fluctuations could be a significant threat to farmers' income. Additionally, uneven infrastructure, climate change, and pests/diseases that are not fully controlled are also points that need to be monitored and addressed.

With a deep understanding of these external factors, the organization can design more effective strategies to leverage existing opportunities while managing potential threats. The EFE matrix analysis helps the organization identify strategic priorities that need attention to achieve success amidst the ever-changing external environment.

3. SWOT and QSPM Matrix

The urgency of the SWOT matrix lies in its ability to provide a comprehensive view of the organization’s situation, guide strategic decision-making, plan appropriate action steps, and enhance organizational performance and competitiveness in a continuously changing environment.

The QSPM matrix, on the other hand, is a strategic analysis tool used to compare and evaluate alternative strategies identified in the SWOT analysis. QSPM integrates key factors from the SWOT matrix with their priority weights, helping the organization determine which strategies are most effective to implement.

The QSPM matrix assists organizations in making more structured and measurable strategic decisions. By using this matrix, organizations can better evaluate alternative strategies, prioritize the most effective strategies for implementation, and allocate resources more efficiently to achieve their strategic objectives.

Table 7: Analysis Results of the QSPM Matrix

NO	STRATEGY	TAS	PRIORITY
1.	ST-3: Development of collaboration (Strength 3) to control pests/diseases (Threat 2), address climate change (Threat 3), high market competition (Threat 4), infrastructure development (Threat 5), improvement of soil fertility (Threat 6), absorption of harvest by local government (Threat 7), agricultural insurance (Threat 8), and unstable rice prices (Threat 9)	6,88	1
2.	WO-1: Increase rice productivity (Weakness 1) by utilizing new land potential of 991 Ha (Opportunity 1), modern agricultural technology (Opportunity 3), infrastructure support (Strength 5), optimizing land function (Strength 6), production facilities (Strength 7), natural conditions (Strength 8), support programs from Department of Agriculture/BPP (Opportunity 2)	6,51	2
3.	WT-1: Increase rice productivity (Weakness 1) by controlling pests and diseases (Threat 2), mitigating climate change impacts (Threat 3), improving infrastructure (Threat 5), and enhancing soil fertility (Threat 6)	6,49	3
4.	SO-2: Enhance agricultural skills for farmer groups (Strength 2) and manage new land of 991 Ha (Opportunity 1) with modern agricultural technology (Opportunity 3)	6,46	4
5.	WT-2: Reduce production costs (Weakness 2), increase utilization of information technology (Weakness 3), and promote policies to address market competition from outside the province (Threat 4) and harvest absorption policies by local government (Threat 7)	6,33	5
6.	WO-3: Enhance mastery/utilization of information technology (Weakness 3) with support from Department of Agriculture/BPP (Opportunity 2) and utilize research results of agricultural technology (Opportunity 3)	6,33	6
7.	SO-3: Increase collaboration (Strength 3) for access to modern agricultural technology (Opportunity 3), KUR/cooperative access (Opportunity 4), market opportunities (Opportunity 5), and partnership for harvesting tools from outside the province (Opportunity 6)	6,29	7
8.	WO-2: Address rising production costs (Weakness 2) by increasing production (Weakness 2) through support from Department of Agriculture/BPP (Opportunity 2) and utilizing banking/KUR support (Opportunity 4)	6,26	8
9.	WO-6: Increase rice productivity (Weakness 1) and diversify products (Weakness 9) to exploit the very broad market opportunities (Opportunity 9) with	6,15	9

NO	STRATEGY	TAS	PRIORITY
	support from Department of Agriculture/BPP (Opportunity 2)		
10.	SO-4: Maximize access to various funding sources (Strength 4), especially with banking/KUR (Opportunity 4)	6,13	10
11.	SO-1: Coaching and mentoring for the growth process of farmer groups (Strength 1) through support from Department of Agriculture/BPP (Opportunity 2)	6,10	11
12.	ST-2: Maximize farming skills (Strength 2), infrastructure support (Strength 5), land management (Strength 6), and utilize production facilities (Strength 7) to face climate change (Threat 3)	6,09	12
13.	WO-4: Overcome limitations of agricultural machinery (Weakness 4) by leveraging partnerships with agricultural machinery from outside the province (Opportunity 6) and KUR facilities (Opportunity 4)	6,05	13
14.	WO-5: Improve post-harvest handling (Weakness 7) with agricultural technology (Opportunity 3) and partnerships for post-harvest tools (Opportunity 6)	6,03	14
15.	WT-3: Address limitations of agricultural machinery (Weakness 4), improve post-harvest handling (Weakness 7), encourage product diversification (Weakness 9) and stabilize rice prices (Threat 9)	6,00	15
16.	WT-4: Strengthen farmer institutions (Weakness 8) and address difficulties in accessing agricultural insurance (Threat 8)	5,95	16
17.	ST-1: Utilize the growth process of farmer groups (Strength 1) to address the burden of Credit for People's Business (KUR) for farmers (Threat 1)	5,76	17

Source: QSPM Analysis Results, 2024

Strategies formulated through QSPM analysis outline the steps that farmer groups can take to address various internal and external factors affecting agricultural productivity, specifically rice production. The priority of the proposed strategies is based on the TAS assessment of each strategy, which combines the weight of internal and external factors with the strategy rating.

Strategy ST-3 receives the highest priority with a TAS of 6.88, focusing on the development of collaboration to control pests/diseases, address climate change, high market competition, infrastructure development, improve soil fertility, harvest absorption by local government, agricultural insurance, and unstable rice prices. This comprehensive strategy addresses a wide range of challenges in the agricultural sector.

Next is WO-1 with a TAS of 6.51, which emphasizes increasing rice productivity by utilizing new land potential and modern agricultural technology, as well as existing infrastructure support. WT-1 with a TAS of 6.49 highlights improving rice productivity through pest/disease control, climate change mitigation, infrastructure improvement, and soil fertility enhancement.

SO-2 with a TAS of 6.46 focuses on enhancing agricultural skills for farmer groups and managing new land with modern agricultural technology. This is followed by WT-2 and WO-3, each with a TAS of 6.33, which emphasize reducing production costs, utilizing information technology, and support from Department of Agricultures/BPP.

The next strategy, SO-3, highlights increasing collaboration for access to modern agricultural technology and other market opportunities, followed by WO-2, which emphasizes addressing production costs and increasing production with support from Department of Agriculture/BPP and banking/KUR. WO-6 focuses on increasing rice productivity and product diversification with support from Department of Agriculture/BPP.

SO-4 and SO-1 emphasize improving access to funding and coaching farmer groups through support from Department of Agriculture/BPP. Meanwhile, ST-2 underlines the use of farming skills, infrastructure support, and land management to address climate change. Strategies WO-4 and WO-5 focus on overcoming limitations in agricultural machinery, post-harvest handling, and partnerships for post-harvest tools with agricultural technology and KUR facilities. Lastly, strategies WT-3 and WT-4 emphasize addressing limitations in agricultural machinery, post-harvest handling, product diversification, strengthening farmer institutions, and overcoming difficulties in accessing agricultural insurance. ST-1 highlights utilizing the growth process of farmer groups to address the burden of Credit for People's Business (KUR) for farmers.

Overall, these strategies form a comprehensive framework to optimize productivity and sustainability in the agricultural sector, with an emphasis on collaboration, modern technology use, productivity improvement, resource management, and institutional support.

DISCUSSION

The aim of this research is to formulate a strategy for empowering rice farmer institutions in Rias Village, South Bangka Regency, using the SWOT-QSPM method. This study deepens the understanding of the role of farmer institutions in the agricultural sector and their impact on productivity. By utilizing SWOT and QSPM analysis, this research adds insight into strategic management and the application of analytical tools for agricultural institutions. The resulting strategy model provides input for policymakers and practitioners to formulate more effective policies to support farmers. Additionally, this research offers a performance evaluation model for institutions, useful for measuring progress and success in empowering farmer groups.

Referring to Law No. 19/2013, the process of empowering farmer institutions begins with empowering the farmers themselves. Empowering farmers involves various efforts to enhance their skills in managing agricultural enterprises through education, training, extension, and mentoring activities. Furthermore, farmer empowerment also includes developing marketing systems and facilities for agricultural products, consolidating and securing agricultural production land, providing easy access to knowledge, technology, and information, and strengthening farmer institutions in accordance with regulations.

Conducting training and extension with a focus on a group approach is a way to empower farmers. The goal is to encourage the formation of farmer institutions or farmer groups capable of building synergy among farmers and between farmer groups to achieve business efficiency, followed by coaching and mentoring by Agricultural Extension Workers to enhance the capabilities of farmer groups. The evaluation of farmer group capabilities is conducted continuously and adjusted to evolving conditions (Permentan / 67 / PERMENTAN / SM.050 / 12 / 2016).

According to Permentan / 67 / PERMENTAN / SM.050 / 12 / 2016, the strategy for empowering farmer groups is carried out across various aspects, including institutional

arrangement, organizational and business management, legal and formal aspects, production/technology technical aspects, business partnership network development, and product diversification.

The development of collaboration in the agricultural sector is a primary strategy designed to address various challenges, such as pest and disease control, climate change, market competition, infrastructure, soil fertility, crop absorption, agricultural insurance, and rice selling prices. With a TAS score of 6.88 and the highest priority, this strategy emphasizes the importance of cooperation between farmer groups, government, research institutions, and the private sector to enhance agricultural sector resilience through access to the latest technology, financial protection, and better marketing strategies (Hermawan et al., 2023; Nugroho et al., 2020; Rizal, 2017).

To increase rice productivity, this strategy focuses on utilizing new land potential, modern technology, and infrastructure support. With a TAS score of 6.51 and third priority, this strategy emphasizes the importance of land optimization and the application of the latest technology, as well as support from agricultural offices and BPP to improve farming efficiency through farmer groups as learning centers (Mantali et al., 2021).

The next strategy, with a TAS score of 6.49 and third priority, integrates pest control, adaptation to climate change, and improvements in infrastructure and soil fertility. The aim is to enhance sustainable rice productivity through farmer involvement in farmer groups and the implementation of adaptive technology (Aulia et al., 2022; Zogar et al., 2022).

Referring to the aspects of farmer group empowerment outlined in Permentan / 67 / PERMENTAN / SM.050 / 12 / 2016, a strategy analysis for empowering farmer groups was conducted using the SWOT-QSPM approach. The analysis results in several prioritized strategies.

Increasing agricultural skills and managing new land with modern technology, which has a TAS score of 6.46 and fourth priority, focuses on training and using the latest technology to enhance efficiency and productivity. Intensive education and training help farmers manage land effectively and optimize the management of new land (Halim, 2020; Ramandani et al., 2022; Wardhani et al., 2018).

The strategy to reduce production costs and market policies, with a TAS score of 6.33 and fifth priority, involves operational efficiency, the use of information technology, and market policies that support competition and crop absorption. This effort is crucial for reducing costs and increasing farmers' competitiveness in a broader market (Mamondol, 2016; Sudrajat & Hanifa, 2023).

The strategy for utilizing information technology and research support, with a TAS score of 6.33 and sixth priority, focuses on developing farmers' capacity to use information technology and adopt agricultural technology research results. Institutional support and technological innovation play a role in more effective and sustainable agricultural management (Akbar & Zahra, 2024; Zuchriadi et al., 2021).

To improve access to modern agricultural technology, Credit for People's Business (KUR), market opportunities, and partnerships for harvesting tools from outside the province, this strategy has a TAS score of 6.29. This collaboration facilitates the use of the latest technology, acquiring funding, and obtaining advanced equipment (Pangondo, 2023).

The strategy for tackling rising production costs, with a TAS score of 6.26, aims to reduce production costs through increased production and financial support from KUR. Efficient cultivation techniques and training from agricultural offices are important parts of this strategy (Mamondol, 2016).

Increasing rice productivity and product diversification, with a TAS score of 6.15, focuses on boosting rice productivity and diversifying products to capitalize on market opportunities.

Support from agricultural offices/BPP is necessary for training and guidance to enhance the added value of rice products (Subejo et al., 2019).

The strategy to maximize access to capital sources, with a TAS score of 6.13, focuses on maximizing access to capital, especially through KUR. The use of financial resources from banking and KUR helps farmers increase productivity and address financial challenges (Nurholis et al., 2020; Muniarty & Rimawan, 2022).

Capacity building and support for the formation of farmer groups, with a TAS score of 6.10, prioritize managerial, technical, and administrative training to enhance the capacity of farmer groups (Sunarti, 2019; Munanto, 2016).

The strategy to maximize farming skills and infrastructure support to face climate change, with a TAS score of 6.09, aims to improve farming skills, infrastructure support, and land management for resilience to climate change (Fadhilah et al., 2018; Perdinan et al., 2018).

Addressing the limitations of agricultural machinery, with a TAS score of 6.05, focuses on partnerships with equipment providers and utilizing KUR for modernizing equipment to improve productivity and efficiency (Perdinan et al., 2018).

Improving post-harvest handling, with a TAS score of 6.03, aims to enhance post-harvest handling processes with technology and partnerships for post-harvest tools to reduce losses and improve the quality of agricultural products (Herdini & Masduki, 2021; Moordiani & Yunita, 2021).

The strategy to address various agricultural challenges, with a TAS score of 6.00, includes managing machinery, post-harvest handling, product diversification, and price stabilization policies. Diversification reduces dependence on a single income source, while price stabilization policies are necessary to protect farmers from price fluctuations (Norfahmi et al., 2020; AK & Aziza, 2022).

Strengthening farmer institutions and access to agricultural insurance, with a TAS score of 5.95, aims to enhance institutional capacity and facilitate access to insurance for financial protection against risks (Fauziyah, 2022; Yohanes Ngamal, 2022).

Lastly, utilizing the process of forming farmer groups, with a TAS score of 5.76, focuses on using farmer groups to address the collateral burden of KUR. This process provides collective guarantees and facilitates access to KUR.

CONCLUSION

The strategy for empowering farmer groups encompasses several key aspects: collaboration to address pests and climate change while building infrastructure; increasing productivity through the use of new land and modern technology; managing production costs and information technology; enhancing farming skills and organizational management; accessing capital and banking support; improving post-harvest handling, product diversification, and stabilization of rice prices; and strengthening institutions and access to agricultural insurance.

Theoretical recommendations include developing a collaborative model for pest and climate change management, analyzing strategies and mathematical models for rice productivity, evaluating agricultural policies and simulating their implementation, applying knowledge management for information technology, conducting agricultural risk analysis and policy modeling, and developing metrics for evaluating the process of farmer group development.

Managerial recommendations include developing collaboration between farmers and stakeholders, enhancing productivity through training and technology, optimizing information technology, supporting capital and insurance, effective risk management and policy, as well as

continuous monitoring and evaluation to improve competitiveness and sustainability in agricultural enterprises.

REFERENCES

Abidin, Z., Wardani, I., & Solikah, U. N. (2023). *Analisis Strategi Pemasaran Buah Naga Organik Di Kampung Organik Beji Di Kabupaten Wonogiri*. Jurnal Pertanian Agros, 25(4), 3970-3978.

Akbar, R., & Zahra, R. (2024). *Sistem Informasi Manajemen Pemberdayaan Kolompok Tani Berbasis Web Pada Dinas Pertanian Provinsi Aceh.* Jurnal Ilmu Komputer dan Teknologi Informasi, 1(1), 45-55.

Akyune, Q., Syarfi, I. W., & Usman, Y. (2023). Strategi Penguatan Kelompok Tani" Senior Ganepo" di Jorong Padang Kandi Nagari tujuah Koto Talago, Kecamatan Guguk, Kabupaten Lima Puluh Kota Provinsi Sumatera Barat. *Journal of Socio-economics on Tropical Agriculture (Jurnal Sosial Ekonomi Pertanian Tropis)(JOSETA)*, *3*(2).

Dinas Pertanian, Pangan, Perikanan Kabupaten Bangka Selatan (2022). Dokumen Rencana Strategis 2021-2026 Perubahan.

Aulia, M. R., Deras, S., & Hutabarat, Y. (2022). *Partisipasi Petani Dalam Kegiatan Kelompok Tani dan Kaitannya dengan Produktivitas Padi Sawah di Desa Wonosari Kecamatan Tanjung Morawa Kabupaten Deli Serdang*. Jurnal Agrisep, *23*(2), 13-21.

Dwiastuty, A. R. N., Sadeli, A. H., Fatimah, S., & Syamsiyah, N. (2020). *Strategi Pemasaran Beras Organik di Gapoktan Simpatik Tasikmalaya*. *Jurnal Manajemenm Agribisnis*, *8*(1), 1-14.

Direktorat Jenderal Tanaman Pangan Kementerian Pertanian, 2021. Rencana Strategis Direktorat Jenderal Tanaman Pangan Tahun 2020-2024.

Fadhilah, M. L., Eddy, B. T., & Gayatri, S. (2018). *Pengaruh Tingkat Pengetahuan, Sikap Dan Keterampilan Penerapan Sistem Agribisnis Terhadap Produksi Pada Petani Padi Di Kecamatan Cimanggu Kabupaten Cilacap.* Agrisocionomics: Jurnal Sosial Ekonomi Pertanian, *2*(1), 39-49.

Fauziyah, D. (2022). *Asuransi Pertanian Sebagai Salah Satu Respon Adanya Risiko Agribisnis Di Indonesia*. Makalah Universitas Koperasi Indonesia.

Halim, A. (2020). *Pemberdayaan Petani Sawah Melalui Kegiatan Pembinaan Dan Pendampingan Di Kabupaten Maros*. Jurnal Pallangga Praja (JPP), 2(2), 166-180.

Herdini, F. L., & Masduki, M. (2021). *Pengembangan Penanganan Pascapanen Melalui Kelembagaan Pertanian Sebagai Upaya Pembangunan Pertanian Dan Pedesaan*. Buletin Pemberdayaan Masyarakat dan Desa, 1(1), 32-37.

Hermawan, M. A., Kurniawan, A. Y., & Nisa, A. F. (2023). *Peranan Kelompok Tani Dalam Meningkatkan Usahatani Di Desa Telaga Langsat Kecamatan Telaga Langsat Kabupaten Hulu Sungai Selatan*. Frontier Agribisnis, 7(4).

Kusumah, R. T., & Suryana, H. (2018). *Model Analisis SWOT dan QSPM Dalam Pemilihan Strategi Pemasaran Distro Botrock Cianjur*. IENACO (Industrial Engineering National Conference) 6 2018.

Laksmi, N.M.A.C., Windia, W., & Suamba, Ketut (2017). *Strategi Pengembangan usaha perbenihan padi bersertifikat di Subak Guama, Kecamatan Marga, Kabupaten Tabanan*. Jurnal manajemen Agribisnis, 5(1).Peraturan Menteri Pertanian Nomor 67/PERMENTAN/SM.050/12/2016 Tentang Pembinaan Kelembagaan Petani.

Mamondol, M. R. (2016). *Pengaruh Luas Lahan Terhadap Penerimaan, Biaya Produksi, dan Pendapatan Usahatani Padi Sawah di Desa Toinasa Kecamatan Pamona Barat.* Jurnal Envira (Enviroment and Agriculture), 1(2), 48-55.

Mantali, M. A., Rauf, A., & Saleh, Y. (2021). *Peran Kelompok Tani Dalam Meningkatkan Produktivitas Usahatani Padi Sawah (Studi Kasus Kelompok Tani Di Desa Bongopini Kecamatan Tilongkabila Kabupaten Bone Bolango)*. AGRINESIA: Jurnal Ilmiah Agribisnis, 5(2), 81-90.

Moordiani, R., & Yunita, F. (2021). *Pemanfaatan Teknologi Pascapanen Padi Meningkatkan Kualitas Mutu Hasil Panen Di Jawa Tengah* (Doctoral dissertation, Sebelas Maret University).

Munanto, T. S. (2016). *Motivasi, Minat dan Pengalaman Petani pada Penumbuhan dan Pembentukan Kelompok Tani Reguler dan Komoditas di Wilayah Kabupaten Gunungkidul.* Jurnal Ilmu-Ilmu Pertanian, 23(1).

Muniarty, P., & Rimawan, M. (2022). *Kredit Usaha Rakyat (KUR) Penguatan Kapasitas Bagi Petani Di Kota Bima.* Owner: Riset dan Jurnal Akuntansi, 6(3), 3227-3236.

Mustofa, A. M., & Mulyatno, B. (2019). *Analisis Strategi Pemasaran Buah Semangka di Gabungan Kelompok Tani (Gapoktan) Tani Makmur di Desa Cabean Kecamatan Demak Kabupaten Demak*. Jurnal Hexagro, 3(2), 292631.

Norfahmi, F., Winandi, R., Nurmalina, R., & Kusnadi, N. (2020). *Dinamika Dan Faktor-Faktor Yang Mempengaruhi Pendapatan Non Pertanian Pada Rumah Tangga Petani Padi Di Kabupaten Sigi Provinsi Sulawesi Tengah*. Jurnal Pengkajian Dan Pengembangan Teknologi Pertanian, 23(1), 1-10.

Nugroho, O. E. D., Budianto, B., & Gunawan, G. (2020). *Adopsi Inovasi Padi Organik Berbasis Kemitraan di Desa Banyuputih Kidul Kecamatan Jatiroto Kabupaten Lumajang.* Jurnal Ekonomi Pertanian Dan Agribisnis*, 4*(3), 604-613.

Peraturan Menteri Pertanian Nomor 67/PERMENTAN/SM.050/12/2016 Tentang Pembinaan Kelembagaan Petani.

Nurholis, M. S., Anwarudin, O., & Makhmudi, M. (2020). *Kapasitas Petani Padi Dalam Mengakses Kredit Usaha Rakyat (KUR) di Kecamatan Pameungpeuk Kabupaten Garut, Jawa Barat.* Jurnal Penyuluhan Pertanian, 15(1), 53-72.

Pangondo, E. H., Putra, M. J., Burhanudin, B., & Hamsani, H. (2023, December). Collaboration Strategy By Design To Achieve Slum Area Reduction Target: Case Study Of Kotaku Program Kepulauan Riau Province 2018-2022. In *International Conference On Digital Advanced Tourism Management And Technology* (Vol. 1, No. 2, pp. 398-410).

Perdinan, P., Atmaja, T., Adi, R. F., & Estiningtyas, W. (2018). *Adaptasi Perubahan Iklim Dan Ketahanan Pangan: Telaah Inisiatif Dan Kebijakan.* Jurnal Hukum Lingkungan Indonesia, *5*(1), 60-87.

Ramandani, S., Danial, A., & Herwina, W. (2022). *Pemberdayaan Kelompok Tani Padi Melalui Penyuluhan Pertanian: Studi Pada Kelompok Tani Mukti Wilayah Binaan Karanganyar BPP Kawalu Kota Tasikmalaya*. Lifelong Education Journal, 2(2), 94-108.

Riaviola, O., Muharam, M., & Suhaeni, S. (2022). *Strategi Pemasaran Beras Semi Organik di Gapoktan Saluyu Kecamatan Cilamaya Wetan Kabupaten Karawang*. Jurnal Ilmiah Wahana Pendidikan, 8(18), 600-607.

Rizal, D. A. (2017). Pemberdayaan Berbasis Kemitraan Antara Pemerintah dengan Kelompok Tani Tri Tunggal Wonorejo. *Jurnal Pemberdayaan Masyarakat:* Media Pemikiran dan Dakwah Pembangunan, 1(2), 317-334.

Rusadi, N. W. P., Setiawan, I. G. B. D., & Puspitadewi, I. D. A. (2020). *Strategi Pengembangan Agrowisata Pada Kelompok Tani Pelaksana Sipadu Studi Kasus Gapoktan Sri Sedana Kabupaten Karangasem.* Agroland: Jurnal Ilmu-ilmu Pertanian, *27*(2), 152-162.

Siddiq, D. M., & Faqih, A. (2020, April). The Empowerment Strategy of Gapoktan Toward an Agribusiness Microfinance Institution in Rural Areas. In International Conference on Agriculture, Social Sciences, Education, Technology and Health (ICASSETH 2019) (pp. 193-197). Atlantis Press.

Subejo S., Irham Irham, I. I., Pinjung Nawang Sari, P. N. S., Arif Wahyu Widada, A. W. W., Azizatun Nurhayati, A. N., & Laksmi Yustika Devi, L. Y. D. (2019). *Problematika Pengembangan Padi Organik di Sawangan Magelang serta Peluang Sertifikasi Internasional.* Jurnal Ilmiah Sains dan Teknologi, 9(1), 1-85.

Sudrajat, M. R., & Hanifa, Z. (2023). *Persaingan Usaha Sehat Dapat Membangun Ekosistem Bisnis Yang Berkelanjutan.* Karimah Tauhid, *2*(4), 1041-1048.

Sunarti, N. (2019). *Efektivitas Pemberdayaan Dalam Pengembangan Kelompok Tani Di Pedesaan. Moderat:* Jurnal Ilmiah Ilmu Pemerintahan, 5(2), 80-100.

Undang Undang Nomor 19 Tahun 2013 tentang Perlindungan dan Pemberdayaan Petani.

Wahyuni, D. (2017). Penguatan kelembagaan petani menuju kesejahteraan petani. *Jurnal Kesejahteraan Sosial*, *10*(17), 9-12.

Wardhani, H. P., Mardiningsih, D., & Satmoko, S. (2018). *Peran Penyuluh Pertanian Terhadap Keterampilan Petani Padi di Kelompok Tani Sidomakmur I di Desa Dengkek Kecamatan Pati kabupaten Pati.* Jurnal Ilmu-Ilmu Pertanian, 25(1).Wulandari, S. E., & Suprapti, I. (2023). *Potensi Dan Pengembangan Usaha Tani Jagung Lokal (Zea Mays L.) Petani Desa Ellak Laok Kecamatan Lenteng Kabupaten Sumenep.* Jurnal Ekonomi Pertanian dan Agribisnis, 7(4), 1507-1520.

Yohanes Ngamal, S. E. (2022). *Asuransi Sebagai Pengalihan, dan Pengurang Risiko Kebijakan Pemerintah di Sektor Pertanian di Indonesia*. Jurnal Manajemen Risiko, 3(1), 91-102.

Zogar, A. U., Retang, E. K., & Djoh, D. A. (2022). *Peran Kelompok Tani Terhadap Produktivitas Usahatani Padi Sawah Di Desa Palakahembi Kecamatan Pandawai.* Jurnal Ilmiah Mahasiswa Agroinfo Galuh, 9(2), 548-562

Zuchriadi, A., Rhakasywi, D., & Sitorus, H. B. (2021). *Implementasi Branding Kampung Cigundi Desa Mekaragung Lebak Banten Sebagai Desa Wisata Tani Berbasis Teknologi Informasi*

Zulkifli, L., & Novia, R. A. (2021). *Strategi Penguatan Kelompok Tani Ngudi Raharjo III Di Desa Lemberang, Kecamatan Sokaraja, Kabupaten Banyumas Strategy For Strengthening Ngudi Raharjo Iii Farmers Group In Lemberang Village, Sokaraja District, Banyumas Regency*. Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis. Juli, 7(2), 1349-1362.