

Alternative Marketing Strategy of Arrowroot Sweet Potato in Kulonprogo Regency, Special Province of Yogyakarta

Setyowati*, Endang Siti Rahayu, Sugiharti Mulya Handayani, Heru Irianto, Mei Tri Sundari, and Fanny Widadie

Sebelas Maret University, Jl. Ir. Sutami No.36, Surakarta, Central Java 57126, Indonesia Tel/Fax (0271) 637457

Abstract. During the post-pandemic period, local food potential received special attention as an effort to maintain food security. One of the local food potentials is arrowroot sweet potato, commonly grown in rural areas as food reserves in the lean season. The development of the potential of arrowroot tubers in realizing food security is inseparable from the product marketing activities themselves involving various stakeholders, so this study aims to identify the formulation of internal and external problems faced by the arrowroot tuber industry and determine alternative relevant marketing strategies. The basic research method is descriptive. The method of determining the research location was carried out purposively in Kulonprogo Regency, Yogyakarta. Determination of informants using the snowball method. Key informants of this study are arrowroot sweet potato farmers, arrowroot sweet potato business owners, competitors, consumers, marketing intermediaries, trade offices, and UMKM cooperative offices. The method of determining key informants is done purposively. The data analysis method used is the IFE and EFE matrix, Grand Strategy matrix, and SWOT matrix. The results showed that the internal factors and external factors that have the most influence on arrowroot tuber business development are good natural resource management (strengths), lack of business capital availability (weaknesses), market development and expansion (opportunities), and high business competition (threats). IE matrix analysis shows the position of the arrowroot tuber business is in quadrant II (grow and build).

1 Introduction

Several factors that contribute to food security in Indonesia are not only focused on food quantity and quality but also improvements in food supply and economic food accessibility [1]. In the period after the pandemic, the potential of local food began to receive attention as an effort towards food diversification. At the same time, climate change has intensified challenges in the food system, as rising temperatures, shifts in rainfall patterns, and

* Corresponding Author: setyowati@staff.uns.ac.id

increased climate variability threaten agricultural productivity and the stability of food supply chains. These conditions reinforce the importance of promoting climate-resilient local crops that are adaptable to environmental stress and capable of supporting sustainable food security [2].

One of the local foods in Indonesia is arrowroot tuber. Arrowroot sweet potato is a local food that is not very popular among the people. This can be seen from the fact that not many of these commodities are cultivated. Nationally, arrowroot sweet potatoes are not recorded specifically and are not a commodity recorded in agricultural statistics. The low interest of farmers in cultivating arrowroot is thought to be due to the low understanding of farmers and the public about the benefits of arrowroot either as an alternative food or for health. Until now, arrowroot is still considered an inferior food. Even though many studies show that arrowroot sweet potato has many benefits both as industrial and healthy raw materials. As an industrial raw material, arrowroot sweet potato can be processed into starch which can then be further processed into various types of food or as a mixed ingredient in noodle making [3]. From a health standpoint, arrowroot sweet potatoes have the potential to be an alternative staple food for diabetics because they contain a low glycemic index and are beneficial for people with autism because arrowroot starch does not contain gluten [4,5].

Setaningrum and Adi, 2022 reported that arrowroot sweet potato has a low glycemic index and can be processed into various kinds of food. Arrowroot sweet potato starch is able to replace the function of wheat flour at a substitution level of 50% to 100% [6]. The many benefits of arrowroot sweet potatoes both as raw materials for processed food and related to health open up opportunities for tubers arrowroot to be developed and widely cultivated. Duffy et al. [7] reported that the potential of home garden crops in Indonesia can contribute 20% of food diversity and if commercialized can be an important contributor to income growth. The existence of local tubers in Indonesia is getting depressed both from limited market demand and non-intensive cultivation [8]

However, arrowroot sweet potato cultivation is currently very limited, which is suspected due to limited information regarding the benefits and opportunities of arrowroot sweet potato as an economically promising commodity. Specific strategies are needed to encourage the development of commodities [9]. In particular, this study aims to examine alternative marketing strategies to increase the added value and supply of industrial raw materials in the Special Region of Yogyakarta.

2 METHOD

The research method used is descriptive and analytical methods by conducting research in the arrowroot sweet potato business. The research was conducted in Kulonprogo Regency, Special Region of Yogyakarta Province, which was determined quantitatively purposive taking into account the production of arrowroot sweet potato commodities. The cultivation area of arrowroot sweet potato in Yogyakarta reaches 400-500 ha and productivity will reach 15 tons/ha under intensive cultivation methods [10].

The application of IFE, EFE and SWOT matrix has been widely used to formulate business development strategies specifically in supporting food security, such as in the research reports [11,12,13]. The method of determining informants in this study is divided into three stages, namely:

Stage I: Identification of Internal Factors and External Factors

Table 1. List *Key Informants* in Identification of Internal and External Factors Marketing Strategy for Arrowroot Sweet Potato Products

No	Party	Indicator	Amount
1.	Arrowroot business owner	Knowing internal conditions (information about marketing mix, financial conditions, production, and human resources) and external conditions (competitive conditions, consumers, government, economy, socio-culture)	13
2.	Arrowroot growers	Knowing the opportunities that can be exploited, competitive conditions, consumers of arrowroot sweet potatoes, and government policies for which arrowroot sweet potato are obtained.	62
3.	Competitor	Knowing the condition of the arrowroot sweet potato industry, both the opportunities that can be exploited and the threats of fellow arrowroot sweet potato business actors and other food processing businesses.	1
4.	Consumer	Knowing product information and competitor's arrowroot sweet potato	7
5.	Marketing intermediaries (traders)	Knowing product information, competitors, and threats of arrowroot sweet potato	1
6.	Agricultural Extension Center	Knowing government policies, competition information, economics, and socio-culture.	2

Stage II: Giving Weights and Ratings to the IFE and EFE Matrix

Giving weight and rating with the criteria included in the consideration of determining the IFE and EFE matrix informants in the study, with the assumption that the existing conditions are compatible with the existing activities.

Table 2. List *Key Informant* in Determination of Weight, Rating, and Formulation of Alternative Marketing Strategy for Garut Bulbs Products

Research Stage	<i>Key Informant</i>	Amount
Giving IFE and EFE Matrix Weights and Ratings	Arrowroot sweet potato Bulbs Business Owner	13
	Arrowroot sweet potato Farmers	62
	Consumer	7
	Marketing intermediaries (traders)	1

Stage III: Formulation of Strategy Alternatives and Strategic Priorities

Implementation of phase III in this study will be carried out on a *key informant* namely the arrowroot sweet potato business owner because the arrowroot sweet potato business owner knows more about the condition of the implementation of the strategy from QSPM.

The data used in this study are primary data and secondary data. Primary data is sourced from *key informants* and other respondents. Meanwhile, secondary data was obtained from related institutions and agencies such as BPS, Cooperatives, and UMKM Offices and data available in arrowroot business administration. In addition, secondary data can also be

obtained from publications that are relevant to the research being studied. Data collection techniques are used in three ways: observation, interviews, and recording.

2.1. Internal Factors and External Factors Arrowroot Sweet Potato Business

In this stage, the first thing to do is to determine the internal and external factors of the arrowroot sweet potato business in the form of strengths, weaknesses, opportunities and threats in this business. Then use the matrix *Internal Factor Evaluation* (IFE) and matrix *External Factor Evaluation* (EFE). The steps in making the IFE and EFE matrices are as follows:

Table 3. IFE Matrix

Main Internal Factors	Weight	Rating	Score = weight x rating
Strength			
-			
Weakness			
-			
Total			

Table 4. EFE Matrix

Main External Factors	Weight	Rating	Score = weight x rating
Opportunity			
-			
Threat			
-			
Total			

1) Write down the main internal factors and external factors, and identify them with the external phase. 2) Give each weight a range of 0.0 (not important) to 1.0 (very important). 3) Rating (*rating*) 1 to 4 are assigned to each, indicating their major weaknesses (rating=1), minor weaknesses/threats (rating=2), minor strengths/opportunities (rating=3), or major strengths/opportunities (rating=4). 4) Multiply the weight in column 2 rating in column 3, and the multiplication result becomes the score in column 4. 5) Add up the scores for each internal and external factor in column 4 to get the IFE and EFE values.

2.2. Matrix Grand Strategy

Matrix Grand's *Strategy* is based on two evaluative dimensions: competitive position and market (industry) growth. Matrix *Grand Strategy* can be seen in Figure 1.



Figure 1. Matrix Grand Strategy

The meaning of the position of each quadrant is as follows:

- Companies that are in Quadrant I are in a very good position. Concentrating on the current market (market penetration and market development) and the current product (product development) is preferable.
- Companies in Quadrant II need to seriously evaluate their current approach to the market. Companies in Quadrant II are in an industry where the market is growing rapidly, an intensive strategy is usually the first choice to think about.
- Quadrant III company's industrial competitiveness grows by avoiding what goes down with the transfer of resources.
- Companies in Quadrant IV have a strong competitive position having programming with existing agreements.

2.3. SWOT Matrix Analysis

After obtaining the position of the marketing strategy, an analysis is carried out using the SWOT matrix to obtain alternative strategies that must be applied to the arrowroot sweet potato business. The SWOT matrix produces an overview of the external opportunities and threats faced according to the strengths and weaknesses possessed. The SWOT matrix performs a pairwise comparison between S-O strategies (*strengths-opportunities*), W-O strategy (*weaknesses-opportunities*), Strategi S-T (*strengths-threats*), and the W-T strategy (*weaknesses-threats*).

	<i>Strength (S)</i> Determine internal strength factors	<i>Weakness (W)</i> Determining internal weakness factors
<i>Opportunities (O)</i> Determine external opportunity factors	Strategy S-O Creating strategies using strengths to take advantage of opportunities	W-O Strategy Creating strategies to minimize weaknesses to take advantage of opportunities
<i>Threats (T)</i> Determine external threat factors	Strategi S-T Creating strategies using strengths to overcome threats	W-T strategy Creating strategies to minimize weaknesses to avoid threats

Figure 2. SWOT Matrix

3 Results and Discussion

2.4. Internal Factors and External Factors Arrowroot Sweet Potato Business

2.4.1. Factors of Strengths and Weaknesses of Garut Bulbs Business Marketing.

The strengths and weakness factors influence the marketing of the arrowroot sweet potato business in Kulonprogo Regency. Strengths and weaknesses are included in the internal environment of the business being carried out. The strengths and weakness factors that influence the marketing of the arrowroot sweet potato business in Kulonprogo Regency are as follows:

Table 5. Strengths and Weaknesses of Arrowroot Business Marketing

Strength		Weakness	
a)	Good management of natural resources (SDA).	a)	Lack of business capital availability
b)	High-quality human resources (HR).	b)	Lack of facilities and infrastructure
c)	Able to absorb labor	c)	Limited mastery of technology
d)	Farmer groups are quite strong	d)	Business management that is not well-managed
e)	The resulting products are of good quality	e)	Dependence of product quality on weather/climate
		f)	Limited range of product marketing

Source: Primary Data Analysis, 2023

Based on Table 5, it can be seen the factors that become the strengths and weaknesses of the marketing of arrowroot sweet potato businesses. Strategy can be raised by looking at the internal factors that come from the strengths and weaknesses of the business. The following is an identification of the strengths and weaknesses of the arrowroot business in Kulonprogo Regency:

1) Identify Strength Factors

a) Good management of natural resources (SDA).

Arrowroot sweet potato business actors also have insight into the management of arrowroot sweet potato farming, not a few even have a side profession as arrowroot sweet potato farmers. This insight is used to manage natural resources in the best possible way to get the greatest possible profit. Natural resource management is carried out by processing available natural resources such as land, water, and so on as efficiently as possible. Efficient management allows businesses to incur minimal costs without changing the amount of harvest or targeted sales.

b) High-quality human resources (HR).

The human resources in the arrowroot business in Kulonprogo Regency are of high quality. This human resource has a thorough knowledge of arrowroot sweet potato from upstream to downstream. By having good human resources a business will be able to continue to improve the development and progress of the business. Human resources in this business are expected to be able to continue to develop through the training held.

c) Able to absorb labor

This arrowroot sweet potato business still has many opportunities to develop. Of course, the development of a business requires more and more human resources needed. The process of processing arrowroot sweet potato from planting until they are ready for the hands of consumers will also require a lot of human resources. The existence of this business promises jobs for the community around the business location.

d) Farmer groups are quite strong

The existence of farmer groups has an important role in supporting farmers in conducting farming and processing of arrowroot sweet potatoes. The existence of arrowroot sweet potato farmer groups in Kulonprogo Regency is considered strong enough to be able to assist the implementation of arrowroot sweet potato farming by farmers. This farmer group serves as a channel for agricultural assistance from

the government, *sharing* insights between farmers, helping to solve certain problems faced by farmers, and so on.

- e) The resulting products are of good quality

Arrowroot sweet potato business products in Kulonprogo Regency in the form of starch and chips have a high shelf life. The quality of the product is not easily damaged because the processing is done properly. The use of fresh and quality raw materials also plays a role in forming a quality product. The packaging process is also carried out by paying attention to the density of the packaging so that air cannot enter and exit the packaging, so that product quality is maintained.

2) Identify Weakness Factors

- a) Lack of business capital availability

Capital is an important factor in the implementation of a business. Arrowroot sweet potato business actors in Kulonprogo Regency feel that the availability of capital is still lacking. This can cause problems in the future, such as delays in the continuity of raw material supplies and the availability of facilities and infrastructure. If this continues, the existence of the business will be threatened.

- b) Lack of facilities and infrastructure

A business requires goods and tools as a means of supporting infrastructure. Arrowroot sweet potato business actors in Kulonprogo Regency feel that the availability of infrastructure is still lacking. The infrastructure owned is mostly traditional and only able to support production on a small scale. This is a weakness that needs to be addressed because it will hinder business development.

- c) Limited mastery of technology

Entrepreneurs of arrowroot sweet potato are dominated by people who are not young, causing mastery of modern information technology to be hampered. This is a weakness and can hinder business development. One of them is promotional activities that are still conventional and are still found in many SMEs, causing a product to become less well known in the community because considering that currently, many people know information about a product through telecommunication media or social media. If promotions are still conventional, if they are not immediately corrected, it may make it difficult for business actors to develop because the public does not pay attention to their products.

- d) Business management that is not well-managed

The average education of arrowroot sweet potato entrepreneurs is 9 years. This causes the insight related to good business management and mastery of modern information technology to be hampered. The availability of human resources with this capability also lacks interest in cultivating arrowroot sweet potato. Good management is needed for the development of a business, as a result, this problem becomes a weakness of the arrowroot sweet potato business in Kulonprogo Regency.

- e) Dependence of product quality on weather/climate

The general fact regarding agricultural products is that they are heavily influenced by weather/climate conditions. The quality of raw materials, namely arrowroot sweet potato, is very dependent on weather or climate. Excessive rainfall during the harvest season results in poor tuber yields. Arrowroot sweet potato business actors also feel the impact of this problem and it is a weakness of the arrowroot sweet potato business in Kulonprogo Regency.

- f) Limited range of product marketing

Arrowroot sweet potato businesses which are included in the small and medium enterprises on average only reach the surrounding market. This is a weakness because market reach is an important point for developing a business's market share.

Limited market reach can be caused by a lack of promotional efforts outside the region. For now, most sales are only done locally. If this is not addressed, it will be difficult for the business to compete with emerging businesses with the same product.

2.4.2. Opportunity and Threat Factors in Arrowroot Sweet Potato Business Marketing.

Opportunities and threats are external factors that influence the arrowroot sweet potato business in Kulonprogo Regency. Seeing the opportunity factors and threat factors can be used as a reference in selecting a business strategy. Opportunity factors and threat factors that influence the marketing of arrowroot sweet potato businesses in Kulonprogo Regency are as follows:

Table 6. Opportunity and Threat Factors in Arrowroot Sweet Potato Business Marketing

Opportunity	Threat
a) Market development and expansion	a) Changes in consumer preferences
b) Availability of raw materials	b) Economic instability
c) Policy on Capital	c) Environmental issues
d) Community Support	d) High business competition
e) Global Trade Issues	e) Changes in people's income
f) Regional Autonomy Policy	

Source: Primary Data Analysis, 2023

Based on Table 6, it can be seen the factors that become opportunities and threats in the marketing of arrowroot sweet potato businesses. Strategy can be raised by looking at external factors that come from the opportunities and threats that the business has. The following is an identification of the opportunity and threat factors in the arrowroot sweet potato business in Kulonprogo Regency:

1) Identify Opportunity Factors

a) Market development and expansion

The existence of arrowroot sweet potato-based businesses is quite small in several cities in Indonesia. This can be an opportunity for business actors who have been pursuing the arrowroot sweet potato business to expand their business outside the region. By developing and expanding the market, it will increase sales and promise business unit growth. This opportunity also does not rule out competitors with the same product emerging.

b) Availability of raw materials

Raw materials in the form of arrowroot sweet potato are easily obtained by producers. This is because in the local area, there are also farmers who cultivate arrowroot sweet potato. In addition, producers already have arrowroot sweet potato sellers who are easy to contact. The price of local arrowroot sweet potato tends to be cheaper, so producers do not need to purchase arrowroot sweet potato from outside the region.

c) Policy on Capital

The local government provides support to micro, small, and medium enterprises in the vicinity, one of which is the arrowroot sweet potato business. The government supervises and assists in business operations, although it is not optimal. The government in particular issued a policy regarding capital with products in the form of capital loans through village unit saving and loan cooperatives. The existence of this arrowroot sweet potato business is a solution for processing arrowroot sweet potato to make them more durable and have a higher selling value.

d) Community Support

Getting support from the surrounding community will be very profitable for business actors. The surrounding community can also become consumers of this arrowroot sweet potato business. Consumers from the surrounding community have more opportunities to become regular customers, this is because the producer's location is close so customers don't have to think about distance and delivery. Support from the community is also needed for the expansion of business units and related business market share.

e) Global Trade Issues

International government policies regarding freedom of trade between countries have been agreed upon by many countries, including Indonesia. This freedom of trade between countries is an opportunity for business actors to import and export. This opportunity can also be managed as an effort to expand the market overseas. Efforts are needed before importing, one of which is by introducing arrowroot sweet potatoes and their processed products as substitute food ingredients.

f) Regional Autonomy Policy

The local government's right to increase the effectiveness and effectiveness of governance can be an opportunity for business actors. With this policy, the local government has the right to use taxes on businesses in the area and use them to improve the quality of trade. The circulation of money in the regions becomes more concentrated and is expected to be effective. For micro, small, and medium enterprises such as the arrowroot sweet potato business, policies like this can increase the quantity of training and supervision carried out by the trade government.

2) Identify Threat Factors

a) Changes in consumer preferences

Every consumer has their preferences regarding the product they will buy. Many things are considered by consumers before buying a product or service. One that may occur in the arrowroot sweet potato business environment is changes in product prices and raw materials from arrowroot sweet potato which often occur and cannot be avoided. Changes in raw material prices are unpredictable and tend to follow current market prices. Changes in raw materials are usually caused by excess *supply* in markets such as during the main harvest which causes the price of raw materials for arrowroot sweet potato to decrease and during the rainy season when it is not the harvest period for arrowroot sweet potato can cause the price of raw material for arrowroot sweet potatoes to increase. Things like this are points that need to be considered by business actors, to make efforts to diversify products so that consumers continue to use products from the arrowroot sweet potato business.

b) Economic instability

Changes in people's economic conditions greatly impact people's purchasing power. The condition of the Covid-19 pandemic is one of the things that affects people's income where people's mobility is limited and their income is reduced. This condition is acknowledged by arrowroot sweet potato business actors to reduce people's buying interest in arrowroot sweet potato products because arrowroot sweet potato are not a staple food so they are not a priority for people's purchases when people's income or purchasing power is declining. Threats like this need to be handled by business actors so that the business they are engaged in fails to develop or even has to stop operating.

c) Environmental issues

Public awareness will protect the surrounding environment for the sake of environmental sustainability the longer the better. This can be seen from the community's activities which are starting to reduce the use of plastic such as the use of plastic shopping bags which are starting to change to tote *bag* cloth to the use of plastic straws which are starting to switch to stainless *straw* which can be used repeatedly. These small changes are based on public awareness that is getting better every day to protect the earth from plastic waste. On the other hand arrowroot sweet potato business actors still use plastic packaging as the primary packaging for the products they produce. It is starting to have to find a replacement solution considering that public awareness of the importance of reducing plastic waste is increasing even though so far the arrowroot sweet potato business actors admit that this has not had a significant impact on their sales. It is not impossible that people will be reluctant to buy because they still use plastic packaging which can cause plastic waste.

d) High business competition

The threat of new competitors with the same products popping up continuously is a natural thing and needs to be watched out for. The wide market opportunity for arrowroot sweet potato makes it a commodity that attracts the interest of other business actors. Very necessary to do branding while still prioritizing the quality and differentiation of the products produced. If a product does not have an identity, it can cause buyers to only choose products that are easy to reach.

e) Changes in people's income

A heterogeneous society that promotes change will experience an increase or decrease in income levels. This can be a threat to business actors, because consumers who experience an increase in income no longer make arrowroot bulbs an option, while consumers who experience a decrease will look for similar products at much cheaper prices. Business actors need to make efforts to develop and expand market reach so that if this threat occurs there will always be new consumers who are in line with the target market.

2.5. IFE Matrix Analysis and EFE Matrix

Analysis matrix IFE (*Internal Factors Evaluation*) and the EFE matrix (*External Factors Evaluation*) are used to determine the key factors of the internal environment and external environment in marketing arrowroot sweet potato business in Kulonprogo Regency. IFE matrix analysis is obtained from the formulation of the strengths and weaknesses of the internal environment analysis. The EFE matrix analysis is obtained from the formulation of the factors of opportunities and threats from the analysis of the external environment. Analysis of the IFE matrix and the deep EFE matrix marketing arrowroot sweet potato business in Kulonprogo Regency:

2.5.1. Matrix IFE (*Internal Factors Evaluation*).

The results of conservation and environmental analysis are used to perform an IFE matrix analysis (*Internal Factors Evaluation*). Some of the components included in the IFE matrix are weights, ratings, and scores. Giving weight and rating on the IFE matrix is used to determine how strong the influence of each internal factor which consists of strengths and

weaknesses, on marketing arrowroot sweet potato business in Kulonprogo Regency. Calculations on the IFE matrix analysis are as follows.

Table 7. Matrix IFE Marketing of Arrowroot Sweet Potato Business

	Internal factors	Weight	Rating	Score
Strength				
1	Good management of natural resources (SDA).	0.11	4	0.44
2	High-quality human resources (HR).	0.10	3	0.30
3	Able to absorb labor	0.07	4	0.28
4	Farmer groups are quite strong	0.10	4	0.40
5	The resulting products are of good quality	0.10	3	0.30
				Amount
				1,72
Weakness				
1	Lack of business capital availability	0.12	3	0.36
2	Lack of facilities and infrastructure	0.10	2	0.20
3	Limited mastery of technology	0.06	2	0.12
4	Business management that is not well-managed	0.07	2	0.14
5	Dependence of product quality on weather/climate	0.08	3	0.24
6	Limited range of product marketing	0.09	2	0.18
				Amount
				1
				1,24
Total Score Matrix IFE				2,96

Source: Primary Data Analysis, 2023.

Based on Table 7. it can be seen that the internal factors analyzed in the IFE matrix are 11 factors, with 5 strengths and 6 weaknesses. The total score for the strength factor is 1.72, while for the weakness factor, it is 1.24. The total score of the IFE matrix obtained by adding up the total score of the strength factors and the total score of the weakness factors is 2.96. According to David [15], an internal business is said to be strong if it has a total IFE matrix score exceeding 2.5. The total score of the IFE matrix obtained by the arrowroot sweet potato business in Kulonprogo Regency shows that its internal state is strong and able to overcome its weaknesses.

"Good Natural Resources (SDA) Management" has the highest weighting and rating score of 0.44 for the strength factor in the arrowroot sweet potato business in Kulonprogo Regency. Entrepreneurs of arrowroot sweet potato who are also actors in arrowroot sweet potato farming feel that they have carried out optimal management of the natural resources included in their farming. Management of natural resources includes good land management, use of appropriate farming inputs, proper management and use of water sources, and so on. The results of good natural resource management will produce quality arrowroot sweet potato.

The arrowroot sweet potato business in Kulonprogo Regency has a weakness in the availability of capital. Arrowroot sweet potato business actors feel that the availability of funds used as business capital is still inadequate. Weaknesses "Availability of insufficient business capital" has a weighting result of 0.12 and a rating of 3. Lack of capital can hinder the process of arrowroot sweet potato farming. The stunted arrowroot sweet potato production will result in a lack of ability to meet the demand for arrowroot sweet potato products.

2.5.2. Matriks EFE (External Factors Evaluation).

EFE matrix analysis (External Factors Evaluation) can be carried out by the results of the analysis of the internal environment in the form of opportunities and threats. There are

several components in the EFE matrix, namely weights, ratings, and scores. Giving weight and rating to the EFE matrix is used to determine how strong the influence of each external factor, in the form of opportunities and threats, is on marketing in the arrowroot sweet potato business in Kulonprogo Regency. Calculations in the EFE matrix analysis are shown in the table below:

Table 8. Matriks EFE Marketing of Arrowroot Sweet Potato Business

External Factors		Weight	Rating	Score
Opportunity				
1	Market development and expansion	0.12	4	0.48
2	Availability of raw materials	0.11	4	0.44
3	Policy on Capital	0.08	3	0.24
4	Community Support	0.11	4	0.44
5	Global Trade Issues	0.05	3	0.15
6	Regional Autonomy Policy	0.07	3	0.21
Amount				1,96
Threat				
1	Changes in consumer preferences	0.09	3	0.27
2	Economic instability	0.10	2	0.20
3	Environmental issues	0.09	2	0.18
4	High business competition	0.11	3	0.33
5	Changes in people's income	0.07	2	0.14
Amount				1,12
EFE Matrix Total Score				3,08

Source: Primary Data Analysis, 2023

Based on Table 8. it can be seen that the external factors analyzed in the EFE matrix totaled 11 factors, namely with 6 opportunity factors and 5 threat factors. The total score for the opportunity factor is 1.96, while the total score for the threat factor is 1.12. The total score of the EFE matrix obtained from the sum of the total score of the opportunity factor and the total score of the threat factor is 3.08. The total EFE matrix score obtained shows that the arrowroot sweet potato business in Kulonprogo Regency is good at responding to, utilizing, and dealing with the external environment of its business.

The result of the highest score on giving weight and rating for the opportunity factor is "Development and expansion of the market" with a weighted score of 0.48. The arrowroot sweet potato business in Kulonprogo Regency has opportunities for markets that are increasingly expanding and developing. This is because processed products from arrowroot sweet potato farming are still not widely cultivated in other regions. The price offered can also compete in a wider market, therefore opportunities to develop and expand the market can occur in the future.

"High business competition" is a threat factor to the arrowroot sweet potato business in Kulonprogo Regency with the highest score on weighting and rating, which is equal to 0.33. This shows that the level of competition between one business and another is not too high. The ability of arrowroot sweet potato farmers to produce arrowroot sweet potato as raw materials for the arrowroot sweet potato business can meet the needs of arrowroot sweet potato business actors. Availability of a lot of markets is also still able to accommodate the production of arrowroot bulbs business ranging from raw to processed.

2.5.3. Analysis of Business Position in Arrowroot Sweet Potato Business in Kulonprogo Regency.

Matrix IE is used to determine the position of the business which can then be known as the right strategy in product marketing business. Previous analysis of the IFE matrix and EFE matrix has produced a total score for each matrix. The total scores in the IFE matrix and EFE matrix are then mapped into the IE matrix so that the position of the arrowroot sweet potato business in Kulonprogo Regency can be identified as follows:

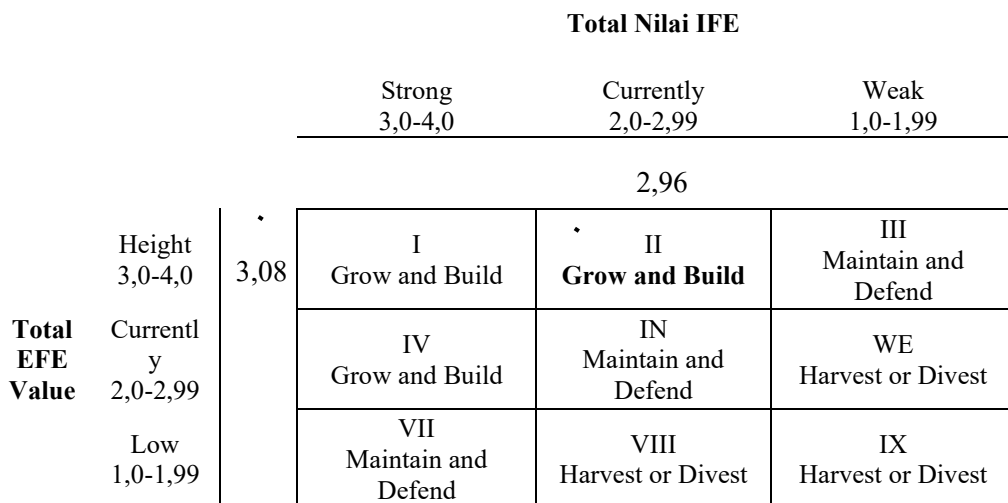


Figure 3. IE Matrix Determining the Position of Arrowroot Sweet Potato Business

Based on Figure 3. it can be seen that the total score for the IFE matrix is 2.96, while the total score for the EFE matrix is 3.08. The total score of the IFE matrix and the total score of the EFE matrix after being mapped into the IE matrix, it can be seen that the arrowroot sweet potato business is in position II, which is the area of implementing the growth and development strategy. After knowing the position of the arrowroot sweet potato business in Kulonprogo Regency, it is then possible to formulate alternative strategies according to the position in the IE matrix.

The appropriate strategy to implement is to develop the business from the internal side. Internal development in the arrowroot sweet potato business in Kulonprogo Regency can include product quality control, innovation development, and market expansion through digital media. These three things can help in preparing strategic planning for building a business based on the internal and external conditions of the business environment.

2.5.4. Analysis of Alternative Marketing Strategies for Arrowroot Sweet Potato Business in Kulonprogo Regency.

The SWOT matrix analysis aims to formulate strategies owned by arrowroot sweet potato businesses with the aim of marketing business products to make them more advanced and profitable. Several alternative strategies that can be developed through the SWOT matrix are the S-O strategy (Strength-Opportunities), W-O strategy (Weakness-Opportunities), strategies S-T (Strength-Threat), and the W-T strategy (Weakness-Threat). The following is the SWOT table for the arrowroot sweet potato business to obtain several business development alternatives.

Table 9. Alternative Arrowroot Sweet Potato Business Marketing Strategy

	STRENGTH	WEAKNESS
	1. Good management of natural resources (SDA). 2. High-quality human resources (HR). 3. Able to absorb labor 4. Farmer groups are quite strong 5. The resulting products are of good quality	1. Lack of business capital availability 2. Lack of facilities and infrastructure 3. Limited mastery of technology 4. Business management that is not well-managed 5. Dependence of product quality on weather/climate 6. Limited range of product marketing
OPPORTUNITY		
1. Market development and expansion 2. Availability of raw materials 3. Policy on Capital 4. Community Support 5. Global Trade Issues 6. Regional Autonomy Policy	1. Doing product marketing to other areas on an ongoing basis (S2, S5, O1, O2, O5) 2. Maintain product quality authenticity (S2, S4, S5, O2) 3. Doing business development (S1, S2, S3, O1, O4, O5, O6)	1. Conducting partnerships with business actors in other areas (W5, W6, O1, O2) 2. Collaborate with government (W1, W2, O3, O6) 3. Improving the internal quality of the business (W3, W4, O4)
THREAT		
1. Changes in consumer preferences 2. Economic instability 3. Environmental issues 4. High business competition 5. Changes in people's income	1. Collaborating with farmers (S1, S4, S5, T2, T3, T4) 2. Maintaining relationships with customers (S1, S2, S5, T1, T5)	

Source: Primary Data Analysis, 2023.

Based on the table it can be known that there are 8 alternative strategies marketing arrowroot sweet potato businesses in Kulonprogo Regency. following alternative strategies for marketing the arrowroot sweet potato business in Kulonprogo Regency.

1. Strategy S-O

The strategy is carried out by looking at the business objectives by utilizing the strengths possessed by each party and making the most of the opportunities that exist. SO strategies that can be pursued by arrowroot sweet potato businesses are:

- a. Doing Product Marketing to Other Areas *Online*

Product development can be achieved when maximizing the use of all available information technology today. Technological advances can be an advantage for arrowroot sweet potato businesses if they are willing and willing to apply them to the business activities they are carrying out. Consumers will become more familiar with a product and can easily get it. If a business is reluctant to take advantage of the latest technology, its product may be left behind and not recognized by the public, which will hamper product growth. Doing product marketing online can reach more consumers because the reach becomes wider so the potential for products to be sold will be greater.

Product marketing can benefit both parties considering the various conveniences and benefits they get. Consumers are facilitated in purchasing and traders are assisted in the sales process. It is not impossible to market arrowroot sweet potato products online online can increase income and help grow the business rapidly.

b. Maintaining the Authenticity of Product Quality

A consumer is someone who buys products produced by a person or business unit with certain considerations. A business activity will get the attention of consumers if it has good quality so it does not disappoint consumers. In arrowroot sweet potato products, maintaining the authenticity of the product is very important, considering that consumers are currently very selective in choosing a product. Many products deliberately modify production results to cut production costs which can be detrimental to consumers.

Activities to modify products to obtain additional profits can be carried out, but if done to the detriment of consumers there will be a high risk because it can damage the product's image and consumers are reluctant to make repeat purchases, thus impacting losses to business actors. Maintaining product quality will be part of consumer assessment and can be an added value that can benefit business actors.

c. Doing Business Development

The arrowroot sweet potato business can carry out the development of the business units it runs. This strategy is carried out by looking at the strengths possessed by the arrowroot sweet potato business, namely good natural resource management, high-quality human resources, and being ability to absorb labor, This can be managed to expand business units to other regions. Opportunities that are owned are in the form of support from the community, the existence of global trade issues, and local government regional autonomy policies. So that the need for developing business units will be fulfilled.

2. W-O Strategy

This strategy seeks to overcome the weaknesses of the arrowroot sweet potato business by looking at the opportunities that exist. The strategies that can be carried out by the arrowroot sweet potato business are as follows:

a. Doing Partnerships with Garut Bulbs Businesses in Other Regions

Arrowroot sweet potato businesses can start doing partnerships with business actors in other areas. This strategy is determined by looking at the weaknesses of the arrowroot sweet potato business, namely the dependence of product quality on the weather and limited marketing reach. Establishing partnerships with business actors in other areas will help arrowroot sweet potato businesses in Kulonprogo Regency to obtain quality raw materials that are not affected by bad weather and do the opposite, namely selling high-quality products when they are not affected by bad weather. This is supported by the opportunities that the arrowroot sweet potato business has in Kulonprogo Regency in the form of raw material availability and market development opportunities. Market development and expansion can be

initiated by establishing partnerships with business actors in other regions so that products can penetrate networks outside the region.

b. Collaborate with Government

The arrowroot sweet potato business in Kulonprogo Regency has weaknesses in the form of a lack of availability of business capital and business-supporting infrastructure. This strategy is carried out by considering the existing opportunities in the form of government policies regarding capital and regional autonomy. The formation of collaboration between the government and arrowroot bulb business actors is expected to be a mutually beneficial relationship between the two parties. Business actors get capital assistance and supporting infrastructure while the government is assisted in implementing work programs for the welfare of the community and increasing the gross regional domestic product for the Kulonprogo Regency area.

c. Improving the Internal Quality of Business

Arrowroot sweet potato business actors in Kulonprogo Regency do not yet have sufficient skills in mastering technology and business management. Lack of ability can be caused by their belief in working on what is there first without making renewal efforts. Opportunities in the form of support from the community can be processed into a starting point for adding to human resources with more capabilities needed by arrowroot sweet potato businesses. Management of human resources supported by community interest and support will become a new strength for efforts to overcome existing weaknesses.

3. Strategi S-T

This strategy seeks to utilize existing strengths to deal with threats that have the potential to hinder the progress of business activities. The strategies that can be carried out are as follows:

a. Collaborating with Farmers

The existence of threats in the form of economic instability, environmental issues, and the emergence of high competition will always exist in every line of business. As a business actor, it takes the right decisions to deal with these threats by utilizing the strengths they have. Strength in the form of good management of natural resources and high-quality products is supported by the existence of farmer groups that are strong enough to help business actors overcome threats that may arise. The strategy in the form of collaborating with farmers is expected to form a relationship that can mutually help both parties, When farmers harvest in high quantity the business actor will receive an adequate purchase price, when the business actor experiences problems in capital the farmer helps by offering a payment system at the end with once the threat of economic instability will be overcome. By collaborating with farmer groups, business actors can formulate with farmers regarding the use of inputs that are not excessive so that they do not affect the yields that will be used as raw materials.

b. Maintain relationships with customers

A business has a good image if its customers are very loyal to always make repeat purchases. Customers who have a high level of loyalty, are one of the media to disseminate or increase brand *awareness* in society. Factors that affect customer loyalty include satisfaction, emotional attachment, and trust. These three things can be built by establishing good relationships with customers.

The strategy of establishing relationships with customers is the main way to create loyalty. Establishing relationships can be done by providing attractive promos, involving customers in the manufacturing process, and providing

consumers with forms of criticism and suggestions. Making customers close friends can also be done in a rural environment, considering that kinship is the main value in establishing friendship. Proximity between a seller and a buyer can increase customer loyalty and trust to repurchase the product.

2.5.5. Priority Marketing Strategy for Arrowroot sweet potato Business in Kulonprogo Regency.

The results of the SWOT matrix analysis have eight alternative marketing strategies that can be implemented by arrowroot sweet potato businesses in Kulonprogo Regency. The eight alternative strategies will be selected according to the priority value based on the location of the business, namely in quadrant II with the growth and development strategy. Here is a strategy for marketing the arrowroot sweet potato business in Kulonprogo Regency according to the business position in the IE matrix:

- Doing product marketing to other areas on an ongoing basis (Strategy 1)
- Maintaining the authenticity of product quality (Strategy 2)
- Doing business development (Strategy 3)
- Establishing partnerships with business actors in other areas (Strategy 4)
- Collaborate with government (Strategy 5)
- Improving the internal quality of the business (Strategy 6)
- Partnering with farmers (Strategy 7)
- Maintaining relationships with customers (Strategy 8)

4 Conclusions And Recommendations

2.6. Conclusion

Based on the results of researchers from the marketing strategy of the arrowroot sweet potato business in Kulonprogo Regency, the following conclusions can be drawn:

1. The internal factors and external factors that have the most influence on the marketing of arrowroot sweet potato businesses are as follows:
 - Good management of natural resources (SDA) (Strength)
 - Availability of less business capital (Weaknesses)
 - Market development and expansion (Opportunity)
 - High business competition (Threat)
2. The business position of arrowroot bulbs after being analyzed using the IE matrix is in quadrant II (grow and develop), with a total value of the IFE matrix of 2.96 and the EFE matrix of 3.08.
3. There are eight alternative business development strategies for arrowroot sweet potato in Kulonprogo Regency according to the SWOT matrix analysis, which are as follows:
 - Doing product marketing to other areas on an ongoing basis (Strategy 1)
 - Maintaining the authenticity of product quality (Strategy 2)
 - Doing business development (Strategy 3)
 - Establishing partnerships with business actors in other areas (Strategy 4)
 - Collaborate with government (Strategy 5)
 - Improving the internal quality of the business (Strategy 6)
 - Partnering with farmers (Strategy 7)
 - Maintaining relationships with customers (Strategy 8)

References

1. A. W. Widada, Masyhuri, J. H. Mulyo, Determinant Factors of Food Security in Indonesia. *Agro Eko*. 28, 2, 205 – 219 (2017).
2. Rozaki, Zuhud. Food Security Challenges and Opportunities in Indonesia Post-Covid-19. *Advances in Food Security and Sustainability*. 6, 119 – 168 (2021).
3. N. M. A. Setyaningrum, A. C. Adi, Kajian Literatur: Potensi Umbi Garut sebagai Pangan Alternatif untuk Penderita Diabetes Miletus. *Media Gizi Kesmas*. 11, 2, 595 – 603 (2022).
4. C. Y. Triningrum, B. Wibowotomo, L. Hidayati, Formula klappertaart tepung garut (maranta arundinacea) sebagai produk gfcf (*gluten free casein free*) alternatif bagi penderita autisme. *Prosiding Pendidikan Teknik Boga Busana*, 15, 1 (2020).
5. M. T. Dewi, N. Rustanti, *Pengaruh penambahan telur terhadap kandungan zat gizi, volume pengembangan dan uji kesukaan blondies garut (marantha arundinacea) sebagai alternatif makanan bagi sindrom autisme* (Doctoral dissertation, Diponegoro University) (2012).
6. T. F. Djaafar, Sarjiman, A. B. Pustika, Pengembangan Budi Daya Tanaman Garut dan Teknologi Pengolahannya untuk Mendukung Ketahanan Pangan. *Jurnal Litbang Pertanian*. 29, 1, 25 – 33 (2010).
7. C. Duffy, G. G. Toth, R. P. O. Hagan, McKeown, S. A. Rahman, Y. Widyaningsih, T. C. H. Sunderland, C. Spillane, Agroforestry Contributions to Smallholder Farmer Food Security in Indonesia. *Agroforest Syst*. 95, 1109 – 1124 (2021).
8. Purwadi, Didik, Perumusan Strategi Pemerintah Daerah Dalam Pengembangan Umbi-Umbian Lokal di Yogyakarta. *Jurnal Teknologi & Industri Hasil Pertanian*, 23, 2, 75 – 81 (2017).
9. F.A. Ruslim, R. Indriyani, *Strategi pengembangan bisnis PT ABC*. *AGORA*. 3, 2, 439-446 (2015).
10. L. I. Purnama, D. R. Yuniarta, L. T. Dewi, Implementasi Rancangan Meja untuk Produksi Emping Garut. In *Prosiding Seminar Nasional Penelitian dan Pengabdian Kepada Masyarakat*. 1, 1, 71-75 (2023).
11. A. Zulkarnain, D. Wahyuningtias, T. S. Putranto, Analysis of IFE, EFE and QSPM matrix on business development strategy. In *IOP Conference Series: Earth and Environmental Science*. 126, 1, 012062 (2018).
12. O. Katsuya, A. R. Kadir, Business development strategy of sago for food security. In *IOP Conference Series: Earth and Environmental Science*. 196, 1, 012013 (2018). IOP Publishing.
13. F. J. Leliga, J. D. Koapaha, A. C. Sulu, Analysis of Internal Factor Evaluation Matrix, External Factor Evaluation Matrix, Threats-Opportunities-Weaknesses-Strengths Matrix, and Quantitative Strategic Planning Matrix on Milk Products and Nutrition Segment of Nestlé India. *East African Scholars Journal of Economics, Business and Management*, 2, 4, 186-191 (2019).
14. Fred, R David. *Strategic Management Manajemen Strategi Konsep*., Edisi 12. Jakarta: Salemba Empat (2011).