

PORANG AGRIBUSINESS DEVELOPMENT STRATEGY (CASE STUDY: BINJAI CITY, BINJAI CITY DISTRICT, NORTH SUMATRA PROVINCE)

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Abstract

This study aims to obtain information about internal and external factors affecting porang development and obtain porang development strategies in Binjai City. The data analysis method uses the IFE (Internal Factor Evaluation), EFE (External Factor Evaluation) matrix, the IE (Internal-External) matrix, and the SWOT matrix. The results showed that the porang development strategy was an aggressive growth policy strategy by taking advantage of opportunities by using the strengths (SO Strategy) of the porang producers. Some strategies that can be applied are: (1) using social media and e-commerce as a promotional platform to increase customer interest by explaining the good quality of porang, how to cultivate plants that do not require special treatment, and how to process porang tubers into food, (2) the number of exporters and the need for exports are quite large, so the cultivation of porang plants has good potential and prospects in the future and has promising advantages.

Keywords— Porang Agribusiness, Porang Development Strategy, SWOT Analysis

Introduction (Times New Roman 14 bold)

Forests as ecosystems store natural resources in the form of wood and non-timber, which can be taken advantage of through the cultivation of agricultural crops, which are expected to bring benefits both from an economic and ecological perspective. One type of intercrop that is quite potential is porang (Masrtianto, 2012). Porang plants have become popular in recent years because they are easy to cultivate, shade tolerant, high productivity, and relatively few pests or diseases attack, increasing market demand. Porang as an export commodity has the potential to be developed because several countries need this plant as food and industrial material (Mundiyah et al., 2021). Porang cultivation does not require technology and large capital because once planted, and there is no need to plant seeds again (Hidayat et al., 2013).

Development that is not following the conditions of growth makes the porang plant unable to produce properly (Apu et al., 2022). Porang grows optimally under environmental conditions of a temperature of 25 - 35 °C and rainfall between 300 - 500 mm / month. Optimal production of tubers can be obtained after three cycle periods, which is about three years (Sumarwoto 2012). Porang cultivation can be carried out on flat land or sloping land. The best time to plant porang is when the rainy season is around November – December; at this time, the porang seedlings have begun to grow buds. The right planting of porang is to choose healthy

seedlings and then put them in the prepared hole with the bud facing up. Fill each hole with one seedling, and the hole fill the last seedling covered with soil ± 3 cm thick (Elvira *et al.* 2021).

Weeds become a disruptor of the growth of porang plants in terms of water and nutrient needs that need to be controlled through weeding, which is carried out by cleaning weeds a month after the porang tubers are planted. Subsequent weeding is carried out when there are weeds that appear. Weeds have been dried and deposited in the pit for organic fertilizer (Yasin *et al.*, 2021). When planting is early in the dry season, harvesting occurs in the dry season and vice versa. The term for harvesting porang is once a year. The crop is partly sold to collectors, and the other part is used as seedlings the following season (Naviyanti *et al.*, 2021). Porang plants can be harvested after the leaves dry, and the plants lie down. At that time, the glucomannan content was higher than before the layover because it was used as a source of energy for leaf growth. After the leaves have experienced maximum growth, glucomannan is not used for metabolic processes, accumulating in the tubers until they reach the dormancy phase (Chairiyah *et al.*, 2014).

The tuber of porang *Amorphophallus paenifolius* (Dennst) Nicolson is one of the species of the Araceae family, which is used to meet the needs of Indonesian people, including as food, medicine, and ornamental plants. Porang tubers containing high glucomannan can be used as raw materials for the food industry, health, and other industries (Yuniwati *et al.*, 2020). Porang tubers contain high fiber and do not contain fat, so they can be used to lower cholesterol levels and prevent obesity and are suitable for consumption for people with high blood pressure and diabetes. In addition, this type of tuber contains a high concentration of minerals, which is beneficial for metabolism. (Purwanto 2014). Porang has economic value, especially for industry and health, so the prospects for this commodity can be very promising (Hamdhan 2021). Porang plants belong to high-income plants. Six thousand porang stalks can be planted in an area of 1 ha and produce 24 tons/ha. If each tuber is sold for Rp.2,500, the multiplication result obtained is Rp.60 million/ha per year (Ramadhani 2021). The function of porang flour can be used as a raw material for making noodles and cosmetics, making the need for porang increase from time to time. Overseas marketing, such as exports in Japan, Taiwan, and Korea, is a promising market (Sari and Suhartati 2015).

The many benefits of the porang plant make this plant a hit, especially in the North Sumatra area. The great demand from the world market makes the large export opportunities and the high selling value of porang plants. However, the lack of good planning and management support makes porang seeds planted by farmers in North Sumatra still shipped from Java Island. This study aims to determine the internal and external factors that influence the development of porang and obtain strategies for the development of porang in Binjai City, Binjai Kota District, North Sumatra Province.

Research Method

The study population is producers who cultivate porang plants in Binjai, Binjai Kota District. The study population consisted of 1 (one) main producer and 1 (one) other producer, which was determined by "Purposive Sampling" with certain considerations. Primary data were collected through interviews with respondents and direct observations at the research site. The collected data were analyzed using a SWOT analysis (Strengths, Weakness, Opportunities, Threats). This analysis obtained information regarding strengths, weaknesses, opportunities, and threats. The model used at this stage consists of an external strategy factor matrix, an internal strategy matrix, and a position matrix. The data analysis tools used in SWOT analysis are the Internal Factor Evaluation Matrix (IFE Matrix) and the External Factor Evaluation Matrix (EFE Matrix), SWOT Diagram, and SWOT Matrix, which will produce four alternative strategies, namely SO, ST, WO, and WT. The SO Strategy is created by utilizing all the strengths to make

the most of opportunities. The ST strategy is a strategy created by using the power possessed to overcome threats. The WO strategy is a strategy that is applied based on the utilization of existing opportunities by minimizing existing weaknesses. Finally, the WT strategy is a strategy that seeks to minimize existing weaknesses as well as avoid threats (Rangkuti, 2017).

Results and Discussion

Identification of Internal Factors of Porang Development

Based on the SWOT results, it can be seen that there are 5 internal factors in the form of strengths and weaknesses that can affect the development of porang in Binjai City (Table 1).

Table 1. Internal Factors that are strengths and weaknesses and the value of their influence

No	Factor	Weight	Rating	Score
<i>Strength</i>				
1.	Producers who successfully cultivate porang	3.5	4	0.52
2.	Guaranteed porang quality	4	4	0.60
3.	Ways of cultivation do not require special maintenance	3.5	3	0.39
4.	Porang tubers can be used as a food	3	3	0.33
5.	Porang has promising advantages	4	4	0.60
Total				2.41
<i>Weakness</i>				
1.	Limited capital	2	2	0.14
2.	Limited availability of porang seedlings	1.5	1	0.06
3.	Public knowledge about porang is quite limited	2	2	0.14
4.	Planting should follow the growing season	2	2	0.14
5.	The attention of the government is still not there	1.5	2	0.12
Total				0.60
<i>Difference</i>				1.81

Table 1 shows that the main factor that can affect the development of porang in Binjai City is the guaranteed quality of porang and porang has a promising advantage with a score of 0.60. The factor whose influence is the least is porang tubers which can be used as food, with a score of 0.33. However, the development of porang also still has various disadvantages. The main drawbacks to developing porang are limited capital, public knowledge about porang, quite limited, and its planting that must follow the growing season with a score of 0.14. The smallest effect is the limited availability of porang seeds, with a score of 0.06. The description below narrates the strengths and weaknesses of the porang plant to be developed in Binjai City.

Strength

There are five factors that are the strength of the development of porang plants in Binjai City, namely producers who have succeeded in cultivating and developing porang, guaranteed quality, cultivation methods that do not require intensive maintenance, and porang tubers that can be used as food and have promising advantages.

Producers who have successfully cultivated and developed porang plants in Berngam Village, Binjai City

The first producer who succeeded in developing and cultivating porang in Binjai City had a great opportunity in its marketing, becoming the only porang producer in Berngam Village that can be said to be successful in cultivating and developing the porang plant.

Guaranteed porang quality

The porang seeds produced are guaranteed to have good quality because they have met the requirements for good porang quality: planting that follows the growing season, perfect dormancy period, not dying young, and old enough.

How to cultivate and to maintain porang plants does not require intensive/special maintenance

Maximum results are obtained through good maintenance, but the maintenance of porang plants does not require special/intensive treatment. Only use compost and liquid organic fertilizer made by self so that this porang plant is not difficult to cultivate.

Porang tubers that can be used as a food

Producers have processed porang tubers into several types of food that can be consumed directly, but the process takes a long time.

Porang has promising advantages

Porang has a fairly high selling price and is profitable for farmers even when the selling/market price decreases because it is a hit crop with many benefits.

Weakness

In addition to having various strengths, the porang plant also has several disadvantages, such as limited capital, limited availability of seeds, limited public knowledge about porang, planting that must follow the growing season, and still no attention from the government.

Less capital

Capital limitations are caused by the large initial capital required by porang producers to start porang cultivation. For example, the initial capital for the cultivation of porang plants covering an area of 1 ha is 220 million, and the land used is also still rented.

Availability of porang seedlings

The limited porang seeds are caused because the porang plant is still a new commodity, so producers still have to buy porang seeds from Java because of the great demand from consumers who want to cultivate porang.

Public knowledge about porang plants is quite limited

The surrounding community is still not very interested in cultivating porang because there is still little information and knowledge the surrounding community about how to cultivate and its guidance.

Planting porang should follow the growing season

Porang is a plant that must be planted at the beginning of the rainy season to get maximum results, which is planted in early September. If the porang is not planted according to the season, the results will be less than optimal.

The attention of the government is still not there

The government from Madya Binjai City has visited, but so far, there has been no attention from the government to develop porang plants.

Identification of External Factors of Porang Development

Opportunities and threats can affect the development of porang in Binjai City. In addition to strength, the opportunities around it must be able to be utilized to support the development of porang by every relevant *stakeholder*. In Table 2, it can be seen that the most important opportunity factor in supporting the development of porang is the potential possessed in the cultivation of porang plants and the great prospects in the future with a score of 0.96. The value of this influence is quite large because it is close to 1. The last opportunity factor is that the need for seed exports is very large, and the number of seed exporters needed is quite large, with a score value of 0.54. Gendon caterpillar pests on porang plants are the biggest threat factor, scoring 0.20. The population factor of porang seeds that is still difficult to obtain is the smallest threat element with a score of 0.09.

Table 2. Factors of opportunity, threat, and value of their influence

No	Factor	Weight	Rating	Score
<i>Opportunities</i>				
1.	Have social media and <i>e-commerce</i>	3.5	4	0.84
2.	The export needs of porang seeds needed are very much	3	3	0.54
3.	The number of exporters of porang seeds needed is quite a lot	3	3	0.54
4.	The cultivation of porang plants has great potential and prospects in the future	4	4	0.96
Total				2.88
<i>Threat</i>				
1.	The population of porang seedlings that are still difficult to obtain	1.5	1	0.09
2.	Pests on porang plants in the form of gendon caterpillars	1.5	2	0.20
Total				0.29
<i>Differences</i>				2.59

Table 2 shows the various opportunities and threats to the development of porang, as narrated below.

Opportunities

Social media and e-commerce as a promotional platform to increase interest and customers

Porang producers use social media to introduce, provide information, and open people's insights about porang. This can increase people's interest in buying porang seeds and cultivating them.

The export needs of porang seeds needed are very much

Porang is a new commodity in North Sumatra, so there are not many people in North Sumatra who cultivate it. However, porang has good prospects in the future because the export needs of porang seeds are very large. There are many enthusiasts from abroad, so it becomes a good opportunity for producers who want to cultivate and develop porang plants.

The number of exporters of porang seeds needed is quite a lot

Porang has many benefits so that it is favored by the public, especially after going through processing which causes a large number of enthusiasts from abroad, so more and more exporters are needed. However, the number of exporters in the North Sumatra area currently does not exist, so it is an opportunity for producers who cultivate porang plants to become porang exporters.

The cultivation of porang plants has great potential and prospects in the future

The cultivation of porang plants has great potential because it is on the rise and is sought after by many people. Moreover, the large market demand from various countries makes the size of export opportunities and selling prices high enough to have promising profits.

Threat

Porang seeds that are still difficult to get

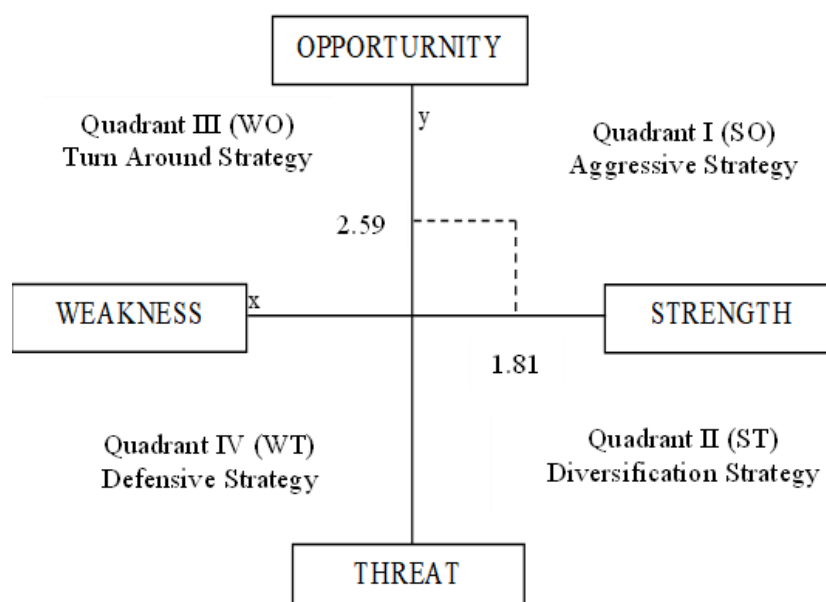
Porang is still a new commodity in North Sumatra and only rose in 2020, so there are still very few people who know and cultivate porang, which results in limited porang seeds produced so that they still have to be bought from java island.

Pests on porang plants in the form of gendon caterpillars

Gendon caterpillars in porang plants are caused by the large amount of grass and non-spraying. Spraying can be done with organic matter from the fermentation of papaya mixed with tobacco or with chemicals (insecticides).

Porang Development Strategy in Binjai City

A SWOT diagram creates the strength and weakness factors on the x-axis (abscissay) and the opportunity and threat factors on the y-axis (ordinate). For example, the x-axis is obtained from the difference in strength factor (2.41) and weakness factor (0.60) of 1.81. Figure 1 presents that the y-axis is obtained from the difference between the opportunity factor (2.88) and the threat factor (0.29) of 2.59. From Figure 1, it can be seen that the porang farming business in Binjai City is in Quadrant 1, which means that to develop porang in Binjai City, one must take advantage of the existing strengths and opportunities.



Gambar 1. Diagram SWOT

Alternative Strategies

The scoring results and SWOT diagram show that the SO Strategy is the Strategy that should be chosen to be carried out. Thus, several other alternative strategies can be drawn up using a SWOT matrix from the identification of internal and external factors. Table 3 shows in

detail how the opportunities and threats to the development of porang in Binjai City can be adjusted to their strengths and weaknesses. This SWOT matrix generates four possible cells of alternative SO, ST, WO, and WT strategies.

Table 3. SWOT matrix of porang development in Binjai City

External Factor	Internal Factor	
	Strength (S)	Weakness (W)
	1. Guaranteed porang quality 2. Porang has a promising advantage	1. Less capital 2. People's knowledge about porang is quite limited
Opportunities (O) 1. Social media and e-commerce as a promotional platform to increase interest from customers 2. The cultivation of porang plants has great potential and prospects in the future	SO Strategy 1. Increasing the use of social media and e-commerce as a promotional platform to increase interest from customers 2. Establishing a porang farming business group to meet export needs and the number of exporters needed	WO Strategy 1. Good capital management 2. Providing technical guidance from stakeholders to increase the interest of the surrounding community in the cultivation of porang plants
Threat (T) 1. The population of porang seedlings is still very difficult to obtain 2. Pests on porang plants in the form of gendon caterpillars	ST Strategy 1. Inviting the community to cultivate porang so that the population of porang seedlings can be fulfilled	WT Strategy 1. Create a porang farming business group to be given training/counseling on porang cultivation and how to handle pests

The analysis results using the SWOT matrix obtained four strategies that can be carried out. The Strategy is presented as follows.

SO Strategy

Using social media and *e-commerce* as a promotional forum to increase customer interest by explaining the good quality of porang, cultivation methods that do not require special treatment, and how to process porang tubers into food. Forming a porang farming business group because the number of exporters needed is quite large.

WO Strategy

Good capital management supported by good potential and prospects in the future will attract buyers to cultivate porang plants that can increase their business capital. Limited public knowledge about porang needs to be overcome by providing technical guidance from stakeholders to increase the interest of the surrounding community in the cultivation of porang plants aimed at meeting the availability of seeds and the needs for porang exports.

ST Strategy

Mengajak masyarakat untuk membudidaya porang karena cara budidaya dan pemeliharaan tanaman porang tidak memerlukan pemeliharaan khusus serta mempunyai keuntungan yang menjanjikan sehingga populasi bibit porang dapat terpenuhi.

WT Strategy

Create a porang farming business group to be given training/counseling on porang cultivation and how to handle pests.

Conclusion

The conclusions obtained through the results of the study are internal factors that are strengths in the development of porang in Binjai City are producers who have succeeded in cultivating porang plants in Berngam Village, Binjai City, guaranteed quality, cultivation and maintenance methods that do not require special treatment, porang tubers that can be used as food and have promising advantages. The weaknesses identified in internal factors are lack of capital, limited availability of seedlings, fairly limited public knowledge, planting that must follow the growing season, and lack of attention from the government. External factors identified as opportunities for porang development in Binjai City, namely the use of social media and e-commerce, the need for large exports of seeds, the number of exporters needed is quite large, has great potential and prospects. Those identified as threats to external factors are porang seeds that are still difficult to obtain and gendong caterpillar pests on porang plants. Therefore, the appropriate Strategy for the development of porang in Binjai City is the SO (strengths opportunities) strategy, which is to take advantage of strengths and opportunities by increasing the use of social media and e-commerce and forming a porang farming business group to meet the needs of exporters and the number of exporters.

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