

STRATEGY OF WAXY CORN AGRIBUSINESS DEVELOPMENT IN SANGIRA VILLAGE, POSO REGENCY

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Abstract. *Waxy corn is one of the agricultural commodities that have the potential to become agroindustrial raw material. Sangira village is one of the production centers of waxy corn in Poso, Central Sulawesi. Some of the problems in the waxy corn agribusiness in Sangira are the low rate of production and productivity and limited access to marketing. This research aims to identify the internal and external factors in waxy corn agribusiness in Sangira and to formulate its development strategies. The number of respondents had taken as many as 19 people. Data were analyzed by SWOT (Strengths, Weaknesses, Opportunities, Threats) method. The result of this research shows that the strategy used for agribusiness development in the village of Sangira is a diversification strategy. The proposed diversification strategy is to innovate waxy corn products, to get the high value of the selling price.*

Keywords: *Agribusiness, Waxy Corn, Development Strategy*

1. INTRODUCTION

Waxy corn is one of the agricultural commodities that have economic value and potential for development. Waxy corn is one type of corn that has a special character, it's the sticky texture when cooked. Amylopectin content in waxy corn is nearly 100%, so it has a sweet, delicious, savory, and fluffier taste. People in Poso Regency generally like waxy corn which is created in various processes such as boiled corn, corn cakes, and corn soup, which is known by local people as binte. In addition to having a good taste, waxy corn can be processed into food since it is still staged milk. Even before the maturity stage, corn milk is also widely used for baby corn vegetables (Suarni, Aqil, & Subagio, 2019). The development of the agribusiness of waxy corn still has obstacles, including the limited amount of production and low productivity. The factor that causes waxy corn to be slightly cultivated is due to the low yield potential of fewer than 2 tons/ha (Rouf, Zubair, Walangadi, & Yusuf, 2010). The success of the development of the waxy corn agribusiness is not only determined by high productivity, but also by the quality of the product itself. So that the resulting product has competitiveness and advantages. To obtain a good quality waxy corn then post-harvest handling also needs to be considered.

Post-harvest handling is part of agribusiness development starting from the production of raw materials to product marketing. Post-harvest activities have the

opportunity to provide added value to agribusiness products. Processing waxy corn into various processed products will provide great benefits (Suarni et al., 2019). Post-harvest handling of out-waxy corn is still done traditionally by waxy corn farmers. Waxy corn that is harvested is corn at stage milk. Without being processed first, this corn is directly sold to consumers in the form of cobs with prices ranging from Rp. 1000, - to Rp. 1500, - per cob and in the form of seeds at prices ranging from Rp. 2000, - to Rp. 3000, - per kilogram. One strategy that can be used in the development of corn agribusiness is the diversification of rural businesses through community economic empowerment so that there is an increase in people's income and purchasing power for food (Aldillah, 2018). Another obstacle related to glutinous corn agribusiness is market access that has not yet developed. Insufficient access to market information results in weak bargaining power. Farmers currently only rely on middlemen to buy their crops at a relatively low selling price and are not balanced with production costs.

The aim of this research is 1) to identify internal factors (weaknesses and strengths), external factors (opportunities and threats) in waxy corn agribusiness; 2) formulating a strategy for developing agribusiness for waxy corn in Sangira Village.

2. LITERATURE REVIEW

1.1 Agribusiness of Waxy Corn

Waxy corn is a special type of corn that is popular and needed by consumers and industry. Waxy corn has a good taste, is more savory and fluffier. The savory taste of glutinous corn is caused by amylopectin levels in corn kernels that reach 93 to 100% of the seed weight (Suarni, 2009). Suarni (2009) also stated that the higher the amylopectin content, the better the texture and taste Waxy corn is getting softer, fluffier, and delicious.

In some areas in Indonesia, waxy corn is served form of boiled corn, roasted corn, and as a raw material for making cakes and marning. Waxy corn which is harvested when the milk stage is ripe can be processed into milk and dodol with a touch of technology, instant products are produced. (Suarni et al,2019). Even before waxy corn at the milk stage, it can be used as baby corn vegetables. The selling value of early harvested corn is higher because the time it takes to process production is shorter than corn for seed production, about 70 days, so planting intensity can be increased from twice to 4-5 times per year (Suarni et al, 2019). Increased cropping intensity has an impact on increasing production and farmers' income (Suharno et al. 2011). The results of the analysis of the early harvested waxy corn per ha obtained a profit of Rp. 14,600,000, - /ha with an R/C ratio of 2.70 (Balitsereal in Suarni, 2019). Processed variations from waxy corn can be an opportunity in the development of waxy corn agribusiness. Sari, et al (2018), stated that one of the strategies that can be used are concentric and horizontal diversification strategies, processed products from corn must create new flavors and add product variants that are not related to existing products but with the same raw material, namely corn. The utilization of corn as food, feed, and raw material for several industries has increased, so it is necessary to increase production. Required corn postharvest handling technology, especially at the farm level, to produce products that are more competitive and able to compete in the free market (Firmansyah et al). The strategy for developing corn agribusiness in Ampana Tete District, Tojo Una Una Regency based on the results of the SWOT analysis is to increase production by adopting appropriate agricultural technology, increase the land potential and take advantage of assistance government to increase production and cooperate/partnership with industry or government to obtain markets and inputs (Mohamad Musna et al, 2016). The results of research by Muhamad Munawir (2014) show that land productivity and the intensity of planting corn is still low because it is caused by the application of still low. Furthermore, Budiman Djohan, et al (2011) suggested that commodities corn has good prospects to be developed, but the development trend is still relatively small compared to the level of demand for corn in the region. Aspect processing results can be done by optimizing the infrastructure support accompanied by increased training of farmers on the technology of corn processing. The use of technological innovations is

needed in the development of agribusiness for waxy corn. The results of research by Suartana, et al (2016), strategies in developing corn farming are: by maintaining corn production through the application of pest control technology.

The results of research by Bambang Winarso (2012), in the Province of Nusa Southeastern West, shows that business development and cultivation of corn commodities in West Nusa Tenggara Province is feasible to be developed. because it is supported by very potential area conditions, also because of the support from other factors such as the availability of technology, and market conditions that are still very open to increasing domestic demand for maize. However, strengthening capital and the performance of businessmen and corn cultivation, especially farmers, still needs improvement seriously so that business development and corn cultivation can be optimal. Furthermore, in terms of farming analysis, especially the income of waxy corn farmers and the R/C Ratio from several research results show that waxy corn farming can be developed. Based on the results of research by Syuryawati, et al (2009) showed that R/C the ratio achieved from early harvested waxy corn farming in the Sub-district of Bantimurung is 4.33, which means that the farm can be developed to support food security and farmers' income. Local government policy can be an opportunity in the development of waxy corn agribusiness. Aldilah, (2017) in his research suggests that the strategy resulting from the use of strengths and minimize threat factors, among others, by developing and increasing the intensity of cooperation networks (institutional) across actors, across regions, and across time in a coordination system to synergize policies, programs, and Corn agribusiness development activities can be supported by product diversity information, competitiveness as an agrarian/maritime country, as well as commitments and policies of the central government and area. There is a government policy to open access to capital through capital assistance farming, the provision of production facilities can help farmers develop their farming. The development of food products made from corn and the high added value of corn This is a great opportunity for farmers to increase their corn production and quality by farmers being more active in farming, adopting new technology, and implementing a managerial function of farming so that corn has high added value (Muhammad, 2019)

2.2 SWOT Analyze

For the strategy of the Company or organization to be formulated effectively, then it is necessary to obtain information about the strengths, weaknesses, opportunities, and threats related to the conditions and situations of the Company or organization. One method to find out the strengths, weaknesses, opportunities, and Company or organization threat is the SWOT analysis. SWOT analysis is an evaluation of the strengths and an organization's internal weaknesses that are carried out carefully, as well as an evaluation of the opportunities and threats from the environment.

3. RESEARCH METHODS/METHODOLOGY

This research was conducted in Sangira Village, North Pamona District, Poso Regency from March till August 2020. It is descriptive qualitative research. This research location is one of the central waxy corn production in the Poso Regency. The sample in this study is the respondents were farmers, corn sellers, and the Sangira village government. The research took 19 members of the potential to provide data and information that is accurate. This research used primary and secondary data. Primary data was collected from the interview with 19 respondents, namely internal factors (weakness and strength) and external factors (opportunity and threat). It was collected through interviews using a structured questionnaire. Data were analyzed by SWOT (Strengths-Weaknesses-Opportunities-Threats).

SWOT is a strategic tool that consists of elements such as strengths, weaknesses, opportunities, and threats. It is done by determining each element including the weight and rating. The next step is counting the total score of every element to determine the best strategy.

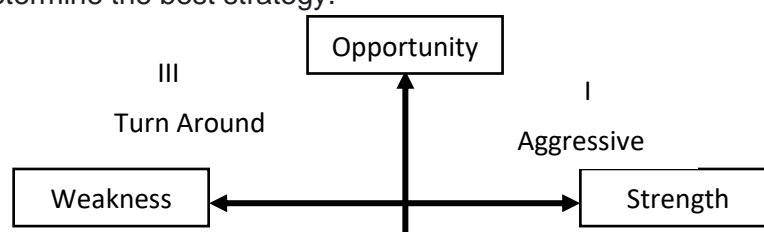


Figure 1. SWOT Analysis

4 RESULTS AND DISCUSSION

4.1 The Analysis of The IFAS (Internal Factor Analysis Strategy)

The analysis of IFAS is used to identify the extent to which the strengths and weaknesses. Analysis of the IFAS assessment is based on internal factors. The result of the calculation analysis of the IFAS is as follow :

Table 1. IFAS Analysis

No.	Strength	Weight	Rate	W x R
1	Sangira has been known as a central waxy corn production.	0.08	0.08	0.0066
2	Sangira village still has a large area of land, soil structure, and climatic conditions that are suitable for waxy corn cultivation.	0.08	0.07	0.0055
3	Waxy corn cultivated by farmers in Sangira village is a local variety, that is in great demand by the people, especially in the Poso Regency because it has a savory and fluffier taste.	0.08	0.06	0.0045
4	The harvest period for waxy corn is faster than yellow corn for animal feed.	0.06	0.06	0.0039
5	Waxy corn can be processed and consumed when the corn is in the milk stage.	0.06	0.06	0.0036
6	Corn seed of local varieties are easy to obtain and has a cheap price.	0.05	0.07	0.0034
7	Waxy corn can be sold in the form of flakes or corncobs.	0.04	0.07	0.0025
8	Does not require a large cost in cultivation.	0.03	0.06	0.0018
9	Can be used as an additional food ingredient and can be a staple food substitute for rice.	0.02	0.08	0.0017
Total		0.50		0.0336
NO.	Weakness	Weight	Rate	W x R
1	Limited demand for waxy corn, consumers of waxy corn in Sangira Village are only local people and the surrounding villages.	0.06	0.04	0.0023
2	The price of waxy corn is very cheap than yellow corn.	0.04	0.04	0.0017
3	The farmers are not interested in the cultivation of waxy corn, because the price is very cheap than the yellow corn.	0.05	0.04	0.0023
4	The income of waxy corn farmers is too low.	0.05	0.04	0.0019
5	Lack of knowledge about the processing of waxy corn. Processed of waxy corn is only soup corn and boil corn on the cob.	0.08	0.05	0.0043
6	The farmers have used traditional technology in the cultivation of waxy corn.	0.06	0.04	0.0027

7	There has been no training from the government or another sector about how to processing the waxy corn into various products.	0.08	0.05	0.0035
8	Waxy corn cannot be stored as long as yellow corn. The longer it is stored, the quality of the taste will change.	0.05	0.04	0.0022
9	The size of the local variety of waxy corn is smallest than yellow corn or another variety of corn.	0.02	0.05	0.0012
Total		0.50		0.0222
Total of internal factor (IFAS)		1.00		0.0558

4.2 The Analysis of the EFAS (External Factor Analysis Strategy)

The analysis of IFAS is used to identify the extent to which the Opportunity and Threat. Analysis of the EFAS assessment is based on internal factors. The result of the calculation analysis of the EFAS is as follow :

Table 2. EFAS Analysis

No	Opportunity	Weight	Rate	W x R
1	Sangira Village's location is strategic. It is located on the Trans Sulawesi road and near the Tentena as a tourism town.	0.08	0.12	0.0102
2	Demand is always even although in small quantities.	0.07	0.11	0.0072
3	The market opportunity of waxy corn, based on corn processed into various products.	0.04	0.07	0.0031
4	The people prefer the local variety of waxy corn to the other variety of waxy corn.	0.05	0.10	0.0052
5	There is no other village known for a waxy corn center production.	0.09	0.13	0.0113
Total		0.34		0.0370
No	Threat	Weight	Rate	W x R
1	The waxy corn sold by the seller is not entirely from Sangira village, but it is from the nearby village that cultivation the waxy corn.	0.12	0.10	0.0122
2	Waxy corn pest attack.	0.07	0.05	0.0034
3	There is no partnership with entrepreneurs of the waxy corn.	0.07	0.07	0.0047
4	There is no support program to increase the waxy corn agribusiness from the government or private sector.	0.12	0.07	0.0083
5	Lack of knowledge about waxy corn processing innovation.	0.11	0.06	0.0065
6	The competitor from other villages who know that cultivation and innovation processing of the waxy corn.	0.05	0.07	0.0034
7	Farmers prefer to cultivate yellow corn because it has a high demand market and a high price.	0.13	0.06	0.0079
Total		0.66		0.0463
Total of External Factor		1.00		0.0833

The analysis of the IFAS and EFAS table showed that following values :

- Total score of strengths = 0.0336
- Total score of weaknesses = 0.0222
- Total score of opportunities = 0.0370
- Total score of threats = 0.0463

To see the position of waxy corn agribusiness in Sangira village, based on calculating IFAS and EFAS can show with SWOT diagram. To find the coordinates can be searched in the following way :

$$\frac{\text{Total Score of Strength} - \text{Total Score of Weakness}}{2} ; \frac{\text{Total Score of Opportunity} - \text{Total Score of Threat}}{2}$$

$$= \frac{0.0336 - 0.0222}{2} ; \frac{0.0370 - 0.0463}{2}$$

$$= 0.0057, -0.0047$$

So, the point of the coordinates is located at (0.057, -0.0047). Here are the result of the coordinates are presented in the SWOT diagram.

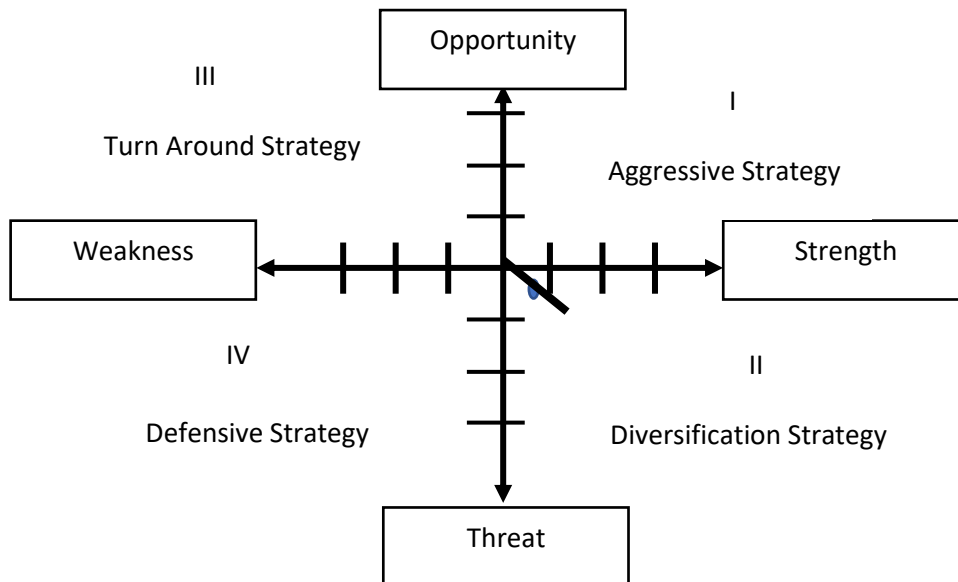


Figure 1. SWOT diagram

Based on the SWOT diagram above, point coordinates to 0.057 and -0.0047 are in quadrant II. Quadrant II supports the diversification strategy. According to Ranguti (2003), quadrant II illustrates that even though gets various threats, it still has internal strength. The strategy that must be applied is to use strength to take advantage of long terms opportunities. It can use the strategic diversification of product/market. The diversification strategy is an effort to develop product innovation to increase added value and market access. The goal is to minimize internal risk within the company. With a diversification strategy in the development of waxy corn agribusiness, the stakeholder can create the innovative product from the yield of waxy corn.

Based on the result, the agribusiness actor needs to implement a diversification strategy. Diversification strategies that can be applied are concentric diversification and horizontal diversification. Concentric diversification, in this case, is the quality of the existing product is improved, so that it can be stored for a long period without changing the taste quality. Horizontal diversification is a strategy by adding the variant product that is not related to the current product and are sold to the same customers, but still with the same raw materials, namely waxy corn. The product is based on the waxy corn material are available in Sangira village are boiled corn and soup corn, which in the local language call binte.

<p>4. There is no support program to increase the waxy corn agribusiness from the government or private sector.</p> <p>5. There is no other village known for a waxy corn center production.</p>		<p>4. Establish corporation with government and private sector related the training and accompaniment to agribusiness actor in Sangira village related to processing the yield of waxy corn</p>
<p>External Threats</p> <p>1. The waxy corn sold by the seller is not entirely from Sangira village, but it is from the nearby village that cultivation the waxy corn.</p> <p>2. Waxy corn pest attack.</p> <p>3. There is no partnership with entrepreneurs of the waxy corn.</p> <p>4. There is no support program to increase the waxy corn agribusiness from the government or private sector.</p> <p>5. Lack of knowledge about waxy corn processing innovation.</p> <p>6. The competitor from other villages who know that cultivation and innovation processing of the waxy corn.</p> <p>7. Farmers prefer to cultivate yellow corn because it has a high demand market and a high price.</p>	<p>ST Strategies</p> <p>1. To maintain the waxy corn farming.</p> <p>2. Increase of production and quality of waxy corn.</p>	<p>WT Strategies</p> <p>1. Establish a corporation with the institution that can accommodate a large yield of waxy corn, so that the interest and income of farmers will increase.</p> <p>2. Improve the managerial ability of waxy corn farming.</p>

Based on the result of the analysis by using the SWOT matrix, it is obtained alternative strategies can be done in Sangira village.

S-O (Strength Opportunity) Strategies

S-O strategy utilizes all strengths to get opportunities as much as possible. The S-O strategies include supporting farmers to increase the waxy corn agribusiness through government programs. This condition support by geographical conditions to cultivate the waxy corn. In addition, waxy corn can be processed into various food from the milk stage to physiological maturity. The waxy corn that harvests early and physiological maturity can be processed into a variety of products that have nutrition and taste with high amylopectin and low amylose (Suarni, et al., 2019). To increase the sale can use promotion and sales on social media.

W-O (Weakness Opportunity) Strategies

W-O strategy is that carried out by minimizing weakness and taking advantage of existing opportunities. The strategy to develop waxy corn agribusiness in Sangira village can be carried out in several ways, such as opening market access of waxy corn to Tentena with the various product of waxy corn material. Don't wait for the consumer to come to Sangira village because so far the corn agribusinessman in Sangira village only relied on consumers in Sangira and consumers from the public transportation passenger who stop for a short. Increasing the sale on social media can increase the demand for waxy corn. The proper and effective use of promotion and sales through

social media can increase sales volume (Augustinah & Widayati, 2019). Get the information and adopting technology to process the yield of waxy corn is need to do. It is has added value. By adopting technology, waxy corn has added value and contribute to the increase of farmer's income (Anwar & Muhammad, 2019). And the last strategy is to establish corporations with government and private sector related the training and accompaniment to agribusiness actor in Sangira village related to processing the yield of waxy corn. The government's role like counseling about new knowledge and information about technology to improve the welfare of farmers and their families (Jusnaeni, 2017).

S-T (Strength Threat) Strategies

This strategy aims to avoid and reduce the impact of threats by using strength. Some of the strategies used among others maintain the waxy corn cultivation. This is also supported by availability and ease to get the seed of waxy corn. The seed is a local variety at a cheap price. To avoid the threat can it can be done by increasing the quantity and quality of the product.

W-T (Strength Opportunity) Strategies

This strategy is a way to survive by reducing weakness and avoiding the threat. The effort that can be made is to Establish a corporation with the institution that can accommodate a large yield of waxy corn so that the interest and income of farmers will increase. Nurhayati, 2018 stated that in agribusiness activity it is necessary to have a corporation between one factor and another because in agribusiness development there is a relation from the upstream to downstream. Another strategy is to improve the product, through the creation of innovative products so ad to open wider market access. This is in line with Hendrayanti, 2011 who stated that a continuous product is a must because in general, every product has a life cycle although with the time differences at each stage of the cycle and each product. In the end, companies that can adapt to these conditions that can survive, are companies that can continue to make innovations of products such as packaging, function, and producing a new product. The last strategy is to improve the managerial ability of the farm.

CONCLUSION

The strategy of waxy corn agribusiness development in Sangira village is diversification strategy, with the effort to innovate waxy corn products to increasing selling value and market access.

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