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STRATEGY DEVELOPMENT OF DAIRY FARMS BY USING SWOT ANALYSIS IN PROVINCE BENGKULU

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ABSTRACT

Compared to imported milk, milk production is much lower. It is necessary to create new milk producing areas outside Java, such as Bengkulu Province which is ideal for dairy farming. This study aims to determine the strategy of dairy farming in Bengkulu Province. The method used in this research is the SWOT anaysis method. Research on dairy farms in Bengkulu Province, precisely in the Districts of Kepahiang and Rejang Lebong, uses a purposive method. The research took place between October 2019 and January 2020. The sampling technique was carried out by direct interviews with 20 respondents and two experts. The results showed that the cattle development strategy must use a strategy between strengths and weaknesses, namely an aggressive strategy. It is recommended that every stakeholder, including local government, should make an aggressive strategic plan and implement it in an effective program to increase the effectiveness of the alternative methods that have been developed. Increase the number of cattle population and expand sales of dairy products to complete the program.

INTRODUCTION

Subsector of dairy farms in an effort to realize the program of milk self-sufficiency in need of a good agribusiness system ranging from inputs to its output, because every year the needs of animal protein always increase, the milk consumption of Indonesian people will continue to increase in line with the increasing population,

education and welfare of the community Indonesia's milk consumption in 2011 reached 16.5 liters/capita/year (Iwantoro, 2012).

Bengkulu Province is one of the potential areas in the government's efforts to meet the needs of dairy animal protein in Indonesia other than the provinces in the java archipelago, Bengkulu Province is one of the potential areas in the government's efforts to meet the needs of milk protein in Indonesia. Is said to have a comparative advantage from the existing potential. Compared to other regions, comparative advantage is the basic capital that needs to be developed through economic development so that it can have a competitive advantage. The population of dairy farms in Bengkulu Province in 2018 reached 324 cows, divided into three disrricrs, namely Kepahiang Regency with 153 cows, Rejang Lebong Regency with 151 cows and Lebong Regency with 20 cows (Bengkulu Province Livestock and Health Office, 2019).

Milk production in Bengkulu Province in 2016 reached 183,817 thousand kg, and in 2017 that is 205,238 kg, further in 2018 reached 437,109 thousand kg (Animal Husbandry and Health Office of Bengkulu Province, 2019). Milk production in Bengkulu Province is relatively lower when compared to milk production in java island, as in East java Province whose production in 2010 reached 528,099.96 tons. Milk production can currently only meet 30% of national milk consumption demand, the remaining 70% comes from imports (Jarmuji et al., 2018).

Marketing of products from dairy farms in Bengkulu Province, especially in Kepahiang and Rejang Lebong regions, farmers market their products to local areas and sometimes farmers sell milk outside the region, if someone orders it. In the opinion (Afifah et al., 2016) that the role of processing and marketing a product is very important in a business. judging from the current condition with the existence of a market, the income of dairy farmers in Kepahiang Regency is still relatively low, due to the small market segmentation.

Therefore, dairy farming in Bengkulu Province needs to be presented more because seen from its potential, the area is very good for the development of dairy farms to support the income of the community/breeders and also assist government programs in milk self-sufficiency. This assessment can be applied by knowing the strengths, weaknesses, opportunities and threats that exist in dairy farming because it is very important to determine alternative strategies to be developed in the dairy farming business.

RESEARCH METHODS

This research was conducted in October 2019 -January 2020, located in the Districts of Kepahiang and Rejang Lebong, with consideration of the research location because the district is a center for dairy farming in Bengkulu Province.

Determination of the location in this study using a purposive method, namely in a dairy farm in Bengkulu Province. In this study, direct interviews were conducted with existing respondents, using the help of a questionnaire. Respondents in this study amounted to 20 farmers and two experts in the development of dairy cattle.

The variables observed in this study were internal factors and external factors. Internal factors include strengths and weaknesses. External factors in the form of opportunities and threats contained in the dairy farming business in the area studied.

There are many methods used by researchers, such as: Analytical Hierarchy Process (AHP) reported by (Oreski, 2012), (Saaty, 1987) and (Tampubolon et al., 2011) and SWOT published by Wheelen and Hunger (2012) and (Oreski, 2012) and the integration of AHP and SWOT, (Mor et al., 2019). Specifically in this study using the

SWOT analysis technique. The steps in formulating a strategy for developing a dairy farming business in Bengkulu Province can be seen from several factors such as internal factors which include strengths and weaknesses that can affect the development of a dairy farming business in Bengkulu Province, from external factors seen from opportunities and threats or can affect the dairy farming business, then the SWOT analysis is used to be able to analyze various factors and formulate alternative strategies that can be applied in the dairy farming business in Bengkulu Province.

RESULTS AND DISCUSSION

The characteristics of breeders are very important in carrying out livestock business because they are related to the results of a business. Observations on the characteristics of dairy farmers in Bengkulu Province include: age of respondents, education level, and business objectives.

The level of education is closely related to the dairy farming business, because with a high level of education, innovation in animal husbandry is also high and is also associated with high economic growth. The opinion (Lubis, 2014), states that the level of education has a positive and significant effect on the economy, so this shows the importance of the level of education in increasing labor productivity which reaches 50% of the exiting breeders, then for junior high school graduates it reaches 10% of farmers, elementary school graduates reach 40%. So seen from the level of education of dairy farmers in Bengkulu Province, it is quite supportive to run a dairy farming business.

The livelihood of dairy cattle in Bengkulu Province is generally only as a side job: most of the farmers prefer other activities, such as trading, labor and farming. Farmers tend to prioritize work other than raising dairy cattle, reaching 65% of the total number of farmers. Those who choose to raise dairy cows for their main occupation only reach 35%.

The population of dairy cattle in Bengkulu Province, especially in Rejang Lebong and Kepahiang Regencies, currently has a population of 137 dairy cows which are divided into 9 bulls , 94 cows and 34 calves and heifers.

SWOT Analysis of Development of Dairy Farms Weighting Internal and External Factors

In determining the value of several questions that have been weighed by the dairy cow experts. Each question is weighted according to expert judgment and has a weight capacity for each question by distributing the questionnaire to dairy farmers in the most thoroughly searched areas. In the questionnaire, there are 42 questions, of which 42 items are given points as a weighting of internal factors and weighting of external factors.

Determining Dairy Livestock Development Strategies

The strategy for developing dairy farms in Bengkulu Province is determined using a SWOT analysis consisting of Internal factors, and knowing external factors (Abadi, 2019). Regarding the SWOT analysis, the most important thing is to determine the weight of each question. The weight can be determined based on the level of interest in regional supervision, both internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats). The greater the level of strength and

opportunity, the higher the ranking, then if the ranking of the strength factor is small, the chances will be lower. Multiplying the weight and rating will produce a weighted value. This weighted value can be informed into a SWOT graph on the Horizontal (X) and Vertical (Y) axes.

Internal strategic factors with the highest rating of 4 are in sufficient water availability, Technical experience and mastery in breeding Availability of farmer groups, Availability of program support from the government, Availability of dairy cooperatives, Support of extension, Limited availability of dairy farms, Low production rate and productivity of dairy cattle, Low farm business scale, Low level of mastery in product processing, Promotion rate in product sales is still low, support from the banking side is still low . External strategic factors with the highest rating are, The absence of supporting instutions such as health centers, Climate suitability for the cultivation of dairy cattle, Application of IB mating technology, The risk of livestock products is quite high, The price of concentrate feed is relatively expensive.

Matriks IFAS (Internal Factor Analysis Summary)

Internal factors that have been analyzed can be identified in the form of internal strategic factors (Strengths and Weaknesses) Abadi (2019) also Martilla and James (1977) using Importance-Performance. This study using (Strengths and Weaknesses) for IFAS the strategic factors that have been identified can be given weight and rating to know the strength factor better among other strength factors as well as the weakest weakness factor among other weakness factors.

Based on Table 1. It is seen that in the internal environment (Strengths and Weaknesses) as a strategic factor, on the strategic factor of strength there is a role of sufficient water availability with a score of 0.34, this factor becomes a major factor in the development of dairy farms in Bengkulu Province. Because in the opinion of dairy farmers that with the abundant availability of water, it is not difficult in the process of care of their livestock, farmers recognize that dairy farms should be made as clean and comfortable as possible from the cage to the livestock itself.

While the main factor of weakness in the internal environment is livestock production and productivity with a score of 0.19. This is indeed a very important factor for farmers because it is related to their income. Dairy farming in Bengkulu Province for livestock production and productivity is still relatively low at around 7-10 liters per head per day, while ideally dairy cattle productivity generally reaches around 12-15 liters per head per day.

This weakness factor must be overcome by the use of high-quality feed, then with additional feed or feed concentrates such as tote oil, bran, bone meal, table salt, cornstarch and others. According to them (Utomo & Pertiwi, 2010; Karuniawati & Fariyanti, 2013; Indriani et al., 2022) the quality of feed in the form of forage and concentrate must be considered because it has an impact on the ability to produce milk.

According to Laryska & Nurhajati (2013) roviding concentrated feed which has a higher nutritional value than forage, is intended to provide opportunities for livestock to maximize growth/production. According to Yuliantika & Effendi (2021) concentrate is a feed ingredient that has high nutritional value in the form of high protein and energy.

Table 1. Factor Strategies IFAS (Internal Factor Analysis Summary)

	Strategic Factors (Strengths)	Weights	Rating	Score	Priority
1.	Sufficient water availability	0.08	4	0.34	1
2.	Availability of livestock medicines	0.07	3	0.21	7
3.	Stability in seedling provision	0.06	3	0.17	9
4.	Availability of home appliance supplay	0.02	3	0.07	13
5.	Availability of manpower	0.03	3	0.10	11
6.	Experience and technical mastery of breeding	0.04	4	0.17	8
7.	High breeder motivation	0.08	3	0.23	5
8.	Quality and quantity of raw materials	0.07	3	0.22	6
9.	Bargaining position of dairy farmers	0.01	3	0.03	14
10.	Product sales rate	0.05	3	0.15	10
11.	Availability of famer groups	0.02	4	0.09	1
12.	Availability of government support	0.07	4	0.26	3
13.	Availability of dairy cooperatives	0.06	4	0.25	4
14.	Extension support	0.08	4	0.32	2
	Subtotal Strengths	0.75		2.62	
	Strategic Factors (Weaknesses)	Weights	Rating	Score	Priority
1.	Lack of additional feed available	0.05	3	0.16	2
2.	Lack of HPT land availability	0.01	3	0.02	8
3.	Limited cage availability	0.003	3	0.01	9
4.	Low production rate and productivity of livestock	0.05	4	0.19	1
5.	Low farm business scale	0.02	4	0.07	6
6.	Mastery level in product processing low	0.04	4	0.14	3
7.	The absence of proper use of technology	0.04	3	0.12	4
8.	Variants of processed products are still few	0.03	3	0.09	5
9.	Low product sales promotion rate	0.01	4	0.06	7
	Subtotal Weaknesses	0.25		0.86	

Matriks EFAS (External Factor Analysis Summary)

Internal factors that have been analyzed can be identified in the form of external strategic factors (Opportunities and Threats). The strategic factors that have been identified can be given weights and ratings, ranking to find out which opportunity factors are better among other opportunity factors and the weakest threat factors among other threat factors.

Table 2. Factor Strategies EFAS (External Factor Analysis Summary)

	Strategic Factors (Opportunities)	Priority	Score	Rating	Weight
1.	Milk price stability	0.07	3	0.21	4
2.	Utilization of livestock waste	0.06	2	0.12	7
3.	The supporting institutions of puskeswan	0.10	4	0.40	2
4.	Climate suitability for dairy cultivation	0.11	4	0.43	1
5.	Public awareness of the importance of milk	0.05	2	0.09	9
6.	Increasing population	0.04	3	0.12	8
7.	High level of public interest in dairy farming sector	0.06	3	0.19	5
8.	Development of technology and information	0.05	3	0.16	6
9.	Application of IB mating technology	0.08	4	0.33	3
10.	Availability of machines in the milking process	0.03	3	0.09	10
11.	Availability of animal feed fermentation technology	0.03	2	0.07	11
	Subtotal Opportunities	0.69		2.21	
	Strategic Factors (Threats)	Priority	Score	Rating	Weight
1.	The risk of livestock products is quite high	0.09	4	0.35	2
2.	Concentrate feed price is relatively expensive	0.09	4	0.38	1
3.	Government policy on importing milk	0.02	3	0.05	4
4.	Transfer of land to a residential area	0.02	2	0.05	5
5.	Livestock disease attacks	0.08	3	0.23	3
6.	Influx of competitors from other regions	0.005	3	0.01	7
7.	Competition of loc. dairy prod. with imports	0.01	2	0.02	6
	Subtotal Threats	0.31		1.09	

Based on Table 2. It shows that climate suitability for dairy cattle cultivation is a prime opportunity for the strategy of developing dairy farms in Bengkulu Province, because in this factor it has a score of 0.43. The suitability of the climate in the cultivation of dairy farms is very affecting the production of dairy cattle, we should know that the suitable climate/suitable for dairy farms is to have a temperature of 23.29 ± 0.49°C with humidity of 85.71 ± 2.97°C (Krisnaningsih, 2010). From these climate factors, Bengkulu Province, especially in Kepahiang and Rejang lebong districts have climate similarities, namely temperature ranges from 23.87°C with humidity around an average of 85.21%.

While external factors are a threat in dairy farms in Bengkulu Province, the price of concentrate feed is relatively expensive with a weight of o.38. Along with the high price of concentrate feed, farmers can only utilize the existing forage feed. So according to farmers their production can not be maximal, because there is not enough

concentrated feed. According to (Siregar, 2000) concentrates serve in providing additional energy and protein needed to meet production needs, which cannot be met by forage.

Based on the comparison matrix between Internal and External factors, in this position the farmers are in a lucky condition because the dairy farming business in Bengkulu Province has high strengths and opportunities.

Alternative Dairy Farming Business Development Strategy

Strategy Strengths - Opportunities (SO)

This strategy is a strategy that uses strengths and takes advantage of opportunities. The alternative strategies are: Increasing the dairy cattle population, this alternative strategy is supported because it is seen from the potential of the area which is the dominant highland suitable for dairy farming, especially in Rejang Lebong Regency and Kepahiang Regency and has abundant potential. Water sources, as well as by utilizing the role of AI mating technology in supporting the success of increasing livestock populations. This is supported by Amam & Soetriono (2020), Amam et al (2021) and Efendi et al (2020) that by increasing the livestock population for farmers, farmers can increase their financial resources, so as to ensure the needs of farmers.

Expanding the market, in this strategy dairy products farmers can expand their market from a variety of existing market segmentation, ranging from geographic segmentation, demographics, psychography, and behavioristics (Ramadhan et al., 2015) and (Abadi, 2019). As for supporting things in the formulation of alternative strategies because it is seen from the public awareness of the importance of dairy animal protein and utilizing the increasing number of populations that each year is increasing, as well as further reactivating the role of the farmer group which is a place for farmers in seeking new information.

Strategy Weaknesses - Opportunities (WO)

WO strategy is a strategy that minimizes weaknesses by utilizing existing opportunities, as well as WO strategies obtained are: Producing quality cow seedlings. In addition to good feed factors, good maintenance management, livestock seedlings are a very important factor to note because it can determine the production of such livestock. Along with the high price of livestock, seedlings can apply IB mating technology, in addition to reducing the cost of breeding livestock can also get quality livestock seedlings.

Establishing partners of other parties (investors) to expand the scale of business and breeding facilities, dairy farms in Bengkulu Province, especially in Rejang Lebong Regency and Kepahiang Regency still have small business scale and facilities for breeding are also still lacking. Establishing partners/ cooperation with other parties can be an alternative strategy. In the opinion (Aidilof, 2016) The development of dairy farms is very necessary in implementing a partnership system with the laian (investor) because by implementing a pattern of partnership this can potentially increase the income of farmers and can also have a double effect for the economy in rural and economic on a wide scale.

Producing quality cow seedlings, in addition to good feed factors, good maintenance management, livestock seedlings are a very important factor to note because it can determine the production of such livestock. Along with the high price of

livestock, seedlings can apply IB mating technology, in addition to reducing the cost of breeding livestock can also get quality livestock seedlings.

Product processing and waste utilization, this alternative strategy can be used to increase the selling price of the resulting product then by processing farm waste can make income for farmers. In general, dairy farmers in Bengkulu Province only sell fresh milk and have not used waste from their farms.

Processing of additional feed, supplementary feed or concentrate is needed for dairy cows, along with the high price of additional feed/concentrate, farmers can take advantage of the agricultural waste raw materials contained to be used to meet livestock needs.

Promotion needs to be done in addition to informing consumers and can also increase the level of product sales. Promotion can be done on social media, newspapers, and others.

Strategy Strengths - Threats (ST)

ST is a strategy of using force to address threats. The formulation of ST (Strengths-Threats) strategies results in strategies that are: Increasing the role of extension and government, this alternative strategy is very important to improve because farmers can know informations or issues - new issues both from the technical breeding and even new regulations from the government. Improving the quality of production, quality does very much need to be maintained to face competition in the dairy farm product market.

Strategy Weaknesses - Threats (WT)

WT is a strategy to minimize weaknesses and avoid threats. WT strategies obtained are: Improving the development of science and technology, the base area is an opportunity for the development of dairy agribusiness in Bengkulu Province. The main base area is Rejang Lebong Regency and the second is Kepahiang Regency. The development and support of Science and Technology (IPTEK) is an opportunity for the development of dairy cows in Bengkulu Province. Science and Technology is obtained through technical training. In the opinion (Amam et al., 2019) the role of technology has a very positive influence in the development of dairy cattle, as much as farmers have access to technology resources then the results achieved will be better.

Based on the calculations that have been done through the IFAS matrix and EFAS SWOT analysis, in determining alternative strategies for the development of dairy farms in Bengkulu Province, the final value of internal factors namely strengths and weaknesses and external factor namely opportunities and threats.

Table 3. Description of Internal and External Factors

No	Description	Value	Difference
1	Internal Factors		
	Strengths	2.62	1.76 (X)
	Weaknesses	0.86	
2	External Factors		
	Opportunities	2.21	1.12 (Y)
	Threats	1.09	

There are at least three important things that can be explained from Table 3. Namely: First the SWOT shows the capacity to take advantage of that opportunity. How farmers have the essence of strategy is opportunity divided by capacity, 2.21/2.62 = 0.84. An opportunity by itself has no real value unless a company has the capacity (resources) to take advantage of that opportunity. This approach, however, onsiders only opportunities and strengths when considering alternative strategies.

Second, the SWOT can measure the Strategic Alternatives (SA), Wheelen and Hunger (2012), Our farmers can also have Strategic Alternatives. Weaknesses in other resource areas can prevent a strategy from being successful. SWOT can thus be used to take a broader view of strategy through the formula SA O/(S-W) that is, (Strategic Alternative equals Opportunity divided by Strengths minus Weaknesses), (2.21)/(2.62-0.86) = 1.26. This reflects an important issue strategic managers face: Should we invest more in our strengths to make them even stronger (a distinctive competence) or should we invest in our weaknesses to at least make them competitive?

The third, as a result of the data in Table 3. there is a difference between internal factors with a difference value of 1.76 then an external factor difference of 1.12, then fo r strategy of developing dairy farms in Bengkulu Province that is to take advantage of the opportunities that exist by maximizing the strength of the possessed. Table 3 shows that the calculation of the IFAS and EFAS matrix on internal and external factors can be found in the SWOT diagram, between the X axis which is the difference in strength and weakness factors, then on the Y axis the difference between the opportunity and threat factors. The determination of the X and Y axes in the SWOT quadrant is as follows:

X = Strength Factor - Weakness Factor
= 2.62 - 0.86 = 1.76
Y = Opportunity Factor - Threat Factor
= 2.21 - 1.09 = 1.12

The calculation between the X and Y axes will be continued by forming a diagram that will later determine the quadrant of the position of strategy. Here is a SWOT analysis diagram of a dairy cattle farm development strategy in Bengkulu Province.

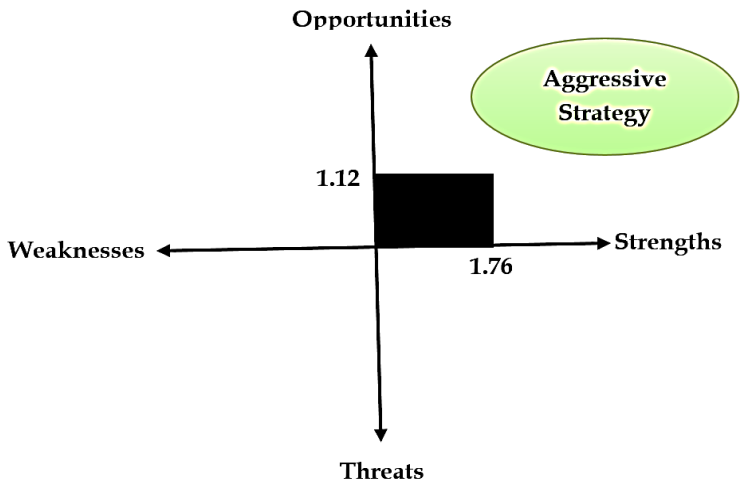

Figure 1. The position of dairy farms' strategy in Bengkulu Province

In Figure 1. It can be seen that the strategic position of dairy farms in Bengkulu Province is in quadrant 1, which means that farmers are in a favorable condition or by taking advantage of existing opportunities to maximize strength. The strategy that can be applied in the development of dairy farms in Bengkulu Province is to support an aggressive policy or by using a power-opportunity strategy (SO strategy). Local governments should apply this strategic plan to the strategy implementation stage for an effective program. The program can be implemented by increasing the number of livestock populations and expanding the marketing of dairy products. In line with the opinion Simamora et al (2015), tecnnical aspects of people's dairy farming is very important to improve the implementation of Good Dairy Farming Practice (GFDP).

CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

Based on the findings of the SWOT analysis of the strategy for developing a dairy farming business in Bengkulu Province, it is recommended to use a balancing strategy or a strategy that is between strengths and opportunities, which is also called an aggressive strategy, Integrate backward or forward strategy.

Policy Implications

Every stakeholder, including local governments, should create an aggressive strategic plan and implement it in an effective program to boost the effectiveness of the alternative methods that have been developed. Integrate backward or forward strategy such as Increase the number of cattle population and extend the selling of dairy products to accomplish the program. Other researchers can also try to use other methods.

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