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Research Article

Strategy of Development Agroindustry Palm Sugar

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Abstract: Palm sugar agro-industry occupies an important position in the family economic patterns of rural communities. This study aims to know development strategy palm sugar. The method used is the method of survey, study sites are set purposive. The sampling technique used stratified random sampling. Basic of stratification is an amount of raw material use palm (Arrenga pinnata Merr) juice. In the third year plus convenient sampling method. The research was conducted in the Cimenga Cijaku Lebak. Modeling analysis tools to acquire agroindustrial development strategies used SWOT (strength, weakness, opportunities, and threats). The results showed: (1) Internal factors provide a response to the palm sugar craft 2.48, the highest response to the craft of palm sugar is a characteristic of the product (product quality). (2) provide a response to external factors palm sugar craft 2.50, the highest response against palm sugar craft is the population growth. (3) strategies that can be taken for the palm sugar craft is the hold and maintenance development strategy focused on/improving and maintaining quality product of palm sugar with labeling, registration number, and expiration date, form a management group, especially with the establishment marketing cooperatives, utilization of research results and create a pilot project on integration on agribusiness palm (Arrenga pinata Merr), and political will of government.
Keywords: brown sugar, SWOT analysis, strategy development.

INTRODUCTION

Agroindustry has very important role in supporting the economy and employment expansion [1]. In the rural community of Indonesia, local resource-based industries proved able to survive amid the crisis that hit the economy since 1997 Otto [2]. One of the industries that thrive in rural areas is palm sugar agroindustry with the material of liquid Arrenga pinata Mer. Its ability to absorb labor up to 68% of the total workforce available in rural [3].

The area of palm (Arenga Pinnata Merr) in Banten Province in 2005 up to 1,633 ha. When compared with the total area of the palm on the Island of Java up to 11% of the total. Palm sugar production in the year 2005 in Banten Province reached 1,217 tonnes with a productivity 1050 kg/ha. In Banten province, dominant palm planting area is Lebak and Pandeglang district. Palm acreage in the Lebak in the year 2005 reached 1,348 ha, with the level of production reached 1,056 tons and productivity of 10.70 kg per ha [4]. Amount of producer in the year 2005 of District Lebak 1,752 people, and 876 units of agroindustry [5].

Previous research in palm sugar Cimenga, Cijaku, Lebak of Banten province showed that the use of production inputs are on the decreasing rate because the value is less than one, with level exponential 0.57. Agroindustry of palm sugar is able to the added value 74% [3, 6]. Based on results of the research indicate that the use of production inputs has been decreasing. Agroindustry of palm sugar based on value-added showed a strong position for defending the household economy.

Resource limitations are a threat to the growth of palm sugar industry. This Conditions would threaten the family economy managers [7, 8]. Therefore necessary to develop a strategy of the industry of palm sugars to be able to make contribution sustainable to the economy the family. This study aims to assess the development strategies agroindustry palm sugar.

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Strategy development is limited to production and problems of marketing [9].

RESEARCH METHODS

This research was conducted at the Craftsmen in the village Cimenga District of Lebak. The method used in this research is survey method.

The sampling technique at the level of artisans in this study is done by using stratified random sampling. Based sample size based on the formula Cochran [10]. The formula is based on a sample size the research was conducted in February 2010 until April 2011.

Based sample size based on the formula Cochran [10]. The process of determining the sample as follows:

Members of the population in the village of Cimenga totaled 118 craftsmen, with the use of raw materials palm juice least than 45 liters as many as 67 people craftsmen and the use of raw materials palm juice more than 45 liters were 51 people, craftsman.

$$n = \frac{N}{Nd^2 + 1} = \frac{118}{118(0{,}1)^2 + 1} = 54 \text{ people}$$

crafted.

So the sample size is 54 people. Selected samples based on the use of raw materials palm juice in the village Cimenga, with the following formula:

$$n_i = \frac{N_i}{N} xn \text{ under the condition:}$$

n_i = number of samples with the use of raw materials to the palm juice-i

N_i = number of population with the use of raw materials to the palm juice-i

N = Number of population to overall

n = Sample Size

The sample size in the village Cimenga for crafters with the use of raw materials least than least than 45 liters by the formulation:

$$n_i = \frac{67}{118} x54$$

= 31

So the sample size in the village Cimenga for crafters with the use of raw materials palm juice least than 45 liters is 31 crafters.

The sample size in the village Cimenga for crafters with the use of raw materials palm juice more than 45 liters is based on the formula above:

$$n_i = \frac{51}{118} x54$$

= 23 people crafted

So the sample size in the village Cimenga for crafters with the use of raw materials palm juice more than 45 liters is 23 people crafting.

This study uses a SWOT (strength, Weakness, opportunities, and Threats) analysis. SWOT analysis is limited to the aspects of production and marketing [11].

RESULTS AND DISCUSSION

Marketing network of palm sugars that develops when this happens naturally. Position craftsmen on the marketing pattern of agroindustry palm sugars are price takers. This pattern occurs because the craftsmen are less informed of market and never carried out market research. Based on the economic value of palm sugar, crafter should have the opportunity as a price maker. Marketing pattern is happening now; Pattern of Marketing I: of the traders buy and collect palm sugar from artisans (producers), traders sold to large traders in traditional markets, while palm sugar wholesalers spread to retailers in Lebak. Patterns of marketing II: craftsmen (producers) to sell directly to large traders in traditional markets. The pattern of Marketing III: craftsmen sell directly to retailers in the village. More details of marketing patterns can be seen in Figure-1.

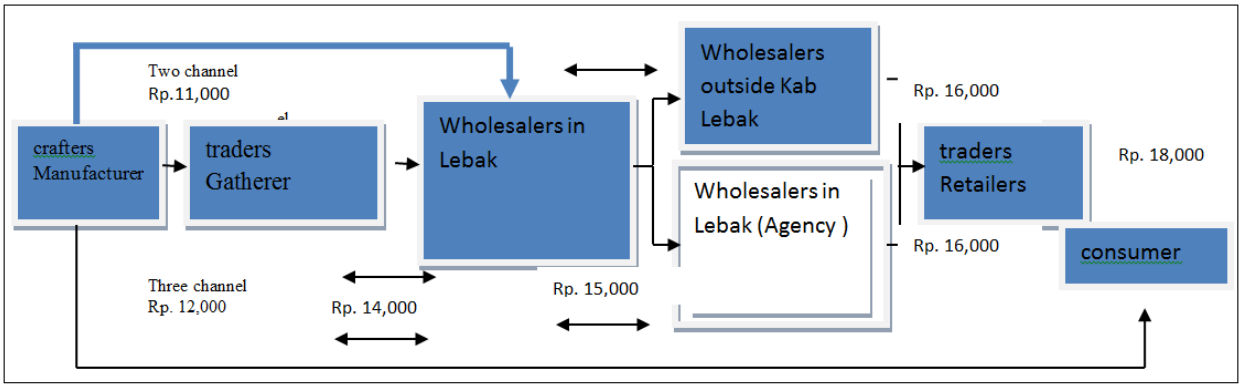

Fig-1: Pattern Marketing Channels Palm Sugar Origin Village Cimenga

Each of these marketing patterns has its own characteristics, the pattern of marketing I of the majority of perpetrators of marketing artisans with palm sugar production quantities of less than 20 kg. The pattern of marketing II: most actors marketing artisans with production volume between 5 to 19 kg. Pattern marketing III, craftsmen with a production volume of less than 5 kg. Advantages of the pattern one craftsmen are not charged marketing while at the pattern of the two charge of marketing in the form of transportation costs and risk of marketing.

Table-1: Matrix relationships Strength, Weakness, Opportunities, and Threats on Agroindustry of palm Sugars

Internal Factors / External factors	***Strength***	***Weakness***
	1. Agroindustry palm sugar growing and developing together with culture of the local community 2.Industry of palm sugars of Cimenga has its advantages and its own peculiarities 3. Industry of palm sugars of Cimenga have a strong market position 4.Processing technology Agroindustry Palm sugar already familiar with the crafter. 5.Agroindustry palm sugar is one important source of income for the household.	1. Management of Individuals 2.Technology of seeding and cultivation of palm tree not yet mastered 3. Means of promotion is still low 4.Technique of analysis Agroindustri palm sugar.Palm sugar not yet mastered
Opportunities/Peluang 1. Population growth 2. Advances in technology good technology (hatchery, processing, and packaging), and transport information 3. Government support 4. Customer loyalty	***Strategi S-O (Strength-Opportunities)*** 1. Increase the production of palm sugar, while maintaining local wisdom (culture) 2. Improving the quality of palm sugar by utilizing packaging technology, quality control, minimizing the damage caused by transport and labeling 3. Permission Agroindustri 4. Market research	***Strategi W-O (Weakness-Opportunities)*** 1. Management and marketing groups (formation of cooperatives) 2. Research (cooperation with the government and universities), especially on hatchery technology 3. Promotion at low cost like the exhibition together, and conventional promotion ***4.*** Management of training about analysis of agroindustry and the report (income statement***)***
1.	***Strategi S-T (Strength-Threats)*** 1. Make village regulations on land use and prohibition to cut down the palm trees that are considered productive 2. Local regulations to restrict hunting weasel because weasel is important for seeding of palm tree 3. Modern agroindustry management with regard to cultural values and local wisdom 4. The establishment of agroindustry group by values of local wisdom	***Strategi W-T(Weakness-Threats)*** 1. Training and education about the management of agroIndustry groups 2. Development of technologies of breeding with technology polybag 3. 4. Pilot project with made of cluster plantation 5. Giving pane (award) to the craftsmen who have souls entrepreneurship in the form of capital and intensive coaching.

Based on the values of internal factors, population growth is an opportunity for the development of palm sugar craft in Cimenga. During this time, the craft is threatened by the decrease of plant population. Craftsmen utilizing palm trees tend to be exploitation only. Craftsmen just take palm juice without any attempt to return the results for sustainable of business.

Weasel is importance to the growth and spread of seed palm trees [12]. Palm farmers consider that palm seed that comes from weasel droppings has a relatively better growth compared to handpick palm seeds from palm trees. It is to be learned by farmers, the behavior of weasel in choosing a palm fruit as a source of seed.

Table-2: Results Weighting Factor of the craft Brown Sugar *(Internal factors)*

External Factors	A	B	C	D	E	F	G	H	Total	weight
A. population growth		3	2	3	3	3	2	2	18	0,16
B. Advances in technology	3		3	2	2	2	2	2	16	0,14
C. government Support	2	3		2	3	1	2	3	16	0,14
D. consumer loyalty	3	2	2		1	1	1	1	11	0,10
E. Land conversion	3	2	3	1		3	2	1	15	0,13
F. Population weasel decrease	3	2	1	1	3		1	1	12	0,11
G. the interest of young people diminishing in the farm plantation of the palm tree and agroindustry of palm sugars	2	2	2	1	2	1		2	12	0,11
H. There are not financial institutions	2	2	3	1	1	1	2		12	0,11
I. Total	18	16	16	11	15	12	12	12	112	1
Weight	0,16	0,14	0,14	0,10	0,13	0,11	0,11	0,11	1	

Explained: 1= horizontal indicator value indicates less regard than the vertical indicator, 2= a value that indicates the horizontal indicator relates closely to the vertical indicator, 3 = a value that indicates the horizontal indicator has more to do in comparison with the vertical indicator.

Agroindustry difficult to grow because of limited factors population to palm trees [13]. Weasel population is currently estimated to have decreased, because of pressure from population growth, and conversion to fields and estate. The dependence of local community on agroindustry palm sugar, based on result research proved palm sugar craft able to contribute to the total family income of 36.32%, its contribution can be decreased if agroindustry of palm sugars not developed with an integration of farm. The attention of governments and financial institutions to advance the craft of palm sugar is very important. Government attention is needed to provide an understanding and strengthen the position of palm sugar craft in the economic structure of society. Caution should be supported by helping the inception of culture-based financial institutions and the ability of local communities.

Sugar production technology does not develop, either technology of tapping and processing technology. Craftsmen use palm juice derived from male flowers for the production process of palm sugars. Necessary new exploration on the female flowers for produce palm juice. Problems technology of tapping: Male flowers are not always able for produce to palm juice with high quality (2) during the female flowers are not used for the production of palm juice, amount raw material will decrease in the future. (3) Development of technology in the process production of palm sugar. If process production of palm sugars developed, output production more efficient. Base on result calculates technology and government support threaten the sustainability of palm sugar with value 0,42.

Table-3: Rating Factor of the Agroindustry Palm Sugars *(External factors)*

External Factors	Total	weight	Ranking	Value Weight
A. population growth	18	0,16	4	0,64
B. Advances in technology	16	0,14	3	0,42
C. Government Support	16	0,14	3	0,42
D. consumer loyalty	11	0,10	1	0,10
E. Land conversion	15	0,13	2	0,26
F. Population weasel decrease	12	0,11	2	0,22
G. The interest of young people diminishing in the farm plantation of palm tree and agroindustry of palm sugars	12	0,11	2	0,22
H. There are not financial institutions	12	0,11	2	0,22
Total	118	1		2,5

Internal factors industry of palm sugars is a product having its own advantages and unique, compared with palm sugar products others. This sugar has product advantages: (1) not quickly melt when stored for long periods (2) it is not porous (3) sucrose of high levels and distinctive aroma. Three of these advantages is the deciding factor for palm sugar origin Cimenga position in the sugar market. Palm Sugars produced made crafter Cimenga occupy a strong market position. Based on internal factors excellence and possessed its own peculiarities with value 0.14, and is reinforced by the position of palm sugar market with value 0.13. The technology that has been well recognized by crafter and palm sugar position as an important source of income in the hierarchy of the family's economic structure is an important force in the development strategy of palm sugar craft ranks second with value 0.14.

Management of palm sugar craft individually that weaken the development of palm sugarcraft, its value 0.12. Management of individuals causing

inefficiencies in the use of production factors [1]. This will cause the waste of capital, so that the balance between revenue and the cost value is less than one, or a partial influence of the use of factors of production are located in the region irrational stage of production, in terms of value of production elasticity greater than one or less than one [14]. Means of promotion is still low, and this is weaknesses craft palm sugar. Promotion referred to in this research related to product development. Based on field conditions there is a difference in price between retailers crafters at a price level. In this position, palm sugar markets tend to be monopsony so that no power for crafters to determine the price [15]. Craftsmen position in the market as a price taker (price taker), while the power and the biggest incentive of marketing palm sugar are obtained by middlemen traders. The low sale is one factor in the development of craft weakness palm sugar. Value Promotion is 0,1 second rank with the value of weight 0.22.

Table-4: Results Weighting Factor of Foreign palm sugar craft *(Internal factors)*

External Factors	A	B	C	D	E	F	G	H	I	Total	weight
A. Grow and develop the culture of the local community		3	2	3	2	1	1	1	1	14	0,10
B. The products have advantages and peculiarities of its own	3		3	2	3	3	2	3	1	20	0,14
C. strong market position	2	3		3	2	1	2	3	2	19	0,13
D. Technology well known to artisans.	3	2	3		1	1	2	1	2	15	0,11
E. Important source of income for the family craftsman	2	3	2	1		2	2	2	2	16	0,11
F. Management of Individuals	1	3	2	1	2		2	3	2	17	0,12
G. Technology has not mastered seeding and cultivation of palm trees	1	2	2	2	2	2		1	1	13	0,09
H. Means of promotion is still low	1	3	3	1	2	3	1		1	15	0,11
I. Yet mastered the technique of analysis Agroindustri palm sugar	1	1	2	2	2	2	1	1		12	0,09
Total	14	20	19	15	16	17	13	15	12	141	
Weight	0,10	0,14	0,13	0,11	0,11	0,12	0,09	0,11	0,09		1

Mastery limited in hatchery technology and agroindustry analysis is weakness palm sugarcraft. Limited mastery of the technology of seeding causes the rate of population palm tree can be diminishing so that palm trees productive as a source of sap becomes increasingly diminished. This palm population reduced direct impact on the rate of decline in production of palm sugar. Craftsmen do not have a small notebook as financial statements, complicate the position craftsmen agroindustry of especially in determining the break event point and the value of benefits. The weight of the limitations in the mastery of technology and mastery of analytical techniques agroindustry weighs 0.09 ranks first with 0.09 weight value. The population of palm trees that reduced, direct impact to the decline in production of palm sugars.

Table-5: Ranking Factors of palm sugar craft Affairs *(Internal factors)*

External Factors	Total	Weight	Ranking	Value Weight
A. Grow and develop the culture of the local community	14	0,10	2	0,20
B. The products have advantages and peculiarities of its own	20	0,14	4	0,56
C. strong market position	19	0,13	4	0,52
D. Technology well known to craftsmen.	15	0,11	2	0,22
E. Important source of income for the family craftsman	16	0,11	2	0,22
F. Management of Individuals	17	0,12	3	0,36
G. Technology has not mastered seeding and cultivation of palm trees	13	0,09	1	0,09
H. Means of promotion is still low	15	0,11	2	0,22
I. Yet mastered the technique of analysis Agroindustri palm sugar	12	0,09	1	0,09
Total	141	1		2,48

Based on the weighting values total, palm sugar craft provide a response to external factors 2.5. Palm sugar craft provides a high response to population growth. Population growth related on-demand product of palm sugars. Land use (plantations and productive forest mixture) is treated most important to the development of palm sugarcraft.

Internal factors provide a response to crafts 2,48. Palm sugar craft provides a high response to the specific nature of the product (product quality). The quality of products is the strength of the palm sugar craft to preserve customer loyalty. Individual management is the main weakness of the development of palm sugarcraft. This individual management weakens the bargaining power of palm sugars. Individual management can complicate the management of artisans to seek innovation and technological development.

Weighted value of the external factors and internal factors palm sugar craft Agroindustri position in the quadrant V. Strategies that can be taken on the palm sugar craft is the hold and maintenance [16]. The focus of the strategy for the development of palm sugar craft is the development of product management and market penetration. Market penetration can be done by (1) Improve and maintain the quality. Strategic steps: labeling, registration number, expiration date, (2) Management of agroindustry group, its strategic step: the formation of cooperatives or other bodies approaching agroindustrial cooperative management [17], (3) Repair of palm cultivation and processing technology. Strategic step: the use and development of research and pilot project on palm agribusiness (3) Support policy, strategic step: Making regulations about plantation of palm trees which ensures agroindustry of palm sugars can be sustainable agro-ecosystems surrounding.

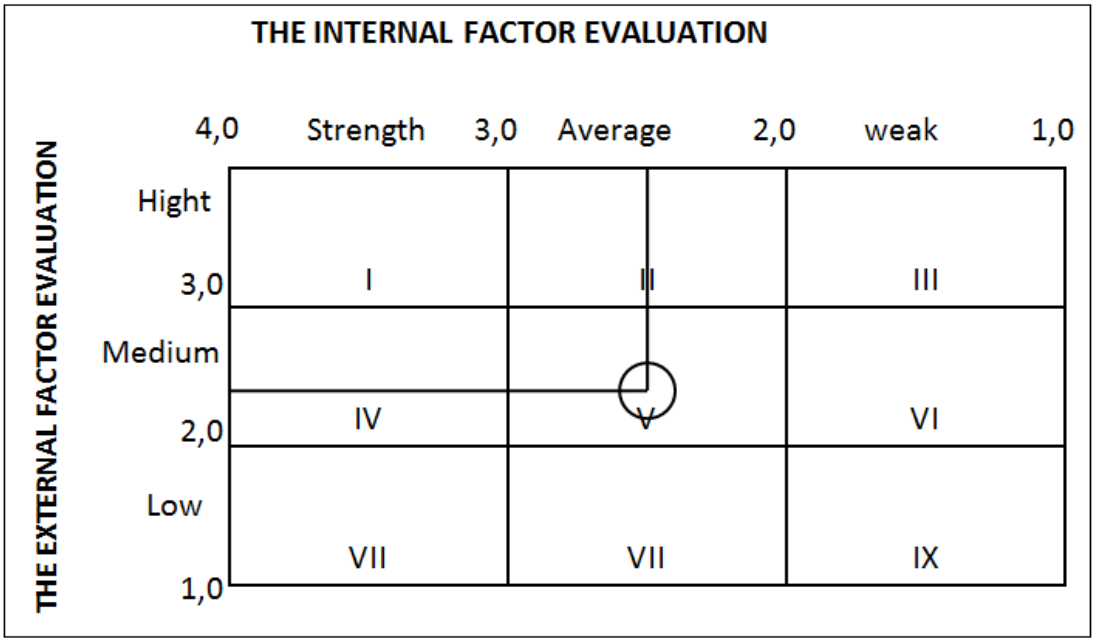

Fig-1: The position of the palm sugar craft Based internal and external factors

CONCLUSION

Based on the results of this study concluded: Internal factors provide a response to the palm sugar Crafts 2.48, the highest response for palm sugar craft is a characteristic of the product (product quality) External factors provide a response to the palm sugar craft 2.50, the highest response against palm sugar craft is the population growth. Strategies that can be taken on the palm sugar craft is the hold and maintenance development strategy focused on improving and maintaining product quality palm sugar through labeling, registration number, and expiration date, form a management group, especially with the establishment of agroindustry bodies together in marketing (cooperatives), utilization of research results and create a pilot project on integration palm agribusiness, and government support through the creation of regulations from the village level up to the district level. This research needs to be reinforced by a study from upstream to downstream to the farmer and processing technology assessment as well as product packaging. The results of this study can be applied to other areas in the same industry conditions, particularly with decision-making and policy relating to the business of palm sugars.

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