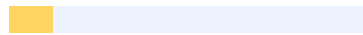




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1 development in rural communities. The purpose of this study is to describe the business of processing sugar cane (saka) and formulating a competitive strategy for processing brown sugar in the Sub-district of Matur, Agam Regency, Sumatra Barat. This study is a literature study based from several research reports and journals relating to the development of sugar cane processing, with the analysis of External Internal Matrix (IE) and Exponential Comparison Method (MPE) to suitable with the competitive strategy. This research shows that the brown sugar processing entrepreneurs are generally small-scale entrepreneurs, with lowscale production with simple and efficient technology, product was marketed in the surrounding area. Competition strategies include: (1) market development, (2) expansion and farming intensification area and processing of products, (3) cooperating with farmers of raw material suppliers, other processing entrepreneurs and traders, (4) strengthening farmer institutions with farmer groups and cooperatives market development. The recommendation of this study is development of social entrepreneurship with the involvement of local governments, universities and local entrepreneurs. Keywords: Competitive Strategy, Rural Agroindustry, Brown Sugar Cane.

INTRODUCTION At this time, the processing businessmen in the countryside must be able to going and survive in a very tight and rapidly changing competition environment caused by globalization, changes in consumer needs, advances in science and technology, and government policies. According to Porter (2007) that competition in business occurs because of pressure or seeing opportunities to improve its position for success or tools (policies) to achieve goals. Strategy is a way to achieve goals in competition. The formulation of strategy are include the improvement of vision and mission, identification of opportunities, threats, strengths and weaknesses, the determination of long-term goals, looking for alternative strategies, and the selection of specific strategies to achieve goals. (David, 2012) The strategy formulation includes: (1) the input stage in: 4 external factor

evaluation (EFE), internal factor evaluation (IFE), and competitive profile matrix (CPM), (2) the matching phases consist of SWOT, SPACE, ⁸ Boston Consulting Group (BCG), IE Matrix, and Grand Strategy, and (3) decision stage. The Internal-External Matrix (IE) positions an organization in the view of nine cells. ⁶ The IE matrix is based on two key dimensions like IFE weight score and total EFE weight score. The development of rural agro-industries will increase by added value of rural agricultural products that will contribute to regional development to increasing farmers' income, processing and involved labor, export volume and foreign exchange will lead to competitiveness and independence. One of the small-scale rural agro-industry is processing sugar cane into brown sugar (saka). Sugarcane is very beneficial, especially as raw materials for making sugar, brown sugar and can even be used as raw material for making alcohol (ethanol). Brown sugar from sugar cane business could be utilized as an Nofialdi*, Lecturer in Agribusiness Department, Andalas University, Padang. E-mail: nofialdi@agr.unand.ac.id Dan Sandra Melly, Doctoral Student of Agricultural Sciences, Postgraduate Program, Andalas University, Padang. Competitive Strategy for Rural Agroindustry Development of Brown Sugar from Sugar Cane (Saka) in Matur SubDistrict, Agam District, Sumatra Barat Nofialdi, Dan Sandra Melly

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Nofialdi et.al alternative to improve the welfare of rural communities and the substitution of sugar, also for the indigence of various industries, such as the soy sauce industry, herbal medicine, and food. In Sumatra Barat, one of the sugar cane producing areas is Agam Regency, with a production center in Matur Sub-district (Nagari Lawang) with a product known as "gulo Lawang". Current production of brown sugar with traditional and simple technology with low sugar cane harvest and productivity so that it cannot fill the actual demand. Sugar cane production is also sold in the bars form to other regions. The local government continues to attempt increasing the production of sugar cane through the expansion of sugar cane area, improvement of

sugarcane varieties (seedlings) and cropping patterns (sugarcane cultivation). Melly and Nofialdi (2015) stated ⁸ that an increase in the productivity of sugar cane processing can be improved by developing the sugar cane fed by carrying 4 sugarcane are sugarcane at once, from the economic and social aspects it is appropriate to apply ¹¹ the development of sugar cane agro-industry in Lawang. The prospect of developing sugar cane of sugar business in this area is exceedingly good, due to the region's potential for sugar cane development, supplemental value of brown sugar and guaranteed markets for sugar cane products. The technology of processing brown sugar is still widely practiced traditionally from the grinding to packaging process, such as in the process of grinding sugar cane using livestock energy/ buffalo power as a roller in grinding force and there are also mechanical grinding tools with machines. The results of Fernalista, Nofialdi, Azriani (2018) research show that ⁹ the brown sugar business must focus on developing saka kariang sugar processing business, increasing the supplemental value of brown sugar can be more efficient with production machines. The above conditions show that sugar cane agro-industry ⁷ in Matur Sub-district, Agam Regency has not yet developed due to low of productivity, quality and competitiveness. Brown sugar entrepreneurs must be able to utilize the potential and manage their resources and business well and take advantage of opportunities to be able to compete, therefore ¹⁰ it is necessary to identify the conditions of sugar cane agroindustry ¹ in the Sub-district of Matur which includes strengths, weaknesses, opportunities and threats can be formulated strategies for its development. The purpose of this study was to describe sugar cane agro-industry and formulate a competitive strategy for the development of sugar cane agro-industry in the Sub-district of Matur. RESEARCH METHODS This research is a literature study based on several research reports and journals relating to the development of sugar cane processing. The description of the conditions of sugar cane agroindustry in Sub-district Matur was done by qualitatively and descriptive method to explain the management of brown sugar agroindustry in Matur Sub-district. While in formulating appropriate strategies for ¹ the development of sugar cane agroindustry in Matur Sub-district, an IE analysis was carried

out which identified various internal factors and external factors contained in the sugarcane agroindustry systematically and subsequently formulated and alternative strategies sorted by Benefit Cost Opportunity and Risk. with the **Exponential Comparison Method (MPE)**.

RESULTS Brown Sugar Cane Agroindustry in Matur Sub-district Sugar cane is the main raw material in making brown sugar cane. Topographic and climatic conditions of the region which are at an altitude of 825 - 1375 m above sea level with an average rainfall of 3200 mm per year in Agam Regency supporting **1 the development of sugar cane** plantation business. Proper direction on sugarcane cultivation techniques has been given by the government (PPL), but not all farmers have implemented this technique because they are still tends to use hereditary cultivation techniques. The MaturDistrict community has an average sugarcane plantation area of around 0.5 - 2 ha per household with an area of around 700 ha of sugar cane plantations. This shows that the sugar cane agroindustry will not be difficult to get raw materials. In Matur Sub-district, not all sugarcane farmers have brown sugar cane agroindustry (sugar cane processing place into brown sugar/ refinery) and sugar cane farmers usually bring their crops to refineries to processed directly with a rent system. However the influence of the brown sugar cane price on the market can affects farmers to make brown sugar, when at this time the price of sugar cane is low, farmers decide to not process the sugar cane but sell in bars form.

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7 Eurasian Journal of Analytical Chemistry In addition, the management of yields that are not yet optimal makes the raw materials are not directly processed so that the quality and quantity of brown sugar can reduced. In producing brown sugar cane in the Sub-district, regency is still traditionally starting from the process of grinding, cooking and molding. The milling process is carried out in two ways, the traditional method (using livestock energy/ buffalo power as a roller grinder) and a mechanical method using a sugarcane grinding machine. Cane milling/ pressing is done until the sugar cane is completely dry to get more juice. The resulting juice is put into a large container known as

the "kancah" (first filtered using cloth and filters commonly used in the household) to cooked on a heating stove whose fuel of dried bagasse resulting from grinding, wood and twigs as well as sweet bark leaves. The foam removal is carried out during the cooking process assist by srumbung (a circle made of woven bamboo) so the bubbling bubbles will not spill (stick in srumbung). Cooking is done until the juice thickens and is ready to be printed which is usually indicated by hardened juice and feels crisp when eaten after dipping it in cold water and has reduced foam. Furthermore, the process of molding sap by using materials from bamboo, shell and congklak (previously soaked first and until the sap is not sticky when molded) where the thick juice is stirred evenly and poured in the mold. These mold, called brown sugar cane/saka/gulo Lawang, are manually packaged using dried banana leaves (called "Karisiak leaves"), plastic and plastic sacks. The production process of brown sugar cane is classified as a simple and easy process to be implemented so in general in Agam Regency this agro-industry is managed in small-scale form enterprises. As a small or micro agro-industry, the labor utilized in the GMT agro-industry amounts to 4-5 people where even this labor can obtained easily because it is sufficiently available in the Matur Subdistrict itself. Moreover, the process of making brown sugar has been carried out for generations which does not require special expertise. Unlike the case when milling with a machine where a skilled worker is needed to operate the grinding machine because the operator's skills will affect its production capacity. And indeed the number of skilled workers in operating this grinding machine is limited. Moreover, even in running its business, in general the brown sugar agroindustry in Matur Sub-district has not implemented business management aspects as well as the deficiency of transparent accounting, there is no proper control between the availability of raw materials and the production process to fill the market demand and others. Other things because this business is a family business/ private property and the management is still simple or in a family way. The brown sugar produced has a sweet taste and a distinctive aroma which is popular in the community. The form of brown sugar is still diverse and there is still dirt found due to the traditional processing. Therefore, by observation (quality tests have not

been carried out in the laboratory) the quality of the results obtained is still low. Demand for brown sugar that has been consumed by the people, especially the people of Sumatra Barat, to make traditional snacks/ foods such as kolak, serabi, ongol-ongol, lapek and others, are continues to increase because currently brown sugar has been used as a substitute/ substitute product of granulated sugar, and there is a demand from the snack food industry, soy sauce and herbal medicine and others. In the distribution of brown sugar cane to get a consumers, it is usually done through by 2 channels, are traders who come to the factory and some are directly sold to retailers in traditional markets. These sugar can also to trade outside Sumatra Barat such as in Riau, Jambi, Bengkulu and others. In marketing of the brown sugar, the farmers/ entrepreneurs of the **1 brown sugar in the** Matur Sub-district had nothing to do because this brown sugar had been around for a long time and had been known by all people, especially in Sumatra Barat. Moreover, very small of the sugar cane agro-industry is diversifying its products in refined sugar/ brown sugar form which in the cooking process is always stirred until crushed and better known as gula semut. Even the promotion should still be done in addition to introducing our products to the public, promotions also aim to attract market share and prevent new competitors. At present the Agam Regency government is actively promoting sugarcane cultivation to overcome and increase sugarcane production both in quantity, quality and sustainability. This is done through the provision of quality seeds and guidance on farming techniques (especially cropping patterns that can produce the best sugarcane production) to farmer groups and provide assistance to sugar cane grinding machines/ tools to the Joint Business Group.

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Nofialdi et.al Brown Sugar Cane Agroindustry Development Strategy Internal and external factors observed are strengths, weaknesses, opportunities and threats from agro-industries which are include the aspects of raw materials, production processes, marketing and support. Based on the study of literature **1 from several**

research reports and journals relating to the development of sugar cane processing, a number of factors become strengths and weaknesses for the internal matrix as well as several opportunities and threats for the external matrix of agro-industry. IFE and EFE can be seen in the Appendix. From the results by the identification of internal and external factors above can be formulated the development strategy of brown sugar agroindustry using the IE matrix. The IE matrix is an analytical framework based on the final summary: evaluation of internal factors (IFE) and external factors (EFE) The final score of the IFE matrix: 3.063 and the final score of the EFE matrix: 3.511. If IFE > EFE shows considerable opportunities to formulate effective strategies to exploit their strengths and minimize weaknesses. This value indicates that the choices are (1) intensive strategies in market penetration, market development and product development, (2) integration strategies such as backward integration, forward integration and product integration. Alternative strategies has identified as: (1) Expanding the area for planting raw materials. (2) Increase production capacity to fill demand. (3) Cooperating with farmers who supply raw materials. (4) Developing the markets. (5) Diversifying similar products. (6) Optimizing the processing of raw materials by setting harvest schedules. (7) Improve product quality to be able to struggle. (8) Strengthening farmer institutions with farmer groups and market development cooperatives. (9) Extending product distribution channels (market development). (10) Applying processing technology. (11) Improving operator skill. (12) Making plan and control of production. (13) Promoting for market share. (14) Taking for business license

Based on the valuation analysis with the Exponential Comparison Method of the aspects of Benefit, Cost, Opportunity and Risk (BCOR) identified the highest value alternatives are: (1) Increasing production capacity to fill demand, (2) Collaborating with suppliers of raw materials, (3) Doing market development. (4) Improving product quality to be able to compete, (5) Improving operator skills, (6) Making production plan and control, (7) Expanding the raw material planting area. Applying processing technology, (8) Promoting.

CONCLUSIONS AND RECOMMENDATION In the processing of sugar cane into brown sugar cane in Sub-district of Matur is still done by traditionally starting from the

process of grinding, cooking, molding and packaging. In the grinding process there is already done by using a grinding machine, ¹⁰ in addition to the traditional method of using livestock energy/ buffalo to rotate the roller grinder. The low quality and quantity of brown sugar cane production in Matur Sub-district. Based on the identification of internal factors (strengths and weaknesses) and external factors (opportunities and threats) using the IE Matrix, alternative business strategies that can be carried out are: (1) Increasing production capacity to fill demand, (2) Cooperating with suppliers of raw materials, (3) Developing markets. (4) Improving product quality to be able to compete, (5) Improving operator skills, (6) Conducting production planning and control, (7) Expanding the raw material planting area. Applying processing technology, (8) Promoting.

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¹ Eurasian Journal of Analytical Chemistry The recommendation of this research is the improving the social entrepreneurship with the involvement of local governments, universities and local entrepreneurs. REFERENCES [1] Bahrun, N.E. (2016). Business Development Strategy for Brown Sugar Sugar Processing in Bukari Batabuah, Canduang Subdistrict, Agam District [Bachelor Thesis]. Padang: Universitas Andalas. [2] David, R.F. (2012). ² Strategic Management Concepts & Cases. Pearson Academic; 14th edition [3] Porter, M.E. (2007). Towards a Dynamic Theory of Strategy. Strategic Management Journal, 12, 95–117. [4] Agricultural Research and Development Agency. (2007). Prospects and Development of Sugarcane Agribusiness. Second Edition. Agroinovasi Magazine. Agricultural Research and Development Agency Ministry of Agriculture. [5] Darma, R., Tenriawaru, N., & Sallatu, A. (2013). Integrasi Gula Merah Tebu dan Ternak Sapi Sebagai Penggerak Ekonomi Pedesaan. <http://gula-merah.net/>. Accessed in Nov, 2013. [6] Fimalista, N., Nofialdi, N., ³ & Azriani, Z. (2018). Analysis of Value Added Distribution of Brown Sugar (Saka) Agroindustry in Bukik Batabuah Village Canduang Sub-district Agam Regency. ¹² Indonesian Journal of Agricultural Research, 1(1), 42-50. [7] Kasryno. (1992). General Policy of Indonesian Agricultural Mechanization. Seminar Paper

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Factor Assessment Number Strengths Weight Rating Weighted Score 1 Agroecology

suitable for sugarcane cultivation 0,068 3,667 0,248 2 Availability and easy to get raw

materials 0,073 3,667 0,267 3 The process of processing brown sugar is easy and simple

0,063 3,333 0,208 4 Availability of experienced labor 0,063 3,667 0,229 5 The

production of brown sugar has tastes and distinctive aroma 0,063 4,000 0,250 6 Low

production costs 0,068 3,333 0,226 7 Availability of local markets and collecting traders

0,078 4,667 0,365 8 Natural sweeteners without preservatives 0,063 4,667 0,292 9

Transportation and communication are available 0,068 4,333 0,293 Weaknesses 1

Limited farmers' capital 0,068 1,667 0,113 2 Simple technology and sugarcane production

productivity and the processing of brown sugar are still low. 0,068 1,667 0,113 3 The

processing process still used firewood 0,078 2,000 0,156 4 There is no standardization of

brown sugar products 0,063 1,333 0,083 5 There is no business management and no

legal entity 0,057 2,000 0,115 6 Processing location is not clean 0,063 1,667 0,104

Total 1 3,063

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Nofialdi et.al Appendix 2: Results of Assessment of

External Factors Number Opportunities 14 Weight Rating Weighted Score 1 Land

availability for sugarcane expansion 0,101 4,000 0,403 2 Increased demand for brown
 sugar for the industry 0,108 3,667 0,396 3 The market potential both at around area and
 abroad 0,108 3,667 0,396 4 Customer loyalty 0,101 4,667 0,470 5 The support from the
 regional government and ministries 0,101 4,000 0,403 6 There are an alternative
 technologies **1 for processing brown sugar** which are environmentally friendly
 0,086 4,000 0,345 7 Ease of credit for group SMEs and cooperatives
 0,094 4,000 0,374 Threats **1** There are competitors **of brown sugar from** other regions
 and palm sugar 0,065 2,667 0,173 2 Growth of a brown sugar processing industry with
 large capacity and with better technology 0,086 2,000 0,173 3 The price is still determined
 by the collection trader (oligopsoni market) 0,072 2,333 0,168 4 Free trade of the Asean
 Economic Community 0,079 2,667 0,211 Total 1 3,511 Appendix3: Assessment Results
 of Exponential Comparison Method of Benefit, Cost, Opportunity and Risk (BCOR) Numb
 er Alternative Strategy Aspect Total B C O R MPE 1 Expanding the raw material planting
 area. 5 4 4 5 18 2 Increase production capacity to fill demand. 5 5 5 4 19 3 Collaborate
 with farmers supplying raw materials. 5 5 5 4 19 4 Developing the market. 5 5 5 4 19 5
 Diversify similar products. 4 3 4 4 15 6 Optimizing the processing of raw materials by
 setting harvest schedules. 5 4 5 3 17 7 Improve product quality to be able to struggle. 5 5 5
 4 19 8 **1 Strengthening farmer institutions with farmer groups and** market development
 cooperatives. **9** Adding product distribution channels (market development). 5 4 4 4 17
 10 Implement processing technology. 5 4 5 4 18 11 Improving operator skills. 4 5 5 5 19 12
 Planning and controlling production. 5 4 5 5 19 13 Promoting 5 4 5 4 18 14 Taking
 business license 4 3 5 4 16

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