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Development Strategy of Palm Sugar Product (Case Study: Garunggang Village, Kuala Subdistrict, Langkat District, North Sumatera)

Strategi Pengembangan Produk Gula Aren (Studi Kasus: Desa Garunggang, Kecamatan Kuala, Kabupaten Langkat, Sumatera Utara)

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ABSTRACT

This study aims to analyze the internal factors that influence the development of palm sugar products in Garunggang Village, to find out the external factors that influence the development of palm sugar products in Garunggang Village, to analyze the strategy for developing palm sugar products. The determination of the research area was carried out purposively or intentionally, namely in Garunggang Village, Kuala District, Langkat Regency, North Sumatra Province. The sampling method in this study was carried out by census with a sample size of 45 people. Analysis method used was qualitative descriptive and used a SWOT matrix and QSPM. Based on the results of the study, the strength factors are: Palm Sugar is in great demand by consumers, The product has several size variants, The manufacturer collaborates with the North Sumatra UMKM service, The raw materials used are selected quality palm sap, Already has a business license, Affordable price, Has its own brand, Palm Sugar Does not use artificial sweeteners, Product shelf life is 1 year, Attractive and safe packaging. Weakness factors are: Production location is not strategic enough, Online promotion and marketing are not optimal, Sales do not use online marketing media, Limited market segment, Easily damaged if not stored properly. Opportunity factors: Being one of USU's fostered villages, There is training on good product marketing, There is free incentive assistance for labels (composition, Halal, MUI), Technological developments that can help spread information and market faster, Raw materials are easily obtained, Participating in exhibitions held by certain parties. Threat factors: Unstable production of palm sap, The existence of new similar products with cheaper prices, Products are easily imitated, The existence of new and old competitors, Inadequate infrastructure, Unstable internet network connection. Based on the SWOT analysis diagram, it is known that the company's position is in quadrant 1 supporting an aggressive strategy. Based on the order of alternative SWOT strategies, Strength - Opportunity (SO) produces the highest weight. Strength–Opportunity (SO) strategy: use technology for marketing, highlight

product benefits, join trainings and exhibitions, and utilize labeling support to expand market reach.

Keywords: Palm Sugar Product, Development Strategy, Swot Analysis & QSPM

ABSTRAK

Penelitian ini bertujuan untuk menganalisis faktor-faktor internal yang mempengaruhi pengembangan produk gula aren di Desa Garunggang, untuk mengetahui faktor-faktor eksternal yang mempengaruhi pengembangan produk gula aren di Desa Garunggang, untuk menganalisis strategi pengembangan produk gula aren. Penentuan daerah penelitian dilakukan secara purposive atau sengaja yaitu di Desa Garunggang, Kecamatan Kuala, Kabupaten Langkat, Provinsi Sumatera Utara. Metode pengambilan sampel dalam penelitian ini dilakukan secara sensus dengan jumlah sampel sebanyak 45 orang. Metode analisis yang digunakan adalah deskriptif kualitatif dan menggunakan matriks SWOT dan QSPM. Berdasarkan hasil penelitian, faktor kekuatan (strength) adalah: Gula Aren banyak diminati oleh konsumen, Produk memiliki beberapa varian ukuran, Produsen bekerjasama dengan dinas UMKM Sumatera Utara, Bahan baku yang digunakan adalah nira aren pilihan yang berkualitas, Sudah memiliki izin usaha, Harga terjangkau, Memiliki merek sendiri, Gula Aren tidak menggunakan pemanis buatan, Daya tahan produk 1 tahun, Kemasan menarik dan aman. Faktor-faktor kelemahannya adalah: Lokasi produksi kurang strategis, Promosi dan pemasaran online belum optimal, Penjualan belum menggunakan media pemasaran online, Segmen pasar yang terbatas, Mudah rusak jika tidak disimpan dengan baik. Faktor peluang: Menjadi salah satu desa binaan USU, Adanya pelatihan tentang pemasaran produk yang baik, Adanya bantuan insentif gratis untuk label (komposisi, Halal, MUI), Perkembangan teknologi yang dapat membantu menyebarkan informasi dan memasarkan dengan lebih cepat, Bahan baku yang mudah didapatkan, Mengikuti pameran yang diadakan oleh pihak-pihak tertentu. Faktor ancaman: Produksi nira aren yang tidak stabil, Adanya produk baru yang sejenis dengan harga yang lebih murah, Produk mudah ditiru, Adanya pesaing baru dan lama, Infrastruktur yang kurang memadai, Koneksi jaringan internet yang tidak stabil. Berdasarkan diagram analisis SWOT diketahui bahwa posisi perusahaan berada pada kuadran 1 yang mendukung strategi agresif. Berdasarkan urutan alternatif strategi SWOT, Strength - Opportunity (SO) menghasilkan bobot tertinggi. Kekuatan-Peluang.

Kata kunci: *Produk Gula Kelapa Sawit, Strategi Pengembangan, Analisis Swot & QSPM*

INTRODUCTION

Indonesia is recognized as the largest producer of palm sugar, according to Persistence Market Research. Data from Global Industry Analysts in *Palm Sugar: Global Market Trajectory & Analytics* estimated that the global palm sugar market

reached USD 1.7 billion in 2020 and is projected to grow to USD 2 billion by 2027 (Rosyidah et al., 2023). The economic potential of the sugar palm tree (*Arenga pinnata* Merr.) is significant, as evidenced by its extensive utilization by local communities. The fruit of the tree is processed into *kolang-kaling* (*sugar palm fruit*), a delicacy enjoyed across various social groups. Its leaves are used as raw material for handicrafts and roofing, while the roots are often processed for medicinal purposes. The trunk yields *ijuk* (fiber) and *lidi* (midribs), both of which have economic value. In its younger stage, the trunk contains edible starch, whereas in older stages, it can be repurposed into household furnishings. Additionally, palm sap can be processed into beverages and refined into palm sugar, which plays a crucial role in improving rural household income (Rangkuti et al., 2020; Harahap & Syawaluddin, 2021; Hardiansyah et al., 2025). These diverse uses underpin the common perception that nearly every part of the sugar palm tree can provide economic benefits for local communities (Hardiansyah et al., 2025).

The sugar palm (*Arenga pinnata* Merr.) is a plant species with high economic potential. It can thrive in a wide range of soil conditions, including loamy, calcareous, and sandy soils. Palm sugar, derived from its sap, is a locally sourced commodity that grows naturally and is cultivated on community-owned land (Yunianti et al., 2020). Furthermore, sugar palm adapts well to diverse agroclimatic conditions (Mariati, 2013) and almost all parts of the plant—including the roots, trunk, leaves, and fruit—can be utilized (Nitawaro et al., 2024). The crop's potential for development is further supported by the availability of appropriate technologies and its adaptability to different types of terrain, although several challenges still persist (Effendi, 2010). However, the processing of palm sugar by local communities remains traditional and small-scale, leading to suboptimal economic outcomes (Makkarennu et al., 2018; Anggraini et al., 2025).

Palm sugar is widely recognized in rural communities as a natural sweetener for food and beverages, often used as a substitute for refined white sugar. It is produced by tapping the sap of sugar palms and boiling it to reduce its water content until it solidifies. The most common forms are molded sugar (*gula cetak*) and granulated sugar (*gula semut*) (Husdiana et al., 2025). Molded sugar is generally

preferred for its ease of storage and longer shelf life.

Despite this potential, in the village that serves as the research location, there is a lack of concrete development strategies for the palm sugar industry. Field observations indicate that palm sugar production is still carried out independently by individual farmers, without coordination or support from the village government. No formal village-owned enterprise (*BUMDes*) or cooperative manages the production, processing, or marketing. Furthermore, the village lacks a clearly defined vision and mission for economic development, and there is minimal collaboration between producers and local authorities. These conditions contribute to inefficiencies, low added value, and limited market reach for the palm sugar produced.

Given these challenges, it becomes essential to conduct a strategic development study to identify feasible directions and action plans for improving the local palm sugar industry. The research is aimed at formulating appropriate development strategies by analyzing internal and external factors that influence the sustainability of palm sugar production. The selected village reflects the broader issues faced by many rural communities in Indonesia, making it a relevant case for strategic analysis that could serve as a model for similar regions.

The production of palm sugar significantly contributes to increasing farmers' household income. The processing of palm sugar requires relatively low capital, especially when farmers cultivate their own sugar palm trees. It also does not demand highly skilled labor and still relies on simple, traditional tools in its production process (Gunawan et al., 2023). As a result, many rural households engage in small-scale, home-based palm sugar production as a means of supplementing their income (Radam & Rezekiah, 2015, as cited in (Husdiana et al., 2025).

One of the key challenges in the development of palm sugar lies in the low quality of the final product. Although an Indonesian National Standard (SNI) has been established for this derivative product, the validity of the analytical method used to measure sucrose content—the main component—remains questionable (Pontoh, 2016). Palm sugar derived from sugar palm sap possesses several

advantages over cane sugar, including a broader range of nutrients, antioxidant properties, a lower glycemic index, dietary fiber, and various health benefits (Hutami et al., 2023). Traditionally, palm sugar is produced by small-scale or household-level processors using simple methods. The quality of the final product is influenced by several factors, namely the quality of the sap, the cooking process, and the packaging technique (Muchaymien et al., 2014; Wahyuni Haris et al., 2020).

RESEARCH METHOD

The research location was determined purposively, namely in Garunggang Village, Kuala Subdistrict, Langkat Regency, North Sumatra Province. The population in this study consisted of farmers and producers involved in palm sugar processing in Garunggang Village. A total of 45 respondents as the research sample. The sampling method used was a census technique, in which the entire population was included as the research sample.

Data collection involved both primary and secondary sources. Primary data were obtained through direct interviews with palm sugar entrepreneurs in the study area. Data analysis employed a descriptive method using primary data, and a SWOT analysis to qualitatively assess the prospects of palm sugar products by identifying strengths, weaknesses, opportunities, and threats. The SWOT matrix was used as a tool to formulate QSPM strategic factors relevant to the development of palm sugar businesses.

RESULTS AND DISCUSSION

This table is the Internal Strategic Factors Analysis Summary (IFAS) that used to analyze the internal factors to development strategy of palm sugar product:

Table 1 Internal Strategic Factors Analysis Summary

No	Internal Factors	Total Score	Weight	Relative Weight	Rating	Weighted Score
Strength Indicators						
1	Palm sugar is highly demanded by consumers	136	3,02	0,08	3	0,25
2	The product is available in various packaging sizes	106	2,35	0,06	2	0,13

3	Producers collaborate with the North Sumatra UMKM agency	100	2,22	0,06	2	0,12
4	High-quality palm sap is used as raw material	153	3,4	0,09	3	0,28
5	Legally registered business	106	2,35	0,06	2	0,13
6	Affordable price	134	2,97	0,08	3	0,25
7	Has its own brand	100	2,22	0,06	2	0,12
8	Free from artificial sweeteners	165	3,66	0,10	3	0,31
9	Shelf life of up to 1 year	121	2,68	0,07	3	0,22
10	Attractive and secure packaging	97	2,15	0,06	2	0,12
Subtotal		**1218**	**27,02**	**0,76**	**25**	**1,97**
Weakness Indicators						
1	Production location is not strategically positioned	45	1,7	0,04	2	0,09
2	Suboptimal online promotion and marketing	36	1,6	0,04	2	0,09
3	Sales do not utilize online marketing platforms	32	1,6	0,04	2	0,09
4	Limited market segmentation	42	1,73	0,04	2	0,09
5	Product is fragile if not stored properly	41	1,73	0,04	2	0,09
Subtotal		**196**	**8,36**	**0,23**	**10**	**0,47**
Total		**1414**	**35,38**	**1**		**2,44**
Strength–Weakness Score = 1,50						

Table 1 illustrates that the highest relative weight among the strength indicators is attributed to the absence of artificial sweeteners in the palm sugar product, with a relative weight of 0.10, followed by the use of high-quality selected palm sap as raw material, with a relative weight of 0.09. Meanwhile, the weakness indicators—namely non-strategic production location, suboptimal promotion and online marketing, absence of digital marketing platforms, limited market segmentation, and the fact that the product is easily damaged if not stored properly—each share a relative weight of 0.04.

This table is the Eksternal Strategic Factors Analysis Summary (EFAS) that used to analyze the eksternal factors to development strategy of palm sugar product:

Table 2 Eksternal Strategic Factors Analysis Summary

No	Internal Factors	Total Score	Weight	Relative Weight	Rating	Weighted Score
Opportunity Indicators						
1	Designated as one of USU's development villages	173	3,84	0,13	4	0,52
2	Availability of training on effective product marketing	139	3,09	0,10	3	0,31
3	Access to free incentives for product labeling (composition, Halal certification, MUI)	142	3,16	0,10	3	0,32
4	Technological advancements enabling faster information dissemination and digital marketing	158	3,51	0,12	4	0,48
5	Easy access to raw materials	131	2,91	0,10	3	0,30
6	Participation in exhibitions organized by various institutions	142	3,16	0,10	3	0,32
Subtotal		**885**	**19,67**	**0,68**		**2,28**
Threat Indicators						
1	Unstable sap production	68	1,51	0,05	2	0,10
2	Emergence of similar lower-priced competing products	81	1,8	0,06	2	0,12
3	Products are easy to replicate	87	1,93	0,06	2	0,13
4	Presence of new and existing competitors	63	1,4	0,04	**1**	0,04
5	Inadequate infrastructure	56	1,24	0,04	**1**	0,04
6	Unstable internet connectivity	68	1,51	0,05	**2**	0,10
Subtotal		**423**	**9,4**	**0,32**		**0,55**
Total		**1308**	**29,07**	**1**		**2,83**
Opportunity–Threat Score = 1,73						

Table 2 indicates that the highest relative weight among the opportunity indicators is associated with the village being designated as one of USU's development areas, with a relative weight of 0.13. This is followed by the opportunity presented by technological advancements, which facilitate faster dissemination of information and more efficient product marketing, with a relative weight of 0.12.

Meanwhile, the highest relative weights among the threat indicators are found in the emergence of similar new products at lower prices and the ease with which the product can be imitated, each with a relative weight of 0.06.

SWOT Analysis Diagram

This diagram serves as a tool to visually map the development strategy based on internal and external factor scores. According to Table 17, the difference between the internal factors strengths and weaknesses is 1.50, while the difference between the external factors opportunities and threats is 1.73. These values determine the strategic position of the palm sugar product development initiative, which is plotted on the SWOT coordinate diagram as shown in the following figure.

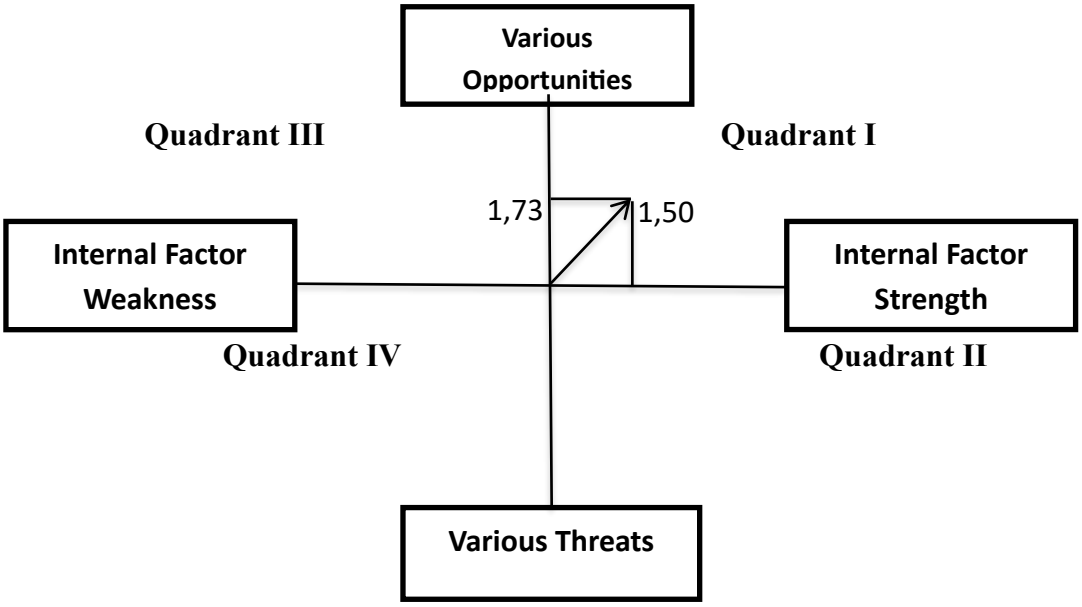

Figure1 SWOT Analysis Diagram

Figure 1 indicates that the coordinate point on the SWOT analysis diagram lies in Quadrant I, which supports an aggressive strategy. This suggests that the enterprise is currently in a highly favorable position. The palm sugar product demonstrates both strong internal capabilities and significant external opportunities, allowing the business to fully leverage its strengths to capitalize on available opportunities.

The recommended strategic approach under these conditions is to adopt a growth-oriented strategy, emphasizing expansion and proactive development efforts to optimize potential and strengthen market presence.

SWOT Matrix

The SWOT matrix serves as a strategic tool to assist business actors in aligning their internal strengths and weaknesses with external opportunities and threats faced by the enterprise. By analyzing both internal aspects (strengths and weaknesses) and external aspects (opportunities and threats), as previously discussed, several strategic alternatives can be formulated to support the development of the palm sugar product.

Table 3 SWOT Matrix

IFAS / EFAS	**Strengths (S)** 1.High consumer demand for palm sugar 2. Product is available in various sizes 3. Collaboration with the North Sumatra MSME Agency 4. High-quality palm sap as raw material 5. Legally registered business 6. Affordable price 7. Own brand identity 8. Free from artificial sweeteners 9. Shelf life up to one year 10. Attractive and safe packaging	**Weaknesses (W)** 1. Poor strategic production location 2. Limited promotion and online marketing 3. Sales not yet utilizing online platforms 4. Limited market segmentation 5. Product easily damaged if not stored properly
Opportunity (O) 1. Designated as one of USU's development villages 2. Availability of training on product marketing 3. Free labeling assistance (composition, Halal, MUI) 4. Technological advancements to improve marketing reach 5. Readily available raw materials 6. Participation in trade exhibitions	**Strategy (SO)** 1. Leverage technological advancements to improve marketing by highlighting product variants, high-quality sap, absence of artificial sweeteners, and long shelf life. 2. Utilize marketing training, labeling assistance, and participation in exhibitions to increase product recognition and attract consumers across segments.	**Strategy (WO)** 1. Improve online marketing efforts through training and participation in exhibitions. 2. Utilize digital technology and online platforms to boost sales and expand market segmentation.

Threats (T)	Strategy (ST)	Strategi (WT)
1. Unstable sap production 2. Similar competing products with lower prices 3. Easy product imitation 4. Emergence of new and existing competitors 5. Inadequate infrastructure 6. Unstable internet connectivity	1. Maintain product quality by emphasizing the use of natural ingredients, high-quality sap, and competitive pricing to stay ahead of competitors. 2. Strengthen collaboration with the North Sumatra MSME Agency to address infrastructure issues and increase community interest in palm sugar.	1. Improve sales and competitiveness through enhanced online promotion and marketing to counter lower-priced products and growing competition. 2. Expand limited market segmentation by improving internet connectivity to enable effective use of online marketing platforms.

Quantitative Strategic Planning Matrix (QSPM)

The internal and external factor analyses, which were previously conducted and summarized in the IFE (Internal Factor Evaluation) and EFE (External Factor Evaluation) matrices, along with the strategy alignment using the IE Matrix and SWOT Matrix, serve as the foundation for the next stage of strategic analysis: decision-making through the Quantitative Strategic Planning Matrix (QSPM).

The QSPM provides a structured analytical framework for objectively evaluating and prioritizing alternative strategies by assessing their relative attractiveness. The following table presents a summary of the calculated alternative strategies derived through the QSPM approach.

Table 4 Summary of QSPM Results and Strategic Priorities

No	Alternatif Strategi	TAS(Total Attractiveness Score)	Priority
1	Market Penetration Strategy	5,51	6
2	Product Quality and Service Maintenance Strategy	5,53	5
3	Functional-Level Strategy	5,67	3
4	Corporate-Level Strategy	5,60	4
5	Business-Level Strategy	5,50	7
6	Stability Strategy	5,84	1
7	Intensive Strategy	5,73	2

Table 4 presents the results of the QSPM analysis for alternative strategies, ranked from the highest to the lowest Total Attractiveness Score (TAS). These

results provide a clear framework for prioritizing strategic implementation in the development of the palm sugar processing business within the research area.

The prioritized order of alternative strategies, based on the QSPM analysis, is as follows: Stability Strategy, Intensive Strategy, Functional-Level Strategy, Corporate-Level Strategy, Product Quality and Service Maintenance Strategy, Market Penetration Strategy, Business-Level Strategy

These findings serve as a strategic guideline for decision-makers and business operators to effectively allocate resources and focus on initiatives that align with both internal capabilities and external opportunities in the palm sugar sector.

The highest-ranking alternative strategy based on the SWOT analysis is the Strength–Opportunity (SO) strategy. This strategic position indicates that the business possesses strong internal capabilities that align well with promising external opportunities.

The SO strategies identified in the SWOT matrix include: Leveraging technological advancements to disseminate information and market the product more efficiently. This is supported by key product attributes such as the availability of various size options, the use of high-quality selected palm sap, the absence of artificial sweeteners, and a shelf life of up to one year. Utilizing available training programs on effective marketing, as well as taking advantage of free incentives for product labeling (e.g., composition, Halal certification, MUI) and participating in trade exhibitions held by various stakeholders. These efforts aim to increase product visibility and attract broader consumer interest across different market segments.

Based on the calculation of alternative strategies, the QSPM result of 5.84 indicates that the most appropriate course of action is to prioritize the implementation of a stability strategy. This strategy emphasizes maintaining the current scope of products, markets, and business functions, with the primary objective of improving efficiency across all operational areas to enhance overall performance and profitability.

In applying the stability strategy, the palm sugar processing enterprise in the study area adopts a focused approach—sustaining its current operations, product

offerings, and market presence without pursuing significant expansion or transformation. This approach allows the business to consolidate its internal resources and streamline operations while maintaining its competitive position.

However, despite its benefits in providing stability and minimizing risk, the no-change strategy also carries potential drawbacks. It can lead to organizational complacency, leaving the company vulnerable to competitive threats or shifts in market dynamics. Moreover, this approach may restrict the company's ability to seize new opportunities for growth and innovation.

Therefore, while the stability strategy may be effective under specific circumstances, it is essential for businesses to periodically reassess their strategic approach to ensure it remains aligned with long-term goals and evolving market conditions.

CONCLUSION

Based on the research, the development of palm sugar is influenced by several factors. Strengths include high demand, affordable price, strong branding, no artificial sweeteners, long shelf life, and attractive packaging. Weaknesses involve non-strategic location, limited online marketing, and narrow market reach. Opportunities include being a USU development village, access to marketing training, free labeling support (composition, halal, MUI), easy raw material access, and participation in exhibitions. Threats include unstable sap supply, cheaper similar products, easy imitation, strong competition, poor infrastructure, and weak internet. The SWOT analysis places the product in Quadrant I, suggesting a Strength–Opportunity (SO) strategy: use technology for marketing, highlight product benefits, join trainings and exhibitions, and utilize labeling support to expand market reach.

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