



Diversification Strategy for Sugar Palm Products in Rejang Lebong Regency, Bengkulu Province

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ABSTRACT

The sugar palm is one of the most important commodities in the Rejang Lebong Regency. Sugar palms have not been widely processed into value-added products because the community solely produces brown sugar. The goal of this study is to identify potential challenges and propose product diversification strategies that will boost the value added and sustainability of sugar palm firms in the Rejang Lebong Regency. This study was carried out in the Rejang Lebong Regency during August to October 2023. Data were gathered through observations, focus group discussions, and in-depth interviews. A fishbone diagram was used to identify potential and map product diversification challenges, while palm product diversification plans were developed using a strengths, weaknesses, opportunities, and threats (SWOT) matrix. The research results indicated that the diversification of sugar palm products is hindered by limited human resources in using technological innovations, restricted use of agricultural machinery, insufficient business partnerships, and local government programs that are not yet integrated into the development of product diversification. The strategy for sugar palm product diversification can be implemented by developing market alliances and improving processing technologies for MSMEs, with government program assistance and access to funding. This technique is expected to improve the quality and pricing of sugar palm products at the farmer level.

Keywords: added value, aren palm, *Arenga pinnata* Merr, diversification strategy

INTRODUCTION

The palm (*Arenga pinnata* Merr.) is an adaptable palm plant (Barlina *et al.* 2020; Purwati and Nugrahini 2018; Sebayang 2016). Palm plants are multipurpose plants that grow naturally in forests and on community-owned property (Kusrini *et al.* 2023). Farmers grow palm as an intercrop for coffee and pepper, or as an agroforestry crop for reforestation and vital land protection (Mulyanie and Romdani 2018). Palm trees also mitigate erosion, flooding, and landslides (Azhar *et al.* 2021; Mulyanie and Romdani 2018). Palm

plantations also yield industrial materials (Assah and Indriaty 2018; Wiryatmadja 2022). Almost every component of the tree is useful and can be utilized for various purposes, from the physical elements (roots, stems, leaves, palm trees, etc.) to products like as fruits, sap, starch, or flour (Alam-Putra 2021). Palm plants can be turned into both food and nonfood goods. Palm sugar from sap, *kolang kaling* from female fruits, and palm flour/sago from the pith, were all food goods. Meanwhile, nonfood goods like bioethanol are made from sap, ropes and brooms from palm fibers, skewers, *janur* from leaves, and medications from roots (Barlina *et al.* 2020). Furthermore, palm products are frequently employed in handicrafts and construction (Manambangtua *et al.* 2018).

Rejang Lebong Regency is the center of palm production in Bengkulu Province. The palm plantations in this district have grown to 2,280 ha, with a projected palm sugar production of 5,442-tons by 2021 (BPS 2022). The average palm producer owns 0.96 hectares of land and 125 plants (Budiman *et al.* 2013). Cultivated palm cultivars are usually local, with limited yield. Palms are grown as intercrops in coffee fields. Palm plants are underutilized. The local people has historically used palms to produce palm sugar, which has little added value. In fact, palm sap may be processed into high-value products such as ant sugar, liquid sugar, and a range of other delicacies. Previous

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research has shown that processing ant sugar and liquid sugar increases the value of palm products (Bustam and Sabrab, 2021; Faliha *et al.* 2022; Gobel *et al.* 2022; Miftah *et al.* 2018).

The diversification of palm products necessitates government program participation, collaboration with the corporate community, and farmer empowerment. The government can act as a facilitator, connecting producers with the commercial world, increasing farmer capacity, and encouraging downstream production of palm goods through policy implementation (Evalia 2015; Falentino and Baroya 2016; Helmi *et al.* 2021). As a result, the appropriate downstream strategy for palm goods is required, which can be employed as a policy in its development.

Diversification of palm products must be centered on the Rejang Lebong Regency's agriculture system. Agribusiness is a system that encompasses the primary subsystem, from input supply to marketing, and is supported by the agribusiness support subsystem (Amrudin 2021; Pratiwi 2021). The creation of an integrated agribusiness system has been successful in improving the potential of commodities in production center areas for diversification and product added value (Hikmah 2021). Diversifying agricultural goods in the form of raw materials can boost added value and farmer income (Maherawati and Sarbino, 2018). This study intends to identify potential issues and establish solutions for diversifying palm goods in order to boost the added value and sustainability of palm enterprises in the Rejang Lebong Regency. This study's findings are expected to provide comprehensive recommendations for the advancement and sustainability of the palm sector.

METHODS

This study was conducted from August to October 2023 in Rejang Lebong Regency's palm oil production hubs, specifically Selupu Rejang and Sindang Kelingi Districts. Data were gathered through field observations, focus group discussions (FGD), and in-depth interviews with informants. Field observations

were carried out to determine the use of palm product diversification technology. FGD was used to investigate potential support for the palm agribusiness support subsystem (policy, funding, and technology). An interview was done to learn more about the palm agribusiness system, which comprises production inputs, palm cultivation, sap harvesting, result processing, and palm product marketing. FGD resource persons and informants were carefully chosen (purposively) based on their respective competencies and knowledge (Table 1).

The observation results were used to conduct a descriptive analysis of palm product diversification potential. The problem of diversifying palm goods was investigated using a fishbone diagram. Fishbone diagram analysis can be used to examine and identify the major causes of problems or inefficiencies in a system, which is beneficial for quality management and process improvement (Chang 2015; Coccia 2020). The palm oil diversification development strategy was created utilizing a SWOT analysis method. SWOT analysis is a management approach that evaluates the strengths, weaknesses, opportunities, and threats that can affect the performance of an organization, project, or initiative, allowing the organization to understand its relative position in a given business environment or context (Benzaghta *et al.* 2021; Namugenyi *et al.* 2019; Rangkuti 2013).

The primary agribusiness subsystem was used to assess the strengths, weaknesses, possibilities, and threats to palm product diversification in the Rejang Lebong Regency. The agribusiness system for palm product diversification was made up of four primary subsystems: inputs or production, processing, marketing, and supporting services (Andini *et al.* 2023; Iskandar *et al.* 2020). The subsystems that provide inputs or means of production, as well as the processing subsystem, are internal factors that are assessed for their flaws and strengths. Meanwhile, the marketing and supporting service subsystems are external aspects to be assessed in terms of opportunities and threats to palm product diversification.

Table 1 Research informant and interview topics

Informant	Number	Topic of interview	Method
Farmer and sugar palm processor	4	Palm agribusiness system	Interview
Palm processing group	2		
Local traders	3	Strategy for the development of palm product diversification	FGD
Agriculture Service	2		
Bappeda Trade Office	2		
Palm processor	2		
Wholesalers	3		
	1		
	19		

RESULTS AND DISCUSSION

Potential for Diversification of Palm Products in Rejang Lebong Regency

Rejang Lebong Regency is located in the eastern portion of Bengkulu Province, on the Bukit Barisan range. The majority of inhabitants in this district work as farmers, primarily producing robusta coffee and vegetables. People here grow palms as coffee shade plants. In 2022, palm plantations will cover 2,301.95 ha across 14 districts (Table 2). Palm plants may be found in all sub-districts of Rejang Lebong Regency, with the exception of Curup District, which serves as the capital. Sindang Kelingi and Selupu Rejang districts are two production centers with 1,535.55 hectares of planting space, accounting for 68.04% of the total palm area of 2,259.95 ha. Meanwhile, sap production in these two sub-districts is 3,085.89 tons, representing 69.44%.

The presence of palm plants in practically all subdistricts demonstrates that Rejang Lebong Regency has inherent potential for palm expansion. Palm thrives in coastal and highland settings with sloping terrain, sandy clay soil, temperatures between 20–25 °C, and annual rainfall of 1200–3500 mm (Effendi and Fitria 2022). Palms thrive at altitudes ranging from 9–1,400 m above sea level, with optimal conditions around 500–800 m and a minimum annual rainfall of 1200 mm (Sebayang 2016).

Palm is a versatile plant in Rejang Lebong Regency. Farmers plant palm as a coffee shade plant and use the sap to make palm sugar for a daily income. The average palm grower owns 0.96 hectares and 125 plants (Budiman *et al.* 2013b). Regency has four local palm species planted: Elephant, Lime, Kijang, and Semulen ST 1. The Semulen ST 1 variety has been designated as a national superior variety under the Minister of Agriculture's Decree Number 113 of 2019. The release of this improved type opens up new opportunities for increasing palm yield. The Regency

Government is currently developing a palm main garden on government land, utilizing the Semulen ST 1 main tree and encouraging farmers to become palm breeders.

Palm farmers typically convert sap into palm sugar. Among the several palm sugar processors, only one group processes ant sugar: the Sari Aren Group in Air Meles Atas Village, Selupu Rejang District. In addition to palm sugar, this group has made ant sugar and liquid sugar. Marketing is carried out at both the local and regional levels, particularly for ant sugar products. Only the Sari Aren Group has marketed palm sugar in Java through collaborations with hotel and restaurant customers.

Problems in the Development of Palm Product Diversification

The development of palm product diversification in Rejang Lebong Regency faces a number of challenges that limit its full potential. Some of the issues include farmers' lack of knowledge and skills, restricted access to current technology and suitable infrastructure, poor product marketing, and a lack of government support. The issue of product diversification development is intimately tied to the conditions in the primary subsystem of palm agribusiness.

Subsystem of Providing Inputs or Means of Production

The subsystem of providing inputs or production facilities has challenges such as farmers' lack of knowledge of cultivation and harvesting techniques, as well as limited capital. Despite extensive planting, plants do not produce sap optimally due to a lack of knowledge about cultivation technology. Farmers generate 10 kg of palm sugar by processing 70 liters of sap. The amount of sap processed comes from tapping 12 palm tree stems in one day.

Table 2 Palm plantation, production and productivity in Rejang Lebong Regency in 2022

District	Area (ha)	Production of sap (ton)	Productivity (ton/ha)
Curup	0	0	
Curup Utara	16.65	8.25	0.50
Curup Timur	19.90	20.90	1.05
Curup Selatan	28.20	33.90	1.20
Sindang Tengah	43.25	83.62	1.93
Sindang Kelingi	986.40	1,561.77	1.58
Sindang Dataran	384.8	930.00	2.42
Kota Padang	22.90	21.75	0.95
Sindang Beliti Ilir	42.85	27.60	0.64
Bermani Ulu	27.35	47.70	1.74
Bermani Ulu Raya	35.15	46.20	1.31
Padang Ulak Tanding	35.90	54.10	1.51
Binduriang	40.05	50.10	1.25
Sindang Beliti Ulu	24.40	34.05	1.40
Selupu Rejang	549.15	1,524.12	2.78
Total	2,256.95	4,444.06	1.97

Source: BPS 2023.

Farmers use detergent in sap reservoirs to address fermentation issues or increasing acid levels in sap collected. This situation is caused by a lack of attention to food safety and information about alternative technologies. To boost knowledge and change farmers' attitudes, improvements to sap collecting and palm sugar processing must be implemented through counseling and technical training (Adisetya and Rawana 2023; Aprianti *et al.* 2019; Radam and Rezekiyah 2015). Farmers that do not offer detergent for sap storage use simple, traditional harvesting technology. This causes sap to acidify quickly, resulting in low-quality palm sugar products (Marsigit 2016; Sari and Akhiroh 2023; Sonya and Lydia 2021). Palm sugar cannot be converted into palm sugar or liquid sugar due to its low quality (Herlina *et al.* 2021). One of the challenges farmers face while diversifying palm products is the employment of conventional technologies with inadequate technological expertise (Lubis *et al.* 2018).

Due to a lack of funds, several palm sugar growers owe collector traders money. The loan requires farmers to sell their products to the dealers who provided the credit. Because the price is fixed for all qualities, production is not directed toward quality (Intan 2018).

Processing Subsystem

The majority of palm sugar processing firms are modest or household-scale. Palm oil farmers' technique remains simplistic, making product diversification difficult (Hulatali *et al.* 2023; Marsigit 2016). The items produced are confined to palm sugar in various shapes, sizes, and grades. Palm sugar's unique quality is defined by a range of product colors, from reddish brown to dark brown. Palm sugar is manufactured in the shape of various sized coconut shells. The variation in coconut shell size causes the palm sugar produced to be non-uniform, resulting in substandard palm sugar quality (Astuti *et al.* 2019; Fithria *et al.* 2021; Radam and Rezekiyah 2015).

Palm farmers have also avoided using other palm-derived products. Because of their limited knowledge and skills, rookie farmers rely solely on palm sap. The *kolang-kaling* fruit is only prepared as a seasonal food during Ramadhan. *Kolang kaling* fruit peels have not been utilized to make compost or biochar (Azhar *et al.* 2022; Yuniarti *et al.* 2022). Palm fiber is still offered as a raw material that has not been separated from the palm, despite its enormous economic worth.

Marketing Subsystem

Palm farmers exclusively cooperate with village collectors. In South Sumatra Province, village collectors sell palm sugar to meet the local market and *pempek* processing business demand. Pempek makers use palm sugar to manufacture vinegar sauce (Agustiani 2021; Suyatno and Alhanannasir 2022). Almost 90% of Rejang Lebong Regency's palm sugar is sold to suit the demands of the culinary industry.

Pempek makers usually have a customer collector who supplies palm sugar on a continual basis. The majority of palm sugar growers remain unwilling to use technology to promote their products. They prefer to offer things to collectors because they believe it is easier and faster to make money from sales (Ningsih *et al.* 2022). In reality, marketing and sharing information via social media enables the rapid and effective creation of opportunities and a large market share, hence increasing sales turnover (Hasrul 2020).

Farmers do not prioritize palm sugar manufacturing due to the difficulty in obtaining commercial partners. Farmers' lack of knowledge about successful marketing methods, along with limited access to a larger market, exacerbates the situation. Palm sugar artists also have limited information about the possibility for marketing partners or a larger market.

Support Service Subsystem

In Rejang Lebong Regency, the agricultural system's supporting services include financing/capital institutions, research and development, and government policies. Because of the tiny size of their enterprises, palm growers continue to struggle with access to conventional banks. Formal banking is typically more interested in large enterprises since they are deemed more stable and capable of repaying loans, whereas banking is essentially an intermediary organization that connects parties with excess funds with others who require funds (Dharmajaya 2018). Palm growers frequently lack sufficient assets or their holdings do not qualify as collateral, making access to formal banking difficult (Supriyadi *et al.* 2024). Farmers also lack an awareness of the banking goods and services available to them.

Researchers and scholars have conducted extensive research into how to process palms to produce high-quality items. However, many studies are purely theoretical and do not address the real issues that palm farmers face in the field. Farmers do not directly profit from research outcomes since they are typically poorly implemented in the field. Farmers have limited access to information technology. Extension personnel are desperately needed to serve as a link between farmers and technical innovation (Sofia *et al.* 2022).

The palm product diversification program has not been implemented in a coordinated manner by many associated agencies/agencies. The government has also been unable to give access to funding and credit to address capital shortages. Government policies have failed to attract investment, improve access to capital, or foster partnerships with investors. Promotional efforts were also not taken out. In reality, advertising is critical in fostering investment relationships and collaboration. Partnerships can improve both quality and quantity, increasing the added value of palm products (Sulistiyono *et al.* 2022). Access to capital and credit, local government policy and

regulatory support, the implementation of research and development for palm product innovation, and palm artisan farmer training and capacity building are all necessary. Based on the description of the state of palm agriculture in Rejang Lebong Regency, a fishbone diagram can be created to map the issues encountered in the development of palm product diversification, as illustrated in Figure 1.

Palm Product Diversification Development Strategy

• Identified internal factors

The subsystem's strength in terms of providing inputs or production facilities include the abundance of land for palm plantations, the availability of plentiful sap, and the presence of seed breeding firms run by the community and local governments. Palm plantations are found in practically every district in the Regency. Farmers grow palm plants as intermediate/shade plants for coffee plants. Sap-tapped and processed products provide a source of daily revenue for palm farmers, increasing their drive to cultivate palm.

The community and the Regional Government have also conducted seedling breeding activities on the main garden site at Rejang Lebong Regency's Plantation Seed Center. The input subsystem's shortcomings include restricted labor and capital, as well as farmers' knowledge levels (A'yunin *et al.* 2022; Caca, 2023; Miftah *et al.* 2018).

The vast number of palm processors in the Regency contributes to the product processing subsystem's success. The Sari Aren group's diverse product line, which includes palm sugar, ant sugar, and liquid sugar, can serve as a model for other groups looking to expand their enterprises. The shortcoming of this

subsystem is that product variety is still insufficient; the items produced are only palm sugar, with varying quality in shape, size, color, and aroma. Product packaging remains basic due to a lack of agriculture production means (Kurniawan *et al.* 2018; Ratnayani *et al.* 2023; Yudho 2021). The processing subsystem's deficiencies in terms of production facilities and technology utilization remain simple or traditional, and the scale of business is still modest, carried out by palm processing farmer households (Evalia, 2015; Kebrob *et al.* 2021).

• Identified external factors

The marketing subsystem presents an opportunity because the market is still relatively open to palm product diversity. Processed palm products, such as ant sugar with improved packaging, can be offered to hotels and restaurants. Palm sugar prices remain consistent, and there is a large market network to suit the needs of local consumers as well as the culinary industry outside of the province.

The processing subsystem is threatened by the lack of widespread collaboration with investors or consumers other than for palm sugar products due to poor product variety. Subsystem that supports innovation development. Many breakthroughs have emerged from palm product diversification research, providing opportunity for palm processors in the regency to use this technology to meet palm sugar quality criteria and diversify their products. Low access to innovation poses a challenge to this subsystem, limiting product diversification.

In the supporting service subsystem, the government's program in the form of building production centers through a pilot project has been successful in fostering palm diversification in the Sari

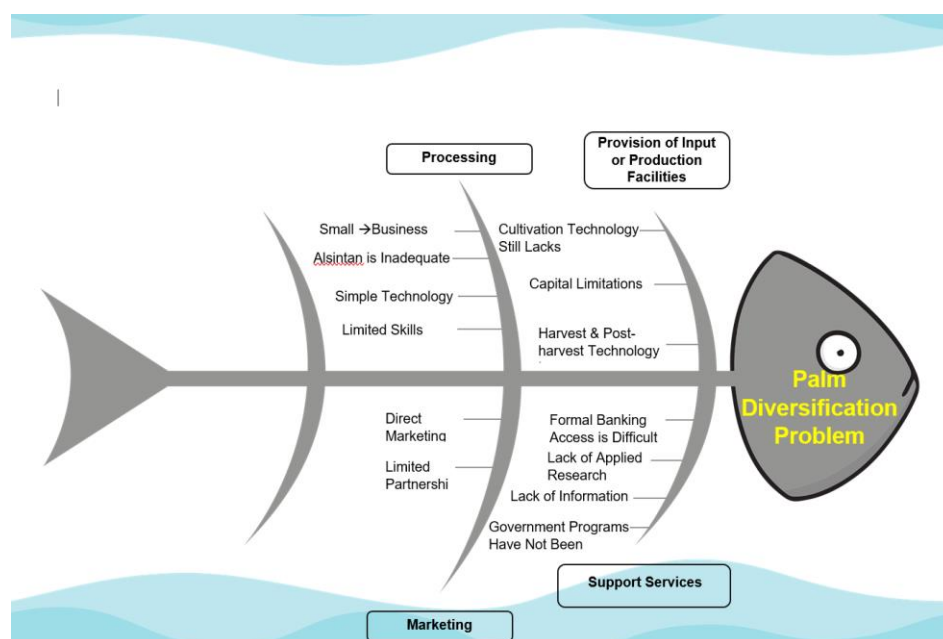


Figure 1 Fishbone diagram of the problem of diversification of palm products in Rejang Lebong Regency.

Aren Group. This can be reproduced in various regions of the production center. Government programs can foster greater collaboration between palm oil processors, investors, and consumers on the Java island. Diversification of palm goods can help to boost the community's economy and regional income. However, local government programs that are still partial and have not been integrated between stakeholders, intensive counseling and assistance for wild businesses, and government promotion to diversify local palm products remain a threat to palm product diversification development.

Opportunities for finance assistance through banking support can be used to lessen palm growers' reliance on collectors. Palm processors can access a variety of low-interest finance programs for micro, mid, and medium-sized firms at government-owned banking institutions to help them diversify their palm products. Farmers' lack of expertise and limited lending arrangements pose a danger to capital development in the palm product diversification sector (Pulungan 2021). Table 3 shows the SWOT analysis of the palm product diversification plan based on the results of internal and external factor identification.

Based on the SWOT table, two strategies can be summarized in the development of palm oil product diversification in Rejang Lebong Regency, namely: (1) utilizing the potential of palm oil available for market development by improving technology, supporting diversification programs, and access to financing; and (2) increasing production capacity through empowering processing farmers to improve the quality, quantity, and diversification of products in order to increase the The first strategy entails involving stakeholders to promote the second strategy of enabling palm farmers or palm processing groups to achieve palm product

diversification. The two strategic proposals must be technically defined, with the cooperation of all relevant stakeholders, to establish an action plan in the form of an integrated program.

The diversification plan for palm products intends to process palm into numerous economic value-added products through innovation in order to meet customer demand. Palm can be processed into a variety of value-added products other than palm sugar, including palm syrup, fermented drinks like *tuak* or *legen*, palm flour, and so on, for use in services and industries. Palm farmers can get a higher price for their palm sugar by processing it into these goods rather than selling it in its raw form. Additionally, palm sugar can be utilized as a raw material in the food and beverage industry, such as a substitute for granulated sugar in food and beverages. Traditional snacks, cakes, and beverages made with palm raw materials can also be used to diversify product offerings.

Strategic Plan for Developing Palm Product Diversification Based on the findings of the SWOT analysis, a strategy plan for palm diversification development can be developed that incorporates the roles of the primary and supporting subsystems in palm agriculture, as shown in Figure 2. The main subsystem's strategy is to develop palm diversification through improvements in the input and production subsystems, as well as the development of production centers through the distribution of high-yielding superior palm seeds and a good cultivation system, particularly in sap harvesting. Meanwhile, in the post-harvest and processing subsystem, infrastructure improvements, more modern processing facilities, product certification, and production operational standards (SOP) are required to ensure that goods are uniform and of high quality (Ariningsih *et al.* 2021).

Table 3 Results of SWOT analysis on the development of palm product diversification in Rejang Lebong Regency in 2023

INTERNAL EXTERNAL	STRENGTH (S) Raw materials for sap are abundant; Production is easy to do; There are quite a lot of processing businesses; The motivation in trying to do palm is quite high; Source of income from a side business	WEAKNESS (W) Lack of product diversification; Alsintan is lacking; The quantity and quality of processors are limited; The quality of palm sugar varies; Limited business scale, innovation capacity and MSME partnerships
	OPPORTUNITY (O) The potential of natural and cultural resources supports; Potential market development prospects; Innovation of research results is widely available; The program to develop palm production centers from the Regional Government is available; There are quite a lot of financing schemes	Utilizing the potential of sap available for market development with technological improvements, support for diversification programs and access to financing Increasing production capacity by utilizing existing potential through empowering MSMEs to improve product quality and quantity as well as increase income
THREAT (T) Market segmentation of diversified products is limited; The program has not been integrated; Mentoring personnel are lacking; Access to capital to banking is difficult; Tied to a collector merchant.	Utilizing the potential of raw materials and motivation of MSMEs to downstream products through market segment expansion programs and strengthening access to capital	Increase the capacity of farmers to diversify and improve product quality to reduce ties with middlemen

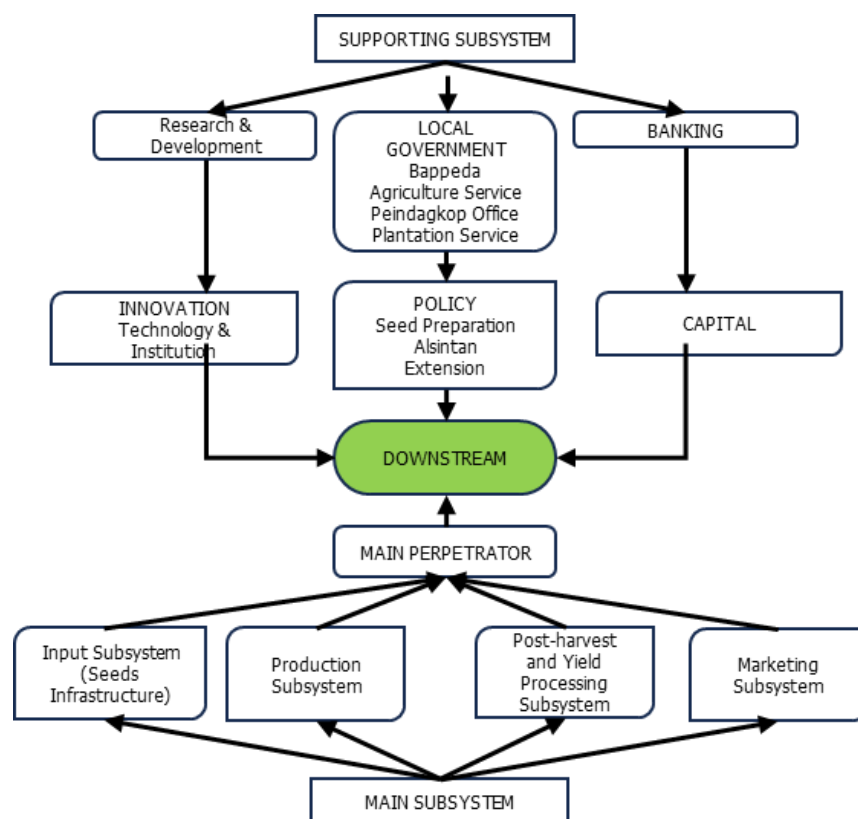


Figure 2 Strategic scheme of integration between the main and supporting subsystems in the diversification of palm products in Rejang Lebong Regency.

The most important strategic direction for the marketing subsystem is to introduce processed palm products to customers in a suitable and successful manner. Good marketing and branding will help enhance product sales and create a positive image. On the other side, it is also required to form partnerships with other parties, such as food and beverage firms, retail outlets, or distribution agents, in order to broaden market reach and improve consumer access. Collaborations with investors might be encouraged for product marketing development (Hartatik *et al.* 2023). Diversifying palm products in Rejang Lebong Regency requires urgent integrated help from many stakeholders within the agribusiness support subsystem. help can take the form of technical innovation training, alsintan help, or capital assistance, all of which are supported by a continual extension program. The use of technology beginning with tapping, collecting, cooking sap, mending molds with uniform sizes, and fixing premium packaging will make the product more appealing and create more added value. As a result, research and extension institutions play a significant and necessary role in supporting the palm product diversification effort. The Rejang Lebong Regency Government must develop a palm diversification development program, particularly in Selupu Rejang and Sindang Kelingi Districts, which have been designated as palm production centers

under the Regent of Rejang Lebong's Decree Number 1 of 2018.

The pilot project for the development of palm oil diversification has been carried out by the Rejang Lebong Regency Government. The government provided Alsintan assistance and assistance in processing palm sugar to the Sari Aren Group in 2013. The Sari Aren group has 60 members who process palm sugar in accordance with the standards needed in the processing of ant sugar and liquid sugar. Members of the Sari Aren Group carry out quality control of the palm sugar products they produce. Quality control is carried out by good sap processing. Palm farmers tap sap in the morning and evening every day. The sap harvested in the morning will be processed in the afternoon with additional sap that has been tapped in the afternoon. This avoids fermentation which results in sap becoming acidic. Applying detergent to sap storage is one way for farmers to avoid acidification. But of course, this is not in accordance with food safety. This quality control has led to an increase in the selling price obtained by farmers. The increase in selling prices received by farmers reached 15.38% of the price of sugar in the market.

The Rejang Lebong Regency Government has implemented a pilot initiative to promote palm oil diversification. In 2013, the government awarded the Sari Aren Group with Alsintan (agriculture production means) aid as well as palm sugar processing help. The

Sari Aren group comprises 60 members who process palm sugar in compliance with the requirements required for the production of palm sugar and liquid sugar. All members are responsible for quality control of the palm sugar products they produce. Quality control is achieved by proper sap processing. Palm farmers collect sap in the morning and evening every day. The sap obtained in the morning will be processed in the afternoon, along with additional sap tapped that day. This avoids fermentation, which causes sap to become acidic. Using detergent to store sap is one method farmers might avoid acidity. However, this is clearly not in conformity with food safety. This quality monitoring has resulted in higher selling prices for farmers. Farmers obtained a 15.38% boost in selling prices compared to market sugar prices.

The Government Sari Aren group's successful product diversification development should be duplicated in other locations with government backing. Replication is one method for spreading technology (Sihombing 2022). By reproducing a successful program in additional regions, the replication location hopes to benefit from the preceding location's expertise and learning. This will lower the likelihood of failure and speed up the realization of beneficial outcomes.

CONCLUSION

Palm commodities in Rejang Lebong Regency have the potential to expand in value through diversification. Several challenges to palm product diversification include palm farmers' lack of knowledge and skills, the use of traditional processing technologies geared toward brown sugar products, a lack of cash, and limited market access. As a result, a plan that blends the primary and secondary subsystems of palm agriculture in the regency is critical in developing a palm product diversification strategy. The plan for expanding palm product diversification is carried out by maximizing the potential of palm for market expansion by enhancing technology, supporting diversification initiatives, and facilitating access to financing. The plan is implemented by increasing farmer aid to improve product quality, quantity, and diversification, resulting in increased community and regional income.

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