

Increasing Production Capacity And Management of Palm Sugar Producing In MSME Purwabakti Village

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Abstract.

It was recorded that in 2023, there were 29.3 million MSMEs in Indonesia in the agriculture and fisheries sectors. One of the processed agricultural products in Indonesia is palm sugar. Palm sugar is a processed product that utilizes the sap of the sugar palm tree. Palm sugar can be a substitute for granulated sugar for diabetics. Researchers from the Center for Behavioral and Circular Economics Research (PR EPS) of the Indonesian Agency for Research on Indonesian National Agency for Research (BRIN) revealed that domestic production capacity is still far from sufficient to meet domestic market demand, let alone the export market. Purwabakti Village, located in Bogor Regency, has the potential to produce palm sugar. Palm sap or palm trees are abundant in this area. Palm sugar production is still relatively low. The amount of palm sugar produced by MSMEs in Purwabakti Village only ranges from 3-6 kg per week. Given the existing potential, palm sugar production can be increased. Production and marketing activities are still very conventional. Limited production facilities and production equipment are among the causes. In addition, palm sugar MSMEs face limitations in product distribution because they do not yet have a product brand and have not marketed through digital media. The Community Service Team provided training related to branding strategies, social media marketing, and the development of standard operating procedures (SOPs) for palm sugar production in Purwabakti Village. The activity resulted in the successful formulation of a brand for the Purwabakti village palm sugar product, namely "Manira Palm Sugar," and an Instagram social media account, "Manira Palm Sugar." The Community Service Team also developed a production standard operating procedure (SOP) that will serve as a standard for consistently producing quality palm sugar products.

Keywords: Palm sugar, Branding strategy, Social Media Marketing and Production SOP.

I. INTRODUCTION

Indonesia, with a population of approximately 280 million people, 70% of whom are of productive age, represents a large market opportunity for businesses. This potential has encouraged the growth of businesses in Indonesia, particularly in the micro, small, and medium enterprise (MSME) sector. The number of MSMEs continues to increase. According to data from the Ministry of Cooperatives and MSMEs, in 2024 there were 64.2 million MSMEs, contributing 61.07% to Indonesia's Gross Domestic Product (GDP).



Data Jumlah UMKM di Indonesia

Kategori UMKM	Jumlah	Persentase	Sumber
UMKM Non Pertanian & Perikanan	30.178.617	50,7%	Sistem Informasi Data Tunggal (SIDT) 2024, Kementerian UMKM
UMKM Pertanian & Perikanan	29.341.033	49,3%	BPS Sensus Pertanian (2023)
Total	59.519.650		



Fig. 1. MSME Data in Indonesia

Source: <https://kadin.id/data-dan-statistik/umkm-indonesia/>

The MSME sector serves as one of the pillars of the Indonesian economy. The government has undertaken various efforts to strengthen the capacity of MSMEs in Indonesia. The increasing availability of imported products through online marketplaces has intensified market competition. Therefore, MSMEs need to continuously improve their business capabilities and strengthen their competitiveness. MSMEs operate across various sectors in Indonesia. Among non-agricultural and non-fishery sectors, wholesale and retail

trade, as well as repair and maintenance activities, account for the largest share of MSMEs (14.43%), followed by accommodation and food and beverage services (6.40%) and manufacturing (4.16%).



Fig. 2. Number of MSMEs in the Non-Agricultural and Non-Fishery Sectors

Source: <https://kadin.id/data-dan-statistik/umkm-indonesia>

More specifically, the number of MSMEs by business sector recorded by the Ministry of MSMEs as of December 31, 2024, was as follows :

- Wholesale and retail trade, repair and maintenance of motor vehicles and motorcycles: 14,433,048 units
- Accommodation and food and beverage services: 6,400,667 units
- Manufacturing: 4,164,542 units
- Other services: 1,906,799 units
- Transportation and storage: 1,169,310 units
- Construction: 307,519 units
- Rental and leasing without option rights, employment, travel agencies, and other business support services: 289,650 units
- Mining and quarrying: 196,841 units
- Water supply, wastewater management, waste recovery, and remediation: 164,111 units
- Human health and social activities: 156,183 units
- Education: 162,659 units
- Real estate: 142,526 units
- Arts, entertainment, and recreation: 129,547 units
- Professional, scientific, and technical activities: 124,287 units
- Electricity, gas, steam/hot water, and air-conditioning supply: 82,504 units
- Financial and insurance activities: 57,589 units

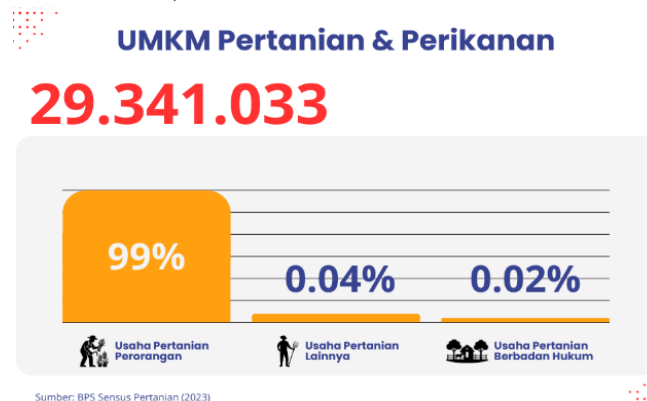


Fig. 3. Number of MSMEs in the Agricultural and Fishery Sectors

Source: <https://kadin.id/data-dan-statistik/umkm-indonesia/>

In addition to the non-agricultural and non-fishery sectors, MSMEs in the agricultural and fishery sectors continue to grow in Indonesia. In 2023, there were 29.3 million MSME operators in these sectors. One of Indonesia's agricultural processed products is palm sugar granules (gula semut). Gula semut is a processed product made from sap obtained from palm trees. It can serve as an alternative to granulated sugar for consumers seeking lower-glycemic sweeteners. The market potential for gula semut is promising. A researcher from BRIN's Center for Behavioral and Circular Economy Research (PR EPS) stated that domestic production capacity remains far below the level required to meet domestic demand, let alone export demand. National demand for gula semut reaches approximately 20 tons per month, while domestic production is currently able to supply only around 5–10 tons (pangannews.id). The potential of palm trees, which are widely found in Indonesia, has not yet been utilized optimally. Indonesia's contribution to the global export market for gula semut remains at approximately 3%. This indicates that Indonesia has not yet become a significant global market player despite having abundant raw materials and human resources.

Purwabakti Village, located in Bogor Regency, has considerable potential for gula semut production. Palm trees are widely found in this area. However, current gula semut production remains relatively low. Production by MSME operators in Purwabakti Village is approximately 3–6 kg per week. Given the existing potential, production can be increased. Business operators face constraints in production capacity, primarily due to limited production facilities and equipment. In addition, gula semut MSMEs have limited product distribution and marketing channels because they do not yet have a product brand and have not implemented digital marketing.

II. LITERATURE REVIEW

a. Branding Strategy

Keller and Swaminathan (2024) explain that the success of a branding strategy is determined by what consumers know, feel, and remember about a brand. A strong brand is developed when consumers have high levels of brand awareness, associations, and emotional connections with the brand.

Kapferer (2012) explains that a branding strategy should be built upon a consistent brand identity. Brand identity serves as the foundation for developing brand image in consumers' minds. The main dimensions of brand identity include Physique, Personality, Culture, Relationship, Reflection, and Self-Image.

According to Aaker (2014), brand equity is built through five main components: Brand Awareness, Brand Association, Perceived Quality, Brand Loyalty, and Proprietary Brand Assets.

b. Social Media Marketing

Social media marketing refers to the use of social media technologies to create, communicate, deliver, and exchange value with organizational stakeholders (Tuten & Solomon, 2023).

Social media marketing is an organizational activity involving the creation, communication, distribution, and exchange of value offerings through social media platforms (Felix et al., 2017).

According to Quesenberry (2024), a social media strategy should be developed based on Business Objectives, Target Audience, Big Idea, Social Platform Selection, Content Strategy, and Measurement & Analytics. This approach integrates marketing, advertising, and public relations into an integrated system.

Effective social media marketing activities can enhance Brand Equity, Brand Trust, Customer Satisfaction, and Customer Loyalty.

c. Production Management

According to Heizer et al. (2023), operations management is a set of activities that transforms inputs into outputs in the form of goods or services that provide value to consumers. The objectives of operations management include improving operational efficiency, maintaining product quality, optimizing resource utilization, meeting customer needs, and creating competitive advantage.

Production management is a process of planning, organizing, directing, and controlling resources to produce goods effectively and efficiently (Stevenson, 2021).

According to Rufino et al. (2025), Standard Operating Procedures (SOPs) are documented instructions for carrying out activities consistently, safely, and in accordance with organizational standards. The objectives

of SOPs are to ensure process consistency, reduce work errors, facilitate employee training, maintain product quality, and improve operational efficiency. Process standardization involves documenting the best way to perform a task so that it can be repeated with consistent results. The higher the level of process standardization, the lower the variation in work, the higher the productivity, the more stable the quality, and the lower the risk of errors.

III. METHODS

The implementation of the community service program (PKM) aimed at strengthening the production capacity of gula semut MSMEs was conducted through several stages.

1. Community Service Program Socialization Stage

During the socialization stage, the PKM team visited the partner to coordinate the planned community service activities. The initial visit was conducted to obtain a more detailed understanding of the problems faced by the partner and to coordinate with the business operators regarding the planned training activities. The socialization stage involved the PKM team, consisting of the team leader, two members, two students, the Chairperson of Pokdarwis Purwabakti, local gula semut business owners, and members of the gula semut producer group in Purwabakti Village.

2. Education and Training Stage

The training stage was divided into three activities as follows:

a. Branding Strategy Training

The first training provided to gula semut business operators focused on branding strategy. The training aimed to provide an understanding of the importance of creating a creative product brand and identifying the unique value offered by gula semut from Purwabakti Village. The branding strategy training covered :

- Product brand development
- Development of social media promotional channels
- Sustainable marketing content production

The branding strategy training was conducted over one day for a total duration of five hours. The training also included materials on marketing content creation. MSME operators were trained to produce engaging promotional content.

b. Product Packaging Education

This activity provided education on food packaging standards that are safe for consumers. The activity was conducted once, with a duration of one hour.

c. Production Management Training

The gula semut MSME operators received training on production management. The training covered raw material inventory management and the preparation of production SOP.

3. Mentoring and Evaluation Stage

Mentoring and evaluation of the digital promotion training outcomes were conducted over six weeks by monitoring increases in social media engagement and the number of social media followers. The target was to reach 100 followers. Evaluation was also conducted to assess the consistency of MSME operators in carrying out digital promotion activities. Mentoring was provided by the student team.

4. Results

The PKM team, consisting of lecturers and students, conducted the socialization activity in December 2025. Information regarding the planned PKM activities was communicated through the Chairperson of Pokdarwis (Tourism Awareness Group) of Purwabakti Village. MSME operators in Purwabakti Village are members of the Purwabakti Village Pokdarwis.

The socialization activity resulted in an agreement to conduct the following follow-up activities :

- Training and mentoring on branding strategies for gula semut MSMEs in Purwabakti Village
- Training and mentoring on online marketing
- Preparation and documentation of production SOPs

The series of activities was scheduled for January–May 2026.



Fig. 4. Community Service Program Socialization Activity

Branding Strategy Training

Gula semut production in Purwabakti Village is carried out by Mr. Idris together with his wife and family. The gula semut business has been operating since 2015. Mr. Idris and his family are able to produce approximately 15–20 kg per month. The selling price is approximately IDR 80,000–90,000 per kilogram. The gula semut is currently marketed only through middlemen or members of the Purwabakti Village Pokdarwis. Attractive packaging and branding have the potential to increase the product's selling price. Distribution channels therefore need to be expanded through digital media, such as Instagram and other social media platforms.



Fig. 5. Branding Strategy and Social Media Marketing Training

The community service team provided training and mentoring on the branding strategy for gula semut produced by an MSME in Purwabakti Village. The activity was conducted in January 2026. Based on discussions among the lecturers, students, and gula semut producers, the brand developed for gula semut from Purwabakti Village was “MANIRA.” The philosophical meaning of “Manira” refers to natural sweetness derived from the finest palm sap. The positioning strategy for the “Manira” brand is: premium gula semut from Purwabakti, Bogor, traditionally produced with modern hygienic standards for families who choose natural, healthier, and high-quality sweetness. The tagline developed for the Manira brand is “Natural Sweetness for the Family.”



Fig. 6. Manira Brand Design

Manira gula semut packaging is planned to be available in two variants, 100-gram and 200-gram packages. The selling price is estimated at IDR 15,000–40,000 per package.



Fig. 7. Manira Gula Semut Purwabakti Packaging

The next mentoring activity conducted by the PKM team was social media promotion. The Instagram account for gula semut from Purwabakti Village was established using the developed brand name : @manira.palmsugar. The account name was selected to make it easier for audiences to recognize the promoted product.



Fig. 8. Manira Instagram Social Media Account

Social media promotion needs to be conducted consistently and continuously. The PKM team developed a content plan for the Manira gula semut Instagram account. The planned content includes:

Health Education:

- Education about gula semut
- Benefits of gula semut
- Education on the glycemic index
- Education about palm trees

Product Promotion:

- Manira Palm Sugar brand from Purwabakti Village
- Manira Palm Sugar packaging



Fig. 9. Manira Social Media Content

Product Packaging Education

Education on packaging for gula semut products in accordance with food safety standards was conducted in May 2026. The packaging planned for gula semut from Purwabakti Village is a stand-up pouch with the following material composition:

- Kraft paper (outer layer) : provides a natural, premium, and environmentally friendly appearance
- PET/VMPET/aluminum foil (middle layer) : protects the product from oxygen, light, and moisture PET: Polyethylene Terephthalate VMPET: Vacuum Metallized Polyethylene Terephthalate
- PE (inner layer) : food-grade layer in direct contact with the product PE: Polyethylene

The PKM team and MSME operators prepared product stocks and packaging molds in two weight variants: 100 grams and 200 grams.

Increasing Production Capacity

The PKM team visited the gula semut production site in Purwabakti Village in May 2026, accompanied by Mr. Rozah (Chairperson of Pokdarwis) and Mr. Idris (gula semut MSME operator). Field observations showed that gula semut production was still carried out using very simple facilities, consisting of one cooking pan with a diameter of 50 cm, a wood-fired stove, and a production area measuring approximately 3 × 2 meters. To increase gula semut production capacity, the PKM team provided an additional cooking pan and several kitchen tools to support production. To prepare the production SOP, the PKM team conducted interviews with Mr. Idris and his wife, who are responsible for producing gula semut in Purwabakti Village. The interview results were subsequently compiled and supplemented into a gula semut production SOP document.



Fig. 10. Production Equipment Assistance

Mr. Idris and his wife initially produced an average of 3–5 kg of gula semut per week. Limited equipment, particularly cooking pans and stoves, restricted production capacity. They had only one pan and one stove for producing palm sugar and gula semut. The Unpak PKM team provided one additional pan and an additional stove to increase production capacity. Following the addition of the pan and stove, production increased to approximately 8–10 kg per week.

Table 1. Results of the Community Service Program

Problem	Solution	Outcome
Production capacity	Assistance in preparing production SOP Provision of production equipment	Gula semut production SOP document Production increased to 8 kg/week
Product marketing	Formulation of a branding strategy Social media promotion strategy Standard packaging design	Gula semut brand from Purwabakti Village: “Manira Palm Sugar” Instagram promotional account: @manira.palmsugar Packaged gula semut using food-grade standard packaging



IV. CONCLUSION

The conclusions drawn from the community service activities are as follows:

- Purwabakti Village has the potential to produce gula semut as an alternative sweetener for food and beverages, with the advantage of having a lower glycemic index.
- Gula semut-producing MSMEs in Purwabakti Village have traditionally conducted both production and marketing activities. The provision of additional equipment and the preparation of clear production SOPs are expected to increase production capacity.
- The “Manira Palm Sugar” brand is expected to provide a distinct identity for gula semut produced in Purwabakti Village. The Instagram account @manira.palmsugar and continuously published content marketing are expected to reach a broader consumer market.

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