

Availability Of Enbal Cassava (*Manihot Esculenta* Cranz) Raw Materials For The Enbal Semprong Business (A Case Study In Namar Village, Manyeuw Subdistrict, Southeast Maluku Regency)

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Abstract

The village of Namar produces enbal cassava (*Manihot esculenta* Cranz), which is used as a raw material in the production of enbal semprong and serves as a source of income for the community. However, there are challenges related to the continuity of the raw material supply that affect the sustainability of production. The study aims to 1) analyze the availability of enbal cassava as a raw material in the enbal semprong industry and 2) analyze the factors influencing the availability of enbal cassava as a raw material in the enbal semprong industry. The study was conducted in March 2026 in Namar Village, Kei Kecil Subdistrict, Southeast Maluku Regency, using a census of 20 farmer-suppliers and 1 enbal semprong business owner. Data were collected through observation, interviews, and questionnaires and were then analyzed descriptively. The results indicate that the availability of raw materials, in terms of both quantity and quality, falls into the good to very good category.

However, continuity remains an aspect that requires attention. Furthermore, cassava production factors, raw material prices, distribution and access, season and environment, as well as institutional and government support influence the availability of raw materials. The main constraints include limited capital for purchasing, weather changes, and suboptimal government support. Therefore, strengthening coordination among farmers and business operators, as well



as government support, is necessary to maintain the continuity of supply and the sustainability of the enbal semprong business.

Keywords: Namar Village, Enbal Cassava, Enbal Semprong

INTRODUCTION

Cassava (*Manihot utilissima*; *Manihot esculenta* Crantz) is one of the world's strategic food commodities that plays a vital role as a source of carbohydrates for people in tropical and subtropical countries. The Food and Agriculture Organization (FAO) notes that cassava has the advantage of being able to adapt to various agroecosystem conditions, including marginal lands and areas vulnerable to climate change, making it a vital commodity in supporting global food security (FAO, 2024). In addition to being a food source, cassava also holds high economic value because it can be utilized as a raw material for various industries, such as the flour, processed food, animal feed, bioethanol, and pharmaceutical industries. These characteristics make cassava not only a food commodity but also a primary raw material for agroindustrial development capable of creating added value and increasing the income of rural communities (Hidayat et al., 2023).

In Indonesia, cassava plays a vital role in the development of the agricultural and agroindustrial sectors. As one of the country's leading local food commodities, cassava contributes to the national food diversification program, which aims to reduce the population's reliance on rice as the primary source of carbohydrates. In addition, cassava serves as a raw material for various processing industries, ranging from household-scale operations to large-scale industrial enterprises. The development of cassava-based agroindustry is considered capable of increasing the value added of agricultural products, expanding employment opportunities, and boosting the income of farmers and business operators by processing agricultural products into goods with higher economic value (Anggraeni et al., 2024). Therefore, cassava is not only important for food security but also as a driver of agriculture-based economic development.

The importance of raw material availability is also closely linked to the sustainability of Micro, Small, and Medium Enterprises (MSMEs). MSMEs are an economic sector that makes a significant contribution to the Indonesian economy through job creation, increased community income, and the generation of Gross Domestic Product (GDP). However, most agro-industrial MSMEs still face various challenges in running their businesses, one of which is the instability of



raw material supply. Insufficient availability of raw materials can lead to reduced production capacity, delays in meeting market demand, increased operating costs, and diminished business competitiveness. In the context of cassava-based agroindustry, business sustainability is largely determined by the ability of business operators to obtain raw materials continuously and in accordance with production needs. Therefore, the availability of raw materials is crucial for supporting the sustainability and development of regional agroindustrial MSMEs (Leasa et al., 2018).

In the context of the enbal semprong business in Namar Village, the availability of raw materials is a critical factor in ensuring the smooth operation of the production process. Based on initial observations, business operators still face various challenges related to the supply of cassava, such as limited availability at certain times, fluctuations in farmers' production volumes, variations in the quality of raw materials received, and uncertainty regarding the continuity of supply. Previous research on cassava supply and the enbal agroindustry has also revealed similar conditions. The availability of raw materials in agroindustrial activities is not only determined by the volume of production generated by farmers but is also influenced by various factors within the supply chain system. Research indicates that production fluctuations and supply instability are among the primary challenges in cassava-based agroindustries, as they result in raw material availability that does not always align with production needs. Supply continuity is also a critical factor in maintaining business sustainability, as disruptions in raw material supply can halt production processes (Timisela et al., 2016). These conditions have the potential to disrupt the production process and affect the business's ability to meet market demand. If these conditions persist, they could lead to a decline in production volume, reduced business revenue, and weakened sustainability of the enbal semprong processing business.

Research Questions

1. What is the availability of enbal cassava as a raw material for the enbal semprong business in Namar Village?
2. What factors influence the availability of enbal cassava as a raw material for the enbal semprong business in Namar Village?



Research Objectives

1. To analyze the availability of cassava as a raw material for the enbal semprong business in Namar Village.
2. To analyze the factors that influence the availability of cassava as a raw material for the enbal semprong business in Namar Village.

LITERATURE REVIEW

Cassava (*Manihot esculenta*)

Cassava (*Manihot esculenta*) is an important food crop that serves as a primary source of carbohydrates in many developing countries, including Indonesia. This crop is widely cultivated because it can grow under a variety of agroecological conditions and is highly adaptable to its environment. The FAO (2023) states that cassava has the advantage of adapting well to marginal lands and unstable climatic conditions, making it a strategic commodity in supporting global food security. In addition to being easy to cultivate, cassava also has significant economic value, making it a source of income for farmers. Cassava can be processed into various agro-industrial products such as tapioca flour, bioethanol, animal feed, and a variety of local food products. Another advantage of cassava is the flexibility of its harvest timing. Cassava tubers can be left in the ground for several months after reaching harvest maturity without experiencing a significant decline in quality. This allows farmers to harvest according to consumption needs or market conditions. This flexibility allows cassava to serve as a "living food storage" that can be utilized during crop failures or food shortages affecting other commodities. Given these characteristics, cassava has been recognized as a key commodity in supporting global food security in the 21st century (Rieuwpassa, 2016).

Availability of Raw Materials

Raw materials are one of the key elements in production activities used to create a product or finished good. In every production process, raw materials play a crucial role because they form the basis for the products to be produced. An adequate supply of raw materials supports the smooth flow of the production process, whereas a shortage of raw materials can hinder production activities and reduce business performance. According to Assauri (2016), raw materials are all materials used in the production process and constitute the main components of the resulting product. Raw materials serve as the primary inputs that are processed into



finished goods with added value. Therefore, raw materials must be managed effectively to ensure that the production process runs smoothly and efficiently. In business operations, raw materials not only affect production volume but also influence the quality of the products produced. High-quality raw materials result in high-quality products, whereas inferior raw materials can lower product quality and reduce a business's competitiveness. Therefore, business owners must pay attention to both the quantity and quality of the raw materials used in the production process.

The sustainability or continuity of the production process depends heavily on the consistent, regular supply of raw materials. Stevenson (2018) argues that disruptions in the supply of sensitive inputs directly result in a decrease in machine capacity utilization, an increase in labor idle time, and a rise in fixed costs per unit of product. When cassava supplies are scarce, the food processing industry faces significant stockout costs due to lost sales opportunities in the market and the potential for consumers to switch to substitute products (Hayati et al., 2022).

Business Enbal Semprong

Enbal is a traditional food of the Kei Islands community made from enbal cassava. Enbal cassava contains cyanide compounds, so it requires a special processing method before it can be consumed. According to Rahail (2018), the people of the Kei Islands have inherited local knowledge, passed down from generation to generation, on how to process enbal cassava into a form that is safe for consumption. This knowledge reflects the community's ability to utilize local natural resources as a source of food that is both useful and economically valuable. In the enbal semprong business in Namar Village, enbal cassava is the primary raw material used in the production process. Enbal cassava is processed into enbal and then further processed into enbal semprong products, which have a higher economic value. Thus, the availability of enbal cassava as a raw material is a crucial factor in supporting the sustainability of this business. The development of the enbal cassava agroindustry in Eastern Indonesia holds significant potential, supported by the availability of local raw materials and high demand for traditional food products. However, the sustainability of this agroindustry is heavily influenced by a stable supply of raw materials, consistent product quality, and the effectiveness of the supply chain from farmers to processing businesses.

In addition to its economic value, enbal semprong also holds significant social and cultural value for the people of the Kei Islands. This product serves as a key element of local culinary identity, reflecting the community's wisdom in utilizing the natural resources available in their



surroundings. Therefore, the development of the enbal semprong business aims not only to increase community income but also to preserve the region's culture and culinary heritage so that it remains known to both the younger generation and people outside the region.

RESEARCH METHODOLOGY

1. Location and Time: Conducted in Namar Village, Manyeuw Subdistrict, Southeast Maluku Regency, from March through April 2026.
2. Population and Sample: A saturated sampling technique (census) was used for the entire population, consisting of 20 cassava-supplying farmers and 1 owner of an enbal semprong business in Namar Village, Manyeuw Subdistrict, Southeast Maluku Regency, resulting in a total of 21 respondents.
3. Data Collection: Field observations, face-to-face interviews with respondents, distribution of structured questionnaires, and a review of documentation.
4. Data Analysis: Qualitative descriptive analysis based on the results of calculations using a Likert scale.

RESULTS AND DISCUSSION

Respondent Characteristics

1. Gender: The respondents consisted of 10 men (47.62%) and 11 women (52.38%), indicating the involvement of both men and women in cassava farming and the supply of raw materials for enbal semprong.
2. Age: Respondents were predominantly in the 40–49 age group (38.10%), followed by those aged 30–39 (33.33%). This indicates that the respondents are of working age.
3. Education: The respondents' educational levels were dominated by high school graduates at 42.86%, while elementary and junior high school graduates accounted for 23.81% each, and college graduates accounted for 9.52%.
4. Land Area: 45% of respondents own 0.5–1 ha of land, followed by 30% who own less than 0.5 ha and 25% who own more than 1 ha. This means that the respondents' agricultural structure is dominated by small- to medium-scale farmers (0.5–1 ha).



DISCUSSION

1. Availability of Enbal Cassava Raw Materials

The availability of cassava as a raw material for the enbal semprong business in Namar Village was analyzed based on quantity, quality, and continuity. The results of the study on the availability of cassava as a raw material for enbal are presented in Table 1

Table 1. Average Scores from the Likert Scale Analysis of Cassava Raw Material Availability Enbal in Namar Village.

Indicator	Average Score	Category
Quantity	4,10	Good
Quality	4,30	Very Good
Continuity	4,30	Very Good

Source: Processed Primary Data, 2026

Table 1, shows that the availability of enbal cassava as a raw material falls into the “good” category, as the quantity indicator received an average score of 4.10; this means that the amount of enbal cassava generally available is sufficient to meet the raw material needs for enbal semprong production. The availability of raw materials is a crucial factor because the more the required amount of cassava for enbal is met, the easier it is for the business to sustain its production activities.

The quality indicator received an average score of 4.30, falling into the “very good” category; this indicates that the quality of the cassava for enbal obtained from farmers generally meets the requirements for processing enbal semprong. Good raw material quality supports a smooth processing workflow and results in enbal semprong products of appropriate quality.

Furthermore, the continuity indicator received an average score of 4.30, falling into the “very good” category. These results indicate that the supply of cassava for enbal is generally available to support production activities. If farmers in Namar Village are not yet ready to harvest or if raw material supplies are running low, enbal semprong entrepreneurs can obtain raw materials from neighboring villages or from the market. This strategy is employed to ensure that production continues and consumer needs are met.

Thus, the research results show that the availability of cassava raw materials for enbal in Namar Village has generally supported the enbal semprong business. The quantity aspect falls



into the “good” category, while quality and continuity fall into the “very good” category. These conditions are factors that support the sustainability of enbal semprong production activities.

2. Factors Affecting Raw Material Availability

The research findings indicate that the availability of enbal cassava as a raw material for the enbal semprong business is influenced by five factors: enbal cassava production, raw material prices, distribution and access to raw materials, season and environment, and institutional and government support.

Table 2. Mean Values from the Likert Scale Analysis of Factors Affecting the Availability of Enbal Cassava Raw Materials in Namar Village.

Factor	Average Score	Category
Cassava production	4,00	Good
Raw Material Prices	3,75	Good
Distribution and Access to Raw Materials	4,25	Very Good
Seasonal and Environmental Factors	4,00	Good
Institutional Framework and Government Support	3,75	Good

Source: Processed Primary Data, 2026

Based on Table 2, the cassava production variable has an average value of 4.00. High cassava production, the large number of farmers cultivating this crop, sufficient village land area, and good productivity in terms of both quality and quantity collectively ensure a sustainable supply of the primary raw material for the production process. This situation aligns with the findings of Timisela et al. (2016), who confirmed that cassava availability in Maluku Province is considered adequate and serves as a crucial foundation for supporting the development of local food agroindustries, making it directly relevant to the business context of cassava-based food products such as enbal. The abundant availability of raw materials at the local level also provides a competitive advantage because cassava-based agroindustries do not rely on imports and simultaneously strengthen the economy of farmers as suppliers (Fitriani et al., 2021).

The raw material price factor received an average score of 3.75, falling into the “good” category. Although prices remain affordable, price stability is sometimes inconsistent. This situation indicates that price fluctuations remain a concern because they are influenced by



production costs and business production volumes. This suggests that while raw material prices are still affordable for business operators, price stability is not yet fully guaranteed. The price instability of enbal cassava is a factor that requires attention because it can affect production costs, business profits, and business operators' ability to maintain production capacity. For food-processing MSMEs such as enbal semprong producers, raw materials constitute the largest cost component in the production process; therefore, price changes will directly affect the cost structure and operational efficiency of the business. This situation is evident from the high score on the indicator showing that increases in raw material prices have a significant impact on production volume. When the price of cassava for enbal rises, business operators tend to reduce production volume to adjust for the increased costs or to maintain selling prices that remain competitive in the market. Furthermore, the high score on the indicator regarding price fluctuations as a major business constraint indicates that the risk associated with raw material prices remains a challenge faced in managing the enbal semprong business. Therefore, better raw material management strategies are needed, such as establishing partnerships with supplier farmers, expanding supply sources, and managing raw material inventories more effectively to minimize the impact of price fluctuations on business sustainability.

Based on the results of the Likert scale analysis, the variables of distribution and access to raw materials received very good ratings, indicating that Enbal Semprong MSMEs have favorable conditions for securing a supply of enbal cassava as the primary raw material for production. These conditions reflect that the availability of raw materials in the area surrounding the business is relatively assured, allowing the production process to run smoothly. Easy access to raw materials is a key factor in maintaining business continuity, particularly for the food processing industry, which is highly dependent on a sustainable supply of raw materials. The presence of Namar Village and the surrounding villages as enbal cassava-producing areas provides a distinct advantage for the Enbal Semprong MSMEs because raw material needs can be met within a relatively short distance, thereby reducing barriers in the raw material procurement process.

These conditions demonstrate the locational advantage enjoyed by the Enbal Semprong MSMEs. The proximity of the business location to the Enbal cassava production center allows business operators to obtain raw materials more quickly, at lower transportation costs, and with better-maintained raw material quality. In agricultural processing businesses, location plays a crucial role because it is directly linked to production cost efficiency and the smooth operation of the business. The closer the business is to its raw material sources, the lower the transportation



costs and the lower the risk of supply delays. This factor contributes to the competitiveness of Enbal Semprong MSMEs in ensuring the sustainability of their operations.

In addition to being supported by the proximity to raw material sources, the smooth distribution of Enbal cassava is also supported by a network of suppliers and collectors who act as intermediaries between farmers and business operators. The existence of this distribution network makes it easier for business operators to obtain raw materials according to their production needs without having to source them directly from individual farmers. Good relationships between farmers, collectors, and business operators create a more efficient supply chain, ensuring a consistent supply of raw materials at all times. Consequently, the risk of raw material shortages that could hinder the production process is relatively low.

Overall, the high ratings for distribution and access to raw materials indicate that these factors are not major obstacles for Enbal Semprong MSMEs. On the contrary, these conditions serve as one of the businesses' strengths in supporting their sustainability and future growth. The availability of easily accessible raw materials supported by the business's location near enbal cassava production centers and a well-functioning distribution network ensures a more stable supply. Therefore, this advantage can be leveraged as a strategic asset to increase production capacity, expand market share, and develop a diversified range of cassava-based products to enhance the value added of the Enbal Semprong business.

Seasonal and environmental variables received an average score of 4.00 based on the Likert scale analysis and fell into the "good" category. This indicates that the owners of Enbal Semprong MSMEs recognize that seasonal and environmental conditions have a significant impact on the availability of Enbal cassava used in the production process. As an agricultural commodity, enbal cassava production is heavily influenced by weather conditions, rainfall, temperature, and climate changes that occur throughout the year. Therefore, the continuity of the raw material supply is determined not only by farmers' production capacity but also by environmental conditions that affect the growth of enbal cassava plants. Awareness of the influence of these seasonal and environmental factors is crucial because it enables business operators to anticipate various risks that could disrupt the smooth flow of production.

Research findings indicate that seasonal changes and weather conditions affect both the availability and quality of Enbal cassava received by the Enbal Semprong MSMEs. During certain seasons particularly during prolonged droughts or periods of heavy rainfall Enbal cassava crop productivity tends to decline, resulting in a more limited supply of raw materials. In addition to



affecting production volume, weather changes can also impact the quality of the Enbal cassava produced, such as tuber size, starch content, and the freshness of the raw material. These conditions have the potential to affect the processing and the quality of the final products produced by the MSMEs. Therefore, seasonal and environmental factors are key aspects that must be considered in production planning to ensure that operations can continue to run optimally despite changes in natural conditions.

Furthermore, the Likert scale analysis for the institutional and government support variables yielded an average score of 3.75, which falls into the “good” category. These results indicate that the government is perceived to have contributed to supporting the development of the enbal semprong business and the enbal cassava agricultural sector in Namar Village, although the level of support provided is not yet fully optimal. The relatively high ratings on most indicators suggest that business operators have benefited from government programs, particularly through extension services, business coaching, and support for farmer groups or business cooperatives. However, there are still several areas that require further attention to ensure that the support provided can have a more tangible impact on business sustainability and improved farmer welfare.

Other research findings also indicate that the form of government support most felt by farmers and business owners is the extension activities carried out by agricultural extension workers in Namar Village. These extension programs are considered effective in helping farmers improve their knowledge and skills in cultivating “enbal” cassava, thereby having a positive impact on the production process. However, the research findings reveal that these extension activities have not been conducted on a regular basis and generally take place only about once a year. This situation indicates that, although extension has provided benefits, the still-low intensity of assistance has the potential to limit the effectiveness of technology and innovation transfer to farmers. In fact, in a modern agribusiness system, the success of productivity increases is determined not only by the availability of information but also by the sustainability of the assistance process provided to farmers on a regular basis.

In addition, the research findings also indicate that the direct assistance received by enbal cassava farmers from the government remains relatively limited. This finding is noteworthy because it aligns with the farmers’ own assessments of the same variable. The shared perception between farmers and business owners indicates that the limitations of government assistance are not felt by just one party but are a reality observed by all stakeholders in the enbal cassava



supply chain in Namar Village. This situation suggests that assistance programs—such as those providing seeds, fertilizer, working capital, and production facilities have not yet reached all farmers optimally. As a result, improvements in productivity and raw material quality remain heavily dependent on farmers' ability to independently manage their farms. In fact, more intensive government support for the upstream sector would have a positive impact not only on farmers but also on processing UMKM that depend on a continuous supply of raw materials.

Overall, the results indicate that distribution and access are the factors that most contribute to the availability of raw materials, while price, seasonality, and the environment, as well as institutional support, still need to be addressed to ensure the sustainable availability of raw materials.

CONCLUSION

Based on the research findings, it can be concluded that

1. The availability of enbal cassava as a raw material for the enbal semprong business in Namar Village is generally in good to very good condition. However, assessments by business owners indicate that supply continuity still requires attention, particularly during periods of climate or weather changes when farmers are not yet ready to harvest or when the supply of raw materials from Namar Village is reduced.
2. The availability of raw materials is influenced by five factors: enbal cassava production, raw material prices, distribution and access, season and environment, and institutional and government support. Therefore, strengthening cooperation between farmers and business operators, increasing productivity, and securing government support are necessary to maintain the availability of raw materials and the sustainability of the enbal semprong business.

FUTURE DIRECTION

Future research will focus on developing a resilient and sustainable supply chain model for Enbal cassava to strengthen the sustainability of the Enbal Semprong business in Namar Village. Future research should move beyond measuring raw material availability toward a more comprehensive analysis of the relationship between farmer productivity, price stability, distribution patterns, seasonal and climate change risks, and institutional capacity to ensure supply continuity. The research findings indicate that distribution and access are key strengths,



while price fluctuations, seasonal and environmental factors, and government support still require attention.

Future efforts could focus on developing farmer–SME partnerships, supply contracts, inventory management, and price information systems to reduce raw material uncertainty. Research should also examine the impact of climate change on the productivity, quality, and harvest calendar of enbal cassava as a basis for developing adaptation strategies.

Furthermore, studies can be expanded to cover value chain efficiency, value addition, competitiveness, product diversification, and market expansion for “enbal semprong.” The effectiveness of strengthening extension services, access to capital, production facilities, and farmer group institutions also needs to be evaluated.

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