

Empowering the Kuta Indigenous Community through the Merah Putih Cooperative: Palm Sugar Production for Local Economic Development

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Abstract

This community engagement program addresses the economic vulnerability of palm sugar producers in Kuta Indigenous Community, Ciamis Regency, who face inconsistent product quality, limited collective business management, and dependence on intermediaries. The program aims to strengthen the palm sugar value chain through the Merah Putih Cooperative while maintaining local knowledge and cultural practices. An Asset-Based Community Development (ABCD) approach was combined with participatory action and a cooperative-based pilot intervention. The implementation consisted of community socialization, technical training, application of appropriate technology, mentoring and participatory evaluation, and a sustainability phase. Interventions focused on production standardization through an SNI-based standard operating procedure, simple quality grading, hygienic equipment, standardized molds, packaging, cooperative business records, and collective marketing. The implementation documented in the field shows strengthened stakeholder coordination, a dedicated cooperative facility, and differentiated palm sugar products, including molded palm sugar and granulated palm sugar with cooperative identity. The program therefore positions the cooperative not only as an administrative institution but also as an economic aggregator and collective marketing agency. The approach offers a practical model for strengthening indigenous rural economies by connecting local resources, institutional capacity, product upgrading, and sustainable market development.

Keywords: palm sugar, community empowerment, cooperative, value chain, indigenous community.

INTRODUCTION

Palm sugar is an important non-timber forest product that contributes to rural livelihoods in tropical regions, particularly among smallholder and agroforestry-based communities (FAO, 2020; Shackleton & Shackleton, 2018). Previous studies have documented its contribution to household income and rural livelihoods, as well as the potential for product diversification and value addition. However, small-scale palm sugar producers frequently remain positioned at the lower end of the value chain because production is fragmented, processing practices are inconsistent, business management is limited, and market access is

often mediated by intermediaries. These conditions constrain producers' bargaining power and limit their ability to capture higher value from their products.

Previous research has also examined various aspects of palm sugar development, including processing technology, product quality, market access, value addition, and rural livelihood improvement. Similarly, studies on community-based development and cooperatives emphasize the importance of collective action, local institutional capacity, and community participation in strengthening rural economies. Nevertheless, these strands of research are often examined separately. There remains limited empirical discussion of how traditional palm sugar production within an indigenous community can be systematically connected to a locally governed cooperative as an institutional mechanism for production upgrading, collective marketing, and value capture.

This gap is particularly relevant in the context of the Kuta Indigenous Community in Ciamis Regency. Palm sugar production in Kuta is supported by existing community assets, including traditional production knowledge, active producers, the Paneresan Peueut Nanjer Social Forestry Business Group (KUPS), and the Merah Putih Cooperative. Despite these assets, producers have traditionally operated individually and remain exposed to fluctuating prices, inconsistent product quality, and dependence on intermediaries. The existence of the Merah Putih Cooperative, with approximately 1,200 members according to the underlying community engagement proposal, creates an institutional opportunity to move beyond individual producer-based interventions toward collective economic organization.

The specific research gap addressed by this study is therefore the limited understanding of how existing indigenous community assets can be organized through a cooperative institution to support integrated upgrading of a traditional palm sugar value chain. Rather than treating production technology, product quality, cooperative governance, and marketing as separate interventions, this study examines their interconnection within a community-based empowerment process.

The novelty of this study lies in the integration of Asset-Based Community Development (ABCD) with cooperative-led value-chain upgrading in an indigenous palm sugar production system. The ABCD perspective provides the foundation for mobilizing existing human, cultural, institutional, and economic assets (Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003), while the cooperative provides an institutional mechanism for translating these assets into collective economic activities. In practical terms, the intervention connects traditional production knowledge with improvements in production consistency, quality control, grading, product identity and packaging, business record-keeping, collective marketing, and potential linkages with tourism and educational activities.

Accordingly, the contribution of this study is not the introduction of palm sugar production itself, nor the use of ABCD as a community development approach. Rather, it is the contextual integration of these elements into a cooperative-based upgrading framework for an indigenous community, demonstrating how existing local assets can be organized to strengthen production, institutional capacity, and market positioning. The study therefore provides a practical model of community empowerment that links cultural and productive assets with collective economic organization.

Based on this research gap, the study aims to describe and analyze the implementation of the community engagement program in the Kuta Indigenous Community, focusing on (1) strengthening palm sugar production practices and product quality, (2) strengthening cooperative governance and business management, (3) improving product value and collective marketing, and (4) identifying the implications and challenges of integrating indigenous community assets into a cooperative-based local economic development process. The objective of this article is to describe and analyze the implementation of the community

engagement program in Kuta Indigenous Community, with particular attention to the strengthening of production practices, cooperative governance, product value addition, and the implications for sustainable local economic development.



Figure 1. Community Consultation and Participatory Coordination between the PKM Team and Kampung Adat Kuta Stakeholders

METHOD

The program used a participatory Asset-Based Community Development (ABCD) approach combined with a pilot-based intervention through the Merah Putih Cooperative. ABCD was selected because the partner community already possesses productive, institutional, economic, and socio-cultural assets. The intervention therefore aimed to connect and strengthen existing assets rather than replace local practices. Participatory action principles were applied so that community representatives, producers, cooperative managers, traditional leaders, women, and youth could contribute to planning, implementation, monitoring, and reflection.

Program Stages

The implementation was organized into five integrated stages. First, socialization and participatory assessment were conducted to align the program with local priorities and cooperative functions. Second, training addressed production hygiene, quality control, cooperative literacy, business recording, packaging, and collective marketing. Third, appropriate technology and innovation were introduced, including food-grade containers and filters, standardized palm sugar molds, an efficient cooking stove, manual packaging equipment, and a simple Grade A–B quality grading system. Fourth, mentoring and participatory evaluation were used to support adoption and identify technical and managerial improvements. Fifth, sustainability mechanisms were prepared by strengthening the cooperative's role as an aggregator of production, quality, volume, and price information.

The production intervention was designed for pilot producers and targeted the daily practices of sap collection, cooking, molding, storage, and packaging. The management intervention focused on recording production, stock, sales, and quality-based prices. The marketing intervention emphasized cooperative product identity and collective market development. The proposal specifies that the technology package is intended for approximately 30–40 producers, with a production capacity aligned to local practice, and that at least 80% of pilot producers are targeted to apply the production SOP operationally.

Data for this article were drawn from the program proposal, implementation documentation, field observations, and photographic documentation provided by the PKM team. Analysis was descriptive and interpretive, linking observed outputs to the program's intended indicators. Quantitative claims are limited to figures explicitly documented in the proposal; the photographs are used as qualitative evidence of field implementation and product development.

RESULT AND DISCUSSION

1. Strengthening Community and Cooperative Coordination

The first visible outcome is the strengthening of coordination between the academic team and local stakeholders. The field documentation shows a participatory meeting involving community representatives and the PKM team in a traditional Kuta setting. This type of interaction is important because the program is not simply a technology-transfer activity. The intervention requires agreement on production standards, quality classification, cooperative aggregation, and the division of roles between producers and the cooperative. In the ABCD framework, collective dialogue is itself an intervention because it activates existing social capital and connects community knowledge with external technical knowledge.

The product upgrading component of the community engagement program focused on improving the presentation, consistency, and market readiness of palm sugar products produced by the Kuta Indigenous Community. The intervention included product standardization, grading, packaging improvement, product labeling, and the development of a clearer product identity. These activities were implemented based on the recognition that traditional production knowledge was already present within the community, while product presentation and market-oriented practices required further strengthening. The results indicate that the intervention generated several observable product-level outputs. First, palm sugar products were differentiated according to physical characteristics and quality attributes identified during the production and consultation process. Second, the products were prepared using more standardized packaging and labeling formats, including product identity and information intended to improve consumer recognition. Third, the intervention introduced a more systematic approach to product handling and presentation compared with the previous practice of selling palm sugar primarily in bulk or simple molds. These changes represent product development and quality upgrading outcomes, rather than evidence of economic impact. The development of standardized products, packaging, and product identity demonstrates an increase in the market readiness of the products; however, it does not by itself demonstrate that producers obtained higher prices, increased sales, expanded market share, or higher household income.

This distinction is important because improvements in product attributes do not automatically translate into improved economic performance. Economic impacts require evidence from market transactions or longitudinal measurements. In the present program, therefore, claims regarding increased income or market expansion are not made unless supported by quantitative evidence comparing conditions before and after the intervention.

Where quantitative monitoring data are available, economic outcomes should be presented using indicators such as average selling price per unit, sales volume, monthly sales revenue, producer income, number of active buyers, number of market channels, and proportion of products sold through higher-value channels. For example, changes in the average selling price can be calculated as:

$$\text{Percentage Change in Selling Price} = \frac{[(\text{Post-intervention Price} - \text{Baseline Price}) / \text{Baseline Price}] \times 100}{}$$

Similarly, changes in producer income or sales revenue should be calculated using comparable observation periods before and after the intervention. Such measurements would allow product upgrading to be distinguished from actual economic impact.

At the current stage, the evidence therefore supports the conclusion that the program improved the product presentation and market readiness of Kuta palm sugar, while evidence of broader economic impacts remains to be established through continued monitoring. This distinction is particularly important for community engagement programs because product innovation may constitute an immediate outcome, whereas changes in income, market access, and producer welfare generally require a longer observation period. The findings also suggest that the cooperative can play an important role in sustaining product upgrading beyond the initial intervention. Rather than relying on individual producers to undertake packaging, grading, quality control, and marketing independently, the Merah Putih Cooperative can potentially coordinate these activities collectively. Such institutionalization may reduce fragmentation and facilitate consistent product standards across participating producers. However, the effectiveness of this mechanism should be evaluated through subsequent indicators of cooperative participation, sales transactions, buyer relationships, and producer-level economic outcomes. Accordingly, the main contribution demonstrated at this stage is the establishment of a cooperative-supported product upgrading mechanism, rather than a demonstrated increase in producer income. Future monitoring should assess whether these product-level improvements translate into measurable economic benefits over time.

2. Merah Putih Cooperative as an Economic Aggregator

The program places the Merah Putih Cooperative at the center of the value-chain upgrading strategy. The proposal identifies the cooperative as an institution with a large membership base but with room for improvement in business recording, production aggregation, and market integration. The field photographs show a dedicated Merah Putih Cooperative facility in Karangpaningal Village, Tambaksari District, Ciamis Regency. The existence of a physical institutional hub provides an important foundation for collective collection, quality control, packaging, recording, and marketing, consistent with the role of producer organizations in strengthening rural market participation (Bijman et al., 2016; Markelova et al., 2009).

From a cooperative governance perspective, the shift is from viewing the cooperative primarily as an organizational structure toward treating it as an economic agency. The intended business-recording system covers production, stock, sales, and quality-based pricing. This information can support decisions about procurement, product grading, inventory, pricing, and collective marketing. Such functions are important because smallholder producers often have limited bargaining power when transactions are conducted individually.



Figure 2. Merah Putih Cooperative facility in Karangpaningal Village, Tambaksari District, Ciamis Regency



Figure 3. Field documentation of the Merah Putih Cooperative facility as the institutional hub for collective palm sugar management

3. Production Standardization and Appropriate Technology

Production standardization is the main technical intervention. The proposal identifies quality variation of approximately 20–30% among producers as a problem associated with inconsistent production and sanitation practices. The response is an SNI-based production SOP adapted to traditional practices, supported by hygiene training, control of cooking processes, standardized molds, and Grade A–B quality grading. The approach is deliberately incremental: traditional knowledge is retained, while critical process points are made more consistent.

The technology package includes food-grade processing containers and filters, standardized molds, an efficient palm sugar cooking stove, and manual packaging equipment. These technologies are appropriate to the scale of community production because they do not require a radical change in the production system. Instead, they address specific bottlenecks in hygiene, consistency, efficiency, and presentation. The proposal states that the technology is intended for approximately 30–40 producers and that the pilot targets operational adoption of the SOP by at least 80% of producers.

4. Product Upgrading and Value Addition

The photographic evidence demonstrates that the program has moved beyond production alone toward product upgrading. The documented products include molded palm sugar and granulated palm sugar (gula semut), presented in labeled containers. The packaging shown in the field documentation carries the Merah Putih/Kampung Adat Kuta identity, which provides a basic product-origin narrative and supports collective marketing. Product identity is strategically important because it enables producers to communicate origin, community ownership, and product attributes to consumers.

The proposal reports the standardized agroindustrial product output as achieved, with evidence including standardized palm sugar, cooperative-labeled packaging, an SNI-based SOP, and documentation of production and packaging. The development of granulated palm sugar also indicates an opportunity for diversification of product forms and market segments. Compared with bulk or simple molded products, differentiated packaging and product forms

can support access to tourism, retail, gifts, food-service, and other value-added markets. However, market performance and income effects should be assessed through systematic endline data before claiming a quantified income increase.



Figure 4. Palm sugar molded product and granulated palm sugar (gula semut) developed by the community



Figure 5. Packaged granulated palm sugar with Merah Putih Cooperative/Kampung Adat Kuta product identity

5. Integration of Local Knowledge, Gender, and Sustainable Development

The program is designed around the principle that modernization should strengthen rather than displace local knowledge. Traditional palm sugar processing remains the cultural and technical foundation, while SOPs, hygiene controls, grading, and packaging provide additional layers of quality assurance. This combination is consistent with the community's broader orientation toward sustainable use of local resources and green economic development.

The proposal also recognizes women and youth as important assets in the value chain. Previous community research cited in the proposal found that women's participation in production, packaging, and marketing contributes to the sustainability of the palm sugar enterprise. The PKM therefore includes roles for women and youth in packaging, marketing, social documentation, and educational tourism. This is relevant to SDG 8 on decent work and economic growth and SDG 12 on responsible consumption and production. It also contributes to the program's objective of building economic resilience from the village level.

6. Discussion: From Commodity Production to a Community Value-Chain Model

The key lesson from the implementation is that product upgrading alone is insufficient. A higher-quality product requires a governance system capable of aggregating supply, maintaining quality, recording transactions, and negotiating markets. Conversely, a cooperative cannot create strong market power if the products it aggregates vary substantially in quality and presentation. The intervention therefore creates a feedback relationship between production standardization and institutional strengthening.

This integrated approach is consistent with value-chain literature emphasizing process upgrading, governance, and stronger producer-market linkages (Kaplinsky & Morris, 2001; Gereffi et al., 2005; Stoian et al., 2012). Cooperative action can reduce the transaction disadvantages faced by small producers, while standardized products can improve the cooperative's ability to market a consistent product. In the Kuta context, this creates a pathway from traditional household production toward a community-managed agroindustrial system without removing local ownership.

The program also has implications for tourism-based local economic development (UNDP, 2018). Kuta's cultural identity and traditional palm sugar practices can be linked to educational tourism, where visitors learn about the landscape, traditional processing, product diversification, and community institutions. Such diversification can create additional value without requiring the community to abandon its core production activity. Nevertheless, tourism development should remain community-controlled and compatible with cultural rules and environmental sustainability.

CONCLUSION

The community engagement program in Kuta Indigenous Community demonstrates a practical pathway for strengthening a traditional rural commodity through cooperative-based value-chain upgrading. The program combines ABCD, participatory action, production standardization, appropriate technology, cooperative business management, and product upgrading. Field documentation confirms active stakeholder coordination, the presence of a dedicated Merah Putih Cooperative facility, and the development of differentiated palm sugar products with cooperative identity. The proposal further documents the achievement of standardized product outputs and sets operational targets for SOP adoption and cooperative business management. The main implication is that sustainable empowerment requires simultaneous strengthening of production quality and the institution that aggregates and markets the product. Future implementation should prioritize systematic endline measurement of production quality, SOP adoption, sales volume, price realization, producer income, and market expansion so that the social and economic impacts of the model can be demonstrated quantitatively. The model is potentially replicable in other indigenous and rural communities with strong local resources and community institutions.

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