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Analysis Of Community Economic Improvement From Coconut Shell Waste Business (Case Study Of Cv Barbarax In South Setanggor Village, Sukamulia District, East Lombok Regency)

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Abstract

Converting coconut shell waste into value-added products offers an alternative approach to rural economic development based on local resources. This study aims to analyze community economic improvement through CV Barbarax's coconut shell waste processing business and identify its business strategies. A qualitative descriptive approach with a case study design was employed. The study population comprised 50 workers, from whom seven informants were selected through purposive sampling. Data were collected through in-depth interviews, direct observation, and documentation, then analyzed through data reduction, data display, and conclusion drawing and verification. The findings revealed that CV Barbarax contributed to increased income among workers and suppliers, local employment opportunities, skill development, and the emergence of supporting economic activities. Its business strategies included raw material procurement partnerships, semi-mechanical production, quality-based product marketing, and community empowerment. However, the business faced constraints related to weather-dependent drying processes, limited capital, and restricted access to export markets. The study concludes that coconut shell waste processing can support community economic improvement through integrated business strategies and local resource-based empowerment.

Keywords: Circular Economy, Coconut Shell Waste, Community Economic Development, Rural Development, Waste Valorization.

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INTRODUCTION

Utilizing local resources through a circular economy approach is a crucial strategy for promoting inclusive and sustainable rural economic development. This approach emphasizes resource optimization, waste reduction, and the creation of added value by processing previously unused materials into products with economic value. Indonesia has significant potential for developing coconut-based businesses, with production expected to reach approximately 2.82 million tons by 2024 (Center for Agricultural Data and Information Systems, 2025). One such utilization is the processing of coconut shell waste into charcoal briquettes, which not only has the potential to serve as an alternative energy source but also opens up business opportunities and generates income for the community (Cahyadi et al., 2024; Yirijor & Bere, 2024; Ramadhana et al., 2025). This potential is relevant to the conditions in South Setanggor Village, Sukamulia District, East Lombok Regency, where the majority of residents work as farmers and farm laborers and still face limited employment opportunities. The presence of CV Barbarax since 2023 is one effort to utilize this potential by processing coconut shell waste into charcoal briquettes, involving the community as laborers and raw material suppliers. This activity opens up opportunities for increased income, local employment, skills development, and the growth of supporting economic activities. These findings align with research by Tamrin et al. (2024) and Ikram HR and Suhab (2024), which shows that utilizing coconut waste can create added value and increase economic opportunities for the community.

Previous research has discussed the utilization of coconut shell waste through improving production quality and artisan income (Sukamta & Indardi, 2021), developing community economic welfare through briquette production (Tamrin et al., 2024), and diversifying circular economy-based products (Qahar et al., 2025). However, studies that integrate the economic contribution of businesses with company management strategies, from raw material procurement, production processes, marketing, and empowering local workers within a single business entity context, still need to be developed. Furthermore, business success is also influenced by limited capital, production continuity, and market access, which determine the sustainability of economic benefits for the community. Therefore, this study aims to analyze the economic improvement of the Setanggor Village community through CV Barbarax's coconut shell waste processing business and identify the implemented business strategies. The urgency of this research lies in the importance of ensuring that waste utilization not only produces products with market value but also provides sustainable economic and social benefits. The novelty of this research lies in its analysis of the relationship between raw material procurement strategies through partnerships, semi-mechanized production, product quality-based marketing, and community

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empowerment with increased income, employment, skills development, and the emergence of multiplier effects in the local economy. Thus, this research is expected to contribute to the development of circular economy studies and community economic empowerment based on local potential, while also providing practical evaluation material for companies and local governments in developing sustainable waste management businesses.

RESEARCH METHODS

This research uses a descriptive qualitative approach with a case study design to analyze the economic improvement of the community through the coconut shell waste processing business of CV Barbarax in Setanggor Selatan Village, Sukamulia District, East Lombok Regency. This approach was chosen to gain an in-depth understanding of changes in income, employment, skills improvement, and supporting economic activities, while also identifying strategies for raw material procurement, production, marketing, and community empowerment (Sugiyono, 2022; Sudaryono, 2021; Emzir, 2018). The study population included 50 CV Barbarax employees, while informants were determined using a purposive sampling technique of seven people representing management, production personnel, raw material collectors, support staff, marketing, and coconut shell suppliers. Informants were selected based on their direct involvement, experience, and ability to provide information relevant to the research focus. This technique allows researchers to obtain in-depth data regarding the relationship between business activities and the socio-economic conditions of the community (Sugiyono, 2022; Tamrin et al., 2024; Ikram HR & Suhab, 2024).

Data collection was conducted through direct observation, in-depth interviews with free, guided interviews, and documentation. The research instruments included the researcher as the primary instrument, interview guides, observation guides, and documentation in the form of company profiles, employee data, income records, and photographs of production activities. The research procedure began with problem identification, literature search, instrument development, research permit processing, field data collection, and processing and interpretation of findings. Data were analyzed descriptively and qualitatively through the stages of data reduction, data presentation, and drawing and verifying conclusions. Information on income was presented descriptively as supporting data, while data validity was checked through source and technique triangulation by comparing the results of interviews, observations, and documentation. Analysis was conducted systematically to identify patterns and interrelationships between findings (Emzir, 2018; Sugiyono, 2022; Braun & Clarke, 2022; Naeem et al., 2023). The study was also supported by a research permit, while maintaining confidentiality of information and informant willingness according to the

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research implementation. The ethical clearance number was not included because it was not available in the research documents.

RESEARCH RESULTS

Improving the Community's Economy through CV Barbarax's Coconut Shell Waste Processing Business

The research results show that the presence of CV Barbarax has changed the economic activities of the people of South Setanggor Village, particularly through the utilization of coconut shell waste, previously discarded or burned, as raw material for charcoal briquettes. Before the company's operation, most residents relied on agriculture, plantations, and casual work for income, with uncertain incomes. After CV Barbarax was established in 2023, the community gained alternative sources of income through involvement as laborers and raw material suppliers. Coconut shells, which previously had no sales value, are now used as production materials at a purchase price of around IDR 2,000 to IDR 3,000 per kilogram. These changes are evident in the increase in community income sources, the opening of job opportunities, and increased community involvement in productive economic activities.

Increased income was one of the research's key findings. Interviews revealed that workers earned income through monthly salaries and production bonuses, while suppliers earned additional income from coconut shell sales. A breakdown of worker income by position is presented in Table 1.

Table 1. Annual Income of CV Barbarax Employees Based on Position

No.	Job Position	Monthly Salary (Rp)	Bonus (3 times/year)	Annual Total (Rp)
1	Carbonization operator	2,000,000	500,000	25,500,000
2	Milling operator	1,900,000	500,000	24,300,000
3	Mixing and printing operator	1,800,000	500,000	23,100,000
4	Drying operator	1,600,000	500,000	20,700,000
5	Packaging personnel	1,500,000	500,000	19,500,000
6	Food and beverage preparation	1,300,000	400,000	16,800,000

Source: Results of interviews with CV Barbarax workers, 2026.

Based on Table 1, the highest annual income was earned by carbonization operators at Rp25,500,000, while the lowest income was earned by food and beverage preparers at Rp16,800,000. Overall, workers' income ranged from Rp16,800,000 to

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Rp25,500,000 per year, with an average of Rp21,650,000 based on six positions. In addition to their base salary, workers received bonuses three times a year. Meanwhile, the interview recapitulation results showed that all seven informants experienced an increase in income after becoming involved in CV Barbarax's business activities, as presented in Table 2.

Table 2. Level of Informant Income Increase

Income Increase Category	Number of Informants	Percentage
Increase	3	42.9%
Greatly improved	2	28.6%
Quite improved	2	28.6%
Not increasing	0	0%
Total	7	100%

Source: Primary data recapitulation via Google Forms, 2026.

The data shows that all informants experienced an increase in income, with 42.9% reporting an increase, 28.6% reporting a significant increase, and 28.6% reporting a moderate increase. No informants reported any income increase. Qualitatively, one worker, Ms. Siah, stated that before working at CV Barbarax, her income was insufficient to cover her daily needs, but after working, her situation improved. Furthermore, interview documents recorded a previous income of approximately Rp200,000 per month, and workers' income after joining was approximately Rp1,500,000 per month, while suppliers earned an additional income of approximately Rp1,000,000 per month. These figures represent general information from interviews, not a measurement of the income of the entire community.

In addition to increased income, the study found employment and expanded community involvement in the business chain. Community members are involved as production operators, raw material collectors, support staff, marketing personnel, and coconut shell suppliers. Details of informant involvement are presented in Table 3.

Table 3. Forms of Community Involvement in CV Barbarax's Business

Role	Forms of Involvement	Economic Benefits
Production staff/operators	Grinding, molding and drying of briquettes	Basic salary and production bonus
Raw material collector	Procurement of coconut shells from markets and farmers	Income from collection activities

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Support staff	Prepare workers' food and drinks	Non-production job opportunities
Marketing department	Sales and distribution of products	Income from marketing activities
Coconut shell supplier	Farmers, collectors and market traders	Income from coconut shell sales

Source: Results of interviews and observations, 2026.

Based on the composition of the seven informants, three people (42.9%) work as production workers or operators, while one person each (14.3%) plays a role as raw material collectors, support staff, marketing staff, and coconut shell suppliers. One worker, Amaq Muhip, explained that the workers in the milling, molding, and drying sections are from the local community. He stated, "Here we work daily. Some are milling, some are molding, some are drying. All are local residents. Not bad, rather than being unemployed." In addition to absorbing labor, the company's activities are also accompanied by the emergence of supporting economic activities in the form of transportation services, stalls, and raw material collectors. Workers also gain skills in operating the milling and molding machines as well as carrying out the carbonization, mixing, and drying processes of briquettes.

Furthermore, the economic benefits felt by informants showed several forms of change, as presented in Table 4.

Table 4. Economic Benefits Experienced by Informants

Form of benefit	Number of Informants	Percentage
Additional income	3	42.9%
Opening of job opportunities	1	14.3%
Acquire new skills	1	14.3%
Cleaner environment	1	14.3%
Income from coconut shell sales	1	14.3%
Total	7	100%

Source: Primary data recapitulation via Google Forms, 2026.

Table 4 shows that additional income was the most frequently cited benefit by informants, at 42.9%. Meanwhile, the creation of employment opportunities, improved skills, a cleaner environment, and income from coconut shell sales were each mentioned by 14.3% of informants. These findings suggest that business benefits extend beyond

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wage receipts to community involvement in the supply chain, increased work capacity, and the utilization of previously unproductive waste.

CV Barbarax's Business Strategy in Improving the Community's Economy

The research results show that CV Barbarax implements a business strategy that includes raw material procurement, production, marketing, and social empowerment. In terms of raw material procurement, the company establishes relationships with coconut farmers, market traders, and collectors to obtain a sustainable supply of coconut shells. Raw materials are obtained from Setanggor Village, Korleko Village, and traditional markets around Sukamulia District at a purchase price of around IDR 2,000 to IDR 3,000 per kilogram. The involvement of these suppliers allows the community to earn additional income from the sale of coconut shell waste. In an interview, Amaq Muhip stated that "coconut shells are plentiful, as long as you collect them diligently," reflecting the availability of raw materials from the surrounding environment.

In terms of production, CV Barbarax implements a semi-mechanical system, combining machinery and human labor. The production process includes drying raw materials, carbonization, charcoal grinding, mixing with tapioca starch adhesive, molding, drying briquettes, and packaging and distribution. This technology allows local workers to participate in various stages of production. However, the drying process still relies on sunlight, taking approximately five days for raw materials and three days for briquettes under normal weather conditions. This dependence causes the production process to take longer during the rainy season. Amaq Muhip explained that raw materials must be completely dry before being burned because "if they are wet, the results will not be good."

In terms of marketing, CV Barbarax employs a product grouping strategy based on quality and particle or mesh size. Finer, more homogeneous products are targeted at the premium category or export market, while medium and coarser products are targeted at the standard and local market. The company markets its products through a network of local distributors and has begun exploring export marketing opportunities. The selling price of briquettes is reported to range from IDR 15,000 to IDR 20,000 per kilogram during periods of high demand, particularly for higher-quality products. Furthermore, the company uses labeled packaging to identify products and provide quality information. In terms of social empowerment, the company involves local communities, particularly youth and housewives, in production and support activities.

Seven informants' assessments of business strategies showed that three informants (42.9%) considered product quality the most important aspect, two informants (28.6%) cited raw material partnerships, and one informant (14.3%) cited competitive pricing and training and coaching. These results indicate that product quality and supply partnerships were the aspects most frequently considered by informants. Supporting

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factors for business activities include raw material availability, community enthusiasm, market demand, and relatively easy-to-master production technology. Conversely, inhibiting factors include dependence on weather for drying, limited capital for capacity development and product diversification, and limited direct access to export markets.

DISCUSSION

Improving Community Economy through Utilization of Coconut Shell Waste

Overall, the research results indicate that CV Barbarax's presence contributes to improving the community's economy by creating new sources of income, absorbing local labor, improving skills, and developing supporting economic activities. The main change is seen in the shift in the utilization of coconut shells from a material previously discarded or burned to a commodity with sales value. This condition shows that the economic potential of local resources can be developed through processing activities that connect aspects of production, distribution, and community involvement. These findings align with the concept of a circular economy that emphasizes resource optimization and the creation of added value in the supply chain, as explained by Cahyadi et al. (2024). These results are also consistent with research by Tamrin et al. (2024) which shows that processing coconut shell waste into briquettes can create alternative sources of income and improve the welfare of rural communities.

Increased community income was the most prominent form of economic contribution in this study. The monthly salary system and production bonuses provided workers with a source of income, while the coconut shell purchasing mechanism created income opportunities for farmers, collectors, and raw material traders. The income changes reported by informants indicate that waste processing activities can provide an alternative source of income outside the agricultural sector, which has traditionally been dependent on the seasons. This finding supports the research of Sukamta and Indardi (2021), who found that processing coconut shell charcoal into briquettes can increase product added value and artisan income through improvements in quality and production management. Similarly, Siregar and Lubis (2022) demonstrated that processing coconut shell waste into charcoal and liquid smoke has the potential to provide additional income and create employment opportunities for the surrounding community. However, the income increases in this study were based on informant information and income records, and therefore do not fully reflect changes in the welfare of all households.

In addition to generating income, community involvement in production activities demonstrates that CV Barbarax's business contributes to expanding employment opportunities and developing local skills. Community involvement in the milling, molding, drying, raw material collection, and marketing processes demonstrates that the business's benefits are not solely concentrated on the company owner, but also extend

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to the community involved in various stages of economic activity. The involvement of youth and housewives also demonstrates the opening of access to productive employment in the neighborhood. These findings align with research by Asfar et al. (2024), which shows that community empowerment through coconut shell waste processing can improve technical skills and open new economic opportunities. Qahar et al. (2025) also demonstrate that developing coconut shell waste-based products through a participatory approach can boost community skills, reduce waste, and expand business opportunities. Thus, CV Barbarax's contribution can be understood as a process of economic empowerment that occurs through direct community involvement in productive activities, even though the level of community business independence outside the company has not yet fully developed.

CV Barbarax's Business Strategy in Improving the Community's Economy

CV Barbarax's raw material procurement strategy, implemented through partnerships with farmers, market traders, and collectors, is a crucial part of building economic relationships between the company and the community. Purchasing coconut shells at a price of around Rp2,000 to Rp3,000 per kilogram allows the community to generate income from previously unused materials, while also helping the company maintain raw material availability. Procurement from multiple regions also expands the reach of suppliers and reduces dependence on a single source. This strategy demonstrates that partnerships in waste processing businesses serve not only as a mechanism for meeting production needs but also as a channel for distributing economic benefits to the community. These findings align with Cahyadi et al. (2024) who emphasize the importance of integration between actors in the circular economy supply chain, and Tamrin et al. (2024) who demonstrate that utilizing coconut shell waste can foster productive economic activities based on local resources.

A semi-mechanized production strategy that combines the use of machinery and human labor demonstrates CV Barbarax's efforts to maintain a balance between operational efficiency and local employment. The production process, which includes carbonization, milling, mixing, molding, and drying, allows local residents to learn new skills through direct involvement in the work. However, the dependence on sunlight during the drying stage poses a constraint that can impact completion time and production capacity, particularly during the rainy season. This issue is crucial because briquette quality is related to the characteristics of the raw materials, particle size, moisture content, and adhesive composition. Yirijor and Bere (2024) demonstrated that adhesive type and particle size influence the physical characteristics and energy performance of coconut shell briquettes. Meanwhile, Ramadhana et al. (2025) demonstrated that utilizing biomass waste into briquettes requires attention to the product's moisture content, ash

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content, carbon content, and calorific value. Both studies reinforce the importance of controlling the production process, although CV Barbarax's own research has not yet conducted laboratory testing to measure the technical characteristics of the resulting briquettes.

In terms of marketing, briquette grouping based on quality and mesh size demonstrates that CV Barbarax has implemented product segmentation to meet different market needs. Products with finer particle sizes are targeted at the premium category, while medium and coarser particle sizes are marketed for standard and local needs. The use of labeled packaging and a distributor network are part of efforts to strengthen product identity and expand distribution. However, access to the export market, which is still under development, indicates that this market potential has not been fully utilized. This situation demonstrates the relationship between product quality, business management capabilities, and marketing access in determining the sustainability of the resulting economic value. These findings align with Sukamta and Indardi (2021), who demonstrated that improving product quality, packaging, and marketing management can increase the selling value of briquettes and the income of artisans. Cahyadi et al. (2024) also emphasized that the integration of production and marketing activities is a crucial part of developing a circular economy-based supply chain. Thus, CV Barbarax's marketing strategy demonstrates a market development orientation, but still requires strengthening the distribution network and preparing quality standards to expand sales reach.

The integration of raw material procurement, production, marketing, and social empowerment strategies demonstrates that CV Barbarax's economic contribution is formed through relationships across business stages. Raw material partnerships generate revenue for suppliers, production activities provide jobs for the community, while marketing determines sales opportunities and company revenue, which in turn supports employee salary and bonus payments. Thus, business success is determined not only by the ability to produce products but also by the capacity to build economic relationships that involve the community from upstream to downstream. Informant assessments, which primarily highlight product quality and raw material partnerships, demonstrate that these two aspects are primary concerns in implementing business strategies. Conversely, training and coaching still receive lower ratings, thus requiring community capacity development to be a priority in further strengthening the business. This perspective aligns with Qahar et al. (2025), who position community participation and product development as part of creating a circular economy, and Asfar et al. (2024), who emphasize the importance of skills development and mentoring in developing waste-based economic activities.

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In terms of theoretical and practical contributions, this study expands the study of the circular economy by demonstrating that the utilization of coconut shell waste at the company level can generate benefits not only in terms of increased product sales value, but also in terms of income distribution, employment, and supporting economic activities in rural areas. Practically, the research findings illustrate that the sustainability of CV Barbarax's economic contribution requires strengthening capital, the use of drying technology that is not entirely dependent on weather, improving product quality, and expanding the marketing network. However, this study has limitations because it only examined one company with seven informants, so the findings reflect the informants' experiences and case context, rather than statistically reflecting the overall condition of the community. Furthermore, changes in unemployment rates, turnover of supporting businesses, and household welfare have not been measured quantitatively, while comparisons of income before and after involvement are still based on informant information. These limitations indicate the need for further research with a broader range of informants and longitudinal economic measurements to assess the impact of waste processing businesses more comprehensively. The approaches to supply chain strengthening and community capacity building discussed by Cahyadi et al. (2024) and Asfar et al. (2024) can serve as a foundation for further research.

Additional Summary of Business Strategy Results

To complete the presentation of business strategy data, informant assessments can be presented as follows.

Table 5. Informant Assessment of Barbarax CV Strategy

Strategic aspects	Amount	Percentage
Product quality	3	42.9%
Raw material partnership	2	28.6%
Competitive prices	1	14.3%
Training and coaching	1	14.3%
Total	7	100%

Source: Primary data, Google Forms, 2026.

The data shows that product quality was the strategic aspect that received the most attention from informants, followed by raw material partnerships. Meanwhile, competitive pricing and training and coaching received equal proportions of ratings.

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CONCLUSION

This study concludes that CV Barbarax's coconut shell waste processing business contributes to improving the economy of the people of South Setanggor Village by increasing the income of workers and suppliers, absorbing local labor, improving skills, and growing supporting economic activities such as transportation services, food stalls, and raw material collectors. This contribution is supported by a business strategy that includes partnerships for raw material procurement, semi-mechanized production, marketing based on product quality (grade), and community empowerment through the involvement of youth and housewives. However, business implementation still faces obstacles such as dependence on the drying process on weather, limited capital, and suboptimal access to export markets. Therefore, CV Barbarax is advised to strengthen production capacity by developing drying technology, improving product quality, expanding supplier partnerships, and developing marketing networks and access to financing. The local government is also expected to provide support through skills training, business mentoring, capital facilitation, and expanding market access so that economic benefits can be felt more sustainably. Academically, further research is recommended to involve more diverse informants and use quantitative and longitudinal measurements to identify changes in household income, labor absorption, and multiplier effects in a more measurable manner. This research is limited by its case study, which focused on only one company with seven informants, making the findings statistically infeasible. Therefore, this study provides an overview of the potential of coconut shell waste processing as an alternative for developing a local resource-based community economy.

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