

Communication Barriers to Sustainable Utilization of Coconut Waste in Gedebage Main Market Bandung

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Abstract

Coconut waste, a largely untapped resource, holds immense potential for efficient utilization. However, this commodity's current production has yet to generate significant added value as coconuts are primarily used for coconut oil, and the fiber is often discarded as waste. This service research identifies challenges and communication barriers in using coconut dregs at the Gedebage Main Market, Bandung City. By employing the Community Research (CBR) service method through Forum Group Discussions (FGD), we aim to collaborate with the community to explore various approaches to the issues they face. Data was collected through a qualitative approach, including in-depth interviews, field observations, and literature studies. The service research findings reveal several challenges in utilizing coconut waste, such as infrastructure problems, licensing constraints, and the need for better-trained human resources. Meanwhile, communication obstacles faced include technical obstacles, namely the lack of accompanying staff or communicators who carry out outreach and provide information on the potential use of coconut dregs to the community. Technological obstacles include the unavailability of the required modern coconut waste processing machines. Institutional obstacles include unclear roles and responsibilities of the parties involved and the need for coordination between stakeholders in utilizing coconut waste. Your active participation and support are crucial in overcoming these obstacles and realizing the full potential of coconut waste.

Keywords

Coconut Waste; Communication Barriers; Gedebage Main Market Bandung



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1. INTRODUCTION

Waste management is one of the issues that often arises in urban areas, especially in the city of Bandung. Moreover, the Bandung City Government has officially declared a Waste Emergency status, reflecting growing concerns about the waste problem. The Gedebage Wholesale Market is one of the significant trading locations contributing to the waste problem, with coconut waste being one of the main contributors. The presence of many coconut sellers in the wholesale market has led to a buildup of coconut waste, often left scattered. With the increasing demand for coconut products, these traders often need more infrastructure or waste management systems. As a result, coconut husk, fiber, and shells are left to accumulate around the market area (Alsharif et al., 2019; Ortiz & Huber-Heim, 2017). Poor management of these piles of coconut waste can disrupt the daily activities of market users and increase the risk of flooding. According to a coconut seller at the wholesale market, coir waste is usually disposed of or burned without undergoing value-added processing (Kendari, 2023; Kusumawati & Sadik, 2016; Oktariani & Srivijaya, 2022). The accumulation of coconut waste is not only a matter of hygiene and aesthetics but also can potentially create adverse environmental impacts (Kamil, 2018b; Married and Married, 2022). To address this issue, a coordinated effort is needed between vendors, authorities, and surrounding communities to develop more sustainable coconut waste management solutions (Di et al., 2023; Rahman & Rita Sulistyowati, 2023).

Based on observations, one of the problems urban communities face is the low level of awareness and understanding related to the potential use of coconut waste (Lucardie, 2014; Stephenson, 2023). More public awareness and understanding is needed. Communication barriers include a lack of effective public awareness campaigns, an inability to convey the benefits of coconut waste management, and the absence of a collaborative approach involving the government, communities, and the private sector (Kamil, 2018a; Napitupulu & Mighty, 2023).

There are several studies on coconut fiber, including, Asrawaty et al (2021) on Processing Coconut Fiber Waste into a Product of Economic Value After the Earthquake During the COVID-19 Pandemic in Salubomba Village, Nirwan Junus et al (2020) on Utilizing Coconut Waste in Improving the Economy of Village Communities to Support Environmental Preservation amid the COVID-19 Pandemic, Bulkaini et al. (2021) on Technological Innovation for Processing Coconut Fiber Waste in Sigar Penjalin Village, Sunardi et al. (2019) on Utilizing Waste Water and Coconut Fiber to Improve the Welfare of the Mojosari Community, and Azizah (2020) Regarding the Utilization of Waste Water and Coconut Fiber to Improve the Welfare

of the Mojosari Community. Most of these studies only discuss coconut fiber waste from economic and technological aspects. At the same time, there has not been much research discussing communication barriers in using coconut fiber waste, so it is interesting to carry out further research.

Therefore, there is a need for more intensive and strategic communication efforts to increase public understanding of coconut waste as a resource that can support local economic growth and environmental conservation. This study aims to identify communication barriers in managing and utilizing coconut waste in creative products and propose sustainable coconut waste management solutions.

2. METHODS

This community service uses the Community Based Research (CBR) service method. The CBR method is a participatory method developed to encourage collaboration between researchers (researchers) and informants, to receive and develop perfect findings, and to become a method for analyzing service research findings into practical changes (Miskiyah et al., 2023). This method is carried out through Forum Group Discussions (FGD), which are carried out with the community to identify various approaches to their problems. In the future, community problems will be resolved using this alternative. The initial stage of this service research involved exploration and collaboration with relevant government departments and institutions, namely Panyileukan District, the Gedebage Wholesale Market Regional Company, the Environmental Service, and the Market Community Association. This step aims to obtain approval, cooperation, access to market areas, and the necessary permits for research. The exploration process also aims to establish mutually beneficial collaborative relationships with stakeholders in the field, thereby facilitating access to relevant data and information for this service research. The research was conducted around the Gedebage Wholesale Market in Panyileukan District, Bandung. The data collected includes primary and secondary data. Primary data was obtained from research informants. Data collection techniques were conducted through in-depth interviews, Focus Group Discussions (FGD), observations, and literature reviews. There were ten research informants: market traders, government officials, environmental activists, and main market managers. The FGD activity was held on August 2, 2023, at the Panyileukan District Hall, Bandung. It was carried out to examine problems, challenges, and obstacles related to coconut fiber waste processing through focused discussions. Secondary data are obtained from documents and records related to the research topic. In addition, data validity checks are performed using triangulation techniques, which involve using something outside the data to

check or compare with the data itself (Sugiyono, 2018). Data analysis is done through data reduction, presentation, and conclusions, which results from the data analysis process, where researchers describe, analyze, and interpret research data. The conclusion is the essence of the overall research activity, with the chosen methodology aligned with the research objectives.

4. FINDINGS AND DISCUSSION

The initial phase of this research involved exploration and engagement with relevant government departments and agencies, namely the Panyileukan sub-district, regional company *Pasar Grosir Gedebage*, Environment Agency, and Market Community Association. This step is aimed at obtaining approval, cooperation, access to market areas, and obtaining the necessary permits for research. The exploration process also aims to establish mutually beneficial cooperative relationships with stakeholders in the field, facilitating access to relevant data and information for research.

Observations and interviews with regional companies *Pasar Gedebage* revealed that waste and waste management in the Gedebage Wholesale Market needs to meet expectations. Gedebage Market can produce up to 10 tons of garbage on any given day. Due to the large market area and its nearly 24-hour operational schedule, accumulating high volumes of waste is inevitable, especially organic food waste such as coconut husk. Market problems are further complicated by a dual management system, with the market management division between *PT Ginanjar and Perusahaan Daerah Pasar Kota Bandung (PD Pasar)*. This dual management has resulted in ineffective communication and overlapping coordination.

Communication problems arise when an organization or milieu has a dualism of power (Iskandar, 2015; Marcelawati & Affandi, 2017). Power dualism refers to situations in which more than one entity or individual holds authority or control in decision-making or the execution of tasks. This can lead to uncertainty about who has the dominant authority or whom to follow in communication and decision-making. This uncertainty can slow down the flow of information, disrupt coordination, and create conflict, ultimately hampering the efficiency and effectiveness of the organization or system in question (Sidik, 2014).

The next stage is to conduct focus group discussions to address various issues in the parent market and align goals and perspectives among related parties. Focus Group Discussion (FGD) is one of the methods used in research to collect qualitative data through guided group conversations. This method involves a group of respondents with relevant experience or views on a particular research topic, and they

gather for a structured discussion under the guidance of a moderator (Bisjoe, 2018). The following are focus group discussion activities organized by the research team in collaboration with the Panyileukan district government:



Figure 1. Focus Group Discussion to overcome waste problems.

In discussions with stakeholders, several facts and data showed that the increase in garbage piles was because the market was used as a dumping ground by market traders and surrounding residents. As a result, the Gedebage wholesale market is used as a temporary garbage dump by locals in the Panyileukan district. Based on interviews with market traders, coconut waste is the most common type of waste produced in the market area because of the large number of traders who sell coconuts. Market authorities have stated that coconut waste can cause problems if collected after some time. Heavy rainfall can impact the flow of the Cipamulihan River and result in retention ponds, which in turn can result in pollution and flooding. Below is a pile of garbage in the Gedebage wholesale market area in Bandung.

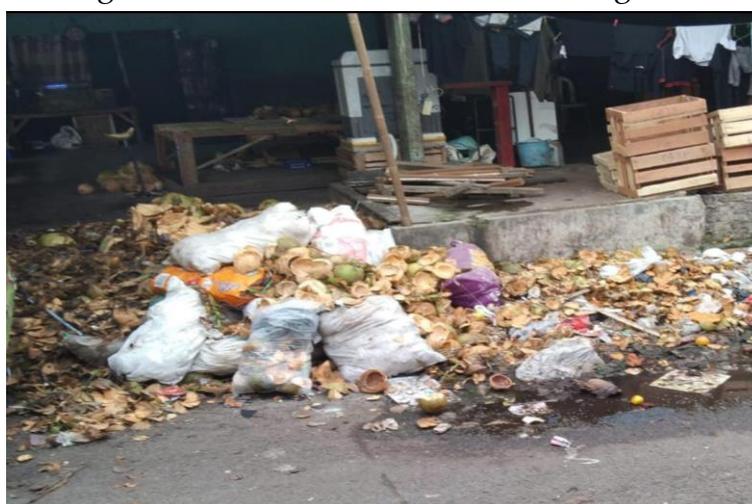


Figure 2. Piles of Coconut Waste

Research findings resulting from FGD activities revealed several challenges in utilizing waste from coconut fiber. Several obstacles in the use and management of coconut waste include low public awareness of the importance of managing coconut fiber waste in a sustainable manner. This challenge is part of the barriers to environmental communication because if public awareness of the environment is still low, the effectiveness of communication delivered by environmental communicators and educators regarding environmental problems, especially the use of coconut waste, will not be optimal (Irawan et al., 2023); (Asfahani et al., 2023). Environmental communication barriers can include various factors, such as a lack of understanding of environmental issues, unclear messages, differences in language or terminology, and other psychological and social factors (Jurin et al., 2010). An obstacle that often arises in environmental communication is the need for more community participation.

Environmental communication can help convey information about coconut waste, its potential use, and environmental impacts. The community can understand their role in managing coconut waste sustainably through effective communication. Open and continuous communication can help the public understand the potential environmental risks of using coconut waste. This allows them to identify and reduce negative impacts and collaborate with relevant parties to find the most effective solutions. There are several references on the role of communication in building public awareness, including Herutomo's (2021) research on environmental communication in developing forest sustainability, Kamil's (2018) on Collaborative Communication in Preserving the Bandung Kamojang Crater Forest Conservation Area, and Grace Anindya's research (2023), on Challenges and Opportunities in Developing Effective Environmental Communication in the Digital Era.

Developing environmental communications for a digital society brings several challenges that need to be overcome. Some of the challenges and communication barriers include:

1. Excessive information (Information Overload). Digital societies are often exposed to much information every day. Therefore, environmental messages must be presented attractively and clearly to compete with other information.
2. Lack of Attention (Short Attention Spans). Modern society tends to have short attention spans. Therefore, environmental communications must be designed to attract attention quickly and convey messages concisely.
3. Limitations of Social Media. Although social media can effectively disseminate information, there is a risk of misinformation (hoaxes) or lack of depth of

information. Strategies are needed to ensure that environmental messages are verifiable and have credible sources.

4. Inequality of Technology Access. Only some have equal access to digital technology. Therefore, finding alternative ways to reach people who may need access to certain digital platforms is necessary.
5. Engagement Challenges. Increasing public involvement in environmental issues in modern society can be difficult. Creative strategies such as the use of gamification or interactive content are needed to increase engagement.
6. Message Differentiation. With so many environmental messages circulating on social media, ensuring that the environmental messages conveyed can be differentiated from others is difficult. Messages need to be designed in such a way that they can attract attention and remain in people's minds.

The lack of collaboration and coordination among stakeholders involved in coir waste management creates communication barriers. Disagreements among environmental stakeholders and waste managers can hinder the effective flow of information and cooperation needed for sustainable solutions (Indah et al., 2022; Suharyadi et al., 2015). This difference of opinion is related to how coconut waste should be managed, whether through recycling methods or other approaches. There is debate about the environmental impact when coconut waste is processed into cocopeat. Before starting production, a feasibility study is required when converting coconut waste into cocopeat or coconut fibers. This relates to site selection and environmental aspects. Cocopeat is widely used in agriculture as a growing medium due to its excellent water and air retention capabilities, making it an environmentally friendly alternative growing medium.

To set up a coir processing facility for cocopeat production, choosing a location away from residential areas is advisable to avoid interference from noise and dust spread resulting from coconut husk milling. During the discussion and focus group discussion (FGD) organized by the Panyileukan Regency Government in collaboration with a research team from Langlangbuana University, there was a debate about the environmental impact when coconut waste is processed into cocopeat. It becomes a point of communication, dialectics, and debate in the FGD among the parties concerned. Therefore, this phase of focus group discussion serves as a communication platform that facilitates open and ongoing dialogue among all parties involved. These efforts will help build mutual understanding, identify common interests, and design more comprehensive sustainable coir waste management strategies.

Appropriate, inclusive, and sustainable communication is key to overcoming

these challenges and barriers. An approach focusing on education, collaboration, and public participation is needed to change perceptions and practices related to coir waste towards more sustainable management that benefits the environment and society. Below are the findings of research on communication barriers in the sustainable use of coir waste:

Table 1. Communication Barriers in the Sustainable Utilization of Coir Waste

Not.	Communication Barriers in the Sustainable Utilization of Coir Waste
1.	Low Public Awareness of the Environmental Impact of Coconut Coir Waste
2.	Lack of Understanding of the Reuse Potential of Coir Waste
3.	Unclear Roles and Responsibilities of Various Stakeholders
4.	Lack of coordination and collaboration between the business sector, coconut traders, and the government
5.	Technical Challenges in Processing Waste into Value Products
6.	Limited Knowledge of Available Waste Management Technologies
7.	Limited Understanding of the Long-Term Impact of Coir Waste

Source: Research Findings, 2023

In discussions and FGDs attended by the Environment Department and Panyileukan district government, stakeholders and community leaders have united in a common vision to address solutions to waste problems, particularly coconut waste, in wholesale markets, to turn them into creative products. The communication strategy is an effort to overcome various communication barriers faced in utilizing coconut waste in the wholesale market of Gedebage Bandung.

In the context of utilizing coconut husk, by designing appropriate communication strategies, involving various stakeholders, and utilizing appropriate media, environmental communication plays a role in shaping a sustainable paradigm in environmental management. The ecosystem multi-helix-based communication strategy in utilizing coconut husk waste involves a collaborative approach involving various parties responsible for waste management. The research findings include strategies involving the industrial and business sectors, market traders, both in the Gedebage Wholesale Market, Caringin Wholesale Market, and GBLA Stadium, farmers, districts, and local governments, including sub-districts and villages, academics, media, Walhi as an environmental organization, volunteers, environmental enthusiast communities, youth organizations, cadres, Local Environmental Management (LMD), and the wider community. This approach encourages open communication, active listening, and stakeholder knowledge exchange. Some solutions to overcome communication barriers in the utilization of

coconut waste are outlined in the form of communication strategies as follows:

Table 2. Strategies to overcome communication barriers in the utilization of coconut waste

Not. Strategies to overcome communication barriers in the utilization of coconut waste

1. The government facilitates meetings between communities and relevant government agencies to provide an understanding of the environmental and local economic benefits of utilizing coconut waste.
2. Conduct social media campaigns on waste utilization through official government websites and social media channels.
3. Academics and government agencies collaborate to organize workshops or seminars on the environmental benefits of recycling coconut waste.
4. Establish partnerships with local industries that need coconut waste as raw material.
5. Build a strong communication network with related industries. - Promoting processed coconut waste products to potential consumers.

Source: Research Findings, 2023

Through collaborative communication, the management and utilization of coconut waste in the Gedebage wholesale market can achieve more optimal results. With a coordinated communication strategy, local governments can provide understanding to communities, motivate sustainable practices, and raise awareness of the ecological and economic benefits of utilizing coconut waste. Market traders will also benefit from improved communication, enabling them to acquire the necessary skills, disseminate information, and successfully market coconut waste derivative products (Juwaningsih et al., 2019; Nugroho et al., 2023). In addition, local communities will be active participants, gain insight into the importance of recycling coconut waste, and participate in eco-friendly initiatives.

Collaboration with industries that utilize coconut waste is key to driving the regional economy towards sustainability, where coconut waste becomes a valuable resource. By linking these industries to a consistent supply of coconut waste, the local economy will receive a boost, job opportunities will be created, and the environment will benefit from significant waste reductions. Ultimately, through a multi-helix approach in communication and collaboration, Gedebage's wholesale market can become a sustainable and environmentally friendly coconut waste management model, providing benefits to all stakeholders and the wider community.

5. CONCLUSION

This research has identified several communication barriers in efforts to utilize coconut waste in the wholesale market of Gedebage, Bandung, and has proposed solutions to overcome these barriers. Communication barriers identified include a lack

of community understanding of the benefits of coconut waste, unsupportive regulations, and inadequate coordination among various stakeholders. However, with an effective communication approach, recommended solutions can overcome these barriers and increase the utilization of coconut waste in the market. This research highlights the importance of the local government's role in promoting the benefits of coconut waste utilization to the community. In this case, collaboration with related parties and social campaigns can help increase public awareness. In addition, involving market traders in training and promoting coconut waste derivative products is an important step in increasing their participation in this initiative. In addition, local communities should be involved through environmental cleanup activities and workshops to increase their understanding of the importance of environmental conservation.

Collaboration with industries that require coconut waste as raw material is a key element in sustainable coconut waste management. By establishing strong communication networks with these industries, Gedebage's wholesale market can become a model for sustainable utilization of coconut waste, providing significant economic and environmental benefits. Thus, the study's results offer a comprehensive insight into the importance of targeted communication solutions in improving the utilization of coconut waste in the wholesale market of Gedebage, Bandung. As a follow-up plan to this research, it is necessary to strengthen internal communication between traders and local producers at the Gedebage main market to increase understanding of the potential utilization of coconut fiber waste. Hold regular meetings and training to discuss the benefits, processes, and business opportunities related to using coconut fiber waste, as well as create practical guides or online tutorials on how to process coconut fiber waste, which coconut traders, communities, and the public can access.

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