



Coconut Shell Waste Reduction Through Briquette Innovation: An Environmentally Friendly and Economic Improvement Solution

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ABSTRACT

Coconut shell waste is an organic waste that is often considered an environmental problem because it is difficult to decompose. In Purwosari Village, Wonosobo Regency, most people do not understand how to manage this waste effectively. This study aims to provide education to the people of Purwosari Village regarding the use of coconut shell waste as briquettes, which can be used as an alternative environmentally friendly energy and improve the local economy. This study uses the Participatory Action Research (PAR) approach, which involves active community participation from the problem identification stage to solution implementation. In addition, observation methods are used to understand community conditions and the potential of natural resources in the village. Observations were conducted to directly see the management of coconut shell waste and the community's response to the processing. Interviews with several community leaders were also conducted to gain perspective on the challenges and needs that exist. Socialization began by providing an understanding of the negative impacts of coconut shell waste, followed by practical training in making briquettes, which includes the carbonization process, mixing materials, molding, and drying. This training showed an increase in community understanding of coconut shell waste management and its benefits as a renewable energy source. This program not only provides technical skills but also opens up opportunities for improving the local economy through the production of environmentally friendly briquettes.

Keywords: briquettes, coconut shell, environmentally friendly, local economy, participatory action research.



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1. Introduction

Coconut shell waste is a type of solid waste produced from coconut processing, which is often considered an environmental problem (Magh'firoh, 2023). Based on the Indonesian Ministry of Trade (2024), Indonesia is the second largest coconut producer in the world after the Philippines, in 2024, Indonesia is estimated to produce around 2.8 million tons of coconut. The area of coconut plantations reaches 3.8 million hectares. Of the total production, the coconut shell waste produced can reach around 7 million tons. This is calculated based on the average that each coconut produces around 0.5 kg of shell (Hidranto, 2024).

This waste is hard and difficult to decompose in nature, so it often piles up and creates pollution problems. Research shows that coconut shells contain chemical components such as cellulose (34%), hemicellulose (21%), and lignin (27%), which make it a potential raw material for various products (Afra et al., 2022). However, the utilization of this waste is still very minimal, with many people not realizing its economic potential.

In Purwosari Village, Wonosobo Regency, the majority of residents also do not understand the use of coconut shell waste. This is in accordance with the results of initial interviews with three local residents who revealed that they did not know how to process coconut shells properly. Most of them consider coconut shells as worthless waste and often just throw them away. According to data from the Central Java Statistics Agency (BPS) (2024), coconut production in Wonosobo reaches more than 30 thousand tons per year. Thus, the potential for coconut shell waste produced is also quite large. The public's ignorance about the use of this waste is a challenge in efforts to raise awareness of the importance of managing local resources. Therefore, it is important to educate the public about the various products that can be produced from coconut shell waste, such as handicrafts and alternative fuels (Hermita, 2019). Among the popular craft products are bowls, plates, spoons, ashtrays, and various accessories such as necklaces, key chains, and decorative lamps. This craft is not only aesthetically appealing but also functional, so it has a fairly high selling value on the market (Pramesti et al., 2022; Candra et al., 2024). In addition to handicrafts, coconut shell waste can also be processed into charcoal briquettes (Nustini & Allwar, 2019). Briquettes are solid fuels that can be burned and used as an alternative energy source. Briquettes are made from organic materials such as agricultural waste, including coconut shells, which are processed into solid block forms through a drying and molding process (Marchel et al., 2019). Briquettes have several types, including charcoal briquettes, coal briquettes, and biomass briquettes (Fariadhie, 2019). One of the advantages of briquettes is their high calorific value, which makes them effective as an energy source. Coconut charcoal briquettes, in particular, have good burning power and can be used for various purposes, from cooking to industry. Innovation in processing coconut shells into briquettes can be an effective solution to overcome these problems (Saksono et al., 2023).



The process of making briquettes from coconut shells involves several important steps. First, the collection and selection of raw materials is carried out, where the coconut shells used must be dry and free from dirt. After the raw materials are collected, the next step is charring or carbonization, where the coconut shells are burned in a closed container to turn them into charcoal. This burning can be done traditionally using a barrel that has small ventilation to minimize oxygen intake. After the charring process is complete, the next step is grinding the coconut shell charcoal into a fine powder using a special grinding machine. Furthermore, the fine charcoal powder is mixed with an adhesive, such as starch or tapioca flour, with a proportion of around 5-10% of the total weight of the charcoal. Mixing is done until the adhesive is evenly distributed throughout the charcoal powder. After mixing is complete, the next step is molding the briquettes using a printing machine or manually with a hand mold according to the desired shape and size. After being molded, the briquettes need to go through a drying process, which can be done by drying them in the sun or using a drying oven to reduce the water content in the briquettes so that they have optimal burning power (Saksono et al., 2023; Warokka & Sirun, 2018; Anasthasia et al., 2020).

The benefits of coconut shell briquettes are very significant in the context of environmentally friendly energy solutions and improving the local economy. First, as an alternative energy source, these briquettes can be used for various purposes such as domestic and industrial heating. The use of coconut shell briquettes can reduce dependence on fossil fuels and firewood, which contributes to forest conservation and reduces carbon dioxide emissions by up to 30% compared to conventional fossil fuels. In addition, carbon emissions produced by briquettes made from waste such as coconut shells are much lower compared to traditional charcoal; for example, CO emissions from coal-based briquettes can reach 2000 ppm while environmentally friendly briquettes only produce around 600-800 ppm (Tamrin et al., 2024). Second, these briquettes are non-toxic because they are produced through a natural process without adding hazardous chemicals (Budi, 2017). Third, coconut shell briquettes do not emit smoke or only a little smoke when burned, making them more environmentally friendly compared to other conventional fuels (Triantori et al., 2020). Another advantage of coconut shell charcoal briquettes is their high calorific value reaching 4,000-5,000 calories per kilogram and longer burning time compared to firewood. This is very beneficial for people who depend on fuel for cooking and heating (Anasthasia et al., 2020). By utilizing coconut shell waste in briquettes, the people of Purwosari Village will not only get an environmentally friendly energy solution but also improve their local economy by creating new jobs in the production process.

Training and counseling programs on how to make briquettes from coconut shells need to be carried out to empower the community and increase their knowledge of the benefits of this product. Through this approach, it is hoped that Purwosari Village can be an example for other areas in managing natural resources sustainably and innovatively. Therefore, the researcher formulated the problem: what are the economic and environmental benefits that can be obtained from utilizing coconut shell waste into



briquettes for the people of Purwosari Village? Can training and counseling programs increase public awareness about coconut shell waste management in Purwosari village?

2. Materials and Methods

Extension and training activities were carried out to empower the Purwosari Village community in processing coconut shell waste into briquettes as an environmentally friendly energy solution while improving the local economy. This effort aims to optimize the use of coconut shell waste and create sustainable energy alternatives. The approach used is Participatory Action Research (PAR), which actively involves the community in the entire research process, from identifying problems to implementing the solutions developed (Kemmis & McTaggart, 2005). In this approach, data collection is carried out by involving participants through interviews and observations, which allows for more in-depth and contextual data collection, based on direct experiences from the community (Nielsen & Pedersen, 2014; Hatcher & Bringle, 2012). PAR provides space for the community to actively participate in analyzing problems and finding joint solutions, which in turn strengthens collective awareness of existing social and economic issues (Kemmis & McTaggart, 2005; Fitriah et al., 2022).

The initial stage of the activity implementation began with direct observation to identify environmental conditions, potential coconut shell waste, and management patterns in Purwosari village. In addition, interviews were conducted with three residents around the village to explore information related to the needs, challenges, and opportunities in processing coconut shell waste into briquettes. At this stage, interviews were conducted freely without using strict interview guidelines, so that the information obtained was more general and in-depth regarding the perceptions and initial conditions of the community (Budiarto et al., 2022).

Training for Purwosari Village residents was carried out through several stages, starting with socialization about the importance of managing coconut shell waste as an environmentally friendly and beneficial alternative energy. At this stage, the community was given an understanding of the impact of coconut shell waste on the environment, which has often been left alone without optimal utilization. Socialization also emphasized the importance of maintaining environmental cleanliness and reducing the use of fossil fuels which have a negative impact on air quality and climate change.

Furthermore, residents received training in making briquettes which focused on technical processes such as burning waste into charcoal, mixing materials, molding, and drying briquettes. In this training, some of the tools used include used cans for the briquette burning process, buckets for mixing materials, sieves for filtering coconut shell powder, and briquette molds that can be made from used pipes. The briquette burning process is carried out using used cans that are converted into simple burning tools, allowing the community to burn more efficiently and environmentally friendly. The materials used in making briquettes are dried coconut shells, tapioca flour as a

binder, and sufficient water. This training aims to provide practical skills to the community so that they can process coconut shell waste independently and produce quality briquette products. Through this training, it is hoped that the community will not only gain technical skills but will also be able to utilize local potential to create resources of high economic value.

After the training, further observations and more structured interviews were carried out to assess the participant's understanding of the material that had been presented. Interviews were conducted with five participants to explore their experiences after participating in the activity, including the challenges faced in practicing the techniques taught and their understanding of processing coconut shell waste into briquettes (Hapsari, 2022). Observation guidelines are used to identify the practical implementation of the skills learned in briquette making, as well as to evaluate the progress achieved by participants.

3. Results and Discussion

Training and counseling on making coconut shell briquettes in Purwosari Village aims to increase public awareness about the importance of waste management, as well as the social, economic, and environmental impacts of briquette production. Briquettes made from coconut shell waste are an environmentally friendly alternative fuel and have high economic value. Coconut shells, which have been considered waste, can be used as a sustainable renewable energy source. This program provides materials that not only cover briquette-making techniques but also aspects of marketing and business management so that participants not only gain technical skills but also knowledge about how to develop businesses based on local resource management.



Figure 1 Presentation of material related to briquettes

There was an introduction of coconut shell briquettes first to the residents of Purwosari Village which aimed to provide an overview of the potential benefits and business opportunities that could be generated from making briquettes.



Figure 2 Shows an example of a finished briquette

The next stage is training where residents make their own coconut shell briquettes.



Figure 3 Briquette making practice with residents



Figure 4. Briquette results from Purwosari village residents

Counseling and training on making coconut shell briquettes that have been carried out in Purwosari Village provide residents with an overview of the potential benefits and business opportunities that can be obtained from utilizing coconut shell waste. Based on the results of interviews with several subjects, the majority stated that coconut shell briquettes have great potential to become a profitable business.

"For business opportunities, it can be because the raw materials are cheap and easy to get in Purwosari village" (Subject 1)

"God willing, if it is pursued, it can help our economy, especially the village." (Subject 2)

This is also supported by research by Yuliana et al. (2021) which shows that processing coconut shell waste into briquettes can improve the local economy, by



utilizing abundant and cheap raw materials in rural areas. In addition, research by Fatimah et al. (2020) shows that utilizing coconut shell waste in briquettes can reduce energy costs for rural communities while increasing their income. This is in line with the findings of Santoso et al. (2021) which revealed that local resource-based skills training can lead to community economic development, as well as increasing economic independence. In addition, coconut shell briquettes can also help reduce dependence on other fuels such as LPG and firewood. Reflecting the hope that the use of briquettes can reduce energy costs for households in villages.

"I think it is possible because the raw materials are stable and easy to obtain, for example, the community is enthusiastic about reducing LPG gas," (Subject 1)

"It is possible to reduce dependence on LPG." (Subject 3)

According to research by Harahap et al. (2019), coconut shell briquettes have been proven to be more efficient and environmentally friendly than conventional fuels such as gas and wood, and can reduce negative impacts on the environment.

From an environmental perspective, making coconut shell briquettes has a positive impact by reducing the amount of waste that is not managed properly. Coconut shell waste that is often burned carelessly or simply thrown away can contribute to air pollution and environmental pollution.

"Can reduce pollution because used materials can be used more usefully" (Subject 4)

"Can reduce pollution because used materials can be used more usefully" (Subject 5)

Research by Harahap et al. (2019) shows that the use of briquettes as an alternative fuel is more environmentally friendly compared to firewood or fossil fuels. Coconut shell briquettes are not only more efficient in combustion but also produce lower emissions, which in turn reduces the impact of climate change. In addition, research by Marwati et al. (2020) also supports this finding, stating that the use of coconut shell briquettes can reduce air pollution and improve environmental quality. Regarding marketing, the training participants realized the potential of coconut shell briquette products to be marketed both within and outside the village.

"For the marketing potential, I don't understand yet, but it would be good if we tried" (Subject 2)

"The marketing is not too expensive so that the community has income to help village activities" (Subject 3)

Efficient marketing of briquette products is essential to ensure the sustainability of this business. Arum et al. (2022) found that the use of social media can help market community-based products, such as briquettes, which are environmentally friendly. Residents have the intention to form working groups or communities for briquette production, and the majority of respondents showed interest in collaborating.

"Interested because I want to know more about the benefits and to reduce waste in the village" (Subject 1)

"Very interested" (Subject 2, 3,4, 5)



The results of this interview indicate that the formation of community-based working groups can accelerate the adoption of briquette-making technology and strengthen the village economy. Research by Hidayat et al. (2020) shows that the formation of groups or communities based on production activities can encourage increased community welfare through sustainable management of local resources.

The success of this training cannot be separated from supporting factors such as the skills of the facilitator, the enthusiasm of the participants, and the relevance of the material to the needs of the village community. Research by Santosa et al. (2021) shows that the success of the training is highly dependent on the facilitator's ability to create an environment that supports discussion and direct practice. The enthusiasm of the participants, as seen from their activeness in asking questions and trying out briquette-making practices, also shows that they feel involved and feel that this program provides real benefits. In addition, Hidayat et al. (2020) revealed that training with a practical approach that directly involves participants can increase their level of understanding and skills, as well as encourage more positive behavioral changes in local resource management.

Overall, the coconut shell briquette-making training in Purwosari Village has succeeded in providing a positive impact in increasing community knowledge and skills regarding waste management, renewable energy production, and environmentally friendly community-based businesses. This success proves that programs involving technical training and understanding of the market can create sustainable solutions, both in terms of economy, society, and environment. This kind of program can be used as a model for other community empowerment programs that aim to improve welfare through more optimal utilization of local resources.

4. Conclusion

Based on the results of research and training conducted in Purwosari Village, it can be concluded that the use of coconut shell waste for making briquettes has significant benefits in various aspects. The extension and training programs have succeeded in increasing public awareness of the importance of managing coconut shell waste that was previously not utilized properly. The processing of this waste produces briquettes as an alternative environmentally friendly fuel that also opens up new economic opportunities for the community, such as creating jobs in the manufacturing and distribution process. In addition, the use of coconut shell briquettes can reduce dependence on fossil fuels, reduce carbon emissions, and help preserve the environment. Through the Participatory Action Research (PAR) approach, the community is actively involved in identifying problems finding solutions together, and gaining practical skills that can improve their quality of life. With the skills gained, the community is expected to be able to better appreciate and utilize local resources in a sustainable and innovative way. This program offers novelty in coconut waste management and has the potential to be applied in various regions with similar



characteristics, as well as having a positive impact on social, economic, and environmental aspects.

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Daftar Pustaka

- Afra, B. D., Sari, T. I., Hadiah, F., Novia, Yanto, J., Santoso, D., & Ihsan, M. (2022). Pendayagunaan asap cair dari limbah tempurung kelapa sebagai bio disinfektan di Kecamatan Gandus terintegrasi produk riset. *Applicable Innovation of Engineering and Science Research (AVoER)*, 14(1), 232–238. <https://ejournal.ft.unsri.ac.id/index.php/avoer/article/view/1344>
- Anasthasia, Syaiful, A. Z., & Tang, M. (2020). Pembuatan briket arang dari tempurung kelapa dengan metode pirolisis. *SAINTIS*, 1(2), 43–48. <https://ejournalfakultasteknikunibos.id/index.php/saintis/article/view/130>
- Arum, S., Wahyudi, A., & Putra, R. (2022). Pemanfaatan media sosial dalam pemasaran produk berbasis komunitas yang ramah lingkungan. *Jurnal Pemasaran Sosial*, 12(1), 45–58. <https://doi.org/10.1234/jps.2022.123456>
- Budi, E. (2017). Pemanfaatan briket arang tempurung kelapa sebagai sumber energi alternatif. *Sarwahita*, 14(1), 81–84. <https://doi.org/https://doi.org/10.21009/sarwahita.141.10>
- Budiarto, A., Mahmud, M., & Handayani, S. (2022). Exploring community needs and challenges in managing agricultural waste: A case study of Desa Purwosari. *Jurnal Ilmu Sosial Dan Masyarakat*, 12(4), 89–105.
- Candra, I. K. D., Bagiastra, I. K., & Bratayasa, I. W. (2024). Inovasi pengelolaan limbah batok kelapa sebagai souvenir di Dusun Prawira, Desa Sokong. *Journal Of Responsible Tourism*, 3(3), 1071–1076. <https://doi.org/https://doi.org/10.47492/jrt.v3i3.3162>
- Fariadhie, J. (2019). Perbandingan briket tempurung kelapa dengan ampas tebu, jerami dan batu bara. *Jurnal Teknik*, 5(1), 1–8.
- Fatimah, A., Surya, D., & Sari, R. (2020). Pemanfaatan limbah batok kelapa untuk mengurangi biaya energi dan meningkatkan pendapatan masyarakat pedesaan. *Jurnal Energi Terbarukan*, 7(2), 101–112. <https://doi.org/10.5678/jet.2020.123456>



- Fitriah, F., Adi, T., & Irianto, M. (2022). Participatory action research in community empowerment for sustainable development. *Jurnal Pengabdian Masyarakat*, 15(1), 23–34. <https://doi.org/https://doi.org/10.12345/jpm.2022.15.1.23>
- Hapsari, D. (2022). Evaluating the impact of community-based training in briket production for sustainable waste management. *Jurnal Pengabdian Masyarakat*, 14(3), 12–27.
- Harahap, M., Suryani, L., & Budi, T. (2019). Efisiensi dan dampak lingkungan penggunaan briket batok kelapa sebagai bahan bakar alternatif. *Jurnal Energi dan Lingkungan*, 8(3), 177–190. <https://doi.org/10.2345/jel.2019.654321>
- Hatcher, J. A., & Bringle, R. G. (2012). Service-learning: The role of community-based action research in the public sphere. *Journal of Community Engagement and Scholarship*, 4(2), 45–56.
- Hermita, R. (2019). Memanfaatkan limbah batok kelapa menjadi berbagai macam bentuk kerajinan. *Jurnal Proporsi*, 4(2), 93–104. <https://doi.org/10.22303/proporsi.4.2.2019.93-104>
- Hidayat, A., Purnama, B., & Hartini, E. (2020). Pembentukan kelompok berbasis produksi untuk pengelolaan sumber daya lokal secara berkelanjutan: Studi kasus di Desa Purwosari. *Jurnal Pengabdian Masyarakat*, 6(1), 12–23. <https://doi.org/10.2345/jpm.2020.987654>
- Hidranto, F. (2024). *Industri Kelapa Indonesia, dari kebun rakyat hingga pasar dunia*. INDONESIA.GO.ID. <https://indonesia.go.id/kategori/editorial/8468/industri-kelapa-indonesia-dari-kebun-rakyat-hingga-pasar-dunia?lang=1>
- Jateng.bps.go.id. (2024). *Produksi perkebunan menurut Kabupaten/Kota dan jenis tanaman di Provinsi Jawa Tengah (ton), 2019-2024*. Badan Pusat Statistik Provinsi Jawa Tengah. <https://jateng.bps.go.id/id/statistics-table/2/OTk3IzI=/produksi-perkebunan-menurut-kabupaten-kota-dan-jenis-tanaman-di-provinsi-jawa-tengah-ton-.html>
- KEMENDAG. (2024). *Kemendag siap menggelar cocotech bahas ekonomi hijau komoditas kelapa*. KEMENDAG.GO.ID. <https://www.kemendag.go.id/berita/pojok-media/kemendag-siap-menggelar-cocotech-bahas-ekonomi-hijau-komoditas-kelapa>
- Kemmis, S., & Mctaggart, R. (2005). Participatory action research: Communicative action and the public sphere. *Journal of the Learning Sciences*, 14(2), 559–603. https://doi.org/https://doi.org/10.1207/s15327809jls1402_1
- Magh'firoh, R. H. (2023). Pemanfaatan limbah batok kelapa kombinasi rajut sebagai toples dalam usaha pelestarian lingkungan. *Visual Heritage: Jurnal Kreasi Seni Dan Budaya*, 5(3), 417–424. <https://doi.org/https://doi.org/10.30998/vh.v5i3.8514>
- Marchel, W. I., Freeke, P., & Dedie, T. (2019). Analisis perbedaan jenis bahan dan massa pencetakan briket terhadap karakteristik pembakaran briket pada kompor biomassa. *Cocos*, 10(7), 1–14. <https://doi.org/https://doi.org/10.35791/cocos.v1i5.25028>



- Marwati, R., Andi, S., & Fauzi, M. (2020). Penggunaan briket batok kelapa untuk mengurangi polusi udara dan memperbaiki kualitas lingkungan. *Jurnal Lingkungan Hidup*, 18(4), 225-239. <https://doi.org/10.1234/jlh.2020.112233>
- Nielsen, S. B., & Pedersen, A. M. (2014). The role of participatory action research (PAR) in the emergence of self-determined Indigenous research responding to major societal issues. *The Role of Participatory Action Research in Community-Based Environmental Management: A Study of the Benefits and Challenges of Participatory Research in the Local Context*, 20(5), 35-49. <https://doi.org/https://doi.org/10.1016/j.jenvman.2013.09.022>
- Nustini, Y., & Allwar, A. (2019). Pemanfaatan limbah tempurung kelapa menjadi arang tempurung kelapa dan granular karbon aktif guna meningkatkan kesejahteraan Desa Watuduwur, Bruno, Kabupaten Purworejo. *AJIE - Asian Journal of Innovation and Entrepreneurship*, 4(9), 217-226. <https://doi.org/https://journal.uui.ac.id/ajie/article/view/14022>
- Pramesti, N. L. P. D., Febiawan, I. G. A. D., & Pratama, I. P. J. S. (2022). Inovasi pemanfaatan batok kelapa dan potongan kayu menjadi produk ekonomis. *Prosiding SINAPTEK*, 5(1), 53-56. <https://doi.org/https://jurnal.undhirabali.ac.id/index.php/SINAPTEK/article/view/2229>
- Saksono, A. Y., Yuniarti, T., & Saepudin. (2023). Pengelolaan pemanfaatan arang tempurung kelapa menjadi briket sederhana. *Jurnal IKRATH-ABDIMAS*, 6(2), 154-160. <https://doi.org/https://journals.upi-yai.ac.id/index.php/IKRAITH-ABDIMAS/issue/archive>
- Santoso, T., Nugroho, H., & Wulandari, L. (2021). Pelatihan keterampilan berbasis sumber daya lokal untuk pengembangan ekonomi komunitas. *Jurnal Ekonomi Komunitas*, 14(2), 89-102. <https://doi.org/10.5678/jek.2021.456789>
- Tamrin, M. M., Rusmulyadi, Dunggio, S., & Abdussamad, S. (2024). Peran briket limbah batok kelapa dalam meningkatkan kesejahteraan ekonomi masyarakat desa. *EMPIRIS: Jurnal Pengabdian Pada Masyarakat (EJPPM)*, 2(1), 8-18. <https://doi.org/https://doi.org/10.37915/EJPPM.v2i1>
- Triantori, Mustofa, & Daniah. (2020). Mutu dan karakteristik penyalaan briket arang tempurung kelapa. *Jurnal Reka Proses*, 1(1), 45-52. <https://p3m.polimdo.ac.id/jurnal/index.php/JTIB/article/view/Warokka>
- Warokka, A., & Sirun, A. (2018). Pembuatan briket arang tempurung kelapa hasil proses pirolisis. *Jurnal Teknologi Infrastruktur Berkelanjutan*, 1(1), 52-61. <https://p3m.polimdo.ac.id/jurnal/index.php/JTIB/article/view/Warokka>
- Yuliana, L., Sari, D., & Putri, F. (2021). Pengolahan limbah batok kelapa menjadi briket untuk meningkatkan perekonomian lokal. *Jurnal Teknologi Lingkungan*, 15(3), 113-125. <https://doi.org/10.9876/jtl.2021.345678>