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# Utilization Of Coconut Coir Waste to Encourage a Green Economy in Simbang Village, Majene Regency

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## ABSTRACT

This community service activity aims to increase the capacity of the community in processing coconut coir waste into products of economic value such as brooms, flower pots, brushes and mining ropes. Organic waste management, especially coconut coir, has great potential in supporting sustainable economic development based on a green economy at the village level. Simbang Village, Pamboang District, Majene Regency, is one of the coconut-producing areas with a fairly high volume of coir waste but has not been utilized optimally. The implementation method includes socialization, technical training to 25 participants who will later become a coconut fiber processing business group at the village level, assistance to business groups, as well as monitoring and evaluation. The results of the activity show that the community is beginning to understand the economic value of coconut fiber waste and show enthusiasm in developing its processing business. This activity also succeeded in forming a new business group that initiated small-scale household production. With a participatory and empowerment approach, this activity has a positive impact on environmental awareness and economic independence of the community. This service is expected to be a model for green economy development based on local potential in Majene Regency.

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## INTRODUCTION

Sustainable development is a global agenda that emphasizes the importance of balancing economic growth, environmental sustainability, and social justice. One of the strategic approaches that has developed in realizing sustainable development is Green Economy (Hamka, 2025). This model focuses on efficient use of resources, low carbon emissions, and inclusion of vulnerable groups. In the local context, especially in rural areas, the implementation of a green economy can be carried out through community-based organic waste management. Simbang Village in Pamboang District, Majene Regency, is one of the villages that has great potential in coconut sector plantations. Every year, this village produces a large amount of coconut coir waste as a by-product of coconut harvesting and processing activities by the community. However, this waste generally accumulates or burns, which has the potential to pollute the environment and cause health problems. Processing coconut fiber waste into useful products is one of the effective ways to reduce the existing pile of coconut fiber waste (Fauzani, et al., 2025). On the other hand, coconut fiber if decomposed will produce coco fibre and coco coir powder which is made for organic and solid and liquid fertilizers. Coconut coir has high economic value if processed into derivative products such as cocopeat, doormark, and mining rope (Nurdin, Jufri, & Budiman, 2021).

One of the environmental problems faced by the people of Simbang Village, Pamboang District, Majene Regency is the handling of coconut coir waste that is not optimal. As an area with a large enough coconut plantation potential, the community produces a large amount of coconut fiber waste every day. Coconut trees have many benefits as a food ingredient but can also be used as handicrafts made from coconut coir and shells (Putra, et al., 2021). Unfortunately, most people like this waste because it is considered to have no use value. This practice has been going on for many years and has become a habit that is difficult to change without educational approaches and realistic alternative solutions. Coconut coir burning activities not only cause local air pollution, but also have an impact on the health of the surrounding community due to smoke particles that continue to be inhaled. Air pollution due to the burning of organic waste such as coconut coir can trigger respiratory problems and reduce environmental air quality. In addition, this activity also reflects the loss of economic potential that should be used as raw materials for value-added products, such as complaints, mats, or other handicraft materials. The large potential of coconut resources that become waste requires a creative and innovative effort in utilizing coconut belt waste into something that has a selling value and is beneficial to the community (Ahmadi, Irayanti, Pradana, Ayulestary, & Oping, 2023).

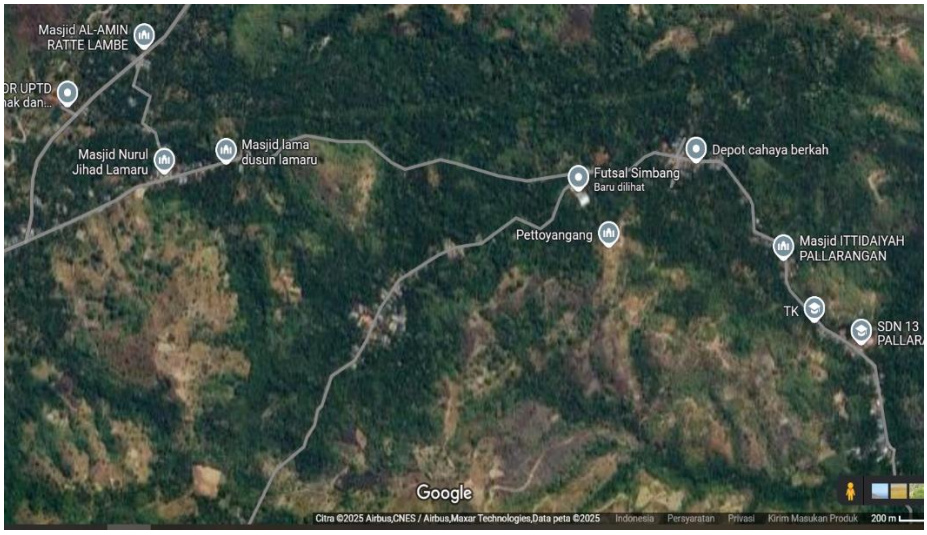


**FIGURE 1.** Location of Community Service Activities in Simbang Village


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The solution that can be offered to address this problem is to encourage people to change their perspective on coconut coir waste from something useless to a resource of economic value. Through a participatory education approach and technical training, the community can be empowered to process coconut coir into environmentally friendly products that support the principles of Green Economy. The concept of green economy aims to create synergies between economic growth, environmental protection, and improving people's quality of life (Hamka, 2025). This initiative not only addresses environmental issues, but also opens up opportunities for sustainable local economic empowerment. This utilization is one of the solutions in the exploration of alternative energy sources and environmental pollution reduction (Nikmah, Musbikhin2, & Safikah, 2023). In addition to education, the development of appropriate technology on a household scale is also an important key in this transition process. The procurement of simple tools for fiber synthesis and the manufacture of cocopeat, for example, can make it easier for people to make coconut fiber without requiring large investments. This effort can be strengthened through collaboration between the village government, community groups, and universities in the form of sustainable empowerment programs. In this way, coconut fiber waste is no longer burned, but is used as part of a circular economy chain that is socially, economically, and ecologically beneficial. (Hamka, 2025) (Nikmah, Musbikhin2, & Safikah, 2023)

The lack of technical knowledge and community skills regarding the processing of coconut coir waste is a factor inhibiting its use. Coconut fruit processing is generally still focused on processing the pulp product as the main product, People tend to view coconut coir as useless waste because they are not aware of its economic potential (Putri, Amran, & Kurniati, 2022). This shows that there is an information gap and limited local capacity that requires educational intervention from universities as part of the community service function. Therefore, it is necessary to carry out programs to strengthen capacity and empower the community in a systematic and sustainable manner (Adwimurti, Sumarhadi, & Mulyatno, 2022).

This community service is designed as a response to these problems with a participatory approach. The activity is focused on education and technical training in coconut fiber processing as well as assistance in the formation of household-based business units. This strategy is expected to be able to change public perception of waste and encourage the formation of new environmentally friendly economic behaviors. This approach is also in line with the principles of community-based development that prioritizes the active involvement of the community in every stage of the program. In addition to the economic aspect, this activity also has an ecological goal, namely reducing the burden of organic waste in the village environment. By processing coconut fiber waste into useful products, people not only get additional income, but also contribute to environmental conservation. This is a concrete example of the implementation of the circular economy at the micro level which is very relevant to be developed in coastal areas such as Simbang Village.

The urgency of this activity is also based on market opportunities that are increasingly open to products based on natural and environmentally friendly ingredients. Coconut coir derivative products such as cocopeat are needed in the horticulture and organic agriculture sectors, both in the domestic and export markets (Baharuddin, Muhlis, & Mattunruang, 2023). With coconut fiber processing skills and efforts, villagers have the opportunity to access a wider market and increase local economic independence. In addition, it encourages energy savings, pollution reduction, natural resource saving, and increases innovation and community welfare (Mafruhah, Istiqomah, & Ismoyowati, 2025).

The method of implementing this Community Service activity uses a participatory and community empowerment-based approach with the following stages:


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| Stages of Activity | Activity Description | Purpose | Output |
|---|---|---|---|
| Coordination and Observation | Conduct initial meetings with the Simbang Village government and community leaders; observation of the potential and weaknesses of coconut fiber waste | Develop a strategy for implementing activities according to local | needs and conditions Map of community needs and potential |
| Socialization and Education | Provide an understanding of the concept of a green economy and the economic potential of coconut fiber waste | Increase public awareness of the economic and ecological values of coconut fiber waste | Residents understand the urgency of waste management |
| Technical Training Provide skills in processing waste into products of economic value | Training in making cocopeat, mats, and ropes from coconut fiber, with direct practice methods | Provide skills in processing waste into products of economic value Initial products | Initial products (cocopeat, mats); increase skills |
| Mentoring and Simulation The community processes it directly | Mentoring intensifies the production process and utilization of simple tools; discussion groups | persuade the community to be able to process coconut fiber independently | The community processes it directly |
| Evaluation and Follow-up | Reflective discussion, identification of working groups, and plans for further preparation with the village government | Prepare program desire steps and form community-based business groups | Working groups are formed; whatever plan occurs has been agreed upon |

**FIGURE 2.** Method of Implementing PKM Activities

Based on the various considerations above, this service activity is important to be carried out as a form of contribution of universities in empowering village communities. This program is expected to be a model for replicating the use of organic waste based on local potential in the framework of a green economy. Through collaboration between historians, village governments, and community groups, Simbang Village has the potential to become a pioneer of empowered and sustainable green villages.

## RESULTS AND OUTPUTS

Community service activities carried out in Simbang Village have produced several significant achievements, both in terms of community capacity building, mindset changes, and local economic potential. This activity was held on June 4, 2025 at the Simbang village hall, with a series of opening activities, socialization related to the concept of the green economy and the practice of turning coconut coir into goods of economic value. The opening activity began with remarks by the PKM team leader, Mrs. Devi Ayuni, S.E., M.Si. in her remarks as the Team Leader expressed her gratitude and appreciation to the Simbang Village Government and the entire community for giving us the space, time, and trust to carry out PKM in Siimbang village. In addition to this activity is part of my responsibility as a lecturer and lecturer to not only develop knowledge on campus, but also distribute it directly to the community as a form of real contribution to regional development.


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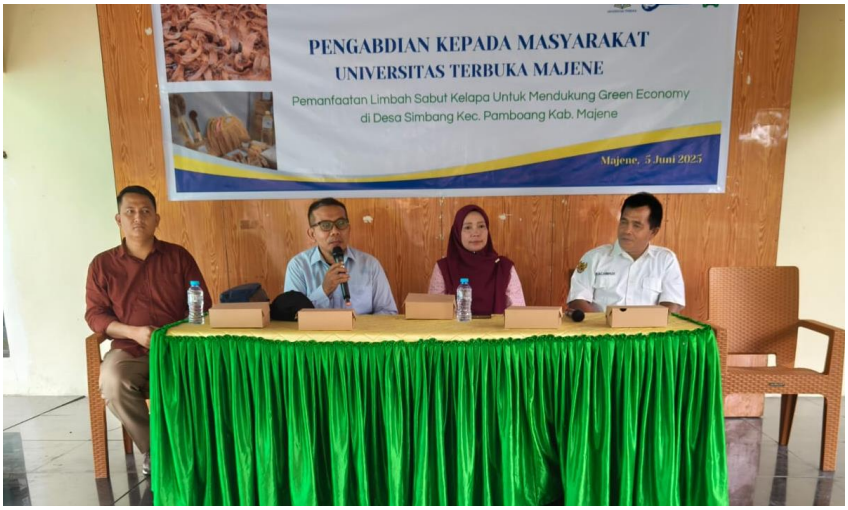


**FIGURE 3.** Opening Ceremony of PKM Activities in Simbang Village

In his remarks, it was emphasized that Simbang Village has great potential in the agricultural sector, especially coconut, but also faces challenges in the form of handling coconut waste that is not optimal. Therefore, as a lecturer, I am here to jointly learn, share practices, and try to turn the weaknesses of waste into valuable economic opportunities. In addition, in his remarks, he appreciated the collaboration that has been established, especially with the Simbang Village Government and the Bababulo Village community group which was the first to successfully implement green economy principles. The presence of community leaders, farmer groups, housewives, and village youth in this activity is proof that the spirit of collaboration and change towards sustainable development is very strong in this village. It is hoped that this activity will not stop at just training for a while, but can continue to be developed and integrated in village development programs in the future. We are ready to continue to help and realize wider cooperation to support the economic independence of village communities through environmentally friendly local resource management.

Furthermore, remarks from the Head of Simbang Village, Mr. Rachmadi, in his speech he represented the Simbang Village Government expressing his high appreciation to the service team from Majene Open University who had chosen Simbang Village as the location for the implementation of this PKM activity. According to the Head of Simbang Village, activities like this are very relevant to the needs of the village, especially in dealing with the problem of managing coconut coir waste that has not been handled optimally. The village head also said that this activity opened a new perspective for the community in seeing the economic potential of things that have been considered waste. He emphasized that so far coconut coir has only been burned because he does not know what to do. However, after this training, the community began to realize that coconut satar can be processed into products with selling value such as cocopeat, broom, mats, and various other handicrafts. According to him, this is a tangible form of sustainable development based on local resources.

Furthermore, the Head of Simbang Village conveyed the village government's commitment to confirm the results of this activity in the village work program. One of the plans submitted is the possibility of integrating this program into village business units or BUMDes, as well as strengthening productive community groups that will focus on agricultural waste management. He also opened up opportunities for further cooperation with universities for continuous mentoring activities, as well as advanced training that can reach a wider community group. Finally, he expressed his hope that PKM activities like this do not stop at one point, but can be replicated and discussed in other villages that have similar characteristics. "We hope that cooperation like this can continue, because the benefits are real and directly felt by the


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community. Hopefully this will be the beginning of Simbang Village's long journey towards an independent, productive, and environmentally friendly village," concluded the Village Head with optimism.

**FIGURE 4.** Socialization of the Green Economy Concept

The activity continued with initial socialization about the concept green economy that Successfully opened up public insight into the importance of environment-based waste management. The concept of green economy is one of the global strategies related to social, economic, and environmental crises (Anwar, 2022). Most of the participants had not previously understood the economic value of coconut coir, but after this activity, there was a collective awareness from 90% of the participants that the waste could be a new source of income if managed creatively and open up new opportunities from this coconut coir. This service activity is even more effective because it is carried out through a collaborative approach involving the Simbang Village government and productive groups from Bababulo Village. The Simbang Village Government provides full support, both in the form of venue facilitation, participant data collection, and integration of this activity into the village empowerment agenda. This collaboration reflects the synergy between historians and village governments in encouraging sustainable local economic transformation.

Meanwhile, the presence of productive community groups from Bababulo Village made an important contribution in the form of best practice experience in the application of the green economy concept . This group first succeeded in developing the business of processing agricultural waste, including coconut fiber, into environmentally friendly products that have selling value. Through experiential sharing sessions and hands-on exercises, participants from Simbang Village gained contextual and inspirational learning that strengthened their motivation to develop similar potentials in their area. This synergy between villages strengthens the social and economic network between local communities which can be the basis for replication and expansion of green economy-based programs. In the context of sustainable village development, cross-village collaboration like this is important as an effort to improve learning efficiency, accelerate the implementation of innovation, and encourage the growth of micro enterprises based on local resources that are environmentally friendly.

Through this collaboration, service activities not only stop knowledge transfer, but also form a learning ecosystem between communities that focus on sustainability. The Simbang Village Government conveyed its commitment to make this activity the beginning of the development of green economic sectors in future village development planning, including strengthening village institutions through the establishment of Village-Owned Enterprises (BUMDes) that focus on waste management and coconut coir derivative products.


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On the other hand, the people of Simbang Village, especially farmer groups and housewives, showed an extraordinarily open and cooperative response. Many training participants admitted that before this activity, they thought coconut coir was just garbage that polluted the environment and should be thrown away. However, after gaining understanding and hands-on practice, their perceptions changed drastically. The public began to see coconut coir as an economic resource that was cheap, easily accessible, and had market potential. Some residents even directly modified simple tools at home to try small-scale production independently.

Furthermore, there has been an initiative from residents to form a small working group that will collectively manage coconut fiber waste that was previously scattered around homes or gardens. This initiative is not something that happens without external encouragement, showing that it is not only transferring knowledge, but also shaping a new perspective on the economic value of the environment. This is an early indication of a larger social change, namely a growing collective awareness of the importance of sustainable local resource management.

The concept of Green Economy or Green Economy is a development approach that integrates aspects of economic growth with environmental preservation and social justice. This concept emerged in response to the global environmental crisis, social inequality, and dependence on non-renewable natural resources. The concept of green economy is increasingly important to be applied in community development, especially in rural areas. A green economy is an approach that focuses on sustainable and environmentally friendly economic growth, by utilizing resources efficiently. By utilizing coconut coir waste, villages can reduce negative impacts on the environment and at the same time improve the United Nations Environment Program (UNEP), Green Economy is "an economy that results in improved human welfare and social equality, while significantly reducing environmental risks and scarcity of natural resources" This means that economic development is no longer solely aimed at achieving GDP growth, but also take into account long-term demand.

In principle, a green economy promotes resource efficiency, the use of renewable energy, the reduction of carbon emissions, and the creation of environmentally friendly jobs. In the context of village development, the green economy can be translated through the use of local potential and waste treatment into products of economic value without damaging the environment. The application of this principle in rural areas not only helps to address the waste problem, but also opens up new economic opportunities for local communities, especially vulnerable groups such as women and smallholders.

One of the important components in the development of a green economy is the circular economy approach, which is an economic system that focuses on reuse, recycling, and waste reduction. In this approach, waste is no longer considered the end of the consumption cycle, but rather as the beginning of a new production chain of the green economy Ellen Mac encourages society to change the paradigm from "take, use, dispose of" to "reuse, recycle, and save resources".

In Indonesia, the implementation of the green economy has become part of the direction of national development policies, as stated in the 2020-2024 National Medium-Term Development Plan (RPJMN). The government encourages the increase in economic productivity based on sustainable resources and the strengthening of green economic sectors that involve the active participation of the community Therefore, community service programs based on waste management and the use of local resources, such as coconut fiber processing, are very relevant to support these development goals. The technical training was carried out for two days including making cocopeat, doormart, and mining rope from coconut coir. The results of the training show that the community is able to follow each stage of the process well. Participants also began to identify home business opportunities that could be developed with simple equipment. In addition, this activity encourages the formation of household-based micro-business groups that focus on coconut fiber processing, with initial support from village officials and local communities.


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In the Practice activity, it was seen that there was high enthusiasm from residents, especially the women of the simbang residents, who were actively involved in technical training in processing coconut fiber into valuable products such as cocopeat, cocofiber, broom and flower pots, This activity also showed the use of simple tools as appropriate technology that is easy to operate by the community. The tool is used to speed up the waste treatment process and become an example of appropriate technology that can be used by everyday people. This marks the importance of innovation in supporting work efficiency and production results. In addition, the support of the village government and collaboration with productive community groups from other villages also strengthen the educational and practical value of this activity, which not only educates but also empowers the community in real terms through a participatory approach. The image below represents the success of PKM activities in uniting elements of education, empowerment, and collaboration across local actors to create environmental solutions based on the green economy.

**FIGURE 5.** Practical Activities to Convert Coconut Coir into Cocopeat and Cocofiber

In terms of output, this activity produces several real products that can be continued. First, the formation of the coconut coir business group "Simbang Hijau", which consists of 10 active members and has a simple organizational structure and work plan. Second, proto-products (early examples) have been produced cocopeat and coir mats that are used as models for advanced training. Third, there is a training module on coconut fiber processing which is prepared as an open material and documentation of activities for replication in other villages. In addition to physical products, this activity also produces outputs in the form of increasing community independence in local resource management. The existence of a new understanding of waste management based on a green economy opens up opportunities for social and economic transformation at the village level. The village even expressed its readiness to include the development of the coconut coir business in the planning of next year's RKPDes.

## CONCLUSION

Community service activities carried out in Simbang Village prove that an empowerment approach based on local potential and green economy principles can be a real solution to environmental problems as well as an alternative to improve the community's economy. Through a series of socialization, technical training, and mentoring, the community was successfully introduced to processing coconut coir waste into products with selling value such as cocopeat, cocofiber, broom, and flower pot. Active support from the Simbang Village government and collaboration with productive community groups from Bababulo Village are important factors in the smooth and successful of this program. The synergy of interests between


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stakeholders not only strengthens the local innovation ecosystem, but also accelerates the process of adopting new knowledge in the community. The positive response of residents shows that educational and participatory interventions are able to build awareness and initiatives for the community to manage environmentally friendly waste. In addition, this activity not only provides momentary benefits, but also opens up opportunities for program replication in other villages, as well as the potential for the development of village economic institutions through BUMDes or joint business groups. To ensure the sustainability of the program, the service team plans periodic monitoring and strengthening long-term partnerships with village governments and community groups. The main change that has occurred is the increase in the awareness and skills of residents in managing waste productively, with direct benefits felt by the community through new business opportunities and a cleaner environment. The next step is to develop this model into a cross-village collaborative project that is integrated into the local level sustainable development agenda.

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