

## GREENPRENEURSHIP DEVELOPMENT FOR THE YOUNG GENERATION: INCREASING THE ECONOMIC VALUE OF COCONUT FIBER WASTE

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### ABSTRACT

Economic development activities based on natural resources and the environment, apart from aiming to support development and economic growth, also significantly improve people's welfare. Coconut fiber processing is one of the efforts to support economic development based on natural resources and the environment to increase financial value. The activity Team was carried out by the PKM Team with partners, namely Gerakan Peduli Pesona Alam, domiciled in Gaga, Larangan, Tangerang. Gerakan Peduli Pesona Alam provides education about environmental conservation to the surrounding community. The program implemented is elementary so that it is easy for the community to follow, including managing coconut fiber. This activity began with holding outreach, counseling, and training for trainers (ToT). The result of this PKM activity is the formation of a team of trainers who will later socialize and train the local community so that their awareness will increase and expand in preserving the environment through coconut fiber waste.

**Keywords:** coconut fiber, economic value, training of trainers

### INTRODUCTION

Indonesia is an archipelagic country that has abundant natural resource reserves, and the supply of natural resources is one of the development capitals that is relied on. Natural resources, in addition to being utilized as a superior commodity for the country's foreign exchange, are also exploited as a development driver. Natural resources should be used as well as possible for the welfare of the entire population. The utilization of natural resources must support the principle of sustainable development, namely development activities carried out today without sacrificing the opportunities for future generations to meet their needs. In reality, economic interests are more dominant than environmental interests. As a result of the rapid development activities, the quality of the environment will decrease (Febriana, Diartho, & Istiyani, 2019). For example, development in coastal areas causes pollution around the coast (Laming & Rahim, 2020). Economic activities also contribute to declining environmental quality, such as industrial waste pollution, household waste, and vehicle exhaust fumes (Siregar & Nasution, 2020). This is exacerbated by increasing population growth, which results in pressure on natural resources, which is also growing due to the rising need for food. So, in the end, the environmental quality continues to decline, for example, the supply of clean water and a decrease in clean air (Akhirul, Witra, Umar, & Erianjoni, 2020).

Economic development activities based on natural resources and the environment, besides supporting economic development and growth, significantly improve people's welfare but still prioritize efforts to protect and preserve the environment. The implementation of greening business management is an integrated environmental management strategy that includes the development of organizational structures, systems, and cultures in a company by implementing and complying with all regulations on environmental management, raw material management, waste processing, effective use of natural resources, use of production technology that produces minimal waste and implementing a commitment to environmental awareness for all employees in their organization (Rahmansyah, Fasa, & Suharto, 2023). One of the plantation commodities that is widely produced in Indonesia is coconut. The Central Statistics Agency (BPS) noted that coconut production in Indonesia 2022 was 2.87 million tons. (<https://dataindonesia.id/sektor-riil/detail/produksi-kelapa-di-indonesia-sebanyak-287-juta-ton-pada-2022>). Coconut plants are plants whose every part has economic value, from the roots, leaves, stems to the fruit. Coconut fruit is the central part of the coconut tree, a raw material for industry. Coconut fruit will produce the main component of fruit flesh and by-products in the form of coconut water, fiber, and shell. In general, the coconut processing industry focuses on processing the fruit flesh only, as do coconut fruit traders in the market. This results in the by-products of coconut fruit having great potential to pollute the environment. If utilized and processed further, the by-products of coconut fruit have high economic value and can also reduce environmental pollution. For example, by-products in the form of coconut fiber have the potential to be processed into coconut fiber, which will produce cocopeat, coco fiber, cocomes, and

cocopeat, coco fiberboard, and cococoir, where these materials are used as raw materials for the mattress industry, dry compost, pots and others (Adwimurti, Sumarhadi, & Mulyatno, 2023).

Further, processed coconut fiber can be used as an alternative to plastic packaging, reducing environmental pollution (Ananda, 2021). Another benefit of coconut fruit by-products in the form of coconut fiber is that it has the potential as a raw material for ruminant livestock feed (Muzaki, Sunarso, & Setiadi, 2020). Coconut fiber can also be used as a superior local product, such as brooms and doormats, so they have to sell power and economic value (Ningtyas et al., 2022). Processed and decomposed coconut fiber will produce coconut fiber powder and coconut fiber, raw materials for making planting media needed by the domestic market (Suharlinda & Hasbiadi, 2023). In addition to these benefits, coconut fiber can be used as a natural fabric dye (Sumarni, Soleh, Nurhaeni, & Prismawiryanti, 2021).

The description above shows that environmental conservation values must be instilled in every line of economic activity. Many non-profit institutions have been oriented towards restoring a clean and healthy environment, including Usaha Peduli Pesona Alam, domiciled in Gaga Village, Larangan District, Tangerang City. Usaha Peduli Pesona Alam was initiated by Mr. Drs. R. Hartanto, SE. MM. whose main goal is to provide education about environmental conservation to the surrounding community. The programs, including coconut fiber management, are simple and easy for the community to follow. Coconut fiber that is not managed correctly will become waste, which significantly increases air pollution. Coconut traders around the Larangan District and its surroundings produce coconut shells and coconut fiber residue. Coconut shells still have a selling value, but coconut fiber becomes waste that will end up in landfills. In this final disposal site, coconut fiber significantly impacts air pollution when burned. Usaha Peduli Pesona Alam invites the surrounding community to participate in managing coconut fiber so that it becomes a valuable product. Coconut fiber waste produced by coconut traders is taken and collected, then processed into coco fiber, which the community can use as a planting medium. The initial step taken by the PKM team was to hold a ToT for students and youth around the partners so that the ToT participants would later be able to socialize and train the surrounding community to utilize coconut fiber waste so that it has a higher economic value.

## **METHOD**

Community service activities (PKM) began with a survey at the partner's location to obtain information on the problems. The interview results informed that several issues needed to be solved, namely (1) community interest in coconut fiber waste management activities still needed to be higher, possibly because the rewards partners gave to the communities involved were not yet appropriate. (2) the entire production process was carried out manually, from the soaking process to becoming cocofiber. Based on the indications of the problems faced by the partners, the initial step taken by the PKM team was to hold training for trainers (ToT) for students and youth around the partner area. The ToT aims to create new trainers with the knowledge and skills to train others. It is hoped that the ToT participants will be able to play an active role in socializing coconut fiber waste management, which has economic value and can contribute to overcoming environmental problems. The ToT training was conducted on January 5, 2024. The training agenda includes socialization and counseling related to other benefits of coconut fiber waste and the production process.

## **RESULTS AND DISCUSSION**

Coconut fiber is a by-product of coconuts that has the potential to pollute the environment, but if it can be utilized and processed further, it will have economic value. Coconut fiber waste in the area around the partner has yet to be used, only ends up in landfills, and even becomes a source of environmental pollution.

Based on this, the PKM team, through the non-profit organization Gerakan Peduli Pesona Alam, initiated by Mr. Drs. R. Hartanto, SE. MM, Gaga Village, Larangan District, Tangerang City, provides education on the use of coconut fiber waste so that it has economic value that not only increases the income of the surrounding community but can also preserve the environment. The initial step taken was the ToT activity to accelerate and expand the community's awareness around the partner regarding environmental conservation by utilizing coconut fiber waste to increase its economic value.

The implementation of PKM was carried out for one day. The agenda for the first day was to provide education related to coconut fiber waste and its uses so that it has economic value and the process of processing coconut fiber waste. The following table and pictures present the materials, training achievements, and photos of PKM activities.

Table 1. Training materials and achievements

Materials	Achievement
Increasing the economic value of coconut fiber waste	ToT participants are serious about paying attention to the material presented by the resource person. Participants are enthusiastic and active in discussions about the material provided through discussions, questions, and answers.
Coconut fiber waste processing process	ToT participants are serious about following waste processing practices by being directly involved.



Figure 3. Educational photo related to the use of coconut fiber waste



Figure 4. Photo of production process training



Figure 5. Photo of handover of equipment assistance

Coconut is one of the commodities that is widely produced in Indonesia. All parts of the coconut plant can be utilized and have economic value. In general, the utilization of coconut fruit is only the flesh of the fruit, while by-products such as coconut water, fiber, and shell have not been utilized optimally; even if they have been used, it is still on a small scale. A survey conducted by the PKM team shows that coconut fiber waste in the Larangan Tangerang area has yet to be utilized optimally, only ending up in landfills and even potentially polluting the environment. For this reason, the PKM team, together with PKM partners, namely Usaha Peduli Pesona Alam, where the business is a non-profit business oriented towards environmental preservation, promotes the utilization of coconut fiber waste so that it has economic value and sales value so that it is not only able to increase the income of the surrounding community but also able to preserve the environment.

Coconut fiber waste that only ends up in landfills can be utilized and processed further to produce something of economic value. Coconut fiber waste will produce coco fiber (coarse fiber) and cocopeat (fine fiber) through processing. Coarse fiber is a raw material used to make seats, pillows, carpets, mattresses, dashboards, and vehicle hardboards. Coconut fiber from coconut fiber waste has a selling value of around IDR 10,000/kg in several marketplaces. (Putera, Mutmainnah, & Mudhi, 2023). Meanwhile, fine fiber produced from coconut fiber can be used as a planting medium for hydroponic plants (Mahmuda, Sanubary, & Santoso, 2022) because it quickly absorbs and stores water and neutralizes soil acidity (Wahyuni, Zamhari, Sahara, & Dewi, 2022). Like coarse fiber, fine fiber also has economic value and selling power. So, utilizing coconut fiber waste is very profitable because the raw material's price is around IDR 250/kg (Yuliyanto, Sukanto, & Sugiyarto, 2022). Considering the significant market opportunity of using coconut fiber waste, it can provide new job opportunities, thereby reducing unemployment, increasing community income, and protecting the environment from pollution.

This PKM activity is carried out to educate the community on the importance of preserving the environment through the utilization of coconut fiber waste, which can provide economic value and ultimately increase the income of the surrounding community. The activity began with training for trainers (ToT), hoping that the trainers would be able to educate the surrounding community so that the utilization of coconut fiber waste is broader and faster. The first agenda of the training was to educate people about the impact of coconut fiber waste and the utilization of coconut fiber waste in goods of economic value. For example, it can be used as a craft material to make doormats, brooms, plant pots, hemp ropes, or room decoration sweeteners.

After the training participants understood the benefits of coconut fiber waste, the PKM team explained and practiced how to process coconut fiber waste to be utilized in goods of economic value and marketability. The practice began with preparing raw materials, soaking them for three days, and changing the water daily so that the tannin was lost. The soaked coconut fiber was then manually beaten using a hammer so that the coco fiber and cocopeat were separated and then dried.

Questions, answers, and discussions were carried out during the first and second agendas, namely the processing process, which proved the participants' enthusiasm for the training. Furthermore, the ToT activity will produce trainers who will educate the community around the partners on utilizing coconut fiber waste to increase its economic value.

## **CONCLUSION**

Coconut fiber waste around the Larangan Tangerang sub-district has only ended up in landfills. This can pollute the environment, with air pollution if burned, water pollution if dumped in rivers, and unpleasant odors and views if dumped anywhere. For this reason, education is needed so that the community is aware of environmental conservation and that coconut fiber waste has economic value through a simple processing process. The formation of a trainer group through ToT training by the PKM team in collaboration with partners is expected to promote the use of coconut fiber waste to increase its economic value, which in turn can increase the income of the surrounding community and maintain environmental sustainability. Suggestions for further coaching activities are using technology in coconut fiber processing to increase production.

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