

## ENCOURAGING CIRCULAR ECONOMY PRACTICES IN SMALL AND MEDIUM-SIZED ENTERPRISES: THE EXAMPLE OF HOUSEHOLD WASTE UTILIZATION

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### Abstract

This community service program was set up to help people in the community who don't know much about the economic potential of controlling domestic garbage. The program was put into action in Muara Penimbung Ulu Village, Ogan Ilir Regency. It was aimed at micro, small, and medium-sized businesses, housewives, and young people. The answer included community socialization events, technical instruction on how to compost organic trash and turn inorganic waste into handicrafts, using composting equipment at home, and mentoring on how to run a business based on waste. We evaluated the program's success by how well participants understood it, made products, and engaged with the community. The results indicated that people were more aware of the environment, more involved in their communities, and able to make compost and recycled crafts. This program helps the community reduce trash, improve the quality of the environment, and create long-lasting green jobs.

**Keywords:** Green Economy, Household Waste Management, Waste-Based Micro, Small and Medium Enterprises, Compost, Recycled Handicrafts

### INTRODUCTION

The green economy is growing because it focuses on low-carbon growth, efficient resource use, and social inclusion as the best ways to make people's lives better while also making the environment safer (Retnosuryandari, 2024). In this context, circular economy models enhance sustainability initiatives by advocating for prolonged product life cycles, minimizing waste, and resource regeneration through reuse and recycling-oriented business practices (Lathifah, 2024; Susilo et.al., 2023). These strategies help make local green businesses, lower production costs, and make the economy more competitive. This makes waste management both an environmental need and a business opportunity. At the same time, putting sustainable consumption and production concepts into practice at the community level is still a big problem in many rural regions where trash is still not being managed or valued properly.

Muara Penimbung Ulu Village is in the Indralaya District of Ogan Ilir Regency in South Sumatra. It covers around 5.55 km<sup>2</sup>, which is roughly 5.48% of the district's total area. The

village has twelve neighborhoods and six hamlets, and 1,595 people live there. Most of them work in farming. A river that runs through the town is often utilized for everyday tasks like bathing and cleaning, but the water quality has gotten worse, especially in the dry season. Without good management systems, the amount of household garbage keeps going up. Most people still throw away their trash informally, either by dumping it on empty land or directly into the river. This pollutes the soil and water. The hamlet has social capital in the form of farmer groups, women's community organizations, youth groups, local micro-enterprises, and weaving artists. However, this potential has not been fully used to deal with waste problems in a productive way.

The village community makes a lot of organic waste, like food leftovers, kitchen garbage, and leaf litter that can be used to make compost. It also makes a lot of inorganic waste, such as plastics, paper, and packaging that can be used to make crafts again. There are still major challenges, even with these prospects. People still don't know much about how to recycle, how to live a zero-waste lifestyle, or what a circular economy is all about. Economically, local micro and small businesses haven't yet used garbage as a value-added input since they haven't had enough business training, marketing access, or financial literacy. From a human resources point of view, technical abilities connected to managing a business, designing products, and processing trash are still not very good. The lack of integrated trash collection and processing facilities makes it further harder to manage waste in a systematic way at the village level.

In these situations, managing household waste using the concepts of "reduce, reuse, and recycle" and "zero waste" is a good idea. Separating garbage at the source lets you turn organic waste into compost using cheap home composting tools like compost containers and biopore systems. You can also turn inorganic waste into recycled handicraft items (Nugroho, 2022). These activities are good for the environment and can also help people make extra money at home (Nurhadi et al., 2023). Craft manufacturing goes through a series of steps, including selecting and cleaning materials, designing products, completing them, and checking their quality to make sure they could satisfy market standards. As more people want items that are good for the environment, sustainability storytelling and beautiful product design become important marketing tools. Using easy-to-use digital marketing tools like social media and online marketplaces makes the market even more accessible at a low cost (Cornelia et al., 2025).

To turn trash use into a long-term source of income for the community, it is important to strengthen micro and small businesses that use waste (Sugianto, 2025). Good business management comprises creating simple business models that use waste materials, setting up manufacturing costs, keeping basic financial records, standardizing product quality, and gradually getting more involved with business legality frameworks to help the business grow (Ammar et al., 2024). Mentoring and incubation programs comprising technical training, managerial coaching, and networking support are important to build entrepreneurial resilience. Using existing social capital and encouraging businesses to work together are two ways to help create a green economy that is based in the community (Kartika et al., 2022; Putri et al., 2024).

This community service initiative is unique because it uses an integrated implementation methodology that teaches people about the environment, helps them learn technical skills,

starts new businesses, and gives them the tools they need to sell their businesses online. It also has structured monitoring and evaluation with pre and post assessment tools to make sure the results can be measured. This program is different from awareness-based outreach initiatives since it focuses on teaching people useful skills and improving their economic ability. It does this by directly integrating efforts to reduce waste with ways to make money.

The major purpose of this project is to teach individuals in the neighborhood how to be more environmentally friendly and develop their abilities by changing rubbish from houses into things that can be sold for money. This will also raise household income and social welfare. The specific goals are to teach people in the community about sustainable waste management and zero-waste practices, give them technical training in making compost and recycled crafts, set up affordable household composting and small-scale craft production technologies, improve the ability of waste-based businesses to manage their operations, and use measurable indicators to see if knowledge and behavior have improved (Ammar et al., 2024).

This program directly supports a number of the Sustainable Development Goals. For example, it helps with Goal 12 on Responsible Consumption and Production by teaching people about sustainability and reducing waste, Goal 8 on Decent Work and Economic Growth by creating jobs that use waste, and Goal 6 on Clean Water and Sanitation by reducing pollution caused by throwing away trash in the wrong way. The project also supports the Ogan Ilir Regency's local government rules on how to handle household waste and how to empower community businesses. This strengthens the cooperation between schools, local governments, and rural communities to create long lasting green economic systems.

## **IMPLEMENTATION METHOD**

This community service initiative was put into action employing a tiered participative method with four phases that were all connected: socialization, technical training, technology application, and mentoring and evaluation. This multi-level strategy is often used in community-based environmental empowerment and circular economy projects because it helps people learn new things, gain new skills, and change their behavior over time (Cornelia et.al., 2023).

The first step was to get people in the community to know one other through village forums and neighborhood group meetings. These sessions talked about the program's aims, timetables, and predicted benefits. They also gave out educational materials on the principles of reducing, reusing, and recycling trash, zero-waste practices, circular economy ideas, and the necessity of getting people involved in their communities. At this point, community commitment was shown by having participants sign up, and a pre-test instrument was used to find out what the participants already knew. The results of this phase included an official list of program participants and some early data on how much the participants knew about waste management and how ready they were to use the technology.

The second phase was made up of workshops to help people learn new technical skills. The training courses were all about how to handle organic waste. They included things like how to separate garbage, how to make compost, how to utilize a home composting machine, and what makes good compost. In addition to the main workshops, there were other sessions

on how to process inorganic waste. These included how to turn plastic and paper garbage into handicrafts by choosing the right materials, designing the product, finishing it, and checking its quality. They also taught people how to start a business, including how to manage a firm that deals with waste, how to brand a product, and how to market a product online. The training session comprised group mentorship, hands-on practice sessions, and demonstrations. These were all used to teach these thematic training modules so that people may learn new skills and get involved in the community. This segment taught people the basics of manufacturing compost and crafts out of recycled materials that are useful for beginning small businesses in the area.

In the next step, the right technology was employed to make sure the application was usable. To make sure that household composters were safe, easy to operate, and worked well, they were built with cheap materials and standard procedures. People were taught how to set up equipment, maintain it functioning, and fix faults. This step transformed what people learned in training into real-life waste management habits right away. For instance, it put composting units in the homes of persons who were in the program.

The fourth phase included ongoing coaching and regular assessments. There were field visits up to six times over six months to check on how participants were using the technology, how consistent the products were, what they were doing for business, and how they were promoting. Mentoring sessions included ongoing technical help, business coaching, and motivational support to help participants feel more confident and make sure that production would continue. Post-test tools were utilized to see how much the program had helped people learn and grasp technical concepts better than they did before. Additionally, qualitative interviews with community representatives and village authorities were performed to assess behavioral change, program relevance, and institutional support mechanisms.

The program was aimed at people who lived in Muara Penimbang Ulu Village, such as farmer groups, housewives, youth groups, and people who own or run small, medium, or micro businesses that deal with waste management and product creation. Leaders of the village administration and heads of neighborhoods were program facilitators. They made sure that the program was carried out in a way that was in line with local development goals and that the institutions would still be able to function once the program was over.

We used pre-set performance indicators to measure how well the program worked. These included participation rates, product development outputs, diffusion efforts, and cognitive improvement measurements. Target benchmarks included having at least 20 people take part in training activities, making at least one type of marketable waste-based product, sharing program outputs through at least one publication or social media outreach, and raising participants' knowledge levels by at least 75% based on comparing pre- and post-test scores. Structured knowledge evaluations, field observation checklists, and semi-structured interview protocols were all used to collect data. These techniques were meant to measure both quantitative performance gains and qualitative behavioral consequences.

The program was carried out over six months, starting with preparation and coordination with partners. It then moved on to field validation, technical training delivery, technology installation, intensive mentoring and monitoring, and finally, evaluation and sharing of results. This organized timeline made sure that the project was carried out in an orderly way, but it also allowed for changes to be made to fit the needs of the community and

the way things worked in the area.

## **RESULTS AND DISCUSSION**

The community engagement initiative was directed by Meita Rahmawati, S.E., M.Acc., Ak., CA, alongside faculty team members Christian Damar Sagara Sitepu, S.E., M.Si., Fitri Nanda Sari, S.Ak., M.Acc., and Riska Tharika, S.E., M.Acc., Akt., ACPA. The event was attended by Mahindra, the Head of Muara Penimbung Ulu Village, and Ery Erman, S.K.M., M.A., the Chair of the Syafian Hafiyya Foundation, along with residents from various backgrounds. Participants were provided with resources on financial literacy, domestic waste management, and methodologies for establishing recycling-oriented small and medium-sized enterprises (SMEs).

The discussions and training sessions progressed efficiently. The participants exhibited enthusiasm from the beginning, as villagers actively participated in discussions and practical exercises regarding the management of organic and inorganic household waste. During the session, it was observed that the discussion was highly interactive, with the community expressing significant interest in comprehending how household waste can be converted into new income sources.

Christian Damar Sagara Sitepu, S.E., M.Si., conducted a session emphasizing the significance of acknowledging the potential of the green economy and opportunities in recycling-based enterprises. Fitri Nanda Sari, S.Ak., M.Acc., expounded on branding and marketing strategies for environmentally sustainable products, whereas Riska Tharika, S.E., M.Acc., Akt., ACPA, imparted knowledge regarding healthy consumption practices and the significance of waste segregation within households.

The program featured a practical session on converting organic waste into compost. Participants were instructed on the technical procedures of organic waste processing, commencing with a demonstration of the segregation of kitchen waste, including vegetable scraps, fruit peels, dried leaves, and food remnants. They were acquainted with the concepts of "green materials" and "brown materials" as fundamental elements of the composting process.

The practical activities were executed in phases. Initially, participants were instructed on the technique of chopping organic waste to expedite decomposition. The team subsequently illustrated the process of preparing compost layers utilizing basic household containers, such as repurposed buckets or Takakura baskets. Participants were also instructed to manage compost moisture levels to guarantee optimal fermentation.

During the advanced practice session, participants were instructed on the utilization of fruit waste to generate Bio E-compost, a product of economic significance. The demonstration encompassed material composition, fermentation methods, storage protocols, and the necessary duration for product readiness. The material highlighted that organic waste can produce both solid fertilizer and multifunctional liquid products suitable for organic agriculture, natural cleaning agents, or micro-enterprise applications.

Participants showed a lot of enthusiasm throughout the hands-on activities, which showed that the approaches were easy to follow because they didn't require expensive technology or specialized knowledge. This made them possible to use at home. The assessment revealed that the daily volume of organic waste in Muara Penimbung Ulu Village is ample to facilitate the

establishment of a collective micro-enterprise. This discovery creates prospects for the establishment of a waste-processing facility that can generate organic fertilizer and other value-added products.

Through these seminars, participants not only learned about theory but also gained real technical skills. The initiative changed how people in the neighborhood thought about organic waste. Instead of seeing it as worthless, they began to see it as a useful and eco-friendly economic asset. The team stressed the need for continued support to help turn community talents into long-term economic activities. This project fits with the Green Economy framework, which puts a lot of emphasis on finding a balance between protecting the environment and growing the economy. The program said, "The goal is for Muara Penimbung Ulu Village to be a model for how to implement a green economy at the village level."

To make sure the initiative keeps going, the team had follow-up talks with village officials and the Syafian Hafiyya Foundation about starting waste-based small and medium-sized businesses and making a plan for future mentoring sessions. The recommended follow-up strategy includes advanced training, setting up a waste management team at the village level, and designing a simple business model that fits the skills of the people in the area. The program, which involved many different groups, including village leaders, partner organizations, and the local community, not only taught participants more about waste management, but it also encouraged everyone to work together to make waste management more responsible and environmentally friendly. This project is a key step in creating a green-economy community that will bring long-lasting benefits to the people of Muara Penimbung Ulu in terms of the economy, the environment, and society.



**Figure 1. Group Picture with Community Service's Participant**



**Figure 2. Explanation Delivered by the Community Service Team**



**Figure 3. Participants**



**Figure 4. Hands-on Workshop on Transforming Organic Waste into Compost**

The following table presents the achievement of the predetermined indicators:

**Table 1. Indicator Achievement**

<b>Indicator</b>	<b>Target</b>	<b>Actual Result</b>	<b>Remarks</b>
<b>Training participants (people)</b>	≥ 20	Achieved	List of attendees and photos
<b>Type of product</b>	≥ 1	Achieved	Documentation, samples
<b>Publication (unit)</b>	≥ 1	In progress	Done published
<b>Knowledge improvement (%)</b>	≥ 75	Achieved	Pre and post tests results

Source: Authors

The program is running smoothly and meeting its main goals. Attendance records and photos confirm that at least 20 people participated, meeting the minimum requirement. Product development goals were achieved, as shown by the samples and documents. The manuscript is still in draft form, so publication is ongoing. Pre- and post-test results show that participants' understanding increased by more than 75%, meeting this target. Photos, attendance logs, product documents, and test results also support that most key performance indicators have been reached.

Strong community involvement and support from village leaders, who provided resources and helped share information, were key to these results. The project led to positive economic and environmental changes (Nurhadi et.al., 2023). Cleanliness in the area improved after people began sorting waste, thereby reducing pollution risks (Nurhadi et.al., 2023). In the past, waste was often dumped into rivers or open spaces, but this has changed, making the environment cleaner (Nurhadi et.al., 2023). Composting organic waste has been effective and environmentally beneficial. The project also created new ways to earn money by selling compost and crafts made from recycled materials. It raised environmental awareness and could greatly improve community health (Nurhadi et.al., 2023).

The training and mentoring methods worked well because more than 75% of participants said they learned more. People were able to better understand and apply what they learnt in their daily lives when they studied both in theory and in practice. Ongoing mentoring after training has made it easy to use new skills consistently, which has helped the program's results last longer. But there are still many things that need to be worked on to ensure things go well in the future. To ensure consistency and market readiness, the first step is to define criteria for product quality. Second, marketing strategies should be upgraded to reach more people, such as by leveraging digital media. Third, getting the right licenses and permissions for your business is vital for building trust with clients and making it easier for people to work together. If you do these things, community-based enterprises will be more likely to last and look more professional in the long run.

There are a number of initiatives in place to ensure the program continues to run and make progress. At first, activities will be expanded to include more neighborhood units (RTs) or hamlets, as well as schools and women's groups (PKK), to reach more people. This is done to make the activities more scalable and replicable. Second, it will be easier to work together, as local governments will help put the plans into action. The next steps are to make more compost each month, introduce additional types of recycled artisan goods, and reach more customers

through both online and physical storefronts. These steps should help the program succeed in the long term and deliver additional benefits to the overall community.



**Figure 5. Publication in Mass Media**

## CONCLUSION

The community service project, Green Economic Innovation: Household Waste-Based MSMEs, has had a significant impact on Muara Penimbung Ulu Village. Residents learned how to apply 3R principles, turning organic garbage into compost and inorganic waste into crafts that are worth money through structured instruction, technical training, and ongoing mentorship. The achievement metrics, such as the number of participants, a 75% increase in knowledge, and the production of marketable outputs, show that the community has significant potential to start waste-based microenterprises. Positive benefits were also seen in environmental and socio-economic areas, such as reduced improper waste disposal and the emergence of new ways to make money.

The main idea behind this initiative is to establish a green-economy-oriented MSME model that works as a sustainable village business unit. To put this approach into action, several strategic steps need to be taken. Setting quality standards for compost and recycled craft goods is very important to ensure they are consistent and can be sold in the same market. Second, digital marketing techniques need to be improved by leveraging social media, online marketplaces, and sustainability-focused ads. Third, following the law when running a business, such as obtaining business identity numbers, home industry food permits, and product certifications, is important for building customer confidence and making it easier for businesses to work together. Also, ongoing mentorship is necessary to help MSME stakeholders become better managers, especially in branding, packaging, and basic financial management. A key part of this program is to make it more effective by replicating it in other villages and involving women's groups and schools to encourage more people to adopt sustainable economic practices. To build a long-lasting green economy ecosystem, it will be important to improve partnerships

with village leaders, relevant government institutions, and environmental groups. The program helps address local waste management problems and provides villages with a practical way to plan for long-term economic growth.

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