Transformation of Used Clothes into Flower Pots in Dongkelan Hamlet, Bantul

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ABSTRACT

Used clothing is one of the sources of waste in Bantul Regency. Without proper management, this type of waste can harm the environment. One concrete example can be seen in RT1 of Dongkelan Hamlet, where the accumulation of used clothing waste occurred due to the community's lack of understanding of its environmental impact and economic potential. To address this, a comprehensive outreach program was initiated to increase community awareness and understanding. The program was divided into four stages: observation, outreach, practice, and evaluation. Before the outreach, participants showed minimal understanding of used clothing waste, with an average score of 75%, which falls into the "less" category. However, after attending the outreach, their understanding improved significantly, especially regarding the impacts and benefits of used clothing waste and how to make flower pots. Interestingly, of all the participants, 60% were interested in putting this new knowledge into practice, while the remaining 40% chose other methods, citing hassle and other reasons. In conclusion, this outreach program proved effective and is recommended to be implemented in other locations to support environmental sustainability and potential income generation.

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INTRODUCTION

In urban areas, environmental imbalances are often rooted in waste management issues (Breukelman et al., 2022). This waste problem is influenced by the lifestyle and culture of urban communities, so an efficient system is needed for its regulation and management (Kinantan et al., 2018). According to WHO, waste is defined as the residual product of human activities that is no longer functional or desirable (World Health Organization, 2021). In essence, waste is the residue of human activities consisting of organic and inorganic materials (Andika et al., 2023). Proper waste management is necessary to prevent environmental pollution and create added value (Abubakar et al., 2022).

The available landfills (TPA) will not be able to continuously accommodate the waste generated by the community (Warlina & Listyarini, 2022). Therefore, the waste problem must be handled starting from the source(Abdel-Shafy & Mansour, 2018). Public awareness is critical in managing waste. Public awareness holds the key in this case. The 3R strategy (Reuse, Recycle, Reduce) has been recognized as efficient in reducing waste volume (Bunditsakulchai & Liu, 2021). A comprehensive approach is needed in waste management to maximize its benefits, both in economic, health, and environmental aspects (Sawalkar et al., 2023).

Recycling waste, such as used fabrics, can be an innovative solution. With proper processing, materials considered initially waste can be transformed into valuable products, such as plant pots (Annisa et al., 2023; Lisya et al., 2022). In the current era of globalization, resource optimization is imperative for environmental sustainability. As an illustration, fabric waste, often considered worthless, has excellent potential to be transformed into aesthetic products such as flower pots (Hartini et al., 2021).

The advantage of using waste fabric is the positive impact it has, both from an environmental and economic aspect (Todor et al., 2019). Reducing fabric waste means contributing to the reduction of soil and water pollution as well as greenhouse gas emissions from waste incineration. From an economic perspective, these flower pots can be a new business opportunity, especially for handicraft businesses.

In line with this, the role of community service is crucial. The dissemination of knowledge about waste fabric recycling technology needs to be improved. Raising awareness of the importance of Recycling and utilizing this waste can open up new income opportunities for urban and rural communities (Oh & Hettiarachchi, 2020). Training and mentoring are needed so that the community has the expertise in processing waste into valuable products to reduce waste problems, create jobs, and improve the community's economy (Damayanti et al., 2021).

The importance of training and mentoring so that the community has the skills to process fabric waste into flower pots and develop it into a profitable business. This initiative is expected to reduce the waste problem, create jobs, improve the community's economy, and maintain environmental sustainability. Therefore, cooperation between the community, government, and educational institutions is needed.

Bantul, Yogyakarta, is the focus of community service in this context. Bantul is currently facing significant problems in its waste management, exacerbated by

increasing urbanization and population growth (Pribadi et al., 2022). Several factors, such as lack of waste separation at source, low recycling awareness, waste flow into the river, and limited disposal land, further exacerbate the situation (Andika et al., 2023). However, the geographical and social characteristics of Bantul can be utilized as an advantage in waste management strategies. The friendly local culture can drive collective awareness for responsible waste management. A holistic approach involving the community, local government, and educational institutions is needed to create a sustainable solution for Bantul.

METHODS

The Community Service Program (PKM) in RT 1 Dongkelan Hamlet, Panggungharjo, Sewon, Bantul Regency aims to empower and increase community income through counseling and practice of managing clothing waste into flower pots. This program is designed in four stages as follows:

Observation And Survey Phase

Based on initial observations made by the PKM team in the RT 1 Dongkelan Hamlet area, it was concluded that many residents did not understand the risks and potential of clothing waste. As a result, many used clothes are not appropriately processed and accumulate in the dump. Most people consider clothes that cannot be reused as worthless items.

Outreach Phase

The outreach approach is a method extensively developed for the transfer of innovation. On September 15, 2023, an outreach session occurred at the RT 1 Hall in Dongkelan Hamlet, Panggungharjo, Sewon, Bantul Regency, Yogyakarta. The PKM team facilitated the session through interactive discussions. The primary objective of this session was to foster a dialogue between the team and the community, emphasizing the potential environmental impact of improperly disposing of clothing waste. Through this outreach, the community is encouraged to recognize the importance of guidance on repurposing clothing waste into flower pots.

Practice Phase

After the outreach session, participants were given hands-on training in making plant pots from used clothes with guidance from the PKM team. The materials taught are expected to increase participants' awareness and ability to manage their clothing waste. Some materials and equipment used in this practice include old clothes, cement, scissors, and printing tools such as buckets, pots, used cans, etc.

Evaluation Phase

To assess the effectiveness and impact of this activity, an evaluation phase was held through discussion and Q&A sessions with participants. This evaluation allowed the team to get feedback and understand how far the participants' understanding and skills had improved after participating in the activity.

With this structured approach, it is hoped that the people of Bantul Regency will be better able to manage their clothing waste and utilize it in value-added products.
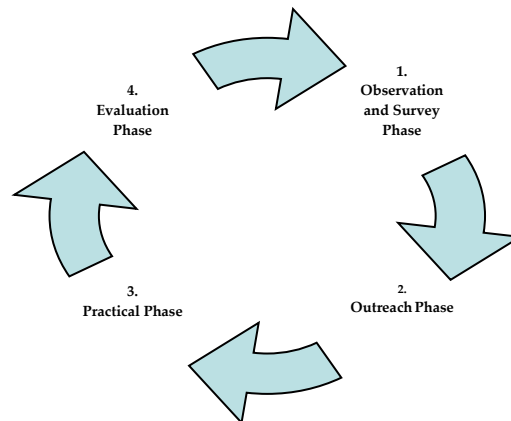
Figure 1: Activity Implementation Phases

RESULTS AND DISCUSSION

At the outset of our Community Service Program (PKM), our team conducted surveys and observations to gather data and insights regarding the issues faced by RT 1 Dongkelan Hamlet residents. We discovered a significant lack of understanding among the community about the risks and potential of used clothing waste. This lack of awareness has led to unmanaged used clothing accumulating, often discarded at dumpsites or burned.

Departing from these conditions, our PKM team initiated an outreach program and practice of making flower pots from used clothes. This program is specifically aimed at residents in RT 1 Dongkelan Hamlet, Panggungharjo, Sewon District, Bantul, with the hope that it can not only increase residents' awareness of the problem of used clothing waste but also provide practical solutions and opportunities to earn additional income by reusing these materials.

Figure 2: Participants who attended the outreach event

The outreach event occurred on September 15, 2023, at the Meeting Hall of RT 1, Dongkelan Hamlet, Panggungharjo Village, Sewon Sub-district, Bantul. This event

successfully gathered 20 RT 1 Dongkelan Hamlet residents and its surroundings as participants - Drs. Agus Subagyo as the resource person. Before starting the material, the resource person asked the participants what they knew about the risks and potential of clothing waste and how to make flower pots from these materials. The aim was to explore the participants' initial understanding, which is summarized in Table 1.

Figure 3: Delivery of outreach material

The participants' enthusiasm was reflected in the many questions and discussions that arose. One focus of the discussion was the economic potential of flower pots made from used clothes. The main obstacles identified were the lack of public awareness of the importance of Recycling and the lack of information and training on processing used clothing into valuable products. Access to additional materials, such as adhesives, was also an issue, often challenging. During the discussion, some limitations of recycled products were also emphasized, such as flower pots made from used clothes (with cement content) that are heavier than conventional plastic pots. This constraint becomes significant if the pots are produced in large sizes.

This outreach activity is expected to broaden the community's knowledge about the importance of Recycling. With a deeper understanding, the community can assess and overcome the existing constraints while considering the advantages and disadvantages of existing recycled products.

Table 1. Initial Knowledge Results of Participants in the Outreach

Knowledge	Frequency	Percentage	Category
Risk of used clothing waste	15	75%	Not Good
	5	25%	Good
Waste potential of used clothing	17	85%	Not Good
	3	15%	Good
About flower pots from old clothes	1	95%	Not Good
	19	5%	Good

After the outreach session, the activity continued with the practice of processing used clothing waste into plant pots. Based on the method of Lisya et al. (2022), the pot-

making process consists of nine steps. Before starting, the necessary preparations include equipment and materials for the procedure. The materials needed include used clothes, cement, scissors, and molding tools such as buckets, pots, used cans, etc. The practice begins with collecting and selecting materials that can be used for the practice. The material selection process is illustrated in Figure 4.

Figure 4: Used clothing selection process

Figure 5. Cement and water mixing process

The application steps in making flower pots are as follows: First. Prepare the mold tool and cover it with plastic or used paper to make removing the mold easier. Second. Position the mold upside down on a stand, ensuring that the ends of the used cloth hang down and do not come into contact with the surface. Third. Mix cement and water in a 1:1 ratio until evenly distributed, as illustrated in Figure 5. Fourth. Wet the scrap cloth with the cement mixture evenly, covering both sides. Fifth. Place the cloth soaked in the cement mixture on the mold while ensuring the ends hang down and do not touch the ground. Sixth. Make small holes at the bottom of the mold so that water can flow out when the plants are watered.

Seventh. Arrange and shape the fabric according to your creativity, adding folds to fit the desired design. *Eighth.* Dry the prints in the sun until dry, which usually takes a day for a medium-sized pot. *Ninth.* Carefully remove the mold from the tool to prevent damage or cracks in the pot. With this systematic approach, people can understand the process of recycling used clothes into value-added products. It also promotes environmental awareness as well as innovation in the use of existing resources.

Figure 6. Placing the cemented fabric in the mold

Figure 7: Evaluation phase after practice

The evaluation stage is the last stage of the outreach and practice of making flower pots. The evaluation stage was carried out by discussing and asking participants about the results of the outreach material and the method of making pots. On average, the participants could answer the questions about the outreach activity material. They also answered the phases of making flower pots from garbage clothes. In addition,

some participants were also interested in applying how to make flower pots with used clothes at home. Evaluation results are presented in Table 2.

Table 2. Results of Participants' Knowledge After Outreach and Practice

Knowledge	Frequency	Percentage	Category
Understand the risks of waste-used clothing.	20	100%	Good
	0	0%	Not Good
Understand the benefits of waste from used clothing.	20	100%	Good
	0	0%	Not Good
Understand the process of making flower pots from old clothes.	16	80%	Good
	4	20%	Not Good
Desire to apply knowledge	12	60%	Yes
	8	40%	Not Yet

The outreach and practices related to processing used clothing waste were successful overall. Indicators of success can be seen from the participants' increased insight and awareness of the usefulness of used clothing waste. Of the total participants, seven were interested in applying this new knowledge in their homes. However, some others chose alternative methods, citing hassles and other reasons.

After a day-long drying procedure, the molded flower pots were ready to be released. When removing the pots from their molds, do so gently to avoid potential damage or cracking. This flower pot is the work of the RT1 Dongkelan Hamlet community resulting from the PKM program.

Figure 8: Practical results of making flower pots (Not yet painted)

CONCLUSION

The community service activities (PKM) initiated by our team have made a positive impact and raised the awareness of the community in RT 1 Dongkelan Hamlet on the importance of managing used clothing waste. Through activities, including surveys, outreach, and hands-on practice, residents became more informed about the risks and potential of used clothing waste and creative ways to process it into value-added products, such as flower pots. Despite barriers and limitations, such as access to

additional materials and lack of prior information, participant' active participation and responses indicated an encouraging shift in their attitudes. This indicator of success was reinforced by the interest of some participants to apply these new skills and knowledge at home, marking the beginning of a more environmentally responsible behavior change.

We hope this heightened awareness and new skills will spark a wave of innovation and environmental responsibility among RT 1 Dongkelan Hamlet residents and the wider community. By utilizing waste as a resource, residents will help preserve the environment and potentially improve their economic well-being through entrepreneurial opportunities. We expect that initiatives such as the PKM program will continue to receive support, either in the form of resources or further training, to ensure the sustainability and growth of this creative ecology initiative. Furthermore, it is hoped that the success of this program can serve as a model for similar programs in other regions, strengthening the movement toward environmental sustainability and economic empowerment at the grassroots level.

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