



COMMUNITY EMPOWERMENT THROUGH WASTE REDUCTION DOMESTIC BASED ON *RECYCLED* PRODUCTS IN MARGATANI VILLAGE, KRAMATWATU DISTRICT, SERANG REGENCY

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Abstract

This community partnership program aims to invite and empower the community to play an active role in increasing environmental awareness by providing education, assistance, and evaluation to process household waste and used cooking oil into various handicraft products. This activity has economic value with implementing a Digital Waste Bank and evaluation and development related to the marketing strategy of handicraft products. This activity is based on the problems related to the lack of public awareness in protecting the environment, as seen from the many points of garbage that should not be seen piling up in the surrounding environment. The lack of public knowledge about waste management and converting waste into goods of economic value by utilizing the waste itself. The priorities agreed to be resolved to relate to 1) Increasing environmental awareness, 2) How to manage household waste properly, 3) How to process plastic sachets into handicrafts with economic value, 4) How to manage used cooking oil into products. The solutions provided are socializing environmental awareness and training (coaching and mentoring) on household waste management in collaboration with digital waste banks integrated with e-wallets such as Dana, OVO, Gopay, ShopeePay, and others. Training on plastic processing of food, beverage, and plastic detergent or dishwasher products into crafts and used cooking oil into soap can be sold and generate economic value.

Keywords: Empowerment, Recycle, Digital Waste Bank

IMPLEMENTATION BACKGROUND

Garbage is still a classic problem that still cannot be solved. With the increase in population and changes in people's consumption patterns, the waste produced by humans also increases, so it is not surprising that the production of waste is increasing from year to year. This product is also exacerbated by deviant behavior in disposing or managing waste due to the lack of available waste management facilities and the lack of public awareness to preserve the environment. In addition, the role of the government is also inadequate, especially in rural communities. Waste Management uses the 4R principles, namely reduce, reuse, recycle and replant, which has been carried out by the general public. However, in practice, replanting is not the choice of the majority of people. Then the principle becomes 3R (reduce, reuse, recycle).

Margatani Village, Kramatwatu Subdistrict was chosen as a partner because, based on a direct survey in the field, there are still many waste disposal points that should not be a place for garbage disposal by the community.

Including polluted river flows due to the large pile of garbage to the stench caused by the garbage. If left unchecked, it will be hazardous to health and cause flooding. Lack of knowledge and public awareness about the environment and household waste management further exacerbates environmental pollution. Digital waste banks are present and have become one of the strategies for implementing 3Rs in waste management at the community level. This innovative solution forces the public to sort out waste such as cardboard and used plastic bottles exchanged for money. Using plastic

waste from sachet packaging products converted into various handicraft products and used cooking oil processed into soap products with selling value. So that, indirectly, waste can have economic value.



Figure 1 The Situation of Improper Garbage Disposal Points in Margatani Village, Kec. Kramatwatu Kab. Attack Banten

Source: Environment around Margatani Village (Taken: February 4, 2022, at 16.00 WIB)

Community empowerment efforts supported by digital waste bank programs, handicraft products, and processing of used cooking oil into soap are expected to have a positive impact on the environment and can improve economic conditions in a particular community or area. The main target of the activity is the empowerment of housewives who only expect income from their husbands, which are expected to help the family economy and actively participate in preserving the surrounding environment.

This training will include everything from evaluating the activity program to coaching and mentoring for the participants. In addition, it is hoped that it can build awareness and an active role for the people of Margatani Village towards waste so that it is socially, economically, and environmentally beneficial. For example, it is hoped that household waste such as cardboard and used cooking oil can turn into an attractive product that can sell to customers interested in buying it. With a digital waste bank, this craft and processing of used cooking oil is an effort to increase people's income, help the family's economy, and increase public awareness to preserve the environment.

IMPLEMENTATION METHOD

In an instant era like today, people prefer things that are instant or practical, which triggers producers to produce an instant product packaging that chooses nothing but plastic as a wrapper. The more consumption of plastic materials used, the more bad things will be for environmental conditions

	b. Creating a Digital Waste Bank <i>Interface with E-Wallet</i>	X	X																
	c. Preparation of materials needed to make handicrafts from processing plastic waste packaging <i>sachets</i>	X	X																
	d. Preparation of materials needed to make soap from used cooking oil	X	X																
3.	Training Stage																		
	a. Training on the importance of environmental sustainability.			X															
	b. training in sorting household waste.			X	X														
	c. Training on the use of digital waste bank applications on <i>smartphones</i> . making handicrafts from processing plastic waste in <i>sachet</i> packaging					X	X												
	d. Training on making handicrafts from processing plastic packaging waste. soap products from cooking oil processing							X	X										
	e. Soap product management training from used cooking oil									X	X								
	f. Training on sales strategy and entrepreneurship											X							

IMPLEMENTATION AND DISCUSSION

The operational steps taken in this community service activity are adapted to the problems, potentials, and culture of the community and are carried out according to the rules that have been set. This activity is carried out by the chairman with competence in management, member 1 with competence in informatics, and member two who is active in social activities in processing plastic waste and using cooking oil in collaboration with students majoring in management, industrial engineering, and information systems. Based on the programs that have been implemented in this Community Partnership Program, the program's achievements can explain in the following description.

a. Preparation phase

Coordination is carried out with the RT/RW and the local Village Head to determine the meeting schedule, place, and plan. At this stage, the team conducted a preliminary survey to find out how the

condition of the target activity was by analyzing the condition of the place to be used, the condition of the participants who would be given treatment, and drafting the activity plan to be carried out. In this preparatory stage, the details of the activities carried out are as follows:

- 1) Preparation of various administration and correspondence.
- 2) Coordination with village heads, PKK groups, homemakers, and youth organizations
11 Coordination with digital waste banks and the Environment Agency for the ability to become resource persons.
- 3) Prepare materials, including training modules on increasing public awareness of the environment, the digital waste bank making handicrafts from plastic waste, and making soap products from used cooking oil.
- 4) Prepare materials for the practice of making handicrafts and processing used cooking oil.
- 5) Prepare competent and relevant resource persons with the prepared material.
- 6) Prepare schedules and permits for training venues.

b. Implementation Stage

At this stage, the team carried out socialization, counseling, and training to the community by conveying material on the importance of awareness and concepts about the environment, which the head of the PKM in coordination with the Environmental Service. In addition, education, counseling, and training on processing plastic packaging waste into handicrafts and product marketing strategies were also carried out by the chief proposer. Furthermore, the stage of socialization, counseling, and training on waste classification and how the digital waste bank works is carried out by members of the 1st proposer. Then the stage of socialization, counseling, and training on making soap products from processed, used cooking oil is carried out by members of proposer two because members of proposer 2 are active in social activities in processing plastic waste and used cooking oil. While the role of students is as learning subjects with their roles, among others, helping coordinate with partners, assisting in writing reference books and journals, students majoring in management can assist in production management, marketing strategies for processed products, and entrepreneurship. Industrial engineering students can assist in the design of work systems. Meanwhile, students majoring in information systems can assist in building a digital waste bank dashboard template and assist in technical activities ranging from socialization to evaluation.

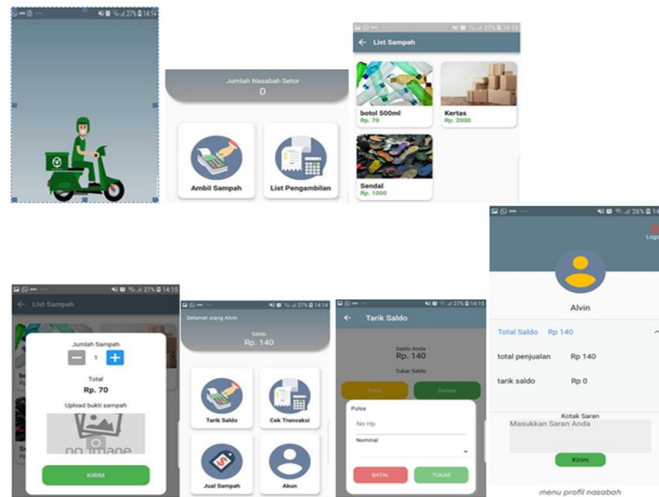


Figure 2 *Digital Waste Bank Dashboard*

The lecture method is combined with laptops and LCDs to display material in PowerPoint equipped with pictures, including a video showing the use of beverage packaging waste crafts. The use of laptops and LCDs can help training participants understand waste management in the environment and the process of establishing a waste bank. Suppose, in practice, there are training participants who are not clear with the material presented by the resource person. In that case, they can ask questions directly without waiting for a question-and-answer session.



Figure 3 *Handicrafts made from plastic packaging sachets*

c. Activity Evaluation Stage

Evaluation is carried out to determine the level of success of all activities that have been carried out. Various indicators include the enthusiasm of the number of partners participating in various series of activities carried out and partners' habits to protect the surrounding environment.

Partners' skills in implementing digital waste banks, how to process plastic waste into crafts, and how to process used cooking oil into the soap to understand product sales strategies. The scheme of community service activities is presented in the following figure:

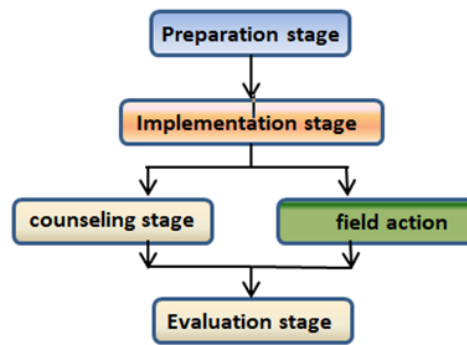


Figure 4 Stages of Activity Implementation

CONCLUSIONS AND RECOMMENDATIONS

From the results of the Community Service activity entitled Community Empowerment through the reduction of domestic waste based on recycled products in Margatani Village, Kramatwatu District, Serang Regency, several conclusions can draw, including:

1. Public awareness and participation in the importance of preserving the surrounding environment has increased by 80%, which can be measured by the number of digital waste bank customers and the total downloads of digital waste bank applications
2. The community's ability to manage household waste by utilizing digital waste banks has increased by 80%, as measured by reducing unnecessary waste disposal points.
3. The community's ability to manage waste such as detergent wrappers, food, and drinks into various kinds of crafts that can be sold and have economic value for the manager has increased by 80%, which can be measured by the number of training participants and the enthusiasm of the trainees.
4. The community's ability to process used cooking oil into soap that can be sold and has economic value has increased by 95%, which can be measured by the number of training participants and the trainees' enthusiasm.
5. The community's ability to manage product sales strategies and entrepreneurship increased by 85%, which can be measured based on the number of active participation in product sales activities.

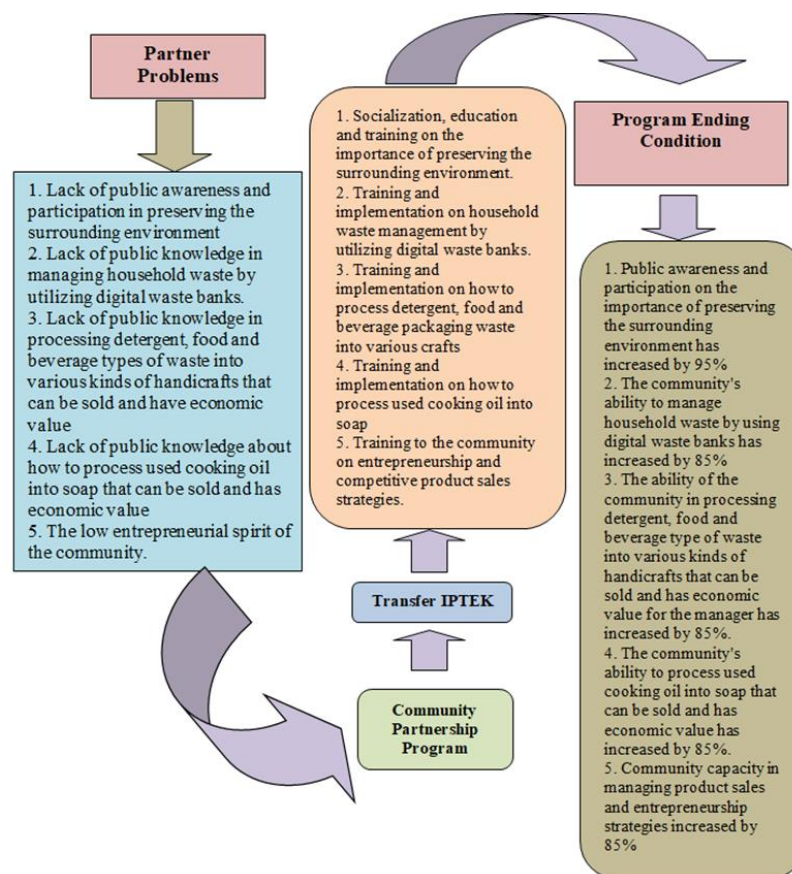


Figure 5 Science and Technology Model Activities

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