
Household Waste Management Through a Waste Bank System to Increase Household Income for Residents of Dukuh Pondok Serang Mulur

Tira Nur Fitria

Institut Teknologi Bisnis AAS Indonesia

Email: *tiranurfitria@gmail.com*

Abstract

Waste management in villages is becoming an increasingly important challenge to pay attention to. Communities often face problems in sorting and managing waste, which has an impact on the environment and health. To overcome this problem, community service activities through the Waste Bank concept were introduced. This activity aims to increase public awareness, especially among housewives, about the importance of waste management through waste banks and provide economic opportunities for well-managed waste. This activity was held on Saturday, 21 September 2024 in Pondok Serang Mulur Sukoharjo and involved representatives of the residents as future managers of the Waste Bank. The activity began with lectures and demonstrations regarding waste management, its impact on the environment, and the importance of waste banks so that residents were more motivated to participate. Furthermore, direct practice was carried out on how to sort waste based on type such as non-organic waste including plastic, glass, cardboard, mineral water bottles, plastic bags, and food packaging. Paper, iron, and electronic goods provide a concrete experience so that residents can apply this technique at home before taking the waste to the waste bank. After sorting, residents weigh each type of waste collected and record the price per kilo according to type, so that they understand the economic value of waste and are motivated to collect more. All types of waste are then collected into large plastic bags at the waste bank location to wait to be transported by waste vans, ensuring that management is carried out efficiently. At the end of the activity, discussions and evaluations were held to formulate follow-up plans, including regular meetings to monitor progress, so that the waste management program could be sustainable and effective. Thus, it is hoped that this activity can create a more structured waste management system, increase community participation, and provide environmental and economic benefits for the community. The response from participants in community service activities regarding waste management through waste banks was generally enthusiastic and positive. The resident felt enthusiastic about the new knowledge regarding the importance of sorting and managing waste, as well as being aware of its impact on the environment. They appreciated the hands-on practice that allowed them to learn how to sort organic and non-organic waste, and many committed to being more disciplined in waste management at home. Participants also hope that similar activities can be held regularly to continue to increase knowledge and share experiences. Several inputs were submitted regarding improving waste bank facilities and the need for further outreach regarding the economic value of waste. Overall, participants felt this activity was useful and wanted to contribute more to waste management in their community.

Keywords: *household income, household waste management, waste bank system, residents*

Abstrak

Pengelolaan sampah di pedesaan menjadi tantangan yang semakin penting untuk diperhatikan. Masyarakat seringkali menghadapi kendala dalam memilah dan mengelola sampah sehingga berdampak pada lingkungan dan kesehatan. Untuk mengatasi permasalahan tersebut maka

diperkenalkanlah kegiatan pengabdian kepada masyarakat melalui konsep Bank Sampah. Kegiatan ini bertujuan untuk meningkatkan kesadaran masyarakat khususnya ibu rumah tangga tentang pentingnya pengelolaan sampah melalui bank sampah dan memberikan peluang ekonomi dari sampah yang dikelola dengan baik. Kegiatan ini dilaksanakan pada hari Sabtu, 21 September 2024 di Pondok Serang Mulur Sukoharjo dan melibatkan perwakilan warga calon pengelola Bank Sampah. Kegiatan diawali dengan ceramah dan demonstrasi mengenai pengelolaan sampah, dampaknya terhadap lingkungan, dan pentingnya bank sampah, sehingga warga semakin termotivasi untuk berpartisipasi. Selanjutnya dilakukan praktek langsung cara memilah sampah berdasarkan jenisnya seperti sampah non organik antara lain plastik, kaca, karton, botol air mineral, kantong plastik, kemasan makanan, kertas, besi, dan barang elektronik, memberikan pengalaman nyata agar warga dapat menerapkan teknik tersebut di rumah sebelum membawa sampahnya ke bank sampah. Setelah dipilah, warga menimbang setiap jenis sampah yang dikumpulkan dan mencatat harga per kilonya sesuai jenisnya, sehingga mereka memahami nilai ekonomi sampah dan termotivasi untuk mengumpulkan lebih banyak. Segala jenis sampah kemudian dikumpulkan ke dalam kantong plastik besar di lokasi bank sampah untuk menunggu diangkut dengan mobil van sampah, sehingga pengelolaannya dilakukan secara efisien. Di akhir kegiatan dilakukan diskusi dan evaluasi untuk menyusun rencana tindak lanjut, termasuk pertemuan rutin untuk memantau perkembangannya, sehingga program pengelolaan sampah dapat berkelanjutan dan efektif. Dengan demikian, kegiatan ini diharapkan dapat menciptakan sistem pengelolaan sampah yang lebih terstruktur, meningkatkan partisipasi masyarakat, dan memberikan manfaat lingkungan dan ekonomi bagi masyarakat. Respon peserta kegiatan pengabdian masyarakat mengenai pengelolaan sampah melalui bank sampah secara umum antusias dan positif. Warga merasa antusias dengan pengetahuan baru mengenai pentingnya memilah dan mengelola sampah, serta menyadari dampaknya terhadap lingkungan. Mereka menghargai praktik langsung yang memungkinkan mereka belajar cara memilah sampah organik dan non-organik, dan banyak dari mereka berkomitmen untuk lebih disiplin dalam pengelolaan sampah di rumah. Peserta juga berharap kegiatan serupa dapat diadakan secara rutin untuk terus menambah ilmu dan berbagi pengalaman. Beberapa masukan disampaikan terkait perbaikan fasilitas bank sampah dan perlunya sosialisasi lebih lanjut mengenai nilai ekonomi sampah. Secara keseluruhan, peserta merasa kegiatan ini bermanfaat dan ingin berkontribusi lebih dalam pengelolaan sampah di komunitasnya.

Kata Kunci: *pendapatan rumah tangga, pengelolaan sampah rumah tangga, sistem bank sampah, warga*

Introduction

Waste is one of the significant environmental problems in Indonesia. Waste can be interpreted as a consequence of the existence of human life activities (Suryani, 2014). With the increasing population and uncontrolled consumption patterns, the volume of waste produced by society continues to increase. Piles of rubbish are also a problem that cannot be separated from everyday life (Halid et al., 2022). As an illustration, when someone shops for daily life needs in a supermarket, minimarket, or traditional market, it will produce waste in the form of packaging or packaging for the products purchased (Sugiyanto et al., 2022).

Ineffective waste handling often causes environmental pollution, health risks, and negative impacts on environmental aesthetics. Even though the negative impacts of poor waste management are becoming clearer, public awareness of the importance of waste sorting

and management is still low. Many residents do not understand that waste can be a valuable resource.

In this context, education and community participation are key to encouraging behavioral change and increasing awareness of environmental responsibility. Therefore, innovative and sustainable solutions are needed to overcome this problem. Waste management is a very important service that needs to be provided by the government. A relatively large population with high density will produce large piles of waste which must be handled properly to maintain cleanliness and preserve the environment (Adriansyah et al., 2023).

Law Number 18 of 2008 concerning Waste Management and Government Regulations Number 81 of 2012 mandates the need for a fundamental paradigm shift in waste management, namely from the collect- transport-dispose, becomes a focused processing on waste reduction and waste management. Effective waste management does not only depend on government policy but also requires active participation from the community. The Waste Bank concept emerged as a solution that integrates waste management with community empowerment. In this model, the public is invited to collect and manage waste in a way that provides economic benefits, while keeping the environment clean.

The Waste Bank is a solution that combines waste management with community empowerment. The Waste Bank is an institution that functions as a place for collecting and processing waste, where the public can deposit waste that has been sorted. The collected waste, such as plastic, paper, and metal, is then processed to be made into recycled goods or new products. Each type of waste also will be rewarded, and residents will receive financial rewards based on the amount and type of waste deposited. In this way, people not only contribute to keeping the environment clean but also gain economic benefits. Through this system, people can get financial rewards from the waste they collect. Thus, the Waste Bank not only functions as a waste management forum but also as a source of additional income for households.

In principle, implementing a waste bank is a form of social engineering to encourage people to sort waste (Saputro et al., 2016). Through waste banks, an innovative solution was finally found to "force" people to sort waste. By equating waste with money or valuables that can be saved, people are finally educated to appreciate waste according to its type and value so that they are willing to sort waste. Waste management must be carried out in an integrated manner from start to finish to produce economic benefits, protect environmental health, and change community behavior (Subanti et al., 2024). The Waste Bank is an alternative solution that is beneficial to society in overcoming the problem of organic waste, especially plastic waste, teaching people to sort waste, and raising public awareness of waste processing. It is not only beneficial economically, but is also useful for maintaining environmental cleanliness (Andani et al., 2024).

One alternative for waste management in society is to form a waste bank in each community RT or RW. Waste banks are a breakthrough in terms of waste management where waste is considered as something that has economic value. The waste bank system adopts a system of banking in a simpler form. In a waste bank, customers and managers are needed. In this case, waste bank customers will 'save' and hand over the waste to management. Furthermore, the waste saved will be sorted, weighed, and converted into balance (DwicaHyani et al., 2022). Customers can withdraw their balance according to the provisions applied to waste banks. In managing waste banks, managers should be creative and innovative to increase the selling value of the collected waste. Waste should not just be sold to collectors but can be reprocessed into creative products with selling value. This is very

important for the sustainability of the waste bank itself. Waste bank practitioners who are successful in processing waste into creative products can become a new livelihood that can improve welfare in society.

Waste banks are run like a banking system, but what is saved is waste which is rewarded in the form of money and the money is put into a savings book (Rantisari et al., 2022). Citizens who save are called customers and have a savings book. Customers who save (hand over waste) to the waste bank, then have their waste weighed and given a reward in the form of money. Waste pricing is based on the type and weight of waste, where the price of each type of waste has been determined by the waste bank. The money received will later go into savings. Some of the waste collected by the waste bank will be recycled by craftsmen and some will be resold to collectors.

As women (mothers) who are closely related to household activities, it is as if they are only objects who only use household items and without education about the dangers of these materials for themselves, their families, and the environment (Jannah et al., 2024). Female residents (mothers) are allowed to participate in environmental awareness, especially in preventing environmental pollution from waste. The aim of creating the waste bank program is to improve the quality of life, women's participation in society regarding pollution problems, and environmental management through organizational life. Housewives play an important role in waste management in the surrounding environment. They are often responsible for sorting and managing household waste. By involving women in the Waste Bank program, it is hoped that they can gain knowledge and skills in waste management, and realize the economic potential that can be generated from this activity. The training and assistance provided will improve their skills in creating recycled products that have commercial value.

Through waste collection and management, households can generate significant additional income. The money earned can be used to meet daily needs, children's education, or other needs. Apart from that, participation in the Waste Bank can also strengthen social ties between residents, build a more solid community, and care about the environment. Communities involved in this program will also be more aware of the importance of good waste management and its impact on health and welfare.

With this background, community service through Waste Bank-based waste management and collection is expected to make a positive contribution to improving household welfare and creating a cleaner and healthier environment. This initiative aims to empower the community, especially mothers in Dukuh Pondoh Serang Mulur Sukoharjo, to optimize the potential of existing resources and play an active role in protecting the environment. Through good collaboration between the government, community, and related institutions, it is hoped that waste management can be carried out sustainably and provide optimal benefits for all parties. Therefore, this activity aims to increase public awareness, especially residents (housewives), about the importance of waste management through waste banks and provide economic opportunities from well-managed waste.

Method

In carrying out waste collection activities through the Waste Bank in Dukuh Pondoh Serang Mulur Sukoharjo, various service methods will be used to ensure the implementation of the program and the active involvement of the community as follows:

1. Lecture Method

The lecture method will be used to provide basic information and understanding about the importance of good waste management, as well as the concept of a Waste Bank. In

this session, experts or facilitators will present material regarding the negative impacts of poor waste management, the benefits of management through a Waste Bank, the waste sorting and processing process, as well as the economic opportunities that can be obtained from waste collection. This lecture will be held at the village hall or other gathering place, to increase awareness and knowledge of housewives regarding the importance of waste management.

2. Demonstration Method

Demonstration methods will be applied to provide practical examples of how to sort and process waste. In this session, the facilitator will show clear steps, such as how to sort organic and inorganic waste, techniques for making simple recycled products such as handicrafts from used materials, and processing organic waste into compost. This demonstration allows participants to see firsthand the processes involved, making it easier for them to understand and apply it in their own homes.

3. Direct Practice Method

After the demonstration session, participants will be invited to do direct practice. Housewives will practice sorting the waste they bring from home and try to make recycled products. This method aims to provide direct experience so that participants are better prepared to apply the knowledge gained in everyday life.

4. Group Discussion Method

After lectures and practical sessions, group discussions will be held to allow participants to exchange experiences and opinions. In this discussion, participants can ask questions related to waste management, discuss the challenges faced in implementing management methods at home, and share ideas and solutions to overcome problems that arise. This discussion aims to strengthen understanding and encourage active participation in the Waste Bank program.

5. Evaluation and Follow-up Methods

After the service activity, an evaluation will be carried out to assess participants' understanding and involvement. Feedback from participants will be used to improve the program in the future. In addition, follow-up actions such as regular meetings will be scheduled to ensure the sustainability of waste management and provide ongoing support to housewives.

By using a combination of lecture, demonstration, direct practice, group discussion, and evaluation methods, it is hoped that waste collection activities through the Waste Bank can run effectively, increase community knowledge and skills, and encourage active participation in maintaining environmental cleanliness and increasing household income.

Results and Discussion

Waste management in villages is becoming an increasingly important challenge to pay attention to. Communities often face problems in sorting and managing waste, which has an impact on the environment and health. To overcome this problem, community service activities through the Waste Bank concept were introduced. This activity aims to increase public awareness, especially among housewives, about the importance of waste management and provide economic opportunities for well-managed waste. Community service activities that focus on waste management through waste banks have an important connection with the waste collection process by residents. The following is a more detailed explanation of the relationship between these two activities:



Picture 1. Waste Management Activity

1. Public Education and Awareness

Lectures and demonstration activities in the service aim to increase residents in Dukuh Pondok Serang Mulur's understanding of the importance of waste management. By understanding the impact of waste on the environment, residents will be more motivated to participate in waste collection activities. This awareness is a crucial first step so that they realize the value of the waste they collect, encouraging them to be more active.



Picture 2. Selecting Waste Type

2. Waste Sorting

During practical activities, residents in Dukuh Pondok Serang Mulur are taught how to sort waste properly. This education is very relevant when they collect waste at home. With a good understanding of the types of waste—such as non-organic waste including clear plastic, colored plastic, glass, cardboard, paper, metal, and electronic goods—they can classify the waste appropriately before taking it to the waste bank. Good sorting makes the next process easier at the waste bank.

Non-organic waste includes all types of waste that cannot be decomposed naturally. Examples of non-organic waste include various types of materials that cannot be decomposed naturally. Among these are plastics, such as mineral water bottles, plastic bags, and food packaging. Additionally, there is glass, which includes beverage bottles, broken glass, and

jars. Metal waste also falls into this category, with examples such as food or drink cans, wire, and used batteries. Paper, such as newspapers, cardboard, and paper packaging, is also non-organic waste. Finally, damaged electronic materials, such as used cell phones, televisions, cables, and chargers, are also classified as non-organic waste. These types of waste require special management to reduce negative impacts on the environment. This type of waste needs to be sorted and managed well to reduce environmental impacts. The collection of non-organic waste begins with separation at the source, where residents must separate non-organic waste at home using special containers for each type, such as plastic, glass, paper, and metal. This is important to facilitate the recycling process. Once collected, each type of non-organic waste needs to be weighed and its value recorded at the waste bank, which provides incentives for residents to actively collect non-organic waste. Next, all types of non-organic waste that have been sorted will be collected and taken to the waste bank to be processed, recycled, or sold.



Picture 3. Waste Weighing

3. Weighing and Recording

After collecting waste, residents in Dukuh Pondok Serang Mulur will weigh each type of waste they bring to the waste bank. In the service, they are taught the importance of weighing, which not only records the volume of waste but also determines the economic value of the waste based on its type. By understanding the price per kilo for each type of waste, residents will be more motivated to collect and sort waste.



Picture 4. Collecting Waste Type

4. Waste Management System

After weighing and recording, all types of waste will be collected into large plastic bags and stored at the waste bank location, waiting to be transported by the waste car. The education provided in service activities helps residents understand the entire waste

management system at the waste bank, including the steps that must be followed to ensure waste is managed efficiently and effectively.

5. Follow-up and Evaluation

The final part of the service activity is discussion and evaluation, which aims to produce a follow-up plan. This plan is very important to ensure that the collection, sorting, weighing, and recording processes run effectively and sustainably. Regular meetings can be scheduled to monitor progress and provide feedback, keeping residents engaged and motivated.

The response from participants in community service activities regarding waste management through waste banks was generally very positive. Many participants, especially PKK women, expressed their joy and enthusiasm for the new knowledge gained regarding the importance of waste sorting and management. They feel they understand more about the impact of waste on the environment and realize the active role they can take in keeping the environment clean. Participants also appreciated the hands-on practice, where they could immediately learn how to sort organic and non-organic waste. Some of them stated that this activity encouraged them to be more disciplined in managing waste at home. Apart from that, participants expressed the hope that similar activities could be held regularly so that they could continue to learn and share experiences. Several participants also provided input regarding improving waste bank facilities and the need for further outreach regarding the economic value of the waste they collect. Overall, participants felt this activity was useful and hoped they could contribute more to waste management in their community.

By linking community service activities with the waste collection process at waste banks, it is hoped that a more structured and efficient waste management system will be created. Residents will be more educated and motivated to actively participate in waste management, which in turn can improve environmental quality and provide economic benefits for the community. It is hoped that this service activity can have a positive impact on waste management in the village and increase household income through the Waste Bank. By increasing people's knowledge and skills, and encouraging active participation, it is hoped that a cleaner and healthier environment will be created. Good cooperation between the government, community, and related institutions is essential to achieve this goal and ensure the long-term sustainability of the program.

Conclusion and Suggestion

This community service activity aims to increase awareness and understanding of residents, especially PKK women, about waste management through waste banks. This activity was held on Saturday, 21 September 2024 in Pondok Serang Mulur Sukoharjo and involved representatives of the residents as future managers of the Waste Bank. The activity began with lectures and demonstrations regarding waste management, its impact on the environment, and the importance of waste banks so that residents were more motivated to participate. Furthermore, direct practice was carried out on how to sort waste based on type such as non-organic waste including plastic, glass, cardboard, mineral water bottles, plastic bags, and food packaging. Paper, iron, and electronic goods provide a concrete experience so that residents can apply this technique at home before taking the waste to the waste bank. After sorting, residents weigh each type of waste collected and record the price per kilo according to type, so that they understand the economic value of waste and are motivated to collect more. All types of waste are then collected into large plastic bags at the waste bank location to wait to be transported by waste vans, ensuring that management is carried out efficiently. At the end of the activity, discussions and evaluations were held to formulate

follow-up plans, including regular meetings to monitor progress, so that the waste management program could be sustainable and effective. Thus, it is hoped that this activity can create a more structured waste management system, increase community participation, and provide environmental and economic benefits for the community.

The response from participants in community service activities regarding waste management through waste banks was generally very positive. Resident representatives felt enthusiastic about the new knowledge regarding the importance of sorting and managing waste, as well as being aware of its impact on the environment. They appreciated the hands-on practice that allowed them to learn how to sort organic and non-organic waste, and many committed to being more disciplined in waste management at home. Participants also hope that similar activities can be held regularly to continue to increase knowledge and share experiences. Several inputs were submitted regarding improving waste bank facilities and the need for further outreach regarding the economic value of waste. Overall, participants felt this activity was useful and wanted to contribute more to waste management in their community.

It is recommended to increase the frequency of community service activities regularly so that residents' knowledge and awareness about waste management continue to increase. Regular meetings can strengthen community commitment to the waste bank program. Apart from that, providing educational materials, such as posters, brochures, or videos explaining how to sort waste and the benefits of waste banks, needs to be done to remind residents. Providing incentives or rewards to residents who are active in collecting and sorting waste can encourage more participation, for example through monthly awards or point programs that can be exchanged for goods.

Further training also needs to be held for waste bank administrators and residents regarding more sophisticated waste management techniques, such as making products from recycled waste. Inviting collaboration with other institutions or communities that have a similar vision for waste management will expand the reach of the program and provide additional resources. In addition, it is important to establish a clear monitoring and evaluation system to assess the effectiveness of waste management programs, so that the data obtained can be used for improvements and create reports that are of interest to stakeholders. Finally, ensuring that the facilities at the waste bank location are always in good condition and adequate to accommodate all types of waste collected is also very important, including providing better storage areas and more efficient waste sorting equipment. By implementing these suggestions, it is hoped that the waste management program through waste banks can run more effectively and sustainably, and have a greater positive impact on society and the environment.

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