

## COMMUNITY WASTE BANK MANAGEMENT TRAINING IN CITAYAM VILLAGE, TAJURHALANG DISTRICTS, BOGOR REGENCY

Laila FEBRINA<sup>1\*</sup>, Wardina HUMAYRAH<sup>2</sup>, Almira NURAELOH<sup>3</sup>, Akmal Algifari ALAUDIN<sup>4</sup>,  
Dita OKTAVIANI<sup>5</sup>

<sup>1,4,5</sup> *Environmental Engineering Study Program, Sahid University, Jakarta, Indonesia*

<sup>2,3</sup> *Nutrition Study Program, Sahid University, Jakarta, Indonesia*

\**lailahardian@gmail.com*

### ABSTRACT

Waste management from the source is a basic thing to be socialized to the community. The existence of a waste bank can reduce waste generation at the final waste processing site. The purpose of this activity is to invite people to sort waste from their homes to be deposited in the waste bank. This activity was carried out by a team from Sahid University to the people of Citayam Village, Tajurhalang District, Bogor Regency. There were 21 participants from the village apparatus as well as RT and RW representatives. This training method includes lectures and discussions on waste bank management, followed by a Forum Group Discussion (FGD) on the establishment of a waste bank institution in the village. Furthermore, questionnaires were distributed to see the understanding of the waste bank. Based on the questionnaire during the training, it was found that most of the participants had never attended waste bank training, and had no knowledge of the waste bank. While most of them already know about the types of waste found in the surrounding environment and almost all participants already know that waste needs to be separated from the house to avoid piles of garbage in the final disposal site. However, most of the participants have not been trained to sort organic and non-organic waste. However, they are willing to invite family members to sort the waste from the house. This activity is sufficient to provide insight and understanding about the importance of participation in managing the environment through the waste bank program. Of course, the next waste bank program needs to be carried out intensely with the community directly so that the community can actively participate as customers and manage household waste at the waste bank formed in Citayam Village.

**Keywords:** community, environment, management, training, waste bank

### 1. INTRODUCTION

The condition of waste in Indonesia, which is increasing every year along with the increasing population, is still an important problem and needs to be addressed immediately. Other factors that play a role in accelerating the generation of waste include economic development and urbanization (Minghua et al., 2009). The waste generated is mostly sourced from household waste, companies, schools, hospitals, and others. The accumulation of waste that occurs in the environment will eventually cause problems, including cleanliness, beauty, health, the environment, and social problems (Siagian et al., 2022).

Waste management in Indonesia has been stipulated in Government Regulation no. 81 of 2008 and Law no. 18 of 2008, this is needed as a guideline for the government in an area, both provinces, cities, and districts. Its activities include waste reduction and management. In practice, the waste management carried out by the government until now has not been able to overcome the problems resulting from the accumulation of waste because the collected waste will be transported and disposed of to the Waste Disposal Site (TPS) without any management so that the longer the landfill land becomes full and difficult to get new land (Cahyono & Budi, 2021). This also happened in Bogor Regency, the handling of waste has not been maximized, even from the 2800 tons of waste produced only around 600-700 tons can be transported by the Environmental Service (DLH) to the final waste disposal site (DLH, 2021). However, Citayam Village is one of the villages in Tajurhalang District, Bogor Regency which still does not have a well-coordinated waste management system. The household waste of the village community is generally piled up and burned in the neighborhood causing burning smoke.



Figure 1. Burning of household waste by residents

One of the efforts in overcoming the waste problem that occurs in the Bogor district is by implementing a waste bank in every environment managed by the community in the area. The waste bank is a place for sorting and collecting that can be recycled and has economic value (Suryani, 2014). Garbage banks also have several benefits, including making the environment clean, making people aware of the importance of cleanliness, and being able to turn waste into something more useful in society, for example for handicrafts and fertilizers that have economic value (Siagian et al., 2022). The process of waste bank activities generally includes financial reports, recording, and management. The process of separating household waste which is included in the category of organic waste can be composted while non-organic household waste is combined for recycling (Ibad I & Devi LR, 2020). The existence of this waste bank can also help local governments in empowering communities to manage community-based waste wisely and can reduce waste transported to Final Disposal Sites (TPA) (Astoria, D, 2016). The construction of a waste bank cannot actually stand alone but must be accompanied by integration with the 3R movement as a whole in the community. This needs to be done so that the direct benefits felt by the community are not only a strong people economy but also the development of a green and clean environment so as to create a healthy society (Directorate General of Human Settlements, 2011).

Community-based waste management is important in managing household waste. Sorting household waste which is included in the category of organic waste can be used as compost, while anarmonic household waste is saved to a waste bank to be recycled and can be used as the material of economic value (Jumar et al. 2014). The success of the waste bank in each community is largely determined by the participation of citizens who will also determine the sustainability of the waste bank program so community-based management needs to be considered (Kristina, 2014).

The establishment of a waste bank is considered as one of the solutions for waste management in Citayam Village because the existence of waste banks is not evenly distributed and there is no understanding and awareness of the local community to manage waste into useful goods and have a selling value. In principle, the implementation of a waste bank is one of social engineering to invite people to sort waste. Through the waste bank, an innovative solution was finally found to "force" the community to sort their waste. By equating waste with money or valuables that can be saved, people are finally educated to value waste according to its type and value so that they are willing to sort waste (Saputro, 2015). Therefore, it is necessary to conduct waste bank management training through this community service activity so that it is hoped that the management system of the Waste Bank management system in Citayam Village, Tajurhalang, Bogor Regency can be formed to answer community problems.

## **2. METHOD**

Waste bank management training was conducted at Citayam Village Hall, Tajurhalang Bogor in July 2022. Audiences to village officials were conducted prior to the implementation of the activity to collect data on training participants, especially representatives of residents who were quite active in environmental care activities to be appointed as administrators of the village waste bank institution. The number of participants who attended was 21 people consisting of representatives of residents and also several village officials.

This training was organized by Lecturers of the Community Service (PKM) team together with students and resource persons from the University. Resource persons are the Founding Practitioners of the Rosella Waste Bank who have been active and successful in Cinere, Depok. The material provided consists of two sessions: (1) a Program to increase understanding of waste banks, waste sorting, and the creative economic potential of inorganic waste and (2) training on the establishment and management of waste banks, related to the operational needs required for opening a bank. waste and waste bank management. The training method used lectures and question-and-answer discussions, followed by a focus group discussion (FGD) for the formation of village waste bank administrators. In addition, all participants were also asked to fill out a questionnaire that measured the participants' understanding and awareness regarding waste banks.

## **3. RESULT**

### **Characteristics of participants**

Participants in the waste bank management training have an average age of  $47 \pm 7$  years, only one participant is  $<30$  years old, the rest is  $> 30$  years old. Most of the participants who attended were male, generally village officials and environmental activists. And most of the participants have a high school / vocational education background, but there are still a third of the participants who did not finish elementary and elementary school. The participants' occupations are generally self-employed with a percentage of almost 50%, followed by housewives and others. Based on village data, most of the population has a business of growing ornamental plants which is distributed to cities around the village area.

Table 1. Characteristics of participants

<i>Characteristics</i>	<i>n</i>	<i>%</i>
<b>Gender</b>		
Man	15	71,4
Woman	6	28,6
<b>Education</b>		
Not completed primary school	2	9,5
Primary School	5	23,8
Junior High School	5	23,8
Senior High School	9	42,9
<b>Job</b>		
Laborer	1	4,8
Housewife	5	23,8
Self-employed	10	47,6
Other	5	23,8

**Activity implementation**

This waste bank management training begins with the first session on waste banks, especially about the types of waste found in the environment, namely organic, inorganic, and hazardous and toxic waste (B3) which if not managed properly can damage the environment. also explained about the benefits of the existence of a waste bank as a form of community participation in protecting the environment. The community was also reminded again about the types of waste that can have a selling value in this first session, it is hoped that the community will be interested in collecting inorganic waste from the waste bank.

The second session of the material contained the successes and challenges as well as the management of the Rosella Waste Bank which was established by the resource person. The resource person explained the flow of the waste bank management process, the tools, and the materials needed until the waste bank operational process was running. This session, apart from sharing experiences, was also complemented by a discussion session which the participants enthusiastically participated in. Participants generally asked how the process started and made people aware of their neighborhood to be interested in sorting waste and becoming customers.

Based on the Regulation of the Minister of the Environment Number 13 of 2013 concerning Guidelines for the Implementation of Reduce, Reuse, and Recycle through the Waste Bank, the mechanism for the performance of the Waste Bank is as shown in Figure 2. Waste is sorted according to its type. There are 7 (Seven) types of waste that are generally accepted by Waste Banks, including; Plastic bottles (separate bottle caps and labels), cardboard, marga (thin cardboard), Glass bottles (syrup and soy sauce bottles), mixed plastics (powder containers, buckets, etc.), mixed paper, aluminum cans (sprite, coca-cola, milo, etc.) ). After the waste is received, then weighing and recording are carried out. The recording is done in the customer's savings book and in the cash book of the waste bank treasurer. In addition, customers also receive a waste deposit proof slip. Savings withdrawals are agreed upon after 1 (one) year of running. The purchase price is the price received by customers when saving their waste, the selling price is the price received by the waste bank when selling waste to collectors and the difference is the sales profit whose results are used as cash for the Waste Bank.



Figure 2. Technical Operational Waste Bank

Furthermore, in the third session, FGD was held which gathered representatives of environmental activists to form village waste bank administrators. This FGD was successful in exploring some of the challenges and potentials of each resident representative area. There are several participants who are willing to represent each neighborhood unit and will invite other residents to become waste customers and socialize the waste bank. In general, waste bank activities can be seen in Figure 3.

In addition, before the start of the training, a questionnaire on understanding and awareness of waste banks was distributed to be filled out completely by the training participants. Based on the 21 participants who had collected the questionnaire, 18 participants (85.7%) had never attended waste bank management training, and only 3 participants (14.3%) claimed to have attended the training.



Figure 3. Waste bank management training

Table 2. Participants' understanding and awareness of waste banks

No.	Understanding and awareness about the garbage bank	Experience being a participant waste bank training			
		No		Yes	
		n	%	n	%
1	Know the type of trash				
	Not	6	33,3	0	0,0
	Yes	12	66,7	3	100,0
2	Need sorting garbage				
	Not	1	5,6	0	0,0
	Yes	17	94,4	3	100,0
3	Know how to sort trash				
	Not	12	66,7	0	0,0
	Yes	6	33,3	3	100,0
4	Inviting to sort trash				
	Not	8	44,4	2	66,7
	Yes	10	55,6	1	33,3
5	Collecting trash at home				
	Not	12	66,7	1	33,3
	Yes	6	33,3	2	66,7
6	Know the purpose of the waste bank				
	Not	12	66,7	0	0,0
	Yes	6	33,3	3	100,0
7	Garbage bank increases waste knowledge				
	Not	1	5,6	0	0,0
	Yes	17	94,4	3	100,0
8	Garbage bank reduces waste in the environment				
	Not	7	38,9	0	0,0
	Yes	11	61,1	3	100,0
9	Become a waste bank customer because you care				
	Not	10	55,6	1	33,3
	Yes	8	44,4	2	66,7
10	Become a customer for profit				
	Not	15	83,3	2	66,7
	Yes	3	16,7	1	33,3
11	Becoming a customer increases revenue				
	Not	11	61,1	1	33,3
	Yes	7	38,9	2	66,7
12	Garbage bank improves environmental efficiency				
	Not	6	33,3	0	0,0
	Yes	12	66,7	3	100,0

Table 2 shows that almost all of the participants are still unfamiliar with the knowledge related to waste banks, although two-thirds of the participants who have never attended the training already know the types of waste, there are still 1/3 of the participants who do not know the types of waste, while all participants who have attended the training already know the types of waste. However, almost all participants who have never been to training agree that sorting waste at home is necessary, in line with participants who have attended the training.

One-third of the participants who had never attended the training did not understand how to sort household waste, while all participants who had attended the previous training understood how to sort household waste. However, most of the participants who have not and have had training want to invite their families to sort household waste. Most of the participants who have never attended the waste bank training do not collect waste at home, which is different from the participants who have been trained in general collecting waste at home. And most of those who have never been trained do not know about the purpose of establishing a waste bank and vice versa for participants who have been trained.

Based on the benefits of the waste bank, most of the participants, both those who have and have never been trained, agree that the existence of a waste bank can increase knowledge about waste and reduce waste in the environment around where they live. Although when asked about the reason for being a customer of a waste bank, most of the participants who had not received training were not because of their concern and increasing their income, profit, and vice versa for those who had attended the training. The view of all training participants is that they realize that waste banks can increase environmental satisfaction.

Waste sorting is one of the most important waste management efforts as mandated by Law No. 18 of 2008 concerning Waste Management. The recommended sorting is a sorting pattern that is carried out starting from the level of the source or origin of the waste because the waste is still pure and has not been mixed or contaminated with other waste. Damanhuri, 2010, said that in fact, the main problem of the waste sorting business is how to increase community involvement in the business. It is hoped that with this activity the community will want to move together to protect the environment.

#### 4. CONCLUSION

The conclusions obtained from this activity are: (1) the participation of participants in participating in the training activities is quite active, which can be seen from the level of participation that follows each training session relatively does not decrease until the end of the activity, (2) the understanding and awareness of participants about the waste bank have improved. quite good but needs to be deepened in the technical direction of how to become a customer and sort out household waste. An environmentally friendly, systematic, and sustainable waste management program can be implemented properly if it involves the community, local government, and universities. It is necessary to carry out further activities starting from the management who has formed the formation of village waste bank so that it can be realized and run according to plan that it can invite the village community to be more concerned about the village environment. It is hoped that the existence of a Waste Bank in Citayam Village can cause social impacts related to the behavior of disposing of waste in its place, the behavior of sorting waste from its source, education about the importance of waste management, and education about the importance of saving. There is an increase in the economic impact (additional income) and environmental impact (reduced household waste disposed to TPS, reduced piles of waste in TPS so that environmental conditions become cleaner

#### ACKNOWLEDGEMENT

First and foremost, praises and thanks to God, the Almighty, for His showers of blessings throughout this program work to complete the research successfully. We would like to express our gratitude to the Ministry of Education, Culture, Research and Technology, Republic of Indonesia, for giving the grant funding to do this program achieved. We also thank for village head of Citayam Village and the society for the warm acceptance and good cooperation through this program came true.

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