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COMMUNITY EMPOWERMENT IN HOUSEHOLD WASTE MANAGEMENT

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Abstract

Waste management is understood to be carried out by the community, or the community gives a dominant role. One of the efforts to maximize community participation in waste management activities is to socialize the economic benefits and the benefits of waste by carrying out waste management. Community participation and perception of waste management activities is important as a decisive first step in waste management activities. Waste management by the community can be started with economic incentives, so that management can be sustainable. Raising public awareness is built on individual awareness and then facilitated by institutions or organizations that will manage it.

Keywords: waste management, household, participation, perception.

I. INTRODUCTION

Population growth is one of the causes for increasing the number of household waste generation. Based on KLHK data, 2017 [1] it was found that the amount of waste per person was 0.8 kg / day. In addition, changes in consumption patterns also contribute to increasingly diverse waste generation. Thus, population growth not only increases the amount of waste but also increases the type of waste generated.

Changes in the type of waste produced occur with changes in people's consumption patterns. The use of plastic wrappers and non-degradable materials that replace wrapping from leaves (degradable) contributes to the amount and type of waste generation. According to Adipura data from 2015-2016 from the Ministry of Environment and Forestry, it was found that the composition of plastic waste in 2013 was 14 percent, to 16 percent in 2016. For organic waste the period decreased from 60 percent to 57 percent. This phenomenon is of course different in rural and urban areas but the trend will be more or less the same.

Based on Adipura data from KLHK, 2017 it was found that the percentage of waste generation in 2016 is shown in Figure 1.

From Figure 1, it can be seen that organic waste still dominates, followed by plastic waste. Management of organic waste into fertilizer (compost) has been known and implemented, but there are still obstacles, especially in maintaining the sustainability of the management. The activity of managing organic waste into compost must be able to provide benefits that are economically feasible so that this activity can survive economically.

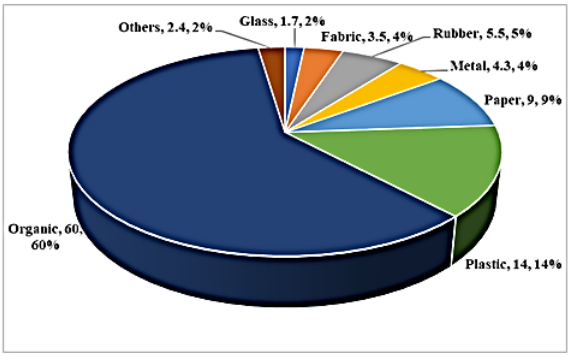

Figure 1. Percentage of Waste generation 2016. Source: KLHK Adipura Data, 2017

The management of waste generation generated by households can be done by reducing waste generation and handling the waste produced. Reduction of waste generation can be carried out by the community itself, such as by always reusing (not disposable) packaging materials, especially those made from plastic [2]. Another effort is to recycle waste produced. The 3R movement (Reduce, Reuse, Recycle) needs to be improved. The reuse of waste as raw material is a very appropriate choice, besides reducing the environmental impact of waste, it can also provide economic value to waste. Omran [3], stated that the behavior of the community to recycle their waste is

also determined by the facilities it receives in managing the waste, and one of the strategies that can be done is to provide trash bins for recyclable waste.

The paradigm of waste management that relies on the final approach is time to be abandoned and replaced with a new paradigm. The new paradigm is to view waste as a resource that has economic value and can be utilized in the production process to produce other products. Resources that can be generated such as for energy, compost, fertilizer or industrial materials. Waste management is carried out with a comprehensive approach from upstream, since before the waste is produced from products that have the potential to produce waste, down to the downstream, that is, in the product phase it has been used and produces waste disposed of into the environment.

This is in accordance with the understanding of waste management according to Law Number 18 of 2008 [4] and Government Regulation Number 81 of 2012 [5], namely systematic, comprehensive and sustainable activities which include the reduction and handling of waste. The purpose of waste management is to improve public health and environmental quality and make waste as a resource. Resources that can be produced by household waste, such as making fertilizer (liquid) or planting media (compost). Household waste which is organic material will always be there, considering that household activities will involve a lot of organic materials such as when cooking, gardening.

For non-organic waste, making it into a resource can be through several ways, such as re-melting waste with certain materials, such as paper, glass, cans, to produce other goods made from raw materials. But of course the waste must be sorted according to the material. Thus waste management must begin with the sorting of waste according to the waste material. Overall, household waste handling will consist of the activities of sorting, collecting, transporting, processing and finishing processing. The implementation of all these activities requires the collaboration of various parties, cannot be done individually. The community as a group and doing together have a very important role.

Household waste management, will achieve the goal of improving health and environmental quality by including the community in the management. This is because the community is the producer of waste itself. Awareness from the community in conducting waste management is important, because community participation in managing household waste will begin with community awareness to carry out management.

According to Riswan, et al., 2011, from the results of research in Daha Selatan Subdistrict, South Hulu Sungai Regency, South Kalimantan, several factors influence the implementation of community waste management, namely education level, income level, behavior towards environmental cleanliness, knowledge about waste regulations and willingness to pay restitution of waste. According to Maskey and Mrinila [6], the magnitude of the desire to pay the public for waste management is influenced by household income, education of the head of the family, environmental awareness and garbage collection facilities.

This activity was a socialization to the community to carry out waste management, both organic and non-organic. The purposes of this activity were to provide insight to the community about the importance of waste management, inviting the public to realize that every day everyone produces waste and invites people to do waste management.

II. METHODS

Community service activities are carried out in two activities in two different places. Consideration of choosing the location of the implementation of this activity because in Bekasi Regency there are migrant communities and indigenous people. Migrant communities generally live in housing areas while indigenous people live in existing villages / kelurahan. The locations taken for community service activities are Mekarmukti Village (Cikarang Baru housing) and Jatireja Village. Community service activities are carried out in two activities in two different places.

The activities at each location started with introduced their selves for knowing more. Giving socialization material is done by using pictures and by using the discussion method. All participants are expected to give their opinions or views about waste and the methods of processing waste they know. Informal discussion is the method used in this activity. Collecting data was used questionnaire that spreaded among the participant when the socialization was done.

III. RESULTS AND DISCUSSION

Waste management by the community consciously will provide benefits and sustainability for the community itself. Raising awareness of the community is the main key so that this activity can have an economic impact. This community service activity begins with an approach to the RT management or community leaders. This is done so that the RT management can continue the citizenship and enter this program in the RT work program. The meeting with the management of RT 01 was held at the residence of the RT chairman and the administrators present were representatives of the RT, RT secretary, and RT treasurer (Figure 2. This meeting took place at night, because remembering the management of this RT was the fathers who worked during the day.

The meeting took place relaxed and full of kinship, from this meeting the problems and current conditions surrounding waste management were obtained. The several problems in waste management obtained such as:

1. Transporting garbage is not always twice a week, as planned, in fact it is often transported once a week. This makes the road conditions and the surrounding environment unhealthy and looks very dirty (Figure 3).
2. For houses used as boarding, more waste is generated, given the large number of boarding house residents (10-15 people).
3. Plastic waste collection, specifically that can be sold (such as plastic bottles) has been done, but coordinated.
4. Efforts to manage organic waste are constrained by processing sites, because if compost is to be made, a place is needed to make a hole or a place to hang out.

Figure 2. Meeting with the management of the RT in the residence of the Chairperson of the RT

Figure 3. Condition of a trash can on a residential roadside

The next step is to disseminate information to residents, namely housewives. Dissemination was conducted at Cikarang Baru Housing and in Jatireja village at different times. The Cikarang Baru Housing was held at the RT arisan forum and socialization in Jatireja village was carried out in the house of one of the residents (Figure 4.).

The socialization of Cikarang Baru Housing in addition to the importance of waste management was conveyed, it was also conveyed the importance of the establishment of organizations that would implement the management. This is because the residents of Cikarang Baru housing generally are migrants who have different backgrounds, so that the values have not been embedded in the community. From this socialization event, it was shown acclamation by Ms. Affan to follow up the waste management organization.

Figure 4. Dissemination of Waste Management in Cikarang Baru Housing and in Jatireja Village

Socialization in Jatireja village was carried out in the house of the midwife's mother, who was very well known to the community. The midwife is willing to provide a place and provide other facilities to contact the community, because of the wishes of the midwife to implement the Green Village program. In the community of Jatireja village, which is a native of Bekasi, it has received additional income by collecting and selling economically valuable waste. Even for plastic waste that cannot be sold, the community has collected it, maybe in the future it can be sold.

Overall, participants in this waste management socialization program have the character as shown in Figure 5 below. From Figure 5, it can be seen that the majority of participants were from the age group of 31-40 years (39.5%), the most participants were housewives (86.8%), the highest level of participant education was elementary school (31.6%) and 84.2 percent of participants lived in their own homes. From the characteristics of most of these participants it can be said that participants are housewives with low education, homeowners and productive age. Participants in waste management activities from low level of education are new, because like the results of research on recycling programs in Malaysia (Zen, Zainura and Rafiu [7]) the respondents who participated were respondents with higher education, high income levels, homeowners and gave great appreciation for handling materials that cannot be recycled.

The characteristics of participants who are often used in waste management are household income, but in the socialization activities this waste management was not successful in obtaining income data, because participants were not willing to state their income. In the study of Zen, Zainura and Rafiu [7] it was found

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that the families participating in the waste recycling program were high income families.

In addition, from Momoh and DH Oladebeye's research, in 2014 [8] , it was found that participants who participated in the recycling program had the most undergraduate education, then diplomas (81.4%), the rest had secondary and elementary education. This is different from the level of education of participation in the dissemination activities carried out, at most many levels of participant education are graduating from elementary (elementary school) and others, which may not finish elementary school or only receive informal education. The results of the study in Nepal regarding the willingness to pay from the public for waste management (Maskey and Mrinila, [6]), the education level of respondents is around 7 years of formal education, or can be said to graduate from elementary school. Higher levels of education will provide a more complete understanding and understanding of waste management, but in the present time with easy access to practical knowledge from the internet, knowledge about waste management can be obtained not only from school.

It is easy to understand that participation in waste management is carried out by families living in their own homes. This is because the sense of responsibility for the environment around the house will determine comfort in staying. In this outreach activity, general participants (84%) lived in their own homes.

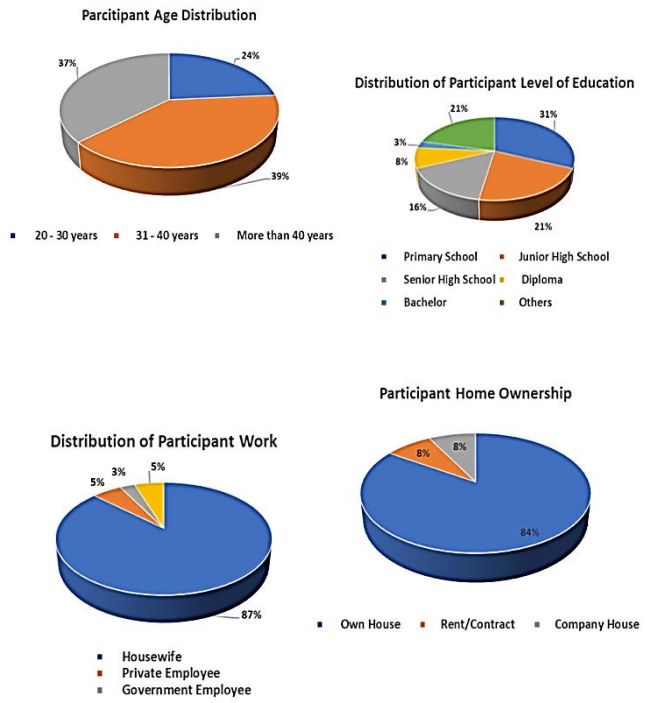

Figure 5. Characteristics of Participants in the Socialization of Household Waste Management activities

In the implementation of this activity, participants' participation and perceptions were measured on waste management efforts. The measured variables are shown in Table 1 below.

Table 1. Variables Measured in Waste Management Information Dissemination Activities.

No	Variable Name	Symbol	Note
	Participan Characteristics		
1	Age	U	Classification: 23-30 years, 31-40 years and> = 40 years
2	Level of Education	Pnd	Classification: Elementary, Middle, High School, Diploma, Sarjan, Others
3	Working	Pkj	Classification: Housewives, private employees, public servants, entrepreneurs
4	Home Ownership	MR	Classification: Own house, rent / contract, company house
	Participation		
5	Have knowledge of waste management	PS	Answer: Yes and No
6	Knowledge source for waste management	MD	Classification: Media, Friends, Others
7	Willingness to recycle waste	IDU	Answer: Yes, no
8	Participation in waste management	Prs	Classification: Composting, Sorting, Economically valuable garbage collection
9	How to collect garbage	CP	Classification: Collector, Alone
10	Frequency of garbage collection	FP	Classification: 1 time a week, 2 times a week,> 2 weeks
	Perception		
11	The desire to follow waste management	IPS	Answer: Yes, no
12	The desire to reuse garbage	IMS	Answer: Yes, no
12	Garbage bags	KS	Answer: Same bag, different bag
14	The desire to buy a garbage bag	MKS	Answer: Yes, no
15	The preferred garbage collection method	MPS	Answer: Alone, Developers, Scavengers, Residents

This variable measurement is done using a questionnaire, after socialization and question sessions. This is done to determine the continuity of this waste management activity. By knowing the participation and perceptions of respondents, further activities will be designed taking into account the participants' opinions. For the variable participation, participation participant can be seen in Figure 6. In the participation variable, participants showed that knowledge of waste management was owned by most (57.9%) participants with sources get that knowledge comes from other sources, that is, from social media, like whatsapp or line. The media referred to in the question of this source of knowledge is online media, such as the web or bloq. The use of social media is very widely used by the community, not only to communicate but also to get the knowledge needed. However, the knowledge gained is still very minimal and not qualified if it will be implemented.

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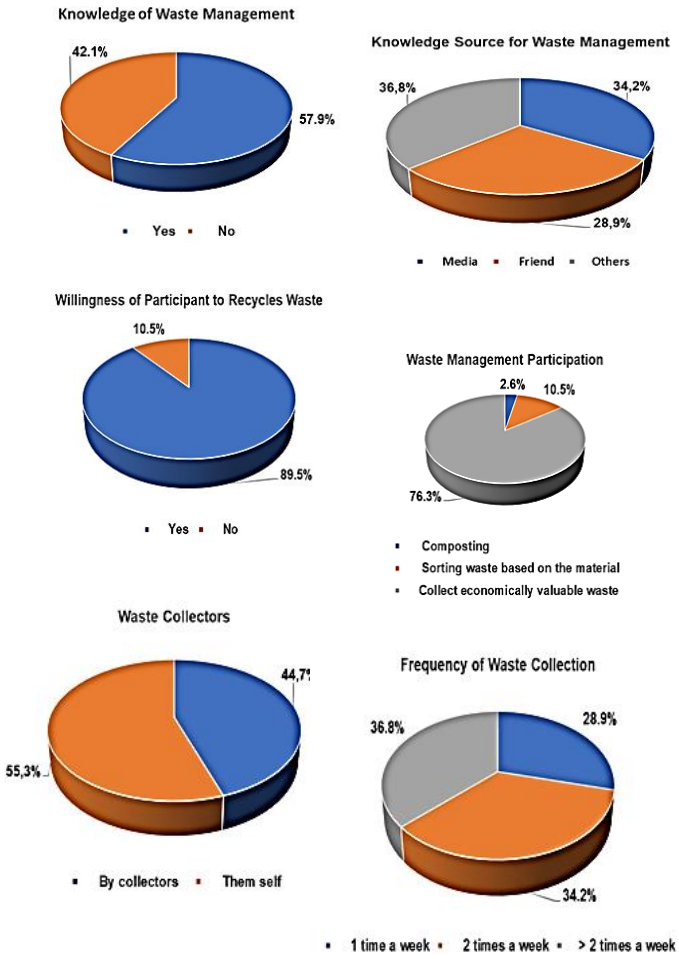

Figure 5. Distribution of Participants in Measuring Participation

Most of the participants (89.5%) were willing to recycle their waste and are now segregating economic waste (76.3%). This economical waste sorting is mainly in plastic bottle waste which can indeed be sold and is easier to collect. Thus most (55.3%) prefer to collect their own waste rather than collected by collectors. The high amount of waste produced makes participants want to transport garbage more often, so that the garbage is not piled up on the road or in the yard, 63.1% want the garbage to be disposed of twice or more in a week.

Based on Omran [3] Research in 2009, it was found that the wrong strategy that could be used so that people were interested in participating in the waste management program was by providing trash bins available in each residential area, thus the community would easily dispose of their trash. Processing waste by making waste into compost) shows that waste management must be economically feasible, so that people are interested in doing so (Djuwendah, [9], Sujauddin [10]). In addition, the use of technology that is capable of processing waste also needs to be done especially at the final garbage collection site (Neupane and Shuve [11]).

Participant distribution based on their perceptions of waste management is presented in Figure 6. From Figure 6, it can be seen that 97.4 percent of participants wished to manage waste and 94.7 percent wished to use economically valuable waste. Economically valuable waste has been collected and sold by most participants, so that the economic benefits have already been felt. By having felt these economic benefits, participants were very enthusiastic to take part in waste management, so that the benefits of waste could be felt more. Therefore, the majority of participants (73.7%) were willing to sort out their trash and mate to buy plastic bags for trash (65.8%).

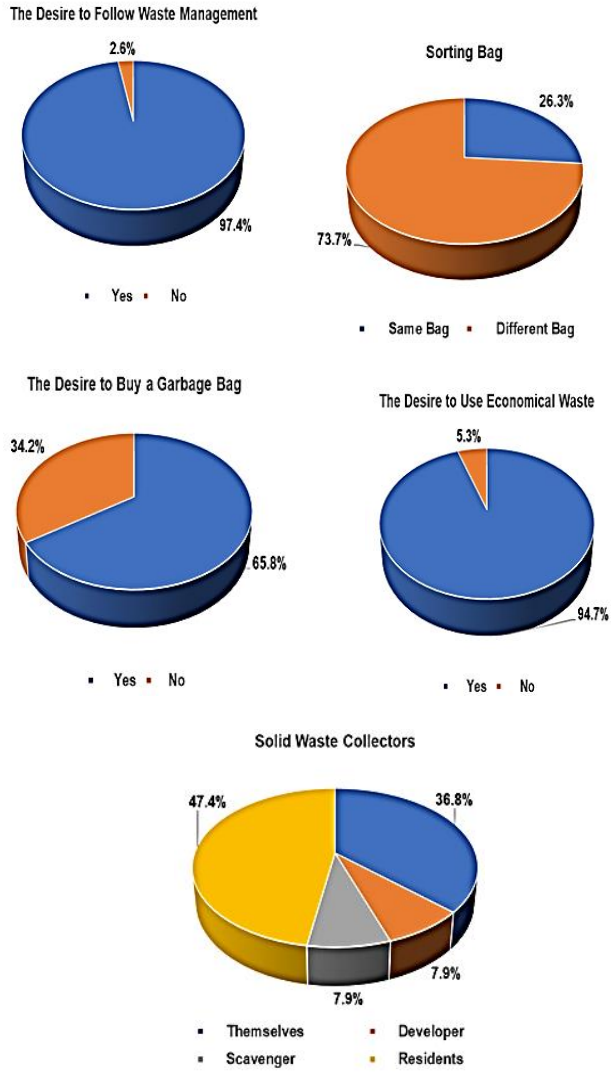

Figure 6 Distribution of Participants in Perception Measurement

IV. CONCLUSION

This waste management socialization activity is the first step in managing household waste. The community welcomed this waste management program and showed very good participation and perception. This high community participation is because the community has benefited from waste, especially plastic bottles that can be sold. The desire of the community to sort and reuse waste is also high, followed by the people's desire to sacrifice, by buying garbage bags and sorting themselves.

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REFERENCES

[1] Data Adipura. *Kementerian Lingkungan Hidup dan Kehutanan*. (2017).

[2] Aliu, IR., Adeyemi, O.E & Adebayi,A. *Municipal Household Solid Waste Collection Strategies in an African Megacity: Analysis of public private partnership performance in Lagos*. Waste Management & Research. 32 (9_supply), (2014) 67-78. https://doi.org/10. 1177.07342X14544354

[3] Omran, A., Mahmood A, Abdul A, Robinson GM. *Investigating Household Attitude Toward Recycling of Solid Waste in Malaysia: A Case Study*. International Journal of Environment. 3 (2). (2009).

[4] Undang-undang Nomor 18 tahun 2008 tentang *Pengelolaan Sampah*

[5] Peraturan Pemerintah Nomor 81 tahun 2012 tentang *Pengelolaan Sampah Rumah Tangga dan Sampah Sejenis Sampah Rumah Tangga*.

[6] Maskey, B dan Mrinila S. *Households' Willingness to Pay for Improved Waste Collection* Service in Gorkha Municipality of Nepal Environment (2017), 4, 77

[7] Zen, IS, Zainura ZN, Rafiu OY. *The Profile of Household Solid Waste Recyclers and Non-Recyclers in Kuala Lumpur, Malaysia.* Habitat International. 42 (2014). 83 – 89. www.elsevier.com/locate/habitantint.

[8] Momoh, John & DH. Oladebeye. *Assessment of Awarness, Attitude and Willingness of People to Participate in Household Solid waste recycling program* in Ado-Ekiti, Nigerai. Journal of Applied Sciences in Environmental Sanitation. 5. (2014).

[9] Djuwendah, E. *Keragaan Sosial Ekonomi Usaha Daur Ulang dan Pengomposan Sampah di Kotamadya Bandung.* Sosiohumaniora. Vol. 7, No 3 (2005).

[10] Sujauddin, M., SMS Huda., ATM Rafiqul H. *Household Solid Waste Characteristics and Management in Chittagong, Bangladesh*. Waste Management 28. (2008).

[11] Neupane B. and Shuve N. *Scenarion of Solid Waste Management in Hetauda Municipality, Nepal*. International Journal of Environment. Vol.2 Issue 01 (2013).