

# Waste Management Policy Based on Community Empowerment in Supporting South Tangerang City as a Green City

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## ABSTRACT

Solid garbage is a widespread problem in big cities in Indonesia, including South Tangerang. The population growth is getting bigger, and the waste pile grows more prominent too. Changes in the lifestyle of the people in South Tangerang and urbanization are also factors that influence waste piles' growth. This article aims to examine waste management policies with community empowerment as a philosophy to support a green city in South Tangerang. This study uses qualitative research with a literature study method to present relevant data for this research. The results showed that one of the efforts to implement a waste management policy and empower the people of South Tangerang is through a waste bank where the increasing number of waste banks in South Tangerang City will increase public awareness of the importance of maintaining the cleanliness of the city so that the hope of South Tangerang City as a green city can be achieved.

**Keywords:** *Waste Management, Garbage Bank, Green City*

## 1. INTRODUCTION

Human activities in utilizing nature always leave remnants that they consider useless so that they are treated as discarded items called garbage (Reno, 2015). Garbage is defined as organic and inorganic waste disposed of by the community from various locations in an area. Population growth, improvements in consumer habits, and changes in people's lifestyles have increased the amount of waste produced and the types and variety of waste characteristics (Karak et al., 2012). Increases in people's purchasing power for different forms of staple commodities and technological items and increases in industries or activities that promote a region's economic development all add significantly to the quantity and nature of waste generated (Madani, 2011). The increasing population in big cities has resulted in a higher waste generation which must be managed every day (Malina et al., 2017).

As per the World Health Organization (WHO), garbage is anything that is not used, disliked, or discarded as a result of human activity and does not occur naturally (Chandra, 2007). Soemirat (1994) argues that waste is unwanted by those who have and are solid. Garbage is a part of something that is not used, disliked, or something that must be disposed of, which generally comes from human activities (including industrial activities) but not biological

because human waste is not included in it (Gruber et al., 2016).

Garbage is a human problem; detrimental consequences of garbage include: (1) In general, waste can affect the environment of the local population since some forms of debris can be a vector of disease, (2) Garbage can degrade the aesthetics or environmental appeal of a city where the waste management is inadequate; (3) Garbage can cause air pollution and foul odors; and (4) Garbage can pose a flood threat during the rainy season, where litter that is not carried can clog rivers (Palmer et al., 1997; Keser et al., 2012).

The growing amount of waste generation necessitates waste management. Waste management that does not use environmentally sustainable waste management practices and procedures will not only have a detrimental effect on health; it will also have a significant impact on the protection of natural roles of residential neighborhoods, parks, rice fields, waterways, and oceans (Dwiyanto, 2011). Based on Law Number 18 the Year 2008, waste is the residue of daily human activities and/or natural processes in solid form. With increasing population, waste production also increases; therefore, waste processing's effectiveness must be increased. These wastes consist of organic and inorganic types that come from various sources (Wardi, 2011).

According to Achmadi (2004), in general, the composition of waste in every city and even country is almost the same, namely:

**Table 1.** Composition of Waste in Each City or Country

No	Waste Composition	Percentage
1	Paper and Cardboard	35%
2	Metal	7 %
3	Glass	5 %
4	Yard and kitchen rubbish	37%
5	Wood	3%
6	Plastics, rubber, and leather	11%
7	Etc	17%

A green city is a progressive urban development term known as an organic city or a balanced city. This indicates that there is a balance between urban planning and environmental sustainability (Jedliński, 2014). Green city is a green city thanks to beautiful city parks in green open spaces and supported by planning and design or planning and engineering (Low, 2005). Tangel City, as a green city with a green building program, is equipped with one of the indicators, namely green waste. This means that the future development of the city of Tangel must be supported by environmental cleanliness. For this reason, the construction of office buildings, shopping center buildings, hospitals, school buildings, colleges, terminals, and government buildings must implement green buildings.

As a supporting city for the developing capital of DKI Jakarta, South Tangerang has endeavored to carry out development, starting from infrastructure, infrastructure to the quality of its human resources. The rapid increase in population in urban areas has an impact on increasing the amount of waste produced. Based on data in 2019, the volume of waste produced by South Tangerang residents reached 850-900 tons. However, entering 2020, the importance of waste will increase by 10 percent to around 1,000 tons per day. This amount will increase at certain times, such as when the PSBB for solid waste was implemented as much as 80 tons per day than before the PSBB, which was only around 50-70 tons per day (South Tangerang City Environmental Service, 2020). According to him, the increase in the amount of waste occurred because

many individuals stayed at home during the coronavirus outbreak. The rise in waste that was not accompanied by changes and improvements to waste management facilities and infrastructure resulted in a complex problem of garbage, including untransported waste and illegal dumping of waste, which could lead to various diseases, dirty cities, foul odors, reducing the capacity of rivers, etc.

Efforts to manage community-based waste in Tangel City are carried out through community empowerment, facilitated by related sectors, and synchronized with city planning. Waste management besides the compost house is also the existence of a Garbage Bank. The decrease in the volume of waste is due to the increasing awareness of City residents who care about the environment. The community's involvement is beneficial because they have sorted, selected, and processed organic waste into compost by themselves; this is part of a community-based waste management program. This program has created a waste management mechanism in South Tangerang City from upstream to downstream.

**2. METHOD**

In this study, researchers used a type of qualitative research. This research is a literature study with a qualitative approach, in line with Sugiyono's (2005) opinion. Qualitative research uses many methods, interpretive and naturalistic techniques, observes and tries to interpret or interpret phenomena from society's perspective, and this includes the use of various empirical sources, including analysis: cases, personal meetings, introspection, life stories, and interviews. Historical, interactional, and visual texts, insights can define everyday moments and difficulties in a person's life.

Furthermore, in obtaining primary and secondary data, a literature study was carried out. The literature study method includes library data collection, reading and recording, and management of research materials. Each researcher conducts a literature study to find a basis for obtaining and building a theoretical foundation, a frame of mind, and determining a provisional estimate or what is known as a research hypothesis (Darmalaksana, 2020).

**3. RESULT AND DISCUSSION**

In general, waste can be defined as all waste resulting from human or animal activities that are unwanted or reused, either solid or semi-solid. Meanwhile, according to Law No. 18 of 2008 on Waste Management, waste is defined as the remnants of everyday human practices or natural processes in

the form of solid or semi-solid biodegradable or inorganic substances that are considered useless and disposed of in the atmosphere. One of the sources of waste generation is 1) waste from residential areas. Organic waste, such as food scraps or wet, dry, plastic ash, and others, is traditionally made. 2) waste from public and industrial facilities, such as food wastes, dry waste, ash, plastic, paper, boxes, and containers, as well as other waste (Hariastuti, 2013). Solid waste is categorized into two types based on its origin: 1) organic waste, household waste (food wastes, packaging other than cloth, rubber, and plastic), flour, fruits, fruit skins, leaves, and twigs, and 2) inorganic waste, which includes metal waste and finished materials, plastic waste, paper waste, glass and ceramic waste, and detergent waste (Tchobanoglous & Kreith, 2002).

One type of waste from residential areas is plastic waste which is impossible to remove, so what can still be done is to minimize plastic waste and process plastic waste. Not by burning it, more than just burying it in the ground. Plastic waste processing is treating plastic waste that aims to reduce or eliminate problems related to the environment (zero waste) (Wu et al., 2013).

The mission of developing a Green City is not just about greening the city. Moreover, a green city with a broader and comprehensive vision, namely an Environmentally Friendly City, has a mission, among others, to effectively and efficiently utilize water and energy resources, reduce waste, implement an integrated transportation system, ensure environmental health, and synergize the natural environment. and artificial, based on urban planning and design that supports the principles of sustainable development in an environmentally, socially and economically balanced manner.

There are several attributes to create a green city: processing waste and waste (Green Waste) by implementing zero waste. The characteristics of a green city (Green City) do not stand alone. Still, they are an integral unit, including local economic development due to the embodiment of each attribute.

Seeing the complexity of environmental problems, both physical and social, empowerment steps based on community participation through the Waste Bank management need to be formulated. The purpose of empowerment is to provide people with tools, opportunities, information, and expertise to improve their capacity to decide their destiny and engage in and impact their communities' lives. Environmental empowerment steps include, first, building ecological awareness. One fundamental problem that causes the environment is not maintained is the low environmental awareness in the community. Second, develop and strengthen local

institutions. Namely by strengthening local institutions that have previously existed and developed in the community. Such as community organizations that the community has formed to manage the resources around them. Third, build partnerships. When the community can manage natural resources and the environment themselves, it eases the local government's task.

According to Setyaningsih et al. (2017), Public participation in waste management is one of the technical considerations in overcoming the issue of municipal waste or the suburban landscape, becoming more complicated by the year. This can take a long time and a higher degree of complexity, but it is not hard to work well if achieved in an organized and coherent way. E.g., it took the Japanese government ten years to teach people to sort waste.

The community-based waste management program is an extensive program that focuses on reducing plastic waste by turning it into economic value goods. Within the program, several sub-programs have produced derivative activities that have been shown to have a tangible impact on the lives of the target group. Following Article paragraphs 1 and 2, it explains that: reduce, reuse, and recycle activities or limit waste, reuse of waste and recycling of waste, from now on referred to as 3R activities are all activities that can reduce everything that can cause destruction, reuse waste activities. Which is suitable for use for the same function or for other processes and waste management activities to make new products. A waste bank is a location for sorting and collecting waste that can be collected and/or reused and has monetary value. The waste bank program is inseparable from community empowerment. Empowerment is an effort to improve people's lives by understanding control over social, economic, and political forces.

The number of garbage banks in South Tangerang continues to increase every year due to residents who care about their environment. Based on data from the Environmental Agency of South Tangerang, the number of waste banks in Tangsel has reached 239 with 8,162 customers. One of the waste banks that are increasingly advanced and able to empower communities around the City of South Tangerang is the Melati Bersih waste bank located in the Bukit Pamulang Indah Housing Block F 20 No. 5 Pamulang Barat Village, Pamulang District, South Tangerang City. The Melati Bersih waste bank has the main activities of assisting in providing mobile health services, organizing corpses, administering social welfare insurance, and many other activities that are of a community empowerment nature.

Before the existence of the Melati garbage bank, many people littered their household waste carelessly. Finally, the piles of garbage around the residential areas make the environment slum and unsightly. This is worsened by the common public mindset of the importance of preserving the surrounding environment by not littering. Initially, the implementation of the waste bank program was complicated for the community to accept. The community views that this waste bank program is a program that only aims for the environment and will make their settlements more slum and smelly due to the pile of garbage in the Garbage Bank. Over time, that thought was lost, and the waste bank manager was successful in managing and inviting the local community to save and join the waste bank program.

Based on the results of an interview with one of the waste bank administrators, the programs in this waste bank include saving and borrowing with garbage, paying for electricity with trash, treating with waste, caring for the environment with garbage, reforesting with waste, recycling, and reading garden as a new program in the Melati Bersih waste bank. The working mechanism of this waste bank is flexible according to the needs and conditions of the local community based on a household where the community will get a reward for depositing waste while still racing against the waste bank implementation mechanism, namely: sorting waste, depositing waste into the waste bank, weighing waste, recording the results obtained by the customer, then transportation. This is part of community empowerment. Besides, saving by using the waste is indirectly able to improve the community's mindset and be able to increase the family income of the community (customers of the waste bank). Suppose this minimum waste activity has been carried out by every household, which has been minimized from home and immediately takes action on organic and non-organic waste so that the waste problem will be adequately resolved. Thus, South Tangerang can create a green city that can process its waste correctly to make an intelligent green environment, and green people care about waste management and waste control.

#### 4. CONCLUSION

From the research conducted, the researchers concluded that the existence of a waste bank is expected to be alternative waste management in South Tangerang City and a method of community empowerment so that it can support and create South Tangerang as a green city. The people in South Tangerang well accept the waste management system using the waste bank method. Where currently, the

number of waste banks in Tangsel has reached 239 with 8,162 customers. The waste bank can be managed by the community individually, community groups, and the government.

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