

SHIFTING PARADIGMS: FROM WASTE AS COST CENTER TO PROFIT CENTER: PROCESSING WASTE INTO PLANTING MEDIA IN MENTENG DALAM VILLAGE, TEBET DISTRICT, CENTRAL JAKARTA

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ABSTRACT

Changing the paradigm of waste from Cost to Profit Center through the practice of making planting media. Partners are the Flamboyan and Rasamala Child-Friendly Integrated Public Space Waste Banks, Menteng Dalam Village. There is residual organic and inorganic waste that is not collected and processed. Observations with the Village Head and partners found problems: (a) limited knowledge and skills in recognizing types of waste; (b) partners are not yet able to handle expired yeast, which must be handled like Toxic and Hazardous Materials waste. The solution to the problem is education to introduce various types of waste, and education to introduce the risks of danger and handling of yeast. The activity was carried out in May and August 2025. These methods used a qualitative approach with a cross-country comparative study design. The results show three challenges: (a) limited conceptual understanding, (2) minimal structural and policy support. Although waste bank managers in both countries show awareness of the importance of the waste paradigm as a profit center, its implementation faces obstacles regarding infrastructure, professional training, and technological resources. A contextual and reflective approach is needed to develop waste policies and programs that can be implemented locally.

Keywords: Expired Yeast, Food Waste, Hazardous Waste, Planting Media, Types of Organic Waste.

1. INTRODUCTION

Organic waste is Indonesia's most significant component of urban waste generation, reaching 40–70% of the total waste volume (Manea et al., 2024). If not appropriately managed, organic waste produces odor, pollution, and greenhouse gas emissions in the form of methane (CH₄), which contribute significantly to climate change (Manea et al., 2024). Central Jakarta, including Menteng Dalam Village and Tebet District, currently faces a household waste problem due to high population density. This condition demands an impactful yet straightforward community-based environmental management innovation, namely changing the waste paradigm from a Cost Center to a Profit Center.

Menteng District is a strategic area in Central Jakarta, known as a residential area and a center of business, government, and social activities. Menteng has an area of 6.53 km² with a dense population and 403 (four hundred and three) Neighborhood Associations (RT) and 38 (thirty-eight) Citizens' Associations (RW) (BPS Central Jakarta City Administration, 2024). This density has a direct impact on increasing household waste generation. The relatively high rainfall and humidity levels in Central Jakarta (74–80%) also accelerate the decomposition process of organic waste, thus creating the potential for environmental pollution if not immediately addressed (BPS Central Jakarta City Administration, 2024).

Composting is a sustainable solution for organic waste management because it can reduce waste volume, improve soil quality, and support urban farming practices (Manea et al., 2024). A study by Manea et al. (2024) showed that compost is an organic fertilizer that improves the soil's physical, chemical, and biological properties and reduces dependence on chemical fertilizers. Research by Ramadhan et. al. (2020) in Bekasi demonstrated that fermented household waste has nutrient components equivalent to commercial fertilizers, thus potentially increasing public confidence in independent waste management.

However, not all organic waste can be managed through conventional composting. Yeast is a microorganism commonly found in fermented foods such as bread, beer, and wine. Some types, such as *Saccharomyces cerevisiae*, are widely used in food and beverage production, while others can pose health risks. For instance, *Candida albicans*—a yeast commonly present on human skin, mouth, and intestines—can cause infections if it overgrows. Improperly managed yeast waste that undergoes prolonged fermentation can become hazardous due to yeast death, contamination by other microbes, production of byproducts such as acetic acid, and potential heavy metal contamination. These conditions present environmental and public health risks and contribute to the degradation of waste quality and the surrounding environment.

Furthermore, experiences with similar Community Service Program activities demonstrate that a participatory approach through outreach, hands-on practice, and mentoring can improve community knowledge and skills in processing waste into growing media (Dewi et al., 2024; Syahid et al., 2024). By integrating local knowledge and simple technological innovations, communities can gain environmental, social, and economic benefits from waste management activities. Given this situation, the Community Service program, which involves training in processing organic waste into growing media in Menteng Dalam Village, is highly relevant. This activity aims to reduce waste generation and encourages communities to utilize limited land for vegetable cultivation, supporting family food security, and raising collective awareness in preserving the urban environment.

Changing the paradigm of waste processing from Cost to Profit Center, among others, through the direct practice of making planting media. Partners are the Flamboyan and Rasamala Child-Friendly Integrated Public Space Waste Bank, Menteng Dalam Village, Tebet District, South Jakarta. There is residual organic and inorganic waste not collected and processed by partners. Observations and discussions were conducted by the Team with the Village Head and his staff as well as partners, and found the following problems that were agreed upon: (a) limited knowledge and skills in recognizing types of waste; (b) partners have not been able to collect and process food waste including expired yeast, which must be handled like Toxic and Hazardous Materials (B3) waste. The solution to these two problems is education to introduce various types of waste and the risks and dangers of yeast waste management. The objectives of this activity are: (a) to increase community knowledge and skills in managing waste; (b) to encourage active community participation in building a productive and sustainable environment; (c) to provide an applicable solution to the accumulation of waste as a planting medium; and (d) to develop social laboratory locations.

2. METHOD

The activity was carried out by the Community Service Program Team in May and August 2025 at two Child-Friendly Integrated Public Space Waste Banks in Flamboyan and Rasamala, Menteng Dalam Village, Tebet District, South Jakarta. This activity used a qualitative approach (Nurrisaa et al., 2025), with a cross-country comparative study design (South Korea) to explore and compare the experiences of Waste Bank Managers in Menteng Dalam Village, Tebet District, South Jakarta, Indonesia, and South Korea. A qualitative approach emphasizes a deeper understanding of a problem rather than simply looking at it.

The qualitative approach is descriptive, tends to use analysis, and is more revealing in terms of the meaning process. A qualitative approach is a method of in-depth data processing using data from observations, interviews, and literature. Qualitative data analysis techniques involve summarizing, categorizing, and interpreting interviews and observations, answering questions such as what, why, and how. The data analyzed using this method is text or narrative (Sekaran & Bougie, 2016).



Figure 1. Management activities at the Menteng Dalam Urban Village Waste Bank, Tebet District, South Jakarta, Indonesia and South Korea

South Korea has a similar system to that of waste banks, namely the Volume-Based Waste Fee (VBWF) waste management system (Ki-Yeong Yu, 2017). Furthermore, the Extended Producer Responsibility (EPR) policy (UNEP, 2023) encourages strict waste sorting and recycling, from household waste to plastic waste (Yohan, 2020). Although not directly called a waste bank, this concept has a similar goal: collecting and utilizing resources from waste effectively to reduce environmental damage and create added value from waste. This approach was chosen to enable

an in-depth understanding of the waste paradigm from Cost Center to Profit Center in the local context and practices faced by Waste Bank Managers in two different waste management systems.

3. RESULTS AND DISCUSSION

The results of a qualitative analysis in the field showed that two waste bank partners still face a problem of organic food waste. The Waste Bank managers do not collect food waste from sufficiently abundant sources. The population of 45,184 people in Menteng Dalam Village is equivalent to 677,760 kg per year. Plastic, cardboard, and cans can be sorted and sold because they have economic value. The price of plastic waste ranges from IDR 4,000 to IDR 6,000 per kg (Figure 2).



Figure 2. Management activities at the Flamboyan Partner Waste Bank

The team, acting as a mediator between stakeholders, worked collaboratively to address existing problems at the Flamboyan Waste Bank. One solution discussed was obtaining CSR funding to procure a large leaf and twig shredder, enabling compost production as planting media. Residues such as glass and mirror waste were excluded due to the absence of sales networks. In general, inorganic and organic waste that remained unprocessed was sent to the Integrated Temporary Disposal Site (ITDS) or Tebet Barat Raya Depot before final disposal at the landfill.



Figure 3. Management activities at the Rasamala Partner Waste Bank

At the Rasamala Waste Bank, organic waste had already been processed into compost for planting media. However, specific residuals were still identified, such as used milk drink wrappers (with tin layers) and Styrofoam. Styrofoam, a lightweight material composed of 95% air and derived from polystyrene polymer, remains widely used for its low cost, durability, and heat resistance. Nevertheless, it poses health risks due to hazardous chemicals such as benzene and styrene, which may leach into food—especially hot or fatty foods—and increase the risk of cancer. Furthermore, the results of qualitative analysis, including data on identified problems and educational solutions to improve knowledge of waste types and handling of hazardous residues such as expired yeast, are summarized in Table 1.

Table 1. Comparative Matrix of Challenges in Implementing Cost Centers into Profit Centers

Aspects	Menteng Dalam Waste Bank, Tebet, Jakarta, Indonesia	Korea Waste Bank
Waste bank management	Collecting and utilizing resources from waste effectively to reduce environmental damage and create added value from waste since 2008	Collecting and utilizing resources from waste effectively to reduce environmental damage and create added value from waste since 1995

Aspects	Menteng Dalam Waste Bank, Tebet, Jakarta, Indonesia	Korea Waste Bank
Disposal of organic waste	Regulations for organic waste disposal in Indonesia are based on Law Number 18 of 2008 concerning Waste Management, which Government Regulation Number further regulates. 81 of 2012 and regional regulations in each district/city. These regulations require communities to sort organic waste and process it in environmentally friendly ways, such as composting and using it as animal feed, rather than dumping it haphazardly in landfills. They also support waste bank systems and (Reuse-Reduce-Recycle) 3R waste management systems for regional waste management.	Each organic waste is thrown into a special container with an RFID system that weighs the amount of waste and charges a fee from the user's card, so that the waste disposal fee can be adjusted to the amount of waste produced.
Waste management fees	Waste management fees in Indonesia vary due to levies set by each regional government. In Jakarta, for example, the fee ranges from Rp 0 per month for households with 450-900 VA of electricity, to Rp 77,000 for higher power consumption, with incentives for active waste sorting. Meanwhile, in other areas, such as Magelang, the fee is charged per kilogram of waste disposed of at the landfill or waste disposal site (Rp 55).	The public is required to purchase special garbage bags, the price of which is determined based on the volume of garbage thrown away.
Structural and policy support	Support emphasizes waste sorting at source, institutional support through the formation of cooperatives or optimization of RT/RW, as well as facilitation support such as training, infrastructure assistance, and strengthening marketing networks involving local governments, the private sector, and communities.	Support for a comprehensive waste management system, including a Volume-Based Waste Fee (VBWF) policy that requires people to purchase special waste bags, as well as an Extended Producer Responsibility (EPR) system that requires producers to recycle products.

Table 1 shows that there are 3 (three) challenges faced by Waste Bank Managers in Menteng Dalam Subdistrict, Tebet District, Jakarta, namely: (a) limited conceptual understanding, (2) minimal structural and policy support. Although Waste Bank Managers in both countries show awareness of the importance of the waste paradigm as a profit center, its implementation faces obstacles regarding infrastructure, professional training, and technological resources. Collaborative governance is a concept that contributes significantly to solving various societal problems, including waste management (Ain, K.Q. et. al., 2021; Minnatullah, K.M., 1998; Sathabornwong, S., 2020).

4. CONCLUSION

The knowledge of Waste Bank Partner Managers in Menteng Dalam Village, Tebet District, South Jakarta, has increased regarding the types of organic and inorganic waste. Waste Bank Managers also improved their knowledge

of the various types of organic waste, which can be found in large quantities and pose a risk to the environment and public health if they remain too long.

To improve skills in leaf and twig waste management at partner locations, a leaf and twig grinding machine is needed to produce compost as a planting medium. This represents a concrete step towards transforming waste into a profit center rather than a cost center.

Furthermore, this Community Service Program (PKM) activity emphasized the need for a contextual and reflective approach in developing waste policies and programs that can be implemented and relevant to local needs. These findings contribute to the global discourse on the importance of empowering waste bank managers as agents of change.

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