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The Effectiveness of the Waste Bank Program through a Community Participation Approach: A Review of the Literature

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Abstract: The escalating waste problem in various regions of Indonesia highlights the need for a waste management approach that not only relies on government policies but also emphasizes active community involvement. The waste bank program has emerged as a strategic alternative and has been widely implemented. However, despite its widespread application, the success rate of waste banks remains varied, primarily due to fluctuating levels of public participation. This study aims to analyze the effectiveness of waste bank programs through a community participation approach, identify key challenges, and formulate strategies to enhance program effectiveness based on a literature review. The method employed is a qualitative literature study of ten relevant academic articles. The findings show that the effectiveness of waste banks is influenced by active community participation, managerial capacity, policy support, and multi-stakeholder collaboration. These findings indicate that the success of waste banks depends not only on economic incentives, but also on environmental literacy and community leadership in fostering public awareness to care for the environment.

Keywords: Waste Bank, Effectiveness, Community Participation, Waste Management

INTRODUCTION

Waste is an environmental problem that has not been solved for a long time and has become a big challenge, both in urban areas and other areas in Indonesia. Along with the increase in population and the increase in human activities, the volume of waste has also increased significantly. Based on data from the Ministry of Environment and Forestry (KLHK), in 2024, waste generation in 317 districts/cities in Indonesia will reach 34.21 million tons/year or as much as 93.74 thousand tons/day. This challenge has also encouraged solutions that are not only based on government policies, but also direct involvement from the community.

One of the approaches in waste management that stands out is the management of community-based waste banks. The concept of a waste bank was first initiated in Indonesia in 2008 with a mechanism that resembles a banking system where people can deposit waste that has been sorted, especially inorganic waste such as plastic and paper, then exchange it for economic rewards (Fikriyyah & Adiwibowo, 2018). In addition, waste banks are not only a place to exchange waste for money, but also present real benefits that can shape the behavior of people who care about the environment. Even in some regions, the waste bank program has succeeded in reducing the volume of waste by up to 40% of the total waste (Purnamasari &

Sugiyanto, 2021). However, this waste bank program certainly does not always achieve success. Several studies have shown that community participation in waste bank management is still volatile and depends on short-term motivation, and requires active support from partner institutions or the government (Jaya & Machdum, 2021). In addition, there is still often a negative perception of waste collection, sorting, and depositing activities associated with scavenger activities (Bachtiar et al., 2021).

This shows that community participation is an important factor in the effectiveness of waste banks. The success of the program is highly dependent on the active involvement of the community, both as customers, managers and agents of change (Jaya & Machdum, 2021). However, this effectiveness is inseparable from external factors such as support from the government or partners, policies that support the running of the program, incentives from the government and adequate waste management infrastructure. The government through Law No. 18 of 2008 and other policies has presented a legal framework for community-based waste management, but in its implementation there are still technical and cultural obstacles in the community (Yudiyanto et al., 2019).

Based on this exposure, it is known that there are many factors that affect the success of the waste bank program. Community participation is one of the main factors in the sustainability of the program. This article aims to analyze the effectiveness of the implementation of waste bank programs from various literatures, identify the challenges and factors affecting the program, and formulate literature-based strategies to improve effectiveness in waste management.

METHOD

The method used in the study is a literature study with a qualitative approach. Data sources are obtained from journals, books, reports and policy documents related to the research topic. The analysis was carried out thematically on 10 literature selected based on academic relevance and quality. Content analysis techniques were used to identify patterns of effectiveness, forms of participation, and implementation challenges. The research was carried out without collecting field data, but focused on the critical synthesis of the results of previous research in order to answer the problem formulation comprehensively.

RESULTS AND DISCUSSION

Result

The results of the study were obtained from scientific articles with the scope of waste bank programs in a number of regions in Indonesia. The summary of the findings can be seen in Table 1.

Table 1. Summary of Findings

Yes	Source	Location	Key Results/Findings	Key Factors
1	Kusumawati et al., 2019	Baleendah, Bandung	Waste banks are effective in changing management patterns and increasing income.	Behaviour change, local economic support
2	Fithri et al., 2024	Gondangmanis Village, Kudus	Digitalization improves the efficiency of waste management and recording.	Digital technology, efficient management
3	Damayanti et al., 2024	Gerat House, Deli Serdang	Education and structuring of operational systems increase understanding and participation.	Education, systems, multi-stakeholder collaboration
4	Satya et al., 2025	Surabaya	The factors of knowledge and people's attitudes greatly affect participation.	Knowledge, attitude, sorting facilities
5	Taufik, 2021	Malili, East Luwu	Participation increases when managers care about the	Human resource capacity, limited facilities

			environment and are supported by facilities.	
6	Princess & Purnamasari, 2025	Scarlet Witch	Effective policies but constrained by equitable distribution of infrastructure and participation.	Efficiency, responsiveness, equity of facilities
7	Nurhajati, 2022	São Paulo, São Paulo	Community participation is effective even though the implementation has not been maximized.	Citizen involvement, program satisfaction
8	Nurfadillah et al., 2023	Pasar Kemis, Tangerang	The level of participation has a real effect on the effectiveness of management.	Social support, community outreach
9	Kartini & Zulkarnaini, 2025	Riau	Participation is effective when supported by local leadership and political incentives.	Local leadership, policy incentives
10	Sasoko & Mahrudi, 2023	Depok	Sorting culture is slow to grow, but it is important for sustainability.	RT/RW commitment, routine socialization

Discussion

Based on the ten literature that has been reviewed, it can be seen that in general, waste bank programs have an effective impact on reducing waste generation and increasing environmental awareness in the community. This effectiveness increases when the program is not only oriented to economic elements, but also carries a change in people's thinking and culture in waste treatment. The synergy between technical and social aspects is the trigger for the success of the waste bank program. Research by Kusumawati et al., (2019) in Baleendah, Bandung shows that the "saving waste" scheme can change people's views on waste. This scheme creates an incentive for residents while educating the community in managing waste. In another study by Fithri et al., (2024) added that the existence of digital technology is able to provide convenience in recording transactions and monitoring the volume of waste included in the waste bank. This can increase efficiency and strengthen public trust in waste bank management.

However, this effectiveness is not always achieved. The results of a review of various literature reviewed show that fluctuations in community participation are the most influential challenge to the sustainability of waste bank programs. Participation is often only oriented towards short-term economic returns without being accompanied by growing awareness of environmental life. Satya et al., (2025) explained that community participation in the waste bank program is greatly influenced by the level of education, knowledge and initial attitude towards the environment as well as supporting facilities for waste management. Active and consistent participation is more shown by people with a better level of environmental literacy. The formation of a community culture to sort waste will have a positive impact on the environment in the long term. Sasoko & Mahmudi (2023) explain that change in attitudes and culture cannot be achieved in a short period of time through technical instruction. Rather, it is through long-term habituation created by the community itself. Therefore, the role of community leaders and community leaders such as youth organizations is very important in calling regularly for the need to sort waste and maintain the cleanliness of the environment so that public awareness of the environment can grow.

Another key factor that has a significant impact on the sustainability of the waste bank program is the internal management of the waste bank. Research by Damayanti et al., (2024) shows that the capacity of waste bank managers in leading, organizing the community, and recording and reporting the running of the program is a determining factor for the effectiveness and sustainability of the program. This finding is strengthened by Taufik (2021) who explained that waste banks managed by communities or communities that are environmentally conscious

tend to provide better and sustainable results in the long term, even though they do not receive great support from outside parties.

In addition to internal factors, support from external parties such as the government and partners also encourages the sustainability of the program. Research by Putri & Purnamasari (2025) and Kartini & Zulkarnain (2025) shows that the existence of regulations such as Regional Regulations and Regent Regulations that support community-based waste management can be a strong policy framework. However, in its implementation, there are still obstacles such as lack of management infrastructure, uneven distribution of facilities, and low coordination between government units. This illustrates that in addition to a legal framework, there is still a need for commitment and allocation of assistance from the government to support the sustainability of the program. On the other hand, Nurfadillah et al., (2023) found that the involvement of the private sector as a partner contributes significantly to the sustainability of the program. Support in form *Corporate Social Responsibility (CSR)*, Such as the procurement of scales and waste transport vehicles as well as entrepreneurship training are very helpful in strengthening the waste bank program.

Based on all these findings, it is known that the management of waste banks is inseparable from cooperation between the community, managers, and external parties such as the government and the private sector. Therefore, there are several strategic steps that can be taken to improve the effectiveness and sustainability of waste banks. First, it is necessary to strengthen the knowledge and literacy of the environment in the community to increase awareness and motivate residents to participate. Second, improving an efficient and open waste bank management system, such as by utilizing digital technology in recording and data integration if needed. Third, there is training and incentives for waste bank managers to increase institutional capacity and waste bank management. Fourth, the role of the government is not only limited to policies as a legal framework, but must also be accompanied by resource procurement and careful long-term planning by taking into account the needs of the community. Finally, there is systematic collaboration with partners such as the private sector or universities to encourage innovation, access and improvement of technical capabilities.

CONCLUSION

Conclusion

Based on the overall study, it can be concluded that the effectiveness of the waste bank program is greatly influenced by community participation, management capacity, and support from external parties such as the government and the private sector. The waste bank program has been proven to have a positive impact on reducing the volume of waste and increasing environmental awareness if managed collaboratively and educationally. However, there are still challenges in managing the sustainability of the program, such as low environmental literacy, limited infrastructure, and weak support from stakeholders. To deal with this, strategies to increase program effectiveness need to be carried out through continuous education, digitalization of management systems, provision of incentives and training for managers, as well as policy and budget support. Collaboration between the community, the government, and private partners is also an important key in ensuring the sustainability of the waste bank program.

Suggestion

Based on the studies that have been conducted, the suggestions that can be given are needed for further research on other factors such as social dynamics in society and the formation of a culture of sorting waste in schools. In addition, quantitative analysis is also needed to measure the impact of the waste bank program on the environment.

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