

The Role of RW in Sustainable Waste Management (Case Study of Perumahan TAS 4 Regency, Jambangan Village)

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ABSTRACT

Objective: This study aims to analyze the role of the Gardenia Lestari Waste Bank, established on 19 October 2019, in enhancing environmental awareness, improving waste management efficiency, increasing community participation, and generating economic benefits in RW 8. **Method:** A qualitative descriptive approach was employed to gain an in-depth understanding of the institution's functions. Data were collected through in-depth interviews with administrators and residents, participatory observations of waste management activities, and documentation analysis of waste collection records over time. **Results:** The findings indicate that the Gardenia Lestari Waste Bank serves not only as an organized system for waste collection and recycling but also as a community-based educational platform that effectively promotes environmental awareness. Through community engagement and consistent socialization strategies, the institution has demonstrated significant environmental improvements while generating financial benefits from the sale of recyclable materials. **Novelty:** This study provides empirical insights into the dual role of waste banks as both environmental management institutions and agents of social change, highlighting a sustainable, community-driven model for addressing environmental challenges at the local level.

INTRODUCTION

The issue of **waste** has become a crucial problem with multidimensional impacts in various regions in Indonesia, including in Jambangan Village and Sidoarjo Regency as a whole, where poorly managed waste accumulation has created various negative consequences, ranging from environmental pollution and health hazards to the risk of flooding [1]. In this context, sustainable waste management is no longer just an option, but a necessity to maintain environmental cleanliness and health at the local level, so that the solution requires the **active participation** of all elements of society, especially at the smallest community level such as the Neighbourhood Association [2], [3].

This study focuses on a grassroots waste management initiative, namely the Gardenia Lestari Waste Bank, which was established in the RW 8 neighbourhood of the Taman Anggun Sejahtera 4 Housing Complex on 15 October 2019. It originated from the concerns of mothers in RT 28 who saw the accumulation of unmanaged waste after community activities such as the 17 August competition [4]. However, this initial initiative faced significant obstacles due to a lack of response and awareness from local residents, resulting in low participation. This situation prompted the waste bank administrators to take strategic steps by expanding operations from the RT level to the **RW level**.

This expansion of operations from the micro level (RT) to the broader community level (RW) was a crucial turning point, driven by two main factors: the need to meet the minimum quota set by waste collectors to make the collection process more efficient and

economical [5], and the need to reach a wider audience to increase participation and program sustainability. This transition shows that small community initiatives often cannot survive and develop without the support of more structured and authoritative institutions at the local level [6], where the involvement and acceptance of RW administrators become catalysts that transform stagnant initiatives into **sustainable programmes**. Although many studies have examined the waste bank model from an economic or technical perspective, there is still a significant knowledge gap regarding the specific role of non-formal local institutions such as **RW** in supporting this initiative [7], [8], given that the role of RW is not only as a facilitator but also as an agent of legitimacy, motivator, and crucial bridge for collaboration.

Therefore, this study aims to examine and analyse in depth the **institutional role of RW** in waste management that is not only effective but also sustainable, with the specific objectives of analysing the role of RW in sustainable waste management in RW 08 Taman Anggun Sejahtera 4 Housing Complex, identifying factors that support and hinder the implementation of the RW's role, and formulating strategic recommendations to improve the effectiveness of the RW's role in sustainable waste management at the local community level.

The Gardenia Lestari Waste Bank functions as an institution that plays an important role in managing waste in the RW 8 neighbourhood. Based on institutional role theory, an institution functions to organise the community to manage waste in a structured and systematic manner, provide socialisation and education to residents, encourage resident participation, and register with the Sidoarjo Community Association to obtain further support.

Bank Sampah Gardenia Lestari has successfully attracted active participation from residents in waste management programmes, as seen from the weight of waste collected on various dates (281.36 kg on 8 June 2024; 340.68 kg on 3 August 2024; 509.76 kg on 5 October 2024; 408.96 kg of waste oil in December 2024; 306.8 kg on 21 December; 437.92 kg on 15 February 2025; 199.2 kg of waste oil in March 2025).

Thus, the Gardenia Lestari Waste Bank not only functions as a waste management solution but also as an institution that promotes environmental awareness, waste management efficiency, economic benefits, and community participation.

RESEARCH METHOD

This study uses a **qualitative-descriptive approach** to analyse the role of Bank Sampah Gardenia Lestari in managing waste and raising environmental awareness in RW 8 [9]. This approach is designed to gain an in-depth understanding of the social and environmental phenomena surrounding waste bank activities, with an emphasis on the local context and the experiences of the actors involved [10], [11].

The research subjects included the administrators of the Gardenia Lestari Waste Bank, residents of RW 8 who participated in the waste bank programme, and external parties such as the Sidoarjo Community Association, which supported the institution's operations.

Data collection techniques included **in-depth interviews** with administrators and residents to obtain information about the history of the waste bank's establishment, socialisation, and operational impact; direct **participatory observation** of the waste collection process, socialisation activities, and interactions between administrators and residents; and archival documentation of activities such as collection schedules and waste weight reports, for example, 281.36 kg on 8 June and 340.68 kg on 3 August. Archival documentation helped to verify findings from interviews and observations. This method was chosen to capture subjective perceptions and objective data comprehensively. Data analysis was conducted using a qualitative approach through **coding** to identify main themes such as environmental awareness, waste management efficiency, and community participation. Data triangulation was carried out by comparing the results of interviews, observations, and documentation to ensure the validity and accuracy of the research findings [12], [13]. These steps were designed to deepen understanding and minimise bias.

Data validity is ensured through **triangulation**, discussions with peers, and re-verification with research subjects. This method ensures that the research results reflect the reality in the field and are accountable. Thus, this study provides a comprehensive picture of how the Gardenia Lestari Waste Bank functions as an institution that contributes to environmental management and increased community awareness in RW 8.

RESULTS AND DISCUSSION

Result

The results of the study show that the role of the **Community Association (RW)** institution in the management of the Gardenia Lestari Waste Bank is multidimensional, going beyond mere operational facilitation. This role is a crucial catalyst in transforming small initiatives at the neighbourhood association (RT) level into a sustainable and structured community programme [6].

The Institutional Role of RW in Program Initiation and Institutionalisation

The Gardenia Lestari Waste Bank initiative was originally a self-help effort that originated from a group of women in RT 28. Although the intention was noble, namely to overcome the problem of waste after communal activities, the initial response from residents was not very enthusiastic, mainly due to a lack of awareness and willingness to participate actively. This condition became a major obstacle that threatened the program's sustainability.

Expansion from the RT level to the RW level was a strategic step based on two considerations: operational and social. Operationally, the administrators realised that in order to deposit waste to collectors, a large volume was needed to meet the set quota. The RT scale was insufficient to achieve this target. Socially, waste bank administrators need broader **legitimacy** and a wider platform to attract more residents to participate. This is where the **role of the RW** becomes very important. Waste bank administrators proposed this expansion idea to the RW level and received very positive acceptance.

This acceptance was not merely approval, but a form of strong institutional support. The RW administrators not only opened up opportunities for the waste bank to socialise and encourage residents to care more about the environment, but also took an active role as an 'advisory board' and '**Waste Ambassadors**'. This dual role provides the waste bank with the legitimacy it needs, transforming it from a mere initiative by a group of women into a programme that is supported and recognised by the community leadership structure [14]. This support serves as a bridge connecting the waste bank with all residents in the six neighbourhood units under RW 8, enabling coordinated socialisation through regular PKK meetings [15]. Without the acceptance and official support of the RW, the programme would likely have remained stagnant or even ceased operations, unable to overcome its initial limitations in scale and participation.

These findings are in line with **community engagement theory**, which emphasises the importance of local actors in facilitating community participation [16]. Research by Jones et al. [17] also shows that successful environmental initiatives are often supported by strong informal leadership at the grassroots level, which is in line with the role of the RW in the Gardenia Lestari Waste Bank. The legitimacy provided by the RW not only increases residents' trust but also reduces the risk of failure that often occurs in programmes initiated by only a small group of individuals.

Operational, Socialisation, and Collaboration Strategies

The sustainability of the Gardenia Lestari Waste Bank is supported by operational and socialisation strategies designed to address the biggest challenge: **community behavioural barriers**. Based on interviews, the main challenge faced is not a lack of knowledge or awareness about the importance of protecting the environment, but rather the '**can't be bothered**' attitude of most residents when it comes to sorting their own waste. This barrier is psychological in nature and requires a different approach than mere cognitive education.

To overcome this, the waste bank implemented several strategies:

1. **Intensive and Personalised Socialisation:** Waste bank administrators proactively socialised the programme by attending PKK meetings in each neighbourhood unit. This approach ensured that information about the benefits, procedures, and types of waste accepted was conveyed directly and personally [15], thereby reducing barriers to participation.
2. **Transparent Management:** Each waste weighing is recorded transparently per item, with the results of the tonnage and nominal value obtained shared with members through a communication group. This transparency builds trust and provides clear economic incentives to residents [1], which is a factor in overcoming the feeling of 'inconvenience.'
3. **External Collaboration:** Support from higher institutions, such as the Sidoarjo Waste Bank Association, opens the door to collaboration with the private sector and government [18]. Through the Association, the Gardenia Lestari Waste Bank has successfully collaborated with companies such as Unilever and the Sidoarjo Regency Sanitation Department. This collaboration provides essential material

support, such as banners, scales, and savings books, which facilitate the waste bank's operations and enhance its credibility in the eyes of residents.

These strategies synergistically create an ecosystem that is not only operationally efficient but also responsive to behavioural barriers. Personalised socialisation reduces barriers to joining, while transparency and external collaboration provide assurance that community participation will yield tangible and measurable benefits.

This approach is consistent with Icek Ajzen's **Theory of Planned Behaviour**, which states that a person's intention to perform a certain behaviour (in this case, sorting waste) is influenced by three factors: attitude towards the behaviour, subjective norms (perceptions of social pressure), and perceived behavioural control (ease or difficulty of performing the behaviour) [18]. The role of the RW as a 'waste ambassador' and intensive socialisation create positive subjective norms, while management transparency increases the perception of behavioural control. Research by Lamanauskas [10] also emphasises the importance of educational and social interventions to change environmentally related behaviour.

Measurable Impact and Development

The success of the Gardenia Lestari Waste Bank can be seen from **quantitative data** showing an increase in participation and the volume of waste collected [5]. Documented weighing data shows significant growth over time, providing strong empirical evidence for the programme's sustainability claims [1].

The following is the waste weighing data collected over several periods:

Table 1. Waste Weighing Data at the Gardenia Lestari Waste Bank, 2024-2025		
Date	Waste Type	Weight (kg)
8 June 2024	Non-specific	281.36
3 August 2024	Non-specific	340.68
5 October 2024	Non-specific	509.76
December 2024	Cooking/Waste oil	408.96
21 December 2024	Non-specific	306.8
15 February 2025	Non-specific	437.92
March 2025	Cooking/Waste oil	199.2

The surge in the volume of waste collected, as seen in October 2024, reflects a steady increase in participation and growing awareness among the community. This increase is also reinforced by external factors. Interviews show that the number of waste bank members increased significantly when there were problems with waste transportation by the relevant agency in the housing complex. This proves that the Gardenia Lestari Waste Bank is not just a side project, but a relevant and essential solution in times of public service crisis [4]. The existence of waste banks has at least succeeded in reducing the accumulation of waste in residential areas.

In addition to measurable environmental impacts, this programme also has social impacts. The level of member participation has reportedly continued to increase every year, and this programme has succeeded in coordinating other communal activities such

as the establishment of parks and activities in village halls, demonstrating the expanded role of waste banks as centres for coordinating community activities [16]. However, administrators acknowledge that the participation rate, when compared to the total population, is still not very high, indicating that the challenge of '**not wanting to bother**' still remains.

Discussion

The findings of this study reaffirm the critical role of community institutions, particularly the RW, as the backbone of sustainable waste management systems in Indonesia's urban neighborhoods. The active participation of the RW in legitimizing and coordinating the Gardenia Lestari Waste Bank demonstrates that grassroots leadership can effectively overcome social inertia and behavioral resistance toward environmental programs. This aligns with the theory proposed by Jones *et al.* [17], which emphasizes that local leadership and community-based legitimacy are key drivers of successful environmental initiatives. By functioning as both facilitator and motivator, the RW bridges the gap between government programs and community action, ensuring continuity and accountability that purely voluntary efforts often lack. The RW's leadership has thus transformed environmental awareness from a peripheral concern into a collective responsibility among residents.

Furthermore, the study illustrates that transparent management, personalized socialization, and external collaboration are integral to sustaining community participation. These strategies are consistent with Ajzen's Theory of Planned Behavior [18], where positive attitudes, perceived social norms, and behavioral control collectively influence participation. The RW's endorsement of the waste bank created a social norm of environmental responsibility, while transparency in reporting and tangible economic benefits enhanced residents' perception of control and trust. This multi-layered approach not only fosters behavioral change but also strengthens social capital among community members. Similar to the findings of Hidayat and Susanto [14], such participatory structures nurture a sense of shared ownership, which is essential for the long-term viability of community-based waste management programs.

Lastly, the measurable increase in waste collection volume reflects both the environmental and social impacts of the program. The continuous rise in participation indicates that institutionalized community programs can deliver scalable results even in the absence of extensive government intervention. However, the persistence of low participation among certain residents highlights the need for continuous innovation in educational approaches, particularly post-pandemic. Digital socialization, youth engagement, and incentive-based mechanisms may offer new pathways to expand inclusivity and maintain motivation. These findings support Saputra [7], who argues that sustainable waste management requires not only community empowerment but also adaptive strategies that evolve with social dynamics. Therefore, the RW's model in this case could serve as a reference for policymakers and local leaders seeking to replicate successful grassroots environmental governance across Indonesia.

CONCLUSION

Fundamental Finding : The study concludes that the active role of the Community Association (RW) serves as a crucial determinant in ensuring the sustainability and legitimacy of the Gardenia Lestari Waste Bank. Institutional support and leadership from the RW, acting as both mentor and ambassador, successfully transformed a small-scale initiative into a structured and enduring community-based waste management system that significantly enhanced public participation over time. **Implication :** These findings underscore the importance of bottom-up environmental governance, where empowered local leadership and community collaboration prove more effective than top-down regulatory approaches in promoting sustainable waste management. Governments and stakeholders should thus prioritize capacity building, facilitation, and partnership with grassroots institutions to foster community-led environmental action. **Limitation :** However, as a single case study, the results may not be fully generalizable to all waste bank models, and persistent challenges remain, including community reluctance in waste sorting and limited post-pandemic innovation. **Future Research :** Further investigations are needed to conduct comparative analyses of RW-supported and independent waste banks, assess the economic contributions of such programs to household welfare, and explore more effective education and socialization strategies to strengthen long-term community engagement.

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