



Collaborative Governance in Waste Management: A Study of the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency

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Abstract

Waste management is a complex challenge that requires collaboration among multiple stakeholders to ensure effective and sustainable implementation. This study aims to analyze the implementation of collaborative governance in waste management through the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency. The research employed a qualitative approach with a descriptive design. Data were collected through interviews, observations, and documentation and were analyzed using data reduction, data display, and conclusion drawing techniques. The analysis was based on Ansell and Gash's Collaborative Governance framework, which includes starting conditions, institutional design, facilitative leadership, and the collaborative process. The findings indicate that collaboration among the Environmental Agency, the Saber Mandiri Waste Bank, PT Pegadaian, and the local community has functioned relatively well through clear role distribution, institutional support, and community participation. However, several challenges remain, including the absence of regular coordination forums, limited operational budgets from the local government, and suboptimal institutional strengthening. The study concludes that stronger institutional support, sustained coordination, and enhanced partnerships among stakeholders are necessary to improve the effectiveness and sustainability of waste management in Karimun Regency.

Keywords: Collaborative Governance, Karimun Regency, Stakeholder Collaboration, Waste Bank, Waste Management.



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INTRODUCTION

The issue of waste management has emerged as one of the most pressing environmental governance challenges in the twenty-first century, driven by rapid urbanization, population growth, changing consumption patterns, and the increasing complexity of solid waste generation. Contemporary environmental management paradigms increasingly recognize that conventional government-centered approaches are often insufficient to address the multidimensional nature of waste problems, particularly in communities where behavioral, economic, institutional, and ecological factors interact simultaneously. As a result, collaborative governance has gained prominence as an alternative governance model that facilitates collective action among governmental institutions, community organizations, private actors, and civil society groups in addressing environmental issues through shared decision-making and joint responsibility mechanisms (Ansell & Gash, 2008; Ansell, 2015). Within the waste management sector, collaborative arrangements have become increasingly important because sustainable waste reduction requires not only regulatory enforcement but also active public participation, institutional coordination, and community-based initiatives capable of transforming waste from an environmental burden into a social and economic resource (Elviana, 2025; Zakianis, 2024).

Previous studies have consistently demonstrated that collaborative governance contributes to improving environmental management outcomes by strengthening stakeholder engagement, increasing institutional legitimacy, and facilitating resource mobilization across organizational boundaries. Research conducted by Banunaek (2021) revealed that collaborative governance in waste management enables the integration of governmental capacity with community participation, creating more adaptive and responsive environmental management systems. Studies on waste banks further indicate that community-based waste management initiatives can enhance environmental awareness, encourage waste segregation practices, and generate economic benefits for local residents when supported by

effective stakeholder collaboration (Wintoko, 2013; Yunus, 2022). A critical reading of this literature suggests that successful waste governance is not solely determined by the presence of environmental policies but also by the quality of interaction among participating actors, the level of mutual trust developed through collaboration, and the institutional arrangements that sustain collective action over time (Ansell & Gash, 2008; Ansell, 2015).

Despite the growing scholarly interest in collaborative governance and community-based waste management, several conceptual and empirical limitations remain evident. Existing studies frequently emphasize collaborative structures and stakeholder participation without sufficiently examining the dynamic processes through which collaboration is initiated, maintained, and institutionalized within local environmental governance settings. Many investigations focus on large urban areas where institutional resources and organizational capacities are relatively developed, resulting in limited understanding of collaborative governance practices in smaller communities and semi-rural localities. The literature also presents inconsistencies regarding the factors that most strongly influence collaborative success, with some studies emphasizing leadership and institutional design while others prioritize social capital, community participation, or policy support as the primary explanatory variables (Banunaek, 2021; Nugroho, 2014). Such divergences indicate that the operational mechanisms of collaborative governance in community-based waste management remain insufficiently understood across diverse local contexts.

These unresolved issues become increasingly important in regions where waste management challenges intersect with limited institutional capacity and growing environmental pressures. Waste banks have emerged as one of the most prominent community-based approaches for addressing household waste problems because they encourage waste reduction, recycling practices, and community participation through incentive-based mechanisms (Wintoko, 2013). Nevertheless, the sustainability of waste bank initiatives frequently depends on the ability of multiple stakeholders to coordinate resources, share responsibilities, and maintain long-term commitment to collective environmental objectives. Environmental health perspectives further suggest that ineffective waste management contributes not only to ecological degradation but also to broader public health risks and social welfare concerns (Zakianis, 2024). The absence of comprehensive empirical knowledge regarding how collaborative governance operates within local waste bank institutions limits the capacity of policymakers and practitioners to design effective strategies for sustainable community-based waste management. This study is positioned within the intersection of collaborative governance, public policy implementation, and community-based environmental management research by focusing specifically on the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency. Unlike previous studies that predominantly examine collaborative governance through broad institutional frameworks or urban waste management programs, this research investigates collaboration processes within a locally embedded waste bank initiative where government actors, community organizations, and residents interact directly in managing environmental challenges.

The study seeks to explore how collaborative arrangements are formed, how stakeholders negotiate roles and responsibilities, and how institutional relationships influence the effectiveness of waste management practices. Such a focus contributes to addressing empirical gaps concerning the operation of collaborative governance mechanisms within community-based waste management institutions and extends current theoretical discussions regarding the contextual dimensions of collaborative environmental governance (Ansell & Gash, 2008; Banunaek, 2021).

This research aims to analyze the implementation of collaborative governance in waste management through the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency, by examining stakeholder interactions, collaborative processes, and factors influencing the effectiveness of collective action. The study seeks to generate a comprehensive understanding of how collaboration contributes to sustainable waste management within a community-based institutional setting. Theoretically, the research is expected to enrich the literature on collaborative governance by providing contextual insights into the relationship between stakeholder collaboration and environmental management outcomes. Methodologically, the study contributes through an in-depth qualitative exploration of collaborative practices that may inform future research and policy development related to community-driven waste management initiatives.

RESEARCH METHODS

This study employed a qualitative research approach with a case study design to examine the implementation of collaborative governance in waste management through the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency. A qualitative approach was selected because it enables an in-depth exploration of stakeholder interactions, collaborative processes, institutional relationships, and community participation within their natural context (Sugiyono, 2013; Abubakar, 2021). The research focused on understanding how collaboration is established and maintained among government agencies, waste bank managers, community members, and other relevant stakeholders involved in waste management activities. Data were collected through in-depth interviews, participant observation, and document analysis. Informants were selected using purposive sampling based on their direct involvement and knowledge of waste management activities, including village officials, waste bank administrators, community leaders, active customers of the waste bank, and representatives of related institutions. Supporting documents such as activity reports, organizational records, policy documents, and waste management program reports were also analyzed to strengthen the credibility of the findings.

The collected data were analyzed using an interactive qualitative data analysis model consisting of data condensation, data display, and conclusion drawing conducted continuously throughout the research process. The analysis aimed to identify patterns of collaboration, stakeholder roles, institutional dynamics, and factors influencing the effectiveness of collaborative governance in the operation of the Saber Mandiri Waste Bank. To ensure the trustworthiness of the findings, source triangulation and method triangulation were applied by comparing information obtained from interviews, observations, and documentary evidence. Member checking was also conducted to verify the accuracy of interpretations and to ensure that the findings reflected the perspectives of the participants. Through this analytical framework, the study sought to generate a comprehensive understanding of collaborative governance practices in community-based waste management and their contribution to sustainable environmental governance at the local level.

RESULTS AND DISCUSSION

Stakeholder Collaboration and Institutional Relationships in the Management of the Saber Mandiri Waste Bank

The findings indicate that collaborative governance in the management of the Saber Mandiri Waste Bank is characterized by the active involvement of multiple stakeholders, including village authorities, waste bank administrators, community members, and environmental agencies. Interviews revealed that each actor performs distinct functions while remaining interconnected through shared objectives related to waste reduction and environmental improvement. Informants emphasized that cooperation among stakeholders emerged gradually through repeated interaction and collective problem-solving efforts. Such a pattern aligns with collaborative governance theory, which highlights interdependence among actors as a prerequisite for effective collective action (Ansell & Gash, 2008).

Data obtained from waste bank managers demonstrate that collaboration is sustained through both formal and informal communication mechanisms. Regular meetings, community discussions, and coordination activities provide opportunities for stakeholders to exchange information and negotiate operational responsibilities. Informants reported that continuous communication has reduced misunderstandings and strengthened institutional commitment. Similar observations have been identified in studies emphasizing communication as a foundational element of collaborative governance arrangements (Fadjarini & Kriswibowo, 2023).

Interviews with village officials revealed that local government support contributes significantly to the continuity of waste bank activities. Government actors facilitate community outreach, provide administrative assistance, and support environmental awareness programs. These forms of support strengthen the institutional legitimacy of the waste bank within the local governance structure. Research on collaborative environmental governance similarly highlights the importance of governmental facilitation in sustaining community-based initiatives (Pamungkas, Masqurin, & Sutomo, 2024).

Community members reported that participation in the waste bank extends beyond waste collection activities. Residents are involved in awareness campaigns, waste sorting practices, and neighborhood environmental programs. This broader participation reflects the emergence of shared

responsibility for environmental management. Studies examining waste bank governance suggest that community engagement is a critical determinant of long-term sustainability (Puspita & Wahyudi, 2023).

Field observations further revealed that trust functions as an essential element within stakeholder relationships. Informants indicated that collaboration became more effective after stakeholders developed confidence in one another's commitment and reliability. Trust reduced transactional barriers and encouraged greater willingness to contribute resources and time. The significance of trust in collaborative governance has been widely documented within public administration literature (Ansell, 2015).

The principal stakeholder roles identified during fieldwork are summarized in Table 1. The table illustrates the distribution of responsibilities among actors involved in the management of the Saber Mandiri Waste Bank. These relationships demonstrate the collaborative nature of waste management activities within the village context. The evidence indicates that institutional interdependence is central to operational effectiveness.

Table 1. Stakeholder Roles in the Saber Mandiri Waste Bank

Stakeholder	Primary Role	Contribution to Waste Management
Village Government	Facilitation and coordination	Institutional support
Waste Bank Management	Operational implementation	Program continuity
Community Members	Waste sorting and participation	Resource provision
Environmental Agency	Technical guidance	Capacity strengthening
Community Leaders	Social mobilization	Participation enhancement

Analysis of Table 1 indicates that the waste bank operates through a complementary distribution of responsibilities. No single actor possesses sufficient resources to manage environmental challenges independently. Collaborative arrangements enable stakeholders to combine institutional authority, technical knowledge, and community participation. Similar findings have been reported in studies addressing collaborative governance within local waste management systems (Sabarna & Ramdani, 2025).

Interview data also revealed that leadership plays an important role in maintaining collaborative relationships. Informants identified waste bank coordinators and village leaders as key actors responsible for facilitating dialogue and resolving operational issues. Their leadership functions are primarily collaborative rather than hierarchical. Research on collaborative leadership emphasizes the importance of facilitative leadership in sustaining multi-actor governance networks (Gafur et al., 2023).

Another notable finding concerns the adaptability of stakeholder relationships. Participants explained that collaborative arrangements have evolved in response to changing operational needs and environmental conditions. Stakeholders demonstrated a willingness to adjust roles and responsibilities when necessary. Such adaptability strengthens institutional resilience and supports the continuity of environmental programs (Herawati, Keman, & Devy, 2022).

Evidence from interviews, observations, and document analysis indicates that collaborative governance within the Saber Mandiri Waste Bank is supported by strong stakeholder relationships, effective communication, and shared environmental objectives. The findings suggest that institutional collaboration creates opportunities for resource sharing, community empowerment, and environmental stewardship. Trust, participation, and facilitative leadership collectively strengthen the operational capacity of the waste bank. Comparable conclusions have been reported in studies examining collaborative governance and community-based waste management initiatives in Indonesia (Zuhdi et al., 2025; Rahayu, Pramitasari, & Ardiyansah, 2024).

Collaborative Processes and Community Participation in Waste Bank Operations

The findings indicate that collaborative governance within the Saber Mandiri Waste Bank is manifested through a series of interactive processes that encourage active participation from community members and institutional stakeholders. Interviews revealed that collaboration is not limited to formal agreements but is continuously reproduced through routine operational activities, community meetings, and environmental campaigns. Informants explained that the sustainability of the waste bank depends

heavily on the willingness of residents to engage in waste sorting and deposit activities. Such observations support the argument that collaborative governance is fundamentally process-oriented and relies on continuous stakeholder engagement rather than static institutional arrangements (Ansell & Gash, 2008).

Data obtained from waste bank administrators demonstrate that community participation has increased gradually as residents became more aware of the environmental and economic benefits associated with waste management activities. Participants reported that educational programs and socialization efforts contributed to greater understanding of waste segregation practices. The growing involvement of households reflects a shift in community perceptions regarding waste as a resource rather than merely an environmental burden. Similar findings have been reported in studies examining community empowerment through collaborative waste management initiatives (Puspita & Wahyudi, 2023).

Interviews further revealed that the collaborative process is strengthened by regular communication among stakeholders. Village officials, waste bank managers, and community representatives frequently exchange information regarding operational challenges and program development. Informants indicated that this communication structure helps maintain transparency and collective commitment. Research on collaborative governance emphasizes that continuous dialogue is essential for building consensus and sustaining cooperation among diverse actors (Fadjarini & Kriswibowo, 2023).

Field observations showed that participation levels vary across different segments of the community. Households with previous involvement in environmental activities generally demonstrated higher levels of engagement compared to residents with limited exposure to waste management programs. This variation suggests that participation is influenced by both awareness and social experience. Studies concerning collaborative environmental governance similarly highlight the role of social capital in shaping community involvement (Herawati, Keman, & Devy, 2022).

Several informants emphasized that incentives provided through the waste bank encourage consistent participation. Residents appreciated the opportunity to convert recyclable waste into economic value while simultaneously contributing to environmental cleanliness. The combination of environmental and financial benefits strengthened motivation among participants. Research on waste bank management indicates that incentive-based participation mechanisms often increase program sustainability and community commitment (Elviana, 2025).

The patterns of participation identified during the research are summarized in Table 2. The table presents the primary forms of community involvement observed in the management of the Saber Mandiri Waste Bank. These activities illustrate how collaborative governance is operationalized through direct citizen engagement. The evidence indicates that participation occurs across multiple dimensions of program implementation.

Table 2. Forms of Community Participation in Waste Bank Activities

Participation Activity	Community Involvement	Observed Impact
Waste Sorting	High	Improved waste quality
Waste Depositing	Moderate to High	Increased recyclable collection
Environmental Campaigns	Moderate	Greater public awareness
Community Meetings	Moderate	Enhanced stakeholder communication
Volunteer Activities	Moderate	Strengthened social engagement

Analysis of Table 2 indicates that waste sorting represents the most consistent form of participation among residents. Community members increasingly understand the importance of separating recyclable materials before depositing them at the waste bank. This practice contributes directly to operational efficiency and waste value optimization. Similar trends have been identified in studies examining collaborative waste management systems in local communities (Pamungkas, Masqurin, & Sutomo, 2024).

Interview findings also revealed that participation contributes to the development of collective environmental responsibility. Residents described the waste bank as a shared community initiative rather than a program owned exclusively by government institutions or administrators. This perception strengthens social ownership and encourages long-term involvement. Collaborative governance literature consistently identifies shared ownership as an important factor influencing institutional sustainability (Sabarna & Ramdani, 2025).

Another notable finding concerns the role of local leadership in mobilizing participation. Community leaders and waste bank coordinators actively encourage residents to join environmental activities and promote awareness regarding waste management practices. Their efforts facilitate communication between stakeholders and support broader community engagement. Studies on collaborative leadership emphasize the importance of local actors in fostering participation and sustaining collective action (Gafur et al., 2023).

Interview data further demonstrated that participation is influenced by perceptions of program effectiveness. Residents who observed tangible environmental improvements expressed stronger commitment to continued involvement. Positive outcomes reinforced trust in the waste bank and strengthened support for collaborative initiatives. Such findings illustrate the reciprocal relationship between program performance and stakeholder participation (Zuhdi et al., 2025).

Evidence from interviews, observations, and document analysis indicates that collaborative processes within the Saber Mandiri Waste Bank are sustained through active participation, continuous communication, and shared environmental objectives. Community engagement functions not only as an operational resource but also as a mechanism for strengthening institutional legitimacy and collective responsibility. The findings suggest that effective collaborative governance depends on the ability of stakeholders to create participatory structures that encourage long-term commitment. Comparable conclusions have been reported in studies examining community participation and collaborative environmental management in Indonesia (Rahayu, Pramasari, & Ardiyansah, 2024; Banunaek, 2021).

Challenges, Power Dynamics, and Sustainability of Collaborative Governance

The findings indicate that the sustainability of collaborative governance within the Saber Mandiri Waste Bank is influenced by a variety of institutional, social, and operational challenges. Interviews revealed that maintaining stakeholder commitment over time requires continuous coordination and adaptive management practices. Informants explained that participation levels occasionally fluctuate due to changing economic priorities and household activities. Such conditions illustrate that collaborative governance is a dynamic process shaped by evolving stakeholder interests rather than a permanently stable arrangement (Ansell & Gash, 2008).

Data obtained from waste bank administrators demonstrate that resource limitations remain one of the principal challenges affecting program continuity. Informants reported constraints related to operational funding, storage facilities, and transportation support for recyclable materials. These limitations occasionally reduce the capacity of the waste bank to expand its activities and reach additional participants. Similar challenges have been identified in studies examining community-based waste management initiatives across Indonesia (Sihombing & Putra, 2025).

Interviews further revealed that stakeholder collaboration involves the negotiation of different priorities and expectations. Government institutions often emphasize environmental objectives and regulatory compliance, while community members may focus more strongly on direct economic benefits. Waste bank managers occupy an intermediary position that requires balancing these different interests. Research on collaborative governance suggests that the reconciliation of diverse stakeholder objectives constitutes one of the central challenges within collaborative networks (Zuhdi et al., 2025).

Field observations indicated that power relations among stakeholders are generally cooperative but not entirely symmetrical. Government actors possess formal authority and access to institutional resources, whereas community participants contribute local knowledge and operational support. Informants acknowledged that decision-making processes are most effective when these different forms of influence are recognized and accommodated. Studies on collaborative governance increasingly emphasize the importance of managing power asymmetries to sustain equitable cooperation (Sabarna & Ramdani, 2025).

Several respondents highlighted the importance of policy support in maintaining the long-term viability of waste management initiatives. Stakeholders perceived environmental programs as more

sustainable when supported by consistent governmental commitment and strategic planning. Institutional backing enhances stakeholder confidence and facilitates resource mobilization. Similar observations have been reported in research examining environmental governance and waste management policies in Karimun Regency (Sihombing & Putra, 2024).

The primary challenges and sustainability factors identified during the study are summarized in Table 3. The table illustrates the key issues influencing collaborative governance performance within the Saber Mandiri Waste Bank. These findings demonstrate that sustainability depends on both institutional capacity and stakeholder commitment. The evidence highlights the multidimensional nature of collaborative environmental governance.

Table 3. Challenges and Sustainability Factors in Collaborative Governance

Dimension	Key Finding	Implication
Resource Availability	Limited operational resources	Constrains program expansion
Stakeholder Commitment	Generally strong but variable	Affects continuity of participation
Policy Support	Moderate to High	Enhances institutional stability
Power Relations	Cooperative with differing influence levels	Requires balanced coordination
Community Awareness	Increasing over time	Supports long-term sustainability

Analysis of Table 3 indicates that stakeholder commitment and community awareness constitute important strengths supporting the waste bank's sustainability. Residents increasingly recognize the environmental and economic value of participation in waste management activities. This growing awareness contributes to the development of stronger environmental stewardship within the community. Comparable findings have been reported in studies examining collaborative waste governance and environmental behavior change (Fadjarini & Kriswibowo, 2023).

Interview findings also revealed that collaborative governance generates learning opportunities for participating actors. Stakeholders acquire practical knowledge regarding waste management, organizational coordination, and environmental problem-solving through their involvement in the waste bank. These learning processes strengthen institutional capacity and improve adaptive responses to emerging challenges. Research on collaborative environmental management frequently identifies social learning as a critical outcome of stakeholder interaction (Herawati, Keman, & Devy, 2022).

Another notable finding concerns the role of collaborative leadership in sustaining stakeholder engagement. Informants emphasized that waste bank coordinators play a significant role in motivating participants, mediating conflicts, and facilitating communication among actors. Effective leadership encourages stakeholders to maintain their commitment despite operational constraints. Studies on collaborative leadership similarly demonstrate its importance in sustaining collective action within environmental governance systems (Gafur et al., 2023).

The findings further suggest that sustainability depends on the institutionalization of collaborative practices rather than reliance on individual actors alone. Participants emphasized the need for clear organizational procedures, stakeholder agreements, and long-term development strategies. Institutionalized collaboration reduces vulnerability to leadership changes and fluctuations in participation levels. Such observations support arguments that sustainable governance requires durable institutional arrangements capable of maintaining cooperation over time (Ansell, 2015).

Evidence from interviews, observations, and document analysis indicates that the sustainability of collaborative governance within the Saber Mandiri Waste Bank is shaped by the interaction of resources, stakeholder commitment, policy support, leadership, and community awareness. While challenges related to resource limitations and differing stakeholder interests remain evident, collaborative mechanisms have enabled actors to maintain cooperation and pursue shared environmental objectives. The findings suggest that long-term success depends on strengthening institutional capacity, balancing stakeholder influence, and fostering continuous community engagement. Comparable conclusions have been reported in studies examining collaborative

governance, power dynamics, and sustainable waste management in Indonesia (Pamungkas, Masqurin, & Sutomo, 2024; Rahayu, Pramitasari, & Ardiyansah, 2024; Zuhdi et al., 2025).

CONCLUSION

The findings of this study demonstrate that collaborative governance has played a significant role in supporting waste management activities through the Saber Mandiri Waste Bank in Sungai Raya Village, Karimun Regency. The collaborative process involves active interaction among village government institutions, waste bank administrators, environmental agencies, community leaders, and local residents who contribute through complementary roles and shared responsibilities. Effective communication, mutual trust, stakeholder participation, and facilitative leadership have strengthened institutional relationships and enabled the waste bank to function as a community-based environmental management initiative. The study also reveals that community participation extends beyond operational waste collection activities and contributes to the development of collective environmental awareness, social responsibility, and local ownership of waste management programs.

The research further indicates that the sustainability of collaborative governance is influenced by the interaction between stakeholder commitment, resource availability, policy support, leadership capacity, and community engagement. Although challenges related to operational resources, participation consistency, and differing stakeholder interests remain evident, collaborative mechanisms have created opportunities for collective problem solving and institutional learning. The findings suggest that long-term effectiveness depends on the institutionalization of collaborative practices, balanced stakeholder relationships, and continuous efforts to strengthen public participation in environmental initiatives. These results contribute to the development of collaborative governance theory by providing empirical evidence from a community-based waste bank context and highlighting the importance of multi-stakeholder cooperation in achieving sustainable local waste management outcomes.

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