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Transformation of Waste Management Governance through Policy Innovation: An Implementation Study of Regional Regulation No. 7 of 2024 at the Environmental Agency of Barru Regency

Muliana
ITBA Al Gazali Barru
muliana@algazali.ac.id
Resky Nur Fadillah
ITBA Al Gazali Barru
resky@algazali.ac.id

ABSTRACT

This study examines the transformation of waste management governance through policy innovation at the Environmental Agency of Barru Regency, focusing on the implementation of Regional Regulation No. 7 of 2024 concerning the Implementation of Waste Management. The study employs a qualitative descriptive approach involving eight informants representing government institutions, waste bank managers, operational personnel, youth organizations, neighborhood leadership, and the community. Data are collected through semi-structured interviews, observation, and documentation, and analyzed using ATLAS.ti 26 to organize, code, categorize, and interpret qualitative information. The findings indicate that waste bank innovation offers several advantages, including reducing plastic waste, increasing environmental awareness, improving environmental cleanliness, and providing additional economic benefits to participating communities. The innovation also demonstrates compatibility with community needs, opportunities for gradual adoption through program socialization, and observable benefits. Supporting factors include institutional support and the availability of plastic shredding equipment, which facilitates waste processing and recycling activities. However, implementation challenges remain, particularly the complexity of waste collection, processing, and recycling, as well as inadequate operational infrastructure and the absence of a designated final disposal facility. The study further highlights the importance of collaboration among the Environmental Agency, waste management units, waste bank managers, community organizations, and residents. It concludes that policy innovation can contribute to more adaptive, inclusive, and sustainable waste management governance when supported by adequate resources, institutional commitment, effective coordination, and active community participation. Strengthening infrastructure, expanding community-based waste management programs, and improving monitoring and evaluation are therefore essential to optimizing the implementation of Regional Regulation No. 7 of 2024 in Barru Regency.

Keywords: Policy Innovation; Waste Management Governance; Waste Bank; Regional Regulation; Collaborative Governance.

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A.INTRODUCTION

Waste management has become an increasingly important issue in public governance because it is closely related to environmental quality, public health, and sustainable development. The continuous growth of population, urban activities, and consumption patterns has contributed to increasing waste generation and the complexity of waste composition. Consequently, waste management can no longer be understood merely as a technical activity involving collection, transportation, and disposal. Instead, it requires an integrated governance approach that connects policy formulation, institutional capacity, public participation, and environmental responsibility. Effective waste management also depends on the ability of local governments to coordinate different stakeholders and allocate resources efficiently. In this context, policy innovation is essential to improve conventional waste management practices and encourage more adaptive and responsive public institutions. Cook et al. (2026) emphasize that sustainable waste management requires comprehensive attention to waste generation, collection, treatment, institutional arrangements, financing, and circular economy opportunities. Therefore, transforming waste management governance represents an important strategy for strengthening local government performance and achieving environmentally sustainable communities.

At the global level, solid waste management has become a major environmental governance challenge due to increasing waste generation and unequal waste management capacities across countries. The World Bank estimates that global municipal solid waste generation reached approximately 2.56 billion tonnes in 2022 and could increase to 3.86 billion tonnes by 2050 under a business-as-usual scenario (Cook et al., 2026). These developments demonstrate that existing waste management systems face growing pressure, particularly in countries and regions with limited infrastructure and financial resources. The United Nations Environment Programme and the International Solid Waste Association (2024) highlight the importance of prioritizing waste prevention, improving municipal waste services, and adopting circular economy approaches.

The global policy direction increasingly emphasizes reducing waste at its source, strengthening recycling systems, and treating discarded materials as potential economic resources. Such approaches require innovation in public policy, institutional coordination, technological utilization, and community engagement. Local governments consequently have a strategic

responsibility to translate global sustainability principles into practical policies that respond to local environmental conditions. Thus, waste management governance needs to move beyond conventional disposal-oriented practices toward integrated, participatory, and sustainable systems.

In Indonesia, waste management is regulated through a national legal framework that establishes the responsibilities of central and regional governments, businesses, and communities. Law No. 18 of 2008 concerning Waste Management emphasizes comprehensive and integrated management from upstream to downstream, including waste reduction and waste handling (Republic of Indonesia, 2008).

This framework is further operationalized through Government Regulation No. 81 of 2012, which regulates household waste management and waste similar to household waste (Republic of Indonesia, 2012). Furthermore, Presidential Regulation No. 97 of 2017 establishes the National Policy and Strategy for Household Waste Management and Similar Household Waste Management, providing a policy direction for waste reduction and handling (Republic of Indonesia, 2017). At the regional level, Barru Regency has established Regional Regulation No. 7 of 2024 concerning the Implementation of Waste Management, which came into force on December 30, 2024.The regulation provides a local legal foundation covering government responsibilities, waste management policies and strategies, institutional arrangements, financing, public participation, partnerships, supervision, and administrative sanctions. Its enactment represents an important institutional foundation for strengthening waste management governance in Barru Regency.

Despite the existence of national and regional regulations, the effectiveness of waste management ultimately depends on how policy provisions are translated into administrative practices and public services. Regional Regulation No. 7 of 2024 identifies the need for comprehensive, planned, and integrated waste management from upstream to downstream in Barru Regency. Its explanatory considerations also recognize that population growth and changing consumption patterns contribute to increasing waste volumes and increasingly diverse waste characteristics. The regulation further acknowledges that previous waste management practices have not fully aligned with environmentally sound methods and techniques (Barru Regency Government, 2024).

These circumstances raise important questions regarding the institutional readiness of the Environmental Agency, the availability of human and financial resources, and the coordination mechanisms required to implement the regulation. Other relevant issues concern the extent to which policy innovation can strengthen waste reduction, improve waste handling, and encourage active participation from communities and businesses. The implementation process also requires clarity regarding institutional responsibilities, monitoring mechanisms, and the consistency of policy execution. Accordingly, examining the relationship between regulatory provisions, institutional capacity, and policy innovation is essential to understanding the transformation of waste management governance in Barru Regency.

Previous studies have examined waste management from the perspectives of policy implementation, collaborative governance, institutional capacity, and community participation. Fatmawati et al. (2022), through a comparative study of Makassar City and Bantaeng Regency, found that waste bank policy implementation depends significantly on stakeholder communication, collaboration, and community participation.Their findings indicate that the effectiveness of waste management innovation requires stronger coordination among local governments, communities, and private-sector actors. Latanna et al. (2023), examining community-based waste reduction in Makassar, demonstrated that governance conditions and relationships among local government institutions and communities influence the implementation of waste reduction programs.

Similarly, Yusriadi et al. (2023) identified human resources, financial resources, organizational communication, and institutional structure as important factors influencing waste bank governance in Indonesia. Indrianti et al. (2025) further highlighted the relevance of policy innovation, public awareness, and good governance in addressing waste management challenges. More recently, Firdausy (2025) emphasized that limited resources, weak coordination, and insufficient community and private-sector participation remain significant obstacles to effective waste management policy implementation in Indonesia.These studies collectively demonstrate that successful waste management requires more than regulatory frameworks, as it also depends on institutional performance and collaborative implementation.

Although previous studies have provided important insights into waste management governance, several aspects remain relevant for further investigation. Existing research has largely focused on waste bank programs, community-based waste reduction, collaborative governance, and the general effectiveness of waste management policies. Fatmawati et al. (2022), for example, concentrated on collaborative implementation through waste bank programs in Makassar and Bantaeng, while Latanna et al. (2023) examined governance conditions surrounding community-based waste reduction in Makassar. Firdausy (2025) discussed the broader effectiveness of waste management governance in Indonesia by comparing national policy objectives with local implementation challenges. However, these studies do not specifically examine the implementation of Barru Regency Regional Regulation No. 7 of 2024 as a newly established local regulatory framework. There is therefore an opportunity to investigate how policy innovation is translated into institutional practices, administrative mechanisms, stakeholder coordination, and public participation within the Environmental Agency of Barru Regency. The novelty of this study lies in connecting the transformation of waste management governance with the implementation of a specific regional regulation, rather than examining waste management programs in isolation. This perspective is expected to provide a more contextual understanding of the relationship between regulatory design, institutional innovation, and local government capacity in strengthening sustainable waste management.

Based on the background and research gap, this study aims to analyze the transformation of waste management governance through policy innovation at the Environmental Agency of Barru Regency. Specifically, it examines how Regional Regulation No. 7 of 2024 is interpreted and implemented through the policies, programs, and administrative practices of the Environmental Agency. The study also seeks to identify forms of policy innovation developed to strengthen waste reduction, waste handling, and the integration of waste management activities. Furthermore, it investigates the institutional capacity of the Environmental Agency, particularly in relation to human resources, organizational arrangements, financial support, and coordination among relevant stakeholders. Another objective is to examine the involvement of communities, businesses, and other institutions in supporting the implementation of regional waste management policies. The research also identifies supporting and inhibiting factors that influence the implementation of policy innovation in the local waste management system. Through these

objectives, the study seeks to explain the extent to which policy innovation contributes to improving the implementation of Regional Regulation No. 7 of 2024. Ultimately, the research is intended to provide an analytical assessment of the opportunities and challenges involved in transforming waste management governance in Barru Regency.

This research is expected to contribute theoretically and practically to the development of public administration, particularly in the fields of public policy implementation, environmental governance, and local government innovation. Theoretically, it enriches discussions on how regional regulations can serve as instruments for transforming institutional practices and improving public service governance. It also contributes to understanding the relationship between policy innovation, institutional capacity, collaborative governance, and sustainable waste management. Practically, the findings are expected to provide input for the Environmental Agency of Barru Regency in strengthening institutional coordination, improving operational capacity, and developing more responsive waste management strategies. The study may also provide recommendations for expanding community participation and encouraging partnerships with businesses and other relevant stakeholders. In addition, the research is relevant to Sustainable Development Goal 11, particularly sustainable communities, and Sustainable Development Goal 12, which promotes responsible consumption and production. By emphasizing integrated waste reduction, resource utilization, and collaborative implementation, the study supports efforts to improve environmental sustainability at the local level. Ultimately, the research is expected to offer policy recommendations that can strengthen the implementation of Regional Regulation No. 7 of 2024 and support the development of more adaptive, effective, and sustainable waste management governance in Barru Regency.

B.RESEARCH METHODS

This study employs a qualitative descriptive approach to examine the transformation of waste management governance through policy innovation at the Environmental Agency of Barru Regency. This approach is considered appropriate because the research focuses on understanding the implementation of Regional Regulation No. 7 of 2024 concerning the Implementation of Waste Management, including institutional practices, policy processes, stakeholder coordination, and challenges encountered during implementation. The research is conducted at the Environmental

Agency of Barru Regency as the institution responsible for implementing regional waste management policies. The main focus is to explore how policy innovation is translated into organizational activities, particularly in waste reduction, waste handling, institutional coordination, and community participation. The research also examines the extent to which the regional regulation provides direction for improving the effectiveness and sustainability of waste management governance.

Data are collected through semi-structured interviews, direct observation, and documentation. Informants are selected purposively based on their knowledge, responsibilities, and involvement in waste management policy implementation. They include officials and staff of the Environmental Agency of Barru Regency who are directly involved in policy formulation and implementation, as well as representatives of relevant institutions, waste management actors, and community members who understand or experience local waste management practices. Interviews are conducted to obtain information about policy implementation, institutional capacity, forms of innovation, coordination mechanisms, public participation, and supporting and inhibiting factors. Direct observation is used to examine relevant waste management activities and operational practices, while documentation involves reviewing Regional Regulation No. 7 of 2024, strategic plans, institutional reports, program documents, and other relevant administrative records. The combination of these techniques enables the researcher to compare information obtained from different sources and develop a comprehensive understanding of the research subject.

Data analysis follows the interactive model developed by Miles, Huberman, and Saldaña (2014), which consists of three interconnected activities: data condensation, data display, and conclusion drawing and verification. Data condensation involves selecting, focusing, simplifying, and organizing interview transcripts, observation notes, and documentary information according to the research objectives. Data display is conducted by arranging the findings into descriptive narratives, thematic categories, and matrices covering policy implementation, policy innovation, institutional capacity, stakeholder coordination, community participation, and supporting and inhibiting factors. Conclusion drawing and verification involve interpreting patterns, identifying relationships among research themes, and comparing empirical findings with the provisions of Regional Regulation No. 7 of 2024 and relevant theoretical perspectives. To strengthen the credibility of the findings, the study applies source and method triangulation by comparing

information from different informants and validating interview results against observations and official documents. This analytical process is expected to produce a comprehensive explanation of how policy innovation contributes to the transformation of waste management governance in Barru Regency.

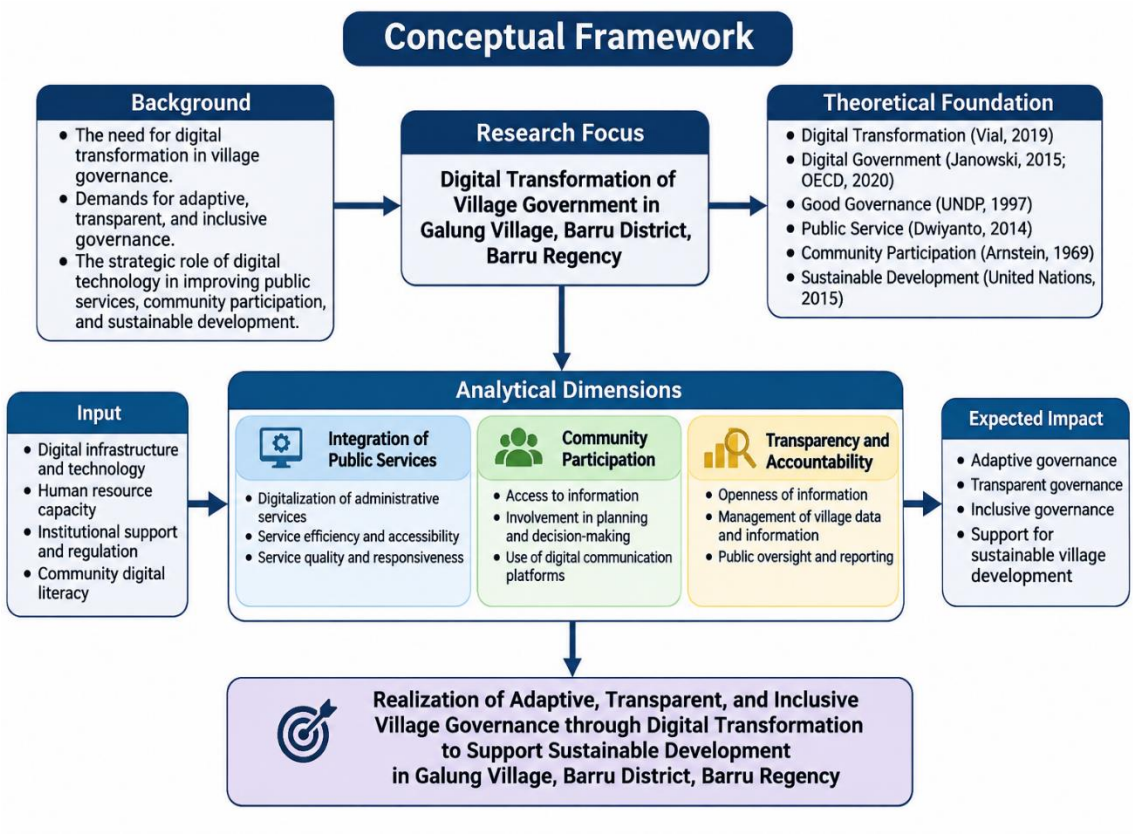


Figure 1 Research Framework of Waste Management Governance Transformation through Policy Innovation in Barru Regency.

The figure illustrates the conceptual framework of this study, which examines the transformation of waste management governance through policy innovation at the Environmental Agency of Barru Regency, based on Regional Regulation No. 7 of 2024. The framework begins with the theoretical foundations of public policy implementation, policy innovation, collaborative governance, and sustainable waste management, supported by the relevant national and regional regulatory frameworks. These foundations guide the analysis of policy implementation through four dimensions: communication, resources, disposition, and bureaucratic structure, as well as several forms of policy innovation, including service, process, institutional, and governance

innovation. The analysis also considers supporting factors, such as regulatory support, institutional capacity, community participation, partnerships, and infrastructure availability, alongside inhibiting factors, including limited resources, weak coordination, low public awareness, and operational challenges. The interaction among these elements is expected to explain how policy innovation can contribute to transforming waste management governance into a more adaptive, transparent, inclusive, effective, and sustainable system, ultimately supporting integrated and sustainable waste management in Barru Regency**.**

C.RESEARCH RESULTS AND DISCUSSION

- Results

Waste management governance in Barru Regency is an important component of local government efforts to maintain environmental quality and improve public services. This study focuses on the Environmental Agency of Barru Regency as the regional institution responsible for implementing waste management policies and programs. The research is particularly concerned with the implementation of Regional Regulation No. 7 of 2024 concerning the Implementation of Waste Management, which provides the legal foundation for strengthening integrated waste management at the local level. The institutional perspective is represented by H. Andi Adnan Azis, S.STP., M.Si., as Head of the Environmental Agency, and Muksin, as Head of the Waste Management Technical Implementation Unit (UPTD). In addition, the research involves Ummu Nafizah, manager of the Peduli Batupute Waste Bank, and Arham Kadir, manager of the Induk Lestari Padang Loang Waste Bank, to examine community-based waste management practices. The perspectives of operational workers and community stakeholders are also represented by Asikin, a waste collection officer; Zaskia Nurasyifa, a member of the Youth Organization (Karang Taruna); Malik, Head of RT 03 in Batupute Hamlet; and Nurlina, a community member. The involvement of these informants provides different institutional, operational, organizational, and community perspectives for understanding waste management governance in Barru Regency.

The current conditions of waste management in Barru Regency need to be examined through the relationship between waste generation, collection services, transportation, processing, and final disposal. This analysis is important because the effectiveness of waste management cannot be measured solely by the existence of regulations or government programs, but also by

the extent to which these arrangements operate in practice. Information from H. Andi Adnan Azis, S.STP., M.Si., and Muksin is relevant for identifying the institutional condition and operational implementation of waste management services. Meanwhile, the experiences of Asikin as a waste collection officer can provide information about the practical aspects of waste collection, transportation routes, work procedures, and operational challenges. The perspectives of Ummu Nafizah and Arham Kadir are important for understanding the activities and development of waste banks as community-based waste management initiatives. Furthermore, information from Zaskia Nurasyifa, Malik, and Nurlina can help explain community awareness, waste disposal practices, participation, and access to waste management services. These different perspectives should be compared with field observations and official documents to establish an accurate description of the actual waste management conditions in Barru Regency.

The implementation of Regional Regulation No. 7 of 2024 constitutes the central focus of this research because the regulation establishes the legal and institutional direction for waste management in Barru Regency. Its implementation involves translating regulatory provisions into operational programs, administrative procedures, institutional responsibilities, and community-oriented activities. At the institutional level, the Head of the Environmental Agency, H. Andi Adnan Azis, S.STP., M.Si., and the Head of the Waste Management UPTD, Muksin, are key informants for examining policy direction, implementation priorities, and operational arrangements. The research also examines how waste management programs are implemented through collection, transportation, waste reduction, sorting, recycling, and other relevant activities. The two waste bank managers, Ummu Nafizah and Arham Kadir, provide important perspectives on the implementation of waste reduction initiatives at the community level. The involvement of waste collection officers and community representatives further enables the researcher to examine how policy provisions are translated into daily practices. The analysis therefore focuses on the consistency between regulatory objectives, institutional implementation, and actual waste management activities.

Institutional capacity plays an important role in determining the effectiveness of waste management policy implementation. The Environmental Agency requires adequate organizational arrangements, competent human resources, sufficient financial support, and appropriate operational infrastructure to carry out its responsibilities. This research examines the institutional

roles of the Environmental Agency and its Waste Management UPTD in managing planning, operational activities, coordination, and supervision. Information from H. Andi Adnan Azis, S.STP., M.Si., and Muksin is essential for understanding organizational responsibilities, human resource availability, budget allocation, and infrastructure requirements. At the operational level, the experience of Asikin can provide information regarding the availability and condition of waste collection equipment, transportation facilities, and occupational support. The institutional capacity of community-based waste banks is also examined through the experiences of Ummu Nafizah and Arham Kadir, particularly in relation to organizational management, operational facilities, and resource availability. The findings should identify whether existing institutional and operational resources are sufficient to support the implementation of Regional Regulation No. 7 of 2024.

The implementation of waste management policies requires clear procedures, effective communication, coordination, and an appropriate division of responsibilities among relevant stakeholders. This study examines how the Environmental Agency organizes waste management activities from planning and implementation to monitoring and evaluation. Particular attention is given to the coordination between the Environmental Agency and the Waste Management UPTD, including the distribution of operational responsibilities and communication mechanisms. The perspectives of Muksin and Asikin are relevant for examining how operational instructions are translated into waste collection and transportation activities. In addition, the experiences of Ummu Nafizah and Arham Kadir provide an opportunity to examine coordination between the government and waste bank managers in implementing waste reduction activities. The research also investigates the mechanisms through which information about waste management services, community responsibilities, and waste reduction programs is communicated to residents. Through these aspects, the study seeks to understand whether implementation mechanisms are sufficiently integrated to support effective and accountable waste management governance.

Stakeholder participation is a fundamental element of sustainable waste management because the responsibility for managing waste cannot be placed exclusively on local government institutions. The Environmental Agency has a strategic role in developing policies, providing public services, facilitating partnerships, and encouraging community involvement. Waste bank managers, represented by Ummu Nafizah and Arham Kadir, are relevant actors in promoting waste sorting, recycling, and community-based waste reduction. As a member of Karang Taruna, Zaskia

Nurasyifa provides a perspective on the potential involvement of youth organizations in environmental awareness activities and community initiatives. Malik, as Head of RT 03 in Batupute Hamlet, represents the neighborhood-level leadership perspective in facilitating communication and mobilizing residents. Meanwhile, Nurlina provides a community perspective concerning public awareness, participation, and experiences with waste management services. The research examines how these stakeholders contribute to policy implementation and how their involvement can be strengthened through communication, collaboration, and participatory decision-making.

The implementation of waste management policy is influenced by various institutional, operational, social, and environmental factors. Supporting factors that need to be examined include the existence of Regional Regulation No. 7 of 2024, institutional commitment, human resource capacity, operational infrastructure, community participation, and collaboration among relevant stakeholders. The perspectives of H. Andi Adnan Azis, S.STP., M.Si., and Muksin are important for identifying institutional conditions that facilitate or constrain policy implementation. Information from Ummu Nafizah and Arham Kadir can help identify opportunities and challenges associated with the operation of community-based waste banks. Meanwhile, Asikin can provide operational insights into challenges related to waste collection, transportation, equipment, and working conditions. Community perspectives from Zaskia Nurasyifa, Malik, and Nurlina are relevant for understanding social factors, including environmental awareness, community habits, participation, and access to information. The analysis of these factors will help explain the conditions that support or hinder the transformation of waste management governance in Barru Regency.

The impacts and achievements of waste management policy implementation need to be assessed by examining changes in institutional performance, service quality, waste reduction practices, and community participation. The existence of Regional Regulation No. 7 of 2024 provides a policy foundation, but its practical contribution must be evaluated through measurable implementation outcomes. At the institutional level, the research examines whether policy implementation has contributed to improved planning, coordination, supervision, and delivery of waste management services. At the operational level, the experiences of Muksin and Asikin can help assess changes in waste collection and transportation practices, subject to supporting field

evidence. The activities of the Peduli Batupute and Induk Lestari Padang Loang Waste Banks can also be examined to determine their contribution to waste sorting, recycling, and community-based waste reduction. Furthermore, the perspectives of Zaskia Nurasyifa, Malik, and Nurlina can provide insights into changes in public awareness, participation, and perceptions of environmental cleanliness. The assessment should distinguish between intended policy outcomes, documented program achievements, and benefits directly experienced by the community.

The evaluation of waste management governance in Barru Regency is conducted by comparing the objectives and provisions of Regional Regulation No. 7 of 2024 with actual implementation practices. The analysis focuses on four dimensions of policy implementation: communication, resources, disposition, and bureaucratic structure, as proposed by Edwards III. Communication concerns the clarity and consistency of policy information delivered to implementing institutions and the community. Resources involve the availability of human resources, budgets, facilities, and operational infrastructure, while disposition concerns the commitment and willingness of policy implementers to carry out their responsibilities. Bureaucratic structure examines the division of authority, standard operating procedures, and coordination mechanisms within the waste management system. These dimensions are analyzed using information from all eight informants, supported by observations and relevant institutional documents. The evaluation also considers the forms of policy innovation developed in service delivery, operational processes, institutional arrangements, and collaborative governance. This analytical process is expected to identify implementation strengths, existing gaps, and areas requiring improvement in transforming waste management governance in Barru Regency.

Strengthening waste management governance in Barru Regency requires an integrated strategy that connects institutional improvement, policy innovation, operational effectiveness, and meaningful community participation. The Environmental Agency needs to ensure that the implementation of Regional Regulation No. 7 of 2024 is supported by clear institutional responsibilities, adequate resources, effective coordination, and consistent monitoring mechanisms. Policy innovation can be developed through improvements in waste collection services, integrated operational procedures, community-based waste sorting, and the strengthening of waste bank networks. The involvement of Ummu Nafizah and Arham Kadir provides a basis for examining opportunities to strengthen waste banks as community-based institutions supporting

waste reduction and recycling. Furthermore, collaboration with Karang Taruna, neighborhood leaders, and residents can be strengthened through environmental education, community campaigns, and participatory waste management activities. The operational experiences of waste collection officers should also inform improvements in service procedures, infrastructure, and occupational support. Institutional monitoring and evaluation should be developed to assess program performance, identify implementation constraints, and ensure accountability. Ultimately, these strategies are expected to support a more adaptive, transparent, inclusive, effective, and sustainable waste management governance system in Barru Regency.

- Data Analysis Using ATLAS.ti 26

This study employs ATLAS.ti 26 as a qualitative data analysis software to assist in organizing, coding, categorizing, and interpreting data obtained from interviews, observations, and relevant documentation. The use of ATLAS.ti 26 is intended to facilitate a systematic analysis of information collected from eight research informants representing different institutional, operational, and community perspectives. These informants include the Head of the Environmental Agency of Barru Regency, the Head of the Waste Management UPTD, two waste bank managers, a waste collection officer, a youth organization representative, a neighborhood leader, and a community member. Through this software, interview transcripts and other research materials are organized into meaningful codes and thematic categories related to the transformation of waste management governance through policy innovation.

The data analysis process involves identifying relevant statements, assigning initial codes, grouping related codes into analytical categories, and developing thematic relationships based on the research objectives. The analysis focuses on several key dimensions, including the implementation of Regional Regulation No. 7 of 2024, policy innovation, institutional capacity, waste management services, stakeholder coordination, community participation, and supporting and inhibiting factors. The coded data are subsequently examined to identify patterns, similarities, differences, and relationships among the perspectives of the informants. ATLAS.ti 26 also supports the visualization of analytical findings through code networks, thematic maps, and other graphical representations, enabling the researcher to interpret the research findings more

systematically. The results of this process provide an analytical foundation for explaining how policy innovation contributes to transforming waste management governance in Barru Regency.

ATLAS.ti 26 Visualization of Qualitative Data Analysis Based on Interview Findings with the Head of the Waste Management Technical Implementation Unit (UPTD), Environmental Agency of Barru Regency.



Figure 2 Interview Findings with the Head of the Waste Management Technical Implementation Unit (UPTD).

The ATLAS.ti 26 visualization illustrates the results of qualitative data analysis based on the interview with the Head of the Waste Management Technical Implementation Unit (UPTD) of the Environmental Agency of Barru Regency. The findings identify several positive aspects of waste management innovation, particularly through the implementation of community-based waste management activities. These include the relative advantages of reducing plastic waste, increasing public awareness, and providing economic benefits to the community. The innovation is also considered observable through the reduction of plastic waste, while its trialability is reflected in the socialization of the program to the community, which provides opportunities for residents to understand and participate in waste management activities. Furthermore, the compatibility of the innovation is demonstrated by its potential to address community needs and encourage more environmentally responsible waste management practices.

However, the visualization also identifies several challenges affecting the implementation of the innovation. The complexity dimension is associated with the processes of waste collection, processing, and recycling, which may require adequate facilities, technical capacity, and operational support. Supporting factors include the availability of plastic shredding machines, which can facilitate waste processing and recycling activities. Meanwhile, the inhibiting factors identified in the interview concern the absence of a designated landfill or final disposal facility, which may create obstacles to the effectiveness of the waste management system. Overall, the findings indicate that waste management innovation in Barru Regency has the potential to improve environmental quality, reduce plastic waste, and generate economic benefits for the community. Nevertheless, its sustainability requires stronger infrastructure, improved operational facilities, and more integrated waste collection, processing, and recycling mechanisms.

- Discussion

The findings indicate that policy innovation in waste management in Barru Regency has the potential to transform conventional waste handling practices into a more community-oriented and economically beneficial system. The waste bank program represents an innovation that connects environmental protection with opportunities for community economic empowerment. This is reflected in the interview findings with the Head of the Waste Management UPTD, which identify the reduction of plastic waste, increased public awareness, and economic benefits for

residents as important outcomes of the program. These findings suggest that waste management should not be understood merely as a government responsibility involving collection and disposal, but as a shared governance process involving institutions and communities. In this regard, the implementation of Regional Regulation No. 7 of 2024 provides an important regulatory foundation for strengthening integrated waste management. However, the transformation of governance depends not only on the existence of regulations but also on the capacity of implementing institutions to translate policy objectives into practical and sustainable innovations. Therefore, the waste bank program can be understood as an instrument for connecting environmental policy, public participation, and local economic development.

The positive responses associated with the waste bank program can be analyzed through the innovation attributes proposed by Rogers (2003), particularly relative advantage, compatibility, trialability, observability, and complexity. The relative advantage of this innovation is reflected in its ability to provide economic value from household waste while simultaneously reducing environmental pollution. The economic benefits offer an incentive for residents to participate because waste is no longer perceived solely as unwanted material but also as a resource with potential financial value. Furthermore, the reduction of plastic waste and the improvement of environmental cleanliness demonstrate the observable benefits of the program. The socialization activities also provide opportunities for communities to understand and gradually adopt waste bank practices, reflecting the trialability of the innovation. These findings indicate that community acceptance is influenced by the extent to which an innovation provides practical benefits and can be integrated into existing social practices. Nevertheless, the complexity associated with collection, processing, and recycling activities may limit broader adoption when operational facilities and supporting infrastructure are inadequate. Thus, improving the accessibility and simplicity of waste bank services is essential to strengthening community acceptance and the sustainability of the innovation.

The implementation of waste bank innovation also demonstrates the importance of collaboration between local government institutions and community-based organizations. The Environmental Agency, Waste Management UPTD, waste bank managers, neighborhood leaders, youth organizations, and residents have complementary roles in supporting waste reduction and environmental protection. The existence of the Peduli Batupute Waste Bank and the Induk Lestari

Padang Loang Waste Bank provides institutional opportunities for expanding community participation in waste sorting, collection, and recycling. This finding is consistent with Ansell and Gash (2008), who explain that collaborative governance requires interaction among public institutions and non-state stakeholders through dialogue, trust-building, shared commitment, and collective action.

Similarly, Fatmawati et al. (2022), in their study of waste bank policy implementation in Makassar City and Bantaeng Regency, emphasize the importance of communication and collaboration among government institutions, communities, and private-sector actors in strengthening waste management programs.Therefore, the development of waste bank innovation in Barru Regency needs to be supported by stronger coordination mechanisms and continuous communication between the Environmental Agency and community-based waste management organizations. Active community participation should become an integral component of policy implementation rather than merely an additional activity.

The findings further demonstrate that institutional capacity and operational resources are important determinants of successful waste management innovation. The availability of plastic shredding machines, as identified in the ATLAS.ti visualization, represents a supporting factor because such equipment can facilitate the processing and recycling of plastic waste. Nevertheless, the complexity of waste collection, processing, and recycling requires adequate coordination, technical capacity, and operational facilities. This situation can be examined through the policy implementation framework developed by Edwards III (1980), which emphasizes four critical dimensions: communication, resources, disposition, and bureaucratic structure. Communication is necessary to ensure that policy information and program objectives are understood by implementing institutions and community stakeholders. Resources include human resources, budgets, equipment, and infrastructure, while disposition concerns the commitment of implementers to carry out their responsibilities. Bureaucratic structure relates to the division of responsibilities and coordination mechanisms within the implementing organization. Consequently, the effectiveness of waste bank innovation in Barru Regency depends on the integration of these four dimensions to ensure that regulatory objectives can be translated into consistent and sustainable operational practices.

Overall, the findings suggest that waste bank innovation contributes to improving environmental awareness, reducing plastic waste, and generating economic benefits for participating communities. These outcomes indicate that waste management innovation can create added value when environmental objectives are connected with community economic interests. However, the sustainability of the program requires continuous socialization, stronger institutional support, adequate processing facilities, and effective coordination between government institutions and community-based organizations. The findings also highlight the importance of strengthening the relationship between the Environmental Agency, waste bank managers, neighborhood leaders, youth organizations, and residents to expand the implementation of waste reduction activities. Fatmawati et al. (2022) similarly demonstrate that waste bank policy implementation requires sustained collaboration and effective communication among stakeholders, particularly to improve community participation.

D.CONCLUSION & RECOMMENDATIONS

- Conclusion

This study concludes that policy innovation through community-based waste bank programs represents an important approach to transforming waste management governance in Barru Regency. The findings from the ATLAS.ti 26 analysis indicate that the innovation offers several relative advantages, including reducing plastic waste, increasing public awareness, improving environmental cleanliness, and providing additional economic benefits to participating communities. The program also demonstrates positive innovation characteristics through its compatibility with community needs, opportunities for gradual adoption through socialization, and observable environmental and economic benefits. The implementation of Regional Regulation No. 7 of 2024 provides a legal foundation for strengthening integrated waste management. However, the effectiveness of this innovation remains influenced by the availability of operational facilities, institutional capacity, and coordination among relevant stakeholders.

Furthermore, the study highlights that sustainable waste management governance requires collaboration between the Environmental Agency, Waste Management UPTD, waste bank managers, community organizations, neighborhood leaders, and residents. The availability of

plastic shredding machines and support from relevant institutions can facilitate waste processing and recycling activities, while operational limitations, particularly the absence of a designated final disposal facility, represent challenges that need to be addressed. Therefore, the transformation of waste management governance cannot rely solely on regulatory frameworks but must also be supported by institutional commitment, adequate infrastructure, effective communication, and active community participation. Integrating policy innovation with collaborative governance is essential to developing a more adaptive, inclusive, effective, and sustainable waste management system in Barru Regency.

- Recommendations

The Environmental Agency of Barru Regency is recommended to strengthen the implementation of Regional Regulation No. 7 of 2024 by improving waste management infrastructure, particularly transportation facilities, plastic processing equipment, and final disposal arrangements. The agency should also strengthen the institutional capacity of waste banks through continuous training, operational assistance, and sustainable financial support. Furthermore, collaboration with village governments, neighborhood leaders, youth organizations, and community members should be expanded through regular socialization, environmental education, and participatory waste management programs. A more integrated monitoring and evaluation system is also necessary to assess waste reduction achievements, improve service quality, and ensure program accountability. These efforts are expected to strengthen the sustainability of policy innovation and improve waste management governance throughout Barru Regency.

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