

EVALUATION OF LOCAL GOVERNMENT POLICIES IN WASTE MANAGEMENT IN NORTH MOROWALI REGENCY

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Abstract

This study aims to evaluate local government policies on waste management in North Morowali Regency based on William N. Dunn's (1994) policy evaluation theory, which includes four main indicators: effectiveness, efficiency, responsiveness, and policy accuracy. The research method used is a descriptive qualitative approach with data collection through in-depth interviews, observations, and reviews of regional policy documents. The results of the study indicate that waste management policies in North Morowali have not been fully effective in achieving the goals of waste reduction and handling, mainly due to limited facilities, minimal processing innovation, and low community participation. In terms of efficiency, budget use is still dominated by operational activities, while allocations for the development of 3R-based programs are still low. The responsiveness aspect is also weak due to the lack of community involvement in policy planning and implementation, while policy accuracy has not fully adopted the principles of a circular economy oriented towards sustainability. These findings indicate that waste management policies in North Morowali are still conventional and have not been able to optimally integrate social, economic, and environmental dimensions. Therefore, improvements to policies based on good environmental governance are needed through increased institutional capacity, multi-stakeholder collaboration, and strengthening community participation in sustainable waste management.

Keywords: *Policy Evaluation, Waste Management, Effectiveness, Environment*

Background

Waste management is an increasingly pressing global issue in the context of sustainable development. Population growth, urbanization, and modern consumption patterns have led to a continuous increase in waste volume each year. According to the World Bank (2022), global waste production is estimated to reach 2.24 billion tons per year, and this figure has the potential to increase by 70% by 2050 if there are no significant changes in the management system. Improperly managed waste poses a serious threat to public health, environmental quality, and climate change due to greenhouse gas emissions from landfills. In the context of the Sustainable Development Goals (SDGs), particularly Goal 11 on sustainable cities and human settlements, waste management is not merely a technical activity but part of an environmental governance system that requires the participation of all stakeholders (Suprpto, 2022). Globally, various countries have implemented a circular economy approach and the 3R principle (reduce, reuse, recycle) in waste management policies to reduce waste generation and increase the economic value of waste (Resolute, 2024). However, in many developing countries, including Indonesia, structural issues such as weak infrastructure, limited institutional capacity, and low public awareness remain major obstacles. This highlights the need for a comprehensive evaluation of the effectiveness of waste management policies, particularly at the local government level, as the primary implementers of environmental policies. In Indonesia, waste management is regulated by Law Number 18 of 2008 concerning Waste Management, which emphasizes the responsibility of local governments to implement a sustainable management system based on the 3R principle. This regulation is reinforced by Law Number 32 of 2009 concerning Environmental Protection and Management, which guarantees the community's right to a clean and healthy environment. However, empirical studies show that the implementation of this policy is still not optimal. According to Wang and Karasik (2022), waste management in Indonesia still faces significant challenges in translating national policies to the local level due to weak cross-agency coordination, budget constraints, and a lack of processing facilities. Similar findings were presented by Hayundwitama et al. (2024), who stated that the implementation of waste management policies in Morowali Regency faces obstacles in inter-

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organizational communication and low public awareness of the importance of waste sorting at source. A national evaluation of waste management effectiveness reveals a gap between planning and implementation. Based on an analysis of the National Waste Management Information System (SIPSN) from 2019 to 2021, the national waste management success rate remains below 60%, and most regions lack modern processing facilities such as 3R waste disposal sites (TPS 3R) or TPST (Wang & Karasik, 2022). In several regions, including Central Sulawesi, waste management still relies on environmentally unfriendly open dumping methods (Amirulkamar *et al.*, 2022). This practice not only reduces management efficiency but also has the potential to pollute soil, water, and air, as well as degrade public health.

In a regional context, North Morowali Regency is one of the areas in Central Sulawesi Province experiencing rapid economic growth along with the development of mining, industrial, and urbanization activities. This increase in economic activity has a direct impact on the increasing volume of domestic and industrial waste. Based on data from the North Morowali Regency Environmental Agency (2023), the volume of waste generated in Petasia District reaches approximately 55 m³ per day, while in Lembo District it reaches 40 m³ per day. However, the availability of management facilities and infrastructure such as temporary storage facilities (TPS), TPS 3R, and transportation vehicles remains very limited. As a result, much waste is not collected regularly and has the potential to pollute the environment around residential areas and rivers. This condition indicates an imbalance between formulated policies and their implementation in the field. The North Morowali Regency Government has actually enacted Regional Regulation Number 5 of 2016 concerning Waste Management as a legal framework for realizing clean and sustainable environmental governance. This regulation emphasizes the importance of integrated upstream-to-downstream management and the involvement of the community and the business sector. However, the implementation of this policy has not been optimal. The obligation to separate waste at source has not been implemented due to minimal publicity, 3R waste disposal sites (TPS) are only available in a small portion of the area, and the retribution mechanism does not cover operational costs (Hayundwitama *et al.*, 2024). Furthermore, coordination between the Environmental Agency, sub-district officials, and the community has not been fully effective.

Furthermore, the management approach used remains conventional, namely a "collect-transport-dispose" pattern, without innovation in waste processing or utilization as an economic resource. According to Amirulkamar *et al.* (2022), this conventional management model is not in line with national policy directions that promote a circular economy based on renewable energy and community empowerment. Therefore, a comprehensive evaluation of waste management policies in North Morowali Regency is necessary to assess the extent to which they are effective in achieving their primary objectives: reducing waste generation, increasing service efficiency, equitable access to sanitation, and increasing public participation. Based on this description, it can be identified that waste management issues in North Morowali Regency are not only technical, but also institutional and social. Inefficient collection systems, limited human resources, and weak oversight and community participation are indicators that existing policies are not being effectively implemented. Therefore, research is needed to comprehensively evaluate local government policies on waste management. With this background, the problem formulation in this study is: How effective is the local government policy in waste management in North Morowali Regency? This study aims to analyze the extent to which the waste management policy in North Morowali Regency has been implemented effectively, efficiently, equitably, and responsively to the needs of the community, using the public policy evaluation framework proposed by William N. Dunn (1994). The results of this study are expected to provide theoretical contributions to the development of public administration science, especially in the field of environmental policy evaluation, as well as practical recommendations for local governments in improving waste management systems that are sustainable and adaptive to local challenges.

Theoretical Basis

Public policy evaluation is a crucial process for assessing the extent to which a policy achieves its stated objectives. Dunn (1994) states that policy evaluation is conducted to generate relevant information regarding a policy's effectiveness, efficiency, and social impact. Evaluation serves as a means for the government to determine the successes and weaknesses of policy implementation so that improvements or adjustments can be made in the future. In the context of public administration, evaluation also serves as an accountability instrument for local government administrators, ensuring that policies are implemented transparently, efficiently, and in the public interest (Anderson, 2011). Therefore, policy evaluation theory is widely applied to assess the effectiveness of government programs in various fields, including environmental and waste management (Widianingsih & Rahman, 2022). According to Dunn (1994), there are six main indicators in evaluating public policy: effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness. Effectiveness measures the conformity of outcomes to policy

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objectives, while efficiency assesses the relationship between benefits obtained and resources used. Adequacy indicates a policy's ability to address core problems, while appropriateness assesses the equitable distribution of policy benefits across community groups (Nugroho, 2014). Responsiveness refers to a policy's ability to respond to community needs and aspirations, and appropriateness relates to its alignment with social values and sustainability principles (Widianingsih & Rahman, 2022). In the context of waste management, these six indicators can be used to assess the success of waste reduction programs, the effectiveness of collection systems, and community participation in recycling activities (Suprpto, 2022).

Modern waste management is shifting from an end-of-pipe paradigm to the concept of integrated waste management (IWM), which emphasizes waste reduction at source, the application of the 3R principle (reduce, reuse, recycle), and sustainable waste utilization (Wilson, Velis, & Rodic, 2012). The 3R principle is the main foundation of Law Number 18 of 2008 concerning Waste Management in Indonesia, but its effectiveness still depends on institutional capacity and public participation (Wang & Karasik, 2022). On the other hand, the circular economy approach positions waste as a resource that can be reused to generate economic value (Geissdoerfer et al., 2017). For regions like North Morowali Regency, implementing this model is crucial to reduce environmental impacts while opening up new economic opportunities based on recycling. Thus, Dunn's (1994) policy evaluation theory and the concept of integrated waste management provide a comprehensive analytical framework for assessing regional waste management policies. This approach allows the study to examine the effectiveness of regional government policies in North Morowali Regency in terms of performance, efficiency, equitable distribution of benefits, and their compliance with sustainability principles. By integrating public policy theory and environmental management theory, this study seeks to provide a scientific overview of the effectiveness of regional waste management policies and their inhibiting factors. The findings can then serve as a basis for improving environmental policies at the local and national levels (Amirulkamar et al., 2022; Resolute, 2024).

Research methodology

This study uses a descriptive qualitative approach aimed at gaining a deeper understanding of the implementation of local government policies on waste management in North Morowali Regency. The qualitative approach was chosen because it can explain social phenomena contextually, explore the meaning behind actors' actions, and assess policy effectiveness based on perceptions, experiences, and factual conditions in the field (Creswell, 2014). According to Miles, Huberman, and Saldaña (2018), descriptive qualitative research allows researchers to systematically describe social realities through data reduction, presentation, and conclusion drawing. Therefore, this study does not focus on hypothesis testing, but rather on analyzing the meaning and policy processes occurring in the field. The research location was determined in North Morowali Regency, Central Sulawesi Province, considering that this region is facing increasing waste volumes along with industrial development and urbanization. The researchers focused on the implementation of waste management policies implemented by the Environmental Agency (DLH) as the primary technical agency, as well as coordination with sub-district officials, sanitation workers, and the community. This location was selected purposively because North Morowali Regency has unique characteristics in waste management, namely limited infrastructure, human resource capacity, and a wide service area (Amirulkamar, Safirussalim, Mulya, & Zhukaira, 2022). A purposive sampling approach was used to determine informants deemed to have the best understanding of policy issues and their implementation (Sugiyono, 2018).

Data sources consisted of primary and secondary data. Primary data were obtained through in-depth interviews with Environmental Agency officials, field staff, and community members using cleaning services. Interviews were conducted semi-structured to provide flexibility in exploring the informants' views and experiences (Kvale & Brinkmann, 2015). Secondary data were obtained from official documents such as Regional Regulation No. 5 of 2016 concerning Waste Management, the Environmental Agency's annual report, the Regional Medium-Term Development Plan (RPJMD) documents, and regional environmental management monitoring reports. Additionally, supporting data in the form of academic publications and national policy reports were used to strengthen the interpretation and triangulate the results (Wang & Karasik, 2022). Data collection techniques were conducted through field observations, interviews, and documentation. Observations were conducted to obtain a direct picture of the condition of waste management infrastructure such as TPS (TPS) and TPA (Final Landfill), as well as transportation and sorting patterns. Interviews focused on how policy actors understand and implement local regulations, as well as supporting and inhibiting factors in their implementation. Documentation complemented the previous two techniques with written data for cross-validation (Creswell, 2014). All data obtained were then analyzed using the Miles and Huberman model, which includes three main stages: data reduction, data presentation, and conclusion drawing (Miles et al., 2018). The reduction stage was carried out by selecting relevant information based on the research focus, data

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presentation was done in the form of a thematic narrative, while conclusions were drawn through interpretation and comparison between field findings and William N. Dunn's (1994) policy evaluation theory. Data validity was maintained through source and method triangulation techniques. Triangulation was conducted by comparing interview results from various informants with policy documents and direct field observations (Patton, 2015). Furthermore, the researcher used member checking techniques to ensure the accuracy of the interview results with the informants' views, as well as peer debriefing to minimize interpretation bias. Dunn's policy evaluation approach was used as the primary analytical framework, with six assessment indicators: effectiveness, efficiency, adequacy, equity, responsiveness, and accuracy (Dunn, 1994). Each indicator will be analyzed based on the empirical data collected, so that the results of this study can provide a comprehensive picture of the extent to which the North Morowali regional government's waste management policy has been implemented according to its stated objectives. Through this methodology, the research is expected to provide a comprehensive understanding of waste management policy implementation from the perspectives of bureaucratic and community actors. The descriptive qualitative approach used allows researchers to assess policy effectiveness not only from the final outcome, but also from the process, participation, and institutional capacity. The results of this evaluation are expected to provide policy recommendations oriented towards increasing program effectiveness, strengthening inter-agency coordination, and implementing good environmental governance principles in North Morowali Regency (Widianingsih & Rahman, 2022).

Results

This study shows that the waste management policy in North Morowali Regency has a clear legal basis through Regional Regulation Number 5 of 2016, but in practice, its implementation still faces a number of significant obstacles. Based on the results of interviews with the Environmental Agency (DLH), it was found that the effectiveness of the policy is still low due to limited facilities and operational capacity. An informant from the DLH said, "Politically, we already have Regional Regulation Number 5 of 2016 concerning Waste Management. However, its implementation is still hampered by facilities, especially inadequate collection vehicles and landfills. The volume of waste in North Morowali continues to increase, but the capacity and frequency of collection are not yet balanced." (Interview with the Head of the DLH Waste Division, 2025). This statement indicates that the designed policy has not fully achieved the goal of optimal waste reduction and management. Dunn (1994) explains that effectiveness is a measure of the extent to which policy outcomes are in line with formulated objectives. In this context, local government policies have not been able to produce real changes in waste management due to limited infrastructure and uneven transportation systems across sub-districts. This finding is in line with research by Resolute (2024) which confirms that limited facilities are the main obstacle in waste management in many areas in Indonesia.

These limited effectiveness also impact the efficiency of policy implementation. Interviews with other officials at the Environmental Agency revealed that the largest portion of the budget is still spent on routine operational activities, rather than waste management innovations. The informant explained, "Our budget is limited; approximately 70% is spent on vehicle operations and staff honoraria. A very small portion is spent on processing programs or community outreach programs." (Interview with the Head of the Waste Management Section of the Environmental Agency, 2025). Environmental Agency budget data for 2024 shows that of the total Rp2.3 billion, only approximately 12% was allocated for community empowerment and outreach activities (North Morowali Regency Environmental Agency, 2024). This situation indicates low resource efficiency in waste management policies. Dunn (1994) defines efficiency as the ratio between achieved results and costs, and the lower the costs compared to optimal results, the more efficient the policy. However, in the case of North Morowali, the budget's focus on routine costs indicates that the local government has not been able to optimize available resources to create long-term impacts. This is in line with the findings of Suprpto (2022) who explained that many regions in Indonesia are still trapped in a collect and dispose system, without focusing on reducing and processing waste from the source.

In addition to effectiveness and efficiency, the results of this study also indicate that the level of policy responsiveness to community needs is still relatively low. Based on an interview with a community leader in Kolonodale Village, it was discovered that the community is rarely involved in the socialization process and does not have adequate access to waste management facilities. The informant stated, "The sanitation workers have tried their best, but the community is not involved enough. We rarely know there are socialization programs or waste management training. As a result, many residents throw waste into the river because there are no facilities near their homes." (Interview with Community Leader, 2025). This statement emphasizes the weak communication and community participation in policy implementation. From the perspective of policy evaluation theory, Dunn (1994) defines responsiveness as the extent to which a policy is able to address the aspirations and needs of the community

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directly affected. Anderson (2011) adds that community participation is an important indicator of the success of public policy, because without community support and awareness, policy implementation tends to be top-down and less effective. This was also emphasized by Widianingsih and Rahman (2022), who stated that low local community involvement is often the main cause of the lack of success of environmental policies in the regions. Furthermore, in terms of policy accuracy, interviews with DLH field officers indicate that the policies implemented are still conventional and do not yet lead to the implementation of circular economy principles. One field staff member stated, "We actually want to build 3R TPS in several sub-districts, but are constrained by funding and land. So far, we are still using the collect-transport-dispose pattern." (Interview with DLH Staff, 2025). This linear waste management model indicates that regional policies do not yet lead to innovation and sustainability. However, Geissdoerfer *et al.* (2017) emphasized that a circular economy approach can increase policy effectiveness by reusing waste into new economic resources. This finding also supports the opinion of Amirulkamar, Safirussalim, Mulya, and Zhukaira (2022), who stated that weaknesses in regional waste management generally lie in limited funding, weak inter-agency coordination, and a lack of community-based innovation. Thus, the results of this study indicate that although the waste management policy in North Morowali Regency already has a strong legal basis, its implementation still faces major challenges in terms of effectiveness, efficiency, responsiveness, and policy accuracy.

Discussion

Public policy evaluation essentially serves to assess the extent to which a policy achieves its stated objectives and benefits the community (Dunn, 1994). In the context of waste management, policy effectiveness is the primary measure for determining whether local government policies are truly capable of reducing waste generation and improving environmental quality. The waste management policy in North Morowali Regency has been formalized through Regional Regulation Number 5 of 2016, but so far its effectiveness remains limited because the results have not been commensurate with the expected objectives. This reflects that the existence of regulations alone does not guarantee the success of a policy without adequate institutional capacity and resources (Anderson, 2011). Similar findings were also conveyed by Resolute (2024), who stated that the effectiveness of regional waste management policies is highly dependent on the government's ability to provide infrastructure, monitoring systems, and sustainable public participation mechanisms. Thus, the effectiveness of waste management policies in North Morowali needs to be reviewed in terms of concrete results and achievements towards the goal of developing a clean and sustainable environment.

Besides effectiveness, efficiency is also an important dimension in evaluating public policy implementation. Efficiency assesses the extent to which a policy optimally utilizes resources to achieve maximum results (Dunn, 1994). In waste management practices in many regions in Indonesia, including North Morowali, efficiency remains a problem because the majority of the budget is still absorbed by routine activities such as collection and disposal, rather than on processing innovation or source reduction (Suprpto, 2022). This condition indicates that waste management policies are still oriented towards administrative aspects rather than sustainable solutions. According to Howlett and Ramesh (2003), efficient public policies are policies that not only use resources economically but also generate long-term impacts through adaptive and outcome-oriented systems. Therefore, increasing efficiency in waste management in North Morowali can be achieved by developing a performance-based financing system and strengthening collaboration between local governments, the private sector, and the community in supporting recycling and waste reduction activities.

Another dimension of concern is policy responsiveness to community needs. According to Dunn (1994), responsiveness refers to the extent to which a policy responds to the aspirations and needs of the target community. In the context of waste management, the level of community participation is an important indicator of policy responsiveness. However, various studies show that public participation in waste management in Indonesia remains low due to a lack of socialization and environmental awareness (Widianingsih & Rahman, 2022). This also reflects weak policy communication between local governments and communities. In line with Anderson's (2011) view, the success of public policy depends not only on regulations and resources but also on the government's ability to build reciprocal relationships with citizens. Strengthening public communication, environmental education, and community involvement in decision-making are strategic steps to increase the responsiveness of waste management policies at the local level. Policy appropriateness is also an important indicator of the extent to which a policy aligns with social values, sustainability principles, and broader development goals (Dunn, 1994). Globally, the integrated waste management and circular economy paradigms are now the primary reference points in formulating waste management policies (Wilson, Velis, & Rodic, 2012; Geissdoerfer, Savaget, Bocken, & Hultink, 2017). However, policies at the regional level, including in North Morowali, still tend to use a linear "collect-transport-dispose" approach that pays

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little attention to the economic potential of waste. According to Amirulkamar et al. (2022), an appropriate policy is one that integrates economic, social, and environmental aspects into a mutually supportive system. By adopting circular economy principles, local governments can shift the paradigm of waste management from a mere burden to a resource with economic value through recycling activities and technological innovation. Therefore, increasing the accuracy of policies in North Morowali must be directed at formulating sustainability-based strategies, cross-sector integration, and utilizing environmentally friendly technologies. Overall, the analysis shows that waste management policies in North Morowali Regency do not fully meet Dunn's (1994) evaluation criteria, including effectiveness, efficiency, responsiveness, and accuracy. The problems faced are not only technical but also structural and institutional. To achieve sustainable environmental development goals, local governments need to strengthen institutional capacity, expand community participation, and align policy direction with the paradigm of good environmental governance. This approach emphasizes the principles of transparency, accountability, collaboration, and sustainability at every stage of the policy (Geissdoerfer et al., 2017; Widianingsih & Rahman, 2022). Therefore, reforming waste management policies in North Morowali is expected to not only address technical issues related to transportation and disposal but also encourage a transformation towards adaptive and inclusive environmental governance.

Conclusion

Based on the research results and discussion, it can be concluded that the waste management policy in North Morowali Regency has not been fully implemented effectively and efficiently in accordance with the objectives set by the local government. Although it has a legal basis through Regional Regulation Number 5 of 2016, the implementation of the policy still faces various obstacles, particularly limited facilities, infrastructure, and human resource capacity in the field. The effectiveness of the policy has not been achieved because the management system still focuses on conventional waste collection and disposal patterns without being balanced by sustainable processing innovations. In terms of efficiency, budget and resource utilization are suboptimal, as the majority is allocated to routine operational activities, while program development and community education remain minimal. Policy responsiveness is also considered low, as public participation in waste management planning and implementation remains limited, creating a gap between government policies and community needs. Furthermore, policies that address modern environmental challenges remain inadequate, as they do not yet address the principles of sustainability and a circular economy that could provide social and economic benefits to the community. Therefore, a more adaptive, participatory, and sustainability-oriented waste management strategy is needed. Local governments need to strengthen institutional capacity, encourage collaboration with various stakeholders, and increase public awareness and active participation to ensure effective waste management policies and positive impacts on environmental development in North Morowali Regency.

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