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Waste Management in Wonogiri Regency: Strategy Towards Sustainable Environmental Management

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Abstract: Waste is one of the main issues in sustainable development, especially in areas with increasing population growth rates. Wonogiri Regency through Regional Regulation Number 11 of 2018 has regulated waste management as part of efforts to create a healthy environment. This study aims to examine waste management in Wonogiri Regency in realizing a strategy towards a sustainable environment. The theory used in this study is the implementation theory of George Edwards III. The method used in this study is descriptive qualitative with the research subjects being policy implementers who play a role in waste management in Wonogiri Regency. The results of the study show that although the Regional Regulation of Wonogiri Regency has provided an adequate legal framework, the challenges of implementation in the field are still quite large, especially in terms of community participation and infrastructure support.

Keyword: Waste Management, Sustainable Development Goals (SDGs), Sustainable Environment.

INTRODUCTION

Waste management has become one of the most complex environmental challenges, especially in regions experiencing high economic activity and population growth. Wonogiri Regency also faces increasing volumes of household waste, market waste, and other non-organic waste that require systematic and sustainable handling. Population growth, shifting consumption patterns, and urbanization without proper waste management systems have significantly increased the volume of waste. If not handled effectively, waste can lead to various negative impacts, including environmental pollution, public health risks, and declining ecosystem quality. Therefore, waste must be managed systematically, starting with policy formulation by the government to regulate every stage from collection to processing to ensure sustainable waste management[1].

[1] Sukmaniar et al., "Waste Bank as an Effort to Manage Waste in Urban Areas," Environmental Science Journal (Esjo): Jurnal Ilmu Lingkungan Vol. 1. No. 2, (2023), p. 9.

Regional governments are obligated to address waste problems as regulated in Article 5 of Law Number 18 of 2008 on Waste Management. As a follow-up to this law, the Wonogiri Regency Government issued Regional Regulation Number 11 of 2018 concerning Waste Management[2]. This regulation serves as the legal foundation for managing all waste-related activities, from reduction and sorting to final processing. However, its implementation often faces challenges, such as limited infrastructure, low public awareness, and weak coordination among stakeholders.

The urgency of waste management in Wonogiri is increasingly important in achieving environmental sustainability, which aligns with the Sustainable Development Goals (SDGs). The SDGs, adopted by all United Nations member states in 2015, comprise 17 global goals aimed at addressing various global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice, with targets set for 2030[3].

Sustainability broadly means the ability to maintain something indefinitely. It includes resilience, balance, and interconnectedness. The World Commission on Environment and Development defines sustainability as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs[4].

A sustainable environment refers to everything surrounding living beings that affects their lives, preserved naturally or through human intervention indefinitely. More specifically, it is a condition where balance, resilience, and interconnectivity allow humans to meet their needs without exceeding the ecosystem's capacity, while enabling it to regenerate and continue supporting future needs[5].

Reducing the amount of waste is one of the targets referenced in Goal 12 of the SDGs, which promotes sustainable consumption and production[6]. Sustainable waste management aims not only to reduce environmental burdens but also to create a circular economy that enhances community welfare.

Therefore, this study aims to analyze the urgency of waste management in Wonogiri Regency based on Regional Regulation Number 11 of 2018 and examine how the regulation contributes to achieving environmental sustainability. By understanding the supporting and inhibiting factors in the policy's implementation, this research is expected to formulate strategic recommendations for more effective and environmentally conscious waste management.

METHOD

This study uses a descriptive qualitative approach. This approach was chosen to provide a detailed and in-depth description of how waste management in Wonogiri Regency is carried out, as well as the extent to which the policy supports the creation of a sustainable environment. In data collection, researchers used purposive sampling techniques. Purposive sampling is the collection of samples through certain considerations[7]. The data sources used are primary data with direct interviews with informants and observations, while secondary data include policy documents (Wonogiri Regency Regional Regulation Number 11 of 2018

[2] Chanidia Ari Rahmayani and Aminah Aminah, "Effectiveness of Plastic Waste Control to Support Environmental Sustainability in Semarang City," Journal of Indonesian Legal Development Vol. 3., no. 01 (2021), pp. 18–33.

[3] Department of Economic and Social Affairs, "The 17 Goals Sustainable Development," United Nations, accessed March 6, 2025.

[4] Rahayu Effendi, Hana Salsabila, and Abdul Malik, "Understanding Sustainable Environment," MODULE Vol. 18, No. 2 (2018), p. 77.

[5] *Ibid*.

[6] Khofifah Kurnia Amalia Sholihah, "Study on Waste Management in Indonesia," Swara Bhumi Journal of Geography Education Vol. 03, No. 03 (2020), p. 2.

[7] Sugiyono, Quantitative, Qualitative & RND Research Methods (Bandung: Alfabeta, 2013), p. 85.

concerning waste management), reports from related agencies, and relevant academic literature.

RESULT AND DISCUSSION

Waste Management in Wonogiri Regency, as a Strategy Towards Sustainable Environmental Management

Waste management in Wonogiri Regency has become an urgent need along with population growth, urbanization, and changes in community consumption patterns. The increasing volume of waste, without being balanced by an effective management system, can cause various environmental problems such as water, soil, and air pollution, as well as threaten public health.

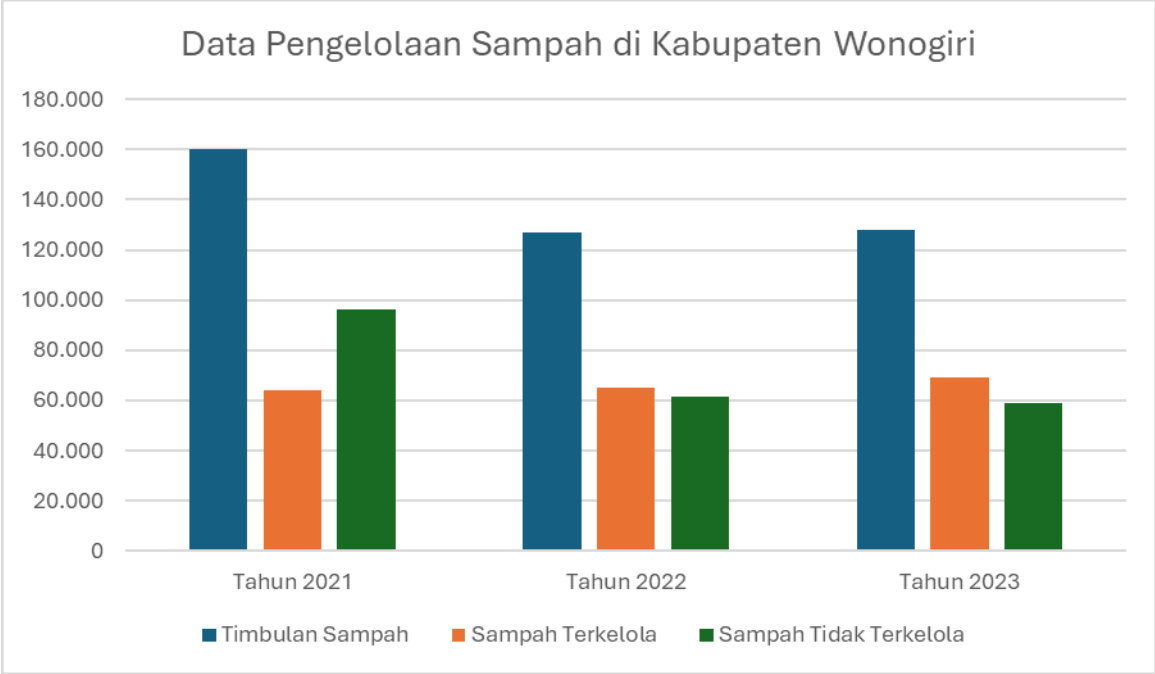

Figure 1. Waste Management Data in Wonogiri Regency for 2021–2023
Source: SIPSN KLHK

Based on Figure 1, waste generation in 2022 experienced a significant decrease, considering that in 2021 Indonesia was affected by the COVID-19 pandemic. The pandemic had a notable impact on various sectors, including waste management in Wonogiri Regency. During the pandemic, there was an increase in the volume of waste, particularly household waste and single-use plastics, due to changes in community consumption patterns. In 2023, waste generation increased again, although not significantly.

Ariyani Saloko, a Functional Officer for Environmental Impact Control at the Environmental Office (DLH) of Wonogiri Regency, stated that waste management is a collective responsibility involving individuals, families, communities, and the government. However, field practices show that the public tends to perceive waste management as the sole responsibility of the Environmental Office (DLH). On the other hand, DLH of Wonogiri Regency admits facing challenges in fulfilling this responsibility due to limited human resources and inadequate infrastructure to cover the entire Wonogiri region.

Currently, waste management in many areas is still dominated by direct disposal at the Final Disposal Site (TPA) without proper sorting or processing. This condition shortens the lifespan of TPAs significantly compared to their planned usage duration, as the incoming waste volume exceeds the available capacity. The continuous accumulation of waste at TPAs also worsens environmental pollution levels, affecting soil, water, and air quality. Moreover,

the increase in waste generation is driven by economic growth, lifestyle changes, and rising consumption patterns, which directly alter the waste composition to become more complex and non-biodegradable thus exacerbating waste management challenges at TPAs[8].

Wonogiri Regency has one active Final Disposal Site, namely the Ngadirojo District TPA. However, currently the Ngadirojo TPA is experiencing problems with limited land due to the increasing pile of garbage. Of the total area of 82 hectares, currently only 7,500 m2 is left in zone C which is still active. Zones A and B can no longer be used, and it is estimated that zone C will be full in 2025[9].

The Wonogiri Regency Government has a target of reducing and handling household waste and household-like waste, namely by reducing 30% of the waste generation rate and handling it by 70% in 2025. Based on data from the National Waste Management Information System in 2023, waste generation in Wonogiri Regency reached 127,999 tons/year. Of that amount, waste reduction was 49,798 tons/year or 38.91% and waste handling was 19,178 tons/year or 14.98%. Meanwhile, unmanaged waste was 59,022 tons/year or 46.11%[10]. From these data, it can be concluded that waste reduction has exceeded the target of 38.91%. However, waste handling is still far from the target set at 14.98%.

In the context of sustainability and environmental protection, the problem of waste is a very important issue. The existence of waste that is not managed properly has various negative impacts. Environmental pollution caused by unmanaged piles of waste can be classified as social environmental degradation. This is because the waste problem not only impacts the physical and ecological conditions of the environment, but also directly affects the lives and social welfare of the community. In communities affected by the presence of waste, the level of quality of life and environmental sustainability can be disrupted[11].

To support sustainable environmental policies, the Wonogiri Regency Government together with the community are making efforts to reduce waste problems. One of them is by establishing a waste bank. There are 72 waste banks spread across 14 sub-districts. This waste bank not only functions as a place for collecting and sorting waste, but also as a means of education and empowerment of the community in creating a clean and sustainable environment. Overall, the existence of waste banks in Wonogiri Regency has had a positive impact in reducing the volume of waste, increasing environmental awareness, and providing economic benefits to the community. With government support and active participation from residents, it is hoped that this waste bank program can continue to develop and become a model for sustainable waste management.

Implementation of Wonogiri Regency Regional Regulation Number 11 of 2018 concerning Waste Management

Following up on Law Number 18 of 2008, the Wonogiri Regency Government issued Wonogiri Regency Regional Regulation Number 11 of 2018 concerning Waste Management. The stipulation of this regulation is expected to be able to overcome the waste problems in Wonogiri Regency. Furthermore, this regulation also supports the achievement of the Sustainable Development Goals (SDGs). The Sustainable Development Goals (SDGs) are a

[8] Nadira Apricia, Matthew Jeremiah, and Andrew Trinovada, "The Urgency of Changing Law Number 18 of 2008 Concerning Waste Management," Jurnal Ilmiah Wahana Pendidikan, Vol. 9 No. 19 (2023), p. 556.

[9] Hamdani, "Various Waste Problems in Wonogiri, LDII Initiates Independent Management," Joglo Semar News. com, 2025.

[10] Directorate General of PSLB3, Ministry of Environment and Forestry, "Waste Management," pslb3.menlhk.go.id, 2024.

[11] Ajeng Putri Utami, Nafisah Nur Addini Pane, and Abdurrozzaq Hasibuan, "Analysis of the Impact of Household Waste/Garbage on Environmental Pollution," Cross-Border Vol. 06, No. 02. (2023), p. 1108.

series of 17 global goals adopted by all member states of the United Nations (UN) in 2015 as a plan to achieve a better and more sustainable future for all. These goals are designed to address a range of global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice, with a target of achievement by 2030[12].

Good and sustainable waste management is closely related to the Sustainable Development Goals (SDGs), especially Goal 12, namely "Responsible Consumption and Production." Through efficient waste management such as reducing waste generation, sorting, recycling, and reuse, it can create a clean, healthy, and livable environment. In addition, integrated waste management also supports the achievement of other SDGs goals, such as in Goal 3 (Good Health and Well-Being), Goal 6 (clean water and adequate sanitation), and goal 13 (action on climate change).

Implementation can be interpreted as the implementation of laws where various actors, organizations, procedures, and techniques work together to implement policies in an effort to achieve policy goals or programs[13]. George Edward III stated that without effective implementation, policy makers' decisions will not be successful. Therefore, according to George Edward III, there are four factors that influence policy implementation, namely: Communication Factors, Resources, Disposition, and Bureaucratic Structure[14].

1. **Communication**

   Communication refers to how policies are conveyed to the public to elicit responses from involved parties[15]. Effective communication involves three indicators: transmission, clarity, and consistency.

   Mei Dwi Kuswitanti, Head of the Legal Division of the Regional Secretariat of Wonogiri Regency, stated that Regional Regulation No. 11 of 2018 is a follow-up to Law No. 18 of 2008 on Waste Management and Government Regulation No. 81 of 2012 on Household Waste and Similar Waste Management, aligning with higher-level regulations. Although the regulation serves as the legal basis for waste management implementation in Wonogiri, she acknowledged that its practical implementation remains imperfect.

   Information must be clearly conveyed to avoid differences in interpretation. Public outreach by the Environmental Office (DLH) is expected to clarify the waste management policy. Consistent information is also crucial to prevent misunderstandings or miscommunication. Socialization efforts function as two-way communication between the government (DLH) and the community. Article 40 of Regional Regulation No. 11 of 2018 states that community development in waste management can be carried out through technical assistance, dissemination of regulations, education, and training in the field.

2. **Resources**

   Resources refer to the availability of competent human resources and the capability to implement policies effectively. Even if policy instructions are transmitted accurately and clearly, lack of necessary resources renders implementation ineffective[16].

   Ariyani Saloko, a Functional Officer for Environmental Impact Control at DLH Wonogiri, noted that the office faces a shortage of field personnel, making it difficult to handle waste issues throughout the regency. Human resources must be adequate in number and skill to

[12] Department of Economic and Social Affairs, "The 17 Goals Sustainable Development," United Nations, accessed March 6, 2025, https://sdgs.un.org/goals.

[13] Budi Winarno, Public Policy: Theory and Process, 1st Edition (Jakarta: MedPress, 2007), p. 144.

[14] Riant Nugroho, *Kebijakan Publik Di Negara-Negara Berkembang*, (Yogyakarta: Pustaka Pelajar, 2014), hal. 214.

[15] Ibid, page. 226.

[16] Hessel Nogi S. Tangkilisan, Public Policy Implementation (George Edward's Thought Transformation), 1st ed. (Yogyakarta: Lukman Offset & Indonesian Public Administration Reform Foundation, 2003), p. 55.

carry out tasks such as delivering information, exercising authority, and providing public services.

Waste management funding in Wonogiri comes from regional, provincial, and national budgets, as well as other lawful sources, as outlined in Article 26 of Regional Regulation No. 11 of 2018. Although specific figures were not mentioned, interviews suggest that current funding remains insufficient to support optimal waste management. This is reflected in limited infrastructure and operational capacity.

3. Disposition

Disposition refers to the willingness and commitment of policy implementers to seriously execute the policy so that its objectives are achieved. Successful policy implementation depends not only on knowing what to do and how to do it, but also on the implementers' determination[17].

DLH Wonogiri continues to strengthen waste management through programs such as community education, waste bank development, and waste processing technology. However, optimal outcomes require stronger synergy among local government, the private sector, and the public in terms of funding, infrastructure, and ongoing environmental awareness.

The Wonogiri government, through DLH, shows strong commitment, as evidenced by Regional Regulation No. 11 of 2018 and the technical framework in Regent Regulation No. 89 of 2018 on Local Policy and Strategy for Household Waste Management. This includes budget allocation for sanitation infrastructure like Temporary Disposal Sites (TPS), Final Processing Sites (TPA), and waste transport vehicles. DLH also actively conducts training and promotes 3R-based (Reduce, Reuse, Recycle) waste management in communities, schools, and businesses.

Nonetheless, challenges persist, such as low public participation in rural areas, limited DLH staff and budget, and lack of eco-friendly waste processing technology. A collaborative strategy involving the private sector and educational institutions is necessary to create innovative and practical solutions.

4. Bureaucratic Structure

Bureaucratic structure involves organizational setup, authority distribution, relationships between internal units, and external organizational interactions. Two key features are Standard Operating Procedures (SOPs) and fragmentation. SOPs aim to standardize actions by implementers, while fragmentation refers to dividing policy responsibilities among organizational units[18].

Every stakeholder plays a role in waste management—from the central government that sets national policies, to local governments responsible for regional implementation, and the public, which practices waste sorting, reduction, and responsible disposal based on shared responsibility.

The Environmental Office (DLH) of Wonogiri is the regional agency responsible for environmental management, including waste management. The following is the organizational structure of DLH Wonogiri:

[17] *Ibid*, page. 90.
[18] *Ibid*, page. 127.

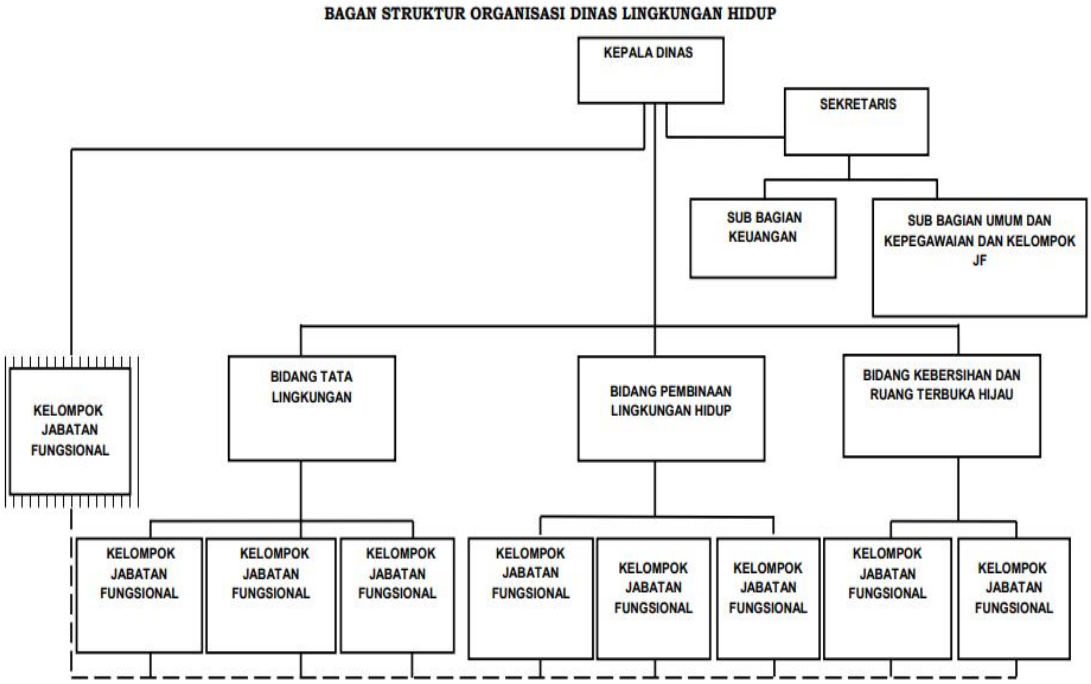

Figure 2. Environmental Organizational Structure of Wonogiri Regency
Source: DLH Wonogiri Regency

The environmental planning sector is tasked with assisting the Head of the Service in implementing the Inventory of environmental protection and management plans, strategic environmental studies, environmental impact studies, and environmental maintenance. The functions carried out by this sector include the preparation and development of technical, planning, coaching, development, empowerment, monitoring, control, and evaluation of activities related to environmental management.

The environmental development sector is tasked with carrying out coaching, supervision, and increasing the capacity of the community and business actors in environmental management. The functions carried out by this sector include:

a. Coaching and supervision of environmental compliance of companies or agencies;
b. Development of environmental education and campaign programs;
c. Increasing community participation through training and counseling;
d. Facilities for the formation of environmentally conscious communities such as waste banks and eco communities;
e. Preparation of partnership programs in environmental conservation.

The cleanliness and green open space sector is tasked with implementing city cleanliness management and the development and maintenance of green open spaces to support environmental quality. The functions carried out by this sector include:

a. Arrangement, maintenance, and management of city parks, green belts, and public green spaces;
b. Implementation of operational cleaning and waste transportation;
c. Coordination of the development of thematic parks and city greening;
d. Management of temporary disposal sites (TPS) and final processing sites (TPA)
e. Control of environmental aesthetics through management of public facilities and city parks.

CONCLUSION

Based on the research findings, it can be concluded that waste management in Wonogiri Regency is of high urgency in the effort to create a clean, healthy, and sustainable environment. Poorly managed waste can lead to various environmental problems, including soil, water, and air pollution. Therefore, an integrated and sustainable waste management approach is essential. Efforts to achieve environmental sustainability in Wonogiri Regency must include public education, strengthening waste collection and sorting systems, and the development of environmentally friendly technologies.

Regional Regulation of Wonogiri Regency Number 11 of 2018 on Waste Management has served as an important legal foundation for waste management efforts in the region. However, the effectiveness of its implementation still faces several challenges, such as low public participation in certain areas, particularly in rural regions; limited human resources and budget for waste management; and inadequate infrastructure. Therefore, stronger synergy between the local government, the community, and the private sector is urgently needed to implement this regulation effectively. Periodic evaluation of the regulation and its implementation is also essential to ensure that the applied policies align with the evolving needs and challenges on the ground.

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