

STRENGTHENING INSTITUTIONAL SYNERGY IN WASTE MANAGEMENT: CHALLENGES AND STRATEGIC SOLUTIONS

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Abstract

This study is entitled "Strengthening Institutional Synergy in Waste Management: Challenges and Strategic Solutions". Waste management in Indonesia is experiencing major challenges, such as increasing waste volume, low public awareness, limited infrastructure, and limited regional funding, as well as coordination and synergy between the institutions involved. This study was conducted to determine the role of central and regional institutions in waste management governance in Indonesia and to determine the challenges and strategies that can be applied to improve institutional synergy in sustainable waste management. This study uses a systematic literature review method, namely by the process of placing, obtaining, reading, and evaluating various research literature related to or related to the problem to be studied. The results of this study indicate that problems in managing waste can be overcome through synergy between central and regional institutions. One of the central institutions in this problem is the Ministry of Environment. In carrying out its role, of course, the Ministry of Environment requires the role and assistance of the regional apparatus as an institution that has the authority to regulate regional affairs.

Keywords: institutional synergy; waste management; strategic solutions.

1. INTRODUCTION

Waste management in Indonesia is facing significant challenges, such as increasing waste volume, low public awareness, limited infrastructure, and limited regional funding.¹ The quality of management planning is a primary factor that needs to be improved to achieve waste management objectives in accordance with the mandate of the law, such as improving the quality of life and public health, as well as making waste a resource. With careful and sound planning, a comprehensive analysis process will be created, enabling a more effective waste management system.²

According to Novrizal Tahir (2024), the waste sector is currently one of the five main sectors targeted by the government to reduce greenhouse gas emissions, in addition

¹ Wicaksono, Rahman, dan Asrijati, "Dynamic Capability Approach in Efforts to Protect the Environment From Waste in Indonesia", *Jurnal Konstituen* 6, no.2, 147.

² Ringkasan Rekomendasi Reformasi Pengelolaan Sampah di Indonesia, <https://www.lcdi-indonesia.id/wp-content/uploads/2024/01/Ringkasan-Rekomendasi-Reformasi-Pengelolaan-Sampah-di-Indonesia.pdf>.

to the energy, forestry, agriculture, and industrial sectors.³ Based on data from the Makassar City Environmental Service, the amount of waste produced increases from year to year, with waste production reaching 868 tons per day, which then increased to 905 tons per day. In 2024, waste production is predicted to increase rapidly to around 4.1 million tons or more (Head of DLH Makassar, Ferdi, 2024).⁴

As the fourth most populous country in the world, Indonesia certainly experiences a significant increase in waste production. Based on data from the National Waste Management Information System (SIPSN), Indonesia produces more than 33 million tons of waste. Meanwhile, in 2023, the amount of waste produced was more than 19 million tons. Looking at these data, there is certainly a significant increase.⁵ The waste control process so far cannot be said to be adequate because there are still problems related to waste, especially in large cities.⁶

Based on Law Number 18 of 2008 and Government Regulation No. 81 of 2012, waste management in Indonesia is carried out in two ways, namely waste reduction and waste handling. Waste reduction can be done from the source of the waste to the final management.⁷ Waste management is carried out with two focuses, namely waste management at Temporary Waste Disposal Sites and Final Waste Disposal Sites designated by the local government. However, this is still not considered effective in handling waste.⁸

In the effort to manage approximately 4.1 million tons of waste in Makassar City originating from community consumption, the Makassar City Government is expected to be able to build synergy among related institutions in waste management in Makassar City. Based on field conditions, the government needs to build consolidation, coordination, and synchronization in community waste management.⁹ Waste management can run effectively when there is cooperation between the government and the community. In addition, local governments together with the community and business actors need to change the paradigm of waste management through waste reduction and

³ (FKP Hosted by Article 33) “Reformasi Kelembagaan di Sumber : Jalan Menuju Pelayanan Sampah 100%”, <https://www.fkpindonesia.org/summary-report/kelembagaan-kelola-sampah>.

⁴ Aswandi, “Sampah di Makassar Tiap Tahun Meningkat, Apa yang Keliru?”, <https://www.bollo.id/ceritaan/wargabercerita/sampah-di-makassar-tiap-tahun-meningkat-apa-yang-keliru/>.

⁵ Nagong, A. (2021). Studi Tentang Pengelolaan Sampah Oleh Dinas Lingkungan Hidup Kota Samarinda Berdasarkan Peraturan Daerah Kota Samarinda Nomor 02 Tahun 2011 Tentang Pengelolaan Sampah. *Jurnal Administrative Reform*, 8 (2), 105.

⁶ Reza Ardiansyah (et.al.), “Analisis Dampak Kebijakan Pembangunan Pembangkit Listrik Tenaga Sampah (PLTSA) Tempat Pembuangan Akhir (TPA) Putri Cempo Kota Surakarta”, 2025, 2.

⁷ Elamin, M. Z (et.al.), (2018). Analysis of Waste Management in The Village of Disanah, District of Sreseh Sampang, Madura. *Jurnal Kesehatan Lingkungan*, 10(4), 368.

⁸ Adrianus Nagong, “Studi Tentang Pengelolaan Sampah oleh Dinas Lingkungan Hidup Kota Samarinda Berdasarkan Peraturan Daerah Kota Samarinda Nomor 02 Tahun 2011 Tentang Pengelolaan Sampah”, *Jurnal Administrative Reform* 8, no. 2, 106.

⁹ Nadia Ulfa (2022), “Sinergitas Antar Lembaga Dalam Pengelolaan Sampah di Kecamatan Syiah Kuala Kota Banda Aceh”, (1).

handling activities.¹⁰ Essentially, besides regional institutions, central institutions are also needed in waste management.¹¹ In addressing these problems, of course, there are challenges and strategies that can be answered when institutional synergy runs well.

The urgency of this research lies in the need to develop a harmonious and adaptive legal framework to support waste management in Indonesia, especially in Makassar City, as well as institutional synergy in the governance of waste management.

2. METHODS

This research employs a systematic literature review method using a normative juridical approach, which views law as written norms that are systematically applicable through legislation. This approach is utilized to examine legal regulations related to waste management, the challenges and strategies that can be applied.

The type of data used in this study is secondary data, which consists of primary and secondary legal materials. Primary legal materials include relevant legislation such as Law Number 32 of 2009 concerning Environmental Protection and Management, Law Number 18 of 2008 concerning Waste Management, and other related implementing regulations. Secondary legal materials include legal literature, scientific journal articles, and textbooks.

Data collection techniques were carried out through library research, by searching academic databases, legal documents, and relevant scholarly publications. Subsequently, the data were analyzed using a qualitative-descriptive approach to interpret legal norms, identify gaps between law and its implementation, and draw conclusions based on legal reasoning and substantive justice.

Through this method, the study aims to uncover legal issues in waste management and institutional synergy, and to provide strategic recommendations for policy improvement and more responsive law enforcement.

3. ANALYSIS OR RESULTS

Waste management in Indonesia is regulated Law Number 18 of 2008 concerning Waste Management. According to Ady Saiman (2022), laws, regulations, and regional regulations are legal products that are relatively abundant. This means that we are not lacking in regulations; rather, what is needed is the implementation of existing rules and ensuring how law enforcement can be effectively carried out. Therefore, it is crucial for the government to assess how these regulations, particularly those concerning waste management, are being implemented.¹²

¹⁰ *Ibid.*

¹¹ Yudianto, T., Setyono, P., & Handayani, I. G. A. K. R. (2021). Implementasi Kebijakan dan Strategi dalam Pengelolaan Sampah di Kabupaten Blora, *Jurnal Kesehatan Lingkungan*, 20(1), 21-26.

¹² Ferinda Fachri (2022), Meski Kaya Regulasi, Penegakan Hukum Pengelolaan Sampah Dinilai Masih Minim, <https://www.hukumonline.com/berita/a/meski-kaya-regulasi--penegakan-hukum-pengelolaan-sampah-dinilai-masih-minim-lt624436ad6eb8f>.

The coordination mechanism among institutions in Indonesia's waste management system adopts the principle of collaborative governance, a collaborative approach involving various actors, ranging from the central government and regional governments to communities and business actors. This approach emphasizes harmonious and complementary cooperation, and managing power imbalances and potential conflicts among actors so that the goals of waste management can be achieved effectively and appropriately.

The problems in managing waste can be addressed through synergy between central and regional institutions. One of the key central institutions in this issue is the Ministry of Environment. In fulfilling its role, the Ministry of Environment certainly requires the support and assistance of regional agencies, as institutions with the authority to manage local affairs. This is reinforced by the existence of 38 provinces in Indonesia, each of which naturally requires the role of regional institutions.

Waste related problems in Indonesia are regulated under Law Number 32 of 2009 concerning Environmental Protection and Management, Law Number 18 of 2008 concerning Waste Management, and other related implementing regulations. These legal provisions explicitly define the roles and responsibilities of both the central and regional governments, thus providing a strong foundation for enhancing inter-institutional synergy in order to effectively resolve waste management issues.

Makassar City is one of the cities located in South Sulawesi Province. In 2024, the volume of waste production increased significantly, reaching more than 4.1 million tons. Furthermore, each person in Makassar generates an average of 0.6 kg of waste per day. Waste management in Makassar is considered relatively adequate; however, there is still a need for socialization and education regarding waste management particularly management based on the 3R principle (Reduce, Reuse, Recycle) in areas where public knowledge remains limited.¹³The Makassar City Government has already planned broader and more equitable outreach and educational initiatives across different locations. In addition, there has been an upgrade in waste management infrastructure and technology. Notably, waste processing at the Tamangapa Landfill has shifted from a supervised system to a controlled landfill system.

The table below shows that the largest source of waste in Makassar City in 2024 came from office waste, accounting for approximately 33.34%.

Table 1 Waste Source Data in Makassar City, 2024

| No. | Source | 2024 |
|-----|-------------------|--------|
| 1. | Office | 33.34% |
| 2. | Others | 33.33% |
| 3. | Commercial | 33.33% |
| 4. | Public Facilities | 0% |

Source: National Waste Management Information System

¹³ Istiqomah, N., Mafruhah, I., Gravitiani, E., & Supriyadi, S. (2019). Konsep Reduce, Reuse, Recycle, dan Replace dalam Pengelolaan Sampah Rumah Tangga di Desa Polanharjo Kabupaten Klaten. *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, Dan Seni Bagi Masyarakat)*, 8(2), 30-38.

3.1.1 The Role of Central and Regional Institutions in Waste Management Governance in Indonesia

In Indonesia's governmental system, public policies are implemented by government agencies through the production of regulations¹⁴ and policies. According to Monahan and Hengst, as cited by Syafaruddin, policy refers to the methods by which all parts of government direct and manage their activities. The government, as a key actor, plays a significant role in formulating plans in the form of policies that can offer solutions to resolve issues arising from certain actions.¹⁵

Moreover, by the year 2035, over 60 percent of Indonesia's population is projected to reside in urban areas. Urbanization and migration are two primary reasons for the high population growth rate in Indonesia.¹⁶ With the increasing population growth and densely populated settlements, there will naturally be a rise in human activity, resulting in increased waste generation in major cities such as Jakarta, Medan, Bandung, Makassar, and others. Research has found and estimated that around 0.52 kg/person/day of waste is produced by the population in Indonesia. High daily waste production occurs both in Java and outside Java, with Makassar being one of the major waste-producing cities in the country.¹⁷

Article 2 of Law Number 32 of 2009 on Environmental Protection and Management stipulates the principles of state responsibility, participatory principles, good governance, and regional autonomy. The government's role in waste management can be exercised at all levels, meaning that environmental governance especially waste management should not be the sole responsibility of the central government or its agencies. Instead, the role of regional institutions is equally essential.

According to SNI 19-2452-2002 on Technical Guidelines for Urban Waste Management, waste management by the government particularly in the waste handling process includes collection, transfer, processing, and transportation. The government or responsible agencies are tasked with providing services and facilities to ensure waste is transported to the final disposal site and/or processed as part of efforts to reduce and utilize waste.¹⁸

Furthermore, Article 20, Paragraph (2) of Law Number 18 of 2008 concerning Waste Management stipulates the obligations of both the central and regional governments in waste management, including: setting gradual waste reduction targets within a specified timeframe; facilitating the application of environmentally friendly technologies; promoting the use of eco-friendly product labeling; supporting reuse and

¹⁴ Ilham Zitri (et.al.), "Inovasi Kebijakan Pengelolaan Sampah Sistem Zero Waste di Nusa Tenggara Barat Model Pentahelix", *Nahkoda : Jurnal Ilmu Pemerintahan* 2, no. 1, 2022, 108.

¹⁵ Dian Andikayani (et.al). (2024). Inovasi Pengelolaan Sampah Untuk Mewujudkan Lingkungan Bersih dan Sehat. *Dediktik: Jurnal Ilmiah PGSD FKIP Universitas Mandir*, 10(4), 1-23.

¹⁶ Dipo Gita Ambina, "Tinjauan Pemilahan Sampah Menurut Undang-Undang Pengelolaan Sampah", *Bina Hukum Lingkungan* 3, no. 2, 2019, 172.

¹⁷ *Ibid.*

¹⁸ *Ibid.*, 175.

recycling activities; and facilitating the marketing of recycled products.¹⁹ This shows that the roles of both central and regional institutions are explicitly regulated in the waste management law. Therefore, what is needed is the implementation of these legal provisions by both central and regional institutions. In addition, under this law, both levels of government are legally obligated to play their roles and provide necessary facilities to support waste reduction efforts in Indonesia.²⁰

Furthermore, Article 7 of the Waste Management Law, in points (c), (d), and (e), states that in the implementation of waste management, the government has the authority to facilitate and develop interregional cooperation, partnerships, and networks in waste management; to organize coordination, guidance, and supervision of regional government performance in waste management; and to establish policies for resolving interregional disputes in waste management. This means that the central government does not act alone in addressing waste-related issues in Indonesia.²¹ Rather, the role of regional governments or institutions is recognized as partners working together with central institutions to resolve issues within their respective regions.²²

The Ministry of Environment plays a role in providing guidance and technical support to regional governments, which have direct authority in implementing waste management in their respective areas. Regional governments (governors, mayors, regents) are responsible for providing waste management facilities such as trash bins, waste banks, garbage trucks, and final processing sites. The synergy between the Ministry of Environment and regional governments is very important to ensure that national policies can be effectively implemented at the local level.²³

3.1.2 Challenges and Strategies to Enhance Institutional Synergy in Sustainable Waste Management

The central government or institutions, especially regional institutions, have the obligation to provide adequate facilities for waste management such as trash bins, waste banks, garbage trucks, and final waste processing sites.²⁴ The central government or institutions, as entities under the President, of course cannot govern by monitoring or supervising the conditions of the 38 provinces in Indonesia. To facilitate the central government, regional apparatuses are needed, namely regional governments or institutions consisting of governors, mayors, and regents. Specifically, in this matter, both the Environmental Protection and Management Law and the Waste Management Law

¹⁹ Undang-Undang Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah”, Pasal 20 ayat 2.

²⁰ Sulthoni, Muhammad A.D.N, Badruzaufari, Yusran, Fadli and Pujawati, E.D. (2014). Strategi Pengelolaan Sampah Berkelanjutan. *EnviroScienteeae*, 10, 80-87.

²¹ Qodriyatun, S. N. (2015). Bentuk Lembaga Yang Ideal Dalam Pengelolaan Sampah di Daerah (Studi di Kota Malang Dan Kabupaten Gianyar). *Aspirasi : Jurnal Masalah-Masalah Sosial*, 6(1), 13-26.

²² *Ibid*, Pasal 7.

²³ Napitupulu, M. H., & Muhyidin, A. (2021). Tantangan Partisipasi Pemangku Kepentingan dalam Tata Kelola Sampah Kota Berkelanjutan. *Jurnal Pembangunan Wilayah dan Kota*, 17 (4), 385-397.

²⁴ Ilham Zitri, *Loc. Cit.*

have mandated that the central and regional governments have obligations to carry out their duties.

In this case, collaborative governance is needed, which refers to the initial conditions that influence collaboration, such as power imbalances or a history of conflict between actors.²⁵ In the book *Collaborative Governance: New Era of Public Policy in Australia* by Janine O'Flynn and John Wanna, it is explained that collaboration can be carried out to solve complex problems within government organizations and to achieve effective and targeted goals.²⁶

The central institution issues directives to regional institutions, especially those in Makassar City that handle waste problems, to improve community engagement. This can be done through enhancing education, training, and provision of knowledge about proper waste management, so that more competent and qualified community members are involved in this field. To realize education and other enhancement activities on waste management in a region, particularly in Makassar City, the central institution supports the regional institutions by assisting in preparing facilities and other needs during the activities.

In carrying out activities, especially waste management activities, evaluation is necessary. Periodic evaluation of stakeholders must be conducted, and good relationships among stakeholders should be established. Every activity conducted by regional institutions requires evaluation, whether by regional institutions themselves, involving local communities, or evaluations between regional and central institutions.²⁷ The evaluation results typically include data depicting the condition of waste management in the respective area. This data can then be used by the central institution to compare with data from other regions, which will lead to solutions related to issues found during evaluation. Besides cooperation between central and regional institutions, the community is also an important part of addressing these problems.

There are several roles carried out by the government, especially regional governments, namely as regulators. This means the government organizes balanced development, such as issuing regulations in the form of regional regulations to create orderly administrative governance. Additionally, regional governments also act as dynamizers, meaning the government plays a role in mobilizing community participation to achieve regional development.²⁸ The government can hold socialization and outreach to the public regarding waste management.²⁹

²⁵ Nabilah Ramahadi Putri, "Kolaborasi Multi-Stakeholder dalam Pengelolaan Sampah di Kota Pare-Pare Provinsi Sulawesi Selatan, 2025, 7.

²⁶ Muhammad Noor (et.al.), "Collaborative Governance : Suatu Tinjauan Teoritis dan Praktik, *Bildung*, 2022, 20.

²⁷ Nabilah, *Op. Cit.* 7.

²⁸ Fitriani, "Peran Pemerintah Daerah dalam Pengelolaan Sampah Perkotaan di Kabupaten Maros, 2023.

²⁹ *Ibid*, 51.

The final role of regional governments is as facilitators. The government's role as a facilitator is to act as a bridge for community interests by providing necessary facilities such as infrastructure, both physical and direct subsidies.³⁰

In 2024, the Mayor of Makassar, Moh. Ramdhan Pomanto, has a strategic program for comprehensive waste system management as an effort to realize a more environmentally friendly Makassar. The program proposed by the Mayor is run under the auspices of the Makassar City Environmental Agency (DLH). This program not only focuses on management but also covers waste handling from upstream to downstream. Increasing public awareness about the importance of waste management is the initial step that needs to be built. DLH frequently conducts socialization and education regarding how to separate organic and inorganic waste, as well as the importance of recycling.

Moreover, DLH also strengthens waste management infrastructure. One example is the Waste Bank. There are 1,076 active Waste Bank units operating at the community and government institution levels. In addition, out of the 1,076 Waste Banks, 3 have implemented the 3Rs (Reduce, Reuse, Recycle) with the goal of reducing waste entering the final disposal site. Handling at the Tamangapa Final Disposal Site is one of the main focuses of DLH Makassar, as shown by the change from a companion system to a controlling system, which is a prerequisite for the Adipura award. However, the volume of waste accommodated at the Tamangapa Final Waste Disposal Site has exceeded capacity, so the Makassar City Government plans to establish an Electricity-Based Waste Management Center (Head of DLH Makassar, Ferdi, 2024).³¹

4. CLOSING

4.1 Conclusion

Waste management in Indonesia, as regulated by Law Number 18 of 2008 and its implementing regulations, emphasizes the central role of both central and regional government institutions. However, the main challenge lies not only in fulfilling the roles of each institution individually but also in how the synergy and coordination among these institutions can be strengthened to create an effective, efficient, and sustainable waste management system.

Strengthening institutional synergy is key to overcoming various challenges such as disparities in capacity among regions, limited facilities, and the lack of public awareness and participation. Through a collaborative governance approach, this synergy can eliminate potential conflicts, align visions, and harmonize policies and implementation across institutions at both central and regional levels.

In the context of waste management in Makassar, a good synergy between the Ministry of Environment, regional governments, non-governmental organizations, and local communities has shown progress, especially in developing waste management

³⁰ *Ibid*, 54.

³¹ Humas Kominfo Makassar, “Wujudkan Makassar Ramah Lingkungan, DLH Makassar Perkuat Program Strategis Penataan Sistem Persampahan”, 2024.

infrastructure and community education. Nevertheless, capacity challenges and resource limitations remain obstacles that need to be addressed through institutional strengthening strategies, such as enhancing routine coordination, clarifying task distribution, and providing adequate technical and financial support. Therefore, strengthening institutional synergy must become a strategic priority in national and regional waste management policies, focusing on cross-sector collaboration, leveraging technological innovations, and fostering active community participation. In this way, sustainable and environmentally friendly waste management can be optimally achieved.

4.2 Suggestion

Considering the conclusion above and analyzing the discussion in the previous chapter, the author deems it necessary to provide the following suggestions:

1. There needs to be an increase in socialization and education efforts directed at the community, waste banks, and community groups concerned with waste, as many are still unaware of the importance of environmental preservation, particularly in waste management.
2. Central and regional institutions need to provide all the necessary facilities for effective waste management.
3. In order to enhance synergy and capacity between central and regional institutions, it is necessary to expand partnerships beyond central government agencies. This could include collaborations with domestic non-governmental organizations as well as international partners.
4. There is a need to develop a community-based waste management information system.

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