



Local Government Strategies for Waste Management in Kebumen Regency, Indonesia

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Article History

Received: 20.11.2023

Accepted: 04.12.2023

Published: 15.12.2023

Abstract: The waste problem is not only the responsibility of the central government, but local governments play an important role in how efforts must be made to manage waste at the regional level. The purpose of this study is to see how the efforts made by the Kebumen district government, Indonesia in solving the waste problem in the region. this research method is carried out with a descriptive qualitative approach with data collection techniques using observation and in-depth interviews with agencies in Kebumen Regency that are responsible for waste management. The Environment and Forestry Service of Kebumen Regency is responsible for the existing waste problem. The findings of this research are several efforts that have been made starting from making regional regulations related to waste management in the Kebumen district and also collaborating with existing stakeholders, including the private sector, the community, and academics. In addition, it also builds public awareness regarding how waste becomes a serious problem if it is not managed properly. The obstacles faced are divided into two, namely internal obstacles and external obstacles. Internal constraints include 1) Lack of budget; 2) Lack of coordination between local government agencies; and 3) Lack of public awareness. As for external constraints, including; 1) Urbanization; and 2) industrial and service activities in urban areas.

Keywords: *Local Government, Public Policy, Waste Management.*

1. Introduction

The increase in population in an area and the consumptive lifestyle of the community have led to an increase in the volume and type of waste. (Berlia & Puspaningtyas, 2023). In addition, the waste management system in some areas has not met the government's requirements for environmentally sound waste management. This will hurt the health of the environment and the surrounding community. The waste problem is something that needs to be considered at this time both at the central and regional levels.

Waste has become a national problem so its management needs to be carried out in an integrated and comprehensive manner from collection to waste processing (Theresia, 2021). Good cooperation between the Government and the Community is needed in waste management so that it runs smoothly and effectively as expected. Waste that is not managed properly will lead to more waste, which makes it difficult to manage, especially for city cleaners. As a result, a lot of waste is left untreated and dumped in many places (Dahriyandi et al., 2021).

The waste problem in Indonesia until now seems to have no appropriate solution that has a long-term impact. Globally, about 2,01 billion tons of municipal waste in the world are produced annually, which is expected to almost double by 2050, increasing the problem in the future (Verma et al., 2019). One of the causes of waste accumulation is caused by population growth, economic development, and changes in consumption patterns (Chen & Lo, 2016).

Based on data from the Indonesia National Plastic Action Partnership released in April 2020, as much as 67.2 million tons of Indonesian waste are still accumulated every year, and 9 percent or around 620 thousand tons enter rivers, lakes, and the sea. In Indonesia, it is estimated that 85,000 tons of waste are generated per day, with an estimated increase of 150,000 tons by 2025. This amount is dominated by waste from households, which ranges from 60% to 75% (Pranita & Putri, 2021).

The impact of waste problems on the environment is very clear and real. Starting from marine pollution, river pollution, inhibiting groundwater processes, soil pollution, and making water and soil unhealthy for humans and other living things (Chotimah et al., 2021). People who live in this garbage-filled environment will also be directly affected such as a dirty environment, and garbage pollution, which can trigger health problems, one of which is the most dominating is respiratory problems (Fadliah et al., 2021). Therefore, the Indonesian government has set a strategic target to reduce the amount of waste entering the ocean by 70% by 2025.

The seriousness of the Indonesian Government in handling waste has been realized in Law Number 18 of 2008 concerning Waste Management. The purpose of the regulation is to improve the health and quality of the environment and make waste a resource that can be utilized by the community (Pundenswari et al., 2023). Waste management is an activity intended to reduce the amount of waste, in addition to utilizing the value still contained in the waste itself (recycled materials, other products, and energy).

The issue of waste is a big problem and is the responsibility of all parties to overcome it, including the Government, Regional Governments, communities, and business actors (Wahyudin et al., 2023). Limited access to waste management services is a major problem in waste management. Five things lead to this situation: a) There are no regulations that support adequate waste management; b) Waste handling is not optimal; c) There is no credible and professional waste service management; d) The waste management planning system is not optimal; and e) There is a limited amount of money to support all aspects of waste management (Fadliah et al., 2021). The amount of waste and types of waste are growing along with the development of people's lives and the development of technology (Berlia & Puspaningtyas, 2023). Therefore, the handling and management of waste must also develop along with the development of science and technology that is environmentally sound.

Since the implementation of regional autonomy in Indonesia, local governments have had a significant role in regional policies (Trisakti et al., 2020). Regional autonomy as a realization of the decentralization system is not only a distribution of authority or transfer of government affairs but also means the division of power to regulate the administration of the State government in central-regional relations (Siratni, 2019). The existence of regional autonomy in Indonesia is a process towards the realization of a democratic society, by the mandate of the Constitution (Ibrahim, 2022). The existence of regional autonomy implemented in Indonesia is a tolerance of the central government to local governments to manage their territory, including in waste management.

The problem of waste management is also experienced by the government of Kebumen Regency, Central Java Province, Indonesia. Although they are aware that the impact of waste can be very dangerous, waste management still has many obstacles. In addition to the Human Resources factor, lack of public awareness, uneconomical perceptions, limited facilities and infrastructure, and weak law enforcement factors are also one of them (Verma et al., 2019). Some of the problems are dirty and shabby public facilities, and low public awareness of waste in the neighborhood. This condition is also felt by people who care, especially young people who care about the environment (Liu et al., 2023). This shows that the community has enough awareness regarding the environmental problems that occur. In Kebumen Regency, there needs to be a legal umbrella that regulates how waste is managed in the region. Based on the background that has been explained, it can be concluded that research on local government policies in waste management at the district level has the potential to produce useful research. This research can provide information about; 1) the Implementation of waste reduction and handling policies at the district level; and 2) Factors that influence the success of policy implementation. 3) Challenges and obstacles in policy implementation.

This study has a research gap that needs to be studied in more depth, especially regarding the implementation of waste reduction and handling policies at the district level and also the challenges faced in implementing these policies. The purpose of this research is to see how the authority possessed by the regions related to waste management can be maximized properly in the form of regulations and handling and prevention of waste in the regions, so as not to get a negative impact on these problems.

1.1. Research Question

- i. What are the policy rules related to waste management in Kebumen, Indonesia?
- ii. What are the strategies used by Kebumen Regency in reducing and solving waste problems in the region?
- iii. What are the obstacles to the waste management policy in Kebumen, Indonesia?

2. Research Method

2.1. Research Design

This research uses a qualitative approach, which emphasizes on understanding social problems through the views of informants. This research method explores and understands the intentions of a number of individuals or a group of people derived from social problems. (Creswell, 2009). Qualitative research is often used in research on community life, behavior, history and policies in an area. This research will create some temporary questions and procedures, collect data at the participant's place, analyze the data inductively, and then interpret the meaning (Moleong, 2006).

2.2. Research Subject

The Kebumen district government is the subject of this research. As the person in charge of implementing a policy related to waste management. Informants in this study were selected using purposive sampling technique consisting of the head of the waste management section of the Kebumen Regency Environmental Agency. This is because the Environmental Agency is responsible for reducing and managing waste in Kebumen Regency. Actors in this policy will be the main informants in this research.

2.3. Method of Data Collection

Qualitative research is research that aims to understand social phenomena in depth by studying them holistically and contextually. The data collection techniques used in this research are observation and interviews. Interview is a data collection technique carried out by means of questions and answers between researchers and informants or research subjects. (Sugiyono, 2013). In-depth interviews were conducted to obtain valid data and also the interviewees were actors involved in the waste management policy in Kebumen Regency. In addition to conducting in-depth interviews, researchers also conducted direct observations to see how waste problems occur in Kebumen district.

The data analysis method carried out in this study includes the following steps: data collection, data compaction, data presentation, conclusion drawing, and determination of data validity through the use of two different types of triangulation: source triangulation and technical triangulation (Ali et al., 2023).

3. Result and Discussion

3.1. Waste management policies in Indonesia

Currently, Indonesia is working hard to improve waste management, given the serious problems faced related to environmental and hygiene issues. Various regulations and efforts have been made to overcome the problem of waste management in Indonesia as a form of seriousness in dealing with existing waste problems. The existence of Law No. 18/2008 on waste management is one form of the Indonesian government's commitment to regulate the duties of producers, waste pickers, processors, and community-based waste management.

Based on the Waste Management Act, the volume, type, and characteristics of waste have increased as a result of population increase and changes in people's lifestyles. Plastic bag waste may increase every year due to people's consumption of food and packaged goods, especially those that do not fully degrade in a short period of time (Iqbal et al., 2022). It causes health problems for humans and damages the surrounding environment.

Waste management must be carried out in a comprehensive and integrated manner from upstream to downstream in order to generate economic benefits, environmental health, and changes in people's behavior (Darmanto, 2012). This makes waste one of the problems faced by many cities around the world (Bénard & Malet-Damour, 2022). As the population and its activities increase, the volume of waste continues to increase. As a result, dealing with waste requires a lot of money and a large amount of land.

In Indonesia, land-based mismanaged plastic waste (MPW) ends up in the ocean, mostly from Java (129.3 kton/year) and Sumatra (99.1 kton/year) (Chotimah et al., 2021). At the national level, about two-thirds (66.6%) of MPW discharged into the marine environment comes from rural sources, with a split in Java of about 45% from urban and about 55% from rural sources. While in Sumatra, Bali and Kalimantan, about 70-75% of MPW discharged into the marine environment comes from rural sources and in Eastern Indonesia (Sulawesi, Maluku and Papua) it increases to 80-90% (World Bank, 2021).

In addition to existing regulations regarding waste management, the Government of Indonesia has also launched various national programs to improve waste management. One of the main programs is the Clean Indonesia Movement which aims to create a waste-free Indonesia by 2025. This aims to solve the waste problem together with various actors, including the government, the private sector, and the community.

3.2. Efforts made by Kebumen Regency in waste management.

Various policies and efforts have been issued and implemented by the Kebumen Regency Government to solve waste problems. However, the results until now have not been able to solve the waste problem. The amount of waste generation is increasing while the capacity of landfills is increasingly limited (Rahmawati et al., 2023). The problem of waste has yet to find the right solution for the Kebumen district. The existing waste management has been based on the final approach, which is to move waste from one place to another.

The existing condition of waste management performance in Kebumen Regency can be explained in the study of Settlement Development Strategy and Urban Infrastructure, which is a study related to urban infrastructure planning in Kebumen Regency where 112 villages have been identified that have met urban criteria, which according to the provisions should be able to be served by waste management. The 112 villages can generally be divided into sub-districts, namely 9 sub-districts including Sempor, Gombong, Karanganyar, Sruweng, Pejagoan, Kebumen, Klirong, Kutowinangun, Prembun, and finally Petanahan.

Meanwhile, based on the work area, the cleaning and landscaping sector is divided into 5 work areas including Gombong KORWIL, Karanganyar KORWIL, Kebumen KORWIL, Kutowinangun KORWIL and Prembun KORWIL. It can be seen

that out of 112 villages in the urban area there are only 42 villages that have received waste services or can only be served around 40%. For more details, see table 1 below.

Tabel 1. Waste Generation Data of Kebumen Regency

Year	Regency	Daily Waste Generation (tons)	Annual Waste Generation (tons)
2021	Kebumen	459.15	167,590.85
2020	Kebumen	407.80	148,846.66
2019	Kebumen	406.54	148,386.62

Source: National Waste Management Information System

Based on the data in the table above, it can be seen that in 2021 the production of waste generation in Kebumen Regency in one day in all areas amounted to 459.15 tons / day or 167,590.85 tons / year, of course, this condition cannot be allowed to continue because it will have a negative impact on environmental health conditions. The high amount of waste generation should be balanced with the waste sorting process at the source of waste.

Seeing the condition of waste in Kebumen district, there needs to be a special handling of the existing waste problem, because the local government does have the authority to solve this problem (Irawanto, 2019). Several programs that have been running in Kebumen Regency in an effort to manage waste include the formation of a Waste Bank. The government and various institutions have encouraged the formation of waste banks in various regions. Waste banks are one of the efforts in waste management by encouraging the community to sort and recycle waste, as well as providing incentives in the form of awards or rewards.

By definition, Waste Bank is a facility for managing waste with the 3R principle, as a means of education, behavior change in waste management, and implementation of the Circular Economy, which is formed and managed by the community, business entities, and / or local governments (Winarni et al., 2022). The objectives of waste management in the form of a Waste Bank include; 1) realizing a healthy and clean environment from waste; 2) preserving environmental functions and maintaining public health; 3) making waste a resource that has economic value; 4) realizing effective and efficient waste service performance; and 5) increasing the participation of the community and business actors to actively reduce and / or handle environmentally sound waste.

Based on the results of interviews conducted by researchers, several strategies carried out by the Kebumen district government include; 1) Limiting waste generation; 2) Waste recycling; 3) Waste reutilization; 4) Waste Sorting; 5) Waste Collection; 6) Waste Transportation; 7) Waste Processing; 8) Waste Final Processing; and funding. The strategy effort is one proof of the seriousness of the local government in solving the waste problem in the region. It requires cooperative governance in waste management that involves bringing together various stakeholder groups, including government agencies, local communities, companies and academics (Firmasyah et al., 2023).

Waste management activities in Kebumen Regency have been implemented under the control of the Environmental Agency.

The implementation of waste management in Kebumen Regency organizes its activities in accordance with applicable regional regulations. The Kebumen District Environmental Agency implements waste management and provides guidance to the community in accordance with a predetermined program.

One of the problems faced by the community and the government of Kebumen Regency in waste management is that there is no appropriate management pattern and good methods in waste management such as 5R (Reduce, Reuse, Recycle, Replant, Replace) have not been applied. This must be resolved immediately because the waste generated from the daily activities of the people of Kebumen Regency is quite a lot, so it requires serious and appropriate handling (Rara & Aliyah, 2015).

In addition, an effort that has been made by the Kebumen Regency government is the establishment of a Waste Bank. Waste banks are one of the efforts in waste management by encouraging the community to sort and recycle waste, as well as providing incentives in the form of awards or rewards (Hidayanti & Efendi, 2021). Optimizing the utilization of waste banks must be accompanied by continuous education and campaigns to increase public awareness about the importance of good waste management.

Although efforts have been made, the challenges in waste management in Kebumen district are still considerable. Better coordination between the central and local governments is still needed (Irawanto, 2019), improvement of better waste management infrastructure, as well as a change in the mindset of the community in managing waste more responsibly. It is important to continuously monitor and evaluate existing policies to achieve more effective and sustainable waste management in the future. Collaboration and partnership with various parties, including the private sector and non-governmental organizations and civil society are needed to improve the effectiveness of waste management programs.

The last effort made by the Kebumen district government towards waste management in the region is to recycle waste. The results of interviews found by researchers related to how the Kebumen district government recycles waste include; 1) providing a composter for each person or group; 2) developing a Waste Bank

Unit; 3) making recycled products from waste; and 4) other activities carried out by the community in the context of recycling waste from waste sources.

Some of the efforts made by the local government will not be successful without the support of the community (Darmanto, 2012). This shows how the waste problem must be solved together both from the government with existing resources and also public awareness related to changing the perspective regarding the handling of existing waste starting from the family environment.

3.3. Obstacles faced in waste management in Kebumen Regency?

Waste management in the regions is often faced with a number of obstacles that affect its effectiveness and sustainability (Winarni et al., 2022). The constraints faced in waste management in the region can be grouped into two, namely internal constraints and external constraints.

Internal obstacles are obstacles that come from within the region itself, including; 1) Lack of Budget; It cannot be denied from any sector that the budget factor is insufficient and not on target, which will result in the implementation of work plans from a program or activity, in this case waste management and cleanliness in an effort to protect the environment in Kebumen Regency. The Regional Government of Kebumen Regency is obliged to pay more attention to waste issues by providing sufficient budget allocations to implement environmentally sound waste management (Theresia, 2021).

Furthermore, 2) the lack of coordination between local government agencies. Poor coordination between agencies that handle waste management and hygiene issues in Kebumen Regency can hinder the implementation of waste management. Coordination between agencies is needed to ensure that waste management is carried out effectively and efficiently. Without integrated cooperation between agencies, it will hinder the resolution of existing waste (Nurlina et al., 2021). Finally, 3) Lack of public awareness that participates in reducing the volume of waste. If you want to solve the waste problem, it is necessary to increase public awareness because at this time the community is also among the many contributors to the waste that occurs, can be seen in table 2 below;

Tabel 2. Kebumen Regency Waste Composition Data

Year	Papers (%)	Wood-Twigs (%)	Fabric (%)	Plastic (%)	Glassware (%)	Organik (%)	Other (%)
2021	28,00	30,00	11,00	38,67	13,00	11,00	2,00
2020	38,00	25,60	9,70	33,40	12,88	9,33	2,67
2019	37,00	31,30	13,00	39,63	12,90	9,10	3,20

Source: Central Bureau of Statistics

Based on table 2 above, it can be seen that plastic waste is quite dominant in the composition of waste in Kebumen district. This is partly due to the large consumption of plastic in household waste (Manalu et al., 2022). Therefore, public awareness is needed on how to use waste wisely so that later there will be no increase in the volume of waste that occurs in Kebumen Regency.

External obstacles are obstacles that come from outside the region itself. External constraints that are often faced in waste management in Kebumen Regency include; 1) Urbanization, the relationship between urbanization and increased waste generation is because the population in urban areas is higher than the

population in villages. This causes the amount of waste generated in urban areas to be much higher (Sekarsari et al., 2023). In addition, urban communities tend to use disposable plastic which will increase the amount of waste in the area. (Chotimah et al., 2021). These products are not biodegradable and can cause environmental pollution.

The next external factor, 2) industrial and service activities in urban areas are higher than industrial and service activities in rural areas. Because these industrial and service activities can produce various types of waste, such as plastic waste, metal waste, and

chemical waste. this is one factor in how waste becomes difficult to control regarding its volume.

To overcome these constraints, the Kebumen district government needs a holistic approach involving collaboration between the government, private sector, civil society, as well as ongoing public education and awareness efforts (Hidayanti & Efendi, 2021). Improving infrastructure, allocating adequate resources, and developing appropriate policies in accordance with regional needs are also very important in an effort to improve the effectiveness of waste management at the regional level.

4. Conclusion

The waste problem is a shared responsibility to solve. It cannot only be the responsibility of the central government. Local governments have full responsibility regarding how to manage waste properly and also reduce the amount of waste. Some of the efforts that have been made by the Kebumen district government in solving the waste problem are to make clear rules regarding how to solve the waste problem so that it does not become a big problem in the future.

Cooperation is needed between the Kebumen district government, the community, the private sector and academics in solving the waste problem in Kebumen district. Efforts made at this time are still not optimal, indicated by data on the volume of waste that is still quite high, especially plastic waste. Public awareness is needed in solving this problem, because most of the plastic waste comes from the community and household waste.

In addition, the local government of Kebumen Regency must show seriousness in solving the problems that occur by providing sufficient budget related to the process of processing and reducing existing waste. Because if the budget for waste management is not enough, then it is not a solution. In addition, there also needs to be cooperation between Kebumen local government agencies that deal with problems related to waste and the environment, so that each program can be well integrated effectively and efficiently.

This research is very important in the future, because the problem of waste is a common problem, and if left unchecked it will have negative consequences for the environment. This research can also serve as a guideline for other regions to see how the kebumen district government's efforts in solving waste management in their area. So that it can adopt some policies that are in accordance with other regions.

However, this research still has limitations that need to be resolved by other researchers. This research is only focused on the Kebumen district government and there is no comparison with other regions. Hopefully, in the future this research can be refined by other researchers so that there are comparisons with other regions and also new data in the future.

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