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## ENVIRONMENTAL AGENCY OF SLEMAN REGENCY'S WASTE MANAGEMENT STRATEGY

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KEYWORDS	ABSTRACT
waste management place, waste management, environmental services.	The purpose of this study was to find out and analyze the strategy of the Sleman Regency Environmental Service in waste management and to find out the constraints of the Environmental Service in carrying out waste management in the Sleman Regency. The type of research used is descriptive qualitative. This research took place at the Sleman Regency Environmental Service. Data collection techniques are observation, in-depth interviews, and documentation. Data analysis techniques, namely data reduction, data presentation, and drawing conclusions, Total informants 25. The results of the study are that the role of the community in waste management has an enormous influence on the success of waste management in Sleman Regency, along with the participation of the community in Sleman Regency: participating in socialization, waste banks, building 4 Rs (reduce reuse recycle waste processing sites), and collecting waste regularly. Direct. The waste management strategy's obstacles include the need for more public awareness, funding, and facilities and infrastructure. This research has implications for the importance of the strategy carried out by the Sleman Regency Environmental Service in waste management. Apart from that, the implications of this research also reveal some of the obstacles faced by the Environmental Service in waste management in Sleman Regency.

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### INTRODUCTION

The closure of the Piyungan Integrated Waste Disposal Site (IWMF) some time ago has overwhelmed several Regencies and Cities in the Special Region of Yogyakarta, including Sleman Regency. So far, the Piyungan IWMF is still the mainstay of waste disposal produced by the residents of Sleman Regency. According to data from the Environmental Service (MOE), the daily volume of waste in Sleman reaches 706 tonnes daily. It is believed that this number will continue to increase, considering that since 2018 the volume of waste in Sleman has continued to increase by 60 road map tonnes per day each year. The condition of the Piyungan IWMF is often closed because it has exceeded its capacity; the Sleman Regency Government has begun to move quickly by making short, medium, and long-term terms. The short-term plan taken by the Sleman Regency Government is to build its own IWMF—construction plans to start in 2023. Two locations are projected to become IWMF locations in East Sleman and West Sleman. "The location for East Sleman is Taman Martani. The area is around 1.8 hectares. One is in Sendangrejo, Minggir, and we are looking for a location. Our target is to start in 2023," said the Sleman Regent, Kustini Sri Purnomo. Kustini explained that constructing The Taman Martani IWMF will cost Rp. 38 billion, while the Sendangrejo IWMF will use a special allocation fund from the central government. Kustini detailed that the system implemented at the IWMF will process and select organic waste into compost. Meanwhile, inorganic waste is used as shanties or chopped, and

the residue will be destroyed by burning or made into briquettes. Meanwhile, the waste processing technology used by the two IWMF uses domestic technology.

Another short-term plan that is being optimized is the performance of the 3r waste processing site (IWMF), delivery of depots, and waste banks in all urban villages. The various waste processing sites above have produced various kinds of compost from processed organic waste. Kustini explained that the process still cannot be carried out optimally because the waste that enters the processing site has not been correctly sorted. For this reason, Kustini issued Circular Letter number: SE.5/MENLHK/PLB.0/102019, which contains instructions for sorting waste from the house. Through this SE, Kustini asked the public to start selecting waste according to organic and non-organic waste types.

This circular is a medium and long-term step to raise public awareness of the importance of segregating waste from the upstream level. Strict sanctions have been prepared following Regional Regulation No. 5 of 2014 for people who do not sort waste carefully before distributing it to the transfer depot (Edi, 2022).

As one of the regencies in DIY with a dense population, waste is a challenge that requires more attention. It is noted that the total waste of Sleman Regency per day, when calculated from the total population of Sleman Regency, is approximately 2,500 m<sup>3</sup> per day. However, this amount can certainly be more significant when calculated from the activities in Sleman, considering that Sleman is an educational and tourism area with many non-permanent residents. High enough. Meanwhile, according to DIY's environmental agency, the total waste pile in Sleman is 8,000 m<sup>3</sup>/day, of which 60% is plastic waste. Waste can be considered as potential if it is managed professionally. However, it can also be a problem if we cannot manage it.

Responding to the waste problem requires synergy and joint efforts from all parties, the government, other stakeholders, and the community who act as subjects and objects in this problem. One of them can be started by managing waste through 3r (reduce, reuse, recycle), namely starting to manage waste by reducing waste piles, especially plastic waste, for example, by switching to using environmentally friendly bags when shopping and sorting waste into organic and organic waste (Widyani et al., 2022). So that further waste management can be more accessible. Organic waste can be made as a planting medium, while inorganic waste can be used for crafts or sold (Sartika et al., 2022). Finally, residual waste can be disposed of in the IWMF by utilizing the cleaning service of the UPT so that it does not throw garbage anywhere.

This waste problem is optimistic that it can be resolved with this method if there is awareness and discipline for the whole community to apply it together. For this reason, on this occasion, I invite all parties to jointly carry out and optimize their respective roles and functions to solve the waste problem in Sleman Regency to maintain cleanliness and environmental sustainability. Especially now that we have 200 waste management groups up to the RT level, I hope that the existence of these waste management groups can become pioneers in raising public awareness as well as being a motivation for changing people's behavior regarding waste management in their respective areas.

Garbage is one of the complex problems faced by both developing and developed countries, including Indonesia (Jin et al., 2023). The waste problem is no longer just a matter of cleanliness and the Environment. However, it has become a social problem that has the potential to cause conflict. The waste management system in Indonesia is generally still relatively traditional and often turns into disposing of waste indiscriminately without following technical provisions in predetermined locations. (Sultoni et al., 2019). Current waste management based on Regional Regulation Number 4 of 2015 is carried out with two main focuses: managing household waste and household-like waste

(Setyaningrum, 2015). Waste processing is focused on TPS and TPA, which have been determined by the local government; this is not very effective regarding waste handling. Solid waste is an important issue, especially in urban areas, where the population in urban areas is quite large and relatively dense. Human life, with all its activities, cannot be separated from the name trash because waste results from side effects from human activities, both in the form of home activities and industrial activities (D. Singh, 2023). Along with the development of time, the population in a particular place will undoubtedly increase, technological developments will become more sophisticated, and industrial growth will also be relatively rapid, producing waste of various kinds (Kalinci & Dincer, 2018).

The Role of the Environmental Service in Market Waste Management as an Effort to Control Environmental Pollution in Boyolali has been carried out based on previous research. However, it has not been able to run optimally. This is because the segregation of market waste has not been carried out at TPS or TPA. Where waste management has not been carried out with the 3R principle (Reduce, Reuse, Recycle). The obstacles and solutions that have not maximized the role of the Environmental Service in market waste management include: Lack of awareness of Boyolali City Market residents and the public about the importance of cleanliness, lack of knowledge of the people living around Boyolali City Market and traders regarding waste sorting according to type, lack of infrastructure such as a fleet of trucks for transporting the waste, There is no particular TPS for the market to handle waste management before it is later disposed of to the IWMF, Those who dispose of garbage at the Boyolali City Market are not only market residents, but the village community around the Boyolali City Market settlement also throw garbage into Boyolali City Market. Based on these constraints, the Environment Service has created various participatory programs for better traders and visitors (Ardianingtyas, 2021).

Other research suggests that the Communication Strategy the Sleman Regency Environmental Service (DLH) used in socializing Perda No. 4 of 2015 was carried out directly and structurally. Direct socialization is the socialization that is carried out directly by the people in the village or hamlet. In contrast, structural or tiered socialization occurs in stages and starts from the sub-district-village level. The tools or media used by DLH Sleman in supporting the implementation of socialization are brochures, prohibition information boards, guidebooks, website services that function as complaints services for the people of Sleman Regency, and the occasional use of TV & Radio broadcasting media. The Kasturi Independent Waste Management Group (KPSM) is a prominent KPSM in Sleman Regency with various achievements. From this success, DLH Sleman embraced one of the parties from KPSM Kasturi who had the most significant contribution, namely Mrs. Ani Sumiarti, to participate in waste management with DLH Sleman in Sleman Regency. The form of participation that Mrs. Ani Sumiarti has carried out is to be a speaker at several socialization activities organized by DLH Sleman. Apart from that, Mrs. Ani Sumiarti was also asked to be a judge in the Kalpataru activity for the Sleman Regency branch. The limited number of human resources (HR) at the Sleman Regency Environmental Service (DLH) inhibited increasing socialization. At the same time, the Sleman Regency Environmental Service (DLH) realized that the socialization they had carried out so far needed to be revised. The limited number of human resources also made DLH Sleman unable to carry out the evaluation program. With the implementation of socialization on the basis of requests, DLH Sleman cannot set a standard schedule because it has to adjust to the community's readiness and does not even rule out the possibility (Utami & Kom, 2020).

Other previous research stated that the role of the Sleman Regency Environmental Service in supervising the management of solid medical waste in Sleman Hospital was carried out well. This can be seen from the three supervision indicators: setting measuring instruments (standards), conducting assessments, and carrying out corrective actions. Management of solid medical waste at Sleman

Hospital, namely the lack of workforce at the Sleman Regency Environmental Service, whose job is to supervise the management of solid medical waste at Sleman Hospital (Sado, 2021).

Based on the background above, this research aims to find out and analyze the strategy of the Sleman Regency Environmental Service in Waste Management and the obstacles it faces. The benefits of this research are for the development of governance science, especially for waste management in Sleman Regency. It is hoped that it can become material for comparative studies or further studies for those who wish to explore more about issues related to the focus of this research. Also, other benefits are expected to be input for the government, regarding waste management, especially in Sleman Regency.

## **METHODS**

The type of research in this research is descriptive qualitative research. This research occurred at the Sleman Regency Environmental Service in the Kalasan Village, Sukunan, Tlogoadi. The determination of informants in this study was carried out purposively. Data collection techniques used in this study were observation, in-depth interviews, and documentation. The data analysis technique used in this study is data reduction, data presentation, and conclusion.

## **RESULTS AND DISCUSSION**

### **Increasing Community Participation in Waste Management**

#### **1. Outreach to the Community**

Socialization was also carried out in the community regarding waste management (Al Huraimel et al., 2022). Socialization will only run smoothly if the community participates in socialization activities. Socialization regarding waste management was carried out, one of which was in Kapanewon Berbah. Yaya and Kusnadi delivered the socialization material from the Kapanewon Berbah Environmental Forum. Yaya said that waste is divided into two groups: natural (organic) waste, which has a short decomposition period, and unnatural (inorganic) waste produced by processed factories, which has a long decomposition period.

Socialization certainly involves the community, which will later play an important role in waste management. With socialization and community assistance, it will be easier to manage waste because of the need for more knowledge. Yaya from the Kapanewon Berbah Environmental Forum stated that waste can be used as something useful, such as organic waste being made into compost or eco enzyme.

Socialization is the front guard in the program launched by superiors here, namely the Sleman Regency government to the community. Communities with minimal knowledge of waste management need direct socialization from the Sleman Regency government so that the community is educated about good and correct waste management. Socialization is the government's initial effort to manage waste (Suryani, 2014).

#### **2. Garbage Bank**

The waste bank benefits the Environment and society and provides economic benefits to the community (Kurniawan et al., 2023). The community earns money from waste that is saved in a waste bank, which can be collected within a certain period according to the rules of each waste bank (Wijayanti & Suryani, 2015). The community can also feel economic benefits through recycling waste into handicrafts that can be sold, such as bags, wallets, pillows, and so on (Gollakota et al., 2020). The Garbage Bank is a solution in waste management because waste is an item that is difficult to decompose (Maslamah et al., 2021). If it can decompose, it has a period of years to tens of years.

The waste bank itself is supported by the existence of an Independent Waste Management Area or what is often referred to as KPSM. In Sleman Regency, a KPSM has been established to maximize waste management. According to data from the environmental service, from the current target of 1200 KPSM, there are only 287 KPSM spread across 17 sub-districts in Sleman Regency. One of the KPSMs in Bayen Purwomartani Hamlet was formed in 2014 by Hamlet residents named KPSM Purwoberhati.

Waste banks in Sleman Regency have various organic and non-organic waste management activities. Organic waste management consists of composting organic waste from households or kitchen waste (food waste, vegetable waste, side dishes, rice waste, and so on) and communal composting, such as leaf waste or yard waste.

Garbage is categorized into several types; the waste is separated according to the group, such as paper, plastic, metal, or glass. The waste is separated according to the space provided. The places where the waste is grouped are the result of community self-help. Plastic food packaging, refills, coffee, and so on can be turned into items of sale value, such as bags, wallets, hats, etc.

The manager of the Banyuraden Village Garbage Bank, Sukunan Village, Sleman Regency, stated that there are several types of waste, such as organic and non-organic waste, which are divided into several categories:

- a. Organic waste, both leaf/plant and cooking waste, will be collected by ourselves and then processed into compost (currently, the composting process uses a composter/compost barrel).
  - b. Waste paper, cardboard, newspapers, etc
  - c. Glass and metal waste
  - d. Plastic waste, crackle, cork, and plastic packaging
  - e. Plastic packaging (aluminum foil) will be collected to make handicrafts
  - f. B3 waste (Hazardous and Toxic Materials). B3 waste in question includes lamps, batteries, and other explosive, flammable, reactive, toxic materials, etc.
3. The 4 Rs (Reduce Reuse, Recycle Garbage Processing Site)

Besides the Garbage Bank, waste management in Sleman Regency is also 4 Rs (Reduce Reuse Recycle Garbage Processing Site) (Taylor, 2021). The Head of the Sleman Regency Environmental Service, Dwi Anta Sudibya, said that the TPS3R and the Garbage Bank were able to reduce waste problems in Sleman Regency. In Sleman Regency, there are 210 units of Garbage Banks and 25 units of TPS3R, all of which are engaged in waste management which has reached 22.48% with a tonnage of 57,757 tonnes/per year.

4. Garbage Collection Directly (door to door)

Garbage collection uses the direct individual method, carried out by cleaners by going to each source (door to door) and immediately transported to be disposed of at the final disposal site (McEwan & Komsul, 2018). The direct individual method usually serves waste sources around the primary arterial road and primary collector. The equipment used is a dump truck car-like trash.

The method commonly used in urban waste management in Indonesia is the collect-and-transport method. Most local governments practice open dumping or semi-sanitary landfills in landfills and create worrisome conditions for the surrounding Environment. In addition, regencies and cities need to be improved in providing and presenting data related to waste management in their areas. A system of collecting waste from door to door or directly transporting it and disposing of it to the landfill is an ineffective waste treatment because waste is allowed to accumulate in a location that results in excess waste capacity. Besides causing an unpleasant odor at the TPA site and around

the TPA, the piled-up waste also pollutes the Environment, soil, air, and water at the TPA site and around the TPA, which, when inhabited by the community, is very unhealthy for the Environment.

The direct collection-transport waste management method is waste management, which people in Indonesia widely use; it is not surprising that many TPS in Indonesia are over capacity and then closed by the local government because they have become very high mountains of waste and endanger the community.

### **Obstacles Faced in Running the Waste Management Program**

A government or individual initiative program has obstacles that are difficult to unravel if no solutions are found.

#### **1. Lack of Community Concern**

One of the obstacles faced by the community is the government's waste management program. Communities often think that government programs are not part of programs promoted by the government but only programs promoted by private parties and non-governmental organizations. Education for the community still needs to be improved, so the community is less interested in carrying out the programs announced by the government.

The lack of people's desire to participate in government programs is due to the lack of education provided to the community, so people are less motivated or even reluctant to participate. The lack of a sense of community awareness of the importance of waste management is still a chore. Instead of managing waste, some communities still dispose of waste indiscriminately, which can be entrenched in society due to the lack of education about the dangers of waste for the Environment. In addition to the inadequate community response, the community lacks confidence in a successful waste management system in the future. According to Mr. Narno, there are pros and cons in the community because some people take the program lightly, some believe it, and some do not believe it, so the waste management process does not run optimally. The community's minimal knowledge of waste processing makes the community's mindset toward the waste management program distrustful of success. According to him, sometimes rural communities are not ready for change; they still stick to the old habit of disposing of garbage in the wrong place; they do not want to sort the waste first, and they even throw garbage in the river or not in landfills without knowing the impact that will occur in the future. The lack of education, information, and community participation in waste management in Sleman Regency is a significant obstacle to future waste management. The community generates garbage itself. Therefore, the community has a vital role in managing it. The obstacles faced are more to the people themselves.

According to the Staff of the Sleman Regency Environmental Service, Mrs. Amita stated that people in Sleman Regency still need to care about waste management. In addition, the location of human resources is also a significant obstacle. Human resources, which could be more competent in managing waste, make waste management easier to materialize. Human resources are needed who understand and understand waste management, both the impact and the benefits.

Non-technical obstacles such as the lack of public appreciation and policy inconsistency, the still weak function and capacity of oversight and control by the government in the implementation of development. Lack of public awareness of waste management is the most crucial obstacle. In addition to the government, the community's role as a waste producer is essential in waste management. The community directly manages waste; if the community does not care, the waste management will be hampered or not even work.

Communities and the government must synergize with the community in waste management to achieve maximum results. People who do not care do not want to participate in sporting or even deposit waste at the available waste management sites because they are considered a hassle.

2. Funding

One of the other obstacles in waste management, according to the Independent Waste Management Network (JPSM). Funding is an obstacle which means that with funds, waste management can run optimally. One example of waste management funding is in Pakem. The Pakem community initially needed to establish a waste bank of 16 million, which was collected from the Pakem community funds, Padukuhan Pakem, Tamanmartani Manage Waste with the Shodaqoh System). Funding for Pakem waste management is through funds collected independently by the community. However, many people feel reluctant to spend money on waste management, and there are also waste management companies that have funding difficulties, so they need to work optimally.

Garbage is still a problem for the Environment that needs to be resolved; the fault is the high operational cost constraints. Operational or funding costs are one of the obstacles faced by waste management. It is not a tiny nominal to make waste management. Therefore, many are only rhetorical and even stop in the middle of the road due to limited funds. Although the government of Sleman Regency has provided waste management tools, they need to be increased.

3. Facilities and infrastructure

According to the Independent Waste Management Network (JPSM), the obstacles to waste management in Sleman Regency are where they are managed, many of which need to be approved by the community. Community stigma at waste management sites is still in dirty, smelly places and polluting the Environment. In 2020, residents still needed to approve the waste management site in central Sleman, namely Tambakboyo.

The waste processing site is part of the success of waste processing. Suppose the community rejects the establishment of a waste processing facility. In that case, this is an obstacle that must be solved by finding a place that is agreed upon by the community.

Based on observations made by researchers of waste management facilities and infrastructure at the Garbage Bank or TPS3R, most of it comes from self-help funds from the community. Even though the tools need to be updated periodically and maintained every year. Of course, with the 200 waste groups that currently exist in Sleman Regency, plus the piles of waste that are increasing every month due to urbanization in Sleman Regency, such as compartments, composters, organic chopping machines, depot transfers, garbage trucks, the 3R Integrated Waste Disposal site need to be maintained regularly.

4. Obstacles - obstacles faced in waste management In the waste management program in Sleman Regency by the Environmental Service, some challenges slow down the program, including:

a. Lack of public awareness and disobedience of information

Even though the Sleman Labupaten Environmental Service has conducted socialization with the community about managing waste, it turns out that there are still many people who still throw garbage indiscriminately without sorting it out at home first, like in the Mataram Sewer for example, even though it is clear that there is a notification bar that the DLH prohibits littering. However, people still throw garbage in that place because there is no other place for disposal.

b. An area

Socialization about waste management is very, very important because many people still throw garbage without sorting it out first. Socialization is expected and builds public awareness to care more about the Environment. Moreover, what needs to be remembered is that throwing garbage

anywhere can pollute the Environment, which can become a source of disease. Littering trash can also pollute water and air and can cause flooding.

## CONCLUSION

Based on the results of the research above, it can be concluded as follows: 1) The role of the community in waste processing has a huge influence on the success of waste management in Sleman Regency, along with the participation of the community in Sleman Regency including participating in socialization, waste banks, TPS3R (Reduced Reuse Garbage Processing Sites). Recycle), Direct Garbage Collection. 2) Obstacles faced in the waste management strategy include the lack of public awareness, funding, and facilities and infrastructure.

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