

WASTE MANAGEMENT IN MAKASSAR CITY: CHALLENGES, POLICIES AND SOLUTIONS

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ABSTRACT

Waste management in Makassar City is an increasingly pressing issue along with rapid population growth and urbanization. In this context, the main challenges faced are low public awareness, limited waste management infrastructure, and weak enforcement of regulations related to waste processing. This study aims to provide a better understanding to the public about the importance of sustainable waste management and to study waste management policies and practices in Indonesia and Malaysia. Through community service activities including field observations, interviews with stakeholders, counseling, and preparation of recommendations, it is hoped that applicable solutions can be found to overcome waste management problems. One of the proposed solutions is the development of a Waste Bank which functions as a means to manage and recycle waste more effectively. The results of the study indicate that active community participation, government support, and collaboration between various parties are essential to create a sustainable waste management system. The recommendations produced include increasing public awareness, utilizing technology in waste management, and strengthening policies that support community initiatives.

Keywords: Waste Management, Public Awareness, Waste Bank

INTRODUCTION

Waste is a major problem in many countries, including Indonesia and Malaysia. With rapid population growth and urbanization, both countries face increasing volumes of waste every year. The main challenges faced are the lack of public awareness, limited waste management infrastructure, and weak enforcement of regulations regarding waste management. These problems have an impact on environmental, economic, and social health. This community service activity aims to provide a better understanding to the community about the importance of sustainable waste management and to learn about waste management policies and practices in Indonesia and Malaysia. Thus, it is hoped that a joint solution can emerge that can be applied to overcome waste management problems in both countries.

Waste management in Makassar City faces major challenges due to rapid population growth and urbanization. As the volume of waste produced increases, a more systematic and sustainable approach is needed to address it. One solution that can be implemented is the development of a Waste Bank, which functions as a means to manage and recycle waste more effectively. In addition to helping reduce the amount of waste, the Waste Bank also plays a role in increasing public awareness of the importance of responsible waste management. This program can be a strategic step in creating a cleaner and healthier environment.(Afdhal, 2024). In addition, active participation from various parties, including the government, communities, and the private sector, is essential to ensure the sustainability of this waste management

system.

Government policies on waste management in Makassar need to be strengthened to support community initiatives in managing waste sustainably. Research shows that community involvement in programs such as Waste Banks can help reduce the amount of waste that ends up in landfills (TPA) and improve environmental quality.(Andani & Sukei, 2022; Ajija et al., 2020). However, one of the obstacles in implementing this policy is the low level of public understanding regarding the importance of proper waste sorting and management. Therefore, more intensive environmental education and socialization are key factors in increasing public participation.(Eliza & Evanita, 2023;Aliwu et al., 2024). In addition, collaboration between government, academics, and local communities is needed to create more effective and applicable policies.

In this context, cooperation between the government, non-governmental organizations, and the community is essential to build a sustainable waste management system. Through various empowerment and training programs, the community can be given a deeper understanding of how to manage waste effectively, including processing organic and inorganic waste to produce valuable products.(Aryantiningsih et al., 2024). With this comprehensive approach, Makassar City can face the challenges of waste management and move towards a cleaner and healthier environment. In addition, regular monitoring and evaluation are needed to ensure that this program runs effectively and has a long-term positive impact on the community. Good collaboration between all parties will also accelerate the realization of changes in community behavior in daily waste management.

ACTIVITY METHOD

This community service activity is carried out through several stages:

1. Field Observation

The team conducted observations at various waste management locations in Makassar City. Several points visited included the temporary disposal site (TPS) and the final disposal site (TPA) Tamangapa. In addition, the team also reviewed several waste banks that play a role in community-based waste management. Observations were made to understand the waste management system, including the recycling process and processing of organic waste. The results of this observation are expected to provide an overview of the challenges and solutions in waste management in Makassar City.

2. Interviews with Stakeholders

Interviews The team conducted interviews with various parties involved in waste management in Makassar City. The sources included the Environmental Service, TPA managers, cleaners, community groups, and residents who are customers of waste banks. The interviews aimed to explore understanding of waste management from various perspectives. In addition, the team also identified obstacles faced in the waste management process at various levels. The results of the interviews are expected to provide insight into challenges and opportunities for improvement in the waste management system.

3. Counseling and Socialization

The Team's activities include conducting outreach in several RW in Makassar to educate the public about sorting organic and inorganic waste. In this activity, residents are also given an understanding of the importance of reducing plastic use. In addition, the team socializes the benefits of waste banks as a solution for

community-based waste management. The MTR program was also introduced as an effort to support more sustainable waste management. Through this outreach, it is hoped that public awareness and participation in maintaining environmental cleanliness will increase.

4. Preparation of Recommendations

Based on the findings from observations and interviews, the team formulated recommendations to improve waste management in Makassar City. The recommendations include aspects of policy, technology utilization, and increasing community involvement. From a policy perspective, more effective regulations are needed to support a sustainable waste management system. The use of technology is proposed to increase the efficiency of waste processing and recycling. In addition, active community participation is key to creating a cleaner and healthier environment.

RESULTS AND DISCUSSION

This International PKM activity was held on Friday, September 13, 2024, at the Makassar City Waste Bank located on Jl. Toddopuli Raya, Makassar. This activity aims to identify differences in waste management policies and practices between Indonesia and Malaysia, so that they can be the basis for developing more effective solutions in dealing with waste problems. In addition, this activity also focuses on increasing public awareness of the importance of proper and environmentally friendly waste management. With this increased understanding, it is hoped that the community can be more active in sorting and processing waste independently, so that it can reduce the amount of waste that ends up in the Final Disposal Site (TPA). This effort will also be supported by an evaluation of waste management policies and programs that have been implemented by the local government, in order to determine the extent to which they are effective in reducing environmental impacts and improving city cleanliness.

In addition, this activity plays a role in identifying the current condition of waste management in Makassar City, including the challenges faced in implementing existing policies. From the results of this identification, recommendations will be prepared that can help improve the waste management system, both at the local and national levels. These recommendations include a community-based approach and the use of technology in more efficient and sustainable waste management. With the active participation of various parties, such as the government, academics, communities, and the general public, it is hoped that a better waste management system will be created and be able to provide long-term benefits for the environment and community welfare.

1. Current Condition of Waste Management in Makassar City

a. Tamangapa Final Disposal Site (TPA)

Tamangapa Landfill is the only landfill in Makassar City that still operates with an open dumping system. Its capacity has exceeded the optimal limit, causing garbage accumulation and unpleasant odors that disturb the surrounding community. In addition, this landfill faces problems in handling leachate that pollutes the environment.

b. Makassar Not Rantasa (MTR) Program

The MTR program is a government initiative to create a clean environment by directly involving the community. Although it has been running for several years, there are still challenges in the consistency of its implementation, especially in active community participation and supervision in the field.

c. Garbage Bank

Makassar City has more than 500 waste banks spread across various regions. This program has helped reduce the volume of waste in several areas. However, community participation in sorting and managing waste is still relatively low. Many residents do not understand the importance of sorting waste from its source.

d. Plastic waste

Plastic waste is one of the main problems in Makassar City, especially due to the high use of single-use plastic. Although several policies have been implemented to reduce the use of plastic bags, their implementation is still not optimal.

2. Waste Sorting Policy and Processing Infrastructure in Makassar City

a. Waste Sorting Policy

The Makassar City Government has implemented a policy of sorting organic and inorganic waste. However, based on observations, this policy has not been running optimally. Many households still do not separate their waste, so when collected by cleaning staff, the waste remains mixed and reduces the effectiveness of its management.

b. Waste Management Infrastructure

Waste management infrastructure in Makassar City is still minimal, especially at the household and community levels. Many Temporary Shelters (TPS) are not managed properly, resulting in waste accumulation that has the potential to cause health problems and environmental pollution.

3. Obstacles and Challenges in Waste Management in Makassar City

a. Lack of Public Awareness

Many residents are not yet aware of sorting waste or reducing plastic use. Cultural factors and the habit of littering are still major challenges in efforts to create a better waste management system.

b. Limited Processing Facilities

The limited waste processing facilities, both at the Temporary Shelter (TPS) and Final Disposal Site (TPA) levels, cause waste management to be suboptimal. The almost full Tamangapa TPA is a serious threat if a long-term solution is not found immediately.

c. Lack of Technology Support

The use of technology in waste management in Makassar is still limited. Although there are composting and recycling programs, modern facilities and technologies to support more effective waste management are not evenly distributed.



Fig. 1
Socialization and Counseling

Based on the results of community service activities, several recommendations are suggested including increasing public awareness of the importance of waste management. More massive education and outreach, both in schools, campuses, and the mass media, are needed to reduce the use of plastic waste and encourage more effective waste sorting. In addition, the Makassar Tidak Rantasa (MTR) program needs to be evaluated and strengthened, by paying attention to aspects of supervision and community participation, as well as providing incentives for residents who actively maintain environmental cleanliness and sanctions for violators.

Furthermore, the application of technology in waste management is a solution that needs to be considered, such as an energy-based waste management system (waste-to-energy) and processing plastic waste into fuel. The Makassar City Government can work with the private sector to implement this technology, which can reduce the volume of waste in landfills while providing economic benefits. The existing waste bank program also needs to be expanded, supported by better facilities, and involve active community participation in sorting and recycling waste.

It is also important to improve waste management infrastructure in rural areas, such as recycling and composting facilities, to reduce reliance on landfills. Bilateral cooperation between Indonesia and Malaysia in waste management, especially related to the development of recycling technology, plastic waste, and electronic waste, is also highly anticipated. Both countries can exchange information and technology to improve efficiency in the waste management system. In addition, the implementation of stricter policies on waste management, with sanctions and incentives, will encourage communities and industries to comply with existing regulations.

CONCLUSION

Waste management in Makassar City faces various complex challenges, including lack of public awareness, limited infrastructure, and minimal technological support. Although there are waste sorting policies and programs such as Makassar Tidak Rantasa (MTR) and Bank Sampah, their implementation is still far from optimal. Therefore, a more comprehensive and collaborative approach is needed to overcome this problem. Community service activities that have been carried out show that intensive education and socialization are very important to increase public awareness of the importance of responsible waste management. In addition, active participation from the community in waste management programs, such as Bank Sampah, can help reduce the volume of waste that ends up in landfills (TPA) and improve environmental quality.

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