



## Effectiveness of Integrated Waste Management Program by Waste Management Institution

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### ABSTRACT

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This study aims to analyze the effectiveness of the Integrated Waste Management Program by the Waste Management Institution in Balai Gadang Village as an effort to reduce waste from its source. Although this program has been implemented, there are still obstacles in its implementation that hinder the effectiveness of the program. This study uses a descriptive qualitative approach with data collection techniques through interviews, observations, and documentation of the Waste Management Institution of Balai Gadang Village and the Padang City Environmental Agency. The data analysis process is carried out through the stages of data reduction, data presentation, and drawing conclusions. The results of the study indicate that the Integrated Waste Management Program has not been running effectively, because several problems are still found such as a lack of public interest in joining the LPS service, socialization has not reached all areas of Balai Gadang Village, operational funds, facilities, and infrastructure are still limited, supervision is still reactive to public complaints, and delays in waste transportation, therefore important steps are needed for improvement and sustainability of the program.

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## INTRODUCTION

Waste remains a serious problem in every region in Indonesia (Bakri, 2021). Waste management is one of the main environmental challenges facing urban areas (Altassan, 2023; Friman et al., 2024; Masturin et al., 2022). Rapid population growth and urbanization have led to an increase in waste volume that is not matched by an adequate management system (Yasin et al., 2024). The government's commitment to addressing this problem by creating a clean and healthy environment is reflected in various laws and regulations, including the Law and several specific regulations at the regional level tailored to individual needs (Budihardjo et al., 2021). Padang City is one of the cities experiencing a

significant waste problem. According to the Environmental Agency's performance accountability report (LAKIP DLH), Padang City will produce 660 tons of waste per day by 2024. This can be seen in Table 1.

**Table 11.1 Data on the Amount of Waste in Padang City**

Data	Sum
Managed Waste	630 tons/day
Unmanaged Waste	30 tons/day
Total	660 tons/day

(Source: Padang City Environmental Agency, 2025)

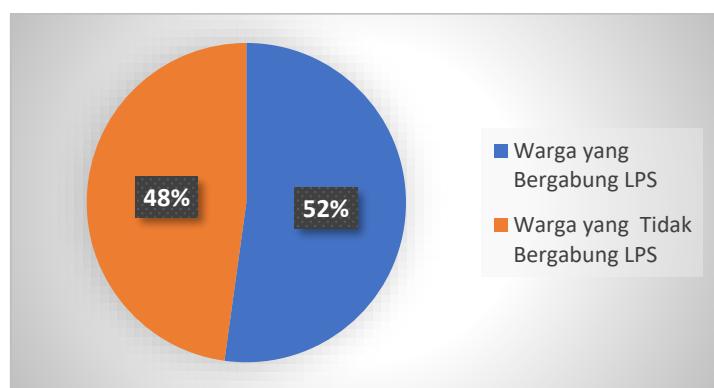
Based on the waste data above, of the total 660 tons of waste generated daily in Padang City, approximately 30 tons of unmanaged waste originates from waste dumped into rivers, the sea, or vacant land. Meanwhile, of the 660 tons of managed waste, 140 tons are managed through the 3R program (reduce, reuse, recycle), composting, and mangosteen utilization. Meanwhile, 520 tons of waste is transported and processed at the Final Processing Site (TPA). According to Mr. Fadelan Fitra Masta, ST, MT, Head of the Padang City Environmental Agency, the available land capacity at the Air Dingin Landfill will not be able to accommodate Padang City's waste for the next few years. This indicates the need for significant changes to waste management (Nainggolan et al., 2023), such as reducing waste generation, sorting waste at source, or increasing land area.

Padang City has enacted a policy, as stipulated in Regional Government Regulation Number 21 of 2012 concerning Waste Management. Article 29 states, "Regional governments, in carrying out waste management as referred to in Article 29, may establish waste management institutions." To improve waste management performance, the Padang City government established an Integrated Waste Management Program, managed by Waste Management Institutions (LPS) in each sub-district. LPSs are tasked with collecting waste from households and businesses, which are then collected at Temporary Waste Collection Sites (TPS).

Residents who participate in LPS services will be charged a fee based on the household or business category. LPS collaborates with the Regional Drinking Water Company (PDAM) and Bank Nagari to collect the fees. For residents who are not yet PDAM customers, LPS officers will routinely collect fees directly at their homes. The fee rates are also regulated in Padang City Government Regulation Number 1 of 2024 concerning Regional Taxes and Regional Levies. The levies paid by the community will be deposited into the regional treasury to be managed according to the budget stipulated in the Regional Budget (APBD). However, these waste levy funds are not specifically used for LPS operations; they are also allocated for various other sanitation management activities, such

as landfill management, city park maintenance, street sweeping, and other activities.

Currently, almost every sub-district in Padang City has joined the LPS service, including Balai Gadang Sub-district. Based on Decree (SK) of the Balai Gadang Urban Village Head of Padang City Number 27A of 2025 concerning the Establishment of the Balai Gadang Sub-district Waste Management Institution (LPS), the decree states that the Balai Gadang LPS was established and inaugurated on December 19, 2024. The Village Decree also states that the Balai Gadang LPS has 10 waste collection operators. However, in the implementation of the LPS waste management program in Balai Gadang Sub-district, many residents have not yet joined the LPS service. The data can be seen in Figure 1.



**Figure 1 Percentage of Residents Who Joined and Didn't Join LPS**  
(Source : LPS Balai Gadang Village, 2025)

The low level of community involvement in Balai Gadang is influenced by several factors, one of which is the lack of outreach and education from the local government, relevant agencies, village officials, and LPS administrators regarding the program. The government only conducted outreach in several sub-districts and villages, and also conducted outreach through social media. However, not all residents actively use social media, such as the elderly. This situation indicates the need to increase outreach in all villages by holding direct meetings with the community to broaden the reach of LPS services.

The success of the integrated waste management program depends heavily on the availability of adequate facilities. Currently, Balai Gadang Village has eight LPS units, but three of them are no longer suitable for use and do not meet operational requirements. This is a serious concern as it reflects the challenges faced by Balai Gadang Village in its waste management efforts. Furthermore, the limited fleet of vehicles can also hamper the operational efficiency and effectiveness of the LPS. Based on the problems described above, the author is interested in conducting further research with a focus on exploring

the effectiveness of the Integrated Waste Management Program by the Waste Management Institution in Balai Gadang Village.

## RESEARCH METHOD

This research used a qualitative approach with a descriptive method. Qualitative research aims to obtain a deep understanding of a social phenomenon. It does so by examining the meaning and values inherent in the research object within its natural context or real situation (Hirose & Creswell, 2023).

The research was conducted at the Padang City Environmental Agency and Balai Gadang Village. Informants were selected using a purposive sampling technique based on their relevance to the research topic. The informants included staff from the Environmental Agency, village officials, waste management officers, and residents of Balai Gadang Village.

Data were collected through observation, interviews, and documentation studies. Each technique was used to obtain accurate and comprehensive information about the research focus. The collected data were then analyzed using the Miles and Huberman model (Köhler, 2024), which involves data reduction, data presentation, and conclusion drawing.

## RESULT AND DISCUSSION

### Result

Program effectiveness can be interpreted as the level of success of an activity or policy in achieving the goals that have been set. In the context of waste management, effectiveness is an important indicator to assess the success of the institution in carrying out its duties, starting from the planning stage, implementation, to the results to be achieved. The integrated waste management program is one of the efforts of the Padang City Government in overcoming the waste problem in Padang City. This program does not only focus on waste transportation activities from the source, but also seeks to increase community involvement in waste management, such as sorting, collecting, and reusing waste that is still in use.

### Accuracy of Program Objectives

The accuracy of program goals is a measure of how much the activities or programs implemented are able to reach and provide benefits to the parties who are the target or main targets. Based on the observations made by the researcher, this integrated waste management program directly targets the general public, especially those in Balai Gadang Village.

Based on data obtained from LPS Balai Gadang Village, out of a total of

5,685 families, only 2,967 families or 52% are members, while 2,718 families or 48% have not been involved. The data shows that community involvement is still relatively low. This is due to the lack of public interest in joining this LPS service, as expressed by Mrs. Rika Yusniadha, S.Si as the staff of the First Expert Environmental Extension Officer of the Padang City Environmental Agency:

“... When we went to the field, there were many reasons that I heard from the community to refuse to participate in this program. They feel that there is already a subscription with the person who has a pedicab to pick up the garbage. Then there are also those who say they cannot afford to pay, some think that they have enough land to manage waste by burning. Some also say that their houses are close to containers...” (interview, 03 October 2025)

This shows that the low interest of the community in Balai Gadang Village to join LPS services is caused by various factors, such as lack of information about the program, old habits of throwing garbage or burning garbage themselves, the existence of private garbage transportation services, and economic reasons related to service costs.

### **Program Socialization**

Before implementing the integrated waste management program by the Waste Management Agency (LPS), the Padang City Government must ensure that all parties involved have in-depth experience and adequate capabilities so that the program can be implemented effectively and optimally. This is important so that waste management from the source to the final place can be carried out in an orderly, organized, and sustainable manner. As Rika's mother explained:

“... Socialization has been carried out, but only in a few sub-districts because of the large number of villages. Socialization is focused on the sub-district level so that the sub-district head can convey it to the village head. For Koto Tangah District, socialization has not been carried out, but we are still active in spreading information through social media such as Instagram.” (Interview, October 3, 2025).

This statement was also supported by Mr. Arbi Simon as the Chairman of LPS Balai Gadang Village:

“... We have socialized to the public about the programs and benefits of LPS services, especially for residents who have not subscribed to PDAM, because those who have subscribed are automatically incorporated. Even though not all residents are socialized directly, information is still spread by word of mouth.” (Interview, October 7, 2025)

The socialization of the integrated waste management program in Padang City has not been evenly distributed and is still concentrated in several sub-districts. Although DLH utilizes social media, its reach is not wide. At the sub-district level, socialization is carried out independently by sub-districts and LPS, but the limitations of publication facilities make the dissemination of information not optimal and still depend on informal communication.

### **Program Objectives**

The purpose of the program is the main measure of success because it describes the real results of the implementation of activities on the problems to be solved. Various efforts have been made by the Padang City Government in achieving the goals of this program. First, collaborating with various parties in supporting the implementation of the Waste Management Institution (LPS) in Padang City. The Padang City Government is actively building synergy with related agencies such as the Environment Agency as a coach and main manager in running the program. In addition to collaborating with related agencies, the government also collaborates with Perumda Air Minum (PDAM) and Bank Nagari in collecting community waste retribution.

Second, LPS is responsible for optimizing waste collection to residents' homes by operators using garbage transport fleets. However, the limitation of the garbage transport fleet is the main obstacle in the implementation of the integrated waste management program by LPS Balai Gadang Village. By only having 6 units of bento and 2 pick-up cars to serve the entire sub-district area, the process of transporting waste must be carried out alternately between operators, so that it has the potential to hinder the timeliness of waste collection.

Third, increasing the volume of waste collected through strengthening operator performance. The amount of waste volume reflects the extent to which the integrated waste management program has been successfully implemented through LPS in Balai Gadang Village, the amount of waste collected by LPS Balai Gadang Village shows a significant waste management performance, with total deposits reaching 895,438.4 liters per month. The system of reporting the volume of waste by operators to LPS management is an important step in maintaining accountability and transparency of program implementers, as well as being the basis for assessing operator performance and preparing administration to DLH.

### **Program Monitoring**

Program monitoring and supervision is an important part in ensuring the successful implementation of waste management programs by LPS in Padang City. The Padang City Government needs to conduct thorough supervision of the performance of LPS, including service achievements, frequency of waste

collection, fleet conditions, and officer discipline. As conveyed by Mrs. Rika Yusniadha, S.Si as the staff of the First Expert Environmental Extension Officer of the Padang City Environmental Agency:

“... The monitoring carried out by DLH itself is not carried out periodically but is based on the complaints received by the public. If there is a public complaint to DLH, it will be followed up to the head of the LPS concerned. For the complaint mechanism, the public can come directly to DLH or it can also be via DLH's official Instagram then via watshapp...”  
(interview October 3, 2025)

Although the Padang City government has provided community complaint services, the field findings obtained by researchers in the implementation of the integrated waste management program by LPS in Balai Gadang Village still found several problems. First, the operator's complaint about the indiscipline of the community in disposing of garbage. The disorderly behavior of the community in placing waste and the mismatch between the volume of waste disposed of and the amount of retribution paid causes inequality in the workload for operators and potential injustice in the payment system. Second, the lack of discipline of some operators in the accuracy of the waste collection schedule.

The monitoring and supervision of waste management programs by LPS in Padang City, especially in Balai Gadang Village, still faces several obstacles. The monitoring mechanism that focuses more on public complaints makes supervision not run regularly and thoroughly. The problems that arise include public disorder in disposing of garbage, incompatibility of retribution with the volume of waste, operator discipline, and salary delays due to weak LPS administration.

## DISCUSSION

In analyzing the effectiveness of the integrated waste management program by waste management institutions in Balai Gadang Village, the researcher used the theory of effectiveness proposed by Rochim et al. (2022) which consists of the accuracy of program targets, program socialization, program objectives, and program monitoring. The evaluation results provide an overview of the achievements and shortcomings in the waste management process in the village.

The waste management program has not yet run effectively as expected (Deden Hadi Kushendar et al., 2023; Malefors et al., 2022). The program has been well designed with clear objectives and mechanisms, but its implementation in the field still faces various obstacles. These obstacles occur both in terms of

community participation and the limitations of operational support needed to run the program optimally (Tahir et al., 2024; Tchonkouang et al., 2023). Although this program has been designed with clear objectives, objectives (Marešová et al., 2023; Shinta, 2024), and implementation mechanisms, its implementation in the field still faces various obstacles.

From the aspect of accuracy of the target, the program is indeed directed to the community as the main source of waste generation, but community involvement is still low, which is only around 52% of the total heads of families involved in Balai Gadang Village. The condition shows that not all levels of society understand and actively contribute to participating in the integrated waste management program. Effective and sustainable waste management is essential to maintain environmental balance and community well-being (Mariam et al., 2022; Wilson, 2023).

In terms of program socialization, information dissemination activities carried out by DLH and LPS have been running, both through social media platforms and direct activities in the field. However, the socialization has not reached all sub-district areas and has not fully built public awareness of the importance of being involved in waste management (Debrah et al., 2021; Xia et al., 2022). The level of community participation remains low, with only about half of the households actively involved (Hu et al., 2021; Yu et al., 2024). This condition shows that public awareness and concern for waste management are still limited, so efforts to increase engagement are needed.

The implementation of the program has given quite good results through an increase in the collection of the volume of waste transported and cooperation with supporting agencies such as PDAM and Bank Nagari. However, limited operational funds, lack of facilities and infrastructure, and limited fleet conditions are still the main obstacles in achieving the program's goals optimally (Cheng et al., 2022; Kurniawan et al., 2022).

Meanwhile, in the aspect of program monitoring, the supervision activities carried out by DLH and LPS management have not been carried out systematically and continuously. Supervision is still reactive to community complaints, causing weak control over the implementation of activities in the field (Kurniawan et al., 2024; et al., 2022). As a result, problems such as delays in transporting waste, irregular schedules, and administrative delays still occur frequently.

The findings of this study imply the need for improvements in several aspects of the waste management program. Community participation must be increased through continuous education and socialization, while operational support and facilities must be strengthened. In addition, routine and structured monitoring is necessary to ensure that the program runs effectively and

sustainably, contributing to a cleaner and healthier environment for the community.

## CONCLUSION

The Integrated Waste Management Program by the Balai Gadang Village Waste Management Agency has not been fully effective. Although it has a clear goal, its implementation is still constrained by low public interest due to limited socialization. In addition, there are limited funds, lack of facilities and infrastructure, and weak routine monitoring activities that cause transportation delays and schedule irregularities. Overall, improvements are needed in socialization, provision of facilities, and supervision so that the program runs more optimally and sustainably.

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