

## Research Article

# Optimalization of Policy Implementation of Resource in Waste Management in the City of Pangkalpinang

Widya Handini

Doctoral Student of Public Administration (Sriwijaya University) &amp; STISIPOL Pahlawan 12

**ORCID**Widya Handini: <https://orcid.org/0009-0001-5135-0161>**Abstract.**

Pangkalpinang City is one of the cities where the amount of waste increases every year. The amount of waste continues to increase along with population growth. Pangkalpinang City collects 150–200 tons of waste from residents every day, while the 2.5-hectare landfill with a population of more than 250,000 people has exceeded its capacity. In addition, if this facility is not operated optimally, Pangkalpinang City will find it difficult to fulfill its waste management duties. As a result, waste accumulates and causes many negative impacts on the environment and public health. This research aims to find out how the implementation of waste management policies in Pangkalpinang City, especially in the resource aspect, is implemented, and to analyze the optimization of the implementation of resource policies in waste management in Pangkalpinang City. In the last 10 years, several studies on waste management in Pangkalpinang City have been carried out. However, research related to the implementation of waste management policies in Pangkalpinang City has never been studied. Therefore, this research is novel and needs to be carried out to analyze and maximize the implementation of policies related to waste management resources in Pangkalpinang City. This research uses a descriptive method with a qualitative approach. Data collection techniques were carried out through observation, focus group discussion (FGD), in-depth interviews, documentation, and secondary data collection related to the Pangkalpinang City Waste Management Policy Regulation.

**Keywords:** policy, policy implementation, waste management policiesCorresponding Author: Widya Handini; email: [widyahandini@gmail.com](mailto:widyahandini@gmail.com)**Published:** 30 May 2024

Publishing services provided by Knowledge E

© Widya Handini. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICOSSH VI Conference Committee.

## 1. Introduction

Urban waste is one of the complex problems faced by developing countries, including Indonesia. Poorly managed waste can lead to health issues due to various diseases, unpleasant odors, soil and water pollution, and a lack of environmental cleanliness and aesthetics [1].

Waste policies in Indonesia are governed by the Waste Management Law No. 18 of 2008 (Waste Management Law). Recently, the government has enacted derivative regulations through Government Regulation (PP) No. 81 of 2012 on Household Waste

**OPEN ACCESS**

and Household Waste Management and PP No. 27 of 2020 on Special Waste Management. According to the Waste Management Law [2], population growth and changes in consumer habits have led to an increase in the quantity, types, and characteristics of different types of waste. The consumption of compounds in the form of food and packaging materials, especially non-biodegradable packaging like plastic bags, has led to an annual increase in plastic waste, causing health problems for humans and environmental damage. Waste management must be carried out holistically and comprehensively from start to finish to maximize benefits for both public health and the environment while also influencing societal behavior. The waste issue should be addressed seriously with the appropriate technical, operational, and integrated management approaches based on the conditions and practices of each sector [3].

Pangkalpinang City is one of the cities where the amount of waste increases annually, in tandem with population growth. Pangkalpinang City collects 150-200 tons of waste daily from its residents, while the landfill area of 2.5 hectares in this region has exceeded its capacity with over 250,000 residents. The waste generated by the population of Pangkalpinang in 2018, which was 208,520 people, amounts to 232,136.35 tons per year, while only 141,193.19 tons per year can be managed [4]. This substantial amount of waste is not accompanied by an improved waste management system. To date, waste management in Pangkalpinang City still follows the old system of collection, transportation, and disposal of waste. On the other hand, waste disposal issues continue to recur. The waste management problem in Pangkalpinang City has not been satisfactorily resolved, such as the waste management problem at the Parit Enam Landfill in Pangkalpinang City, which disrupts community activities. Waste management in Pangkalpinang relies on the operation of the Parit Enam Landfill. If this facility is not optimal in its operation, the Pangkalpinang City Government will face difficulties in fulfilling waste management duties. Consequently, waste accumulates and causes numerous negative consequences for both the environment and public health. Moreover, the pungent odor emanating from the Parit Enam Landfill in Pangkalpinang City has significantly disrupted daily community activities.

Furthermore, a critical issue in waste management in this city is the low capacity and facilities of relevant agencies compared to the amount of waste handled. Local governments have the authority to establish waste management policies and strategies based on national policies in conducting waste management. The Regional Regulation on Waste Management is one of the policy products of the Pangkalpinang City Government aimed at the public for waste management in Pangkalpinang City. Therefore,

the implementation of waste management policies is necessary to achieve a clean and healthy urban environment.

The research problem formulation includes: 1) How is the implementation of waste management policy in Pangkalpinang city, particularly in relation to resources? 2) What efforts can be made to ensure that the implementation of waste management policy, specifically regarding resources in Pangkalpinang city, can run optimally? This study employs a descriptive method with a qualitative approach. Several studies have been conducted in the last 10 years, such as research on the utilization and improvement of waste management in Pangkalpinang [5], then research on the Model of Landfill Site Determination Support System in Pangkalpinang [6], research on public knowledge and data collection on coastal waste composition in Pangkalpinang city [7]. Furthermore, there is research on the Influence of Household Waste Reduction Based on the 3R Program in Pangkalpinang city using dynamic system modeling [8]. Then, research on the design of waste levy information system at the Environmental Agency of Pangkalpinang city [9]. However, research on waste management policy, especially in the case of Pangkalpinang city, has never been conducted. Thus, there is novelty in this research, and it is needed to analyze and maximize the implementation of waste management policy in Pangkalpinang city.

## 2. Methods

The research is located in Pangkalpinang City, Bangka Belitung Islands Province, Indonesia. This study used a descriptive method with a qualitative approach. The research focuses on understanding how the implementation of waste management policies, especially regarding resources, is carried out in Pangkalpinang City and seeks ways to optimize the implementation of these policies in Pangkalpinang City. Data collection techniques used include observation, Focus Group Discussion (FGD), interviews, and documentation.

According to Law No. 18 of 2008 [2], every regency and city government is obligated to manage waste to improve the welfare of the people. The procedure for waste management is the responsibility of each region. The purpose of public policy evaluation is to assess the effectiveness of policies being implemented. If a practice is related to implementation and the set goals, then it is considered successful. Policy implementation is a crucial step in the policy process. Without implementation, a policy is merely a document without meaning to society [10]. The government can formulate many policies with the help of experts from both within and outside the country, but

if they cannot be implemented, they may not have an impact on the nation's life [11]. The study of the implementation of regional waste management regulations is viewed from one perspective based on Edward III's Policy Implementation Theory [12], which is resources.

Data collection was carried out through in-depth interviews with informants from the Environmental Agency of Pangkalpinang City (Head of the Environmental Agency of Pangkalpinang City, Head of the Waste Management Division in the Environmental Agency of Pangkalpinang City, and staff responsible for waste collection). In addition, direct observations and Focus Group Discussions (FGD) were conducted to understand the complexity of waste management issues in Indonesia, particularly in Pangkalpinang City. Secondary data were obtained from literature reviews. Furthermore, informant identification was carried out deliberately (on purpose). Data from interviews, observations, FGD, and secondary data were collected, processed, and analyzed qualitatively.

The stages in qualitative research methodology begin with problem identification, followed by literature review, clarification of research objectives, data collection, observation, sampling, interviews, ethical questions, and data analysis [13]. When analyzing data, data reduction, presentation, and conclusion drawing are carried out. Data reduction involves categorizing data obtained from primary and secondary data collection processes. Data reduction is a selection process focused on simplifying, abstracting, and transforming raw data from field notes. Reduced data provide a more accurate picture and make it easier for researchers to gather more information if needed. After data reduction, the next analysis step is data presentation. The material is presented in the form of descriptive text, where the research findings are discussed and debated with the help of additional graphics, tables, or diagrams. Data presentation is designed to organize the generated data in a relational pattern for better understanding. Data presentation can take the form of narrative descriptions, diagrams, class relationships, and flowcharts. Presenting data in this format facilitates the researcher's understanding of what is happening [14]. At this stage, the researcher seeks to collect relevant data so that the information obtained can be summarized and have a specific meaning to answer the research problem. The results displayed include:

A description of the implementation of Pangkalpinang City waste management policies based on regional regulations, including content descriptions, implementation descriptions, and empirical evidence of regional regulations per object, presented in descriptive form and supported by tables.

A description of the critical aspects of policy implementation, such as resources. The third stage involves drawing conclusions from the research findings and making recommendations to the community. Making or verifying inferences is an effort to discover or understand meanings, regularities, patterns, explanations, cause-and-effect relationships, or propositions. Before drawing conclusions, data cleansing, data presentation, and conclusion drawing or review of previous activities are carried out.

In this research, the researcher will use Edward III's theory. In Edward III's view (1980), policy implementation is influenced by four variables: 1. Communication, resources, disposition, and bureaucratic structure. However, the author will only discuss in detail the resource aspect.

### 3. Results and Discussion

In terms of resources, the important aspects that are further examined are human resources, infrastructure, and budget. Regarding human resources, the human resources in the Environmental Agency of Pangkalpinang City are competent in their respective positions. At the end of 2021, the Environmental Agency of Pangkalpinang City had a total of 45 employees, consisting of 4 individuals or 8.89% with master's/S2 degrees, 25 individuals or 55.56% with bachelor's/S1 degrees, and 16 individuals or 35.56% with non-bachelor's degrees. As shown in Table 1.1.

TABLE 1: Composition of Pangkalpinang City Environmental Service Employees in 2021 Based on Education.

NO	POSITION	EDUCATION LEVEL				TOTAL
		DOCTOR	MASTER	UNDERGRADUATE	NON UNDERGRADUATE	
1	Echelon II		1			1
2	Echelon III		1	3	0	4
3	Echelon IV		2	10	1	13
4	Excecutor			11	14	25
5	Main Radiation Supervisor			1		1
6	Skilled environmental impact controller				1	1
<b>TOTAL</b>						<b>45</b>

Source: General Affairs and Personnel Subdivision of the Environmental Agency of Pangkalpinang City, 2021.

Considering the conditions of employees as mentioned above, based on their educational levels, the human resource capacity of the Environmental Agency of Pangkalpinang City is generally sufficient. In terms of educational background, some individuals have educational backgrounds that do not match their responsibilities. However, based on interview results, regardless of their educational backgrounds, their performance remains competent. There are also personnel whose educational backgrounds align with their responsibilities.

To enhance human resource competence, the Pangkalpinang City Environmental Agency has a resource improvement program. This program is intended to support the main tasks of the Environmental Agency of Pangkalpinang City, particularly in enhancing institutional capacity in terms of organization, management, infrastructure, supervision, and other aspects.

Human resources play a crucial role in policy implementation in the field of public administration. It is expected that human resources in the Environmental Agency of Pangkalpinang City have a better alignment between their responsibilities and educational backgrounds. This is because human resources are the primary elements in carrying out tasks and responsibilities related to public policy. They are the ones translating policies into tangible actions. Without competent and trained staff, policy implementation can be hindered or even fail. Moreover, human resources with skills and competencies that match policy requirements can execute their tasks more effectively. Training, development, and education related to policies are essential to ensure that staff have the necessary knowledge and skills. Additionally, the Pangkalpinang City Environmental Agency must pay attention to several other important criteria to ensure that existing resources can perform their tasks optimally, such as the ability to coordinate and collaborate with other agencies, the ability to make informed decisions based on relevant data and information, the ability to identify problems or obstacles in implementation and take necessary corrective actions, and effective communication and social interaction skills to facilitate community participation in policy implementation.

Overall, human resources are a key factor in the success or failure of policy implementation in public administration. Therefore, governments and public institutions need to invest in the development, training, and proper management of human resources to ensure that the established policies can be executed efficiently and provide the expected benefits to the public.

Regarding the budget, in the fiscal year 2021, the Environmental Agency of Pangkalpinang City received a budget allocation of Rp. 26,340,160,200.00, which came from the Regional Budget (APBD) of Rp. 24,881,160,200.00 and Assignment Fund (DAK

Penugasan) of Rp. 1,459,000,000.00. This budget covered Operational Expenditures of Rp. 5,086,146,374.00 and Capital Expenditures of Rp. 21,254,013,826.00, allocated for the implementation of 7 (seven) programs. The budget situation for waste management is still insufficient. Ideally, the budget for waste management should increase every year, as both waste and the population increase annually. In reality, the budget does not increase. The budget determination process is based on proposals from the Regional Planning Agency of Pangkalpinang City, where the Environmental Agency submits a budget proposal for waste management, including waste handling, personnel salaries, and operational costs for waste collection vehicles. However, the budget allocation is determined during a meeting chaired by the Secretary of the City.

Budgeting plays a crucial role in policy implementation in the context of public administration. The budget determines the allocation of resources needed to implement policies, including funds, personnel, equipment, and various other resources. Without adequate allocation, policy implementation can be hindered or even fail. The budget helps control government expenditures, ensuring that the required expenditures for policy implementation do not exceed established limits, thus maintaining the government's financial balance. The budget aids in setting priorities for policy implementation. The government must decide among various programs and projects to be funded, which depends on policy priorities and public needs. The government is accountable for the use of public funds to the public and oversight bodies. A clear and detailed budget facilitates the monitoring and evaluation process. The budgeting process involves various stakeholders, including legislative bodies and the general public. This can strengthen support for policies and increase transparency in the implementation process. Overall, the budget is an essential tool in managing and facilitating policy implementation. Good involvement in budget planning and management can help ensure that policies are executed efficiently, transparently, and in line with government priorities and public needs. In the Environmental Agency of Pangkalpinang City, there needs to be increased involvement of various parties, including the community, field personnel, division heads, etc., to ensure that the planned budget aligns with field needs.

The infrastructure and facilities owned by the Environmental Agency of Pangkalpinang City include buildings, office equipment and supplies, waste facilities, office operational vehicles, and waste transport vehicles, including 84 units of pickup trucks, 20 units of trucks, 4 units of armroll trucks, 1 landfill site, 4 units of temporary recycling centers (TPS3R), 1 central waste bank, 5 small waste banks (BSU), and a "Compost" grinding machine. In general, the facilities and infrastructure in the

Environmental Agency of Pangkalpinang City are still insufficient due to the budget limitations.

The production of waste in Pangkalpinang reaches 150 tons per day, while the current capacity of the landfill site can no longer accommodate this amount of waste. It is feared that this could become a threat in the future if not addressed promptly. Currently, only about 20% or approximately one hectare of active land remains in the Parit Enam Landfill, Bacang Subdistrict. This is a significant reduction from the previous 4.5-hectare area. Furthermore, the one-hectare active area cannot be utilized due to infrastructure, facilities, and transportation constraints in the area, as there is no access road to the location, making it impossible for waste transport vehicles to reach the site. Additionally, waste management at the landfill site is still not optimal, with waste being piled up and buried using soil. This practice continues to cause air pollution for residents living within a radius of less than two kilometers from the site.

## 4. Conclusion

Overall, it can be concluded that resource management in waste management at the Environmental Agency of Pangkalpinang City is still not optimal. In terms of human resources, there is a sufficient number of employees with skills appropriate for their required tasks. However, there are still personnel whose backgrounds do not align with their roles, and there is a need for improvement in various skills. Furthermore, in terms of budget resources, there are still issues, namely, a shortage of funds at a time when waste generation increases every year in proportion to the growth of the human population. It is hoped that in the budget allocation process, all stakeholders involved can be invited and given the opportunity to express their opinions. Regarding infrastructure and facilities, there is still a need for optimization in providing facilities at the Parit Enam landfill site. Resources are one of the key factors required to achieve effective policy implementation. Without adequate resource support, policies will remain as documents without concrete actions.

## References

- [1] Nugraha A, Sutjahjo SH, Amin AA. Analisis Persepsi Dan Partisipasi Masyarakat Terhadap Pengelolaan Sampah Rumah Tangga Di Jakarta Selatan. *J Pengelolaan Sumberd Alam dan Lingkung (Journal Nat Resour Environ Manag.* 2018;8(1):7–14.



- [2] UU RI. Undang-Undang Republik Indonesia Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah. *Phys Rev A* [Internet]. 2008;100(1):1612–6.
- [3] Darmanto T. Implementasi kebijakan tata-kelola persampahan di Kabupaten Jombang. *Jejaring Adm Publik*. 2012;2:175–82.
- [4] DLH pangkalpinang. Sampah Kota Pangkalpinang. 2018
- [5] Ningsih S. Evaluasi Program Pemanfaatan Dan Peningkatan Pengelolaan Sampah Oleh Dinas Lingkungan Hidup Kota Pangkalpinang Kepulauan Bangka Belitung. 2021;
- [6] Magdalena H, Santoso H, Rahayuningsih H, Rochmayani K, Oktoranda O. Model Sistem Pendukung Keputusan Menentukan Tempat Pembuangan Akhir Sampah di Kotamadya Pangkalpinang. *CogITo Smart J* [Internet]. 2019;5(1):22–34. Available from: <https://cogito.unklab.ac.id/index.php/cogito/article/view/148>
- [7] Sari E, Pratiwi FD. Pengetahuan Masyarakat Dan Pendataan Terhadap Komposisi Sampah Pesisir Di Pantai Pasir Padi Kota Pangkalpinang. *J Pesisir Dan Laut Trop*. 2020;8(1):106.
- [8] Fitriansyah H. Pengaruh Reduksi Sampah Rumah Tangga Berbasis Program 3R Di Kota Pangkalpinang Menggunakan Pemodelan Sistem Dinamik [Internet]. *eprints.undip.ac.id*; 2021. Available from: <http://eprints.undip.ac.id/83475/>
- [9] Rochmayani K, Rahayuningsih H. Sistem Pendukung Keputusan Pemilihan Tempat Pembuangan Akhir Sampah Kota Pangkalpinang Metode Analytical Hierarchy Proses ... [Internet]. *repository.atmaluhur.ac.id*; 2018. Available from: <https://repository.atmaluhur.ac.id/handle/123456789/1828>
- [10] Widodo J. Analisis Kebijakan Publik: Konsep, dan Aplikasi Proses Kebijakan Publik [Internet]. Malang: Bayu Media. Media Nusa Creative (MNC Publishing); 2021. 1–186 p.
- [11] Izzaty, Sari R. Kebijakan Penetapan Upah Minimum di Indonesia. *J Ekon Kebijakan Publik*. 2013;4(2):131–45
- [12] Subarsono AG. Public policy analysis. Yogyakarta Student Libr. 2005;
- [13] Bungin B. Metode Penelitian Kualitatif, Jakarta: PT. Raja Graf Persada. 2004;
- [14] Miles MB, Huberman AM. Analisis data kualitatif. Jakarta: UI press; 1992.