

# INSTITUTION MODEL ON MANAGEMENT OF REGIONAL WASTE PROCESSING SITE

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**ABSTRACT---** *The main problem of waste management in urban areas is the limited land available for the location of the Final Waste Processing Site (TPAS). To overcome this problem, the city government cooperated with the district government in handling the final processing of waste together (TPAS Regional) with TPAS locations in the district area. This condition occurs in the cities of Yogyakarta and Denpasar, which have collaborated in the management of Regional TPAS with surrounding districts. Yogyakarta City Government cooperates with Sleman Regency and Bantul Regency, known as TPAM Regional Kartamantul. While the Denpasar City Government collaborated with Bandung Regency, Gianyar Regency, and Tabanan Regency, known as TPAS Regional Sarbagita. In the implementation of the Regional TPAS, it is less effective due to among others: institutional structures that are too large, lack of coordination between institutions, overlapping of leading tasks, and institutional functions between districts if problems occur. This study aims to choose the right institutional model for regional TPAS management so that it can develop and be independent. This research uses exploratory methods and discussed using SWOT analysis. The SWOT analysis results show that the Regional Technical Implementation Unit (UPTD) of Province is superior to the District UPTD. The existence of UPTD institutions under the Provincial Government as the manager of the Regional TPAS facilitates supervision and control in the field. Districts/cities involved in cooperation can send waste to the TPAS location, with only a tipping fee charged according to the volume of waste sent. Whereas the transportation of debris from the waste source to the TPAS location remains the responsibility of each district/city. This research conducted in two areas, TPAM Regional Kartamantul and TPAS Regional Sarbagita. The most appropriate institution to manage Regional TPAS to be able to develop and be independent is the Provincial UPTD by applying the Financial Management Pattern of the Regional Public Service Board (PPK-BLUD).*

**Keywords---** *Final Waste Processing Site, SWOT Analysis, Regional Technical Implementation Unit, Regional Public Service Board.*

## I. INTRODUCTION

Garbage Final Processing Site (TPAS) is a place to process and return waste to the environment media safely for humans and the environment. A good TPAS is a TPAS based on sanitary landfills and controlled landfills. Whereas TPAS, which commonly carried out in various cities in Indonesia, is an open dumping method where the

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garbage is just thrown away in a landfill without further treatment and then left when it is full. Even though through Law Number 18 Year 2008 regarding Waste Management, the Government is urging each region to close the landfill that is still open dumping no later than 5 (five) years since the enactment of the Act. This means that no later than 2013, there should not be another landfill with an open dumping waste management system. This condition, if left unchecked, can lead to problems of pollution and environmental degradation.

In addition to the improper method of processing waste, because it is still open dumping, the location of the landfill also needs to be evaluated for its suitability about the guidelines or regulations regarding waste management that apply, in particular, SNI 03-3241-1994 regarding the procedures for selecting TPAS locations. The proper method of processing waste in the landfill, which is supported by appropriate location placement, will encourage the realization of a more sustainable discharge. The limited landfill in the urban area has encouraged the city government to collaborate with the district government in managing the discharge. This condition occurs in the Yogyakarta City Government in collaboration with the Bantul Regency and Sleman Regency. Likewise, the Denpasar City Government collaborated with the Bandung District Government, Gianyar Regency, and Tabanan Regency. The problem is whether the best form of Regional TPAS management institution so that the TPT managing UPTD can later develop through the Financial Application Pattern of the Regional Public Service Agency (PPK-BLUD)

### ***1) Waste Management***

Waste is an item that considered to be unused and discarded by its owner, but some can still use if managed with the right procedures (Nugroho, 2013). Sources of waste generation can come from residential areas, public infrastructure, trade, community service facilities, industry, and agriculture. Waste management starts from the initial place of waste disposal, namely households, institutions, and temporary disposal. Government involvement urgently needed in waste operational activities, including transportation, processing, final disposition, and waste utilization. Government institutions related to waste management, both at the central and regional levels, including the Ministry of Environment, the Ministry of Public Works, the Regional Technical Implementation Unit (UPTD), the Sanitation and Gardening Agency (DKP), the Regional Cleaning Company, and the Environmental Management Agency (BPLH). Besides, the facilities and infrastructure owned by the government strongly support the implementation of waste management programs and activities. Besides the government, the main supporting factor for the successful handling of waste is the community's participation in reducing waste starting from the source.

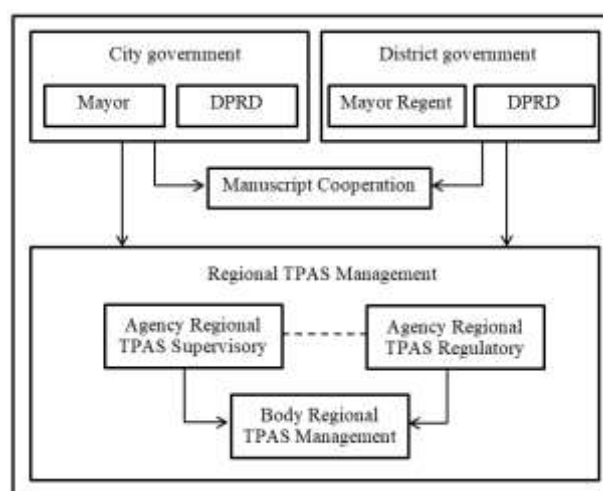
According to Government Regulation No. 81 Year 2012 detailed by Minister of Public Works Regulation Of Indonesia No. 3 Year 2013, the waste handling by the government was carried out in stages including: sorting and classifying waste according to the type and characteristics of waste, collect and move the debris from the source of waste to temporary shelters, transport waste from temporary storage to the final waste processing site, processing waste by changing the characteristics, composition and amount of waste, process waste in the form of residues to be returned to the environment safely. So that the Regional Government can carry out this task requires an appropriate institution of waste management following the characteristics of the generation of waste in the area.

## 2) *Regional Waste Recycling Processing Sites (TPAS)*

Waste management ends when waste is sent to TPAS for safe processing and return to the environment. Limited landfill land in big cities in Indonesia encourages the city government to collaborate with the district government through the establishment of Regional TPAS. The formation of the Regional TPAS begins with the activity of compiling cooperation agreement documents carried out by the parties of the regency/city. They want to collaborate in the final waste processing at a landfill together (called the Regional TPAS). Generally, the initiative of this cooperation agreement comes from the City Government, which has problems in providing TPAS land. On the other hand, the district government also benefits from the Regional TPAS because it is more efficient than building the TPAS itself. With the cooperation in the form of Regional TPAS, the participating districts or cities will only send waste to the Regional TPAS location, with only a tipping fee charged. However, waste transportation from the source of waste or depot to TPAS remains the responsibility of each local government. In general, the contents of the articles of the Memorandum of Understanding are the basis for cooperation, objectives, scope, implementation, the role of each party, financing, results, period, dispute resolution, and closing.

According to Government Regulation No. 14 of 1987 and Law No. 33 Year 2004), that waste management is an autonomous or decentralized regional authority. Even so, it does not mean that to manage waste in the area, the local government must carry out its waste handling, especially during the final processing of garbage. Therefore, cooperation between regions can be done through the establishment of Regional TPAS by involving one or more districts/cities, with various considerations, efficiency, and effectiveness.

The initial step in implementing cooperation through the establishment of a Regional TPAS is to establish the objects of collaboration. Next, conduct a feasibility study and determine the institutional form. Alternative institutional structures that can propose as managers (operators) of the Regional Landfill are: Provincial UPTD or Regency UPTD, Regional Company (PD), Regional Public Service Agency (BLUD), Management Institution owned by Regional TPA Participants, Third-party (private). In regional TPAS, institutions must be separated between the institutions that carry out regulation, supervision, and management of Regional TPAS, as shown on Figure 1.



**Figure 1:** Cooperation Relations between Institutions

### 3) *Institutional Improvement of PPK-BLUD*

Following Government Regulation No. 41 of 2007, the form of a Regional TPAS management organization must be UPTD under the Public Works Department at the Provincial Government level. Regional TPAS management institutions must have a separation between supervisors, regulators and managers so that Regional TPAS institutions in the form of Joint Secretaries or Cooperation Agencies will experience difficulties in acting as operators as well as supervisors and regulators.

To develop their role in managing the final wastes processing, the institutional capacity of the Regional TPAS can increase by applying the BLUD financial management pattern (Government Regulation No.23 Year 2005 and Permendagri No. 61 Year 2007). By running a BLUD, the Regional TPAS management institution can manage finances independently, like a regional company. Regional TPAS management institutions at the provincial level as providers of final waste processing services and district/city waste management institutions as service users (Anggraini, 2011).

## II. METHODOLOGY

The research method uses exploratory methods for regional TPA institutions that applied to agencies in the field. The study uses secondary data and primary data. Primary data sources come from surveys of relevant agencies and interviews with solid waste institutional experts. Survey locations carried out in Yogyakarta and Bali. The results of secondary data and primary data are carried out for the analysis of the Regional TPAS management agency at each research location and determining the best alternative management institutions as well as the stages of forming the Regional TPAS management agency.

The discussion uses the SWOT method for several alternative TPAS Regional management institutions. Institutional selection based on the results of an assessment of indicators of internal and external environmental factors.

## III. RESULTS AND ANALYSIS

### 1) *TPAS Kartamantul*

Kartamantul TPAS is a form of cooperation between regions in the management of the final waste processing site (TPAS) located in Piyungan, Bantul Regency. This collaboration was carried out by three local governments, namely Yogyakarta City, Sleman Regency, and Bantul Regency, which subsequently were named Kartamantul. The form of cooperation includes operational funding and maintenance of Kartamantul. Legal Basis for Cooperation Agreement between the Government of Yogyakarta City, Sleman Regency, and Bantul Regency, Number 07 / Perj / Bt / 2001, 05 / PK.KDH / 2001, and 02 / PK / 2001 concerning Management of Kartamantul's Final Waste Processing Site (TPAS) in Piyungan Bantul Regency. This cooperation agreement signed in Yogyakarta on November 28, 2001. The purpose of this cooperation agreement is that the utilization, management, and development of Kartamantul TPAS is carried out effectively and efficiently and meet environmental technical

standards TPAS, waste processing technology, environmental management, and the determination of retribution rates.

This cooperation agreement consists of 25 articles, namely: basis and objectives, principles of the cooperation agreement, scope, operation and maintenance management, development of infrastructure and facilities, organization formation, supervisors, supervisors, personnel composition of the supervisory team, functions, and duties of the supervisory team, determination and personnel income, environmental management, financing and infrastructure development, withdrawal and distribution of local levies on TPAS, the obligations of the parties, the rights of the parties, the responsibilities of the manager, the rights of the manager, the period and sanctions. Agencies involved in the management of Kartamantul TPAS are District/city Bappeda, Public Works Office, Cleanliness, Beauty and Funeral Services (DKKP), Kimpraswilhub Office, Environmental Impact Management Office.

The institutional form of cooperation between the three Regional Governments consisting of the Yogyakarta City government, Sleman Regency, and Bantul Regency is the Joint Secretariat of Kartamantul. The management system is carried out in rotation by each regency/city member of Kartamantul every 2 (two) years. Whereas the Kartamantul TPAS Management Unit technically implements the operational system.

## 2) *Sarbagita TPAS*

Sarbagita is a form of cooperation between Sarbagita TPAS management in three local governments, namely Denpasar City, Bandung Regency, Gianyar Regency, and Tabanan Regency, which are then named Sarbagita. The collaboration aims to solve various problems together in an integrated environmental and hygiene management.

Sarbagita formed on April 16, 2001, based on a Joint Decree between the Mayor of Denpasar (No. 357 of 2001), the Regent of Badung (No. 1403 of 2001), the Regent of Gianyar (No. 130 of 2001), the Regent of Tabanan (No. 150 of 2001). The Sarbagita, waste management program, is a collaboration between the government and the private sector (KPS) and community participation (PSM). Waste management in Sarbagita TPAS currently handled by institutions consisting of:

- Sarbagita Management Agency (BPS)
- Sarbagita Control and Control Agency (BPPKS)
- Sarbagita Cleanliness Management Supervisory Agency (BP2KS)

The characteristics of the two Regional TPAS mentioned above have some differences that can detail as the following Table 1:

**Table 1:** Comparison of the Characteristics of TPAM Kartamantul and TPAS Sarbagita

No.	Characteristics	TPAS Kartamantul	Sarbagita TPAS
1	Legal Basis	Joint Decree	Joint Decree
2	Funding and Risk Sharing	There is	There is
3	Cooperation Institutions formed	There is	There is

4	Cooperation in landfill management	There is	There is
5	The nature of cooperative institutions	Coordinate	Operational
6	Separation between operator and supervisor	There is no	There is
7	Form of cooperation institution	Joint Secretariat	Cleanliness Management Agency

The difference in characteristics between TPAS Kartamantul and TPAS Sarbagita lies in the nature and form of the institution and the separation between operators and supervisors, while the similarity is that the two TPAS still managed by the district UPTD.

#### IV. DISCUSSION

When there is a mutual agreement between regions to form a Regional TPAS, the problem that arises in the form of the management agency, whether the provincial UPTD or district UPTD. The district UPTD can use to handle Regional TPAS as a more natural first step compared to forming a new business entity because it is still under the control of the relevant department. However, the implementation often creates conflicts of interest between regions.

The best institutional between the District UPTD and the Provincial UPTD, a SWOT analysis is carried out based on consideration of internal and external environmental factors (Rangkuti, 2008). These internal and external environmental factors serve as the basis for determining the best choice for the needs of regional TPAS management institutions. The following table compares the assessment of internal and external environmental factors in the District UPTD and Provincial UPTD if both institutions manage Regional TPAS.

**Table 2:** Comparison of Internal Environmental Factors

No.	Internal Environmental Factors	District UPTD		Province UPTD	
		Power	Weakness	Power	Weakness
1	Institutional formation process	√			√
2	Investment and operating costs		√	√	
3	Human Resources		√	√	
4	Determination of tipping fees		√	√	
5	Risk sharing		√	√	
6	Monitoring and evaluation	√			√
7	Provincial funding support		√	√	
8	Continuity of service		√	√	
9	End of cooperation		√	√	

Based on the comparison of internal environmental factors, as shown in Table 2. above indicates that the provincial UPTD has many advantages compared to the district UPTD.

**Table 3:** Comparison of External Environmental Factors

No.	External Environmental Factors	District UPTD		Province UPTD	
		Opportunity	Threat	Opportunity	Threat
1	Compliance with regulations/laws	√		√	
2	Suitability of cooperation goals	√		√	
3	The suitability of the benefits of cooperation		√	√	
4	Channelling funds		√	√	
5	Resolving technical issues	√			√
6	Continuity of waste supply		√	√	
7	Dispute resolution		√	√	
8	Low tipping fee billing rates as a result of low PAD		√		√

Based on the comparison of external environmental factors as shown in table 3 above shows that the provincial UPTD has many advantages compared to the district UPTD. The following data shows the strengths and weaknesses of the provincial UPTD. The benefits of the Provincial UPTD are:

- Risk-sharing shared with the regencies/cities involved in the collaboration
- Continuity of service and waste disposal from regencies/cities is guaranteed
- The determination of the tipping fee is carried out jointly between the parties involved in the collaboration
- The central/provincial government bears investment and operating costs
- Financial support from the primary/provincial government is possible
- The availability of manager resources is guaranteed both in quantity and quality
- Capital and assets are owned by the government when the cooperation ends

The weaknesses of the Provincial UPTD are:

- Institutional formation is very complex and bureaucratic because it requires a Governor's Decree.
- The decision-making process requires a relatively long time

Based on the description on Table 2 and Table 3, the best alternative for Regional TPA management institutions is the Provincial UPTD. Because the provincial UPTD is an operational, technical implementation element, its formation must be base on a Governor Decree. With a position at a higher level in the government hierarchy, the Provincial UPTD can overcome the weaknesses that exist within the district UPTD. The distribution of funds from the intermediate level and the transfer of sharing funds from the community, if implemented, will not cause social jealousy from other districts not involved in cooperation. Thus all the principles of collaboration, namely efficiency, effectiveness, mutual benefit, synergy, good faith, mutual agreement, prioritizing national

interests, and territorial integrity of the Unitary State of the Republic of Indonesia, equality, transparency, justice, and legal certainty can be implemented.

After the regional TPA management institution formed, the next step is to increase its institutional role to become the UPTD, which runs the Financial Management Pattern of the Regional Public Service Agency (PPK-BLUD). By implementing PPK-BLUD, the implementation of Regional TPAs will be given more flexibility in financial management, so that they can provide better services to the public by not being profit-oriented and based on the principles of efficiency and productivity (Regulation of the Minister of Home Affairs Number 61 of 2007). PPK-BLUD is a pattern of financial management that provides flexibility in the form of flexibility to improve services to the community to achieve its objectives, namely advancing public welfare and the intellectual life of the nation.

At present several regencies/cities in the regional scope have initiated the formation of a Regional Technical Implementation Unit (UPTD) to manage the Regional TPAS, which will follow up by completing the requirements in the structure of BLUDs. The formation of this BLUD must have the full support of the Regional Government. In the process of establishing a BLUD, some requirements, namely substantive, technical, and administrative elements. The establishment of this BLUD expected to have a positive impact on the management of Regional TPAS, namely: (1) increasing waste services (2) reducing the burden on the State Budget (3) increasing confidence in waste management (4) improving the regional economy.

## V. CONCLUSION

Based on the SWOT analysis, the best management agency is the provincial UPTD. The existence of this UPTD is advantageous because the UPTD remains in provincial control, making it easier to control implementation on the ground. Regencies/cities participating in Regional TPAS management only send waste to the Regional TPAS location, with only a tipping fee charged according to the volume of garbage delivered. While the transportation of debris from the source of waste or depot to the TPAS location remains the responsibility of each Regency / City Government. Forms of waste management institutions that are not following the regulations or legislation will experience difficulties in allocating the budget and its accountability. The best alternative in the management of Regional TPAS is through the formation of the Provincial UPTD by running the Regional Public Service Board (BLUD) Financial Management Pattern. If, in the management of Regional TPAS, it is desirable to have financial management flexibility, it is possible through improving its institutional status to become a UPTD that applies the BLUD Financial Management Pattern (PPK). The Financial Management Pattern of the BLUD provides flexibility in the form of flexibility to implement sound business practices to improve services to the community based on the principles of efficiency, effectiveness, and productivity.

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