

## Identifying Stakeholders' Role in Waste Management in the Sanitation and Environment Agency of Kupang City

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### Abstract

This is a study to identify the role of stakeholders in waste management in the Sanitation and Environment Agency of Kupang city conducted by M.N.B.C. Neolaka; A. O. Ena Mau and A. Fallo. The purpose of this study is to (1) identify the stakeholders in waste management in the Sanitation and Environment Agency of Kupang city; (2) identify and explain the role of stakeholders in waste management in the Sanitation and Environment Agency of Kupang city; (3) describe and analyze the supporting and inhibiting aspects of the stakeholders' role in waste management in the Sanitation and Environment Agency of Kupang city. The approach used in this study was qualitative, whose type of research is a case study; it was a case relating to the role of stakeholders that have been identified in waste management. Research conducted at the Sanitation and Environment Agency of Kupang city, and in six sub-districts in Kupang city focusing on the role of the government, which in this case, the Sanitation and Environment Agency of Kupang city in dealing with the waste problem. It also discussed the role of the community and organizations concerning the waste problem in the city of Kupang. The results revealed that the Sanitation and Environment Agency of Kupang city played a role in waste management: planning, implementing, and supervising. Other stakeholders having a role in waste management in Kupang City were the Urban Village apparatus, neighborhood and community association (Indonesian: *Rukun Tetangga* or RT and *Rukun Warga* or RW), Sanitation Officers (collectors, transporters, and waste sorters from waste temporary disposal site (Indonesian: *Tempat Pembuangan Sementara* or TPS) to waste final disposal site (Indonesian: *Tempat Pembuangan Akhir* or TPA), stakeholders from the Community Element (households, community groups, students groups, scavengers, collectors, as well as small and medium enterprises), and private parties (managers of tourist attractions and companies).

**Keywords:** Role, Stakeholders, Management, Solid Waste, Environment, Sanitation

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### BACKGROUND

According to the Sanitation and Environment Agency of Kupang city data in 2017, the Kupang City population of 550 thousand people produces 400 tons of waste per day or equivalent to 900 cubic meters. Of this amount, around 400 cubic meters is transported to the landfill site, and 10 percent is recycled into compost. The rest, which is about 500 cubic meters per day, is managed individually by burning or throwing the waste away in water-bodies. Communal management begins with garbage collection at the waste temporary disposal site (TPS) and then transported by garbage trucks to the waste final disposal site (TPA).

To date, there are 262 units of permanent TPS built, and 32 of them were damaged. Regarding this number, the Sanitation and Environment Agency of Kupang city revealed that this number is still far from enough because there are still many residential settlements with no TPS. To transport waste from the TPS to TPA, the Sanitation and Environment Agency of Kupang city has several transport units: five-arm roll units, 29 dump trucks, and 13 bin containers; there are two operational arm roll units, 20 dump truck units, and six bin containers. Meanwhile, to provide optimal service and fulfill the target of waste transportation services, with the amount of production as previously stated, at least ten arm rolls, 51 dump trucks, and 30 bin containers are needed.

Based on the explanation and data stated above, it appears that the waste problem requires solid waste management. In this case, it is not only the government's responsibility but also the community, both as a subject and an object. Waste management in Kupang city requires the involvement of all stakeholders' interests both as subjects (waste producers) and objects (waste consumers) of the waste problem.

Based on the description above, to solve the waste problem in Kupang city, it is necessary to, directly and indirectly, involve all parties in the waste problem. Thus, to determine what and how each party's roles are needed, a study on identifying the role of stakeholders in waste management in the Sanitation and Environment Agency of Kupang city is needed.

This research aimed to (1) identify the stakeholders in waste management in the Sanitation and Environment Agency of Kupang city; (2) identify and explain the role of stakeholders in waste management in the Sanitation and Environment Agency of Kupang city; (3) describe and analyze the supporting and inhibiting aspects of the role of stakeholders in waste management in the Sanitation and Environment Agency of Kupang city.

This research offers usefulness; academically, it is hoped that solid waste can take into account stakeholders' role, while practically, it can contribute ideas to the Kupang City government in overcoming solid waste problems

through active stakeholder involvement.

## LITERATURE REVIEW

### The Concept of Public Administration

According to McCurdy (1986 in Keban, 2008: 3), public administration is not just a managerial but also a political problem, which is one method of governing a country and can also be considered as a principle way to perform various functions of the state (Keban, 2008; 3). Conceptually, state functions include regulation, service and protection (Siagian, 2001; 128-129; Keban, 2008; 17; Hardiyansyah, 2011; 16). As stated by Thoha (without the year; 37) and Keban (2008; 4-5) public administration can also be understood as (1) public administration explains the role of government as the sole agent in power or as a regulator that actively initiates, regulates and takes steps initiative because it considers the community as a passive party; (2) public administration is related to the role of government as a service provider that carries a mission responsive to the needs of the community and knows the best way to provide services to the public; (3) public administration is oriented towards the dimension of community empowerment by prioritizing the independence and ability of the community.

Meanwhile, regarding the political, legal/managerial, managerial, livelihood categories, Shafritz and Russel (1997 in Keban, 2008; 6-7) define public administration as: (1) in the political category, public administration is understood as "what government does" both directly and indirectly; (2) based on the category of legal/public administration law, it is understood as the implementation of the "law in action," or regulation; (3) based on the managerial category, public administration is seen as an executive function in government; and (4) based on the livelihood category, public administration is a form of the profession from general to specific because it is related to certain skills.

### Public Administration Paradigm

Public administration, as a science, has experienced several paradigm shifts. In understanding government administration and public bureaucracy, Warsono (2008; 20-23) describes a shift in the paradigm of public administration in four comparison matrices: Old Public Administration (OPA); New Public Management (NPM); Entrepreneurial Government (EG); and New Public Services (NPS). Each paradigm's characteristics and characteristics can be identified through several dimensions, including Objectives, Incentive; Responsibility; Power; Culture; Role of Government; and the Concept of Public Interest.

The development of the public administration paradigm described above shows that the implementation of solid waste management in general, or implemented by the Kupang city government in particular, is still affected by the developing paradigm. Ideally, if the implementation of waste management is expected to increase stakeholder participation (community), empowering the community or the government can create a collaborative climate between stakeholders. However, these conditions have not been implemented.

The role of government is still more limited to the paradigm of the New Public Management (NPM) and the Entrepreneurship Government (EG) that is directing (Steering) even at the level of the Old Public Administration (OPA), which is participating in implementing (Rowing). The community is still seen as a customer, not as a citizen. As a result, community participation in waste management is meager. The community assumes that waste is the government's problem, and the parties concerned. The community seems to be spoiled by the government.

### The Concept of Participation

According to Keith (1978 in Wibawa, 1992; 57), participation in a person's mental and emotional involvement in a group situation helps motivate people to realize group goals and to accept responsibility willingly. Regarding Good Governance, citizen participation is citizen involvement in making decisions regarding the use of public resources and solving public problems for regional development (Sumarto, 2009; 109).

Participation is an attitude to participate in planning, implementing, and supervising an activity. Thus, participation can be measured using attitude indicators and the results of the attitude indicators. There are two types of indicators in measuring participation: a) Attitudes during the planning, implementing, and supervising an activity, and; b) The frequency and quality of involvement in planning, implementing, and supervising an activity/program (Wibawa, 1992; 58). Through participation, citizens become more aware of the problems in their environment and have confidence that they can contribute to overcoming them. The stakeholder dialogue process can encourage the government to be more open to stakeholder input and more responsive to its citizens' demands.

Several problems arise in the regional development process when citizen participation is not heeded, including (1) lack of guidance and information regarding the needs and desires of its citizens; (2) investment in the region not reflecting the priority needs of the citizens; (3) scarce public resources not optimally empowered; (4) no access to potential community resources related to quality improvement; (5) inaccuracy in designing service standards; and (6) the facilities not being used optimally.

## Stakeholders Concept

According to Freeman (1984 in Firedman and Miles, 2006: 1), the classic definition of stakeholders is any group or individual that can influence or be influenced through the achievement of organizational goals. In general, there are two views used in explaining stakeholder definitions. First, it shows the nature of the relationship between the organization and stakeholders. Second, it includes adjectives or other qualifications or aspects of the organization or stakeholders. It refers to a scope-simplification of who can be identified as a stakeholder. This simplification can occur in two ways: strategic or normative. Qualifications such as legitimate claims made as stated by Calton and Lad (1995, in Firedman and Miles, 2006: 11) narrow the scope of who can be considered a stakeholder by using normative criteria.

There is a clear relationship between the definition of what stakeholders are and the identification of stakeholders. The most common way to classify stakeholders is to consider groups of people with distinguishable relationships in the company (Firedman and Miles, 2006; 13).

The most common stakeholder groups to consider are Shareholders, Customers; Suppliers and distributors; Employees; and the surrounding community. Anyone might be referred to as a stakeholder. However, the main problem is whether the stakeholders understand the things crucial for achieving company goals or are merely entities protected by corporate actions, mainly if they include alternative actions that can be taken companies to achieve their goals but were not chosen.

## Solid Waste Management

Nurmandi (1999: 222) explained that most city governments in developing countries try to finance all the management components themselves so that user charges are the best way to fund the public. However, it is realized that waste is a public good. Waste economy invites various informal sectors in waste management, especially in the weak economy or informal sector. The pattern used differs from the pattern of solid waste management used by developed industrial countries that are still conventional. It means that all processes and stages in waste management are managed by the city government or formal institutions contracted by the government.

Waste management in Asian countries has other characteristics and is different from those of industrialized countries. Waste management involves various parties in its management (Nurmandi, 1999; 223). It is not only related to formal waste management carried out by the city government, but also involves various informal actors (informal solid waste management). In this case, the informal sector, scavengers, and collectors play an essential role in conducting waste recycling (Nurmandi, 1999; 224). The role of the informal sector can reduce approximately one-third of the amount of waste produced for recycling.

In Indonesia, waste management normatively is regulated in the Law of the Republic of Indonesia number 18 of 2008 concerning Waste Management. It includes implementing regulations such as Government Regulation of the Republic of Indonesia number 81 of 2012 concerning Management of Household Waste and Household-like Waste, also Regulation of the Minister of Environment of the Republic of Indonesia number 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse, and Recycle through Waste Banks. In addition to regulating the rights and obligations of the government and the community in terms of handling waste, this normative rule also regulates the role of the community and other stakeholders in waste management (Chapter IX article 28 of Law number 18/2008; Chapter VII article 35 of PP number 81/2012).

Specifically for Kupang City, waste management is regulated by Kupang City Regulation number 3 of 2011 concerning Organizing Household Waste Management and Similar Household Trash.

## RESEARCH METHODS

This study employed a qualitative approach using a case study, which is a case relating to the role of stakeholders that have been identified in waste management. Research conducted at the Sanitation and Environment Agency of Kupang city and in six sub-districts in the city, focusing on the role of the government. This research discusses the Sanitation and Environment Agency of Kupang city in dealing with the waste problem and the role of the community and organizations concerned with the waste problem in the city.

The research informant was determined purposively, as well as normatively and conceptually considered. The observations and prior studies revealed that some stakeholders played a role in the waste problem in Kupang City. This study used accidental and snowball techniques to obtain the level of data saturation. The informants in this study were (1) Kupang City Government as a service provider that is in waste management who provide rules and facilities for waste management; (2) Kupang city community; (3) personal organization and/or subject as observers of the waste problem in Kupang City. Data collection in this study used the following techniques: (a) observation, which was to find out the phenomenon of waste problems in Kupang City; and (b) in-depth interviews, which was to obtain clear understanding and the informants' views of the phenomenon of waste, the problems, and obstacles, as well as what they desire and hope.

## RESEARCH RESULTS

### Identifying Waste Handling Stakeholders in Kupang City

The observations and research results revealed that there were 15 stakeholders in the process of waste management in Kupang city with their respective roles. The distribution of stakeholders based on their domicile includes six sub-districts: Maulafa, Oebobo, Alak, Lama City, Kelapa Lima, and Kota Raja. The characteristics and number of stakeholders identified in this study are presented in table 1.

Table 1. Kupang Municipal Waste Management stakeholder matrix

No	Stakeholder	Quantity
1.	Household	15
2.	Street Vendors (Indonesian “ <i>Pedagang Kaki Lima</i> ” or PKL)	15
3.	Kiosk / Stall Owners	5
4.	“Suka Roti” bread store	1
5.	College students	15
6.	Student organization	1
7.	Groceries seller	1
8.	Fishmongers	2
9.	Scavengers	15
10.	Garbage Collectors (locally known as “ <i>pengepul</i> ”)	3
11	Business / private entrepreneurs	3
12.	Shops	3
13.	Human-waste trucks	1
13.	Heads of Neighborhood Association (RT)	10
14.	Heads of Urban Village	3
15.	Head of Public Service Office of the Urban Village	1
16.	Head of Waste Section B3 of Sanitation and Environment Department	1
17.	Community Groups	2

Source: Primary Data Processed Results, 2019

The selected stakeholders represent some urban villages in each sub-district, such as Oepura, Oesapa, Air Mata, Kampung Solor, Nun Baun Sabhu, Naimata, Naimata, Tode Kisar, Kelapa Lima, and Pasir Panjang. These identified stakeholders contribute to the phenomenon of waste and waste management in Kupang City. The contribution referred to in this study is interpreted as the role of stakeholders in waste management.

These stakeholders are considered to play a role in the waste management process in Kupang City based on several things: (1) their duties and functions (the urban village apparatus, the Sanitation and Environment Agency of Kupang city, and the waste transport workers); (2) the routine activities: those that produce waste and those that manage waste (for example, community elements consisting of households, scavengers, artisans, traders or entrepreneurs, and non-governmental groups).

### Identifying Stakeholders’ Role in Waste Management in Kupang City

#### The Role of Kupang City Government

Law No. 18 of 2008 concerning Waste Management has regulated the role of the government and regional governments in waste management activities. They are tasked with ensuring the implementation of good and environmentally sound waste management. The intended waste management is a systematic, comprehensive, and sustainable activity that includes planning, reducing, and handling waste (Minister of Home Affairs Regulation No. 33 of 2010). In waste management, especially household waste and the like, it is done through waste management and waste reduction activities.

Table 2. Results of the Identification of the Role of Stakeholders  
 in the Category of Kupang City Government

Stakeholder Category	Role
Kupang City Government	
1) Sanitation and Environment Department	a) Issuing policies, programs, and activities of waste management (waste handling and reduction) b) Preparing the Budget c) Providing Facilities and Infrastructure for Waste Management d) Implementing waste management policies (waste reduction management) e) Encouraging community participation (socialization, the Kupang Green and Clean Program, waste reduction facility) f) Developing Partnerships with Private Parties
2) Urban village apparatus	a) Issuing environmental sanitation and waste management policies b) Carrying out waste handling and reduction activities c) Providing waste management infrastructure and infrastructure d) Encouraging Community Participation e) Developing Partnerships with Private Parties
3) Management of neighborhood and community association (RT and RW)	a) Encouraging community participation (socialization and mutual cooperation in cleaning up the environment and reducing waste) b) Facilitating the supply of environmental cleaning personnel and hygiene facilities independently
City Janitor (Indonesian: <i>Pasukan Kuning</i> )	a) Cleaning the environment (public roads, public facilities, and other locations) especially the sweeper team b) Collecting and transporting waste from the TPS (waste temporary disposal site) to the TPA (waste final disposal site) c) Sorting waste based on its type and piling it up in TPA
Human waste truck	Helping the community to pump and transport household feces for disposal

Source: Primary Data Processed Results, 2019

The Kupang City Government has carried out its role through several policies and programs, including the enactment of the Kupang City Regulation No. 3 of 2011 concerning Implementation of Household Waste Management and Similar Household Waste. It also applies Kupang City Regulation No. 4 of 2011 concerning the Implementation of Household Waste Reduction and Household-like Waste, and environmental hygiene programs, one of which is the Kupang Green and Clean Program. In addition, the city government has encouraged the public to be aware of the process of reducing and handling waste through delivering information directly (through city janitors, urban village apparatus, and RT and RW managements) and indirectly (via a warning board).

Through the Sanitation and Environment Agency of Kupang city, the government prepares facilities and infrastructure for waste disposal such as:

1. Garbage trucks (both dump trucks as garbage transport and arm roll trucks to accommodate the moveable garbage containers). There are 36 units of dump trucks used to transport at 750 TPS points for 1-2 times a day.
2. Garbage transport motorbike (around 72 units, of which 49 are in damaged condition). This garbage motor is used in every urban village in the city.
3. Garbage carts, which are distributed in each urban village.
4. Trash cans placed at strategic points in every neighborhood, shops, tourist attractions, government complexes, schools, and other public places. This trash can consists of organic and non-organic waste bins.
5. Temporary waste disposal sites (TPS). Around 263 TPS (other than TPS provided by non-government parties) are spread out in several locations in the city following population density.
6. Final waste disposal site (TPA), which is currently located in Alak District.

In addition, the Kupang City Government assembles city janitors assigned to collect waste from each TPS and Field Superintendents. The city janitors have become an essential element in waste management in Kupang City. They are distributed at public road points throughout the city, tasked with collecting and transporting waste at the TPS to the TPA.

At the urban village level, the head of urban villages in Kupang city encourages the community to involve themselves in overcoming the waste problem with mutual assistance activities every Friday; it is called 'Clean Friday.' There are also urban village officers and neighborhood associations (RT) assembling janitors in their respective regions.

The roles described above indicate that the presence of stakeholders from government elements in waste management in Kupang City is oriented towards planning through policies, programs, activities, and budget support, and implementation (handling and reducing waste), as well as supervision conducted (through the Sanitation and Environment Agency of Kupang city, the urban village apparatus and field supervision for janitors).

### The Role of Community

In waste management of Kupang City, the community is crucial because it is a part of the waste producer. In Minister of Home Affairs Regulation No. 30 of 2010 concerning Guidelines for Waste Management, it is stated that the forms of community's role in waste management include: (a) maintaining environmental cleanliness; (b) being active in the activities of reducing, collecting, sorting, transporting and processing waste; and (c) providing suggestions, proposals, complaints, considerations, and opinions in an effort to improve waste management in the region. The expected role of the community was also reinforced by the city government by regulating it in Regional Regulations No. 3 of 2011 and law No. 4 of 2014, through socialization and appeals both directly and indirectly to be involved in handling and reducing waste in Kupang City. In this case, the community is expected to sort their waste, provide their own trash cans in their homes and shops or places of business, work together to clean the environment by disposing of waste at polling stations following the specified schedule. Currently, they are encouraged to recycle their waste.

Table 3. Results of Identifying the Role of Stakeholders in Kupang City Community Category

Stakeholder Category	Role
Community:	
1) Households	a) Providing education in the family to be aware of cleanliness b) Providing a trash can at home c) Participating in handling waste (collection, sorting, and disposing at TPS) d) Participating in cleaning up the environment e) Involving in reducing household waste (recycling and reducing the use of waste-producing goods)
2) Community groups (environmental groups, waste recycling groups and others)	a) Assisting the socialization to the community b) Participating in handling waste (collection, sorting, and disposing at TPS) c) Participating in cleaning up the environment (markets, tourist sites, and other public facilities) d) Being creative in reducing household waste (recycling)
3) Student and Youth Organizations	a) Assisting the socialization to the community b) Participating in handling waste (collection, sorting and disposing at TPS) c) Participating in cleaning up the environment (markets, tourist sites, and other public facilities) d) Being creative in reducing household waste (recycling)
4) Scavengers	a) Helping reduce landfill waste by sorting rubbish in TPS or TPA b) Utilizing waste of economic value (for sale) c) Carrying out the process of recycling waste into useful materials (baskets, flower pots, and others)
5) Garbage Collectors	Reducing waste accumulation by collecting (or receiving) waste of economic value and then selling or reprocessing it.
6) Small and Medium-scale Business actors (kiosk traders, street vendors, traders in the market)	a) Providing a trash can at the business location b) Participating in handling waste (collection, sorting and disposing at TPS) c) Supporting waste management activities by providing agreed contributions

The community participation in waste handling in Kupang City, among others, are disposing of waste at the specified location, cleaning up the environment (cooperation) on joint initiatives or in activities organized by the village government, preparing waste disposal in residential or business places, forming community groups concerned about cleanliness, and processing waste (recycling waste) into materials useful for daily activities. The research shows that people have begun to be involved in waste management in the city of Kupang, such as in the provision of trash cans, cleaning the environment, and utilizing TPS. In some tourist locations or places frequented by citizens, the managers have paid attention to the cleanliness of the location by handling waste according to their capacity.

In addition to its role in maintaining environmental hygiene, the community is also involved in reducing,

sorting, transporting, and processing waste. Some participated in waste reduction, in this case, reprocessing. This recycling is done by producing several baskets and flower pot products. Some use several types of waste, such as plastic bottles, to be processed into sofa chairs, and its caps are used to make garbage boxes. The recycled products in the form of sofa chairs are marketed throughout the city and several East Nusa Tenggara regions.

This description shows that people have developed an understanding of waste management, especially concerning handling and reprocessing. It was also found that there were still people who were not aware of waste management as they did not care about cleanliness and littered.

### The Role of Private Sectors

The role of the private sectors (the company or entrepreneurs) is expected to support waste management in Kupang City since private parties play an essential role in handling and reducing waste based on their capacity, including building partnerships with the government.

Table 5. Results of Identifying the Role of Stakeholders in Kupang Entrepreneur / Private Sector Category

Stakeholder Category	Role
Private parties	
1) Tourist attractions management	a) Assisting in socializing environmental cleanliness (warning board or invitation to dispose of trash in its place) b) Providing a trash can at the business location c) Carrying out waste handling activities (collection, sorting and disposing at the TPS)
2) Companies (limited partnership (locally known as CV), limited company (locally known as PT), and Trading Business)	a) Assisting in socializing environmental cleanliness (warning board or invitation to dispose of trash in its place) b) Assisting the provision of trash cans and TPS c) Carrying out waste handling activities (collection, sorting and disposing at the TPS) d) Developing a Waste Bank e) Collaborating with the government in handling waste (in the final process in the landfill, through waste crushing machines and waste recycling)

Source: Primary and Secondary Data Processed Results, 2019

In several villages visited, it was found that entrepreneurs were involved in providing trash cans around their business locations; some of them built TPS, and participated in waste reduction. Interestingly, the private sectors pay their attention by developing a Waste Bank in Oebufu Village called "The Gade." Waste Bank is managed using a banking system in collaboration with Pegadaian Persero PT. It is one embodiment of the CSR (Corporate Social Responsibility) Program of the company. The Gade waste bank in Oebufu Urban Village began its operation in April 2019. It operates every day, Monday to Saturday, from 09.00 to 15.00. The types of waste that can be weighed in this garbage bank are white/opaque HVS paper, mixed paper, cardboard, newspapers, bottles, and glasses of mineral water, mixed plastic bottles, plastic bags, mixed plastic, jerry cans, aluminum, scrap metal, and other types of garbage. This garbage bank is useful for turning waste into gold savings and is expected to help the welfare of the community's economy. The community can increase their income; when they exchange their waste, they will receive money sent to their account.

The private sectors' role in several areas in the city illustrates their involvement in waste management in handling and managing waste from the community. It still needs to be developed because the government has limited budget and waste management infrastructure; it will be challenging to overcome the waste problem in Kupang City.

The involvement of the private sectors in waste management is also regulated in several statutory provisions: Law No. 18 of 2018 concerning Waste Management, Minister of Home Affairs Regulation No. 33 of 2010, Kupang City Regulation No. 3 of 2011, and Kupang City Regulation No. 4 of 2011, in which it is stated that the local government needs to build partnerships with the private sector in waste management (reduction and handling of waste), including the development of garbage handling technology in Kupang City. Some informants expected the involvement of the private sector in the final waste management process at the TPA. Also, some expect to build partnerships with the private sector to support the waste recycling process.

### Supporting and Inhibiting Factors of Stakeholders' Role in Kupang City Waste Management

#### a) Supporting Factors for Stakeholders' Role

##### 1. Kupang City Government Authority in Waste Management Policy and Budget

Kupang City Government, as an autonomous region, has the authority or affairs related to waste management. This authority is also supported by Law No. 18 of 2008 concerning Waste Management and Minister of Home Affairs Regulation No. 33 of 2019, which regulates the role of local government

in waste management. Moreover, Kupang city has stipulated Regional Regulation No. 3 of 2011 concerning the Implementation of Household Waste Management and Similar Household Waste and Local Regulation No. 4 of 2011 concerning the Implementation of Household Waste Reduction and Similar Household Waste. This provision governs the activities of reducing waste and handling garbage in the city, carried out through relevant agencies (the Sanitation and Environment Agency of Kupang city) and apparatus at the Urban Village level, involving the community and the private sector.

This authority is followed up by creating programs and activities to manage waste, issuing policies and regulations for the community and business people (for example, providing trash cans, implementing environmental cleanliness and waste collection and disposal time at polling stations). In addition, there are government programs with the procurement of garbage trucks, TPS, City Janitors, TPA, Waste Management Technology Training and Development, including the Green and Clean Program.

## **2. The Emergence of Community Awareness to Participate in Waste Management.**

Community participation as part of Waste Service Recipients has started to develop due to awareness of cleanliness. It has become another supporting factor resulting from information developed through socialization, training for recycling of waste (into reusable materials such as flower pots, baskets, bags, sofas, paving blocks, and other materials), and also support for the existence of environmental groups.

## **3. The Existence and Support of Private Parties**

Business actors and/or private parties support the provision of facilities for handling and reducing waste, including waste handling technology, such as cooperation established by Kupang city with several companies, viz. PT. SAG, PT Pertamina, PT. Kaltimex, PT Bumi Indah, UD Alfa Mart, and several educational institutions (UNDANA, UCB Kupang, UNWIRA) in handling waste, including waste reduction technology, both at the community level and in the final level management at the waste disposal sites.

## **b) Factors Inhibiting Stakeholders' Role in Solid Waste Management**

In other situations, there are still factors inhibiting the role of handling waste in Kupang City. Based on the previous discussion results, several situations were identified and considered to be obstacles to stakeholders' role, which often becomes a classic problem in handling waste in Kupang City. These factors can be grouped as follows:

### **1. Limitation of Waste Management Resources**

Limited resources affect each other in waste management in Kupang city. In the budget aspect, it affects the availability of cleaning personnel (City Janitors and other Cleaning Officers ranging from TPS to TPA), waste handling facilities, and infrastructure (barrels or disaggregated trash, TPS, fleet transport or garbage transport, cleaning staff, the location of the waste disposal site, and the processing of waste). The lack of budget resources and the capacity to implement waste management also results in the ineffective development of waste management and reduction technologies in Kupang City. Limited resources are considered as an obstacle to most stakeholders, both government, community, and private.

### **2. Weak Enforcement of Regulations for Waste Management**

Kupang city has set various regulations or policies regarding waste management. However, the implementation of the provisions in the local regulation has not been fully realized. These are the development of community participation, Regional Public Service Agency (locally known as *Badan Layanan Umum Daerah* or BLUD), waste handling and reduction technology, and the enforcement of sanctions for violation in waste management provisions committed by community members, business players, and other elements.

### **3. Lack of Community Awareness (Participation)**

Even though community awareness and participation in waste reduction and handling have begun to emerge, there are still people who are indifferent to the waste problem in Kupang City. Lack of information and socialization to provide motivation and personal awareness from citizens and business actors have caused the non-optimal handling of waste in Kupang City. It can be seen from the behavior of littering (including in places that have been given a prohibition sign), unsorted garbage, disposing of garbage at the TPS, which is not according to the specified time, and low participation in supporting waste reduction activities. The perception of waste as dirty material, makes people do not care about handling, including reprocessing (recycling) and utilizing recycled-waste. In several findings, it was found that although the government had made maximum efforts to regulate and provide solid waste services, community support for the processes carried out was not optimal.

### **4. Lack of Private Party Support**

The waste problem being viewed as the government's responsibility is still one of the thoughts



inherent in the business world that impedes the process of waste management in Kupang city. There has not been much support from the private sector to assist waste management in Kupang city, including developing CSR in handling and reducing waste (recycling). The economic value of waste and encouraging public awareness to help the Kupang City Government manage waste have not caught the attention of big business actors (in terms of sufficient resource capacity) to partner with the government in handling and reducing waste Kupang City.

## Conclusion

1. The Sanitation and Environment Agency of Kupang city plays a role in waste management in planning, implementing, and supervising. Other stakeholders identified as having a role in waste management in Kupang City include the urban village apparatus and management of neighborhood/community association (RT/RW), Sanitation Officers (collectors, transporters and waste sorters from TPS to TPA), stakeholders from the Community Element (households, community groups, groups students, scavengers, collectors, and small and medium business actors), and private parties (managers of tourist attractions and companies).
2. The role of each stakeholder in waste management is based on their duties and functions.
  - a. At the planning level, the government, through the Sanitation and Environment Agency of Kupang city and the Urban Village Government and its apparatuses, determines the policies, strategies, programs, and activities of waste management (reduction and handling). In the implementation, they are carried out through the providing cleaning workers (who carry out the tasks collecting, transporting and sorting and processing waste), providing waste management facilities and infrastructure, socializing and training in handling and reducing waste, developing waste management technology and building partnerships with the private sector (treating waste and providing waste infrastructure).
  - b. The role of community as recipients of services is shown in the implementation of waste management through doing awareness activities in the family environment, providing trash cans, taking part in garbage collection, cleaning the environment, helping to sort out waste and utilizing the economic value of waste as scavengers and collectors, recycling rubbish, and joining in environmental care groups and waste recycling business groups.
  - c. The role of the private sector is more oriented to supporting waste management activities by providing a place or trash cans, creating a TPS and developing CSR through several activities such as the development of a waste bank (The Gade in Oebufu by PT Pegadaian company), the provision of TPS by the contracting company and PT SAG, the provision of waste management and waste processing technology in the landfill by PT Kaltimes and PT Pertamina.

## Suggestion

1. Through the Sanitation and Environment Department, Kupang City Government needs to socialize and develop a comprehensive waste management plan that is supported by increasing the availability of resources (budget).
2. Development of programs and activities that can encourage community participation in reducing waste (through waste recycling training) and handling waste (through direct and indirect socialization and appeals using easily accessible media, providing trash cans and polling stations in each RT/ neighborhood association)
3. Kupang City Government, through related institutions such as Regional Apparatus Organization (locally known as *Organisasi Perangkat Daerah* or OPD), Urban Village apparatus, and RT/RW levels, needs to encourage the community to reduce waste in the recycling process and the utilization of recycling. It can be done by facilitating the formation of recycling business groups and capacity building (training) and support the waste collection business.
4. The government builds cooperation (in partnership) with the private sector in developing waste reduction and waste handling technology in Kupang City through a cooperation agreement so that the private sector can develop CSR in the environmental field (waste management).

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