
Collaborative Governance in Waste Management in Kupang City

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Abstract:

The waste problem in Indonesia, including Kupang City, is a pressing issue due to increasing waste production from various sources, such as households, offices, markets, and public facilities. Collaborative Governance involving stakeholders (government, private sector, and community) is essential for addressing this issue. This study aims to analyze Collaborative Governance in Kupang City's waste management, focusing on trust among participants, distributive accountability, and information sharing. Findings reveal that: (1) Trust among participants is minimal, with limited community trust in government programs; (2) Distributive accountability is practiced through shared governance and decision-making; and (3) Information sharing is conducted through government-led socialization efforts, such as waste bank awareness programs. Recommendations include enhancing government-community trust, conducting regular surveys on waste bank participation, and improving public counseling and facilities to promote effective waste management.

Keywords: Collaborative Governance, Waste Management

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1. Introduction

Kupang City faces a pressing issue with a rapidly increasing volume of waste production. According to the Head of the Kupang City Hygiene and Environment Agency in 2022, the overall waste production in the city has reached 218.98 tons per day, with a growing population from 455,847 people in 2021 to 468,913 people in 2022. This results in each resident generating approximately 0.466 kilograms of waste daily. The primary sources of waste in Kupang include households/residences, offices, traditional markets, commercial centers, public facilities, and other areas. Household waste constitutes the largest portion, around 48% or 105.12 tons/day, composed of both organic and inorganic waste (Kupang City Environment and Hygiene Office, 2022). Traditional market waste follows, making up 19.50% (42.70 tons/day), with commercial center waste at 11% (24.08 tons/day), office waste at 8%

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(17.52 tons/day), public facility waste at 7.50% (16.43 tons/day), and other waste at 6% (13.13 tons/day). The composition of waste includes 28.50% food waste, 20.50% plastic waste, 16.50% wood waste, 14% paper/cardboard waste, 8.50% other waste, 5% metal waste, 3% fabric waste, 2.50% glass waste, and 1.50% rubber/leather waste. Data from the Department of Environment and Hygiene show that out of the 218.98 tons of waste produced daily, 26.28 tons (12%) are recycled, 18.39 tons (8.4%) are burned by producers, 25.05 tons (11.44%) are dumped on vacant land/river/got, and 149.26 tons (68.16%) are collected and transported to TPS/landfills.

A significant challenge faced by the Kupang City Government in waste management is the increasing waste volume, which is not matched by the availability of landfill space. The city currently operates with only one landfill (TPA), 275 permanent TPS units, 60 iron container TPS units, and 752 plastic container trash cans. Law No. 18 of 2008 concerning Waste Management mandates a systematic, comprehensive, and sustainable approach to waste management that includes both waste reduction and handling. Effective waste management aims to improve public health and environmental quality and to convert waste into a resource rather than a problem. From an environmental health perspective, waste management is considered effective if waste does not become a breeding medium for disease (Agranof & McGuire, in Chang, 2009).

In this context, the government alone cannot address waste management effectively. The private sector and the community also play crucial roles in this process. This collaborative approach is known as Collaborative Governance, which involves the government working with the private sector and the community to achieve common goals in addressing a shared problem (Ansell & Gash, 2007). Collaborative Governance has emerged as an interesting and novel phenomenon in the development of governance, particularly within public policy, where regulations in Kupang City encourage the involvement of various stakeholders—including the government, private sector, and community members. Effective waste management in Kupang cannot be achieved without collaboration among different offices, such as the Cleanliness Office collaborating with the PUPR office on infrastructure, the Settlement Infrastructure Center, Pol-PP, Regional Revenue Office, Transportation Office, Kelurahan, and Kecamatan (Davies & Rehema, 2012; Holzer, March et al., 2012). The Kupang City Environment and Hygiene Office, which is primarily responsible for waste management, must be capable of implementing a well-coordinated waste management system in Kupang City.

Given these issues, the author is interested in exploring the research question: "How can Collaborative Governance improve waste management in Kupang City?" This study aims to analyze the concept of Collaborative Governance in waste management in Kupang City, focusing on its dimensions: Collaborative Governance, Trust among participants (mutual trust between stakeholders), Distributive

accountability (sharing governance), and information sharing (sharing information). The research will also identify the gaps in current waste management practices and provide insights into the novelty of Collaborative Governance as a solution to enhance waste management efficiency in Kupang City.

By linking the findings of this study with the research objectives and the existing body of knowledge, this research will contribute to the growing literature on collaborative governance and its applications in environmental management. The novelty of this study lies in its emphasis on understanding how various stakeholders—government agencies, private sector, and community members—can collaborate effectively to manage waste more sustainably in urban settings.

2. Theoretical Background

Definition of Governance The term governance is fundamental to the concept of Collaborative Governance, which is crucial for understanding how economic, social, and political affairs are managed through interactions between society, government, and the private sector. Governance refers to a system of values, policies, and institutions where these three domains—state (government), private sector (business world), and society (community)—interact and carry out their respective functions. According to Sedarmayanti (2003:5), governance indicates the 'dissemination of authority' from single actors to multi-actors, demonstrating that public affairs that were once managed by a single actor, primarily the government, are now managed collectively with other actors such as the private sector and society. The existence of governance thus shifts the dominance of the government, fostering a democratic administration in public affairs.

Collaborative Governance "Collaborative Governance" emphasizes voluntary collaboration and horizontal linkages between multi-sectoral participants. The demands of clients often exceed the capacity and role of a single public organization, requiring interaction among various organizations related to and involved in public activities (Agranof & McGuire, 2009). According to Ansell and Gash (2007), Collaborative Governance refers to a condition in which the government meets public goals through collaboration between organizations and individuals. This model focuses on joint activities where parties produce mutual goals and strategies, sharing various responsibilities and resources (Davies & White, 2012). Holzer et al. (2012) highlight that Collaborative Governance is a response to the failure of implementation and the high costs associated with regulation, requiring collaboration between institutions due to the limited capacity of each institution to manage its own programs.

Purpose of Collaborative Governance The concept of Collaborative Governance is essential in today's government practice, driven by the need for cooperation and coordination to address public problems (Junaidi, 2015). It emerged as a response to

failures in implementation and the challenges of high-cost and politicized regulations. Collaborative Governance involves collaboration between institutions due to the limitations in their abilities to carry out their programs independently. Collaboration also helps in pooling limited budget funds across different institutions, making it a developmental aspect of governance. This collaboration involves government, the private sector, and society, emphasizing the involvement of various actors in public administration (Irawan, 2017).

Definition of Collaboration Collaboration is a response to changes or shifts in the policy environment, which can involve an increasing number of policy actors, widespread issues, limited government capacity, and increasing institutional complexity (Kutagalung, 2015). By collaborating with the private sector and the public, the government can address public policy issues more effectively (Singh & Sirdeshmukh, 2000). This collaboration helps align institutional actions with the surrounding environment, enabling institutions to meet public demands effectively.

Waste Management (Waste Bank) The concept of a waste industry area at the regional level involves minimizing waste directed to the landfill by encouraging community self-help in waste recycling (Suwerda, 2012). The paradigm of waste management has shifted towards reducing, reusing, and recycling waste, which is critical in managing the waste problem in cities like Kupang (Djani et al., 2019). This model necessitates the involvement of all parties, requiring a change in perspective towards waste management, particularly through the 3Rs—reduce, reuse, and recycle.

3. Methodology

The research adopts a descriptive qualitative approach, focusing on Collaborative Governance in handling waste in Kupang City. The study explores key aspects such as mutual trust among participants, distributive accountability (shared responsibility), and information sharing. The research was conducted at the Kupang City Environment and Hygiene Office, involving informants comprising employees of the office and 13 residents of Kupang City. These informants provided valuable insights, opinions, and perspectives relevant to the research objectives.

Data collection techniques employed in this research included interviews, field observations, and documentation. Interviews were conducted through direct interaction between the researchers and informants to obtain verbal responses to a set of structured questions. Field observations involved direct examination of practices at the Kupang City Environment and Hygiene Office, where issues such as irregular waste disposal and the lack of strict regulations were noted. Documentation studies involved collecting and analyzing relevant supporting documents to enhance the validity and reliability of the findings.

Data analysis was conducted using a descriptive qualitative technique, following a three-step process: data reduction, data presentation, and drawing/validating conclusions. To ensure the validity of the data, several strategies were employed, including extending the research period, increasing persistence, conducting meticulous and continuous observations, and employing triangulation as suggested. These measures aimed to uphold the credibility and reliability of the research findings.

4. Empirical Findings/Result

Overview of the Research Location

Kupang City is a municipality and the capital of the East Nusa Tenggara (NTT) Province of Indonesia. Kupang City was formed under Law Number 5 of 1996. Established on April 25, 1996, Kupang is the largest city on Timor Island, located on the coast of Kupang Bay in the northwestern part of Timor Island. As the largest city in East Nusa Tenggara Province, Kupang is filled with various ethnic groups. The most significant tribes in Kupang are the Timorese, Rote, and Sabu, Chinese, Flores, and a small number of Bugis and Javanese migrants. Kupang City covers an area of 180.27 km² consisting of 6 sub-districts and 51 villages and is geographically located between 10⁰ 36'14" to 10⁰ 39'58" South latitude and 123⁰ 32'23" to 123⁰ 37'01" Longitude.

The population of Kupang City has been increasing from year to year. The population of Kupang City is spread across six (6) sub-districts and 50 villages. According to BPS data in 2022, the population of Kupang based on the results of population projections in 2021 is 455,847 people consisting of 229,652 men and 226,195 women. The population density in Kupang City is 2,528.69 people. In 2022 there was an increase of 468,913 people consisting of 236,182 men and 232,731 women. The largest population is in Maulafa sub-district and Oebobo sub-district with 106,129 people and 105,076 people respectively.

Waste Bank Scheme

Starting with the KGC (*Kupang Green and Clean*) movement in 2018, as well as the issuance of Ministerial Regulation No. 13 of 2012 concerning the handling of 3R-based Waste Management through Waste Banks, 3 waste banks were formed in Kupang City. The process/stage of waste management in Kupang City is carried out through three activities, namely waste reduction and waste management. The three activities are described in detail as follows:

1. Limitation of waste generation activities. The Kupang City government has issued policies related to waste limitation, namely Mayor Regulation Number 33 of 2019 concerning the reduction, use of plastic bags and Mayor's instruction Number 071/DLHK.188.45.5.660/VIII/2019 concerning the reduction of plastic waste in schools and houses of worship, in addition the Kupang City government has implemented an *eco-office* policy.

2. Waste Recycling. The eastern pearl garbage bins, Mapoli garbage bins and Rehobot Church garbage bins collect plastic waste and manage it in a simple way, which is then sold to a plastic recycling plant in Surabaya. This is because Kupang City does not yet have a waste recycling plant.
3. Reutilization. There are reuse activities carried out by several businesses in Kupang City.

Collaborative Governance in Waste Management in Kupang City.

Collaborative governance is influenced by many factors, situations, conditions, and the actors who implement it. Collaboration in Kupang City has been going on for a long time, we know the term Gotong royong, or self-help, these terms are a form of collaboration between the government, the private sector and the community, although we know that the level of collaboration can vary. Referring to the concept of collaboration, collaboration is an effort to connect all actors, both government and non-government, to manage, organize and organize all affairs together in order to achieve effective and efficient results. From the explanation above, this research will describe *Collaborative Governance* in Handling Waste in Kupang City. There are 3 important items to measure the success of collaboration in governance, namely: (1) *Trust among the participants*; (2) *Distributive accountability*; (3) *Information sharing*. The results of the assessment of these four things are as follows:

a. Trust Among The Participants (the existence of mutual trust between participants)

The belief that participants trust the information or efforts of other stakeholders in a network to achieve a common goal. There must be trust between stakeholders in the implementation of the innovation. In the implementation of the waste handling and Waste Bank program, stakeholders maintain trust in each other.

Based on the results of interviews from the government, private sector, and the community, it can be concluded that *Collaborative Governance* in Waste Management in terms of the Waste Bank program has not been maximized because there is still distrust between stakeholders. The Waste Bank is very helpful to the government in handling waste and handling waste, it's just that the lack of public trust in the government makes this innovation not maximized.

This is supported by the author's observation that the Waste Bank collaborates with every stakeholder from the government, private sector and the community. In a collaboration, trust is needed from stakeholders, this relates to the collaboration between the Kupang City Environment and Hygiene Office, PUPR Office, Settlement Infrastructure Center, Mutiara Timor Waste Bank and the community including scavengers, suppliers and customers, there must be mutual trust in each other. However, in reality, the community itself lacks trust in the government, namely the Department of Environment and Hygiene due to the lack of socialization to the community, causing it not to

comply with Regional Regulation Number 04 of 2011 concerning Waste Handling.

The results of this research when compared to previous research researched by William Djani et al, say that quality waste policy efforts so that actors can understand and carry out their roles optimally. Meanwhile, the results of this research say that in handling waste, trust between stakeholders is needed so that actors can carry out their duties and responsibilities according to their respective roles. But there are also people who do not trust the government, where there is still a lack of socialization to the community about waste management.

b. Distributive Accountability.

In the collaboration of the Waste Management program, the implementation procedure (SOP) has been determined by the government but the roles and responsibilities of each stakeholder vary according to their fields. The division of accountability in the collaborative process of the Waste Management program is involved in the division of responsibilities and authority of each stakeholder. The government is responsible for providing the best service to the community, Mutiara Timor *Sustainable Collection Center* is responsible for assisting the community in the waste handling process.

Based on the results of the interview, it is known that each stakeholder has different tasks that must be ready to be accounted for. Nevertheless, all stakeholders always hold meetings to evaluate the waste bank program that is implemented.

Based on the results of interviews with the community, it can be seen that the community is involved in waste bank activities because without the community the program launched by the government will not run.

The results of the interview also explained that all stakeholders have their respective functions and duties in accordance with the Law and Regional Regulation Number 4 of 2011 concerning the Implementation of Reducing Household Waste and Waste Similar to Household Waste, so that in carrying out these tasks there are already responsibilities accepted by all stakeholders themselves.

The results of this research when compared with the theory of accountability according to Mardiasmo 2006 where it is explained that "Accountability is the obligation of the trustee to provide responsibility, present, disclose and report all government activities to those who have given the mandate, namely the community" which means that each stakeholder must dare to be responsible for what is done with their respective roles. For example in Waste Handling where the relevant Dinas is able to explain the flow or process in handling the waste, from transportation to disposal to the landfill, so that there is no more

garbage scattered everywhere or no more people throwing garbage outside the TPS.

c. Information sharing

In collaboration, all stakeholders sort out the information provided to the public, because protecting the privacy of each stakeholder is the right of all collaborating stakeholders. All stakeholders only provide important information to fellow stakeholders. The government provides socialization to the community as a form of information that waste banks exist. The Kupang City Government assigns sub-districts to socialize waste management that has been assisted by the Waste Bank if needed.

The interview above shows that the government is still less massive in providing socialization to the community about the waste bank itself. From the author's observations, it can be concluded that the government and the community are inversely proportional to the problem of information, due to the lack of awareness from the government that when there is information that must be given to the community, it must be conveyed immediately, while for the government and the private sector, the information relationship is going well with the meetings that are always held.

The results of this research when compared to the theory of Carlos Coronel and Steven Morris 2016 which says that "Information is the result of raw data that has been processed to provide results in it. Which means that information is very useful for the community if there is information about waste handling. But what happens in the field is that there are still people who do not know information about Waste Handling and Waste Banks.

Supporting and Hindering Factors of Collaborative Governance in Waste Management in Kupang City

1. Supporting Factors

Supporting factors that influence *Collaborative Governance* in Waste Management in Kupang City:

a. Legislation

The existence of national and local laws and regulations related to waste management in Kupang City. Several documents show that there are a number of central government regulations that support waste management, including: Law No. 23 of 1997 on "Environmental Management", Law No. 18 of 2008 on "Waste Management", Law No. 32 of 2009 on "Environmental Protection and Management", Ministerial Regulation No. 13 of 2012 on "Handling 3R-based Waste Management through Waste Banks", Government Regulation No. 27 of 2020 on "Waste Management", Government Regulation No. 101 of 2014 on "Hazardous and Toxic Waste Management", Kupang Mayor's

Regulation No. 19 of 2019 on "Kupang City's Policies and Strategies in the Management of Household Waste and Household-Type Waste", Mayor's Regulation No. 33/2019 on "Reducing the Use of Plastic Bags", Regional Regulation No. 3/2011 on "Implementation of Household and Household Waste Management", Regional Regulation No. 4/2011 on "Implementation of Household and Household Waste Reduction", and Government Regulation No. 81/2012 on "Household and Household Waste Management".

b. Authority

Authority is a factor that supports collaboration. With the authority or authority in collaboration between stakeholders, other stakeholders can carry out tasks according to their respective roles following the existing SOPs. Based on the results of the interview above, it explains that the government, private sector and the community work according to their respective jobs. In accordance with the results of the author's observations that they work in accordance with the SOPs imposed by the government.

c. Strong Commitment

Commitment is an important factor in collaboration. Without the commitment of each stakeholder, collaboration will not be able to run and cannot achieve the collaboration goal itself. In implementing the Waste Bank program, stakeholders maintain trust in each other.

Based on the results of the interview, it can be concluded that the government maintains the trust of the private sector and the community by carrying out their respective Standard Operating Procedures. In collaboration in Waste Handling (Waste Bank), the commitment of each stakeholder is very strong so that collaboration in implementing innovations runs well.

2. Inhibiting Factors

Inhibiting factors can make activities that have been carried out unable to run well. Collaboration inhibitors include:

a. Lack of trust

In collaboration, trust between stakeholders is needed, but in this collaboration, the community's trust in the government is still lacking.

b. Limited information

Information obtained by stakeholders is still lacking

c. Human Resources

Factors that hinder *Collaborative Governance* in Waste Management in Kupang City are human resources and financial resources. Human resources and financial resources are important factors in any collaboration activity.

d. Inadequate infrastructure

In addition to personnel, waste management activities are also supported by waste collection and transportation facilities and infrastructure such as collection bins, TPS, containers, transportation fleets, and other equipment. with the facilities and infrastructure owned by the Kupang City Environment and Hygiene Office far from sufficient to serve waste management for house-to-house transportation. This is exacerbated by the lack of community participation in waste management, which still uses the old paradigm of collect-transport-dispose. Therefore, collaborative waste management should be encouraged to improve waste management in Kupang City.

5. Discussion

Based on the findings of the research conducted, the authors conclude that the background of community participation in waste handling in Kupang City is influenced by the interaction of stakeholders involved in the process. This aligns with the concept of Collaborative Governance, which is characterized by the involvement of multiple actors—namely government, private sector, and community—in the management of public affairs. The study identifies three critical indicators of Collaborative Governance in waste handling:

1. **Trust Among Participants:** The existence of mutual trust between participants is fundamental to the success of Collaborative Governance. While the government and the community show a certain level of trust in each other, the community's trust in the government remains limited. This is consistent with findings from Agranof and McGuire (2009), who emphasize that trust is crucial for the effective functioning of collaborative governance, particularly in environments where public organizations are engaged in horizontal linkages with multiple stakeholders. The lack of trust among community members toward government initiatives highlights a gap that needs to be addressed for more effective governance in waste management.
2. **Distributive Accountability:** This indicator involves the shared responsibility among stakeholders in decision-making processes and the allocation of resources. According to Ansell and Gash (2007), collaborative governance necessitates that stakeholders are involved in setting the goals and contributing resources to achieve these goals. The research findings indicate that while distributive accountability is functioning well—especially in compliance with existing regulations—the program's overall effectiveness is still compromised because not all stakeholders have embraced the required changes in mindset. This partial participation may result in program shortcomings, suggesting that collaborative governance needs more inclusive engagement to ensure broader commitment and shared responsibility.

3. **Information Sharing:** Effective communication and information sharing are crucial for Collaborative Governance. The Kupang City Government's efforts in socializing waste management through sub-district assignments, as identified in the study, highlight a strategy to foster community awareness and engagement. However, the research reveals that communication between the government and the community is still lacking, leading to delays in information dissemination. This finding is consistent with research by Irawan (2017) on collaborative governance in Surabaya, where poor communication was a barrier to effective governance. Enhanced communication strategies are needed to bridge the information gap and foster greater trust and cooperation among all parties involved.

The factors affecting collaboration in waste management in Kupang City include both supporting and inhibiting elements. Supporting factors, such as adequate resources, authority, and strong commitment, are crucial for the success of collaborative governance. However, inhibiting factors like lack of trust, inadequate facilities and infrastructure, and delays in information, as identified by Djani et al. (2019) and Suciati (2017), challenge the effectiveness of collaborative efforts. These barriers hinder the collaborative process, emphasizing the need for improved policies and practices that facilitate better communication and build trust among stakeholders.

6. Conclusions

Based on the results of the research conducted, the authors conclude that the background of community participation in Waste Handling is the influence of stakeholders who play a role in handling . There are several things that are concluded, namely Collaborative Governance in Waste Handling shows 3 indicators, namely trust among the participants. The existence of mutual trust between participants is still minimal, although the government and the community trust each other, it is different with the community to the government itself, the community is reluctant to trust too much with the government programs implemented. Distributive accountability. If members are not involved in determining the objectives of the Garbage Handling program and are not willing to bring resources and authority to the program, then it is likely that the program will fail to achieve its objectives. Information sharing. The government provides socialization to the community as a form of information that waste banks exist. The Kupang City Government assigns sub-districts to socialize waste management that has been assisted by the Waste Bank if needed. Of these three indicators, one indicator is working well, namely Distributive accountability because it runs in accordance with existing regulations, but it is not enough to make the collaboration more effective, because only some of the stakeholders have changed their mindset. It was found that trust in the government is still lacking because communication is not going well and communication is still lacking with delays in information obtained by the

community. Factors affecting collaboration in waste management in Kupang City include supporting factors such as adequate resources, authority, and strong commitment. While the inhibiting factors are lack of trust, lack of facilities and infrastructure, and delays in information.

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