

# WASTE MANAGEMENT POLICY IN THE PERSPECTIVE OF COLLABORATIVE GOVERNANCE PLUS MULTI-HELIX

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## Abstract

Plastic waste is a big environmental problem in Indonesia, in fact Indonesia is ranked second as the largest contributor to marine plastic pollution in the world. Even though there have been efforts to manage waste in accordance with Palembang Mayor Regulation Number 72 of 2018 regarding waste management, there is still a gap between the expected targets and the realization in the field. In this context, innovation and strengthening of more integrated waste management policies is needed, one of which is based on Collaborative Governance which has been proven effective in several countries. The effectiveness of waste management policies in Palembang City has not yet reached the maximum target, especially in managing non-household waste. Collaboration between various stakeholders will also be a focus in efforts to strengthen waste management in this region. The aim of this research is to explore the performance of waste management policies from a collaborative governance plus multi helix perspective. This research is a type of descriptive research with a qualitative approach. Interviews, documentation and observation are used to obtain data in the field. A total of 15 informants representing the government, private sector, society, community, NGOs and media in Palembang City were identified as the main sources of information. Data obtained in the field was analyzed by the interactive qualitative analysis model from Miles, Huberman, and Saldana (2014). Research findings show that Palembang Mayor Regulation Number 72 of 2018 regarding waste management is not yet running optimally, and various challenges in the aspects of drivers, principled engagement, shared motivation, and capacity for joint action still need to be overcome. So, it is recommended to strengthen dynamic collaborative deliberation integrated with a culture of mutual cooperation to improve waste management performance.

**Keyword:** waste governance, collaborative governance Plus Multi-Helix

## 1. Introduction

Public policy plays a very important role in today's modern life (Sidney, 2017) This policy covers various sectors, including health, social welfare, housing, education, and agriculture. In the context of public policy, there is a cycle that includes stages starting from agenda setting, formulation, adoption, implementation, evaluation, to feedback, and determining whether the policy will be stopped or continued (Parsons, 2017) However, the success of policy implementation often depends on various complex factors that influence the process, as stated by (Winarno, 2012) These factors include the content of the policy, as well as the context of its implementation which involves various actors and

resources. One example of public policy that faces major challenges in its implementation is waste management policy. The waste problem is becoming an increasingly serious global issue as population growth and people's consumption levels continue to increase. Based on research by Kaza et al., (2018) world waste production is estimated to reach 3.4 billion tons in 2050. This shows the need for integrated global action and policies in dealing with the increasing waste crisis.

In various countries, including Indonesia, plastic waste is one of the biggest sources of environmental problems. Indonesia has even been declared the second largest producer of marine plastic waste in the world. Various efforts have been made by the government to reduce the negative impact of plastic waste, such as waste recycling programs and developing policies to process waste into fuel or energy, as is done in Bali and Surabaya (Hassan et al., 2018) However, the challenges of implementing this policy are still very large. Data from the Ministry of Environment and Forestry (KLHK) shows that waste in Indonesia continues to increase every year. In 2022, the amount of unmanaged waste will still reach 33.06%, which has the potential to cause further environmental impacts. This increase in the amount of waste not only increases the burden on final disposal sites (TPA), but also increases the risk of air, soil and water pollution, as can be seen from the condition of the Sukawinatan TPA in Palembang which has reached its capacity limit.

This problem also includes the management of household food waste, which is the largest contributor to waste in the world (Ezeah & Roberts, 2014). Food waste contributes to significant greenhouse gas emissions, especially methane, which impacts global climate change. Based on the United Nations report on achieving SDGs 2022, greenhouse gas concentrations continue to increase, and this contributes to the increasing frequency and intensity of extreme weather phenomena in various parts of the world. In an effort to reduce the impact of waste on the environment, Indonesia has formulated various waste management policies, one of which is through Law Number 18 of 2008 concerning Waste Management. This law emphasizes the importance of managing waste from upstream to downstream in an integrated manner, involving the government, community and private sector. However, the implementation of this policy still faces various obstacles, especially in terms of synergy between the parties involved (Vallero, 2019).

The Collaborative Governance model is an approach that is considered appropriate for overcoming complex problems such as waste management (Garske et al., 2020). This approach prioritizes collaboration between the government, private sector, NGOs and society in dealing with environmental issues. Several examples of successful waste management collaboration occurred in Shanghai and several cities in Indonesia, which shows that the active participation of all parties can increase the effectiveness of waste management. However, in Indonesia, although there are many policy initiatives, their implementation has not been optimal (Lee-Geiller & Kütting, 2021). There is still the problem of a lack of competent human resources, limited waste management facilities, and low public awareness of participating in waste management programs (Xie et al., 2022). For example, in Palembang, even though the city government has established TPS 3R (Reduce, Reuse, Recycle), community participation in managing waste is still low, which makes this policy not work optimally. Based on Palembang City government data on regional performance indicators in waste management, it appears that the government's performance, especially the Palembang City Environmental Service, shows quite good achievements with a waste management percentage reaching 96.77%. However, there is still 4.2% of household waste that has not been managed properly. Apart from that, waste generation does not only come from households, but from various sources such as offices, companies and industry which are not yet fully covered in government performance indicators (Gutberlet et al., 2020).

This problem shows that even though there have been waste management efforts, there is still a gap between the expected targets and the realization in the field. In this context, innovation and strengthening of more integrated waste management policies is needed, one of which is based on

Collaborative Governance which has been proven effective in several countries. In addition, to create a successful sustainable waste management policy, collaboration between the government, private sector and society is very necessary. Through a Collaborative Governance approach, it is hoped that the waste problem in Indonesia can be handled more effectively, so that the environmental impacts can be minimized and sustainable development goals (SDGs) achieved. In this research, the main problem raised is the effectiveness of waste management policies in Palembang City which have not reached the maximum target, especially in managing non-household waste. Collaboration between various stakeholders will also be a focus in efforts to strengthen waste management in this region.

## 2. Literature review and problem statement

### 2.1 Policy Implementation

Policy implementation Grindle, (2017) emphasizes that the success of public policy implementation is greatly influenced by two main variables, namely content of policy and context of policy. This approach is referred to as Implementation as a Political and Administrative Process, which means that policy implementation does not only involve technical aspects but is also influenced by complex political and administrative dynamics. Grindle, (2017) emphasized that after a policy has been transformed, only then can the success of its implementation be measured through the level of implementability, namely the extent to which the policy can be implemented in accordance with the stated objectives.

The first variable, content of policy, includes several factors that determine the success of implementation. Among them are interests affected, which refers to the various interests affected by the policy Grindle, (2017) Policies that involve many interests have the potential to face resistance from groups who feel disadvantaged. Apart from that, policies that have a type of benefit will be easier to implement because they can get support from many parties, especially if the benefits are collective and broad. Next, the extent of change envisioned is also an important factor in policy implementation. The bigger the desired change, the more difficult it is to implement because it requires significant adjustments from various parties. Apart from that, the site of decision-making also influences implementation. The more scattered and complex the decisions that must be taken by various parties, the more difficult it is to implement the policy. Another important factor is program implementers who require high competence and capability as well as sufficient committed resources to support policy implementation.

The second variable in Grindle, (2017) model is the context of policy, which includes the political and social environment in which the policy is implemented. Power, interest, and strategy of actors involved greatly determines how policies are implemented. Implementers who have political power and certain interests will influence the direction of implementation. Apart from that, institution and regime characteristics also influence the level of policy success. Institutions with an authoritarian character may face less resistance in implementation, but may create conflicts for certain interests. Finally, compliance and responsiveness from policy implementers is also very important. If implementers do not comply or are not responsive to the policies being implemented, then the policy objectives will not be achieved properly. Implementers must be sensitive to the needs of the target group so that policies can be implemented effectively and receive full support from the community.

### 2.2 Collaborative Governance

The Collaborative Governance Plus Multi-Helix (CGPMH) model developed by Wijaya, (2023) is a development of the Collaborative Governance concept which was originally introduced by Emerson and Nabatchi (2015) This model emphasizes the importance of participation of various parties in the public policy process by adding a multi-helix dimension which includes actors from the

government, business, academic, community, media and other relevant sectors. Dynamic collaboration in this model, which consists of three main elements, namely principled engagement, shared motivation, and capacity for joint action, plays an important role in ensuring collaboration is effective and produces a significant impact.

Principled engagement in the CGPMH model emphasizes that thorough preparation, significant exchange of information, and awareness of the various interests involved are necessary for collaboration to run well (Emerson and Nabatchi, 2015)). Actors involved in collaboration must have effective communication and continuous evaluation so that they can work together harmoniously. Collaboration based on this principle will help create an open and participatory environment, so that the actors involved feel valued and are more motivated to contribute. The second element, shared motivation, emphasizes the importance of mutual agreement between actors regarding goals, values and interests in collaboration. In the CGPMH model, shared motivation is the key to maintaining a spirit of collaboration among stakeholders. When actors have the same motivation, they are more likely to work together to achieve the desired results, and are committed to maintaining the sustainability of the collaboration process (Wijaya, (2023). With shared motivation, each actor will feel they have the same responsibility for the success of the program. The final element, capacity for joint action, refers to the ability of collaborative actors to take joint action to achieve predetermined goals. In this model, the ability to combine diverse knowledge, resources, and expertise is critical for collaboration to produce optimal results. This shared capacity enables actors to adapt to change and improve their understanding of the complex issues at hand. Successfully managing differences in expertise and background between actors is key to determining effective collective action Emerson and Nabatchi, 2015).

The advantages of the Collaborative Governance Plus Multi-Helix model include increasing more comprehensive knowledge, innovative solutions, and wider involvement of stakeholders. This model also increases the legitimacy of decisions taken and creates flexibility in the decision-making process. In addition, the involvement of various parties from the start in the public policy process makes support and commitment to the policy stronger, which ultimately increases success in policy implementation. Collaborative Governance Plus Multi-Helix provides a solid foundation for addressing complex issues in the public sector. By involving actors from various sectors through intensive and structured collaboration, this model is expected to be able to produce sustainable impacts and overcome public problems in both the short and long term.

### 3. The aim and objectives in this study

The aim of this research is to explore the performance of waste management policies from a collaborative governance plus multi helix perspective. The fact shows that this waste problem not only focus on its society but also parties related to this matter. The focus of this research is to analyze the performance of waste management policies in Palembang City from a Collaborative Governance Plus Multi-Helix perspective using four main dimensions which are drivers as policy content, the context of policy implementation, the dynamics of collaboration in waste management, and the outcomes of policy implementation.

### 4. The study materials and methods

This research uses a qualitative descriptive method, which aims to analyze the performance of waste management policies in the city of Palembang from the perspective of Collaborative Governance Plus Multi-Helix. According to Creswell et al., (2018) qualitative research explores and understands the meaning of a number of individuals or groups regarding social problems. This type of research is suitable for observing community phenomena, behavior and social dynamics related to the implementation of public policies, especially related to waste management in Palembang City. The focus of this research is to analyze the performance of waste management policies in Palembang City

from a Collaborative Governance Plus Multi-Helix perspective. This research focuses on four main dimensions: drivers as policy content, the context of policy implementation, the dynamics of collaboration in waste management, and the outcomes of policy implementation. The driver's dimension includes elements such as uncertainty, interdependence, consequential incentives, and leadership. Collaboration dynamics are analyzed through engagement, shared motivation, and capacity to act.

Method of collecting data used in this research includes three main techniques, namely interviews, observation and documentation. Interviews were conducted with informants who are directly involved in waste management in Palembang City, such as the government, community, academics, business sector, media and NGOs. Non-participant observation was carried out to directly observe waste management activities. Documentation involves collecting data from documents related to waste management policies, such as regional regulations, government reports, and other archives. Research informants were selected using a purposive sampling technique, where researchers selected individuals who were relevant to the performance of waste management policies. A total of 15 informants representing the government, private sector, society, community, NGOs and media in Palembang City were identified as the main sources of information. These informants include figures from various sectors, such as the Mayor of Palembang, the Head of the Environmental Service, as well as representatives from PT. Indo Green Power, World Clean Up Day community, and local media. The data analysis method used in this research is the interactive qualitative analysis model from (Miles et al., 2014). This analysis involves the process of collecting data, condensing data, presenting data, and drawing conclusions. Researchers collect field data, codify it, and develop categories and themes. The data was then condensed to find conclusions that could answer research questions related to the performance of waste management policies in Palembang City from the perspective of Collaborative Governance Plus Multi-Helix.

## 5. Result and Discussion

This research examines the performance of waste management policies in Palembang City using a Collaborative Governance Plus Multi-Helix perspective. This approach emphasizes the importance of collaboration between various parties, including government, society, the private sector, academics, media, and non-governmental organizations (NGOs). (Emerson, 2015) stated that the Collaborative Governance model aims to facilitate multi-actor collaboration to overcome complex problems, including in this case waste management. In Palembang City, although regulations regarding waste management already exist, their implementation has not been optimal, and various challenges in the aspects of drivers, principled engagement, shared motivation, and capacity for joint action still need to be overcome.

In the drivers dimension, challenges were found in overcoming uncertainty which hampered the collaborative waste management process (Wijaya, 2023). According to Grindle, (2017) uncertainty is often an obstacle to policy implementation, especially in developing countries. In Palembang, this uncertainty has resulted in weak initiative leadership, which should act as the main driver in driving cross-sector collaboration. Additionally, interdependence at high levels between actors indicates an urgent need to work together. However, this weak leadership results in a lack of effective coordination in implementing waste management policies.

Palembang Mayor Regulation Number 72 of 2018 regarding waste management is the legal basis for implementing this policy. Based on the policy analysis, some of the interests affected by this policy are the community, who should receive direct benefits from the policy. However, the Environmental Service (DLH) as the main implementer is facing an increasing workload without being supported by adequate resources. This is in line with the findings of Wijaya, (2023) who emphasize



that the implementation of public policies requires sufficient human resources, funds and infrastructure to be successful.

Apart from that, the changes in community behavior expected through this policy have not been fully achieved. According to Grindle, (2017), behavior change is one of the main indicators of the success of public policy, especially policies related to the environment. However, in Palembang, community behavior in terms of waste management has not yet experienced significant changes, which has resulted in this policy not achieving the desired results. In the context of policy implementation, coordination between actors, including government, the private sector and society, is still not optimal. Vallero, (2019) emphasized that the success of policy implementation is very dependent on effective coordination between the various actors involved. In Palembang City, this weak coordination has resulted in the implementation of waste management policies not going according to plan. Apart from that, the characteristics of the institutions involved are less democratic and not open to input from external parties, which further worsens the situation.

The responsiveness and compliance of policy implementers is also a significant problem. (Parsons, 2017) states that implementer compliance with policy rules is an important element in the successful implementation of public policy. However, in Palembang, the responsiveness of policy implementers is still low, which means that this policy cannot be implemented optimally. Lack of compliance with regulations causes an inability to achieve more effective waste management goals (Garske et al., 2020).

In the principled engagement dimension, one of the main components of Collaborative Governance Plus Multi-Helix, This research shows that the communication between the various helixes involved is still closed. According to Emerson and Nabatchi, (2015) open communication is very important in the collaboration process to reach deliberative agreements. However, in Palembang, this closed communication hinders the exchange of ideas and solutions, and reduces the effectiveness of collective decision-making processes. Apart from that, in the principled engagement process, it was discovered that the interests of several helixes were not properly accommodated. This makes the collaboration that occurs partial and not comprehensive. According to Wijaya, (2023) successful collaboration must take into account all the interests of the various parties involved to achieve inclusive results. In Palembang, this problem caused collaboration between actors to not run optimally.

In the shared motivation dimension, it was found that the level of trust between helixes was still low. Trust between parties is critical to creating effective collaboration. According to Wijaya, (2023), shared motivation includes a shared understanding of the goals to be achieved, as well as a commitment to work together for the common good. However, in Palembang, even though there is a fairly good mutual understanding, the level of trust between actors still needs to be increased to support successful collaboration in waste management. Apart from that, internal legitimacy in the collaboration process is still not strong. This legitimacy is important to ensure that each helix feels valued and has an important role in decision making Emerson and Nabatchi, (2015) In Palembang, this weakness in internal legitimacy led to a lack of shared commitment between helixes, which had a negative impact on the effectiveness of waste management policy implementation.

In the dimension of capacity for joint action, although existing legal procedures are adequate, leadership in the collaboration process is still weak. Strong and visionary leaders are needed to guide multi-actor collaboration (Grindle, (2017) However, in Palembang, the existing leadership has not been able to move all the helixes to work together effectively. Apart from that, knowledge between helixes is also not evenly distributed, which causes an imbalance in understanding of the steps that need to be taken. Limited resources, especially budget, are also a major inhibiting factor in achieving the desired results. According to (Arantes et al., 2020) without adequate resource support, it is difficult for policies to be successfully implemented. In Palembang, budget constraints mean that many waste management

programs cannot be implemented properly, so that the positive impact of these policies cannot be felt by the wider community.

The culture of mutual cooperation, which has long been a characteristic of Indonesian society, has been proven to be able to unite the community in various social and development activities, including environmental management (Bugge et al., 2019). This mutual cooperation value can be optimized to face challenges in waste management in Palembang City. It is hoped that the people of Palembang, as an important element in the waste management cycle, can again prioritize this spirit of togetherness to maintain a clean environment. According to Wijaya, (2023) one of the keys to the success of waste management policies lies in the active participation of the community, especially through a collective culture of mutual cooperation. Reviving the culture of mutual cooperation in the context of waste management is not only about carrying out activities together, but also about fostering a sense of collective responsibility towards the environment. Mutual cooperation in waste management can be realized through activities such as community service, regular environmental cleaning, and waste recycling efforts at the household level. By reactivating community participation, collaboration between actors, both from the government, private and community sectors, will become stronger and more comprehensive. This can also increase public awareness of the importance of maintaining a clean environment (Arantes et al., 2020)

Apart from that, mutual cooperation in waste management can provide other benefits, such as strengthening social ties between residents and creating awareness of the importance of protecting the environment for future generations. Wijaya, (2023) emphasized that active participation in environmental management will increase the success of environmental policies, especially in big cities like Palembang which are facing the problem of increasing waste volumes. The collective awareness that grows from mutual cooperation is also able to create changes in community behavior in terms of reducing and managing waste better. Thus, restoring the culture of mutual cooperation as an integral part of waste management in Palembang will not only have an impact on improving environmental quality, but also on increasing social involvement and a sense of togetherness between residents. This will also strengthen the collaborative system between various parties involved in waste management, so that waste management policies can be implemented more effectively and sustainably (Righetti & Schremmer, 2022).

The results of policy implementation show that although this policy is designed to increase community participation in waste management, the expected behavioral changes have not been fully achieved. According to Grindle, (2017) the success of public policy can be measured by how far the policy is able to change the behavior of the policy targets. In Palembang, further efforts are still needed to actively involve the community in waste management. Overall, Palembang City still faces various challenges in waste management, ranging from weak coordination between actors to limited resources. Emerson and Nabatchi, (2015) emphasize that without strong collaboration between government, the private sector and society, it is difficult for waste management policies to achieve optimal results. In Palembang, these challenges must be addressed immediately to create a clean and healthy environment.

This research recommends implementing the Collaborative Governance Plus Multi-Helix model which emphasizes on dynamic deliberative governance more optimally to overcome waste management problems in Palembang City. By involving all helixes in the decision-making process and policy implementation, it is hoped that this policy can be more inclusive and relevant to the needs of society (Wijaya, 2023) Better collaboration between actors will increase the effectiveness of waste management and have a positive impact on the environment. As a strategic step, it is proposed to establish a Waste Governance Commission, an ad hoc institution that will be responsible for coordinating waste management in Palembang City. This institution will act as the main facilitator between government, the private sector, academics and the community to ensure that policy implementation runs in accordance with the stated objectives.

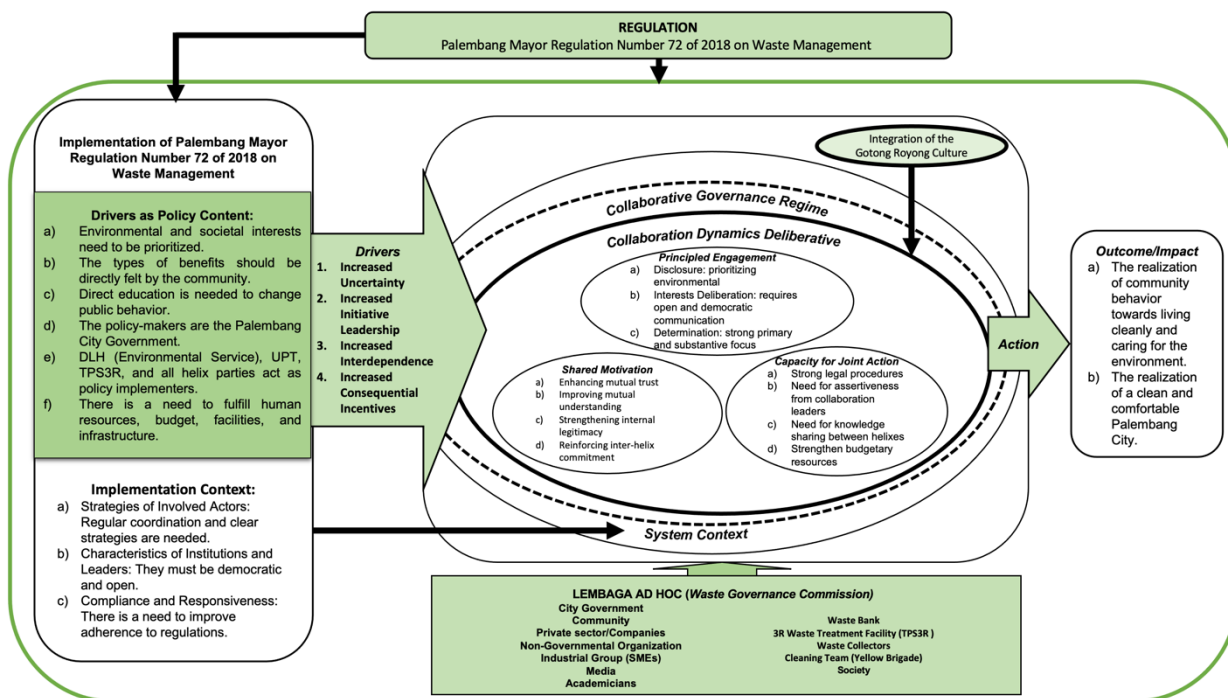


Figure 1. The model of waste management policy implementation in the perspective of Collaborative Governance Plus Multi-Helix

Based on figure 1, the formation of a Waste Governance Commission is proposed as a strategic step to overcome the problem of waste management in Palembang City. This ad hoc institution aims to improve coordination between various parties involved in waste management, such as the government, private sector, academics, communities and society. The main role of this commission is to act as a bridge between these actors, so that cross-sector collaboration can run better. With the existence of this institution, it is hoped that waste management policies can be implemented in a more coordinated, efficient manner and in accordance with the targets that have been set. This institution will function as the main facilitator ensuring that every party, from the government to the community, has a clear role in waste management. One of the main challenges in implementing environmental policies is the lack of communication and synergy between actors. The Waste Governance Commission will bridge this gap by providing an appropriate forum for discussion, exchange of ideas and continuous evaluation of implemented policies. In this way, the active participation of all the helixes involved will be further strengthened, and policy implementation will be more focused.

In addition, the Waste Governance Commission will be responsible for monitoring and evaluating the results of the waste management policies implemented. This institution can provide recommendations based on empirical data and research results conducted by academics or other parties. Thus, every new policy or strategy implemented will be based on strong evidence and measurable results, thereby increasing the effectiveness of waste management in Palembang City. It is hoped that the Waste Governance Commission can become a driving force for significant changes in the waste management system in Palembang. Through its strategic role as facilitator, coordinator and evaluator, this commission has the potential to bring about major changes in creating a sustainable and environmentally friendly waste management system. Not only that, this institution can also be a model for other cities in Indonesia that face similar challenges in managing waste more effectively.

Dynamic deliberative governance is an approach that prioritizes the active involvement of all parties in the decision-making process, emphasizing open dialogue, deliberation and collaboration between actors. In the context of waste management, this approach is very relevant because



environmental problems, especially waste, require the participation of all parties, including government, private sector, academics, communities and society directly. This concept emphasizes that waste management is not only the responsibility of the government, but also requires active contribution from the community. In the dynamic deliberative governance framework, each actor has the opportunity to voice opinions, provide input, and collaborate actively in formulating the most appropriate solutions to waste problems.

A culture of mutual cooperation can be an important element in realizing dynamic deliberative governance in waste management. As explained by Wijaya, (2023) active community participation is very important in the success of environmental policies, especially in the context of waste management. Mutual cooperation in this case is not only limited to community service to clean the environment, but also community involvement in the deliberation and decision-making process. In deliberations involving various parties, the voice of the community, especially those directly affected by waste management policies, becomes very important. By prioritizing the principle of mutual cooperation, all parties can work together to achieve the common goal of a clean and healthy environment.

More than that, dynamic deliberative governance with the principle of mutual cooperation enables the creation of a sense of ownership among the community. When the community is involved in the decision-making process and implementation of waste management policies, they will feel they have a shared responsibility to keep the environment clean. A deliberation process that is inclusive and involves all parties will strengthen collective awareness that waste management is a common issue that requires sustainable cooperation. Mutual cooperation in this context not only includes physical activities such as cleaning the environment, but also includes a long-term commitment from the entire community to reduce waste production and support recycling efforts.

Finally, the integration of mutual cooperation in dynamic deliberative governance will produce a more significant impact on waste management in Palembang. Through deliberative deliberation, all actors involved will be able to find more creative and effective solutions, because the decisions taken are the result of a collective process that considers various perspectives. In the long term, this approach can strengthen waste management institutions and create a more sustainable system. Mutual cooperation, which is part of the culture of Indonesian society, is the main foundation in building deeper involvement from the community, so that waste management is not only the responsibility of the government, but also all levels of society.

## 6. Conclusion

The aim of this research is to explore the performance of waste management policies from a collaborative governance plus multi helix perspective. Research findings show that Palembang Mayor Regulation Number 72 of 2018 regarding waste management is not yet running optimally, and various challenges in the aspects of drivers, principled engagement, shared motivation, and capacity for joint action still need to be overcome. So, it is recommended to strengthen dynamic collaborative deliberation integrated with a culture of mutual cooperation to improve waste management performance. Dynamic deliberative governance is an approach that emphasizes the active involvement of all parties in decision making regarding waste management, promoting open dialogue and collaboration between government, the private sector, academics, communities and society. In this context, community participation through a culture of mutual cooperation is the key to success, because it involves them in the deliberation and decision-making process. With a sense of ownership and shared responsibility, people will be more committed to maintaining a clean environment. Through deliberative deliberation, creative and effective solutions can be found, strengthening waste management institutions and creating a sustainable system that involves all levels of society, not just the government.

**Conflict of Interest**

The author declares that he has no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study, as well as the results reported in this paper.

**Funding**

The study was conducted without financial support.

**Data availability**

All data are available, either in numerical or graphical form, in the main text of the manuscript.

**Use of artificial intelligence**

The author confirms that he did not use artificial intelligence technologies when creating the current work. The images were built by authentic algorithms, without AI involvement

**Acknowledgment**

This work is supported by the Doctoral Program in Administrative Sciences, Faculty of Administrative Science, University of Brawijaya Malang, Indonesia, Indonesia. Therefore, the author would like to thank profusely for the support.

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