TRANSFORMASI: Jurnal Manajemen Pemerintahan Vol 17, No. 1, 2025, pp. 17-34
Website:http://ejournal.ipdn.ac.id/JTP, **e-ISSN 2686-0163, p-ISSN 085-5192**
Faculty of Government Management, Governance Institute of Home Affairs (IPDN)

Plastic Waste Management Policy in Support of Sustainable Development Goal 12 "Responsible Production and Consumption": A Case Study of Surabaya City

Author:
Sabil[1], Helen Dian Fridayani[2], Achmad Nurmandi [3]

Affiliation:
Universitas Muhammadiyah Yogyakarta, JL. Brawijaya, Bantul, Yogyakarta 55183, Indonesia [1,2,3]

e-Mail:
sabillilah842@gmail.com[1], helen.dian@umy.ac.id[2], nurmandi_achmad@umy.ac.id[3]

***Corresponding author**
Sabil
Universitas Muhammadiyah Yogyakarta, Indonesia
Email: sabillilah842@gmail.com

Received: Jan 16, 2025
Revised: Aug 02, 2025
Accepted: Aug 02, 2025
Available Online: Aug 16, 2025

ABSTRACT

Plastic waste management is one of the main environmental challenges in Indonesia, especially in the city of Surabaya. This qualitative study aims to review and analyze the implementation of government policies in creating and implementing plastic waste management to support SDG 12 (Responsible Production and Consumption). This study raises the issue of the limited effectiveness of policies in reducing plastic waste and increasing community participation. Secondary data was collected from various sources, such as Surabaya City government policy documents, scientific journals, and relevant publications. This study contributes to strengthening the understanding of the importance of a collaborative approach in the implementation of waste management policies. However, challenges such as low public awareness and weak supervision still exist. This study highlights the importance of cross-sector collaboration in strengthening plastic waste management policies. The researchers recommend that the government should increase awareness campaigns on waste sorting and recycling. Additionally, stricter oversight is needed to limit the use of single-use plastic waste as part of the strategy to achieve SDG 12 at the city level.

Keywords: *Plastic Waste; Policy Implementation; Public Awareness*

DOI: https://doi.org/10.33701/jtp.v17i1.5158

TRANSFORMASI: Jurnal Manajemen Pemerintahan Vol 17, No. 1, 2025, pp. 17-34
Website:http://ejournal.ipdn.ac.id/JTP, **e-ISSN 2686-0163, p-ISSN 085-5192**
Faculty of Government Management, Governance Institute of Home Affairs (IPDN)

ABSTRAK

Pengelolaan sampah plastik merupakan salah satu tantangan lingkungan utama di Indonesia khususnya di kota Surabaya. Studi Kualitatif ini bertjuan untuk meninjau dan menganalisis implementasi kebijakan pemerintah dalam menciptakan dan melaksanakan pengelolaan sampah plastik guna mendukung SDG 12 (Produksi dan Konsumsi yang Bertanggung Jawab). Penelitian ini mengangkat masalah terbatasnya efektivitas kebijakan dalam menekan timbulan sampah plastik dan meningkatkan partisipasi masyarakat. Data skunder di kumpulkan dari berbagai sumber, seperti dokumen kebijakan pemerintah Kota Surabaya, Jurnal Ilmiah, dan Publikasi yang relavan. Studi ini berkontribusi untuk memperkuat pemahaman tentang pentingnya pendekatan kolaboratif dalam implementasi kebijakan pengelolaan sampah. Namun, tantangan seperti minimnya kesadaran publik dan lemahnya pengawasan masih terjadi. Dimana studi ini menyoroti pentingnya kolaborasi lintas sektor dalam menguatkan kebijakan pengelolaan sampah plastik. Peneliti merekomendasikan pemerintah perlu meningkatkan sosialisasi pemilahan dan daur ulang sampah. Serta memperketat pengawasan untuk membatasi penggunaan sampah plastik sekali pakai sebagai bagian dari strategi mencapai SDG 12 di tingkat kota.

Kata kunci: *Sampah Plastik; Implementasi Kebijakan; Kesadaran Masyarakat*

INTRODUCTION

Surabaya City has a long history in waste management and has even become an example for other cities in waste management (Pandana & Firdaus, 2024). However, due to the times and also population growth (Salim, 2023), the waste management system in Surabaya City needs to be addressed to overcome the increasingly comprehensive waste problem (Verawati, 2021). Based on the Minister of Environment and Forestry Regulation No.14 of 2021 in Article 1 defines that waste is daily human activities / natural processes in solid form. With the increasing consumption and use of waste in the modern era (Nova Novita laju, 2024), it has caused many problems for the environment, one of which is plastic waste (Maskun et al., 2022).

Various environmental problems have emerged (Mulyati et al., 2023), one of which is sea water pollution which can endanger living things (Sains et al., 2023). Furthermore, the quality of the environment also continues to decline, which causes environmental degradation problems in people's lives (Purwendah et al., 2023). Some experts such as Dr. Jane Goodall who emphasizes the importance of waste management through the application of five principles: *Refuse, Reduce, Reuse, Recycle,* and *Rot* (Sullivan, 2020). Prof. Wangari Maathai also argues through the Green Belt Movement organization that there is a need to educate the public about the importance of waste management and environmental sustainability. In line with this, to carry out effective waste management, a public policy approach is needed, where the government and the community are actively involved in making regulations to support comprehensive waste management. One important concept is the Waste Management Hierarchy which emphasizes that *Refuese (rejection)* as the top priority, followed by *Reduce (source reduction)*, After that *Raycle (Recycling)*, and *Dispose (Disposal)* as the final step. In addition, production-based and sustainable approaches are also necessary, as they can minimize resource use and encourage greener consumption patterns to reduce negative impacts on the environment.

With a total of 352 waste banks in Surabaya City (Fajriatin, 2019), based on

DOI: https://doi.org/10.33701/jtp.v17i1.5158

existing data, most of the waste has been managed properly (Dewanti et al., 2020). However, more in-depth research is still needed to determine the percentage of waste that has been managed to the point that it can be recycled (Andina, 2019). Some parties support the development of waste banks in Surabaya City with the aim of increasing the efficiency of waste management (Fitrianto et al., 2024). So that it can reduce the amount of waste disposed of in landfills, and to increase the income of people involved in waste banks (Mu'arif et al., 2020). However, there are some cons, such as the fee required to start the improvement and the need for a change in people's perspective on waste management (Sudiarta & Dewi, 2023).

Various research analyses on waste management have been conducted, with some studies also carried out in several regions. For example, in Jakarta (Stefany et al., 2023), Yogyakarta (Sumbodo et al., 2024), Semarang (Adinda et al., 2024), and various other regions, such studies remain very limited. Where studies directly link local policies and their contributions to achieving Sustainable Development Goal (SDG) 12, particularly in the context of responsible consumption and production. This indicates a literature gap that needs to be addressed through policy studies focused at the city level. Therefore, research on plastic waste management in support of the SDGs, particularly in the city of Surabaya, is important to conduct. This city not only demonstrates progressive waste management practices, such as the development of community-based waste banks, but also has the potential to serve as a model for replicating SDG 12 implementation at the local level in Indonesia. This research also introduces novelty by linking local policy strategies with sustainable changes in community behavior, as well as offering a multidimensional analysis that has been rarely discussed in previous literature. By analyzing government policies on plastic waste management, this research is expected to provide strategic contributions to achieving the SDGs, particularly in the aspect of responsible production and consumption. Therefore, the objective of this research is to review and analyze government policies in creating and implementing plastic waste management to support the SDGs (Responsible Production and Consumption), as well as to enhance public awareness for sorting and recycling plastic waste sustainably.

THEORETICAL FRAMEWORK

a. Public Policy

In the context of waste management in the city of Surabaya, public policy theory is used in this study. Generally, public policy is a set of laws, guidelines, and actions taken by the government for the benefit of the general public (Alaslan et al., 2023). Leo Agustino (2008: 6) defines public policy as the relationship between government units and their environment (Howlett & Mukherjee, 2021). Dunn (2003) and Anderson (2011) further develop this by stating that the public policy model consists of three stages: first, formulation, which is the process of finding policy solutions and defining problems. In Indonesia, particularly in the city of Surabaya, the formulation of plastic waste management policy began with the identification of problems caused by the high use of single-use plastics and the accumulation of plastic waste in landfills. The policy framework in this study refers to the policy cycle approach, which

DOI: https://doi.org/10.33701/jtp.v17i1.5158

originated from the thinking of Harold D. Lasswell (1971) and was later reinforced by Jann & Wegrich (2017). This policy cycle divides the policy process into several systematic stages, namely: agenda setting, formulation and decision-making, policy implementation, and evaluation.

The Surabaya City Government through the Environmental Agency has conducted several studies and data collection to support policies related to daily plastic waste volume, waste collection locations, and people's plastic consumption habits. Therefore, this formulation stage uses the Regulatory Policy approach to set rules and limit businesses and communities, such as reducing the use of plastic bags in shopping centers and traditional markets (Amri & Susilawati, 2023). To ensure that all citizens understand and comply with this policy, the city government also implements the Environmental Policy approach, which emphasizes public education and participation (Yuan & Zhang, 2020). This education is manifested in the form of environmental campaigns, collaborating with schools to teach the importance of reducing plastic waste, and optimizing the provision of recycling facilities in several areas of Surabaya city. After these two approaches, it is important to evaluate. According to (Lemire et al., 2020) evaluation is a specific type of policy analysis that uses systematic data collection and analysis to determine the value of the formative or summative effectiveness of a program or policy. Therefore, policy evaluation is carried out to assess the successes and shortcomings in the implementation of plastic waste management policies in Surabaya.

b. Waste Management Hierarchy (*Refuse, Reduce, Recycle and dispose)*

This study uses the waste management hierarchy theory, which describes a systematic approach to waste management to minimize environmental impact by applying a sequence of priority actions. This approach has four main principles, namely *Refuese, Reduce, Recycle, and Dispose* where these four principles offer comprehensive steps in reducing the accumulation of plastic waste in a sustainable manner.

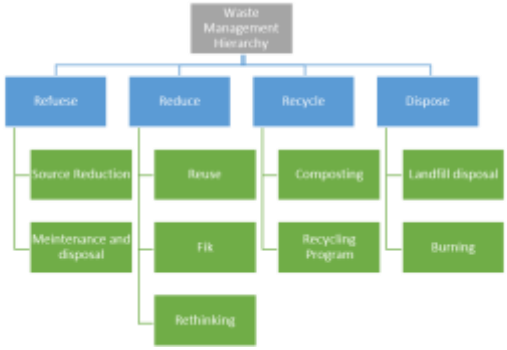

Figure 1. Waste management hierarchy concept map

With regard to the Refuse principle, the Refuse principle emphasizes the importance of refusing to use materials that have the potential to generate waste, especially single-use materials that are difficult to decompose, such as plastic waste. In the context of policy, this is implemented through restrictions on the use of single-use plastics in public spaces and encouraging consumers and businesses to switch to more environmentally friendly alternatives (Mazhandu et al., 2023).

Following the Refuse principle is the Reduce principle, which aims to reduce the amount of plastic waste consumed. This strategy can be implemented through public education, changing consumption patterns, and encouraging the use of more environmentally friendly products (Awino &

DOI: https://doi.org/10.33701/jtp.v17i1.5158

Apitz, 2024). This is particularly true in the city of Surabaya, where plastic reduction policies have been implemented through campaigns to reduce single-use items and promote the use of sustainable products (Yaqub et al., 2023). The next principle is Recycle, which focuses on managing materials so that they can re-enter the economic chain. This is achieved by providing representative recycling facilities and involving the community, so that waste—including plastic waste—can be collected, sorted, and reused to create new, higher-quality products (Ding & Zhu, 2023; Khoaele et al., 2023). Finally, there is Dispose (Disposal), where materials are sent to landfills or incinerated without any recovery. Disposal increases pollution and contributes to resource depletion.

c. Sustainable Comsumption and Production

The theory of sustainable consumption and production is no less important for this study because it helps explain how consumption and production patterns can be directed to support resource efficiency, reduce impacts that may affect the environment, and meet the sustainable needs of society (Restrepo & López, 2024). Additionally, the theory of sustainable consumption and production provides a framework for understanding more efficient and environmentally friendly resource management practices (Moyo & Ngwakwe, 2020). From this theory, sustainable consumption focuses on the wise use of goods and services, minimizing waste, emissions, and environmental damage throughout the product lifecycle (Vargas-Merino et al., 2023). Meanwhile, sustainable production emphasizes efficient production processes and technological innovations that support environmentally conscious practices (Trummer et al., 2022).

The Surabaya City Government has implemented various programs such as banning plastic bags in traditional markets, strengthening the function of waste banks, and public education through partnerships with communities and schools. Although these efforts show progress in the formulation and implementation stages, the policy evaluation stage still needs to be strengthened systematically, particularly in assessing the long-term impact on community behavior. As a point of comparison, Kamikatsu City in Japan has successfully implemented a Zero Waste-based waste management system that involves residents in sorting waste into 45 categories, enabling nearly all waste to be recycled without being disposed of in landfills. This approach could serve as inspiration for Surabaya in developing a more participatory and structured system (Shenyoputro & Jones, 2023). Additionally, San Fernando in the Philippines is widely recognized as a pioneer Zero Waste city in Southeast Asia, achieving household waste sorting rates of up to 80%. This success was driven by collaboration between local government, NGOs, and residents, which can serve as a strategic reference for the Surabaya City Government (Ancheta et al., 2020). In the context of plastic waste management in Surabaya, this theory serves as a conceptual framework for assessing the effectiveness of local policies in supporting the sustainable development goal SDG 12. By adopting this approach, Surabaya is expected to create a system aimed at reducing plastic waste and increasing public awareness of responsible consumption.

DOI: https://doi.org/10.33701/jtp.v17i1.5158

METHODS

This research was conducted in the This research was conducted in the city of Surabaya. Surabaya was chosen as the study area because, first, of its ability to promote the Sustainable Development Goals (SDGs), particularly in the areas of responsible production and consumption, as well as its effectiveness in implementing community-based waste management programs. Second, this city is the second largest city in Indonesia facing significant challenges in managing plastic waste. This study employs a qualitative research method, which is appropriate for this research as it requires a deep understanding of waste management in Surabaya. Data was collected from 2020 to 2024, as this period saw a surge in waste generation in Surabaya. The data sources collected were secondary data obtained through literature review techniques. Secondary data was collected from various sources, such as government policy documents of Surabaya City, annual reports of the Surabaya City Environmental Agency, scientific journals, and publications relevant to plastic waste management.

Additionally, the data collected includes the amount of plastic waste generated, recycling rates, related policies, as well as community and private sector initiatives supporting sustainable waste management.

After the data was collected, data reduction was performed. At this stage, the data was simplified and focused to use relevant information. This process involved filtering data in accordance with the research objectives. The reduced data was then presented in a more structured form to facilitate analysis. Finally, conclusions are drawn based on the analyzed data, which is then verified to ensure its validity and consistency with the analyzed data. To maintain ethical standards, this research only uses open data and explicitly states the limitations due to the unavailability of access to primary data.

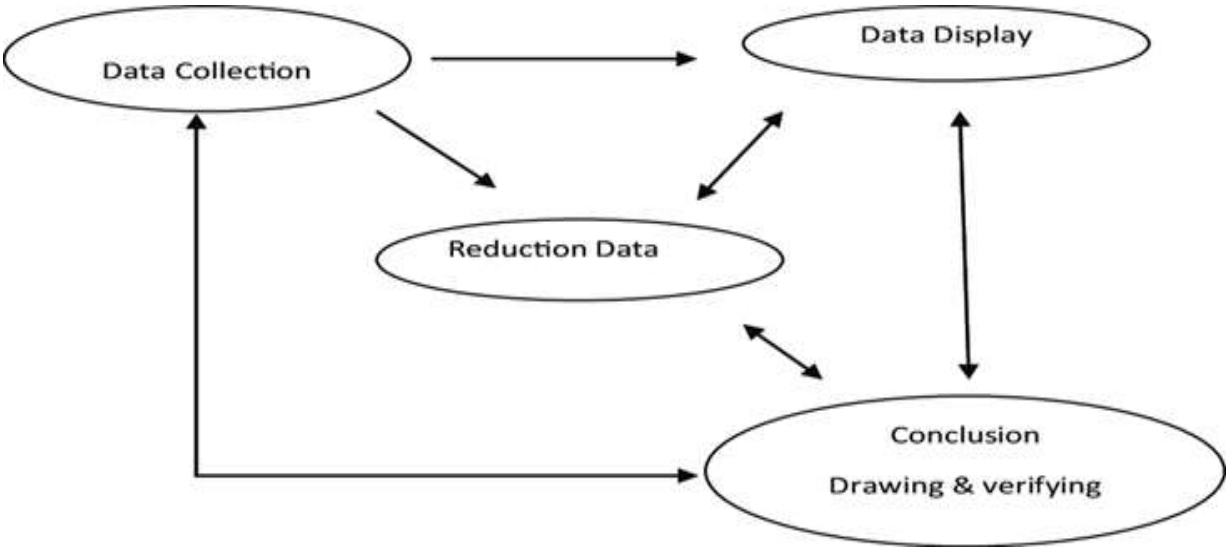

Figure.1 Interactive Model Data Analysis Technique.
Source: (Kustiandi & Rachmawati, 2020)

DOI: https://doi.org/10.33701/jtp.v17i1.5158

RESULT AND DISCUSSION

a. Implementation in policy

To reduce the production of plastic waste that is rampant in the city of Surabaya. Surely the government and the people of Surabaya city have designed policies that can help reduce plastic waste in the city. One of the main focus areas of the policy is the development of public waste banks spread across various areas of Surabaya city. Based on the Surabaya City Environmental Agency 2023, there are currently more than 352 waste banks operating and the management success rate reaches up to 99.09%. The implementation of this program aims to increase public awareness of waste segregation, and improve the waste collection system. Furthermore, the government also introduced organic recycling and composting practices, and strengthened the area against littering. With an integrated approach that involves all parties, it is expected that the amount of non-recycled waste will continue to decrease and contribute to a cleaner and healthier environment in Surabaya city.

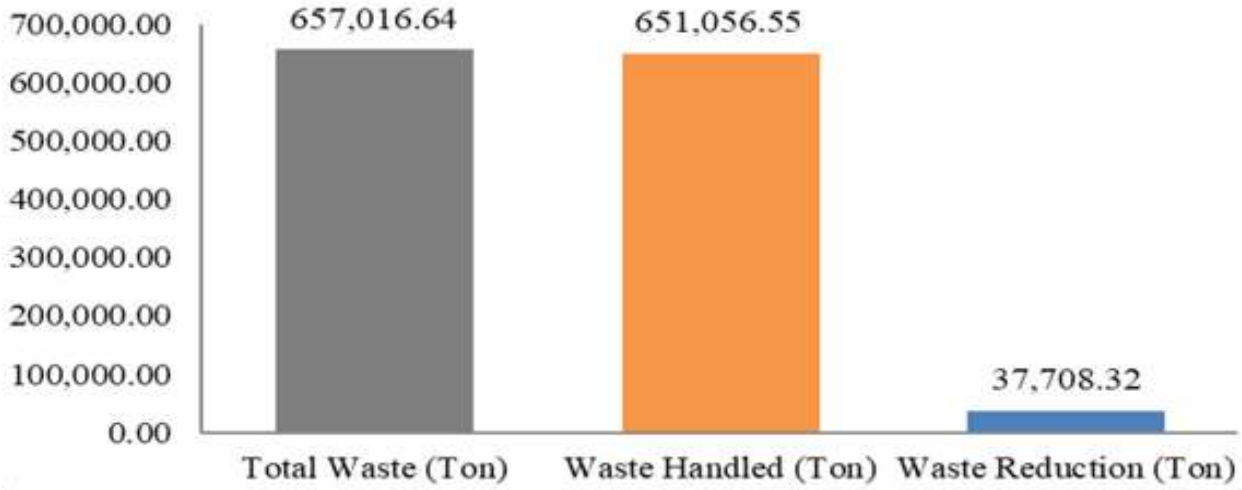

Diagram 1. Achievement of Waste Management Performance in Surabaya city (2023)
Source: SIPSN

Diagram 1 can be seen that the achievement of waste management performance in the city of Surabaya, the data obtained shows that the total waste generation in the city of Surabaya reaches 657,016.64 tons per year. With this amount, successful waste reduction efforts reached 37,708.32 tons per year or equivalent to a reduction ratio of 5.74% per year. Meanwhile, waste handling reached 613,348.23 tons per year, which indicates that 93.35% of the total waste generation was successfully handled. Furthermore, the percentage of well-managed waste reached up to 90.09%. This achievement reflects the effectiveness of the waste management program that has been implemented by the city government. Despite the significant progress, further efforts are still needed to increase the level of waste reduction and community participation in the waste management program. . To better understand the challenges and potential of waste management in Surabaya city, it is necessary to analyze the composition of waste sources generated. Therefore, below

DOI: https://doi.org/10.33701/jtp.v17i1.5158

is a circle diagram that illustrates the composition of waste sources in the city of Surabaya.

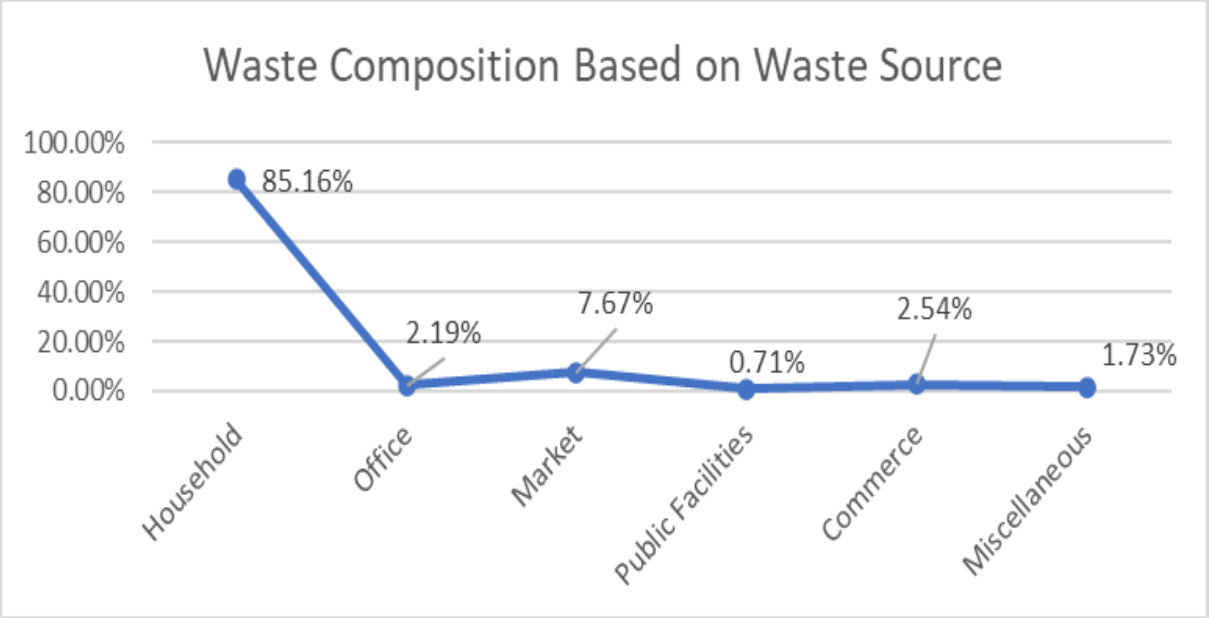

Diagram 3. Waste Composition by Waste Source (2023)

In analyzing the composition of waste sources in Surabaya city, based on Figure 3 the data displayed in the pie chart shows a significant percentage distribution of various categories of waste sources. The largest composition of total waste generation from households, which amounted to 85.16% of the total waste generation. This reflects the high consumption pattern of the community, thus showing that the importance of community involvement in efforts to reduce plastic waste in Surabaya city. After that, the market contributed 7.67%, while Businesses and Offices contributed 2.54% and 2.19%. Meanwhile, the small percentage of others and public facilities of 1.73% and 0.71% indicates that other sources such as industry or public activities, have a relatively low contribution to the total waste generation. This highlights the need fors

trategies that focus more on the household sector and construction sites, as well as educational efforts to increase public awareness of waste reduction and effective management. By knowing the composition of waste generation, the government and stakeholders will find it easier to design targeted measures to reduce plastic waste and increase public participation in waste management programs in Surabaya city.

DOI: https://doi.org/10.33701/jtp.v17i1.5158

Table 1. Waste Composition by Waste Type in Surabaya City Year 2023

Type of Waste	Yearly
Leftovers	55.48%
Wood-Twigs	2.25%
Paper-Cardboar	3.05%
Plastic	22.01%
Metal	0.25%
Fabric	5.75%
Rubber-	1.35%
Glass	0.50%
More	9.36%

Source: SIPSN, 2023

Furthermore, based on Table 2, it can be seen that the composition of waste based on its type in the city of Surabaya in 2023, it shows that food waste dominates the highest waste generation with a percentage of 55.48%. While cloth waste, other waste and paper-cardboard waste dominate 5.75%, 9.36% and 3.05%. This shows a potential for waste to be recycled. So that it can reduce the amount of waste that is disposed of to the Final Disposal Site (TPA). Then wood waste which dominates 2.25%, rubber-leather waste 1.35%, metal waste 0.25%, glass waste 0.50% which is relatively small also contributes to the total waste generation. Finally, plastic waste is a significant type of waste that is the focusof this study. Because it reaches 22.01% of the total waste generation. This high level of plastic waste is a big challenge in waste management, considering that plastic waste is very difficult to decompose and can pollute the surrounding environment. Therefore, it is necessary to educate the public about plastic sorting and reducing plastic usage to overcome this problem. After discussing the composition of waste based on its type in the city of Surabaya in 2023, it is also necessary to discuss the location of the distribution of waste bank locations and landfills in the city of Surabaya, the following map of the location of the distribution of waste banks that have been successfully traveled.

DOI: https://doi.org/10.33701/jtp.v17i1.5158

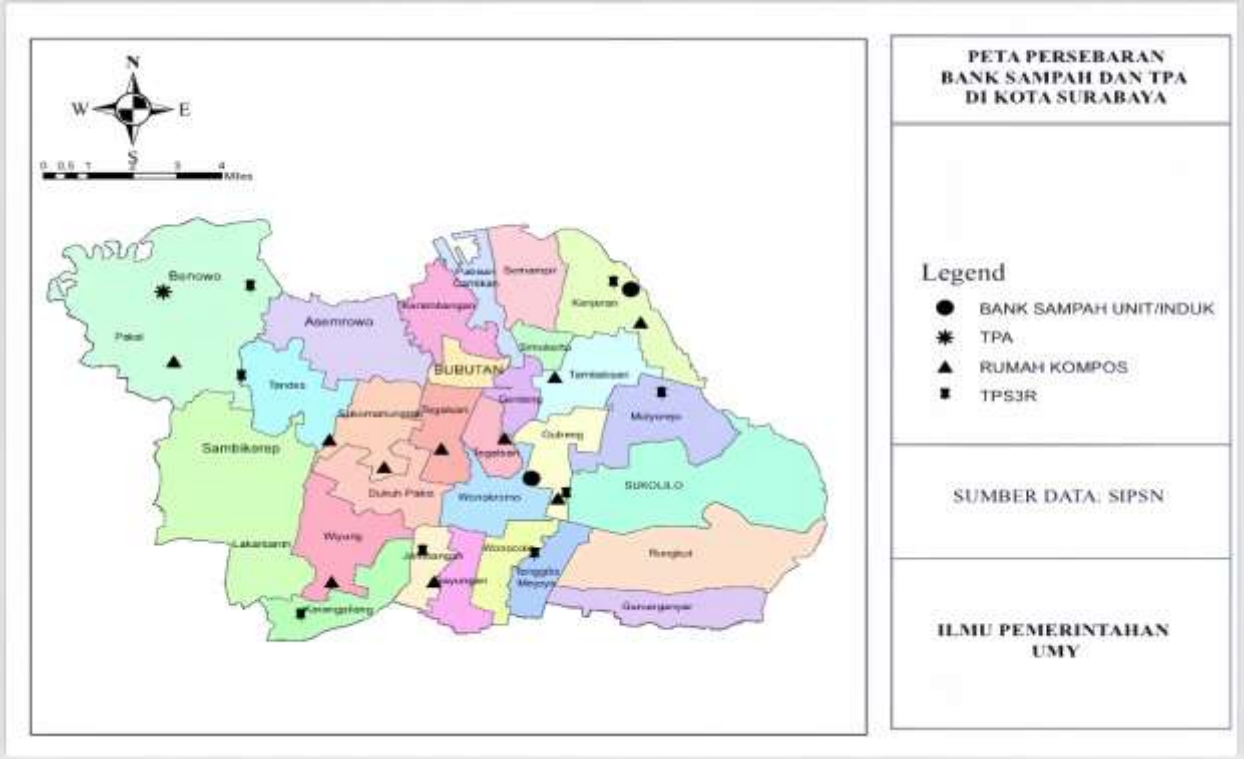

Figure 4. Map of Waste Bank and Landfill Distribution in Surabaya City

Based on Figure 4 above, the map shows the distribution of waste management facilities in Surabaya City, which consists of 12 locations of waste bank units, 1 location of landfills, 8 locations of compost houses, and 9 locations of TPS3R (Waste Management Sites Reuse, Reduce, Recycle). Although the map shows only a few waste bank locations recorded, the actual number of waste banks in Surabaya City is much higher. Based on a Circular Letter issued by the Surabaya City Government, there are 352 waste banks spread across various areas of the city. However, information regarding the detailed locations of these waste banks has not been fully disseminated to the public at large. As a result, many residents are unaware of the existence of waste banks in their neighborhood, hindering active participation in community-based waste management. This lack of information also makes it difficult to coordinate between the community and waste bank managers to maximize the potential of collective waste management. This suggests that communities in some areas may face limited access to waste management facilities, resulting in constrained active participation in recycling and waste management. Therefore, the researcher recommends that the Surabaya City government needs to add facilities in areas that lack access, as well as utilize technology to provide interactive maps that can be accessed by the public.

In line with the policy context, the Surabaya city government also made a policy to limit the use of plastic through the mayor's circular letter on reducing the use of plastic bags in the modern retail sector. This is complemented by empowering micro, small and medium enterprises (MSMEs) in creating alternative products that are more environmentally friendly, such as reusable shopping bags. The program succeeded in

DOI: https://doi.org/10.33701/jtp.v17i1.5158

reducing the consumption of single-use plastic bags by around 1.5 to 2 tons per day in its first year of implementation (Pewarta, 2022). However, the effectiveness of this policy still faces challenges, especially in terms of cross-sectoral coordination and heterogeneous community participation. As a metropolitan city, the difference in the level of awareness between the upper-middle and lower-middle class communities is a considerable inhibiting factor. Not only that, the support of waste management infrastructure, such as landfills with adequate recycling facilities, also still needs to be improved. Nonetheless, the implemented policy shows great potential to have a positive impact on reducing plastic waste and increasing public awareness in supporting sustainability.

The implementation of various waste management programs in Surabaya directly contributes to the achievement of SDG 12, namely reducing waste generation in a sustainable manner through prevention, reduction, recycling, and reuse. A 5.74% reduction in waste and a waste management rate of 90.09% reflect the effectiveness of the policy approach implemented. However, this achievement also indicates that there is still room to improve the waste reduction ratio. The presence of 352 waste banks and various regulations, such as restrictions on the use of plastic bags, align with SDG 12 targets to reduce food waste and promote efficient consumption. Therefore, policies in Surabaya not only focus on waste management at the end of its lifecycle but also on changing consumer behavior, which is a crucial foundation for transitioning toward sustainable development.

b. Challenges in Policy Implementation

Although several plastic waste management policies have been implemented in Surabaya city, the implementation still faces some considerable challenges and one of the main obstacles is the lack of modern and integrated waste management infrastructure (Maskun et al., 2022). Based on a report by the Surabaya City Environmental Agency (2023), the capacity of Benowo landfill, which is the center of waste management in Surabaya, has almost reached the maximum threshold. This is exacerbated by the lack of dedicated facilities for efficient recycling of plastic waste, which means most plastic waste still ends up in landfill or dispersed into the environment.

On the other hand, public participation in community-based waste management programs, such as waste banks, is still uneven (Hendriati, 2018). The study found that the level of public awareness of the importance of plastic waste management still varies, especially between urban and suburban areas. Economic and educational factors are the main determinants of participation levels, where people with lower incomes tend to be less involved because they have to prioritize other life needs. Furthermore, policy socialization conducted by the government is still top-down in nature, making it less able to reach the community as a whole (Sarry & Sasmito Jati Utama, 2023). Not only that, community participation in cross-sector collaboration also still faces obstacles. Although the private sector has contributed through corporate social responsibility (CSR) programs to support waste management, integration with government policies tends to be less than optimal due to the misalignment of private sector priorities with the government

DOI: https://doi.org/10.33701/jtp.v17i1.5158

agenda, reducing the effectiveness of policy implementation (Mawasti et al., 2022). In addition, weak law enforcement related to restrictions on the use of single-use plastics in the informal sector, such as traditional markets and other trades, is also a challenge to policy implementation. The lack of strict supervision and sanctions makes this policy difficult to implement consistently. In addition, there is a lack of incentives for small businesses to switch to more environmentally friendly alternatives (Sunarti et al., 2021).

Furthermore, in the context of public policy, the challenges faced by the city of Surabaya also reflect a mismatch between policy formulation, implementation in the field, and support from various sectors (Arianto, 2024). Community participation, especially in suburban areas, is still relatively low. On the other hand, there is still a gap between the government's agenda and the corporate social responsibility (CSR) programs of the private sector (Khamimah, 2021). This situation indicates that the effectiveness of policies depends heavily on coordination among institutions and the implementation of a participatory approach. This situation aligns with the principle of collaborative governance, which emphasizes the importance of balanced involvement of all stakeholders to ensure policies can be implemented sustainably. Additionally, the weak socialization and suboptimal enforcement of laws indicate the need for more responsive monitoring and evaluation mechanisms (Salsabilla & Rosdiana, 2023). As a result, policy implementation can be more adaptive to the social and economic dynamics of society.

c. Initiatives and Best Practices

Surabaya City has implemented several innovative initiatives in plastic waste management that can be used as best practice models, both locally and globally. One of its leading programs is operating a community-based waste bank, so that it not only functions as a collection and recycling center for plastic waste, but as a means of environmental education for the community (Mawardani & Lukman Arif, 2023). The program has successfully involved 85.16% of active households, with a total recorded plastic waste generation of approximately 111,000 tons of plastic waste per year. The program is supported by a collaborative approach which involves the government, community, and other private sectors.

In addition, there are also several innovations made by the Surabaya city government where these innovations utilize technology regarding waste management, including the use of digital technology through reporting applications such as applications that have been created by the city government called the *Wargaku* application and waste management based on online platforms (Abdul Hakim, 2022). Regarding this, this application can allow the public to report illegal waste disposal and monitor recycling activities in virtual real time. Thus this innovation will increase transparency and accelerate and facilitate the community in accelerating the management process, so as to encourage community participation.

Related to what has been explained above about the collaborative approach involving the private sector, because the private sector, has a contribution with the corporate social responsibility (CSR) program, so this is an important one regarding plastic

DOI: https://doi.org/10.33701/jtp.v17i1.5158

waste management in the city of Surabaya. In the city of Surabaya, there are currently several large companies that support the development of recycling facilities and promote or introduce more environmentally friendly products (Syaputri et al., 2023). This can be seen from the cooperation between the city government and the private sector, where they took the initiative to produce paving blocks made from plastic waste so that it not only reduces the amount of plastic waste, but can also provide additional economic values for the community (Cantika Agustinur et al., 2023). Furthermore, to increase public awareness of the importance of waste management, Surabaya City has implemented an environmental incentive policy which rewards people who are actively involved in waste management. This has proven to be effective in changing behavior and increasing awareness of the importance of responsible waste management.

The waste management practices implemented in Surabaya have not only proven successful at the local level, but also have strong potential to be replicated in other cities in Indonesia facing similar challenges. By adopting a collaborative approach, strengthening community-based incentives, and leveraging digital technology in waste management, other cities can adopt the strategic elements that have proven effective in addressing the challenges faced in Surabaya. The findings of the analysis highlight the importance of developing policy models that are responsive to local characteristics and needs while remaining aligned with the global principles outlined in Sustainable Development Goal (SDG) 12. In this regard, strengthening regulations, enhancing community literacy and education, and empowering the informal sector are key components in transforming Surabaya's success into a foundation for more inclusive and sustainable national policies.

CONCLUSION

In this study, waste management policies in the city of Surabaya were the main focus. The results of this study found that the government, community, and private sector have contributed to the development of several policies to reduce plastic waste. However, in reality, the government and community still face quite serious problems. The success of these efforts can be seen from the number of waste banks that have been established, which is the primary objective of the policy. With 352 waste banks in Surabaya, the city has successfully managed 99.09% of its waste. However, community participation in this policy remains uneven, and the current waste management infrastructure also needs to be improved.

Based on the findings from this study, the researchers recommend: First, increasing the intensity of ongoing socialization and education for the community about the importance of waste sorting and recycling, Second, strengthening oversight in informal sectors such as traditional markets to reduce the use of single-use plastics, Third, developing incentives to encourage more equitable public participation, as this is crucial because if the plastic waste restriction regulations implemented by the Surabaya city government have weaknesses, it could make the policy difficult to implement effectively. This study has limitations, particularly in the data used, as data collection was only conducted through literature reviews and other data sources. These limitations may affect the depth of

DOI: https://doi.org/10.33701/jtp.v17i1.5158

analysis regarding policy implementation in the field. Therefore, future research is recommended to use a direct qualitative field approach, such as interviews with policy actors and observations at waste management units, to obtain richer and more in-depth data. The findings indicate that strong collaboration between the government, the community, and the private sector is key to improving the governance of plastic waste management. Thus, this study contributes to strengthening environmental governance and the implementation of Sustainable Development Goal SDG 12, particularly in terms of responsible production and consumption.

REFERENCES

1. Agustina, E., & Wibowo, A. (2020). Bank sampah sebagai salah satu solusi pengelolaan sampah berbasis masyarakat. *Jurnal Pengabdian dan Pemberdayaan Masyarakat, 4*(1), 61–68. https://doi.org/10.30595/jppm.v4i1.4915
2. Alam, M. S., Chowdhury, M. A. I., & Hasan, M. M. (2020). Plastic pollution: Causes, impacts, and remedies. *Environmental Science and Pollution Research, 27*(30), 1–19. https://doi.org/10.1007/s11356-020-10677-0
3. Ali, S. A. M., Ahamad, R., & Jali, M. F. M. (2021). Sustainable consumption behavior among university students in Malaysia. *Journal of Asian Finance, Economics and Business, 8*(4), 865–875. https://doi.org/10.13106/jafeb.2021.vol8.no4.0865
4. Arthawiguna, W. A., & Sulistyawati, I. (2020). Implementasi kebijakan larangan penggunaan kantong plastik sekali pakai di Kota Denpasar. *Jurnal Ilmiah Dinamika Sosial, 4*(2), 249–263. https://doi.org/10.38043/jids.v4i2.2472
5. Azizah, N., & Nugroho, P. (2021). Pengelolaan sampah plastik berbasis masyarakat di Kota Malang. *Jurnal Kajian Ilmu Administrasi Negara, 9*(1), 1–12. https://doi.org/10.52447/jki.v9i1.119
6. Bamwesigye, D., & Hlaváček, P. (2019). Sustainable development and governance of waste management in Africa. *Journal of Environmental Protection, 10*(3), 442–460. https://doi.org/10.4236/jep.2019.103026
7. Banday, U. J., & Aneja, S. (2020). Sustainable consumption and production: A review. *International Journal of Environmental Technology and Management, 23*(5), 421–443. https://doi.org/10.1504/IJETM.2020.111202
8. Caturiani, D., & Rahmawati, N. (2022). Peran bank sampah dalam meningkatkan kepedulian lingkungan masyarakat. *Jurnal Pengabdian Kepada Masyarakat, 3*(1), 12–18. https://doi.org/10.22219/jpkm.v3i1.13447
9. Damanhuri, E., & Padmi, T. (2019). Pengelolaan sampah terpadu: Konsep dan implementasi. *Jurnal Teknik Lingkungan, 25*(1), 45–53. https://doi.org/10.5614/jtl.2019.25.1.5

DOI: https://doi.org/10.33701/jtp.v17i1.5158

10. Ellen MacArthur Foundation. (2020). *The new plastics economy: Rethinking the future of plastics and catalysing action*. Ellen MacArthur Foundation.
11. Ellen MacArthur Foundation. (2022). *Circular economy in cities: How to make it happen*. Ellen MacArthur Foundation.
12. Ellen MacArthur Foundation. (2023). *Financing the circular economy*. Ellen MacArthur Foundation.
13. Fitriani, E., & Yulianto, H. (2021). Peran masyarakat dalam pengelolaan sampah plastik di Kota Bandung. *Jurnal Masyarakat dan Budaya, 23*(2), 205–218. https://doi.org/10.14203/jmb.v23i2.1120
14. García-Quevedo, J., Mas-Verdú, F., & Montolio, D. (2020). Public policies for sustainable entrepreneurship and consumption. *Sustainability (Switzerland), 12*(23), 1–15. https://doi.org/10.3390/su122310064
15. Hakim, L., & Mulyono, S. (2020). Upaya pengelolaan sampah plastik melalui program bank sampah. *Jurnal Pengabdian Kepada Masyarakat, 5*(1), 33–40. https://doi.org/10.22146/jpkm.58984
16. Handayani, S., & Putra, R. A. (2021). Perilaku masyarakat terhadap penggunaan kantong plastik di Kota Surabaya. *Jurnal Sosial Humaniora, 12*(2), 145–152. https://doi.org/10.12962/j24433527.v12i2.7642
17. Indrawati, R., & Santoso, A. (2020). Implementasi kebijakan pengelolaan sampah plastik di Kota Yogyakarta. *Jurnal Kebijakan Publik, 11*(2), 121–134. https://doi.org/10.22212/jkp.v11i2.1742
18. Khoaele, K. K., Gbadeyan, O. J., Chunilall, V., & Sithole, B. (2023). The devastation of waste plastic on the environment and remediation processes: A critical review. *Sustainability (Switzerland), 15*(6), 1–20. https://doi.org/10.3390/su15065233
19. Lemire, S., Peck, L. R., & Porowski, A. (2020). The growth of the evaluation tree in the policy analysis forest: Recent developments in evaluation. *Policy Studies Journal, 48*(S1), S47–S70. https://doi.org/10.1111/psj.12387
20. Maskun, M., Assidiq, H., Bachril, S. N., & Al Mukarramah, N. H. (2022). Tinjauan normatif penerapan prinsip tanggung jawab produsen dalam pengaturan tata kelola sampah plastik di Indonesia. *Bina Hukum Lingkungan, 6*(2), 184–200. https://doi.org/10.24970/bhl.v6i2.239
21. Mawardani, S., & Arif, L. (2023). Program pengurangan penggunaan kantong plastik di Pasar Pucang Anom Kota Surabaya dalam pandangan teori implementasi kebijakan. *Journal Publicuho, 6*(2), 560–567. https://doi.org/10.35817/publicuho.v6i2.158
22. Mawasti, W., Al-, S., & Surabaya, H. (2022). Assistance in establishing a garbage bank for urban communities based on community assets in

DOI: https://doi.org/10.33701/jtp.v17i1.5158

Wonokusumo Kidul Surabaya. *Jurnal Pengabdian Kepada Masyarakat, 6*, 482–498.

23. Mazhandu, Z. S., Muzenda, E., Belaid, M., & Nhubu, T. (2023). Comparative assessment of life cycle impacts of various plastic waste management scenarios in Johannesburg, South Africa. *International Journal of Life Cycle Assessment, 28*(5), 536–553. https://doi.org/10.1007/s11367-023-02151-3
24. Moyo, T., & Ngwakwe, C. C. (2020). Sustainable consumption and production: A conceptual framework and agenda for research. *International Journal of Green Economics, 14*(1), 34–49. https://doi.org/10.1504/IJGE.2020.108374
25. Mu'arif, S., Yulianto, M., Suciati, M., Yenni, C., & Ridwan, M. (2020). Peran bank sampah dalam meningkatkan pendapatan masyarakat dengan menyulap sampah menjadi rupiah pada Bank Sampah Sri Rejeki. *Dedikasi PKM UNPAM, 1*(3), 48–54.
26. Mulyati, B., Ilmi, Y. F., & Basri, A. (2023). Sosialisasi pengelolaan sampah sebagai upaya peningkatan peran masyarakat dalam mengelola sampah di Kota Serang. *Bantenese: Jurnal Pengabdian Masyarakat, 5*(1), 26–34. https://doi.org/10.30656/ps2pm.v5i1.6285
27. Nova, L. N., & Kasim, K. M. (2024). Kajian pengelolahan sampah di Waioti. *Multidisciplinary Journal, 1*, 44–50. https://yasyahikamatzu.com/index.php/FSN
28. Pandana, Z. A., & Firdaus, P. (2024). Kerjasama sister city antara Pemerintah Kota Surabaya dan Kota Kitakyushu sebagai upaya pengelolaan sampah tahun 2012–2023. *Global Focus, 4*, 22–43. https://doi.org/10.ub.jgf.2024.004.01.2
29. Peraturan Menteri LHK No. 14 Tahun 2021. (2021). *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia nomor 14 tahun 2021 tentang pengelolaan sampah pada bank sampah*.
30. Restrepo, C. B., & López, A. V. (2024). Sustainable production and consumption from human needs. *Revista de Gestão Social e Ambiental, 18*(2). https://doi.org/10.24857/rgsa.v18n2-183
31. Sains, R., Kelautan, D. T., Azharil, M. Y., & Paskah, I. (2023). Bahaya sampah plastik di laut bagi makhluk hidup. *Sensistek, 6*(2).
32. Salim, H. (2023). Fenomena urbanisasi Kota Surabaya (Studi pertambahan penduduk berusia muda). *Prosiding Seminar Nasional*, 938–946.
33. Salsabilla, N., & Rosdiana, W. (2023). Implementasi kebijakan pengurangan penggunaan kantong plastik (Studi pada Pasar Wonokromo Kota Surabaya). *Journal of Policy Implementation, 1*, 16–29.
34. Sarry, B. D., & Utama, S. J. (2023). Peran bank sampah sebagai lembaga berbasis masyarakat. *Jurnal Pengabdian Masyarakat.*

DOI: https://doi.org/10.33701/jtp.v17i1.5158

35. Shenyoputro, K., & Jones, T. E. (2023). Reflections on a two-decade journey toward zero waste: A case study of Kamikatsu town, Japan. *Frontiers in Environmental Science, 11*, 1–4. https://doi.org/10.3389/fenvs.2023.1171379
36. Stefany, I., & Rahmawati, I. (2023). Strategi pemberdayaan masyarakat melalui program pengelolaan sampah di Bank Sampah Maju Selalu Kelurahan Marunda Jakarta Utara. *Jurnal Al-Ijtimaiyyah, 9*(2), 294–305. https://doi.org/10.22373/al-ijtimaiyyah.v9i2
37. Sumbodo, B. T., Ika, S. R., Sardi, S., Kamboja, Y., Hasanah, M. D. I., Sudrajat, I. S., Suranta, S., Murni, S., & Widagdo, A. K. (2024). Pengelolaan sampah organik dengan biopori dan pelatihan pembuatan kompos untuk mendukung pengurangan sampah di Kelurahan Giwangan Kota Yogyakarta. *Kacanegara: Jurnal Pengabdian Pada Masyarakat, 7*(3), 335. https://doi.org/10.28989/kacanegara.v7i3.2235
38. Sunarti, Tjakraatmadja, J. H., Ghazali, A., & Rahardyan, B. (2021). Increasing resident participation in waste management through intrinsic factors cultivation. *Global Journal of Environmental Science and Management, 7*(2), 287–316. https://doi.org/10.22034/gjesm.2021.02.10
39. Syaputri, M. D., Suryawati, N., & Rafi'ani, K. (2023). Legal awareness of food delivery restaurants regarding regulations on reducing the use of plastic bags. *Jurnal Cendekia Hukum, 8*(2). https://doi.org/10.3376/jch.v8i2.598
40. Trummer, P., Ammerer, G., & Scherz, M. (2022). Sustainable consumption and production in the extraction and processing of raw materials: Measures sets for achieving SDG target 12.2. *Sustainability (Switzerland), 14*(17). https://doi.org/10.3390/su141710971
41. Vargas-Merino, J. A., Rios-Lama, C. A., & Panez-Bendezú, M. H. (2023). Sustainable consumption: Conceptualization and characterization of the complexity of "being" a sustainable consumer—A systematic review of the scientific literature. *Sustainability (Switzerland), 15*(10). https://doi.org/10.3390/su15108401
42. Verawati, P. (2021). Kritik ekologi mendalam terhadap regulasi persampahan di Indonesia. *Jurnal Meta-Yuridis, 4*(2). http://journal.upgris.ac.id/index.php/meta-yuridis
43. Yaqub, M. Z., Yaqub, R. M. S., Riaz, T., & Alamri, H. A. (2023). Prolificacy of green consumption orientation and environmental knowledge to slash plastic bag consumption: The moderating role of consumer attitudes and the demarketing efforts. *Sustainability (Switzerland), 15*(13). https://doi.org/10.3390/su151310136
44. Yuan, B., & Zhang, Y. (2020). Flexible environmental policy, technological innovation and sustainable

DOI: https://doi.org/10.33701/jtp.v17i1.5158

development of China's industry: The moderating effect of environment regulatory enforcement. *Journal of Cleaner Production, 243*, 118543. https://doi.org/10.1016/j.jclepro.2019.118543

DOI: https://doi.org/10.33701/jtp.v17i1.5158