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Government Collaboration Model in Plastic Waste Management as an Effort to Protect Indonesia's Marine Environment

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ABSTRACT

Plastic waste in the ocean is a global problem that has a serious impact on the sustainability of marine ecosystems. Indonesia, as an archipelagic country with a dominant sea area, faces major challenges in managing marine plastic waste, which is mostly sourced from land and shipping activities. This study aims to analyze the government's collaboration model in the management of marine plastic waste as part of Indonesia's marine environmental protection efforts, with an emphasis on the construction of national laws and forms of international cooperation. This research uses a descriptive and explanatory approach through the study of documents on regulations such as Law No. 32 of 2014 concerning Marine Affairs, Law No. 17 of 2008 concerning Shipping, Presidential Regulation No. 83 of 2018, and international cooperation documents. The results of the study show that the government's collaboration model is legal-formal, regulatory-based, and institutionally structured. This collaboration includes multi-level coordination between central and local governments and sectoral ministries, as well as the involvement of non-governmental actors and international organizations such as NPAP, MARPOL Annex V, and UNEA. This model differs from the conceptual collaborative approach because it prioritizes policy synergy through a binding and implementable legal framework. The study concludes that the Indonesian government's collaborative model has strong potential to achieve the target of reducing 70 % of marine plastic waste by 2025 and can be replicated by other archipelagic countries facing similar challenges.

CITATION

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KEYWORDS

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Background

The problem of plastic garbage is not only from the mainland. Plastic waste in the sea also poses a problem because it can disrupt the food chain and kill marine life. Rising plastic pollution levels are a serious global environmental problem that negatively impacts various dimensions. Suppose the problem is not addressed in a meaningful way. In that case, projections from the United Nations Environment Programme (UNEP) show that the amount of plastic entering aquatic ecosystems could almost triple by 2040 to 23–37 million tons (Ministry of Environment, 2024). If there are no meaningful actions in business-as-usual scenarios and without the necessary intervention, then according to UNEP. The amount of plastic waste entering the aquatic ecosystem can increase almost threefold, from around 9–14 million tons per year in 2016 to 23–37 million tons per year by 2040 (Lincoln et al., 2022).

The International Coastal Cleanup reported that in 2019, a total of 97,457,984 types of waste, weighing 10,584,041 kilograms, were found in the sea (Ocean Conservancy, 2019). Nine of the top 10 types of waste they found came from plastic materials, such as straws and stirrers, plastic cutlery, plastic drinking bottles, plastic cups, and bags. The Secretariat of the United Nations Convention on Biological Diversity said that the results of a 2016 study confirmed that plastic waste threatens at least 800 species, 40 percent of which are marine mammals and 44 percent of seabird species (Secretariat of the Convention on Biological Diversity, 2016).

Eventually, most of it will become garbage and end up in the sea. The ratio of the amount of plastic to fish in the ocean in 2025 is 1:3. However, by 2050, it is estimated that the amount of waste will be more than the number of fish in the sea. It can be exacerbated by overfishing. The existence of plastic waste in the sea can kill various biota, damage ecosystems, and even endanger shipping navigation activities if the garbage gets stuck in the propellers. Plastic waste not only threatens human health but also affects world climate change.

This condition can occur because every year, the Indonesian Sea is estimated to receive shipments from land 70–80 percent of plastic waste used for human consumption. The amount is between 480 thousand and 1.29 million tons of plastic waste out of a total of 3.22 million tons of trash that enters the sea and coast. Marine microbiology researchers released it from the Oceanographic Research Center (P2O) of the National Research and Innovation Agency (BRIN) (Shuker et al., 2018). On this basis, the Indonesian Government is making efforts to reduce plastic waste in the sea. The target of reducing plastic waste in the sea will reach 70 % by 2025.

Meanwhile, according to data from the National Coordinating Team for Marine Waste Management (TKN PSL), the amount of plastic waste in Indonesia's seas was 398,000 tons in 2022. This number has decreased by 35.36 % compared to 2018. Based on its origin, marine plastic waste from the mainland has experienced the most significant decrease of 42.47 % in the last five years. The amount decreased from 538,182 tons in 2018 to 309,625 tons in 2022. On the other hand, plastic waste from the ocean increased in the same period. In 2018, plastic waste from the sea amounted to 77,000 tons. The amount then increased by 14.77 % to 88,374 tons (Lestari & Trihadiningrum, 2019).

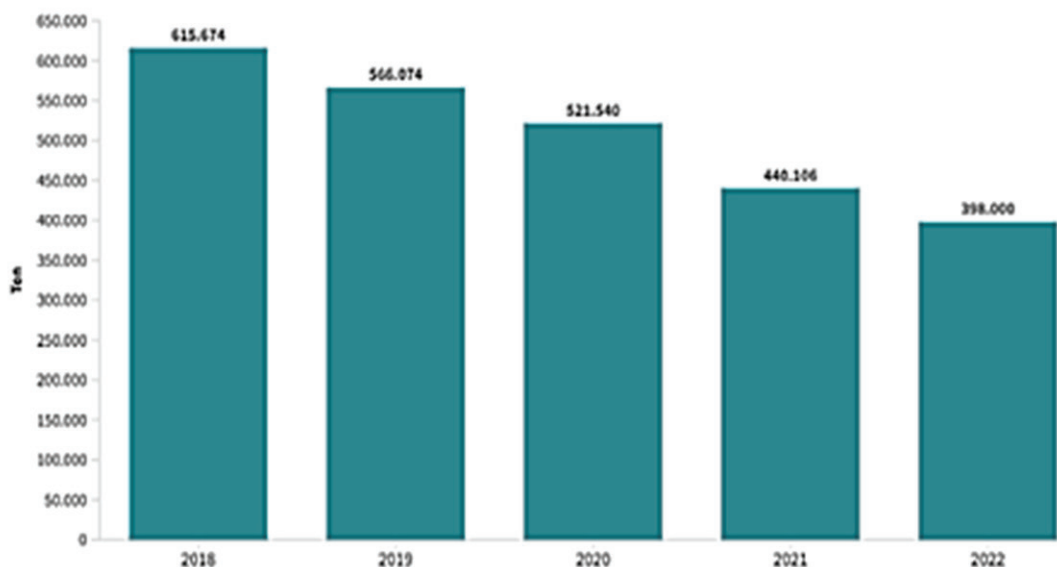


Figure 1. Amount of Plastic Waste in the Indonesian Sea
(Source: National Coordinating Team for Marine Waste Management, 2023)

Various problems and challenges faced today in managing plastic waste in the ocean must be solved together. In addition, it must also be discussed how to find innovative local and national policies and private, public, and educational partnerships for community behavior change to play an active role in combating plastic waste. If plastic waste in the sea is not prevented from being produced, then it will threaten the existence of marine life, which is very numerous and diverse (Bhuyan et al., 2020). Not only that, plastic waste, along with microplastics in the sea, can also threaten coastal areas, which are indeed very vulnerable

(United Nations Environment Assembly of the United Nations Environment Programme, 2018). Therefore, Indonesia, with a third of its area being the ocean, must make more efforts to protect the marine environment due to plastic waste. Indonesia must increase International Cooperation with neighboring countries to find innovations in the management of plastic waste in marine areas to protect Indonesia's marine environment (Ministry of Transportation, 2019).

Marine plastic pollution poses a significant threat to marine ecosystems and human livelihoods in Indonesia, a country with vast and ecologically diverse maritime zones. Addressing this complex environmental challenge requires robust legal frameworks and collaborative efforts beyond national borders. This study focuses on two primary aspects: the evolution of environmental law in Indonesia and the framework of international cooperation with neighboring countries, considering Indonesia's strategic geographical location. Subsequently, the study aims to identify and analyze the Government Collaboration Model in managing plastic waste as a strategic effort to protect Indonesia's marine environment.

Methodology

This study uses descriptive and explanatory methods with a qualitative approach based on document studies. The descriptive method is used to describe Indonesia's national legal and policy framework in the management of marine plastic waste. In contrast, the explanatory method aims to explain the pattern of collaboration between government institutions, both at the national and international levels. Data sources consist of legal and policy documents, such as laws, presidential regulations, and national action documents, as well as reports from international institutions (UNEP, World Bank, GPAP). The data was analyzed using content analysis techniques to identify legal structures, institutional roles, and forms of cross-sector cooperation. The study also examines the integration between domestic regulations and international commitments in achieving the target of reducing marine debris by 70 % by 2025. Thus, this approach allows the mapping of government cooperation models systematically and contextually within the framework of marine environmental governance.

1. Characteristics of Collaboration Models

In addressing complex and cross-sectoral environmental problems, such as plastic waste pollution in the ocean, the traditional approach based on a single hierarchy (top-down government) is no longer considered adequate. Therefore, a collaborative governance approach is needed. One of the relevant theoretical frameworks to explain the model of government cooperation in this context is the concept of collaborative governance developed (Ansell & Gash, 2007). They define *collaborative governance* as a collaborative decision-making process involving actors from the public, private, and civil society sectors in one formal forum organized to formulate policies or solve problems together.

This model is based on the principles of joint participation, process transparency, open communication, and consensus building. In practice, the success of this model relies heavily on trust between actors, facilitative leadership from the government, and a shared commitment to long-term goals.

The Government Cooperation Model developed in this study refers to the pattern of collaboration based on regulations and institutions used by the Indonesian government in dealing with the problem of marine plastic waste in a systemic and integrated manner. In contrast to the Penta helix model, which is conceptual and emphasizes the balanced involvement of the five main actors (government, academia, business, society, and the media), the model in this study is rooted in formal policy structures and real cross-agency coordination practices in national and international contexts. The model has three main characteristics:

A. Based on Regulations and Institutional Structure. This model is built from formal legal frameworks such as Presidential Regulation No. 83 of 2018 and Law No. 18 of 2008, which gave birth to special institutions such as the National Coordination Team for Marine Waste Management and encourages the formation of strategic partnerships such as NPAP (Indonesia National Plastic Action Partnership). The government not only acts as a facilitator or collaborative actor but also as a policymaker and owner of binding legal mandates.

B. Multi-Level Collaboration (Inter-Level Government). This model emphasizes the importance of coordination between the central and local governments, as well as the involvement of sectoral ministries such as the Ministry of Environment and Forestry, the Ministry of Marine Affairs, and local governments. This collaborative relationship is more than just a horizontal partnership, but rather forms a vertical governance system that allows for measurable implementation of national policies at the local level.

C. Integrated with International Diplomacy and Global Partnerships addition to including domestic actors, this model involves international cooperation with global organizations (such as the World Bank, UNEP, GPAP, and ASEAN), which places Indonesia as part of a transnational environmental governance system. This approach is not found within the framework of the classical Penta helix, which tends to focus on local or national actors.

In other words, the Government Cooperation Model in this study not only maps stakeholders but also describes the dynamics of relationships between stakeholders in a formal policy system based on law, institutions, and global commitments, thus offering an applicable framework with strategic dimensions for the management of marine plastic waste in Indonesia.

2. Construction of Indonesian Marine Environmental Protection Law

The handling of waste in the sea is a concern because, so far, the focus of the Government's attention has been on handling waste on land. It is because studies show that 80 percent of waste in the sea is sourced from land (Siedlecki, 2020). However, the fact that ships are still dumping their waste into the ocean must also be resolved so that waste handling at sea is comprehensive. Legal measures to protect the marine environment in Indonesia's national law have been regulated in Law No. 32 of 2014 concerning Marine Affairs. The law emphasizes that Marine Environmental Protection is a systematic and integrated effort carried out to conserve Marine Resources and prevent pollution and/or environmental damage in the sea, which includes Marine conservation, Marine pollution control, Marine disaster management, pollution prevention, and control, as well as damage and disasters (George & Merkus, 2023). Estimated Baseline Marine waste data is an example of the main activities of the National Coordination Team for Marine Debris Management, which is under the auspices and is directly responsible to the President. The team was formed following Presidential Regulation No. 83 of 2018 concerning Marine Debris Management. The target is to reduce 70 % of marine debris by 2025. In the related Presidential Regulation, the National Action Plan for Marine Waste Management for 2018–2025 was prepared, which resulted in strategic directions for agencies/ministries to overcome the problem of maritime waste within 8 years.

The development of marine environmental protection laws in Indonesia reflects the increasing awareness of the urgency of handling marine pollution, especially plastic waste. Indonesia's national law has established a fairly comprehensive legal framework to regulate marine pollution and maintain the preservation of the marine environment. The main regulation that is the basis is Law Number 32 of 2014 concerning Marine Affairs, which explicitly regulates that the protection of the marine environment is a systematic and integrated effort in the context of the preservation of marine resources as well as the prevention and control of pollution and/or damage to the marine environment. The scope of

this protection includes marine conservation, pollution control, marine disaster management, and environmental damage recovery.

In addition, Law Number 17 of 2008 concerning Shipping requires every ship operator and party responsible for shipping activities to prevent pollution from ship activities. This provision is further regulated through Government Regulation Number 21 of 2010 concerning Maritime Environmental Protection and Regulation of the Minister of Transportation Number 29 of 2014 concerning the Prevention of Pollution of the Maritime Environment, which describes technical standards and procedures for the prevention of pollution by ships. Another strategic step is the issuance of Presidential Regulation Number 83 of 2018 concerning Marine Debris Management, which is a milestone in marine environmental governance. This regulation establishes the National Action Plan for Marine Waste Management 2018–2025, with a target of reducing marine debris by up to 70 % by 2025. This regulation also establishes the National Coordination Team for Marine Debris Handling, which is directly under the President, as well as opens up space for international cooperation through partnerships such as the Indonesia National Plastic Action Partnership (NPAP) and the 3RproMar ASEAN-Germany project. Indonesia's legal approach also adopts the principle of Extended Producer Responsibility (EPR) as stated in Law Number 18 of 2008 concerning Waste Management. It is strengthened through the Regulation of the Minister of Environment and Forestry Number 75 of 2019 concerning the Roadmap for Waste Reduction by Producers, which requires producers to be responsible for post-consumption waste.

The Indonesian Government has formed a body for handling waste in the sea, namely with the establishment of the Indonesian National Plastic Action Partnership (NPAP), in collaboration with the World Bank and the Ministry of Environment to conduct follow-up observations to obtain an estimate of plastic waste made into the sea for all Indonesian waters. (Ministry of Environment and Forestry, 2020). Although NPAP does not have the status of a state institution established by law, it is formally recognized by the Government of Indonesia as a strategic cross-stakeholder partnership forum. NPAP is part of the initiative Global Plastic Action Partnership (GPAP) initiated by the World Economic Forum and launched in Indonesia in 2019 as a response to the high threat of plastic waste to the national marine ecosystem.

Through the support of the Coordinating Ministry for Maritime Affairs and Investment and the Ministry of Environment and Forestry, NPAP also contributes to the preparation of scientific projections, such as the Marine Debris Trends Report, and provides evidence-based recommendations to support the implementation of the National Action Plan for Marine Debris Management 2018–2025. The partnership relationship between NPAP and the World Bank is synergistic in the form of technical support and institutional capacity building. The World Bank contributes in the form of policy analysis assistance, the development of plastic waste reduction scenarios, and the facilitation of dialogue between stakeholders. This collaboration strengthens the implementation of national policies, such as the application of the principles of Extended Producer Responsibility (EPR) and the development of a circular economy as part of a sustainable approach to handling marine plastic waste.

Thus, although it does not have a formal legal framework as a state body, NPAP plays a vital role in building inclusive and science-based collaborative governance in efforts to protect the marine environment in Indonesia. This collaboration is a concrete manifestation of the Penta helix approach that emphasizes the importance of cross-sector cooperation in overcoming complex environmental problems. The Government sets five strategies for dealing with maritime waste. The five strategies are contained in the National Action Plan to deal with marine waste, namely a national movement to increase the awareness of policymakers; managing waste originating from the mainland; tackling waste in the high seas and coasts;

financing procedures; tightening supervision, law enforcement and institutions and research and development (Ministry of Environment, 2019).

The implementation of strategic policies in waste management can be carried out through the implementation of programs or by making derivatives of these policies. The implementation of the waste management strategy policy as a tool of legal administration requires the cooperation of various actors, organizations, procedures, and technicalities to implement the policy to achieve the desired impact and goals. The protection of the marine environment from pollution, especially plastic pollution and waste management in general, must be a top priority. Policy implementation connects policy objectives and their realization with the results of government activities. Regulations or policies have a gambling target as a form of policy value application. The target of the implementation of the regulation is included in certain projects and programs that are funded or prepared. The program is carried out in line with the design. The implementation of rules and programs is generally influenced by the context of implementation and the content of regulations.

3. Indonesia's International Cooperation with Other Countries as an Effort to Protect Indonesia's Marine Environment

As an archipelagic country with a dominant sea area, Indonesia is actively building various forms of international cooperation to strengthen the protection of the marine environment, especially in dealing with the problem of plastic waste. This form of cooperation involves regional and global forums as well as technical support from international organizations. To clarify the form and impact of these various cooperations, the following table is presented that summarizes international actors, the forms of cooperation carried out, as well as concrete decisions and commitments that have been taken as part of Indonesia's marine protection strategy.

Table 1. International Cooperation

Organizations	Forms of Cooperation	Decisions / Commitments Taken
East Asia Summit (EAS), 2017	Regional marine environmental diplomacy initiative	Indonesia proposes a Regional Plan of Action on Combating Marine Plastic Debris and a plastic bag reduction campaign
ASEAN–34th Summit, 2019	Regional cooperation between ASEAN countries	Adoption of the Bangkok Declaration on Combating Marine Debris in the ASEAN Region
ASEAN-Germany 3RproMar Project	Technical bilateral collaboration to strengthen the circular economy capacity	Implementation of land-based waste leakage reduction strategies and knowledge exchange among ASEAN member countries
United Nations Environment Assembly (UNEA-4)	Global environmental resolution	Indonesia proposes the establishment of a Regional Capacity Center for Clean Seas (RC3S) in Bali.
MARPOL Annex V (IMO)	Compliance with international maritime law	Implementation of the ban on the disposal of plastic waste from ships and port operational supervision
World Economic Forum (GPAP) – NPAP	Multi-stakeholder partnerships with technical support from international institutions (World Bank, WEF)	Preparation of the Marine Debris Trends Report, policy projections, and the National Plastic Action Partnership (NPAP)

Various international forums have raised the topic of plastic waste in the sea as a global environmental problem that requires simultaneous movement from the world community; this is also the case with Indonesia; the Government of Indonesia, in various international forums, has expressed its commitment to strive to reduce plastic waste in the sea up to 70 % by 2025.

At the East Asia Summit (EAS) Conference in Bali in 2017, Indonesia campaigned for a war on plastic waste in the ocean. At the conference, Indonesia conveyed several steps that Indonesia has taken to combat plastic waste in the sea. Among them are the issuance of Presidential Decree Number 16 of 2017 concerning Indonesia's Marine Policy and the National Plan of Action on Marine Plastic Debris 2017–2025 (May 2017), the Combating Marine Plastic Debris Campaign and Reduction of Plastic Bag Production and Use (Hendiarti, 2018). The EAS is a regional forum that serves as a forum for dialogue and strategic cooperation between leaders from 18 countries facing various major challenges in the region. The 18 participating countries of the EAS are 10 ASEAN member states, the United States, Australia, India, Japan, South Korea, the PRC, Russia, and New Zealand.

This EAS meeting is also the initiation stage in environmental diplomacy by Indonesia in handling marine plastic waste. Indonesia, in EAS 2017, initiated the preparation of a Regional Plan of Action on Combating Marine Plastic Debris. Indonesia, in this meeting, also suggested several approaches that can be taken to combat plastic waste in the sea. Indonesia also provides an example of the approach that has been taken, namely the issuance of Presidential Decree No.16/2017 on Indonesia's Marine Policy and the National Action Plan on Plastic Waste in the Sea for 2018–2025. Other suggestions given by Indonesia are the implementation of policies to convert waste into energy sources, the development of bioplastics from cassava and seaweed, and the development of waste banks.

Indonesia's commitment to overcoming plastic waste in the sea, one of which is shown by the National Action of the Clean Sea and Coast Movement on September 12, 2019, received appreciation at the 12th Cooperation Forum (CF) meeting. At the ASEAN level, Indonesia supports the realization of the Bangkok Declaration on Marine Litter Management in the ASEAN Region, which was adopted by ASEAN countries at the 34th ASEAN Summit in Thailand on June 22, 2019 (Hendar et al., 2022). It collaboration is an ASEAN-Germany project that focuses on circular economy issues and environmental awareness, especially waste management in the sea. The policy dialogue explores information, knowledge, and strategies and becomes a forum for learning and exchanging information about plastic circularity to overcome marine debris in ASEAN, applied in Indonesia. The results of the dialogue will later be used as recommendations for the Reduce, Reuse, Recycle to Protect the Marine Environment and Coral Reefs (3RproMar) Project related to relevant and explorable issues for development cooperation (Noviani, 2023).

In the national component implemented in Indonesia, the 3RproMar Project is implemented to support ASEAN member countries to increase implementation capacity to reduce land-based waste leakage to protect the marine environment at the local level and to transition strategies towards a circular economy, as well as to contribute to improving regional cooperation and knowledge management among ASEAN countries. This project has been started since July 2020 and will be implemented until June 2025, in the implementation of the 3RproMar project at the national level.

Meanwhile, at the global level, Indonesia proposed a resolution at the 4th United Nations Environment Assembly (UNEA) Meeting to establish a Regional Capacity Center for Clean Seas (RC3S) in Bali. Also, it proposed to the IMO to have a Marine Litter Action Plan.

4. Government Collaboration Model in Combating Plastic Waste in the Sea

Implementation efforts towards reducing 70 % of Indonesia's marine litter by 2025 must be carried out by all parties, be it the Government, the private sector, industry, and the community. The efforts that have been made also need consistency so that the results produced can be sustainable, so it needs the commitment of all parties and stakeholders involved (Awaluddin et al., 2024.) Socialization efforts through various environmental movements will not be sustainable if they are not accompanied by changes in the mindset of the community and their daily habits in managing waste, starting from household waste. Marine debris reduction activities cannot be carried out temporarily at a certain time but need to be carried out continuously so that consistency from all parties is required to reduce the leakage of land waste discharged into the waters/oceans. Experience in waste management in Indonesia at the government level is carried out at the national level by various institutions and ministries and at the local level by local governments. At the central government level, responsible actors such as the Ministry of Environment and Forestry (KLHK) and the Ministry of Public Works and Public Housing (KemenPUPR). Meanwhile, local governments are more concerned with the implementation of regulations issued by the Central Government at the regional level.

The role of the Central Government in the context of waste management often only functions as a regulator of top-down policies to be implemented at the local government level. Furthermore, in terms of public awareness, it is still very lacking to dispose of waste in its place; for example, sorting between organic and non-organic waste is still not widely done. The Central Government is obliged to collaborate with regional governments by implementing several things, including increasing efforts by each party with the main goal of dealing with the problem of marine plastic waste resulting from activities on land and at sea can be successful. Some of the actions taken by the Indonesian Government include implementing the strategy of the national movement to care for waste in the sea through education for government officials or ASN, students, and educators.

To achieve effective collaboration among stakeholders, a commitment is required to implement the outcomes of the discussions despite prior divergences in perspectives on the issues presented. This commitment can be in the form of an agreement or an agreement that has been agreed upon by the collaborating parties. One of the requirements for realizing commitment in the collaboration process is the existence of interdependence or interdependence between actors to collaborate, where there is a need to build awareness that they need each other to overcome existing problems. To overcome the problem of marine plastic waste in Indonesia, the Government has committed to reducing the waste pile by 30 % and its handling by 70 %, which is stipulated in Presidential Regulation Number 97 of 2017. For the projection of marine debris reduction until 2025 based on the National Plan of Action.

The Ministry of Marine Affairs and Fisheries itself has a commitment to this by carrying out Gita Laut activities since 2017 until now, where the activities include 26 areas of the sea and beach cleanup movement, 22 waste management areas, five coastal jamboree areas, and 14 Indonesian coastal school areas (Ministry of Maritime Affairs and Fisheries, 2024). The KKP Sea Gita activity provides counseling for residents, especially on the coast, to protect the environment through the method of recycling plastic waste so that it can be used again.

Another form of commitment from the Indonesian Government and also from private actors is implementing collaborative efforts to implement the EPR (Extended Producer Responsibility) policy, which has actually been regulated in Law No. 18 of 2008, as well as the Regulation of the Minister of Environment and Forestry Number 75 of 2019 concerning the Roadmap for Reducing Producer Waste.

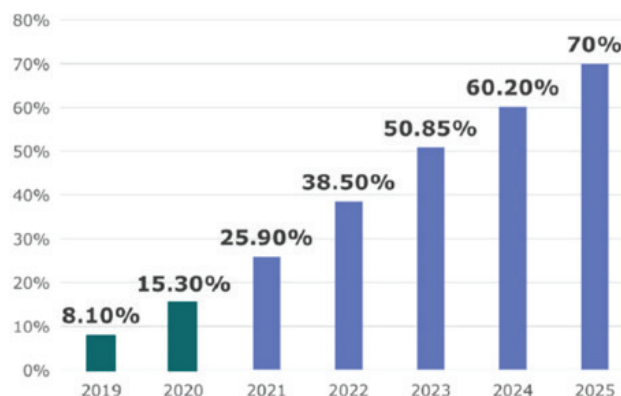


Figure 2. Percentage of Waste Reduction
(Source: Waste Management Coordination Team, 2025)

The National Movement for the Month of Love of the Sea (Gernas BCL) can build collective awareness in the management of plastic waste in the sea. In accordance with Presidential Regulation No. 83 of 2018, as well as the implementation of priority programs in supporting the MPA blue economy policy, the activities of the Government hope to be committed, and the role of all parties to continue to educate and campaign for our joint concern for marine debris massively and sustainably must continue to be maintained. The Director General of Marine and Marine Space Management said that until 2024, the National Movement for the Month of Love of the Sea will continue to move. Until now, through the National Movement of the Sea Love Month, it has succeeded in collecting coastal and marine waste of 1,005.82 tons and involving 4,621 fishermen.

Some Regencies/Cities are the target for the implementation of Sea Love Month in 2024; until June 2024, this national movement will expand to 30 city districts that are involved. The Bulan Cinta Laut program is a concrete step of the KKP in carrying out sustainable waste management through a Penta helix approach by involving all stakeholders.

Conclusions

Marine plastic waste management in Indonesia requires an approach that goes beyond cross-sector coordination but requires a collaborative model based on a strong legal foundation, a clear institutional structure, and cross-sectoral and cross-level government integration. This research shows that Indonesia has built a legal framework for the protection of the marine environment through Law No. 32 of 2014 concerning Marine Affairs, Law No. 17 of 2008 concerning Shipping, and Presidential Regulation No. 83 of 2018 concerning Marine Debris Management, which is the basis for the formation of national institutions, strategies, and programs in marine debris management.

The government collaboration model analyzed in this study emphasizes the importance of the involvement of various actors in a structured manner, under state coordination, and implemented through a measurable formal mechanism. This collaboration includes synergy between central and local governments and technical institutions, as well as support from the non-governmental sector and international partners such as NPAP, MARPOL, and UNEA. This model is different from the conceptual approach that only focuses on the involvement of actors because the model proposed in this study prioritizes the implementation of regulations-based policies, legal authority, and measurable results.

With this vertically and horizontally integrated collaboration model, Indonesia has a great opportunity to realize the target of reducing marine plastic waste by 70 % by 2025.

This study recommends strengthening the role of institutions, sustainability of cross-sectoral coordination, and long-term commitment between stakeholders to ensure the success of Indonesia's marine environmental protection in a sustainable manner.

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Віната Р.Т., Кумала М.Т. Модель урядової співпраці в управлінні пластиковими відходами як спосіб захисту морського середовища Індонезії. – Стаття.

Пластикове сміття в океані становить глобальну проблему, що суттєво впливає на стійкість морських екосистем. Індонезія, як держава-архіпелаг з переважно морською територією, стикається зі значними викликами у сфері управління морськими пластиковими відходами, основними джерелами яких є діяльність на суходолі та судноплавство. Метою цього дослідження є аналіз моделі співпраці уряду Індонезії у сфері управління морським пластиком сміттям як складника системи захисту морського середовища. Особливу увагу у статті приділено розвитку національного законодавства та формам міжнародної взаємодії. У роботі застосовано описовий та пояснювальний підхід із вивченням нормативно-правових актів, зокрема Закону № 32 від 2014 р. про морську справу, Закону № 17 від 2008 р. про судноплавство, Президентського указу № 83 від 2018 р., а також документів у сфері міжнародної співпраці. Результати дослідження засвідчують, що модель урядової співпраці має юридично-формалізований характер, спирається на регуляторні механізми та інституційну координацію. Вона передбачає багаторівневу взаємодію між центральними та місцевими органами влади, галузевими міністерствами, а також залучення міжнародних міжурядових та неурядових організацій, таких як NPAR, MARPOL Annex V і UNEA. Ця модель відрізняється від концепції спільного управління, оскільки акцентує увагу на політичній синергії через реалізацію обов'язкової нормативної бази. Авторами підсумовано, що модель урядової співпраці Індонезії має високий потенціал для зменшення обсягу морських пластикових відходів на 70 % у 2025 р. й може бути використана як приклад для інших острівних держав, які зіштовхуються з подібними екологічними викликами.

Ключові слова: морські пластикові відходи, урядова співпраця, національна політика, міжнародне співробітництво, Індонезія.