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Strengthening Extended Producer Responsibility
to Reduce Plastic Leakage into the Ocean:
Policy Directions for Indonesia



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Executive Summary

Plastic waste entering rivers and the ocean remains a persistent issue in Indonesia, where 80 percent of marine debris originates from land-based sources rather than activities at sea. The Indonesian Ministry of Environment and Forestry has issued Regulation No. P.75/2019 that introduced the principle of Extended Producer Responsibility (EPR), putting producers to bear responsibility for their packaging waste. Yet, the implementation remains ineffective as it mostly relies on individual and voluntary initiatives carried out by a limited number of producers and a lack of coordination among stakeholders. Additionally, structural challenges persist, including data silos, uneven waste management infrastructure across the nation, and the exclusion of informal sectors from the current EPR scheme. Practices in Taiwan, South Korea, Japan, and the Philippines also provide lessons learned on potential governance frameworks that might be useful for Indonesia.

This ASEAN Briefs provides policy recommendations for the Indonesian government that could help move the current framework toward a working nationwide implementation. These steps include establishing a recognized producer responsibility organization, building a national monitoring and reporting platform, introducing structured producer fees linked to packaging types, strengthening domestic recycling markets, connecting EPR systems with existing informal collection networks, implementing incentive and disincentive measures, aligning EPR with local waste management, and developing a pilot project. None of these measures will solve the waste problem on their own. But together, they can shift part of the financial and operational burden of post-consumption waste from municipalities to producers, while supporting recovery systems that reduce plastic leakage into rivers and the ocean.



INTRODUCTION

Plastic waste has become a persistent environmental problem in Indonesia¹ as the pressure keeps growing. Consumption is rising, packaging is getting lighter and more disposable, and the waste system struggles to keep up.² When plastic waste is not collected or recycled, it does not simply disappear. Much of it moves through drainage channels, rivers, and coastal settlements before reaching the sea. For an archipelagic country with more than 17,000 islands and long coastlines, the consequences are hard to ignore.

Approximately 80 percent of marine debris originates from land-based sources rather than activities at sea.^{3 4} Waste that slips through collection systems in cities, towns, and villages travels through waterways before reaching coastal waters.⁵ Once plastic

enters rivers or the ocean, recovery becomes expensive and technically difficult. Preventing leakage on land therefore remains the most practical option. Indonesia has recognized this problem and introduced several policy responses, including the National Action Plan on Marine Debris and regulatory obligations for producers to reduce packaging waste.

International assessments also show the scale of the challenge. The Environmental Performance Index (EPI) 2024 ranks Indonesia at 122nd globally.⁶ Among Southeast Asian countries, this position remains one of the lowest. The index does not measure plastic pollution alone, but it reflects broader environmental governance conditions, including waste management capacity. The ranking reinforces a point that many local studies have already raised: improvements in waste governance are still needed if Indonesia wants to reduce pollution flowing from land to the ocean.

Yet implementation gaps remain, despite regulations requiring producers to prepare waste reduction roadmaps and take responsibility for packaging waste. In practice, however, operational mechanisms remain incomplete. Collective systems for post-consumer packaging recovery are still

¹ Frigo, G., Zurbrügg, C., Juwana, I., & Binder, C. R. (2025). Where does plastic waste go? Local dynamics of waste flows in Indonesian neighbourhoods. *Environmental Challenges*, 19, 101135. <https://doi.org/10.1016/j.envc.2025.101135>

² Aprilia, A. (2021). Waste management in Indonesia and Jakarta: Challenges and way forward. Proceedings of the 23rd ASEF Summer University, Virtual 20. Asia-Europe Foundation.

³ Cordova, M. R. (2024). *Urgensi pengelolaan sampah plastik dalam mendukung mitigasi pencemaran lingkungan laut*. Penerbit BRIN. <https://penerbit.brin.go.id/others/catalog/book/1082>

⁴ Cordova, M. R., Hasan, R. K., Iskandar, M. R., Sani, S. Y., Alhanif, R., & Rambe, A. B. (2023). *Naskah kebijakan ekspansi industri daur ulang sebagai aksi strategi pengelolaan sampah plastik pada Peraturan Presiden Republik Indonesia Nomor 83 Tahun 2018 tentang Penanganan Sampah Laut* (pp. 1–38). Pusat Riset Oseanografi, Badan Riset dan Inovasi Nasional.

⁵ Cordova, M. R., Kelly, M. R., Hafizt, M., Wibowo, S. P. A., Ulumuddin, Y. I., Purbonegoro, T., Yogaswara, D., Kaisupy, M. T., Subandi, R., Sani, S. Y., Thompson, R. C., & Jobling, S. (2024). From riverbank to the sea: An initial assessment of plastic pollution along the Ciliwung River, Indonesia. *Marine Pollution Bulletin*, 206, 116662.

⁶ Yale Center for Environmental Law & Policy. (2024). *Environmental Performance Index 2024: Indonesia*. Yale Center for Environmental Law & Policy, Yale University, and Center for International Earth Science Information Network, Columbia University. <https://epi.yale.edu/country/2024/IDN>

limited, monitoring and reporting systems vary across programs, and many producers continue to run individual and voluntary initiatives rather than working through a shared mechanism.⁷ The policy direction is clear, but the system that should carry it out is still taking shape.

Extended Producer Responsibility (EPR) offers one possible route forward. The principle is simple: producers share responsibility for the waste generated by the products and packaging they introduce into the market.⁸ Where EPR systems operate effectively, they finance collection systems, support recycling industries, and encourage packaging design that is easier to recover. Indonesia has already introduced elements of this approach through existing regulations, however, the institutional structure needed to make the system work at scale is still evolving.

This ASEAN Briefs examines how EPR could be strengthened as part of Indonesia's effort to reduce plastic leakage into the marine environment at the upstream level. Drawing on discussions and interviews with policymakers, industry representatives, waste practitioners, and researchers as well as literature reviews, the brief examines the current regulatory framework, identifies operational gaps, and considers lessons from several Asian regions with established EPR systems. The aim is to outline practical policy directions that can help Indonesia move from regulatory commitments toward an operational system that keeps plastic waste out of rivers and the ocean.

⁷ Damanhuri, E., & Padi, T. (2009). Current situation of waste recycling in Indonesia. In M. and E. D. Kojima (Ed.), *3R Policies for Southeast and East Asia* (pp. 23–52). ERIA.

⁸ Ardi, R., & Purwojatmiko, B. H. (2019). Producer perspective on extended producer responsibility concept: An Indonesian case study. *ACM International Conference Proceeding Series*, 91–95. <https://doi.org/10.1145/3364335.3364341>

ANALYSIS

Current EPR Framework in Indonesia

Indonesia began introducing producer responsibility into its waste policy more than a decade ago. The legal basis appears in Law No. 18/2008 on Waste Management, which states that producers are responsible for the waste generated from their products and packaging. While the principle is straightforward, municipal governments cannot handle the entire burden of waste management alone. Producers must take part in managing the waste that follows their products into the market.

More concrete obligations appeared later when the Indonesian Ministry of Environment and Forestry issued Regulation No. P.75/2019, which requires producers in several sectors to prepare roadmaps for reducing packaging waste. The obligation applies to manufacturers, retailers, and food and beverage service businesses, with each company in these sectors must outline how packaging waste will be reduced, reused, or recycled over time.



In the Indonesian regulatory framework, the term 'producer' covers a wider set of actors than manufacturing firms alone. Ministry of

Environment and Forestry Regulation No. 75/2019 defines producers as manufacturers, importers, modern retailers, and food and beverage service providers that place packaged products on the domestic market. This definition reflects the structure of consumer goods distribution in Indonesia, where large retail chains and food service operators introduce substantial volumes of packaged products into circulation. Retailers therefore fall within the scope of producer responsibility, even though in several EPR systems internationally they are treated mainly as distributors rather than obligated producers.⁹

EPR systems generally involve several forms of responsibility.¹⁰ Physical responsibility requires producers to participate in product take-back or collection after consumption. Financial responsibility refers to producer contributions to the costs of waste management, often through recycling funds or producer responsibility organizations (PROs). Informational responsibility concerns labeling or disclosure related to material composition and recycling. Current policy instruments in Indonesia focus mainly on waste reduction roadmaps and packaging redesign required from producers. Mechanisms based on financial responsibility, such as national recycling funds or PRO-based compliance systems, have not yet been implemented. This situation leaves a gap between producer obligations defined in policy and the municipal

systems that manage most post-consumer waste.

The roadmap requirement has created a gradual transition toward producer responsibility. Companies submit plans and report their progress periodically. Some have redesigned packaging materials, while others run take-back schemes or cooperate with waste collectors and recycling companies. Industry groups have also started coordinating voluntary programs that involve several producers working together.

Yet, the system still operates mainly through individual roadmaps rather than through an integrated recovery structure. Producers design their own initiatives and run them separately. National mechanisms that organize post-consumer packaging recovery remain limited. Because of that gap, the link between producer obligations and actual waste recovery often stays weak.

Policy discussions in recent years indicate that the Indonesian government intends to strengthen the framework. As of the writing of this brief, a new presidential regulation is still under formulation as part of the upcoming national action plan on broader waste management, which aims to integrate marine debris and domestic waste management. Early drafts discuss several institutional elements, including producer registration, differentiated fees based on packaging characteristics, collective recovery arrangements, and the potential formation of government-endorsed PROs. These proposals suggest a shift toward a more structured EPR system, although the operational design is still being debated. Despite this regulatory progress, translating producer obligations into a coordinated recovery system remains an ongoing policy challenge.

⁹ Arisman, & Fatimah, Y. A. (2023). Waste management in Indonesia: Strategies and implementation of Sustainable Development Goals (SDGs) and circular economy BT - circular economy adoption: Catalysing decarbonisation through policy instruments (S. K. Ghosh & S. K. Ghosh (eds.); pp. 131–157). *Springer Nature Singapore*. https://doi.org/10.1007/978-981-99-4803-1_5

¹⁰ Faiz, F., Ninduwezuor-Ehiobu, N., Adanma, U. M., & Solomon, N. O. (2024). Blockchain for sustainable waste management: Enhancing transparency and accountability in waste disposal. *Comprehensive Research and Reviews in Science and Technology*, 2(01), 045–069. <https://doi.org/10.57219/crrst.2024.2.1.0032>

Implementation Gaps

With the prevailing regulatory direction, Indonesia has established the legal basis for producer responsibility and has begun introducing obligations for packaging reduction. The remaining question concerns how to translate regulatory commitments into a functioning recovery system, which requires institutional arrangements, financial structures, monitoring mechanisms, and operational capacity. Several gaps become apparent when the policy is examined from that perspective.

One gap concerns the fragmentation of producer initiatives. Many producers have started waste reduction programs, often linked to their own corporate sustainability commitments. Packaging redesign, voluntary collection programs, and recycling partnerships appear across several sectors. Yet these initiatives usually operate independently and remain limited in scope. Programs rarely connect through a shared national recovery structure. Each company designs its own approach, works with different partners, and reports outcomes through separate channels. The result is a patchwork of initiatives rather than a coordinated recovery system.

Institutional coordination presents a second difficulty.¹¹ Given that there are many stakeholders involved in Indonesia's waste management sector, inconsistencies in policies, communication, and enforcement often arise across different government agencies. Additionally, different levels of commitment among different local governments also present a challenge

towards the implementation of national goals in tackling the waste management problem. This lack of coordination is also exacerbated by the fact that Indonesia is yet to have a formally recognized PRO responsible for organizing collective producer obligations.¹² The establishment of PRO is a common institutional response to the implementation of EPR schemes. Acting on behalf of producers, PRO manages EPR fees, coordinates producers' participation, and contracts waste management operators in compliance with the EPR regulations. A few industry platforms have begun discussing collaborative arrangements, though participation remains voluntary, and institutional authority is not clearly defined. Without a coordinating body that operates at a national scale, organizing collection systems becomes complicated. The same issue also applies to managing financial contributions from producers and tracking the recovery of packaging waste across multiple regions.

Monitoring and reporting systems remain as another unresolved issue in the implementation of EPR. Under current regulations, producers are required to submit waste reduction roadmaps to the government. Public information suggests that roughly thirty companies have submitted such roadmaps, and a smaller group has begun implementing pilot initiatives. These documents, however, are not publicly accessible and are often difficult to access even across government institutions. Reporting formats also differ widely between sectors. Some companies report reductions in packaging weight, while others focus on recycling partnerships or collection pilots. The absence of a unified monitoring system makes it difficult to track

¹¹ Hardi, K. A., Senastri, N. M. J., & Wiryani, M. (2024). Environmental law enforcement regulations regarding producer obligations in waste management in Indonesia. *Journal of Law Theory and Law Enforcement*, 3(1), 44–58. <https://doi.org/10.56943/jlte.v3i1.497>

¹² Amirudin, A., Inoue, C., & Grause, G. (2023). Rethinking waste management in Indonesia using public-private partnership framework: A case study of Akhmad Amirudin PET bottle waste management. *Nature Environment and Pollution Technology*, 22(1), 29–38. <https://doi.org/10.46488/NEPT.2023.v22i01.003>

packaging placed on the market, materials collected after use, and recycling outcomes. As a result, regulators face practical constraints when assessing compliance or evaluating national progress.

Financial arrangements form a fourth governance gap.¹³ The regulatory framework is yet to define how EPR contributions should be structured or distributed among producers. In many countries, EPR systems rely on collective financial mechanisms, where producer fees are pooled and subsequently used to finance collection, sorting, and recycling activities. Indonesia has not established such a structure. As a result, companies often fund their own programs, and large-scale recovery systems often receive only a limited amount of financial support.

Operational conditions within the waste management system also influence how EPR policies unfold. Recycling capacity differs widely across regions. Most large facilities are located on Java Island. Other regions rely on smaller recycling operations or informal processing networks. Transporting recyclable materials from outer islands to processing centers can be costly.¹⁴ Some packaging materials, particularly multilayer plastics, still lack viable recycling pathways. These conditions shape the feasibility of producer responsibility schemes in practice.

The final gap relates to the connection between EPR systems and existing waste collection networks. In many Indonesian cities, waste

recovery depends heavily on informal actors: waste pickers, small collectors, neighborhood sorting points, and local recycling businesses. These networks have already recovered a substantial portion of recyclable materials. Yet, producer responsibility programs rarely integrate them into formal recovery systems. When EPR initiatives operate separately from these networks, coordination becomes difficult and the efficiency of collection systems declines.

These governance gaps help explain why the implementation of producer responsibility has progressed slowly. The policy framework exists, but the operational system needed to implement it effectively remains under development.

Structural Challenges

Regulatory reform alone will not determine whether producer responsibility systems function effectively in Indonesia. Several structural conditions shape how far such policies can operate in practice. These conditions stem from demographic scale, geography, patterns of consumption, and the organization of the waste economy itself.¹⁵

Indonesia is home to more than 280 million people, and household consumption continues to expand as urban areas grow and purchasing demand increases. Estimates of plastic consumption in Indonesia vary across datasets. Several studies report per capita plastic consumption of about 19.8 kg in 2017, increasing to roughly 22-23 kg in 2022, while industry sources such as the Indonesian Olefin, Aromatic and Plastic Industry Association (INAPLAS) cite figures approaching 29 kg per capita in recent

¹³ Ezeudu, O. B., & Bristow, D. (2025). Financing methods for solid waste management: A review of typology, classifications, and circular economy implications. *Sustainable Development*, 33(2), 3062–3085. <https://doi.org/https://doi.org/10.1002/sd.3256>

¹⁴ Haqq, A. M., & Gultom, Y. M. L. (2022). The challenge of implementing public-private partnerships: A transaction costs perspective on waste to energy projects in Indonesia. *Journal of Financial Management of Property and Construction*, 27(3), 365–386. <https://doi.org/10.1108/JFMPC-09-2020-0058>

¹⁵ Frost & Sullivan. (2021). *Convergence and collaboration to usher circular economy in the plastics and composites industry*. <https://www.researchandmarkets.com/reports/5306986/convergence-and-collaboration-to-usher-circular>

years, depending on the scope of materials included. Differences arise from variations in data sources and accounting methods used to estimate plastic consumption and waste generation. Hence, it requires convergence in managing data silos.

Packaged products dominate daily retail transactions, from small convenience stores to large supermarkets. Plastic packaging remains the cheapest option for producers and distributors. The result is a steady flow of post-consumer packaging waste. Managing this volume requires recovery systems capable of operating across thousands of municipalities and settlements, not only in large cities.

As an archipelagic state, waste infrastructure in Indonesia does not develop evenly. Recycling facilities and corresponding processing industries are concentrated mainly in a few industrial areas, especially on the island of Java. In many islands outside Java, waste collection and sorting facilities operate on a smaller scale. Transporting recyclable materials from island to island increases operational costs and often reduces the economic value of recovered materials. Additionally, recycling capacity remains limited and municipal systems continue to rely heavily on landfills. National policy assessments¹⁶ have warned that many landfill sites may reach excess capacity in 2028 or faster if current waste generation trends continue. Reducing the volume of packaging waste entering municipal disposal systems therefore becomes a critical task, and EPR is often discussed as one mechanism that could help shift part of this burden away from local waste services.

¹⁶ Kementerian Perencanaan Pembangunan Nasional/Bappenas. (2024). *Peta Jalan dan Rencana Aksi Nasional Ekonomi Sirkular (RAN-ES) 2025-2045*. Jakarta: Bappenas. <https://lcdi-indonesia.id/wp-content/uploads/2024/07/RAN-ES-2025-2045.pdf> [accessed 16 March 2026]

Institutional capacity also differs widely among local governments.^{17 18} Some cities have begun experimenting with improved collection services, sorting centers, and partnerships with recycling businesses, while others still struggle to maintain basic waste services. Local budgets, technical staff, and administrative resources vary considerably. Municipal governments remain responsible for waste collection, yet regulatory guidance on how EPR should connect with local waste systems is still limited. In practice, EPR obligations are defined at the national level, while operational responsibilities remain with local governments. Integration with local service standards, including municipal minimum service standards for waste management, has yet to be clearly established. These regulatory gaps affect how producer-funded recovery systems could function across regions.

The structure of the recycling sector introduces another layer of complexity. Much of the material recovery in Indonesia is carried out by informal actors. Waste pickers, small traders, neighborhood collectors, and community sorting networks form an extensive recovery chain. The government estimates that the number of waste pickers alone exceeds 4.2 million.¹⁹ They contribute to recycling industries by supplying materials such as PET bottles, metals, and cardboard. However, packaging with little market value

¹⁷ Maskun, Kamaruddin, H., Pattitingi, F., Assidiq, H., Bachril, S. N., & Al Mukarramah, N. H. (2023). Plastic waste management in Indonesia: Current legal approaches and future perspectives. *Hasanuddin Law Review*, 9(1), 106–125. <https://doi.org/10.20956/halrev.v9i1.3683>

¹⁸ Iacovidou, E., Gerassimidou, S., Ebner, N., Webster, M., Whyle, A., Jobling, S., Ceschin, F., & Cordova, M. R. (2025). System-wide analysis of the plastics value chain in Indonesia: The five levels of information. *Journal of Circular Economy*, 3(1), 1–49. <https://doi.org/10.55845/bor19746>

¹⁹ Radio Republik Indonesia. (2025). *BP Taskin soroti kemiskinan ekstrem pemulung perkotaan*. Radio Republik Indonesia (RRI). https://berita.rri.co.id/nasional/1769493/bp-taskin-soroti-kemiskinan-ekstrem-pemulung-perkotaan#google_vignette. [accessed 16 March 2026]

often remains outside of these recovery networks. Noting its significance to job creation, a national EPR scheme shall ideally tap into this informal system rather than attempt to replace it.

Market demand for recycled materials also affects how packaging waste moves through the system.²⁰ Recycling industries depend on stable prices and predictable supply. When the demand for recycled plastic declines, collection networks will weaken. Materials that previously had value may instead be disposed of or leaked into the environment. Policies that encourage the use of recycled content in manufacturing can help stabilize demand and strengthen recovery systems.

These structural conditions do not prevent the introduction of producer responsibility. Countries with large populations and complex waste systems have implemented similar schemes. Still, policy design must account for the realities of Indonesia's geography, uneven infrastructure, and existing recycling networks. Without those adjustments, a national EPR framework risks remaining effective only in a limited number of urban centers rather than operating across the country.

Lessons from Other Asian EPR Systems

In the Indo-Pacific region, some have already developed their respective national arrangements that assign parts of the waste management burden to producers.²¹

²⁰ Sulami, A. P. N., Murayama, T., & Nishikizawa, S. (2018). Current issues and situation of producer responsibility in waste management in Indonesia. *Environment and Natural Resources Journal*, 16(1), 70–81. <https://doi.org/10.14456/ennrj.2018.7>

²¹ Zhang, Z., Chen, Z., Zhang, J., Liu, Y., Chen, L., Yang, M., Osman, A. I., Farghali, M., Liu, E., Hassan, D., Ihara, I., Lu, K., Rooney, D. W., & Yap, P.-S. (2024). Municipal solid waste management challenges in developing regions: A comprehensive review and future perspectives for Asia and Africa. *Science of The Total Environment*, 930, 172794. <https://doi.org/10.1016/j.scitotenv.2024.172794>

Their experiences suggest that the concept of producer responsibility needs to be operationalized to ensure that the system works. Such operationalization begins with a clear institutional design, as who collects the fees, who manages the funds, and how recovery activities connect with existing waste management systems all shape the outcome.

Taiwan provides an early example in the region when the government established a national recycling fund supported by producer contributions. In 1988, Taiwan majorly amended the Waste Disposal Act 1974, which mainly centered on the EPR principle by requiring manufacturers and importers to bear financial responsibility for recycling activities.²² Companies pay fees based on the type and quantity of packaging they introduce into the market. These payments flow into a centralized fund that finances collection programs, recycling activities, and monitoring systems. The structure distributes responsibilities across different actors under the 4-in-1 recycling program. The program mandated the involvement of local governments to handle collection, recycling companies to process materials, public communities to conduct waste separation, as well as the central authority to manage the collected recycling fund and reporting system.²³ In Taiwan, financial flows and reporting procedures are standardized, and regulators can monitor material recovery rates and revise policies as needed.

Beyond its domestic policy framework, Taiwan has taken an active role in regional efforts to address marine pollution. Through collaboration with think tank institutions such

²² Taiwan Environmental Protection Agency. (2012). *Recycling regulations in Taiwan and the 4-in-1 recycling program*. Available at: <https://www.epa.gov/sites/default/files/2014-05/documents/handout-1aregulations.pdf>

²³ Ibid.

as The Habibie Center, the Ocean Affairs Council (OAC) has developed an Indo-Pacific platform on marine debris management, with Indonesia as one of the main focal points. Taiwan has also participated in cross-country forums involving partners from the United States, Japan, South Korea, and several Southeast Asian countries, indicating an approach that connects national waste management systems with regional cooperation mechanisms. For Indonesia, this experience is relevant not only for understanding how EPR can be implemented, but also for shaping institutional partnerships that respond to transboundary marine pollution. This cooperation can also support the development of Indonesia's EPR system in more specific areas, such as the standardization of monitoring and reporting, the development of digital tracking systems for packaging flows, and the design of collective producer responsibility mechanisms that are aligned with practices already tested in the region.

South Korea established multiple PROs that represent groups of companies in similar sectors. Producers join these organizations and contribute according to the volume and characteristics of the packaging they produce. Public institutions supervise compliance and verify reported outcomes. At the operational level, producer contributions support recycling and recovery programs connected to municipal waste management services. This arrangement allows companies to meet their obligations collectively while maintaining regulatory oversight from the state.

Japan's institutional arrangement on EPR operates through a designated national organization responsible for managing funds

and contracting recycling activities.²⁴ Municipal governments collect packaging waste as part of their regular waste services. The collected materials then enter a competitive bidding process in which recycling companies obtain processing contracts. Responsibilities are distributed clearly: municipalities organize collections, producers finance the system, and recycling companies process the materials through contracted operations. Japan did not begin its producer responsibility system with packaging alone. Earlier policies focused on specific product streams with identifiable recovery pathways, including home appliances under the Home Appliance Recycling Law (2001) and vehicles under the Automobile Recycling Law (2005). These early programs allowed regulators to establish financing arrangements, collection channels, and recycling capacity before expanding producer responsibility to packaging. A similar sequencing may also be relevant for Indonesia. Rather than introducing EPR across all packaging categories at once, initial implementation could concentrate on high-volume product streams where collection and recycling pathways can be organized more predictably.

In Southeast Asia, the Philippines has also begun introducing the EPR framework. Recent legislation in the country requires large-scale companies to recover a portion of the plastic packaging they place on the market. Recovery targets increase gradually over time. Producers can meet these obligations through their own recovery programs or through collective arrangements and are obliged to report their performance to national authorities.

²⁴ MOE Japan. (2014). *Sound material-cycle society in Japan*. Ministry of the Environment, Government of Japan. <https://www.env.go.jp/en/recycle/smcs/>



Looking across these systems, several design patterns appear repeatedly. First, producer contributions are organized through structured financial mechanisms. Second, collective institutions coordinate producer obligations. Third, reporting systems track both packaging placed on the market and materials recovered after consumption. Lastly, municipal governments continue to manage basic waste collection, while producer financing expands recovery and recycling capacities.

Indonesia does not need to copy any single model. Institutional conditions differ and the country's geographic scale is larger than many of these abovementioned examples. Even so, the experiences point to four elements that influence whether EPR systems function in practice: clear financial arrangements, recognized coordinating institutions, consistent reporting systems, and operational links between producers and local waste management services.

CONCLUSION

The concept of producer responsibility is not new to Indonesia. Elements of the concept already appear in national waste policy, including requirements for producers to prepare waste reduction roadmaps and to participate in managing packaging waste. For more than a decade, regulations have stated that responsibility for post-consumer waste should not rest on municipalities alone.

However, a fully functioning system has not yet emerged. Much of the current implementation still depends on individual initiatives designed by producers themselves. National

arrangements that organize financing, recovery targets, and reporting remain incomplete. Monitoring systems vary across programs, collective recovery mechanisms remain limited, and institutional coordination continues to evolve. As a result, producer obligations and actual material recovery on the ground do not always align.

Another layer sits beneath the policy design. Indonesia's large population, its geographical landscape, and uneven waste infrastructure shape how any recovery system operates. In many places, recyclable materials move through informal networks of waste pickers and small traders before reaching recycling facilities. These networks already form part of the country's recycling economy. Any national EPR arrangement will have to work with them, not around them.

Experiences from Taiwan, South Korea, Japan, and the Philippines demonstrate that EPR tends to function effectively when key elements are in place: clear institutional responsibilities, predictable financial arrangements that fund recovery activities, and robust reporting systems that track both packaging placed on the market and materials collected after use. When these elements align, producer responsibility shifts from regulatory text to everyday practice.

The development of a more structured EPR system in Indonesia will benefit from continued international collaboration. Engagement with partners, such as Taiwan's OAC, opens opportunities for policy exchange, technical learning, and institutional strengthening. Future cooperation can focus on improving



monitoring systems, expanding recovery infrastructure, and aligning producer responsibility mechanisms with broader regional efforts to reduce marine debris. Marine plastic pollution will continue to flow irrespective of territorial boundaries, therefore, and international collaborations become necessary if national policies are expected to produce significant measurable outcomes. Strengthening this type of partnership will help ensure that Indonesia's policy direction is supported by practical cooperation at the regional level.

Indonesia now stands at a critical transition from policy commitments to actual implementation. What remains is the institutional work needed to translate those commitments into operational arrangements that function effectively across the country. While a stronger EPR framework will not resolve all waste management challenges, it can redistribute part of the financial and operational burden to manage post-consumption waste to producers, while strengthening recovery systems that prevent plastic leakage into rivers and coastal waters. The following recommendations therefore focus on institutional arrangements, financing mechanisms, and monitoring systems needed to operationalize EPR in Indonesia.

RECOMMENDATIONS

Indonesia has indeed already introduced EPR, the principle that producers share responsibility for packaging waste, as part of its waste management policies. What remains underregulated is the operational framework that connects this principle into

everyday waste management practices across the country. Several key elements include institutional coordination, financing arrangements, monitoring systems, and linkages with existing collection networks, which still require clearer policy designs. The following policy directions therefore focus on building these operational foundations so that producer responsibility can function effectively in practice and contribute to reducing plastic leakage into rivers and coastal waters.

a. Establish a state-recognized Producer Responsibility Organization (PRO) system

A national EPR framework requires an institution that organizes producer obligations collectively. Without such a body, most initiatives remain fragmented. A state-recognized PRO could collect financial contributions from producers, coordinate recovery programs, and organize contracts with waste management and recycling actors. Legal recognition would also clarify the relationship between producers, regulators, and service providers within the recovery system.

The proposed system places regulatory oversight at the national level while operational activities are coordinated through PROs. Environmental authorities define recovery targets, set reporting standards, and supervise compliance through a national EPR registry that records packaging placed on the market, materials collected after consumption, and recycling outcomes. Producers—including manufacturers, importers, and large retailers—must register in the system and contribute financial fees

proportional to the packaging they introduce into the market. These funds are administered by PRO entities that organize recovery programs and contract waste collection and recycling activities. In practice, the system links producer financing with existing waste management actors. Local governments continue to manage primary waste collection, while informal collectors and aggregators remain active in recovering recyclable materials. Materials recovered through these networks are then transferred to recycling industries through agreements coordinated by the PRO system. The structure separates regulatory authority, financial responsibility, and operational implementation while maintaining coordination across producers, local governments, and recycling industries.

A hybrid PRO arrangement is particularly relevant for Indonesia, given the country's geographic scale and decentralized waste governance (see **Figure 1. Proposed hybrid PRO system for Indonesia**). Municipal waste services and informal recovery networks already handle a large share of material collection, and these systems cannot simply be replaced by producer-led programs. Instead, producer contributions should function as a financing mechanism that strengthens existing collection and recycling activities where packaging waste accumulates. Under this approach, regulators maintain control over targets and reporting systems, while collective PROs manage operational coordination and funding distribution. Experiences from South Korea, Japan, and Taiwan show that producer responsibility systems tend to operate more consistently when industry financing is organized collectively but monitored through national regulatory frameworks. A similar arrangement would allow Indonesia to expand material recovery while aligning producer responsibility with the country's existing waste management structure.

b. Develop a national monitoring and reporting system for producer responsibility

Reliable data determines whether EPR obligations are actually fulfilled. A national reporting platform could record producer registrations, packaging volumes placed on the market, recovery targets, and recycling outcomes. Standardized reporting would allow regulators to track compliance more consistently and evaluate whether recovery activities align with national waste reduction targets.

c. Introduce a structured EPR financing based on packaging types and recovery costs

A collective financial system allows producers to contribute according to the packaging they introduce into the market. Fee structures can be differentiated by material types or recyclability, with higher contributions applied to packaging that is difficult to recycle and lower fees for materials with established recycling pathways. This differentiation incentivizes more sustainable packaging redesign while generating funds to support collection, sorting, and recycling activities. Fees may be further modulated according to material type, polymer composition, and recyclability. For instance, packaging formats that are difficult to recycle (e.g. multilayer laminates) would carry higher contributions, while materials with established recycling pathways (e.g., PET or HDPE) would face lower fees. Such system-wide improvements would allow EPR financing to effectively support waste collection, sorting, and material recovery across multiple stages of the waste management system.

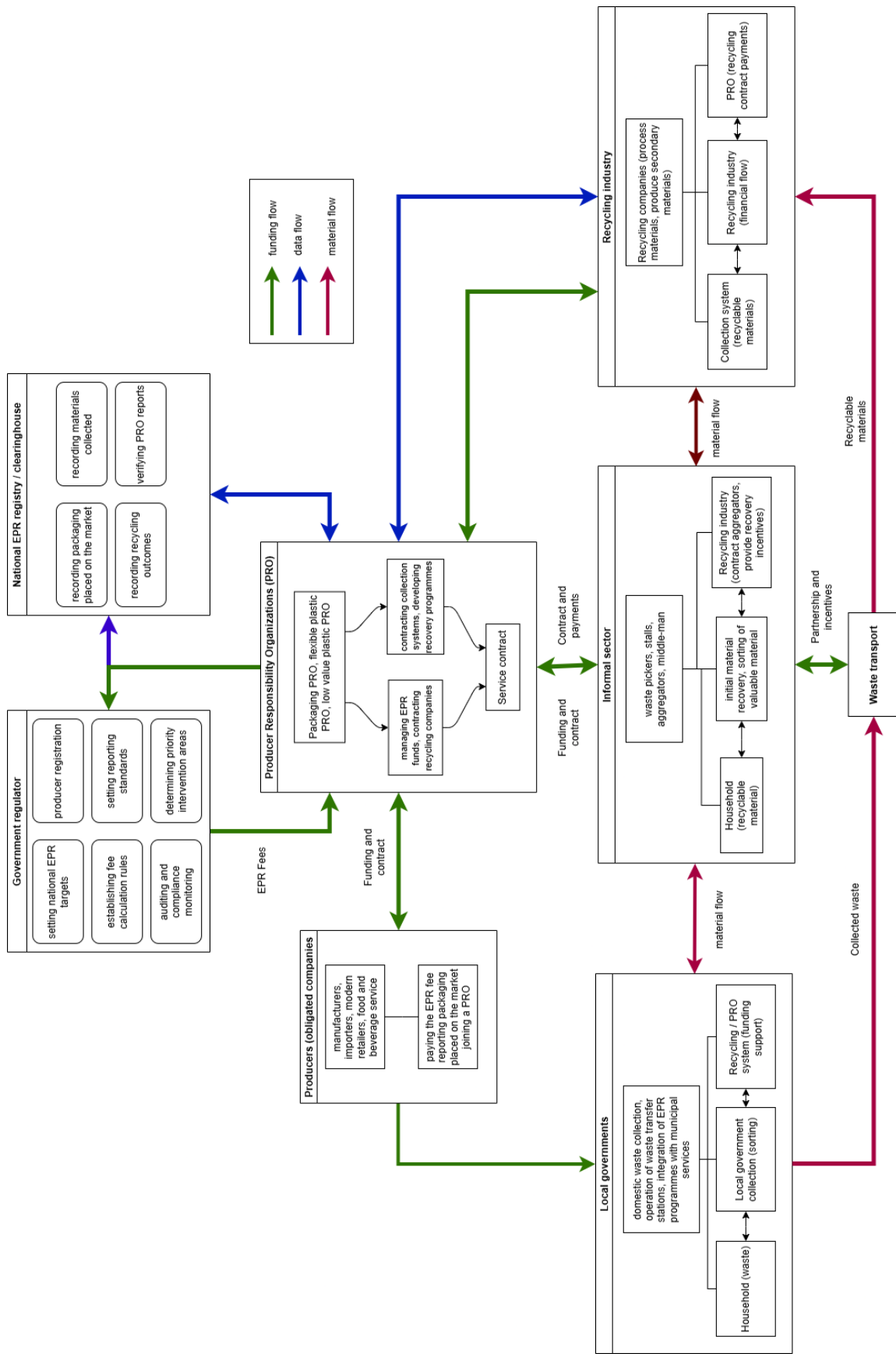


Figure 1. Proposed hybrid PRO system for Indonesia
Source: authors' own creation



d. Strengthen domestic recycling capacity and markets for recycled materials

Material recovery depends on stable demand. When recycling markets weaken, collection systems also weaken. Policies that encourage the use of recycled content in manufacturing, combined with support for recycling industries, can help stabilize demand for secondary materials. Expanding processing capacity beyond major industrial zones would also reduce transport costs and allow recovery systems to operate in more wider regions. Strengthening domestic recycling capacity requires investment across the material recovery chain, including source separation systems, community waste banks, sorting facilities (*Tempat Pengolahan Sampah Terpadu* (TPST)), material recovery facilities (MRFs), and downstream recycling or alternative treatment infrastructure.

e. Integrate informal waste collection networks into EPR implementation

Informal waste collectors already recover a large share of recyclable materials in many Indonesian cities. These actors form part of the existing recycling economy. Future EPR systems should connect producer-funded recovery programs with these networks rather than replace them. Partnerships with waste picker groups, support for community-based sorting systems, and data integration between informal collectors and formal recovery schemes can strengthen recovery rates while maintaining livelihoods linked to recycling activities.

f. Implementing incentive and/or disincentive measures for EPR implementation

Developing regulatory frameworks that incorporate either or both incentives and disincentives could promote the effective implementation of EPR. On the one hand, incentives in the form of fiscal or non-fiscal would recognize and reward producers that have already adopted EPR practices while encouraging those that have yet to implement them. This approach may serve as a practical pathway for Indonesia, particularly during the period when EPR may not yet be feasible to be comprehensively carried out across the country. On the other hand, introducing disincentive measures for industries that have not yet implemented EPR can also be an option, as it creates a stronger regulatory push to encourage a higher level of compliance. However, this option should be accompanied by adequate supporting mechanisms and a well-established EPR ecosystem to ensure that the provision does not place an undue burden on industries.



g. Align EPR financing with local waste management responsibilities

Waste management services in Indonesia are largely handled by local governments, while producer regulation and many fiscal instruments remain centralized. EPR financing should therefore be linked directly to municipal waste systems, particularly in areas where packaged goods circulate in large volumes and leakage risks are highest. Several Asian systems follow this approach, South Korea channels producer funds to support municipal recovery programs, while Japan reimburses municipalities for packaging collection. Moreover, Taiwan distributes recycling fund revenues to local governments that manage collection. Connecting producer contributions with local waste management would help close the institutional gap between national producer obligations and everyday waste handling on the ground.

g. Developing a targeted pilot project

Gaps in the readiness and availability of adequate infrastructure and supporting facilities continue to pose a challenge for EPR implementation across Indonesia. Additionally, public awareness of proper waste management, which is essential to support the implementation of EPR, remains uneven. Therefore, developing targeted pilot projects in regions that demonstrate a relatively stronger institutional capacity and well-developed supporting infrastructure could serve as a meaningful entry point. These initiatives would also provide experience and lessons learned to guide future large-scale implementation nationwide.

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This policy brief is developed as part of a collaboration between The Habibie Center and Taiwan through the OAC. Taiwan has indicated its readiness to support regional efforts to address marine plastic pollution, particularly through policy exchange, technical cooperation, and capacity development. This collaboration reflects a growing interest in strengthening Indo-Pacific cooperation on marine debris, where similar challenges are faced irrespective of boundaries and cannot be addressed in isolation. The partnership with OAC could create a practical entry point to connect policy development in Indonesia with implementation experience from other regions that have already established structured waste management systems, including EPR.



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The Habibie Center was founded by Bacharuddin Jusuf Habibie and family in 1999 as an independent, non-governmental, non-profit organisation. The vision of The Habibie Center is to create a structurally democratic society founded on the morality and integrity of cultural and religious values. The mission of The Habibie Center are first, to establish a structurally and culturally democratic society that recognizes, respects, and promotes human rights by undertaking study and advocacy of issues related to democratization and human rights, and second, to increase the effectiveness of the management of human resources and the spread of technology.

About ASEAN Studies Program

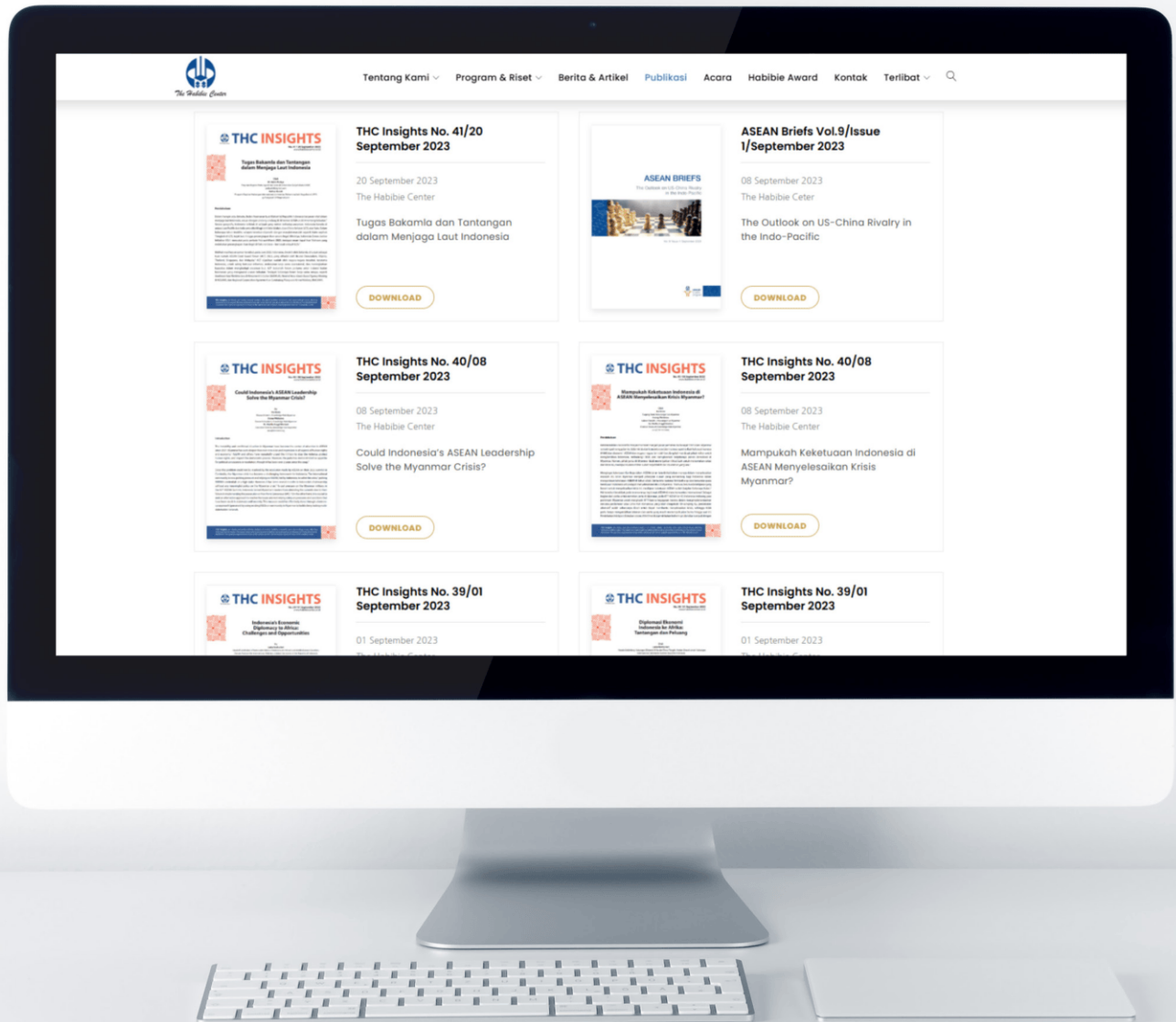
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About Talking ASEAN

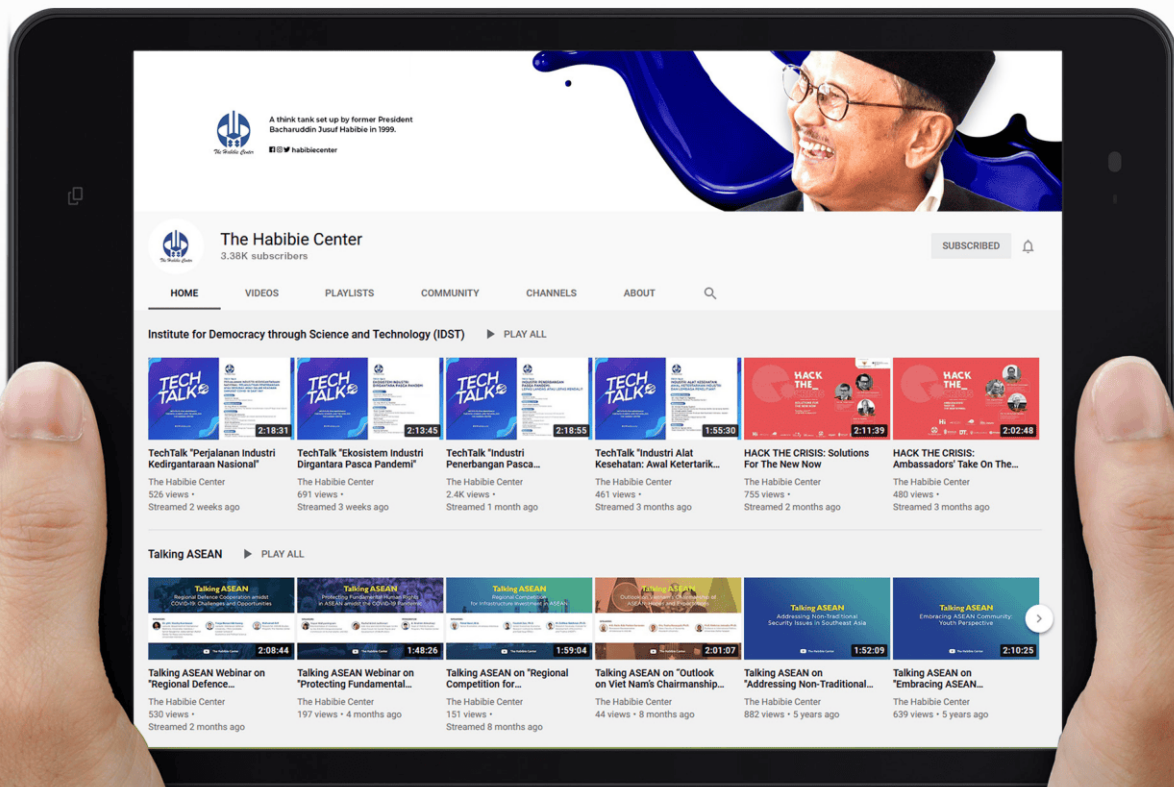
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