



Legal Development Guidelines for Strengthening the Role of Citizens in Household Waste Management in Thailand

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Abstract

This research addresses the critical environmental crisis of household waste in Thailand, where existing legal frameworks fail to regulate public behavior at the source. Although the government has designated waste management as a national agenda, overall waste volume continues to rise due to shifting socio-economic conditions and the lack of mandatory waste segregation. This study aims to examine legal concepts and theories, conduct a comparative analysis of legal measures in the United Kingdom, Sweden, and Japan, analyze impediments within the Thai legal system, and propose developmental pathways to enhance the civic role in waste management. The findings reveal significant structural gaps in Thai law, which primarily focuses on "end-of-pipe" solutions, lacks specific duties for individual households, and relies on inefficient flat-rate fee structures. Comparative evidence suggests that success in developed nations stems from the exercise of state power through "Command and Control" mechanisms alongside economic incentives. Consequently, this research recommends a comprehensive legal reform, including the enactment of a specialized "Lex Specialis" for household waste. Key proposals include transposing constitutional duties into statutory obligations, transitioning to a "Pay-As-You-Throw" (PAYT) fee model, and implementing Extended Producer Responsibility (EPR) and Deposit-Refund Systems (DRS). These reforms are essential to transform citizens from passive service recipients into active environmental stakeholders, ensuring sustainable resource recovery and social equity.

Keywords : Legal Development Guidelines; Civic Duty and Responsibility; Circular Economy; Household Waste Management

Introduction

The challenges surrounding household waste management constitute a significant environmental crisis with profound ramifications for contemporary Thailand. Notwithstanding the endeavors of the government and state authorities to address these exigencies and designate household waste management as a National Agenda [1], statistical data regarding municipal solid waste—encompassing household refuse—indicates a consistent upward trajectory. This trend is inextricably linked to shifting socio-economic dynamics and evolving consumption modalities. The primary impediment to effective management resides in public behavior at the

source, specifically the lack of conscientious waste segregation. Such neglect leads to the cross-contamination of diverse waste categories, thereby diminishing their economic viability and impeding efficient resource recovery. Consequently, this imposes an immense fiscal burden on the public sector regarding logistics and disposal, while simultaneously engendering deleterious effects on public health and well-being [2]. These systemic failures underscore the inadequacies of the extant legal framework in effectively regulating behavioral patterns or incentivizing the role of citizens as stakeholders obligated to mitigate the environmental impacts derived from household waste.

Legal factors constitute both a primary cause and a significant impediment contributing to the persistent failure in regulating public conduct regarding household waste management. This is evident across various contexts, including the Constitution and related statutes. For instance:

First, the issue of ambiguity regarding the role of citizens and their duty to preserve the environment. Although the current Constitution of the Kingdom of Thailand, 2017 [3], under Chapter 5: Duties of the Thai People, stipulates in Section 50 (8) that “A person shall have a duty to cooperate and support the conservation and protection of the environment...”, such a provision remains merely a general principle. It requires the enactment of supplementary legislation to establish concrete enforcement mechanisms over public behavior. Consequently, an examination of various extant Thai laws reveals significant inconsistencies and regulatory gaps in enforcing and organizing public conduct regarding environmental preservation. This issue is directly pertinent to the challenges of household waste management by citizens themselves.

Second, the legal challenges arising from a regulatory framework that prioritizes the control of large-scale pollution sources while neglecting the household sector. This disparity is evident in the Enhancement and Conservation of National Environmental Quality Act, 1992 [4], particularly within the various provisions of Part 7: Monitoring and Control. Although the 'Polluter Pays Principle' (PPP) was adopted as a foundational tenet for environmental protection, the legislative intent remains focused on regulating industrial point sources. There is a discernible lack of provisions establishing a standard of conduct or a legal duty for individual citizens as small-scale generators of household waste. Consequently, the public's legal responsibility for environmental conservation is not effectively applied to household waste management. This regulatory gap inhibits public awareness of their status as stakeholders and their legal obligation to manage the waste they generate, ultimately resulting in negative externalities that adversely affect the broader public interest.

Third, the legal problems stemming from a framework that prioritizes "end-of-pipe" solutions for household waste management rather than

addressing the problem at its source. This is illustrated by the Public Health Act, 1992 [5] in section 20 which empowers the state to provide public services for the collection, transportation, and disposal of waste. Such provisions reflect a reactive approach, as the legislative intent is primarily focused on the collection of fees and the prohibition of waste disposal in public areas. Crucially, the Act fails to mandate "waste segregation" at the household level in a concrete manner. Consequently, citizens are positioned merely as passive recipients of state services, shifting the entirety of the management burden onto the public sector. This imbalance precludes active public participation and cooperation in managing household waste at the point of origin.

Finally, the legal problems arising from a regulatory focus on urban cleanliness and public order rather than systematic household waste management. This is exemplified by the Maintenance of Cleanliness and Orderliness of the Country Act, 1992 [6], which is intended to preserve the sanitation and aesthetics of public spaces. The Act primarily functions as a prohibitive law, restraining citizens from actions that disturb public order—such as the prohibition against disposing of filth or waste in public places, as stipulated in Sections 29 to 34 of Chapter 2. However, it fails to impose a legal duty on citizens to manage waste within their households. This creates a legal loophole whereby citizens may commingle all types of household waste without penalty, provided that the disposal occurs within state-provided receptacles or designated areas. Consequently, the scope of this Act is limited to the regulation of public spaces and fails to govern public conduct regarding waste management at the source. Furthermore, the Act prescribes a "flat-rate" fee for waste management. This results in an inequitable situation where individuals who generate minimal waste or practice diligent segregation bear the same financial burden as those who generate excessive waste or fail to segregate entirely. Such a fee structure lacks the necessary incentives to motivate behavioral changes toward more sustainable household waste management.

In light of the aforementioned circumstances and legal exigencies, conducting research to identify pathways for legal development—with an emphasis on empowering citizens to actively collaborate with state authorities in household

waste management—is a critical endeavor. Such research serves to establish a equilibrium between the rights and duties of citizens and the exercise of state power, ultimately transforming Thailand into a society characterized by sustainable waste management and environmental preservation throughout the entire lifecycle. Research Contributions: for academic dimension, this research provides profound insights into the limitations of Thai legal system regarding the regulation of public conduct in household waste management, which directly impacts the creation of a sustainable environment. For the legal development dimension, his study serves as a framework for the legislature to formulate or amend relevant statutes, incorporating provisions that clearly define the duties of citizens in household waste management while establishing concrete enforcement mechanisms. Moreover, for the social dimension, this research establishes a legal system that fosters public awareness of environmental duties and responsibilities, leading to a sustainable reduction in waste volume and an increase in recycling rates at the source.

Research Gap and Unique Contribution

This study bridges a critical research gap by shifting the focus from "end-of-pipe" technologies to analyzing the regulatory vacuum at the point of origin (the household sector) and the legal constraints of state power regarding domestic privacy. The unique contribution is the conceptualization of a standalone statute (*Lex Specialis*) grounded in Law and Economics and Circular Economy principles. By pioneering a Dual-Track Approach, the framework harmonizes mandatory enforcement (e.g., "No Sort, No Collect") with fiscal and tax incentives (PAYT/EPR/DRS), legally redefining passive citizens into active, obligated stakeholders in resource recovery.

Objective and Methodology

This study aims to examine the relevant conceptual and theoretical framework: legal concepts, theories, and principles; conduct a comparative analysis of legal measures and experiences from the United Kingdom, Sweden, and Japan; analyze the current legal impediments within the Thai context; and

propose recommendations for legal reform that prioritize the enhancement of the public's role as a key partner in household waste management alongside the government. This study constitutes legal research primarily employing a Documentary Research methodology. The operational procedures are categorized as follows: Data Collection involves the comprehensive gathering and review of legal statutes, judicial precedents (where applicable), pollution situation reports, dissertations, and academic articles pertaining to household waste management from both domestic and international sources. Data Analysis is conducted through Content Analysis to evaluate the efficacy of Thai legal measures against international standards, supplemented by Comparative Legal Analysis to identify legal frameworks appropriate for the Thai socio-cultural context. Finally, Data Synthesis involves the integration of findings to propose legal reforms, encompassing both Mandatory Measures and Incentive Measures.

Furthermore, the scope of this research is directed towards the examination of legal provisions that impact the role of citizens in household waste management. The primary statutes under review include the Constitution of the Kingdom of Thailand, 2017; the Enhancement and Conservation of National Environmental Quality Act, 1992; the Public Health Act, 1992; and the Maintenance of Cleanliness and Order of the Country Act, 1992, as well as relevant subordinate legislation pertaining to fee collection structures and waste segregation mandates. The comparative jurisdictional scope further encompasses the legal systems of the United Kingdom, noted for its civil penalty measures; Sweden, distinguished by its mandatory food waste segregation; and Japan, characterized by its robust social discipline and local government ordinances.

Results and Discussion

Conceptual and Theoretical Framework

Regarding the relevant legal concepts, theories, and principles, it is found that enhancing the role of citizens in effective and sustainable household waste management—thereby establishing the legitimacy of state power in regulating or limiting individual liberties and creating a system conducive to

behavioral shifts—incorporates the following frameworks:

1. Right to a Healthy Environment and Civic Duty

The concept of the right to a healthy environment is a fundamental right aimed at ensuring that individuals can live in conditions conducive to health and safety. However, within the realm of public law, 'rights' are invariably intertwined with 'duties.' [7] In the context of household waste, while citizens possess the right to demand efficient public waste collection services from the state, they simultaneously bear a 'fundamental duty' to refrain from polluting and to actively preserve environmental quality [8]. Imposing a legal duty on households to segregate waste prior to disposal is, therefore, not merely a restriction of liberty; rather, it is an exercise of state power to protect the collective environmental rights of the public. Transforming the status of citizens from 'passive receivers' of services to 'active contributors' with shared responsibilities constitutes a vital foundation for the modern development of household waste management legislation.

2. Law and Economics and Behavioral Control

The field of Law and Economics analyzes how legal frameworks should be designed to achieve maximum efficiency in resource allocation. In the context of household waste, this theory posits that citizens are "Rational Actors" who make decisions regarding waste disposal or segregation based on a cost-benefit analysis. If the law mandates a flat-rate fee for waste services, the "marginal cost" of disposing of additional waste effectively becomes zero for the individual, thereby eliminating any incentive for waste reduction. Applying Law and Economics to legal reform focuses on the utilization of Economic Instruments, such as the Pay-As-You-Throw (PAYT) system, to internalize social costs into private costs. Under this mechanism, if individuals generate more waste, they must bear higher costs, whereas diligent segregation of recyclables leads to reduced fees. Such legal mechanisms compel individuals to automatically adjust their behavior through the imposition of financial burdens [9]. Recent studies demonstrate that purely command-and-control frameworks

are insufficient to alter household behavior without functional economic instruments. Their legal and economic analyses of the Pay-As-You-Throw (PAYT) mechanism in developed jurisdictions show that replacing flat-rate schemes with unit-based pricing models leads to an average of over 30% reduction in municipal solid waste destined for landfills, reinforcing the argument that financial accountability directly catalyzes household source segregation [10, 11].

3. Circular Economy Principle

The Circular Economy principle shifts the perspective on household waste from "refuse requiring disposal" to "resources for recovery" (Resource Recovery). This concept relates to household waste management through the establishment of legal standards that mandate the Waste Hierarchy, which prioritizes waste reduction (Reduce), reuse (Reuse), and recycling (Recycle). Legislation supporting this principle does not merely regulate disposal; it encompasses mandatory public participation in returning recyclable materials to the system. This participation is fundamental to preserving the value of materials, preventing them from becoming useless landfill waste, and ensuring they can be reutilized as resources [12].

4. Polluter Pays Principle (PPP)

The Polluter Pays Principle (PPP) serves as a fundamental tenet of international environmental law, stipulating that those responsible for producing pollution must bear the costs of remediation or management [13]. At the household level, every citizen is essentially a "polluter" through the consumption of goods and the generation of solid waste. The integration of this principle into waste management aims to establish legal equity. When the law authorizes the state to collect fees that reflect the actual costs of waste management, it is not merely a revenue-generating exercise; rather, it is a legal instrument to compel individuals to acknowledge the burden they impose on society and the environment. Failure to impose appropriate fees on waste generators constitutes an unjust shifting of externalities onto the state and the public.

5. Extended Producer Responsibility (EPR) Principle

The Extended Producer Responsibility (EPR) principle extends the scope of a producer's responsibility to encompass the post-consumer stage of a product's lifecycle. Although this principle primarily focuses on the private sector, it is inextricably linked to household waste management, as the vast majority of domestic refuse consists of "packaging" generated by producers. Legislation implementing EPR establishes a take-back system that directly engages the public. Under this framework, citizens are legally mandated to segregate packaging waste, while producers are obligated to provide collection points or subsidize the costs of recycling. The synergy between laws regulating producers and those governing household behavior under the EPR framework facilitates a comprehensive "closed-loop" waste management system, effectively minimizing the burden of waste management at its point of origin [14]. Successful Circular Economy outcomes rely heavily on statutory synchronization, where recent expansions of Extended Producer Responsibility (EPR) and Deposit-Refund Systems (DRS) globally underscore that legislation must simultaneously mandate source segregation for citizens and take-back structures for producers, achieving resource recovery rates of up to 80-90% for household packaging components [15, 16].

Comparative Analysis of International Legislation and Experiences in Household Waste Management

A comparative study of foreign legislation demonstrates that success in waste management does not rely solely on the provision of public services by the state. Rather, it depends on the exercise of state power through legal mechanisms to "mandate duties" and "restrict liberties" regarding public disposal practices. The specific measures and their impacts are detailed as follows:

1. The United Kingdom: Enforcement through Statutory Notices and Civil Penalties
The United Kingdom exercises state power to regulate public behavior through the Environmental Protection Act 1990, which functions as a clear "Command and Control" mechanism at the household level.

1.1 Legal Measures: Under Section 46, local authorities are empowered to issue "Statutory Notices" mandating that citizens place waste in designated receptacles, segregate waste types as specified, and present waste on certain days and times [17]. Non-compliance allows authorized officers to issue "Fixed Penalty Notices (FPNs)"—a form of civil sanction—immediately without the need for court proceedings [18].

1.2 Impact on the Public: These measures impose a "Legal Burden" on citizens as waste generators. Individual liberty to dispose of waste indiscriminately is curtailed, and citizens must bear the financial cost of penalties if they lack discipline. However, the positive outcome is that citizens receive clean and orderly services, representing a trade-off between the acceptance of legal duties and the enjoyment of a high-quality environment [19].

2. Sweden: Economic Incentives and Mandatory Bio-waste Segregation.

Sweden emphasizes the application of the Polluter Pays Principle (PPP) and the Law and Economics framework to create mechanisms that compel an automatic shift in public behavior.

2.1 Legal Measures: The Swedish Environmental Code mandates the segregation of bio-waste (organic waste) as an 'absolute duty' for households, specifically for energy production purposes [20]. Furthermore, Sweden has also implemented a 'weight-based billing' system, where waste fees are collected based on the actual weight of the waste dumped. This represents a rigorous application of the Polluter Pays Principle (PPP) at the individual level. Impact on the Public: Citizens are confronted with "marginal costs" for excessive waste generation, which incentivizes source reduction and mindful consumption patterns. Although citizens must dedicate time to meticulous waste segregation, they receive reciprocal benefits in the form of reduced service fees and access to affordable energy derived from the Waste-to-Energy process.

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service fees and access to affordable energy derived from the Waste-to-Energy process [21].

3. Japan: Behavioral Control through Local Ordinances and Social Pressure.

Japan serves as a preeminent model for the integrated exercise of "State Power and Social Power" to regulate individual conduct under the Basic Act on Establishing a Sound Material-Cycle Society.

3.1 Legal Measures: Japanese law empowers local governments to implement a "Standardized Garbage Bag System" (Financial Incentive), where bags are priced higher to incorporate disposal costs (Pay-As-You-Throw). Furthermore, the "No Sort, No Collect" policy is enforced, granting sanitation workers the legal authority to refuse non-segregated waste and affix a non-compliance sticker [22]. In certain jurisdictions, regulations require citizens to write their names on waste bags to ensure traceability to the polluter.

3.2 Impact on the Public: These measures impact the Right to Privacy to a certain extent but are widely accepted as a fundamental civic duty. Citizens bear a significant "Social Pressure" (Social Sanction), as non-compliance can lead to social stigmatization within the community. This legal framework transforms waste management into a matter of personal discipline that is subject to continuous state and social oversight.

Legal Challenges and Impediments to Household Waste Management in Thailand

Based on an analysis of the situation in Thailand in conjunction with international legal principles and experiences, it is found that the primary obstacle to successful household waste management in Thailand does not reside in disposal technology. Rather, it lies within the limitations of the legal structure, which adversely impacts the regulation of public behavior, as detailed below:

1. Absence of Substantive Provisions Mandating "Civic Duty in Waste Segregation".

Although the Constitution of Thailand stipulates the environmental duties of citizens, existing enforcement statutes—specifically the Maintenance of Cleanliness and Order of the Country Act, 1992 and the Public Health Act, 1992—contain no provisions designating "source segregation" as a mandatory duty that citizens must perform prior to disposal. In the

absence of a mandatory legal framework, the state's authority is limited to "requesting cooperation," which lacks legal sanctions. This contrasts sharply with the legal systems of Japan or Sweden, where duties are explicitly defined by law [23]. This regulatory vacuum leads citizens to perceive the commingling of waste in a single bag as a legally permissible action, as it does not constitute a statutory offense.

2. Limitations on the Exercise of State Power over Domestic Conduct.

A significant obstacle to enforcing waste discipline in Thailand is the tension between the exercise of state power for the public interest and the protection of the Right to Privacy. While authorities in the United Kingdom utilize powers under Section 46 to inspect waste receptacles and issue immediate fines, Thai officials frequently encounter legal constraints when attempting to inspect the "contents within waste bags" or identify individual household polluters. Opening waste bags to monitor behavior may be challenged as an infringement of personal privacy or an ultra vires exercise of power, as current Thai statutes primarily authorize state action only for the maintenance of external cleanliness in public spaces [24].

3. Failure to Implement Economic Instruments for Behavioral Control.

According to the Law and Economics framework, behavioral modification necessitates a functional price mechanism. However, Thailand's current subordinate legislation remains tethered to a "Flat-rate" fee structure [25]. The prevailing fee rates do not authentically reflect the Polluter Pays Principle (PPP). Households that diligently endeavor to reduce or segregate waste are burdened with the same financial costs as those generating excessive volumes of refuse. This legal disparity results in a lack of both "positive incentives" and "negative pressures" within Thai law to compel citizens to segregate waste, unlike the Pay-As-You-Throw (PAYT) systems successfully implemented in Japan or Sweden.

4. Absence of Legislation on Extended Producer Responsibility (EPR) Linked to Households.

Thailand has yet to enact a primary statute (Act of Parliament) that effectively mandates the Extended Producer Responsibility

(EPR) principle. In the absence of mandatory EPR legislation requiring producers to facilitate the take-back of packaging, the entire burden of managing product residues falls directly upon citizens and the state. Citizens lack convenient, legally-supported channels to return packaging waste to producers. Consequently, such packaging is discarded as co-mingled household waste, which is difficult to manage and constitutes a significant barrier to the achievement of Circular Economy objectives [26].

5. The Existence of Multiple related Laws Leads to Conflict and Lack of Unity.

Household waste management in Thailand is governed by several laws, each with different primary objectives (the National Environmental

Quality Act focuses on policy frameworks, the Public Health Act focuses on disease prevention, and the National Cleanliness and Orderliness Act focuses on urban aesthetics). The distribution of legal authority across multiple laws with conflicting legal intent results in a lack of unified enforcement regarding household waste management. Various agencies tend to prioritize prosecuting "littering" (illegally dumping garbage in public areas) under the Cleanliness Act because it is a more straightforward procedure than enforcing environmental waste separation principles [27]. This lack of legal unity hinders the public's ability to clearly understand their legal roles and responsibilities toward the state.

Table 1 Comparative Matrix of Statutory Frameworks and Household Behavioral Regimes

Country / Comparative Dimensions	The United Kingdom (UK)	Sweden	Japan	Thailand
Primary Statutory Instruments	<i>Environmental Protection Act 1990</i>	<i>Swedish Environmental Code (Miljöbalken)</i>	<i>Basic Act for Establishing a Sound Material-Cycle Society</i>	<i>Public Health Act B.E. 2535, Maintenance of Cleanliness Act B.E. 2535, and NEQA B.E. 2535</i>
Statutory Duty and Source Segregation Mandate	Legally enforceable mandate driven by municipal Statutory Notices.	Absolute statutory obligation with a strict focus on 100% organic/bio-waste separation.	Enforceable civic obligation codified through specific local government ordinances.	Absence of substantive mandates; limited to "voluntary cooperation," allowing legal commingling.
Fiscal Instruments / Economic Regimes	Fixed public service levies coupled with prompt non-compliance civil penalties.	Weight-based billing systems, strictly executing the Polluter Pays Principle (PPP).	Pay-As-You-Throw (PAYT) via standardized, pre-paid municipal refuse bags.	Flat-rate monthly fee structure; minimal rates that strip away waste-minimization incentives.
Behavioral Enforcement Mechanism	Civil and administrative sanctions via Fixed Penalty Notices (FPNs) bypassing court delays.	Marginal cost mechanisms compelling households to minimize waste to lower utility levies.	"No Sort, No Collect" policy enforced via statutory non-compliance stickers and name traceability.	End-of-pipe reactive approach; limits enforcement to visible littering in open public spaces.

Statutory Justification over Domestic Privacy	Legitimate public power under Section 46 to inspect refuse contents and issue fines.	Accepted limitation of liberties in exchange for heavily subsidized, waste-derived green energy.	Justifiable restriction of privacy driven by robust communal and social oversight.	Severe regulatory hurdles; lacks statutory entry or inspection rights, risking privacy torts.
Extended Producer Responsibility (EPR / DRS)	Closed-loop networks reinforced by strict producer take-back civil frameworks.	Nationwide Deposit-Refund System (DRS/Pant) granting immediate cash or vouchers.	Integrated product-specific recycling statutes binding producers and community depots.	Absence of mandatory primary EPR statutes, shifting all fiscal burdens to municipalities.
Regulatory Architecture and Ideology	Command-and-control approach with streamlined local administrative authority.	Market-based instruments blending environmental mandates with energy infrastructure.	Decentralized governance leveraging formal laws with informal social sanctions.	There are many laws with conflicting intentions, leading to a lack of unity.
Legal Status of the Citizen	Active contributors operating within a legally balanced regime of rights and duties.	Co-producers of green energy bound to return material value to closed loops.	Communal stewards subject to continuous state and localized social peer review.	Passive recipients shifting the entire logistical and financial burden onto the public sector.

Conclusions and Recommendations

The evolution of household waste legislation must transcend the perception of waste as mere refuse, moving toward a framework where waste is redefined as a resource that every individual is legally obligated to manage in collaboration with the state. The exercise of state power to restrict the liberty of indiscriminate disposal—whether through the amendment of existing statutes or the enactment of a new specific Act dedicated to household waste management—serves as a pivotal instrument in establishing a sustainable 'Civic Role in Environmental Stewardship' that aligns with international standards. An analysis of the legal nexus between state authority and civic duties reveals that surmounting Thailand’s legal impediments necessitates a structural legal reform. This reform must be grounded in theoretical principles and successful international experiences, adapted to the Thai context. Accordingly, the recommendations for developing household

waste management legislation to further enhance the role of the public are as follows:

1. Transposing Constitutional Duties into Statutory Obligations

To address the lack of enforceable provisions regarding "civic duty" at the operational level, the State must utilize the Constitution of the Kingdom of Thailand, 2017, Section 50 (8), as a legal basis for the Parliament to enact a primary statute (Act of Parliament). This legislation should explicitly mandate "source segregation of solid waste" as a mandatory duty for all households. Furthermore, a clear definition of "environmental civic duty" should be established within the household waste management law. This would provide the State with the legitimate authority to intervene in waste management behaviors within private domestic spaces—analogueous to the powers granted under Section 46 of the UK’s Environmental Protection Act. Such a legal framework would prevent individuals from invoking the right to privacy as an impediment to

waste segregation practices intended for the public interest.

2. Reforming Existing Statutes to Establish Behavioral Enforcement Mechanisms

It is proposed that the lack of coordination among the three primary statutes be addressed through the following legal reforms:

2.1 Enhancement and Conservation of National Environmental Quality Act 1992: Provisions should be incorporated to empower the State to issue "Household Waste Management Standards" and implement Economic Instruments at the individual level. This ensures that the Polluter Pays Principle (PPP) and Law and Economics frameworks possess concrete enforceability rather than remaining mere policy principles without practical effect.

2.2 Public Health Act: The waste collection fee system must be reformed, transitioning from a flat-rate structure to a variable-rate system based on the actual weight or volume of household waste generated (Pay-As-You-Throw). By adopting Japan's standardized garbage bag model, the fee will function as a 'behavioral control instrument' rather than merely a service fee for waste transportation provided by the state to the public.

2.3 Maintenance of Cleanliness and Order of the Country Act 1992: The underlying philosophy of the Act must shift from an emphasis on "aesthetics" to "environmental discipline." Provisions should be added mandating the duty of owners or occupiers of dwellings to segregate household waste. Sanctions, such as administrative fines, should be prescribed for non-compliance with state-defined sorting standards. Furthermore, a "No Sort, No Collect" provision should be enacted, legally empowering officials to refuse the collection of unsegregated waste, thereby creating social enforcement similar to the Japanese model.

3. The enactment of a new primary statute as a specialized law (Lex Specialis) dedicated specifically to household waste management

Beyond the amendment of existing legislation, an alternative approach involves drafting a new, standalone primary law to serve as a specific and centralized framework for

household waste management. The essential substantive provisions of this proposed Act are as follows:

3.1 The Act shall stipulate a comprehensive national policy framework and management plan for household waste, aligned with the National Economic and Social Development Plan. This framework is to be grounded in the principles of the Circular Economy and the Right to a Healthy Environment, emphasizing civic duties and active cooperation with the state.

3.2 The Act shall mandate the establishment of household waste collection and disposal fees, administered by the public sector, utilizing a variable-rate structure based on the actual weight or volume of waste disposed of by citizens. This entails the abolition of the current flat-rate system to ensure that fees function effectively as a behavioral control instrument, incentivizing public compliance with the state's waste management objectives.

3.3 The Act shall stipulate the Extended Producer Responsibility (EPR) principle, mandating that producers establish comprehensive systems for the take-back of packaging from households. This mechanism serves to alleviate the statutory duties of both citizens and the public sector in managing household waste that is difficult to recycle. Furthermore, it utilizes price mechanisms to compel producers to internalize environmental costs, thereby incentivizing the design of products and packaging that are more environmentally friendly.

3.4 The Act shall provide for the implementation of a Deposit-Refund System (DRS), established as a mandatory price-based mechanism for specific categories of packaging within household waste, modeled after the Swedish system. This initiative aims to transform public behavior from the role of 'disposers' to 'returners,' thereby reintegrating resources into the production cycle or facilitating reuse. Under the DRS, a small deposit fee is added to the product price at the point of purchase—such as for plastic bottles or aluminum cans. Upon consumption, citizens may return these containers to redeem the deposit in the form of cash or cash-equivalent vouchers. Furthermore, the operational and financial

management of this deposit-refund mechanism may be administered through the Environmental Fund.

3.5 The Act shall stipulate tax incentives and social welfare measures by granting benefits to citizens who consistently perform waste segregation. Such incentives may include reductions in waste collection fees or discounts on local taxes, such as the Land and Buildings Tax. These measures are designed to encourage voluntary public participation in household waste management, facilitating alignment with state-defined guidelines through positive reinforcement.

References

- [1] Office of the Prime Minister. 2014. Regulations of the Office of the Prime Minister on the National Solid Waste Management System, B.E. 2557 (2014). Royal Thai Government Gazette, 131(Special Part 176 Ng): 1-5.
- [2] Pollution Control Department. 2024. Thailand state of pollution report 2023. Ministry of Natural Resources and Environment, p. 16.
- [3] Constitution of the Kingdom of Thailand, B.E. 2560 (2017). 2017. Royal Thai Government Gazette, 134(Part 40 A): 1-90.
- [4] Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992). 1992. Royal Thai Government Gazette, 109(Part 37): 1-45.
- [5] Public Health Act, B.E. 2535 (1992). 1992. Royal Thai Government Gazette, 109(Part 38): 1-42.
- [6] Maintenance of Cleanliness and Orderliness of the Country Act, B.E. 2535 (1992). 1992. Royal Thai Government Gazette, 109(Part 15): 1-21.
- [7] UN General Assembly. 2022. The human right to a clean, healthy and sustainable environment (Resolution 76/300). undocs.org.
- [8] United Nations Conference on the Human Environment. 1972. Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration). UN Doc. A/CONF.48/14/Rev.1. Principle 16.
- [9] Pigou, A.C. 1920. The economics of welfare. Macmillan and Co., pp. 192-194.
- [10] Inoue, T., Sato, M. and Tanaka, K. 2023. Behavioral responses to variable-rate pricing mechanisms: Empirical evidence of the Pay-As-You-Throw (PAYT) system in metropolitan municipal solid waste management. *Waste Management*, 168: 45-56.
- [11] Sarker, M.A.R., Rahman, M.M. and Islam, M.S. 2024. Economic instruments for household behavioral control: Assessing flat-rate fee limitations versus volumetric waste billing under the Polluter Pays Principle. *Law & Economics Review*, 41(2): 211-228.
- [12] European Commission. 2008. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Waste Framework Directive). *Official Journal of the European Union*, L 312: 9-12.
- [13] UN Conference on Environment and Development. 1992. Rio declaration on environment and development. UN Doc. A/CONF.151/26 (Vol. I). Principle 16.
- [14] Sachs, N. 2006. Planning the funeral at the birth: Extended producer responsibility in the European Union and the United States. *Harvard Environmental Law Review*, 30(1): 51-55.
- [15] European Environmental Bureau [EEB]. 2025. Advancing circular economy packages: Realizing co-responsibility ecosystems through unified Extended Producer Responsibility (EPR) and Deposit-Refund Systems (DRS) in the European Union (EEB Publications & Reports). European Environmental Bureau.
- [16] Filho, W.L., Salvia, A.L., Bonoli, A., Saari, U.A., Voronova, V., Klõšeiko, K. and Madruga, L.R.R.G. 2022. An assessment of Extended Producer Responsibility (EPR) in packaging waste management: Global trends and policy recommendations for circular economy integration. *Environmental Science & Policy*, 136: 122-134.

- [17] Environmental Protection Act 1990 (c. 43). Section 46. Available online: legislation.gov.uk
- [18] Abbott, C. 2009. Enforcing environmental law: Central government-local government relations and the role of the courts. Hart Publishing, pp. 112-115.
- [19] Fisher, E., Lange, B. and Scotford, E. 2019. Environmental law: Text, cases, and materials (2nd ed.). Oxford University Press, pp. 562-565.
- [20] Swedish Ministry of the Environment. 1998. The Swedish environmental code (1998:808). Government Offices of Sweden. Chapter 15, Sections 1-11.
- [21] Dahlén, L. and Lagerkvist, A. 2010. Evaluation of recycling programmes in municipalities. Waste Management, 30(8-9): 1502-1505.
- [22] Waste Management and Public Cleansing Act (Act No. 137 of 1970). (Japan). Article 6-2, pp. 12-15.
- [23] OECD. 2016. Extended producer responsibility: Updated guidance for efficient waste management. OECD Publishing, pp. 68-72.
- [24] Fisher, E., Lange, B. and Scotford, E. 2019. Environmental law: Text, cases, and materials (2nd ed.). Oxford University Press, pp. 568-571.
- [25] Kaza, S., Yao, L., Bhada-Tata, P. and Van Woerden, F. 2018. What a waste 2.0: A global snapshot of solid waste management to 2050. World Bank Group, pp. 102-105.
- [26] OECD. 2016. Extended producer responsibility: Updated guidance for efficient waste management. OECD Publishing, pp. 82-85.
- [27] Sands, P. and Peel, J. 2018. Principles of international environmental law (4th ed.). Cambridge University Press, pp. 255-258.