

The Development of Legal Frameworks for Recyclable Waste Management by Local Government Organizations

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Abstract

This research article aim to study the issues of participation by producers and the public in the management of recyclable waste, by comparing foreign laws and proposing guidelines for the development of Thai legislation. The research is based on a qualitative research, by conducting document research, analyzing provisions of Thai law, foreign laws, and relevant academic documents.

Research findings show that Thai law lacks provisions that clearly define the duties of producers and the public in separating and managing recyclable waste, and there are no economic measures to create incentives. As a result, the burden of waste management mainly falls on local government organizations, leading to less effective recycling management. In contrast, the laws of the Federal Republic of Germany, the Republic of Korea (South Korea), and Japan clearly define the responsibilities of producers and the public and use economic measures to promote tangible participation. Therefore, Thailand should develop its laws by specifying duties for separating recyclable waste, defining the responsibilities of producers, and implementing economic measures to sustainably improve the efficiency of recyclable waste management by local government organizations.

Keywords: Legal Framework, Recyclable, Waste Management.

Background and Statement of the problem

Environmental issues are a crucial aspect of national development, as natural resources are fundamental to human life and economic and social development. Environmental policy aims to maintain environmental quality for sustainable development,

a concept that emphasizes the balanced use of natural resources while preserving environmental quality for the benefit of present and future generations. Thailand has established important legal mechanisms, including the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992), which sets environmental quality standards and mechanisms for pollution prevention and control, as well as the Polluter Pays Principle. (Sureeporn Salapsri, 2024)

Currently, waste is one of the world's major environmental problems, including in Thailand, which has to deal with continuously increasing amounts of solid waste. This is a result of urban growth, higher consumption by the population, changes in resource use behavior, and the convenience-driven online ordering of products and food. All of these factors contribute to the rising amount of municipal solid waste and plastic waste, which have impacts on the environment, public health, and people's quality of life. Particularly, if recyclable waste is properly managed, it can create economic value and reduce environmental impact. The key principle in internationally recognized waste management is the 3Rs: Reduce, Reuse, and Recycle. This approach aims to reduce waste at the source, promote efficient resource utilization, and minimize long-term environmental impact. (Atthachai Donjunla and Sudabhorn Khitkhulnamchai, 2025)

In the context of local governance in Thailand, waste management is a crucial responsibility of local administrative organizations. This aligns with the principle of decentralization, which aims to enable local agencies to effectively manage resources and address problems in a manner consistent with local conditions and the needs of the people. Laws concerning decentralization stipulate that local administrative organizations play a vital role in the conservation of natural resources and the environment, including waste management within their areas. (Sunee Mallikamarl, 2026)

Waste Volume Statistics in Thailand, 2024: Thailand generates approximately 26.95 million tons of solid waste. It was found that 9.31 million tons (34.5%) of solid waste were recycled, 10.17 million tons (37.7%) were properly disposed of, and 7.47 million tons (27.7%) were improperly disposed of (National Statistical Office, 2024) From the information above, the recycling rate statistics remain low. If recyclable waste is not managed properly, it will have a negative impact on the environment, causing various forms of pollution such as foul odors, wastewater, disease-carrying pests, and contributing

to an increase in global atmospheric temperature. Part of this problem is the lack of participation from producers and the public in managing recyclable waste, as follows. (Thai PBS, 2024)

The problem of participation by producers and the public in managing recyclable waste, especially the sorting of recyclable or reusable waste, currently lacks cooperation from the public. Even though the Act On The Maintenance of The Cleanliness and Orderliness of the Country, B.E. 2535 (1992) stipulates the duties of individuals and local authorities, Section 8 (2) requires owners or possessors of buildings or land not to neglect waste disposal on their property. Combined with Section 54, violators are subject to a fine of up to two thousand baht. Sections 6 and 7 specify the duties of building owners or occupants to maintain cleanliness of sidewalks and surrounding areas, and Section 33 in conjunction with Section 57 sets a fine of up to 10,000 baht. It can be seen that this Act focuses on cleanliness, prohibiting littering in public places and stipulating fines only for those who dispose of waste improperly. However, it does not establish any measures requiring people who dispose of reusable or recyclable waste to separate it before disposal, nor does it impose any fines for failing to do so. This results in a lack of public participation in waste separation, leading to mixed waste that is not sorted from the source and wasting local budgets on separating recyclable waste. Furthermore, local administrative organizations lack mechanisms to enforce citizens' responsibility for source waste separation. In comparison, South Korea uses economic measures to create both negative and positive incentives regarding whether to charge a fee for recyclable waste collection. (Yongjin Lee, 2019)

For waste generators, according to the Ministerial Regulation Hygienic Waste Management B.E. 2560 (2017) Section 2, which states, “waste producer” means dwellers and the owner or the possessor of a building, establishment, service center, industrial factory, market place, or other places in which waste is generated. The Ministerial Regulation is stipulated to cover producers in generating waste as follows. To make the law enforceable, it is necessary to clearly define the duties for sorting recyclable waste, following the examples of the Federal Republic of Germany and Japan. Local administrative organizations should be empowered to implement administrative measures, and producers should be held responsible for packaging based on the “polluter pays principle”

principle, establishing producer responsibility. Solving the recyclable waste problem at the local level cannot rely solely on citizens sorting waste at the source or on local administrative organizations collecting waste at the endpoint. It is essential for private sector producers to participate as well, in order to manage recyclable waste effectively and sustainably.

The Constitution of the Kingdom of Thailand, B.E. 2560 (2017) places great importance on the process of public participation. It provides avenues for people to participate through the exercise of direct rights. Provisions regarding community rights and the state's duties related to the management of natural resources and the environment are presented in two parts as follows. The first part is the provisions in Chapter 5 on the Duties of the State. Section 57 (2) stipulates that the state has the duty to conserve, protect, maintain, restore, manage and use or arrange for utilisation of natural resources, environment and biodiversity in a balanced and sustainable manner, provided that the relevant local people and local community shall be allowed to participate in and obtain the benefit from such undertaking as provided by law. Part Two, provisions in Chapter 3 concerning the rights and Liberties of the Thai people, Section 43, stipulates that both individuals and communities have the right to manage, maintain, and benefit from natural resources and the environment, as well as biodiversity. The aforementioned section is directly related to public participation and the duty to care for the environment as prescribed by law.

Therefore, this research article aim to study the development of laws for the management of recyclable waste by local administrative organizations. The study scope focuses on issues of participation by producers and the public in recyclable waste management under Thai law and compares international approaches, in order to provide recommendations for the development of laws on recyclable waste management for local administrative organizations in Thailand.

Objective

1. To study the issues of participation by producers and the public in recycling waste management.
2. To study concepts, theories, and principles related to the development of legal frameworks for recyclable waste management by local government organizations.
3. To study Thai law and foreign laws related to the development of legal frameworks for recyclable waste management by local government organizations.
4. To develop proposals for guidelines on improving the development of legal frameworks for recyclable waste management by local government organizations.

Expected benefits

1. Received an understanding of the issues regarding the participation of producers and the public in managing recyclable waste.
2. Received knowledge of concepts, theories, and principles related to the development of legal frameworks for recyclable waste management by local government organizations.
3. Received knowledge about Thai laws and foreign laws related to the development of legal frameworks for recyclable waste management by local government organizations.
4. Received proposals for developing legislation on the development of legal frameworks for recyclable waste management by local government organizations.

Research Methodology

The qualitative research by document research has established a procedure for conducting qualitative research, which includes data collection through documentary research. The focus is on analyzing relevant documents such as concepts, theories, principles, Thai laws, foreign laws, as well as various academic documents, information from the internet, and related research data to study the development of legislation for the management of recyclable waste by local administrative organizations.

Research Results

From the study of the participation issues of producers and the public in managing recyclable waste under Thailand's legal system, analyzed alongside the concepts, principles, and theories of environmental law, and compared with foreign laws, it was found that current Thai law still has structural limitations in defining the duties and responsibilities of those involved with recyclable waste. This results in an inability to establish a legal mechanism to genuinely enforce participation.

1. Issues with producer participation in managing recyclable waste

The study found that, according to the Public Health Act B.E. 2535 (1992), Sections 18 and 20, which grant local administrative organizations the authority to manage waste, as well as the Ministerial Regulation Hygienic Waste Management B.E. 2560 (2017), Clause 2, which states that “waste producer” means dwellers and the owner or the possessor of a building, establishment, service center, industrial factory, market place, or other places in which waste is generated. the ministerial regulation also includes producers as waste generators. Although these provisions legally establish producers as 'waste generators,' the law does not specify any particular responsibility for producers to manage recyclables generated from their products.

This issue reflects the gap in Thai law regarding the legal duties of producers, which differs from merely defining them as 'waste generators.' Assigning a status without corresponding duties or enforcement measures does not produce practical effects. Since the law does not establish duties and enforceable conditions, it cannot create legal liability. In other words, although producers may be the factual generators of waste, they are not legally responsible.

Such a structure contradicts the Polluter Pays Principle, which is a fundamental principle of environmental law. The Polluter Pays Principle is an environmental economic concept that requires those who cause pollution to be responsible for the damage and environmental costs incurred. (Nattha Tanayapong, 2015) and it is an economic tool to make prices reflect the true environmental costs. (Waranan Tantiwat et al, 2014) Polluters are required to bear the costs of remedying, compensating, and preventing environmental damage. (Ayukorn Boonakat, 2023) Which aims to prevent the costs from falling on society or the state, and to create fairness in terms of the environment.

(Sumittra Jhermpun, 2014) In legal terms, this principle is also applied in establishing legal measures, such as imposing fines or charging for environmental restoration costs. It is considered an important mechanism that helps ensure accountability for the impacts of economic activities and helps reduce pollution problems in the long term. (Pitak Sasisuwan, 2024) In the past, producers or users of natural resources often did not include these costs in the prices of goods or services, resulting in the overuse and degradation of resources. (Udomsak Sinthipong, 2018) This principle is also similar to the user-pays principle and plays an important role in encouraging producers and consumers to change their behavior to reduce environmental impacts. (Muneeroh benkob, 2023) However, since Thai law does not stipulate the responsibility of manufacturers for recyclable waste, while Thai waste management laws and community waste management plans follow a linear economy model, the 'collection, transport, and disposal' process focuses on the responsibilities of local administrative organizations but does not assign duties to all sectors. This makes the management of the problem still incomplete throughout the system, lacking a source-separation system, and there is still no specific Waste Management Act or Packaging Waste Management Act. (Sujitra Vassanadumrongdee, 2021)

In addition, when considered according to the Extended Producer Responsibility (EPR) theory, the concept requires producers to be responsible for the environmental impacts of products and packaging throughout their life cycle. (Office of Natural Resources and Environmental Policy and Planning, 2024) From design and production to post-consumption management, especially the establishment of a system for product or packaging returns to reduce waste and increase recycling efficiency, this principle helps to distribute the responsibility from local government authorities to producers and consumers, who are the ones generating the waste. It helps address waste management issues caused by not sorting waste at the source and serves as a principle to encourage producers to take environmental responsibility to reduce waste problems. (Public Relations Department, 2023)

Compared to foreign laws, for example, the Federal Republic of Germany has adopted the principle of Extended Producer Responsibility (EPR), which is codified in the law on packaging waste management, namely The Ordinance on the Avoidance of

Packaging Waste (BGB1. I 1991 S. 1234). The state uses the principle of Extended Producer Responsibility (EPR) as a policy tool to require producers or brand owners in each industry to be responsible for packaging and product waste throughout the product's life cycle after consumption. Producers must participate in establishing take-back systems to collect and manage such waste effectively. This measure aims to reduce the burden on local authorities responsible for managing packaging and product waste. Although the principle of increased producer responsibility focuses primarily on the role of producers, in establishing legal measures, the state has also extended responsibility to other relevant sectors, such as retail operators, local governing bodies, and consumers. (Sujitra Vassanadumrongdee, 2020) And the deposit–refund system (Pfand) for beverage bottles and cans, where consumers receive a refund when they return the packaging. This system results in a return rate of up to 98 percent for bottles in Germany. (Martina Igini, 2022) It also creates a direct economic incentive by allowing the public to return bottles or cans at collection points in stores to receive their deposit back, which encourages participation. The purposes of the Deposit–Refund System are: 1) to create an economic incentive for the public to return packaging, 2) to reduce the amount of waste from beverage bottles and cans, and 3) to increase recycling rates, as the returned materials are sent to sorting systems and reused. In Japan, under Article 4 of the Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, it is stipulated that 'Consumers must make efforts to reduce packaging use and separate packaging waste from other waste to promote effective recycling. (Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging (1995), Art. 4) (Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, 1995) And as stipulated in Section Article 11(1) In conducting business activities, pursuant to the fundamental principles, businesses have the responsibility to take necessary measures to prevent or reduce the raw materials, etc. from becoming wastes, etc., in the course of business activities and when raw materials, etc. have become circulative resources in the course of business activities, businesses have the responsibility to undertake proper cyclical use of such resources themselves, or to take necessary measures to enable their proper cyclical use. In cases in which raw materials, etc. cannot undergo cyclical use, businesses have the responsibility to undertake their proper disposal, on their own

responsibility. (Basic Act for Establishing a Sound Material-Cycle Society (2000, Art. 11(1)). (Basic Act for Establishing a Sound Material-Cycle Society, 2000) These provisions reflect the principle of 'Extended Producer Responsibility (EPR),' which is an important tool for fostering collaboration between the government, private sector, and the public. In the Republic of Korea, an Extended Producer Responsibility (EPR) system is implemented, requiring producers and importers to take back and recycle their packaging or products at the end of their life cycle. Failure to comply incurs additional fees. This system helps alleviate the burden on local government organizations and promotes waste management through a circular economy approach. (Ministry of Environment of Korea, 2021)

It was found that all three countries have mandated that producers are legally obligated to take back and recycle their own packaging, and are responsible for the costs of carrying out these activities. This reduces the burden on local authorities and increases the efficiency of the recycling system. However, Thai law has not yet established this principle as a legal duty. As a result, the legal relationship between 'producers' and 'product-generated waste' is disconnected, leaving producers without a legal incentive to reduce waste or support recycling.

In conclusion, the problem of the lack of provisions clearly defining the responsibilities of manufacturers in managing recyclable waste is a major obstacle to developing an efficient and sustainable recycling management system.

2. The problem of lack of public participation in managing recyclable waste

The study found that although The Constitution of the Kingdom of Thailand, B.E. 2560 (2017) guarantees the rights and duties of the people to participate in the management of natural resources and the environment, related acts at the legislative level, such as the Act On The Maintenance of The Cleanliness and Orderliness of the Country, B.E. 2535 (1992), show that the law is intended to control public littering by prohibiting the disposal of waste or garbage in public places and setting penalties for offenders. However, the law does not stipulate the 'duty of citizens to separate recyclable waste.' Legally, this means that failing to separate waste is not considered an offense and cannot lead to punishment, resulting in public participation being voluntary rather than a legal obligation.

For a person to be legally liable, certain key elements must be present: 1. There is a legal provision establishing a duty, 2. The duty is breached, and 3. There is a binding condition. However, when the law does not specify a duty to separate waste, the first element does not occur, resulting in no legal liability, even though failing to separate waste affects the recycling waste management system.

From the aforementioned legal issues, when analyzed according to the concept of public participation, public involvement is considered a fundamental foundation for sustainable development. It also promotes the joint utilization of potential across various sectors to integrate participation in multiple areas, one of which is the effective conservation and management of the environment. (Laksamee Ketsakul and Chutarat Chompunth, 2016) The principle of public participation is an important universal principle in decentralization, allowing people to have a role in decision-making regarding administration and resource allocation that affects public benefits and quality of life. (Sirichai Kumanchan, 2023) Public participation is a key principle in environmental management and waste management systems. (Sujitra Vassanadumrongdee et al, 2022) The public must play a role both as 'rights holders' and 'duty bearers.' However, Thai law focuses on 'rights' but does not define 'duties,' which results in the public having no legal responsibility and remaining merely as 'recipients of government services,' despite being 'producers of waste.' At the same time, when analyzed according to the principles of environmental economics (Economic Incentives), economic incentives are financial measures used to adjust the costs for polluters so that they reflect the true environmental costs based on the 'polluter pays' principle, instead of relying on direct government mandates. Key measures include: 1. Environmental taxes and fees. Collecting environmental fees and taxes is an economic tool to make polluters responsible for environmental costs. (Warissanee Meekaeo, 2001) 2. Subsidies 3. Emission trading systems 4. Deposit–refund systems and 5. Environmental funds to encourage environmentally friendly behavior. Although these measures are more efficient and lower in cost than command-and-control approaches, they still have limitations in terms of fairness and the difficulty of setting appropriate rates. (United States Environmental Protection Agency, 2025) The use of economic tools helps improve the efficiency of pollution and waste management. (Office of Small and Medium Enterprises Promotion,

2023) The lack of such measures in Thai law has resulted in people having no economic incentive to separate their waste, leading them to throw it all together since there is no difference in cost.

Compared to foreign laws, such as in the Republic of Korea, South Korea uses a Volume-Based Waste Fee System (VBWF) since 1995, where citizens purchase garbage bags issued by local government organizations to dispose of general waste. Recyclable waste can be disposed of free of charge, which incentivizes citizens to separate waste from the source. (Yongjin Lee, 2019)

In conclusion, the problem of the lack of public participation in Thailand does not stem from the absence of rights recognition, but from the lack of legal mechanisms that clearly define duties and incentives, reflecting a discrepancy between legal principles and their practical implementation.

Summary of the study

The study on producer participation revealed that, although Thai law designates producers as waste generators under the Ministerial Regulation Hygienic Waste Management B.E. 2560 (2017), there are no provisions directly assigning producers responsibility for recyclable waste from their products or packaging. Producers, as the source of packaging and products that generate recyclable waste, do not have a legal obligation to directly manage waste generated from their products. Even though relevant laws designate producers as waste generators, they do not specify a duty to sort or recover recyclable waste. As a result, waste management responsibility remains primarily the burden of local administrative organizations. Furthermore, the study on public participation found that, despite the 2017 Constitution guaranteeing the right of citizens to participate in natural resource and environmental management, relevant waste management laws do not clearly define the public's duty to sort recyclable waste. Therefore, waste sorting remains voluntary, not a legal obligation.

Discussions

Research on the issue of producer and public participation in recycling management reveals that current Thai law lacks clear provisions defining the duties and responsibilities of producers and the public in sorting and managing recyclable waste. Most relevant laws focus primarily on defining the authority of local administrative organizations to collect, transport, and dispose of solid waste, without establishing concrete mandatory or economic incentives to encourage producer and public participation in waste sorting at the source. As a result, the burden of recycling management falls solely on local administrative organizations, leading to inefficient recycling management. This is because effective recycling management requires cooperation from all sectors, especially producers who are the source of packaging and products, and the public who are consumers and direct generators of waste. However, since Thai law does not clearly define these responsibilities, it is impossible to create incentives or enforce genuine participation. This differs from the laws of the Federal Republic of Germany, the Republic of Korea, and Japan, which clearly define the responsibilities of producers and the public, and utilize economic measures such as packaging deposit systems and waste-based fee systems to promote participation. As a result, these countries have more efficient recycling management and reduced the burden on local administrative organizations.

The research findings are consistent with the principles of environmental economics (Economic Incentives), which explain that the use of economic measures such as fees or incentives can help change the behavior of polluters to consider environmental costs and promote more environmentally friendly behavior. Furthermore, it aligns with the Polluter Pays Principle (PPP), which holds polluters responsible for the impacts and costs incurred, creating fairness and reducing the burden on the government. Simultaneously, the research aligns with the theory of Extended Producer Responsibility (EPR), which emphasizes that producers are responsible for their products throughout their life cycle, including the management of end-use products. This principle reduces the burden on local governments and improves the efficiency of recycling management. Finally, it aligns with the concept of public participation, which recognizes that public involvement is a crucial component in sustainable resource and environmental management, as citizens play a direct role in sorting and reducing waste at the source.

In summary, the main causes of producer and public participation in recycling management in Thailand stem from the lack of clear legal provisions and appropriate incentives. Developing laws that align with environmental economics principles, the polluter pays principle, producer responsibility theory, and the concept of public participation would promote concrete involvement and lead to effective and sustainable recycling management by local administrative organizations.

Recommendations

This research on “The Development of Legal Frameworks for Recyclable Waste Management by Local Government Organizations” focuses on the issue of producer and public participation in recycled waste management. The researchers have the following recommendations: Public participation in recycling waste management according to the Act On The Maintenance of The Cleanliness and Orderliness of the Country, B.E. 2535 (1992), which focuses on maintaining cleanliness, prohibits littering in public areas, and sets fines for improper disposal. To make the law enforceable, it is considered necessary to establish measures requiring those who dispose of recyclable waste to sort it before disposal and impose fines on those who fail to comply. As for the Public Health Act B.E. 2535 (1992), which focuses on defining the responsibilities of local administrative organizations in waste management, the Act does not specify how the public should handle recyclable waste. Therefore, in order to make the law enforceable, it is deemed necessary to clearly define the duties of the public in managing recyclable waste. The public should separate recyclable waste from the source, and there should be measures to provide incentives, such as reducing fees or granting benefits to those who properly separate waste, or using economic measures to create negative or positive incentives regarding the collection or non-collection of recyclable waste fees. If these duties are not followed, there should be fines imposed. Producer Participation in Recycling Waste Management According to the Ministerial Regulation Hygienic Waste Management B.E. 2560 (2017), Section 2 states, “waste producer” means dwellers and the owner or the possessor of a building, establishment, service center, industrial factory, market place, or other places in which waste is generated. The ministerial regulation also applies to producers in generating waste. Therefore, to make the law enforceable, it is necessary to

clearly define the duties of sorting recyclable waste and to establish the responsibilities and scope of liability of producers in generating waste. Failure to comply may result in additional fees or legal penalties.

Suggestions for future research include whether there should be specific legislation on packaging waste management in Thailand, and what mechanisms for accountability throughout the product's life cycle should be established.

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