

A Comparison Study of Fiscal Policy in Different Countries Regarding Plastic Waste Management in Supporting the Achievement of Sustainable Plastic Production and Consumption Patterns in Indonesia

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Abstract

Nowadays, plastic waste management has become an international issue. Plastic waste that is not managed will end up in the ocean and cause dangerous pollution. Environmental issues were agreed to be one of the SDGs goals proclaimed in 2015 by all countries members of the United Nations. All countries, including Indonesia, have implemented various pro-environment policies. One of them is through fiscal policy. How to determine the right fiscal policy so that the management of plastic waste to realize a sustainable pattern of plastic production and consumption to be optimal is important. One of them is by conducting comparative studies on the fiscal policy of plastic waste management in various countries as a policy benchmark. It is what the author did. This research uses a qualitative approach with a comparative study method regarding the form of fiscal policy in various countries used to manage plastic waste. This research data was obtained through literature studies from various journals, articles, and reports on fiscal policy of plastic waste management in various countries and then concluded various similarities and differences. It is hoped that studying various forms of fiscal policy in various countries can provide input to the Indonesian government on the right form of fiscal policy to create a sustainable pattern of plastic production and consumption in accordance with the SDGs goals to be achieved by the Indonesian government.

Keywords: *Plastic Waste, Fiscal Policy, Comparative Study, SDGs.*

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A. INTRODUCTION

In Indonesia, the management of waste management, especially plastic waste, has now become a national issue in relation to environmental sustainability which requires the seriousness of the government and the community in dealing with it. Director of Sustainable Waste Indonesia (SWI) Dini Trisyanti quoted by Syahni(2019)said that in research conducted by J. Jambeck (researcher from the United States), the population of the United States uses an average of 38 million kilograms of plastic per day, but the number of mismanaged plastic waste in the United States does not exist. Different things are experienced by Indonesia, with the total amount of waste according to data from the Ministry of Environment and Forestry (KLHK) an average of 175 thousand tons per day or 64 million tons per year, of which 10% to 15% is plastic waste, while the amount of plastic waste that is only about 10% to 15% can be recycled, which ends up in landfill around 60% to 70%, and 15% to 30% wasted into rivers, lakes or seas. This means that the recycling rate of plastic waste in Indonesia is still low or in other words, plastic waste in Indonesia is not managed properly.

In the context of controlling plastic waste, the government has actually issued Presidential Regulation Number 97 of 2017 concerning National Policies and Strategies for the Management of Household Waste and Similar Household Waste as a guide in implementing waste management using the 3R (Reduce, Reuse, Recycling) strategy or the known as the circular economy for waste management (in this case plastic waste). Based on estimates from the Ministry of Environment and Forestry of the Republic of Indonesia (KLHK) there will be 71.3 million tons of waste in Indonesia by 2025 if waste management is not managed properly. (Patrick, 2019).

In the process of recycling plastic waste, there is an industry that has an important role as the executor, namely the Plastic Recycling Industry (IDUP). Data from Sustainable Waste Indonesia (SWI) states that only about 10% of the total plastic waste in Indonesia is recycled (Syahni, 2019). The following is a picture of the plastic waste recycling cycle process with the circular economy concept.

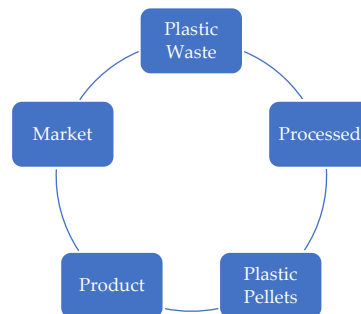


Figure 1 Plastic Waste Economic Circular

Source: Halim et al. (2018)

IDUP, in carrying out its functions, still has a limited production capacity, meaning that there is still much plastic waste that is not recycled and ends up in the ocean. Data from the Ministry of Industry, Directorate General of Chemical, Pharmaceutical, and Textile Industries (IKFT) in 2019 said that the per-capita plastic consumption of the Indonesian people was 22.5 kg with a growth of 6% to 7% per year. The following compares plastic production and consumption in Indonesia, which indicates that domestic plastic needs are still not being met.

Table 1 Comparison of Plastic Production and Consumption in Indonesia (Tonnes)

	2017	2018
Production	6,684,497	7,230,427
DN supply	6,195,159	6,745,981
Consumption	6,998,224	7,600,625
Export	489,338	484,446
Import	803.065	854.644

Source: Kementerian Perindustrian RI (2020)

From the data above, it can be seen that there is still a gap between IDUP's ability to supply recycled plastic raw materials compared to the total national IDUP raw material needs, so there are still opportunities for IDUP to continue to grow. Given the important role of IDUP in the circular economy of plastic waste management, it is only natural for

the government to participate in promoting the sustainability of IDUP, one of which can be through fiscal policy.

The role of the plastic recycling industry as the spearhead of plastic waste processing in Indonesia is in line with the results of the 70th General Assembly of the United Nations (UN) in September 2015 in New York, United States, which became a new historical point in global development known as the term Sustainable Development Goals or SDGs. The processing of plastic waste through recycling has become a goal that must be achieved as stated in the SDGs targets, especially the 12th global goal, namely "Ensuring sustainable production and consumption patterns".

In carrying out fiscal policy reconstruction, especially related to IDUP as the spearhead of plastic waste management while realizing SDGs goal 12, the government can also compare with policies in other countries, for example, whether to impose taxes or provide tax incentives or even both.

B. LITERATURE REVIEW

The implementation of fiscal policy towards the plastic recycling industry in the context of managing plastic waste and to achieve the 12th SDGs goal is one form of government intervention considering the market failure that occurred in Indonesia, especially in the management of plastic waste management which must be addressed immediately. This is based on the Welfare State Theory stated by Briggs (1961) in Andersen(2012). This condition is also in line with one of the functions of taxation as a form of fiscal policy, namely as an Instrument of Economic and Social Policy which is a non-fiscal function as stated by Peck (1936). In the current era, according to Alink and van Kommer (2015, p. 6) taxes are also used in modern society to finance various public services such as:

1. Education system;
2. Waste collection;
3. Unemployment

This means that taxes can also be earmarked, namely tax revenues are not only used as a source of state revenue in order to carry out overall development, but tax revenues can also be used for certain purposes, one of which is to preserve the environment (Alink & van Kommer, 2015). The function of tax as economic, political, and social engineering was also stated by Prof. Dr. Haula Rosdiana in her presentation at the Philanthropy Learning Forum. She mentioned that in order to carry out one of its roles as a regulator in achieving resilience in all sectors such as food, energy, and the environment as well as overcoming negative externalities, the state can intervene through tax regulation policies and subsidies (Rosdiana, 2015). The right form of fiscal policy in this case, according to previous research conducted by Cheng and Shi (2015) it turns out that countries such as the United Kingdom (UK), United States (US), South Korea, Japan, France use fiscal policy in the form of penalties and incentives in order to preserve the environment globally. In the context of Indonesia regarding the management and control of plastic waste, the government has implemented taxes in the form of a plastic excise tax with the approval of

the Draft Government Regulation on plastic excise. According to the OECD (2007) report on environmental resilience issues, to maintain the sustainability of environmental resilience, the government in constructing tax policies can go through 2 (two) policies, namely (1) imposing taxes such as the imposition of plastic excise and (2) providing tax incentives, for example exemption or reduction of taxes on industries capable of controlling negative externalities on the environment.

C. METHOD

This study uses a qualitative method, one of the characteristics of which is to use a variety of data sources such as interviews, observations, documentation, and audio-visual information which is then processed according to the research objectives (Cresswell, 2018). Data collection techniques are carried out through collecting data and/or information relevant to the purpose of writing through a literature study that examines written sources related to the implementation of plastic waste management policies, both in the form of imposition of taxes/excise/retribution and providing incentives in the world, both journals and reports. The results of the comparative study are used to analyze the implementation of plastic waste management fiscal policies in various countries and the challenges to implementing these policies so that they can provide input on plastic waste management fiscal policies in supporting the achievement of sustainable plastic production and consumption patterns that will be implemented in Indonesia.

D. RESULTS AND DISCUSSION

Based on the literature study conducted, it is possible to compare fiscal policy on the management and control of plastic waste in various countries, namely:

1. Thailand

In proper waste management, Thailand has established the National 3R Strategy and the National Master Plan for Waste Management (2016–2021). Furthermore, Thailand also launched the "2017–2021 Plastic Waste Management Plan", which consists of several approaches, such as promotion and introduction design of environmentally friendly packaging and environmentally friendly plastic substitution, development of material flows for plastic containers and packaging products, implementation of the 3R (reduce–reuse–recycle) strategy for plastic waste management, and increased education for relevant stakeholders in the field of plastics and alternative materials.

In addition, the option to create more effective plastic waste management is to implement laws or revise laws to increase efficiency and reduce the amount of plastic waste, such as charging plastic bags, strengthening 3R measures, and encouraging the implementation of a circular economy in plastic value chain. Although Thailand has a policy, regulatory framework, and plastic waste management plan, the level of participation of waste producers, especially households, in sorting plastic waste from its source is still low. Lack of financial and infrastructure incentives to support plastic waste recycling. For plastic producers, there is no incentive to use recycled plastic as raw material (Wichai-utcha & Chavalparit, 2019).

2. German

Germany's legal framework for waste management began in the early 19th century, when several regions began to adopt waste disposal laws. Germany's first uniform national waste disposal law, the Waste Disposal Act of 1972 (Abfallbeseitigungsgesetz), has been amended and adapted from time to time, and is now the current Waste Management Act (Kreislaufwirtschaftsgesetz – KrWG) (Waste Management, 2014). The essence of the German Waste Management Act is a five-level waste hierarchy that establishes a set of fundamental steps consisting of waste prevention, reuse, recycling and other elements besides, including energy recovery, and finally waste disposal. In each instance, the best option from the point of view of environmental protection always takes precedence, where ecological, technical, economic and social impacts have to be taken into account as well.

Thus, the practice of systematic waste management in Germany actually uses 3R policies that aim to minimize waste accumulation and maximize recycling, while at the same time ensuring that residual waste is disposed of in a manner consistent with the common good. Different types of waste should be collected separately at source (separation of sources at collection points by storing different types of waste in separate containers designed for this purpose) to maximize the recycling potential of different waste streams. Separate collection of different types of waste is required to maintain the specific quality standards of the waste stream for recycling. Under the Waste Management Act, from 2015 separate collection of all waste streams consisting of paper, glass, plastic and household organic waste will be mandatory.

The product liability instrument promulgated by the Waste Management Act defines responsibilities throughout the product life cycle, as well as incentives for manufacturers to make durable products that produce a minimum amount of waste. The product responsibility principle is also intended to ensure the environmentally sound recovery and disposal of final goods. Fiscal policy in this regard, according to Rennings (2004) both about the imposition of environmental taxes in Germany, which was a new thing at the time, so companies tried to run it, but what is no less important is the existence of subsidies (tax preferences) from the government for certain industries such as the plastics industry to reduce the negative externalities generated.

3. Italy

The European Union issued a regulation on plastic waste management No. 904 of 2019 concerning steps towards the formation of a circular economy in which the design and production of plastics and plastic products fully uses the 3R principles. Recycling. Italy as a member of the European Union responded to this by issuing the Italian Budget Law 2020, one of which is related to the regulation of taxation for single-use plastics (MACSI) (Deloitte, 2021). The application of a tax on single-use plastic is imposed on (International, 2021).

- a. Manufacturer/manufacturer;
- b. Seller/retailer;

- c. Buyer/consumer if MACSI is purchased from another EU member for business purposes;
- d. EU supplier if MACSI is obtained from another EU member country which is sold to other private parties;
- e. Importer

Meanwhile, the plastic tax is exempted for:

- a. MACSI which uses recycled plastic as the base material;
- b. If the plastic tax is imposed in a country outside Italy, it can be credited or refunded.

The plastic tax imposed is EUR 0.45 per kg of plastic.

4. Malaysia

In terms of waste management, Malaysia is one of the countries that has been practicing end-of-pipe treatment or regulation for a long time. In essence, end-of-pipe technology is a traditional approach to waste management, where "crush", "drown" or "bury" solutions have received increasing scrutiny. Today, many organizations and individuals have promoted the concept of waste management, whereby they choose options such as waste prevention either through product substitution or process substitution and source reduction through product formulation or process modification and equipment improvement and design. In Malaysia, the Department of Environment (DOE) is responsible for regulating industrial waste. At the same time, the Department of Local Government (DLG) at the Ministry of Housing and Local Government (MHLG) and local authorities are responsible for managing solid waste and/or household waste. To improve solid waste management, Malaysia has taken a phased approach to privatize and centralize its solid waste management.

The hierarchy of waste management standards involves five important steps; reuse, reduction, recycling, processing and disposal. Currently, the most widely used measure in Malaysia is disposal. The Malaysian government continues to promote more effective ways of waste management by encouraging reuse and reduction methods and ultimately reducing landfill waste. To improve solid waste management, Malaysia has taken a phased approach to privatize and centralize its solid waste management. The hierarchy of waste management standards involves five important steps; reuse, reduction, recycling, processing and disposal. Currently, the most widely used measure in Malaysia is disposal. The Malaysian government continues to promote more effective ways of waste management by encouraging reuse and reduction methods and ultimately reducing landfill waste. To improve solid waste management, Malaysia has taken a phased approach to privatize and centralize its solid waste management.

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by encouraging reuse and reduction methods and ultimately reducing landfill waste the most widely used measure in Malaysia is disposal. The Malaysian government continues to promote more effective ways of waste management by encouraging reuse and reduction methods and ultimately reducing landfill waste (MIDA, n.d.) Malaysia provides incentives in the form of tax reductions and even tax exemptions for companies that can carry out waste management. These incentives are known as Waste Eco Park (WEP) incentives. The Malaysian government imposes additional taxes for the environmental taxation itself, especially for the CPO-producing industry.

5. South Korea

The Korean government has implemented the Resource Circulation Act (RCA), which includes a circular economy and resource efficiency policies for overall waste management. Following the RCA concept, a Plastic Waste Management Plan (PWCP) was established for comprehensive plastic waste management in line with the SDGs concept from the United Nations. In order to realize the main objective, three strategies have been set as follows: (1) dividing the circulation system into four stages, namely production, consumption, disposal, and recycling; (2) reduce waste generation before recycling and produce high quality recycled products; and (3) optimizing regional government-based integrated waste management that is easily accessible by the community (Shin et al., n.d.).

In other words, in South Korea, waste management policies have evolved from open dumping to safe disposal, to recycling and converting waste into energy. Various policies were introduced to reduce waste at source, promote recycling and ensure safe disposal. The polluter pays principles are applied to all waste streams; thus, the waste producers pay the fees for collection and disposal. The Volume Based Waste Fee (VBWF) system was introduced in 1995 to reduce the amount of waste disposed and secure recyclable materials, and as has been proven, the Extended Producer Responsibility (EPR) scheme has helped increase the recycling of packaging materials. Government initiatives are expanding the market for recycled materials. Furthermore, the Korean government emphasizes on converting waste into energy.

Currently, the locals welcome the green energy city project as it provides economic benefits for the residents, which has helped to change the existing negative perception about waste disposal facilities. To ensure safe waste disposal, the Ministry of Environment provides subsidies to local governments to install waste disposal facilities, solving the problem of lack of financial resources. The Korean government is accelerating the transition to a circular economy by minimizing resource input, maximizing the reuse and recycling of materials, eliminating waste disposal, and imposing a waste disposal tax on incineration and landfilling. Korean government emphasizes on converting waste into energy. Currently, the locals welcome the green energy city project as it provides economic benefits for the residents, which has helped to change the existing negative perception about waste disposal facilities. To ensure safe waste disposal, the Ministry of Environment provides subsidies to local governments to install waste disposal facilities, solving the problem of lack of financial resources.

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6. Spanish

Because Spain is also a member of the European Union, according to regulations issued by the European Union in the context of handling plastic waste, as the author wrote

when discussing Italy, Spain also responded to the European Union's directives by issuing fiscal policies in the context of handling plastic waste as follows (Sims, 2021):

- a. Imposing a tax on the use of plastic products as of 01 September 2021 at EUR 0.45 per kg for:
 - 1) Manufacturer/manufacturer;
 - 2) European Union suppliers;
 - 3) Importer
- b. Provide an exception to the above tax imposition if:
 - 1) Using recycled plastic;
 - 2) Used for sanitary and health purposes;
 - 3) Plastics for agricultural products;
 - 4) Imports weighing under 5kg;
 - 5) Territorial rules: different regulatory mechanisms (non-tax, exemption, deduction, refund) to ensure that taxes are not paid effectively on products shipped overseas

E. CONCLUSION

From the literature study on fiscal policy in handling plastic waste in various countries mentioned above, the authors classify their fiscal policies into 2 (two) categories, imposition taxation and exceptions or subsidies (exemption) as a form of fiscal incentives. Each of the above countries does it only impose taxes (without providing incentives) or does it impose taxes and provide incentives to achieve a circular economy in plastic waste management.

Countries in the world tend to use 2 (two) strategies, namely on the one hand imposing taxes to reduce the rate of consumption and plastic production, but on the other hand providing incentives to parties who participate in handling plastic waste with 3R policies. Italy and Spain exclude taxes on plastic products made from recycled products. Meanwhile, South Korea to increase its plastic waste recycling capacity, assigns companies to recycle plastic products produced through EPR (Hendra, 2016). Although there is a 3R policy regulation, Thailand itself, its implementation is still slow. Taxes on plastic products in Thailand are still in process, and incentives for the plastic recycling industry are also not in place. For Malaysia itself, the imposition of taxes on single-use plastic products has been implemented, and incentives are provided for companies that can manage waste. These incentives are known as Waste Eco Park (WEP) incentives. How about Indonesia? With the Harmonization of Tax Regulations (HPP) enactment, the imposition of taxes (excise) on single-use plastic products will soon be realized.

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