



TAX ON INDUSTRIAL B3 WASTE AS AN ENVIRONMENTAL CONTROL INSTRUMENT IN BEKASI DISTRICT

Daniel Edgar Hirasma Saragi¹⁾, Amrie Firmansyah^{2)*}

¹⁾4132220069_daniel@pknstan.ac.id, Politeknik Keuangan Negara STAN

²⁾amriefirmansyah@upnvj.ac.id, Universitas Pembangunan Nasional Veteran Jakarta

* correspondence author

Abstract

Industry in an area can cause environmental quality degradation due to hazardous and toxic (B3) waste generated and polluting the environment. To maintain environmental sustainability in the future, it is necessary to establish a policy to control B3 waste disposal activities. Tax, as one of the regular end instruments, is a tool that the government can use to control waste disposal and is a source of earmarking state revenue. This study analyzes the scheme, benefits, and challenges of taxing industrial hazardous waste disposal. Thus, this policy can be a control tool and source of revenue to overcome negative environmental impacts due to company activities. This research applies a qualitative method with literature study data collection techniques. The literature study analyzed documents related to the research topic, such as letters, photo archives, meeting minutes, journals, diaries, etc. The research concludes that taxation of B3 waste disposal can be applied by official assessment by the Bekasi Regency Regional Government by establishing a special location where the tax subject disposes of its waste and determining the amount of tax payable. The rate used is *advalorem*, which refers to the capacity of the waste disposed by the company. Administrative aspects, legal certainty, and supervision are critical in implementing this policy. The policy can be implemented if the government has provided adequate infrastructure, resources, monitoring, and law enforcement mechanisms. This research is expected to prepare public policies related to economic and environmental management by the Indonesian government at the regional government level.

Keywords: Industry, Tax, Waste

Abstrak

Keberadaan industri di suatu wilayah dapat menyebabkan penurunan kualitas lingkungan akibat limbah bahan berbahaya dan beracun (B3) yang dihasilkan dan mencemari lingkungan. Untuk menjaga keberlanjutan lingkungan di masa depan, perlu ditetapkan sebuah kebijakan untuk mengendalikan aktivitas pembuangan limbah B3. Pajak sebagai salah satu instrumen regulasi merupakan alat yang dapat digunakan pemerintah untuk mengendalikan pembuangan limbah sekaligus menjadi sumber penerimaan negara yang bersifat earmarking. Penelitian ini bertujuan untuk menganalisis skema, manfaat, dan tantangan dari penerapan pajak atas pembuangan limbah B3 industri. Dengan demikian kebijakan ini dapat menjadi alat kendali sekaligus sumber penerimaan untuk mengatasi dampak negatif lingkungan akibat aktivitas perusahaan. Metode penelitian yang digunakan kualitatif dengan teknik pengumpulan data studi literatur. Studi literatur dilakukan dengan mengkaji dokumen-dokumen terkait topik penelitian yang berupa surat, arsip foto, notulen rapat, jurnal, buku harian, dan lain-lain. Penelitian memberikan simpulan bahwa pemajakan atas pembuangan limbah B3 dapat diterapkan secara *official assessment* oleh Pemerintah Daerah Kabupaten Bekasi dengan menetapkan lokasi khusus sebagai tempat subyek pajak membuang limbahnya sekaligus ditetapkan jumlah pajak terutang. Tarif yang digunakan adalah *advalorem*, yang mengacu pada kapasitas limbah yang dibuang perusahaan. Aspek administrasi, kepastian hukum, dan pengawasan menjadi titik kritis dalam penerapan kebijakan ini. Kebijakan tersebut dapat diterapkan apabila pemerintah telah menyediakan sarana infrastruktur, sumber daya, dan mekanisme pengawasan serta penegakan hukum yang memadai. Penelitian ini diharapkan dapat berkontribusi pada penyusunan kebijakan publik oleh Pemerintah terkait pengelolaan ekonomi dan lingkungan di tingkat pemerintah daerah.

Kata Kunci: Industri, Limbah, Pajak

INTRODUCTION

Bekasi Regency is an administrative region located in West Java Province. This is one of the largest industrial centers in Indonesia, with big names such as MM2100, Jababeka, and Bekasi Fajar Industrial Estate. Bekasi Regency has the availability of land and a strategic location, thus attracting investors to invest their capital in factory construction (Rahmadi & Widayari, 2023). The industries developed in Bekasi Regency are diverse, ranging from electronics, chemicals, automotive parts, and fast-moving consumer goods (FMCG) to household appliances (Ichsani, 2022). The existence of industry is a driver of economic growth and the largest source of GRDP for Bekasi Regency (Hermawan et al., 2023). However, the



business activities conducted have a negative impact on the surrounding environment in the form of waste (Rahmadi & Widyasari, 2023). If this condition continues, it can affect the quality of the environment and the surrounding community's health.

Bekasi Regency has been damaged by water pollution in 89 villages and soil pollution in 11 villages. Furthermore, data from the West Java Environment Agency showed 1930 companies operating in Bekasi Regency (Dinas Lingkungan Hidup Provinsi Jawa Barat, 2022). These businesses produce B3 waste above the highest range of 293,810 tonnes (Dinas Lingkungan Hidup Provinsi Jawa Barat, 2022). The industry that dominates waste disposal is manufacturing.

The amount of waste produced by industrial actors in Bekasi Regency raises the urgency of control. Control is important so that companies can be forced to manage their waste properly (Rahmadi & Widyasari, 2023). Tax is one of the instruments that the state can use to control the behavior of its people (Sulastyawati, 2014). One of the tax functions is *regulerend*, which means that tax can control people's behavior in a country (Irawan et al., 2023). With the rise of industries that produce waste and pollute the environment, the government needs to take policies to limit corporate waste disposal activities. The tax charge on waste disposal activities is one of the alternatives that can be applied to overcome existing environmental problems.

This topic is important to study because there is a need to overcome environmental damage caused by excessive waste. Besides, in a public policy, the incentive and disincentive aspects are important (Carattini et al., 2018). Tax is an instrument that can be used to manage people's behavior (Irawan et al., 2023). However, conducting an in-depth study of the affected aspects is necessary in formulating a policy.

This research has three objectives. The first objective is to determine the environmental conditions and waste management in Bekasi Regency. Then, this research aims to explain the scheme of waste tax imposition in the Bekasi Regency. Lastly, this research aims to assess the benefits and challenges that could potentially arise in implementing a tax on hazardous and toxic waste in the Bekasi Regency.

Previous research has discussed the implementation of landfill tax as an alternative control for industries and households to reduce solid waste disposal (Ula & Liyana, 2022). This research shows that a country needs to implement a comprehensive circular economy to implement the landfill tax effectively. In addition, other research explains that fiscal support for environmental management is still inadequate due to the limited budget to address the negative impacts of business activities (Alfredo et al., 2020). Other research also explains that to control community activities, the government cannot only apply punishment in the form of taxation. It needs stimulation through incentives for communities or entities that have met environmental standards in their activities (Hidayat et al., 2022). This policy has been implemented in the Netherlands and Malaysia.

This research has some significance. Firstly, the scope of the research location focuses on Bekasi Regency, an industrially concentrated area. Then, this research also uses the concept of negative externality as the basis for the discussion. Contrasting with previous studies, this research also explains the taxation scheme on hazardous waste and the opportunities and challenges of implementing the policy.

Taxing taxes on industrial waste disposal can be an alternative to controlling the behavior of business actors to achieve better environmental conditions. This study aims to analyze the scheme, benefits, and challenges of taxation on industrial hazardous waste disposal so that it can be a control tool and a source of revenue to overcome negative impacts on the environment due to the company's business activities. The existence of tax control instruments is expected to encourage sustainable business management, improve the environment in the long term, and become an alternative to solving problems related to industrial waste. The



novelty of this research is in the form of a policy scheme that does not yet exist in the local government. This research can contribute as a reference for the government in implementing public policies related to the environment and fiscal, specifically in Bekasi Regency.

LITERATURE REVIEW

Hazardous and Toxic Waste (Bahan B3)

Waste is a material produced from labor, work, and many kinds of action (Reno, 2018). The European Council defines waste in several terms, such as spilled materials, expired products, unused components, residues from industrial activities, residues from raw material extraction processes, products that are no longer used, and objects that no longer function properly. Government Regulation (PP) No. 101/2014 explained hazardous and toxic materials as substances or components that can pollute, damage and/or endanger the environment, health, and survival of humans and other living things. Meanwhile, B3 waste contains hazardous and toxic materials. A waste is considered hazardous if it causes an undesirable impact on the human body (Maulida et al., 2022).

PP No. 101/2014 categorizes hazardous waste into several types. First is explosive waste, which can cause an explosion due to a chemical reaction. Second is flammable waste, which, when brought close to a source of fire, will burn easily, causing a fire risk. Third, oxidizing waste, which can produce oxygen, is prone to causing fires. Fourth, corrosive waste is a type of waste whose content can injure the skin and eyes. Fifth is toxic waste, which contains toxic substances that, if absorbed into the body, can cause health effects. The last is infection waste, which contains dangerous disease germs and can be transmitted to those who interact with the waste. There are several challenges in controlling hazardous waste production in the community. Some of these include limited facilities for hazardous waste management inspection, low public knowledge of hazardous waste, many industries that do not have hazardous waste management licenses, and poor legal instruments (Kurniawan, 2019).

Principles of Taxation on Waste

Implementing environmental taxes is one of the ways to address environmental damage caused by waste (OECD, 2011). Environmental taxes are instruments implemented by charging taxes on content proven to harm environmental sustainability. The OECD divides environmental taxes into four clusters: pollution taxes, energy taxes, transport taxes, and resource taxes. Environmental tax collection should be based on several principles. The first is the polluters pay principle, which is the concept that the waste disposer should be the party economically responsible for improving the environment. The second is the prevention principle, which asserts that every country should know the negative potential that can arise from waste to design policies that can prevent these negative impacts. The third is the precautionary principle, which explains that countermeasures are taken for environmental damage that occurs (Latifah, 2016).

Environmental Management

The environment is where living things grow and develop, including humans. Therefore, the environment must be considered properly and preserved to prevent damage that can harm future generations (Nugraha et al., 2021). Environmental pollution is a factor that can continue to be present and threaten environmental sustainability (Rahmadi & Widyasari, 2023). The state has the responsibility to preserve the environment. In addition, as a government organizer, the state needs to understand the concept of sustainability and environmental awareness (Ziaul & Shuwei, 2023). Based on Indonesian Act No. 32 of 2009 on Environmental Protection and Management, the activities covered include planning, utilization, control, maintenance, supervision, and law enforcement. This regulation also explained the purpose of environmental protection and management, including human safety, environmental



sustainability, justice for present and future generations, wise utilization of resources, sustainable development, and anticipation of global issues.

Negative Externality

Externalities are variables that make up the welfare level of an entity, which explains that economic welfare is influenced by other factors, not just dependent on it (Buchanan & Stubblebine, 1962). An externality is considered negative if the resulting impact can harm other parties who do not receive compensation for the activity (Barnet et al., 2021). Several alternatives can be done to overcome the impact of negative externalities, which include imposing taxes per unit of production, providing subsidies, granting pollution rights through auctions, and implementing regulations (Pysmenna & Trypolska, 2020).

Negative externalities are classified into three categories: environmental, social, and economic (Ziolo et al., 2019). In the environmental realm, negative externalities are caused by pollution, degradation of environmental conditions, environmental ecosystem balance problems, waste, and the greenhouse effect (International Labour Organization, 2018). Then, in the social realm, negative externalities are caused by low protection for the citizen, inflation, and unemployment (Grimshaw et al., 2018). In the last domain, the economy, negative externalities are caused by lower quality, quantity, and performance of production in the economic system, increased household costs due to environmental impacts, increased fuel demand, and direct and indirect impacts of operations related to energy, water, and drainage needs (Sundaram, 2016).

Environmental Pollution

Environmental pollution is a condition where substances or other components enter or are introduced into the environment so that they can change the natural settings and processes that occur, causing a decrease in natural quality (Siregar & Nasution, 2020). Environmental pollution can be prevented by implementing several measures, such as changing product composition, raw materials and processing technology, and recycling (Kurniawan, 2019). Supervision of waste production is an important step for the government to take, but certain factors constrain it. Some of these include the lack of officials who can act as supervisors, limited facilities for hazardous waste inspection and treatment, public knowledge, and limited instruments for law enforcement (Kurniawan, 2019). Environmental pollution can be categorized as follows:

Table 1. Categorization of Environmental Pollution

| No, | Types of Pollution | Information | Negative impact |
|-----|--------------------|---|---|
| 1 | Water Pollution | Polluted water becomes unfit for use in daily activities. When contaminated by effluents, water will have an odor, color, taste, and sediment. In addition, the temperature and pH of the water will also change. | It cannot be used for household needs, irrigation, and fisheries. |
| 2 | Air Pollution | Some substances enter the air and contaminate the components of the circulating air. | Direct or indirect skin, respiratory and internal body disorders. |
| 3 | Soil Pollution | Physical and nutrient changes in soil due to interaction with pollutants result in a decrease in their utilization. | Reduces the quality of living things in the soil (earthworms and other fertilizers) |

Source: Dewi, 2014



Earmarking Tax

Earmarking tax is a concept of taxation in which the collectible is used to finance a specific public good, and the public good is only financed from the tax collection (Masihor & Pontoh, 2015). The concept can provide direct benefits by providing a source of funding to protect the environment and increase public confidence in the policies enacted because there is a direct relationship between the tax collected and its use (Kallbekken et al., 2011). There are several advantages and disadvantages to earmarking a tax policy. The advantages include the direct benefits of taxes, increasing new tax revenues, and providing guarantees for public financing not influenced by bureaucracy or the legislative process. Meanwhile, the disadvantages that the application of earmarking tax can cause include the ineffectiveness of budget monitoring, making the budget inflexible, and being prone to misallocating revenue sources.

In Indonesia, the implementation of earmarking tax has been carried out as regulated in the Government Regulation of the Republic of Indonesia Number 35 of 2023 concerning General Provisions of Regional Taxes and Regional Retributions. Article 25, paragraph (1) mandates 10% of Motor Vehicle Tax (PKB) and Opsen PKB revenues to be allocated at least 10% for the construction and maintenance of roads and improvement of transportation facilities. Then, Article 25 paragraph (4) states that at least 50% of Cigarette Tax revenue must be allocated to finance public health services and law enforcement. In addition, Article 25 paragraph (5) mandates that at least 10% of Groundwater Tax revenues be used for activities to prevent and mitigate environmental pollution or damage, including tree planting, infiltration well hole making, forest conservation, and waste management.

METHOD

This research employs qualitative methods and data collection using a literature study. A literature study is an effort to collect relevant materials and information to be studied, read, or utilized (Abd hul, 2023). We collected previous literature on the research theme to be analyzed and used. The literature study focused on content related to environmental management, public policy, and laws and regulations related to the research theme.

The literature study includes several stages, i.e. determining research problems and keywords, searching for literature, selecting literature based on suitability to the research topic, and synthesizing it into research topics. The keywords used included waste, tax, hazardous waste, and industry. Furthermore, We searched the literature on online data sources, including Google Scholar and the Publish or Perish application. Literature selection was done manually and reviewed individually to obtain writings relevant to the research objectives listed in the bibliography. After collecting all data sources and information, We synthesized them into the discussion section to obtain adequate research conclusions.

Picture 1. Stages of Data Collection Using Literature Study



Source: Processed

RESULTS AND DISCUSSION

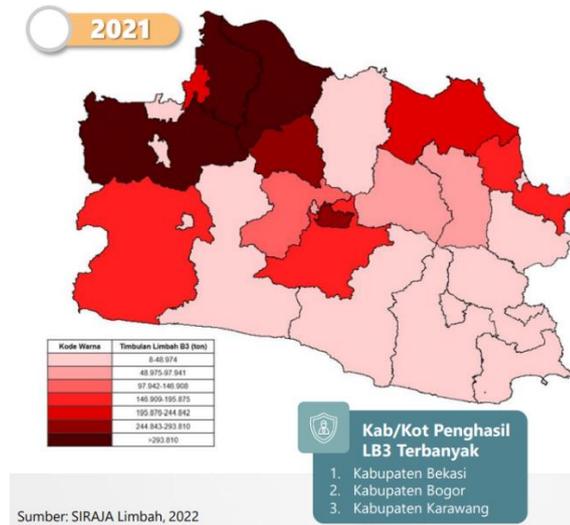
Conditions of Environmental and Waste Management in Bekasi Regency

The triple bottom line is a concept that measures entities from three perspectives: profit, people, and planet. It was first introduced by Elkington in 1994. The three aspects are further described as economic prosperity, environmental quality, and social justice (Felisia, 2014).



Implementing the triple bottom line can help companies balance financial profit and environmental and social interests (Winarno & Sawarjuwono, 2021). However, not many companies are concerned about sustainable business goals. Business actors tend to focus on the economic aspect because it is an aspect that has a direct influence on company valuation and investor appetite in the market (Romadhani et al., 2020).

Picture 2. Regency/City Producing the Most Waste in West Java Province



Source: Dinas Lingkungan Hidup Provinsi Jawa Barat (2022)

This condition occurs in industrial players in Bekasi Regency. As an area with a high population of factories, Bekasi Regency may face environmental risks. Factories provide jobs and economic growth for the region. But on the other hand, this condition also causes abundant waste production. BPS data shows that in Bekasi Regency, 2018, 89 villages experienced water pollution, and 11 villages experienced soil pollution.

Bekasi Regency has the largest hazardous waste operators in West Java Province. Data from BPS shows that 1930 companies operated in Bekasi Regency in 2021 (Dinas Lingkungan Hidup Provinsi Jawa Barat, 2022). Bekasi is confirmed to be the largest hazardous waste-producing area in West Java Province, with waste generation in tonnes at the highest range, > 293,810. The source of hazardous waste is dominated by the manufacturing industry, which is the majority of businesses operating in the region.

Factories in Bekasi Regency also affect environmental conditions such as soil, water and air. A study by (Harjayanti et al., 2023) compared the soil in several locations around the factory with those far from the factory. The results showed that soil conditions close to the factory had a lower pH, higher temperature, and lower humidity than soil in areas not adjacent to the factory. These results indicate that the soil quality around the factory is degraded, partly due to exposure to hazardous waste generated from the production process.

Table 2. Measurement Soil Conditions in Bekasi Regency

| Indikator | Sekitar Pabrik | Jauh dari Pabrik |
|------------|----------------|------------------|
| Ph | 1,20ppm | 8,72ppm |
| Suhu | 25,39°C | 22,74°C |
| Kelembaban | 18,27% | 28,58% |

Source: Harjayanti et al. (2023)

Kusuma et al. (2022) concluded that the water quality in Bekasi District was at an index value of 46.852. When looking at Government Regulation No. 82 of 2001 concerning Water Quality Management and Water Pollution Control, this value is equivalent to the lowest cluster



of water quality groups promulgated in the PP. This directly impacts industrial activities in Bekasi District, which is linear with hazardous waste production.

Table 3. Measurement of Water Conditions in Bekasi Regency

| Status | Amount | Percentage (%) | Coefficient | Score |
|---------------------|--------|----------------|-------------|--------|
| Good | 5 | 5 | 70 | 3,241 |
| Adequate | 81 | 75 | 50 | 37,5 |
| Moderate | 22 | 20 | 30 | 6,111 |
| Heavy | 0 | 0 | 10 | 0 |
| Total | 108 | | | |
| Water Quality Index | | | | 46,852 |

Source: Kusuma et al. (2022)

Referring to one of its functions, tax can act as a regulatory instrument to control people's behavior in a country (Sulastyawati, 2014). The imposition of additional costs for activities that can cause negative externalities is expected to reduce the negative environmental impacts. The imposition of tax on hazardous waste disposal is a policy recommendation that can be applied within the scope of local government. This policy can potentially influence industry behavior when carrying out business activities. In this policy perspective, selecting raw materials, treatment, and disposal are critical for each industrial business actor.

57 types of industries or activities are classified as generating hazardous and toxic waste according to PP No. 101/2014 on Hazardous and Toxic Waste Management. The regulation also details 339 types of waste that qualify as hazardous and toxic (B3). All types of waste are divided into several characteristics, including explosive, flammable, reactive, infectious, corrosive, and toxic. The wide range of hazardous and toxic waste types further emphasizes the need for instruments to suppress the production of hazardous and toxic waste.

Until now, the Bekasi Regency Government has had a legal instrument to oversee the presence of B3 waste in the ongoing business cycle through Regent Regulation Number 8 of 2021 concerning Hazardous and Toxic Waste Management. However, business actors tend not to change their behavior towards waste management without a coercive policy. Based on this condition, We recommend a control instrument as a tax imposed on B3 waste from industrial activities. Thus, businesses will be encouraged to reduce waste generated from production activities. Furthermore, this policy is expected to have a long-term positive impact on the environment, which continues to degrade due to industrial progress. The application of environmental tax for the manufacturing industry is considered appropriate, as it is an industry that tends to be environmentally unfriendly. This is due to inputs with large pollutant levels and outputs in the form of waste that can also pollute the environment (Purba, 2014).

Every entity that carries out production activities must produce waste that must be treated before being disposed of into the surrounding environment to reduce the negative impact caused. However, the cost required to manage waste before disposal is not small. This is why many companies ignore the aspect of waste treatment before disposing of it to the surrounding environment, aiming to reduce production costs (Muslim, 2021).

Tax Imposition Scheme for B3 Waste Disposal

This draft policy comprises several complete attributes, as do other taxes. The tax subjects of this policy are all businesses that generate hazardous waste, without exception. Under the purpose of its implementation, which is to internalize the negative externalities of hazardous waste generated from industrial activities, for the sake of fairness, every business actor with hazardous residues must be included in the implementation of this policy.

This policy aims to B3 waste from activities carried out by business actors. The classification of B3 waste refers to the classification listed in Appendix I of PP No. 101/2014



on Hazardous and Toxic Waste Management. That regulation classified B3 waste into explosive, reactive, flammable, infectious, corrosive, and poisonous. The unit of measurement used for solid waste is mass (in kilograms). As for liquid waste, the unit of measurement used is the volume (in liters). Advalorem rates can be applied to this type of policy. Thus, the higher the hazardous waste generated by businesses, the higher the tax must be paid. However, the rate for companies with a hazardous waste treatment plant should be lower. This aims to encourage other businesses to provide waste treatment plants immediately.

The administration of the tax policy on hazardous waste disposal would be more appropriate if it is left to local governments. This is due to the different geographic, demographic, and economic characteristics between regions in Indonesia (Mardiansjah & Rahayu, 2019). The official assessment mechanism is more appropriate for this policy. The Bekasi Regency Government needs to synchronize data with the Directorate General of Taxes to obtain the most up-to-date information on industrial businesses in the area. The business field classification (KLU), management, and other financial information are needed. By knowing the KLU of industrial businesses in Bekasi Regency, the district government can focus administration, supervision, and law enforcement on businesses with high risk and the potential to produce greater negative impacts on the environment. The district government can conduct targeted supervision and law enforcement by knowing company management information. By knowing financial information, the government can estimate the production carried out by an industry and compare it with the waste produced.

As with other local tax levies, payments are made through post offices, perception banks, and other media determined by the government. Then, We recommend placing a local tax service post around the industrial estate management office. This aims to improve administrative and supervisory services related to the policies enacted. Corporations must dispose of their waste in a place designated by the local government. Thus, the authorities can calculate the volume and amount of tax that the company must pay. This is also a challenge for the government because it must first provide adequate solid and liquid waste disposal infrastructure in the industrial areas of Bekasi Regency.

Furthermore, an important aspect of policy implementation is legal certainty and supervision. With the large number of industrial businesses in Bekasi Regency, it will be a huge challenge for the local government to supervise compliance. Supervision is a process to ensure the achievement of organizational and management objectives (Pramudya, 2021). The role of technology in implementing this policy is very important, given the breadth of tax subjects involved and the variety of tax objects that must be monitored. Therefore, a database that describes the condition of all tax subjects in the Bekasi Regency area is very important. The role of the Environmental Supervisory Officer (PPLH), also one of the functional positions within Bekasi Regency, is very strategic. PPLH is recommended to collect data on business characteristics, raw materials, business processes, and potential waste released by all industrial businesses in Bekasi Regency. Thus, the district government can map the risks and benefits from an environmental and economic perspective to achieve the highest aggregate level in implementing this policy.

Supervision procedures for business actors are carried out directly by visiting the location of business activities. Direct supervision is a supervisory step by the supervisor directly visiting the object of supervision and knowing the application's suitability with the applicable standards (Pramudya, 2021). PPLH plays a role in checking production information needed to determine the amount of B3 waste generated by business actors. For now, the biggest obstacle to implementing the supervision of the tax policy on hazardous waste is the availability of supervisory human resources. With its strategic role in this policy framework, the local government must provide PPLH with sufficient quantity and quality.



Benefits and Challenges of Implementation of Tax Imposition on B3 Waste Disposal

Applying a tax on every waste disposed of provides several benefits. The first is the decrease in waste discharged into the environment. Taxing emission-generating activities can encourage entrepreneurs to reduce waste generated and switch to sustainable business practices. (He & Jing, 2023). One of the countries that has long imposed a tax on solid waste disposal is the UK. Since its first entry into force in 1996, the policy has successfully reduced aggregate waste generated nationwide (Martin & Scott, 2003).

Table 4. Waste Generated in the UK After the Implementation of Waste Tax (in tons)

| Year | Active Waste | Inert Waste | Exempt Waste | Total Weight |
|---------|--------------|-------------|--------------|--------------|
| 1997-98 | 50.362 | 35.440 | 9961 | 95763 |
| 1998-99 | 49.006 | 29.606 | 8301 | 86913 |
| 1999-00 | 49.743 | 23.013 | 9215 | 81970 |

Source: Martin & Scott (2003)

Second, imposing a tax on the disposal of B3 waste can also encourage entrepreneurs to implement green innovation (Zhao et al., 2023). Takalo et al. (2020) explained that green innovation creates technology and production to reduce environmental risks. Innovations generated are product innovations and service innovations. Taxation can encourage entrepreneurs to implement innovations to minimize the environmental impact of their production, such as implementing cleaner production processes and investing in more environmentally friendly energy (Zhao et al., 2023). Third, the benefit that can be obtained is the opportunity to internalize the negative externality that results from the company's production process (He & Jing, 2023). Thus, the entrepreneur will also be more considerate of every impact of his business activity.

Fourthly, the B3 waste disposal tax can be a source of revenue for the government. These sources of revenue can contribute to supporting the implementation of policies related to environmental sustainability, management of environmental infrastructure, and public services related to the environmental aspects (Jiang et al., 2023). Fifthly, policy enforcement can encourage entrepreneurs to implement sustainable performance. Thus, entrepreneurs will increasingly consider the environmental impact of their business and its impact on financial and socio-environmental performance (Zhao et al., 2023).

On the other hand, every policy must face challenges in its implementation, especially in its early stages. Concerning such policies, the first potential challenge is economic distortion. Excessive taxation of additional costs risks further increasing the cost of production of entrepreneurs, which can reduce the competitive aspects of companies and slow economic growth (Maghfirani et al., 2022). Second, implementing a tax policy on the disposal of B3 waste is potentially facing political challenges. Such a policy could win resistance from business associations, parliaments, or opposition from the government of a country (Carattini et al., 2018).

Thirdly, the implementation of this policy has the potential to face resource constraints. Cross-sectoral policy always requires human resources, technology, and no small amount of funding. Specifically, in this policy, governments need adequate equipment and information for effective law enforcement and surveillance (Hao et al., 2020). Fourthly, a tax on waste disposal cannot be imposed on unstable economic conditions, as it can be a boomerang to the country and trigger inflation (Safitra & Hanifah, 2021).

The fifth challenge is the need to provide infrastructure such as Reduce, Reuse, Recycle (TPS 3R) waste disposal sites, final disposal points for solid waste, and additional sewage treatment facilities (IPAL) for areas that do not yet have them. TPS 3R can be applied as a solid B3 waste disposal site before being handed over to the TPA. Processed B3 wastes are recorded and taxed (Ula & Liyana, 2022). IPAL is used to treat liquid waste containing toxic, toxic



substances. TPA management tends to be more effective if it uses the sanitary landfill method: spreading garbage at a confined location, compressing it, and coating it with soil daily after the operation. The granted soil layer is intended to prevent the spread of viruses, dust, or other substances that could pollute the environment and disrupt public health (Munir, 2023).

CONCLUSIONS

Conclusions

Based on the research, things studied in the following section can be concluded. There are 1930 manufacturers located in Bekasi Regency that produce hazardous waste that can impact the environment. This research found that soil quality around the factory is degraded due to exposure to hazardous waste generated from the production process. Besides, this research also shows that the water quality in Bekasi District is equivalent to the lowest cluster of water quality groups stated in the government regulation.

Concerning the taxing scheme, any industry that produces B3 waste is subject to tax without exception. The administration is officially assessed by the Government of the district of Bekasi. The government designates a special location where taxable persons dispose of waste while setting the maximum amount of tax. The tariff used is the advalorem, which refers to the waste capacity discharged by the company. Administrative aspects, legal certainty, and supervision are critical in implementing this policy. Such policies can be implemented when governments provide adequate infrastructure, resources, monitoring, and law enforcement mechanisms.

This policy model has benefits and challenges when the Bekasi district government implements it. Benefits can be obtained, among other things, such as reducing industry B3 waste, encouraging entrepreneurs to implement green innovation, fostering internalization of negative externality on business activities, increasing state acceptance, and encouraging sustainable performance in entrepreneurs. The challenges that may arise include economic distortions, political turmoil related to policy agreements, limited human resources as policy operators, technological constraints, risks of economic instability, and the need for infrastructure to support policy implementation.

Research Limitation

The factor causing the limitation in research is the subjectivity in analyzing the research. Being biased can cause an analysis of literature and research objectives to be less objective. In addition, the methods used are still simple. Then, the distance and time aspects also became one of the limitations of researchers, so they could not analyze research objects directly in the Bekasi Regency.

Implications

To implement this policy, the Directorate General of Taxes and Local Government should conduct a collaborative assessment of the industries eligible to be charged and the type of waste this policy targets. This will help the government to enforce this policy in a more targeted way. In addition, the local governments must provide adequate waste disposal infrastructure in industrial areas. It also requires an increased focus of the apparatus on the environmental aspects by enforcing public policy instruments, vigilance processes, and robust law enforcement.

We suggest that future research should reach the sensitivity of implementing a cross-disciplinary environmental policy. The financial and technological aspects become useful areas when linked to environmental topics. Suggestions for future research also include studies conducted in other industrially intensive areas due to differences in regional conditions and local government governance. Furthermore, We suggest that future research can be carried out



with primary data sources involving local governments and actors in densely industrialized manufacturing as long as it can deepen the phenomena that are real and happening in the field.

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