

Waste Management Policy Model in Order to Reduce Plastic Waste Hacks

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ABSTRACT

The goal of this research is to find a solution to the waste problem, which involves determining how to govern management rules in order to limit the development of plastic garbage. How to model waste management in order to decrease plastic trash creation. This is normative law study, which examines the law from a statutory standpoint. The study's findings show that waste management is covered by legislation, including Act Number 18 of 2008 on Waste Management, Government Regulation Number 81 of 2012 on Household Waste and Waste Similar to Household Waste, Regional Regulation Number 5 of 2011 on Waste Management, Governor Regulation Number 97 of 2018 on Reduction of Plastic Waste Hacks, and Denpasar City Regulation Number 3 of 2018.. However, these policies need to be complemented by public awareness to sort waste from the household, supervision of waste sorting at temporary landfills by relevant stakeholders, and purchases of plastic waste (plastic bags) by the government, tightening single-use plastic production permits.

Keywords: Management, Policy, Plastic Waste.

1. INTRODUCTION

Environmental conditions influence public health because environmental factors are the most decisive factors for public health. Suppose there is a change in the environment around humans. In that case, there will be a change in the health condition of the community's environment. [1]. Environmental factors and behaviour factors significantly affect the degree of public health, so they need serious attention. Healthy behaviour factors are expected to maintain, improve health and protect from the threat of disease, while a healthy environment is expected to create a conducive, pollution-free environment, healthy settlements, and healthy waste management. [2]

Until now, waste has become the main problem that plagues not only cities, villages, roads, rivers, public places and all corners of the environment, and it can be ascertained that there is always garbage scattered about which after that must be found a good, precise and correct solution to the problem can harm the environment. Social, economic, and environmental aspects. this is a result of the lack of public awareness regarding the importance of waste management in life. [3]

According to the terms of Act No. 18 of 2008 on waste management, waste management is a systematic and ongoing activity that involves trash reduction and

handling. Waste is defined as the solid remnants of everyday human activity and/or natural processes. Based on the constituent substances (biological and chemical), waste is divided into organic waste (wet waste) and inorganic waste (dry waste). Wet waste is also called garbage that easily decomposes (garbage) due to the activity of microorganisms, such as leaves, trunks, and twigs of trees, leftovers of significant vegetables, fruits, old wood, animal carcasses, etcetera. Dry waste is also called waste that is difficult to decompose (refuse) such as paper, plastic, scrap, cloth, metal, glass, rubber, etcetera. [4]

Waste hacks is the volume of waste or the weight of waste generated from types of waste sources in a particular area per unit time. [5] Waste hacks originating from single-use plastic waste (psp) in the form of plastic bags, polystyrene (styrofoam) and plastic straws cannot be reused, recycled, and/or readily biodegradable, or vice versa. waste heaps in indonesia in 2016 reached 65,200,000 tons per year with a population of 261,115,456 people. indonesia's population projection shows a population that continues to grow and will undoubtedly increase the amount of waste generation. garbage generation and waste disposal harm the environment and health. Therefore, it is necessary to take security measures.

The waste management policy is based on the Waste Management Act of 2008, which defines garbage management as a long-term, systematic, and complete activity that includes waste reduction and management. Follow-up to Presidential Regulation No. 97 of 1917, which established the national policy and strategy for the management of garbage and other domestic waste, and Act No. 18 of 2008, which dealt with household waste management. These three requirements necessitate a fundamental paradigm shift in waste management, notably a shift away from the waste treatment idea, which still emphasizes the final approach. At a final waste treatment plant, garbage is collected, transported, and disposed of.

It's time to replace the waste management paradigm that depends on the final approach with a new one. The new paradigm considers garbage as a resource with economic value that may be used for energy, compost, fertilizer, or industrial raw materials, among other things. The governor of Bali regulation no. 97 of 2018 concerning restrictions on single-use plastic waste hacks and Denpasar mayor regulation no. 36 of 2018 concerning reducing the use of plastic bags are the implementation of the three rules above in the province of Bali related to reducing the use of plastic bags. The regulations above do not ensure that waste is free of plastic waste; plastic waste in rivers can reach 20.7 tons per m³, 3.9 tons per m³ on the shore, and 2.1 tons per m³ on land, thus management in this situation has to be revised.

2. METHOD

This is a normative legal study that looks into the law. The law is the subject of the research, which is defined as a social standard or regulation that serves as a guideline for everyone's conduct. As a result, normative legal study concentrates on a list of positive law, legal principles and doctrines, legal conclusions in specific instances, legal systems, synchronization levels, legal comparisons, and legal history.

The statutory method is used in this research. Of course, normative research must use a statutory method because the focus and key issue of the research will be on numerous legal norms. The legal resources utilized are primary and secondary legal materials, including primary legal elements in the form of waste management legislation and regulations. In the meantime, secondary legal resources come in the form of books about the subject of study.

The processing of legal materials is carried out systematically on written legal resources in normative legal research. The term "systematization" refers to the classification of legal documents in order to make analysis and construction work easier. The received legal papers are then debated, evaluated, and divided into sections before being processed into information. The outcomes of the legal materials analysis will be interpreted utilizing a systematic (a) interpretation

technique, (b) grammatical, and (c) teleological interpretation method. The legal framework of this study will be determined by the systematic interpretation chosen. Other legal writings are interpreted using systematic interpretation (systematische interpretatie, dogmatische interpretatie).

3. RESULT AND DISCUSSION

3.1 Waste Management Policy Setting

Based on data from the Head of the Bali Provincial Environmental Service dated February 7, 2019, it was proven that the volume of plastic waste in 2017 reached 414 tons per day and increased by 1.61% in 2018, so that plastic waste in 2018 reached 414.7 tons per day. Even based on the results of the clean up voice one island activity which involved 13,000 people in Denpasar City on February 19, 2019, the amount of plastic waste collected was 30 tons with the composition: food packaging (22%), bottles and glasses (16%), shopping bags (15%), straws (12), and others, especially styrofoam (7%), as explained by Ujang Solihin Sidik, Directorate of Waste Management, Directorate General of B3 and Waste Management of The Ministry of Environment.

Based on the condition of the massive volume of plastic waste generation in the Province of Bali, it is urgent to regulate waste management policies and strategies, including regulating waste reduction through limiting waste generation, especially from the type of Single-use Plastic Based on Act No. 18 of 2008 concerning Waste Management related to the implementation of integrated and comprehensive waste management from law to downstream, indicating that a product that has the potential to become waste has been utilized before it reaches the production phase, causing it to become waste, which is then securely returned to the environment medium.

Article 19 of the substance-related to waste management laws governs the management of residential trash and waste that resembles household garbage. "Management of domestic waste and comparable household waste comprises of minimizing waste and managing waste," according to the text. Article 20 describes "three main activities in implementing waste reduction activities: limiting waste generation, recycling waste, and reusing waste." The 3R principle of ecologically sound waste management is embodied by these three actions (reduce, reuse, recycle). Article 22 states that "the five main activities in implementing waste handling activities include sorting, collecting, transporting, processing, and final processing of waste."

The purpose of implementing a comprehensive approach in waste management is to prevent and limit waste generation, increase recycling, optimize the use of waste, reduce waste that is piled up in the landfill, especially the type of plastic waste, because of the inappropriate use of plastic causes various kinds of

diseases, besides that plastic is tough to decompose by microorganisms.

What is meant by minimizing trash creation, according to Government Regulation No. 18 of 2012 concerning the Management of Household Waste and Types of Household Waste, is an endeavor to minimize waste generation prior to the manufacture of a product and/or product packaging. Use of products and/or packaging that can be recycled and readily created by nature, restricting the use of plastic bags, and/or minimizing the use of single-use items and/or packaging are all examples of implementing waste generation limitations.

That in order to implement the provisions of Government Regulation No. 81 of 2012 concerning Household Waste Management related to national policies and strategies in waste management, the government needs to stipulate Presidential Regulation No. 97 of 2017 concerning the National Policy and Strategy for the Management of Household Waste and similar Household Waste. The direction of the Regional Strategy Policy states that the target for managing household waste and similar household waste is to reduce waste by 30 percent from the number of waste piles before the direction of the Regional Strategy Policy in 2025. As well as handling waste by 70 percent through sorting, collecting, transporting, processing, and final processing. [6]. Strategic handling in waste management carried out by the government is the handling of household waste, including those related to sorting, separating, handling and managing household waste.

Bali Province is a province that residents densely populate because it is a center for industrial development and a tourism area destination, with a population density found in Bali, it will undoubtedly have positive and negative impacts, to create a life order that cares about cleanliness and environmental sustainability in the area. Therefore, the Bali Provincial Government makes a written regulation and enforces policies used to overcome things that can damage the beauty and sustainability of the environment. The problem of waste, if it is not managed correctly and adequately, can harm social, economic, and environmental aspects. Based on the authority, the Provincial Government can manage waste in its territory, either through establishing policies, forming legal products, and implementing actions. Based on these considerations, the Bali Provincial Regulation Number 5 of 2011 was formed regarding waste management.

In the Regional Regulation of the Province of Bali, Number 5 of 2011 concerning Waste Management related to implementing waste management, waste reduction, and handling activities are carried out. Waste reduction activities include limiting landfills. The limitation of stockpiling in the Bali Provincial Regulation Number 5 of 2011 in article 12 states that everyone is obliged to use materials that can be reused, recycled, and/or are readily decomposed by natural processes. To

carry out the activities of Restriction of landfill waste, further provisions are needed for the Provincial Government to formulate policies through the Governor of Bali Province Regulation Number 97 of 2018 concerning the Limitation of the Use of Single-use Plastic Waste Heaps. This regulation prohibits single-use plastic bags, styrofoam (polystyrene), and plastic straws by producers, distributors, and business actors throughout Bali.

The Regional Regulation regulating cleanliness and public order in the Denpasar City area is Denpasar City Regional Regulation number 3 of 2015 concerning Waste Management. The cause of the importance of waste management in Denpasar City is the rapid rate of population growth in Denpasar City, which means that the larger the population, the more waste generated. Plastic garbage, particularly packaging debris that is difficult to degrade by natural processes, is becoming more prevalent as the population grows and people's consumption patterns change.

Denpasar City Government supported national policies and strategies for Household Waste Management and considered the negative impacts caused by waste problems, especially plastic waste; therefore, the Denpasar City Government made an innovation. Among them is the stipulation of the Denpasar Mayor Regulation on Procedures for Management and Development of Waste. Denpasar Mayor Regulation No. 36 of 2018 on Plastic Bag Reduction and Instruction No. 1 of 2018 on the Establishment of Waste Banks and the Development of Web-Based Replicas of Waste Bank Services.

3.2 The Model of Waste Management Policy

The mechanism for managing plastic waste in Denpasar City is in waste handling activities, including selection, collection, transportation, processing, and final processing.

3.2.1 Waste Selection

Regarding waste selection, based on Denpasar City Regulation Number 3 of 2015 concerning Waste Management which states that "sorting is an effort to handle waste in the form of grouping and separating waste according to the type, amount and/or nature of waste." Selecting waste is a very tough job in waste management. Waste that has been separated produces organic and inorganic waste.

3.2.2 Waste Collection

Article 19 paragraph (3) of Denpasar City Regional Regulation Number 3 of 2015 on Waste Management states that, "The City Government is obliged to provide TPS and/or TPST." Denpasar City has provided 13 Waste Disposal Site 6 3R Waste Disposal Site T and 1 Temporary Waste Disposal Site. This collection is an act of collecting waste from the source to the TPS by using a wheelbarrow or a particular garbage pick-up truck. [7]

3.2.3 Waste Transportation

Transportation is an endeavor to handle trash by transporting waste utilizing garbage trucks from the source and/or from the Waste Disposal Site/Temporary Waste Disposal Site to the Landfill. Based on the findings of interviews with residents from several villages in the Denpasar City region, waste transportation is generally carried out 2 (two) times a day in the morning and afternoon. With the use of waste transportation services, the community is charged various retribution fees, starting from Rp. 35.000,- to Rp. 55.000,- per month. Garbage transportation services in Denpasar City that are available in 2019 are 56 transportation services.

3.2.4 Waste Management

Management is an effort to handle waste by changing the characteristics, composition, and amount of waste. One of the waste management programs established by the government is through the Waste Bank. In waste management regarding waste reduction and handling, the Denpasar City Government established a 3 R Waste Bank of Waste Disposal Site/Temporary Waste Disposal Site. The Waste Bank is a program formed by the Denpasar City Government based on the community, which means that community participation in waste management programs where the community can manage the waste becomes valuable items such as making bags, clothes, and other equipment from community waste can also make organic fertilizer from this waste. Community participation is community participation in carrying out every activity or program set by the government to empower and build the community so that the community wants to take an active role in the planning, implementation, and maintenance process. [8]. The manifestation of community participation in implementing the waste bank program is by sorting waste, both organic waste and inorganic waste, waste based on the type of material includes plastic, paper, glass, and metal. So the waste bank system can be used as a tool to carry out social engineering so that a good waste management order or system is formed in the community. [9]. The classification of waste in the waste bank is classified into two types, namely organic waste and inorganic waste.

Inorganic waste includes glass waste (glass bottles, cups, jars, etcetera.), which will crash and be smelted as raw material for new products. Metal waste (minimum and canned food) to be melted down to become the primary material for new products. Paper waste (newspapers, magazines, cardboard, etcetera) will be crushed and made into pulp as the primary material for new products. Plastic waste (plastic bottles, plastic packaging, etcetera.) to be melted down into plastic pellets as the primary material for new products.

3.2.5 Waste Final Processing

The final processing site, referred to as a landfill, is a place to safely process and return waste to environmental media for humans and the environment. In the waste

management mechanism, the most decisive stage is waste sorting, namely the grouping and separation of waste according to the waste's type, amount, and nature. As stated in article 2, paragraph 3 of Denpasar Mayor Regulation No. 11 of 2016. Waste segregation starts at the household as regulated in the Bali Governor's regulation no. 47 of 2019 concerning household-based waste management. Can reduce the volume of waste at Garbage Disposal Site and Landfill because what is transported by waste carriers to Garbage Disposal Site and Landfill is waste that has been sorted between organic and non-organic waste, collected in certain places and then taken to the Waste Bank. At this stage, the most critical role is sorting household waste. To maximize this, it is necessary to supervise from the official village through the Village Regulation regarding waste management, traditional villages through perarem (decision of traditional community group), youth organizations, and the private sector.

4. CONCLUSION

Based on the analysis above about waste management policies, it can be concluded as follows:

1. Laws, Government Regulations, Provincial Regulations, Governor Regulations, Regency/City Regional Regulations, and Regents and Mayors Regulations are all suitable in terms of waste management.
2. Waste management with the model of sorting, collecting, transporting, managing, and final processing of waste has not been able to reduce the separation between organic and non-organic waste at Garbage Disposal Site and Landfill. To overcome this, it needs supervision from the Official Village, Traditional Village, Youth Organization, and private sector in the form of assistance with waste processing equipment.

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