

# The Effectiveness of Governer Regulation Number 142 Year 2019 Concerning the Obligation to Use the Environmentally-Friendly Shopping Bags at Shopping Centers, Swalayan Stores, and Traditional Markets for Reducing the Use of Plastic Bags in Lindeteves Trade Center (LTC) Glodok

Hansen Joneri<sup>1</sup> Mella Ismelina Farma Rahayu<sup>1\*</sup>

#### **ABSTRACT**

This Governor Regulation does not yet provide a transition period for business actors in shopping centers and markets, as well as managers in supermarkets to ensure a transition from using single-use plastic packaging bags to more environmentally friendly packaging bags. There are no social sanctions for violators, this regulation only regulates administrative sanctions for business managers and actors who do not comply, such as reprimands, writing, forced money, license suspension, and license revocation. There is no follow-up to publishing which is subject to sanctions, such as including the names of managers or business actors who violate the website of DKI Jakarta or the mass media. This mechanism cannot work if the public does not know which business managers or actors violate it. The price of Eco-friendly Shopping Bags is not affordable so it is ineffective. The lack of replacements for plastic bags at affordable prices has actually led to the rampant smuggling of plastic bags.

Keywords: Environment, Plastic Bags, Bags, Eco-Friendly Shopping

#### 1. INTRODUCTION

#### 1.1. Background

All living and inanimate objects and the conditions in them are the meaning of the environment.[1] Humans are part of the environment that can influence or change through inappropriate activities or behavior. Changes caused can include environmental damage such as acid rain, global warming and depletion of the ozone layer, destruction and pollution of biodiversity.[2] the occurrence of this is due to a lack of balance in using existing natural resources.[3] and littering. The environment is exposed to contamination because the material cycle in the environment changes so that the balance in terms of structure and function is disturbed. The imbalance of the function and structure of the material cycle can occur due to human actions or occur due to natural factors. In this modern era, technological and biological needs are increasing due to the large number of human activities or actions that demand technological and biological developments to a more modern level. This causes environmental pollution due to uncontrolled waste disposal optimally. Humans who want to improve their

welfare can cause a problem called pollution.[4] Currently, there are many polluted rivers around us. A paradigm shift and society's culture causes this pollution to occur, because the prohibition and taboos that once existed in the eyes of society are no longer seen by society.[5] Water is the most important thing in society, because water that is properly maintained can be used properly by the community, but it is different from clean water. Water that is not properly maintained can bring disaster to the environment, this happens when the water is polluted by chemicals that kill surrounding plants and also damage the environment. When viewed from a safeguard point of view, water can cause disasters such as landslides, floods and so on which damage the environment on a large scale. A good and healthy living environment is the basic right of every Indonesian citizen as mandated in article 28H of the 1945 Constitution.[6] Therefore, environmental pollution usually occurs as a result of buying and selling transactions using the container in the product and throwing it away carelessly. Business actors who carry out transactions between consumers need a place to bring goods that have been purchased before 1 July 2020 a place to carry these items used with plastic containers in the form of bags and since 1 July 2020 are required to wear eco-friendly bags in shopping areas such

<sup>&</sup>lt;sup>1</sup>Faculty of Law, Universitas Tarumanagara, Grogol Petamburan, West Jakarta 11440, Indonesia \*Corresponding author. Email: mellaismelina@fh.untar.ac.id



as, people's markets and convenience store. If the violation is subject to administrative sanctions of at least Rp. 5,000,000 (five million rupiah) and as much as Rp. 25,000,000 (twenty five million rupiahs). [7] There are many transactions between business actors and consumers, so a container for goods is needed. Here the author wants to examine the effectiveness of environmentally friendly bags in reducing plastic bags that are still lacking guidance for environmentally friendly bags from the government.[7] In this case, there are still many shopping centers, public markets and supermarkets that have not implemented governor regulation Number 142 of 2019 concerning the obligation to use shopping bags that fall into the ecofriendly scope or environmentally friendly in supermarkets, shopping centers, and traditional markets. Therefore, here the author wants to raise the title of "The Effectiveness of the Governor's Regulation Policy Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags at Shopping Centers, Supermarkets, and People's Markets in the Context of Reducing the Use of Plastic Bags in West Jakarta".

#### 1.2. Problems

Based on the background that the author has described, the author draws a problem, namely:

- 1. How are the regulations related to the use of environmentally friendly shopping bags in the community in terms of Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags in Shopping Malls, Supermarkets and Traditional Markets?
- 2. How is the effectiveness of using environmentally friendly shopping bags in the community in terms of Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags at Shopping Centers, Supermarkets and Traditional Markets at LTC Glodok, West Jakarta?
- 3. What is the role of the government in reducing Plastic Bags to Replace with Eco-Friendly Shopping Bags?

#### 1.3. Research Method

#### 1. Nature of Research

The nature of this research is descriptive research where the research describes certain objects and explains things related to or systematically describes the facts or characteristics of certain populations in certain fields factually and accurately. This research merely describes an object to draw generally accepted conclusions [8].

2. Type of Research

The type of research used is juridical empirical legal research, namely legal research that examines the factual implementation or implementation of positive legal provisions (legislation) on any particular legal event that occurs in society.[9]

- 3. Type of data
  - a. Primary data is data obtained directly from interviews. Primary data includes applied research

- data from normative provisions to legal events in concerto [9].
- b. Secondary data is normative data, especially those sourced from legislation. Secondary data is usually obtained from literature studies and document studies, by collecting data from various reading sources in the form of applicable laws and regulations and literature or legal science literature relating to the problem under study [9].

#### 4. Data Collection Techniques

Literature review, Literature study is the study of written information about law that comes from various sources and is widely published and is needed in normative legal research. In this research, the literature study is carried out by reading, recording and quoting from legislation, contract manuscripts of agreements, literature books, and data through related internet searches [9].

#### 5. Data Analysis technique

The data analysis was done qualitatively, comprehensively and completely. Qualitative analysis is quality data sequencing in the form of regular, coherent, logical, non-overlapping and effective sentences, thereby facilitating data interpretation and understanding the results of the analysis [9].

#### 2. DISCUSSION

## 2.1. Definition of the Environment and Theory of Sustainable Development with an Environmental Viewpoint

Everything that is around humans and is reciprocally related is the meaning of the environment, and the opposite of this environment is the environment which includes areas and its components that are subject to much interference by humans, therefore this environment is called the artificial environment. The living environment is also a spatial unit with all conditions, forces, objects and living things, including humans and their behavior, which affect nature itself, the continuity of life, and the welfare of humans and other living creatures [10]. Sustainable development with an environmental insight is a conscious and planned effort that combines social, living and economic environmental aspects into a development strategy so that environmental integrity is guaranteed, as well as the ability, welfare, safety and quality of life of the present generation to future generations [11]. KLHS is a series of comprehensive, systematic, and participatory analyzes to ensure that the principles of sustainable development are basic and have been integrated into the development of an area and / or policies, plans, and / or programs [12]. The government and local governments are required to make KLHS to ensure that the principles of sustainable development have become the basis and have been integrated into the development of an area and / or policies, plans, and / or programs [13].



#### 1. Water Pollution

A change in conditions in water reservoirs such as lakes, rivers, oceans and groundwater due to human activities is the meaning of water pollution. Although natural phenomena such as storms, earthquakes, volcanoes, etc. also result in large changes to water quality, they are not considered pollution. Water pollution can be caused by various things and has different characteristics from one another.

When viewed from the origin of the pollutants and the source of the pollution, water pollution can be divided into, among others, household waste, agricultural waste, industrial waste, oil tanker leakage, fishing using poison, and fishing using explosive devices.

#### 2. Plastic

Based on their uses and economic considerations, plastics are divided into two main classifications: commodity plastics and engineering plastics. Commodity plastics are known for their high volume and low price. This plastic is often used in the form of disposable items such as packaging coatings, but it is also found that this commodity type of plastic is used in durable goods [14]. Some examples of types of commodity plastics and their uses, among others : LDPE (low density polyethylene) as a packing layer, play goods, wire and cable insulation, flexible bottles, HDPE (high density polyethylene) used as drums, bottles, pipelines, films, sheets, wire and cable insulation, PP (polypropylene) used as part of car tools, webbing, ropes, carpets, PVC (polyvinyl chloride) used as building materials, pipes, materials for floors dan PS (polystyrene) used as packaging material (foam and film), home furnishings, utensils and toys. The main engineering plastics include poliformaldehyde, polyester, polyamide. Some of the uses of engineering plastics are mainly in construction, transportation, electrical and electronic goods and industrial machinery [15].

#### 3. The Impact of Plastic Waste on the Environment

Plastics are synthetic polymers that are difficult to decompose in nature. It takes nearly hundreds of years for plastic to completely decompose. When compared with the use of plastic which increases every day, with the time it takes to completely decompose, of course you can imagine the impact of the accumulation of plastic waste on the environment. This plastic bag waste can reach 400 tons per day, or the weight of 16 Boeing 747 aircraft. The UN Environment Program in June 2006 recorded that there are at least 46,000 plastic waste in the oceans every square mile. It is even known that this flow of plastic waste collection can form an island made of floating plastic which is almost twice the size of the island of Kalimantan, Indonesia. In Jakarta, the capital city of Indonesia, this plastic waste can reach 6,000 tons per day or around 30,000 cubic meters of plastic, which is equivalent to half of Borobudur Temple in Central Java, Indonesia [16].

Plastics carried by ocean currents can pollute marine life, and even cause many deaths in marine animals. The deaths of marine animals have reached about one million seabirds, one hundred thousand marine mammals, and fish that have died from consuming plastic waste. On land, soil containing plastic particles has killed many decomposing animals, such as worms, thus reducing the soil fertility in the area. Garbage that accumulates in the river also causes shallow and narrow river flow, so that flooding occurs. For humans, smoke from burning plastic waste has the potential to trigger cancer, nervous system disorders, respiratory problems, and hepatitis. Because of this, plastic waste is very dangerous for humans and the environment [17].

#### 4. Tackling Plastic Waste

The plastic waste that has accumulated cannot be tolerated. Overcoming plastic waste by burying it in the ground is not a good solution because it is difficult to decompose in nature, especially by burning it, where during the burning process of plastic it will produce chemical compounds that are very dangerous to humans. There are several ways to deal with plastic waste that can be done in addition to burying or burning it, including reducing the use of plastic bags, reducing the use of plastic bags and replacing them with cloth to wrap goods or commonly known as furoshiki; plastic waste treatment using recycling methods; and the use of biodegradable plastics that are more biodegradable in nature.

#### a. Use of Furoshiki to reduce plastic bag waste

The term Furoshiki (Japanese) which actually in Indonesia has also known this as "pundutan" (Banjar) or "boenthelan" (Java). Furoshiki is a technique of wrapping and carrying items using a square cloth. Boenthelan size varies depending on the size of the item to be wrapped or carried. Various wrapping techniques, thus adding to the aesthetic value of the boenthelan. This Boenthelan can be used to wrap or carry goods, such as boxes, bottles, books, and so on. In addition, by using boenthelan as a modern lifestyle we also participate in preserving our beloved earth [17].

#### b. Use of Biodegradable Plastics

The use of biodegradable plastic is a powerful way to tackle plastic waste, where the nature of biodegradable plastic which is environmentally friendly makes it the right choice as our solution to dependence on the use of plastic bags [17]. The importance of the responsibility of consumers and industries to the environment must be increased. For the industrial sector that produces biodegradable plastic materials, this is a key advantage, because biopolymers can reduce carbon dioxide emissions during the manufacturing process, and reduce / reduce organic matter after disposal. Although synthetic plastics are a more economically feasible choice when compared to biodegradable plastics, an increase in the availability of biodegradable plastics will allow many consumers to choose them on the basis of biodegradable plastics because everyone has a responsibility towards their environment. The process of biopolymer materials is the most promising in its development, because it uses



renewable resources [18]. Biodegradable plastics containing starch and / or cellulosic fibers are likely to experience positive growth in their use, but the infrastructure needed to expand the use of biodegradable plastics in this commercial market, still requires a long process of time and is expensive [19].

### 2.2. Environmental Protection and Management

Integrated efforts in environmental management, utilization, maintenance, supervision, restoration, control and development are the meaning of environmental management [19].

Systematic and integrated efforts undertaken to conserve environmental functions and prevent environmental pollution and / or damage, which include utilization, planning, supervision, control, maintenance and law enforcement [20].

The environment can be saved from damage by increasing awareness of the surrounding environment. Raising this awareness requires efforts such as implementing environmental education, cultivating environmental ethics, and habituating environmentally friendly behavior.

The most basic factor in increasing environmental awareness is a person's basic understanding of the environment. Someone who does not have a basic understanding of the environment can take actions that damage the environment without realizing it. However, there are also those who already understand the environment, but they still choose a lifestyle that damages the environment.

Legislation that raises public awareness of the environment to regulate itself through "gentlemen's agreement", which is normally characterized by "self-regulation", which is a future need to ensure the sustainability of a clean environment. Self-regulation does not mean that environmental pollution control laws have eliminated the role of the government [21].

Environmental protection and management instruments built on the principle of preventing environmental pollution. So that the birth of the concept of "prevention of environmental pollution" which is motivated by the emergence of awareness that environmental pollution control is based on the "end of pipe" approach which is declared ineffective [22].

The government is working on a balance between development and environmental preservation. One of these efforts is the formation of an institution. The effectiveness of environmental institutions can be seen from the performance of government agencies, laws and regulations and legal instruments, as well as programs run by the government in order to preserve the environment and by implementing sustainable development. Currently, there are many activities or businesses dealing with environmental problems due to demands from the community.

Environmental problems can affect the performance of a company in carrying out various business activities. The

government has taken various measures, including by improving legal instruments related to the environment. One of the newest legal products that have been passed by the government is Law Number 32 of 2009 which contains the Protection and Management of the Environment. This law, which has been in effect since October 2009 and recorded in the Republic of Indonesia in 2009, has replaced the role of Law Number 23 of 1997 concerning Environmental Management. The environment is something that cannot be separated from human life. This happens because where a person lives a new environment will be created and vice versa. Development is a multidimensional process that includes various fundamental changes in the attitudes of society, social structures and national institutions. In addition, it continues to pursue accelerated economic growth, poverty alleviation, and handling income inequality. So that it becomes better and healthier.

#### 2.3. Description of Shopping Centers, Supermarkets, and Traditional Markets in the Context of Reducing the Use of Plastic Bags in West Jakarta

From what I observed and researched regarding the Reduction of Plastic Bags in Shopping Centers that I visited at Lippo Mal Puri, Puri Indah Mall, Green Sedayu Mall, Central Park Mall, and Taman Anggrek Mall. I shop and tour around malls and Governor Regulation Number 142 of 2019 concerning the obligation to use environmentally friendly shopping bags in shopping centers, convenience stores, and people's markets has been effective against malls in West Jakarta by selling Eco-friendly Shopping Bags to replace Plastic Bags, or you can bring your own Eco-friendly Shopping Bag to shop at the mall.

I also observed technical goods shopping centers on Jalan Hayam Wuruk, West Jakarta, namely LTC Glodok and Harco Glodok. Lots of consumers buy and are given plastic bags and do not sell environmentally friendly shopping bags so that technical goods shopping centers such as LTC Glodok are not effective against Governor Regulation Number 142 of 2019 concerning the mandatory use of environmentally friendly shopping bags in shopping centers, supermarkets and markets people.

Supermarkets in West Jakarta, namely Indomaret, Alfamart, Superindo and Farmers Market, no longer provide plastic bags for transactions, so consumers have to buy from these supermarkets or bring their own from home with environmentally friendly shopping bags. Supermarkets such as Indomaret, Alfamart, Superindo and Farmers Market have followed Governor Regulation number 142 of 2019 concerning the obligation to use environmentally friendly shopping bags in shopping places, people's markets, and convenience stores.

People's markets in West Jakarta such as Pasar Jaya Cengkareng, Morning Market, Pasar Citra 5, Pasar Citra 1, and Pasar Laris Palm Paradise provide plastic bags to wrap groceries and do not sell environmentally friendly shopping bags. Pasar Rakyat in West Jakarta has not followed



Governor Regulation Number 142 of 2019 concerning the obligation to use environmentally friendly shopping bags in shopping centers, convenience stores, and public markets. In the shopping center in LTC Glodok itself, there have been fines, business actors by giving free plastic bags to consumers who have been caught in the act by Satpol PP. This incident was subject to a fine in the form of Rp.10,000,000 to the business actor for violating the provisions of Governor Regulation Number 142 of 2019. Satpol PP also urged business actors in the shopping center to no longer use plastic bags but must use eco-shopping bags. friendly.

2.4. The Effetctiveness of Using Environmentally Friendly Shopping bags in the Community in terms of Governor Regulation Number 142 of 2019 concerning the mandatory use of Environmentally friendly shopping bags at shopping centers, supermarkets and public markets

Based on LIPI's research results, 8.32 tons of waste per day flows into Jakarta Bay from nine river estuaries in Jakarta, Tangerang and Bekasi.

APPBI asked the DKI Jakarta Governor Regulation regarding the mandatory use of biogradable shopping bags to be revised. This is because the sanctions stipulated in the regulation are considered burdensome and not on target [23].

This Governor Regulation has not provided a transition period for business actors in shopping places and public markets, as well as managers in supermarkets to ensure the transition from using single-use plastic packaging bags to packaging bags that are more environmentally friendly.

This can become a legal loophole, for both plastic producers, managers and business actors in shopping centers, markets and supermarkets, to continue to provide single-use packaging bags. As a result, managers and business actors can continue to provide disposable plastic packaging bags as long as more environmentally friendly packaging alternatives are not available.

There are no social sanctions for violators yet, this Governor Regulation only regulates administrative sanctions against business managers and actors who do not obey, such as forced money, reprimands, writing, license revocation, and license suspension. There is no follow-up to publish a sanction, such as including the name of the manager or business actor who has violated it on the DKI Jakarta website or other mass media. This is done so that the public control mechanism can work. This mechanism will not work if the public does not know which business managers or actors have violated it.

The less affordable eco-friendly pocket price also makes this law ineffective. The lack of replacements for plastic bags at more affordable prices has actually led to the smuggling of bags made of plastic-based materials. The Governor of DKI Jakarta Regulation has actually stipulated that business managers or actors can provide affordable

prices for biogradable shopping bags. However, the definition of a fair price for a biogradable shopping bag will lead to different interpretations between managers, business actors and the community. So it would be better if the regulation could regulate the upper and lower limits of the biogradable shopping bag price, so that the implementation of this regulation could be effective in all levels of society. Lack of guidance from the Government in the use of Ecofriendly Shopping Bags as a reduction in plastic bags in shopping areas other than malls and markets that still use plastic bags as containers for goods. Coaching from the Government to managers of Shopping Centers other than Malls and Markets has not yet been realized in transactions between business actors and consumers.

2.5. Regulations Regarding the Use of Eco-Friendly Shopping Bags in the Community in terms of Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags at Shopping Centers, Supermarkets and Traditional Markets

Plastic bags cause environmental pollution because plastic bags will become non-organic waste. Garbage is the residue from human daily activities [24]. The waste must be managed. Waste management is a comprehensive, systematic and sustainable activity which includes waste reduction and handling [25]. Everyone has the right to:

- a. Get services in good waste management and get environmental insight from the Government, local governments, and / or other parties that have been given responsibility for it
- b. Participate in the process of organizing, making decisions, and supervising waste management
- c. Obtain accurate, correct, and timely information regarding the implementation of waste management
- d. Receive protection and compensation for the negative impact of the activities at the final waste processing site
- e. Receive guidance so that they can carry out good and environmentally friendly waste management [26].

#### 3. CLOSING

#### 3.1. Conclusion

Based on the results of the studies that have been carried out and based on the theories that have been put forward, the author can draw a conclusion, namely

 Regulations related to the use of biogradable shopping bags in the community which are reviewed from Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags in Shopping Centers, Supermarkets and Public Markets, namely the related regulations are Law Number 18 of 2008 concerning Waste Management,



- Law Number 32 of 2009 concerning Environmental Protection and Management.
- 2. There are no social sanctions for violators. This Governor Regulation only regulates administrative sanctions for business managers and actors who do not comply, such as reprimands, writing, forced money, license suspension, and license revocation. There is no follow-up to publishing which is subject to sanctions, such as including the names of managers or business actors who violate the website of DKI Jakarta or the mass media.
- 3. The role of the government in reducing plastic bags to replace them with environmentally friendly shopping bags is to provide guidance to Managers, Business Actors and Consumers in order to fulfill their obligations as stipulated in this Governor Regulation. The environment is all living and inanimate objects and the conditions that exist in it. Humans are part of the environment that can influence or change through inappropriate activities or behavior. Changes that can result in the form of environmental damage such as global warming, acid rain and depletion of the ozone layer, pollution and a decrease in biodiversity. One of the causes is the lack of balance in using existing natural resources. and littering.

#### 3.2. Suggestion

Based on the above conclusions, the following suggestions can be given,

- That the local government should provide comprehensive information and guidance on Governor Regulation Number 142 of 2019 in Shopping Centers, Supermarkets and People's Markets. In order for Shopping Malls, Supermarkets, and People's Markets to put more emphasis on using Eco-Friendly Shopping Bags in reducing plastic bags, the government should issue regulations regarding references to replacing plastic bags that are more environmentally friendly.
- 2. The Governor Regulation Number 142 of 2019 concerning the obligation to use environmentally friendly shopping bags in shopping centers, supermarkets, and public markets should focus more on the prices of environmentally friendly shopping bags to make it easier for consumers and business actors to make transactions.
- 3. The community should participate in reducing plastic bags and supporting a healthy environment.

#### REFERENCES

- [1] TresnaSastrawijaya, *Pencemaran Lingkungan. Jakarta: Rineka Cipta*, 2009, 7.
- [2] Wiryono, Pengantar Ilmu Lingkungan. Bengkulu: Pertelon Media, 2013, 7.

- [3] Sofyan Anwar Mufid, Ekologi Manusia. Bandung: PR Remaja Rosdakarya, 2010, 68.
- [4] Wisjachudin Faisal dan Elin Nuraini, "Validasi Metode AANC Untuk Pengujian Unsur Mn, Mg dan Cr Pada Cuplikan Sedimen di Sungai Gajahwong", *Jurnal Badan Tenaga Nuklir Nasional, Yogyakarta*, Volume 1, Nomor 1 [Juni 2010]: 10.
- [5] Sulastriyono, "Pembangunan Hukum Sumber Daya Air Sungai yang Berbasis Kearifan Lokal: Peluang dan Tantangannya", *Mimbar Hukum*, 10 Agustus 2008.
- [6] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Tambahan Lembaran Negara Republik Indonesia Nomor 5059), Pasal 17.
- [7] Indonesia, Peraturan Gubernur Nomor 142 Tahun 2019 tentang kewajiban penggunaan kantong belanja ramah lingkungan pada pusat perbelanjaan, toko swalayan, dan pasar rakyat (Berita Provinsi Daerah Khusus Ibukota Jakarta Tahun 2019 Nomor 64003), pasal 24, ayat 1.
- [8] Sutrisno Hadi, *Metodologi Research I*, (Yogyakarta: Yayasan Penerbitan Fak. Psikologi UGM, 1986, 3.
- [9] Abdulkadir Muhammad, Hukum dan Penelitian Hukum. Bandung: PT. Citra Aditya Bakti, 2004, 134.
- [10] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 1, ayat (1)
- [11] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 1, ayat (3).
- [12] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 1, ayat (10).
- [13] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 15, ayat (11).
- [14] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 18.



- [15] Neng Sri Suharty, Kimia Material Polimer. Yogyakarta: Deepublish, 2012, hal. 81.
- [16] Sununianti, V. V., et al "Sosialisasi Penggunaan Furoshiki Untuk Mengurangi Sampah Kantong Plastik dalam Gaya Hidup Modern", *Jurnal Pengabdian Sriwijaya*, Volume 1 Nomor 1 [Juli 2013]: 88-100.
- [17] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 3.
- [18] Setyanto, R. H.," Aplikasi Polimer Biodegradable dan Dampaknya pada Ekonomi dan Lingkungan" *Majalah Ekanika*, 20 Januari 2013.
- [19] K.E.S. Manik, Pengelolaan Lingkungan Hidup. Jakarta: Kencana, 2016, hal 31.
- [20] Indonesia, Undang Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Berita Lembaran Negara Republik Indonesia Nomor 5059), pasal 1, ayat (6).
- [21] Otto Soemarwoto, Paradigma Baru Pengelolaan Lingkungan Hidup. Yogyakarta: Gadjah Mada University Press, 2001, Hal. 124-129.
- [22] Takdit Rahmadi, Pengaturan Hukum Tentang Bahan Berbahaya dan Beracun di Indonesia, Disertasi, Program Pascasarjana Universitas Airlangga, Surabaya, 1998, hal 144.
- [23] Suparto Wijoyo, Perlindungan Lingkungan Hidup. Airlangga University Press, 2017, 9.
- [24] Indonesia, Undang Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah (Lembaran Negara Republik Indonesia Nomor 4851), Pasal 1, ayat 1.
- [25] Indonesia, Undang Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah (Lembaran Negara Republik Indonesia Nomor 4851), Pasal 11, ayat 4.
- [26] Indonesia, Undang Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah (Lembaran Negara Republik Indonesia Nomor 4851), Pasal 11, ayat 1.