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WASTE MANAGEMENT AND THE RESONSIBILITY OF WASTE PRODUCERS TO THE ENVIRONMENT

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Abstract: This article aims to explain the problems at Talang Gulo TPA (Final Processing Site). The research method we use in this journal is an empirical juridical method using field data that we obtained from research at Talang Gulo TPA, Jambi City. The research approaches we use are a statutory approach and a conceptual approach. In this approach we use statutory regulations as a reference for problems in waste management and with a conceptual approach we analyze related issues regarding the management of Talang Gulo TPA. The results of the literature review can be summarized as two important problems, namely: waste management and producer responsibility towards the environment. TPA as the end of the waste management chain receives a large load of waste, causing negative impacts. There are many areas for sorting waste carried out by Talang Gulo TPA, namely: distillation area, compost area, landfill area, and LTP (Leachate Treatment Plant) area. It can be concluded that solving waste problems that is not comprehensive from end to end and does not involve all parties is the main obstacle to sustainable waste management.

Keywords: Talang Gulo; Waste Problem; Environmental Impact; Final Processing Site; Landfill

1. Introduction

Waste is an object or material which is no longer used by humans so it was thrown away. Related societal stigma trash is all trash is disgusting, dirty, etc. so it must be burned or disposed of properly. All community activities always give rise to rubbish. This is not just a responsibility the responsibility of the local government but also of the entire community to process waste so that does not have a negative impact on the surrounding environment. Builds public awareness as easy as turning the palm of your hand. Need work equally from all parties, both society, government or third parties as supporter. It takes quite a long time to build that awareness. Required too positive role models and consistency from policy makers in a region certain. Direct socialization activities regarding waste management can encourage community participation in management matters waste. Efforts to increase participation community is needed to attract involvement community in managing waste. Through participation this society, in its future development will be able to reducing the volume of waste and waste has value economical.

Based on research published in www.sciencemag.org in February 2015, it was stated that Indonesia is the second largest contributor of plastic waste to the sea after China. This is a very detrimental thing for Indonesia itself, because with it is the largest contributor of waste in the

world, it is also the one who bears the consequences of the continuous accumulation of waste.[1] Chaerul analyzed the problems faced in waste management in Indonesia, including the lack of a firm legal basis, inadequate waste disposal sites, lack of effort in composting, and lack of proper landfill management.[2] Integrated landfill management is an important human need. The existence of the landfill as a landfill should be held with strict safety considerations against pollution for the present and the future. Landfills remain one of the popular ways of handling final waste because it is very difficult to destroy or reduce the amount of waste produced from human activities in line with the rapid growth of the human population.

Based on the Jambi City dataset (Satu Peta Satu Data) Waste Management[3], it is stated that, in 2021, waste in Jambi City reached 433.50 tons per day or 158,106.98 tons per year. Of this amount, 34,792.68 tons or 22.01% were successfully reduced, while 119,002.94 tons or 75.27% were handled well. Meanwhile, in 2022, waste generation in Jambi City increased to 437.50 tons per day or 159,688.01 tons per year. Of this amount, 35,843.56 tons or 22.45% were successfully reduced, while 119,723.96 tons or 74.97% were handled well.

With this data, it is hoped that it can provide an overview of the condition of waste management in Jambi City and become a basis for local governments to formulate more effective policies and strategies in dealing with waste problems in the future.

2. Research Methode

This research is a type of empirical juridical research, or what is called field research. Empirical juridical research is legal research regarding the application or implementation of normative legal provisions in action at each specific legal event that occurs in society. The research approach that we use is a mixed approach between a statutory approach and a conceptual approach. In the legal approach, we examine the laws and regulations regarding waste management and the responsibilities of producers in handling waste management. Meanwhile, in the context approach, we provide an analytical perspective regarding the problems behind which there must be public awareness in waste management. We examine the applicable legal provisions and what happens in their implementation in society. As well as getting field data related to waste management at Talang Gulo TPA, Jambi City in accordance with Regional Regulation (PERDA) Number 5 of 2020.[4]

3. Discussion

The increasing population of Jambi City has resulted in an increase in the volume of waste. In addition, people's consumption patterns contribute to creating increasingly diverse types of waste, including packaging waste that is dangerous and/or difficult to decompose by natural

[1] Science's Daily Newslatter about *Plastic waste inputs from land into the ocean*. 13 Feb 2015, Vol 347, Issue 6223, pp. 768-771, DOI: 10.1126/science.1260352.

[2] Mochammad Chaerul, *Journal of Municipal Waste Management in Indonesia: Status and Strategic Action, 12 (1),*
41-49 (2007).

[3] Jambi City Dataset (One Map One Data), *Environmental Service Regarding Waste Management, https://kotajambisatu.jambikota.go.id/dataset/pengelolaan-sampah. Accessed June 4, 2024.*

[4] Indonesia, *Jambi City Regional Regulation (PERDA) Number 5 of 2020 concerning Waste Management.*

processes. So far, most people still view waste as useless waste goods, not as resources that need to be utilized.

Effective waste utilization requires active participation from government, industry and society. Education and awareness regarding the importance of good waste management are also very important to achieve optimal results in environmental conservation efforts.

Education that can be provided to the community by holding a waste bank. This waste bank can help or educate people to manage waste from home to sort which waste can be recycled, as well as reuse waste that can still be used. That way, the waste in the landfill will not be overloaded, because we have sorted the waste from home.

3. 1 Waste Management

The community in managing waste still relies on the end-of-pipe approach, which is waste collected, transported, and disposed of at the final waste disposal site (TPA). In fact, a large volume of waste accumulation at the site where the final waste is processed has the potential to release methane gas (CH4) which can increase greenhouse gas emissions and contribute to nature requires a long period of time and requires storage at a large cost. The waste management paradigm that relies on the final approach is time to abandon and replace it with a new paradigm of waste management.

The famous Final Processing Site (TPA) in Jambi Yanki City, Talang Gulo Landfill. There it accommodates as much as 620,000 tons of waste with the first system in it, namely the Sorting Plant or sorting with a capacity of 35 tons per day. The next stage is the Composting Plant or composting as much as 15 tons per day, the third stage is the laendfild process. This laendfild itself has a division called a sub-cell, in which the sub-cell has 3 sub-cells.

Based on the Regional Regulation (PERDA) of Jambi City Number 5 of 2020 concerning Waste Management,[5] it establishes rules related to waste handling in Jambi City comprehensively. Here are some important points in the regulation: Chapter VIII, Regarding the Implementation of Waste Management, Part One Article 11 includes:

a) Waste reduction; and
b) Waste handling.[6]

a) Waste Reduction

For waste reduction, namely, by doing 3R (Reduce, Reuse, and Recyle). This activity is intended to reduce, use or reuse, and recycle waste.

1. Reduce

Reduce is the first and most fundamental step in the waste management hierarchy. This principle focuses on preventing waste from the beginning, by reducing the amount of waste produced. By implementing Reduce, we can reduce waste or prevent waste accumulation (the

[5] Indonesia, *Law Number 5 of 2020 concerning Waste Management.*

[6] Indonesia, *Article 11 Regional Regulation Number 5 of 2020 concerning Implementation of Waste Management.*

less sacks are produced, the smaller the burden of waste management at TPS and TPA), save natural resources or conserve natural resources by reducing the consumption of goods which means reducing the exploitation of natural resources used to produce them, and the last step is to reduce environmental pollution.

How to apply Reduce in waste management in daily life, as follows:

a. Bring your own shopping bag: Avoid using single-use plastic bags when shopping. Use a cloth shopping bag or a plastic shopping bag that can be used repeatedly.
b. Buy durable products: Choose durable and durable products to reduce the frequency of purchasing and disposing of goods.
c. Changing eating habits: Bring your own food and drinks from home to reduce the use of single-use containers.
d. Donate goods: Donate items that are still suitable for use.
e. Composting: Converting organic waste such as food scraps and leaves into compost, to reduce waste that will be disposed of at TPS and landfills.

Benefits of implementing Reduce in waste management:

f. Saves money: Reducing the consumption of goods means saving money on buying new items.
g. Improve health: Reducing the consumption of processed foods and plastic packaging can help maintain health.
h. Improve quality of life: Implementing a minimalist and environmentally friendly lifestyle can improve the quality of life

2. Reuse

Reuse is the second step in the waste management hierarchy after Reduce. This principle focuses on adding value to waste by reusing items that can still be used. By implementing reuse, we can reduce the volume or amount of waste that will be disposed of at TPS or landfills, minimized, and increase creativity. At this stage of Reuse, it is very necessary to think creatively and find innovations to reuse old items into new items that can be reused.

How to apply Reuse in waste management in daily life, as follows:

a. Reuse bottles: Reuse plastic drinking water bottles or glass bottles to store drinks or other materials.
b. Making handicrafts: Make use of scrap items such as cardboard, cans, and plastics to create unique and useful handicrafts.
c. Using items: Reuse food containers such as glass jars or tupperware to store food.
d. Change the function of the item: Change the function of the old item into a different new item. For example, used clothes can be turned into bags.

Benefits of implementing Reuse in waste management:

e. Increase creativity: Reuse encourages creativity in finding new ways to reuse old items.

f. Increase love for the environment: Reuse can increase love for the environment and concern for nature conservation.

3. Recyle

Recycling, or recycling, is the third or last step in the waste management hierarchy after Reduce and Reuse. This principle focuses on reprocessing waste into new raw materials that can be used to make new products. By implementing Recyle we can create jobs with recycling can open up jobs in the collection, processing, and manufacturing of recycled products. Reducing greenhouse gas emissions, with this Recyle can help reduce greenhouse gas emissions generated from the production process of new goods. To apply this principle, it is necessary to learn about the types of waste that can be recycled, and participate in recycling social programs.

How to apply Recyle in waste management in daily life, as follows:

a. Sorting waste: Separate recyclable waste from non-recyclable waste.
b. Wash and clean the garbage: Wash and clean the recyclables before they are collected.
c. Submit recyclables to the sorting area: Submit the recycling waste to the sorting place or waste bank.

Benefits of implementing Recyle in waste management:

a. Improve quality of life: Recycling can help create a cleaner and healthier environment.
b. Fostering a sustainable economy: The recycling industry can drive a sustainable economy by creating jobs and reducing dependence on natural resources.
c. Preserving the environment: Recycling can help reduce environmental pollution, air pollution, and habitat damage.

The types of waste that can be recycled, namely:

- Paper: Paper, cardboard, newspapers, magazines, and books.
- Plastic: Plastic bottles, plastic containers, and plastic bags.
- Metal: Aluminum cans, iron cans, and tin bottles.
- Glass: Glass bottles and glass jars.

b) Waste Handling

Waste handling Article 21 of Law Number 5 of 2020,[7] Waste handling as referred to in Article 11 letter b, includes the following activities:

1. Waste sorting;
2. Waste collection;
3. Waste transportation;
4. Waste processing; and

[7] Indonesia, *Article 21 of Law Number 5 of 2020 concerning Waste Management*.

5. Final processing of waste.

The following is an explanation or some steps in handling waste in daily life:

1. Waste segregation Separating organic and non-organic waste. Waste sorting is an important first step in sustainable waste management. By separating organic and non-organic waste, waste can be processed more effectively and efficiently, so that it can reduce environmental pollution and increase the economic value of waste.
2. Waste collection: Collecting waste regularly and on a scheduled basis Collecting waste regularly and on a scheduled basis is an important step in effective and efficient waste management. By implementing a planned waste collection system, waste can be transported on time and disposed of in a safe and environmentally friendly manner.
3. Waste transportation: Transporting waste to waste treatment sites Transportation of waste to waste treatment sites (TPS or TPA) is an important part of effective and efficient waste management
4. Waste processing: waste compaction, household-scale composting, area-scale composting at TPS 3R, processing waste into recycled raw materials, processing waste into recycled products, processing waste into renewable/alternative energy and recycling industry in the business world carried out by the private sector.

   The waste processing method is divided into:

   a) Incineration, is a method of processing waste by burning waste at a high temperature (850°C - 1,200°C) in a special furnace called an incinerator. This combustion process produces exhaust gases, ash, and heat that can be used to produce energy.
   b) Recycling, is the process of reprocessing raw materials that are no longer used into new products. Recycling is one of the important methods in sustainable waste management.
5. Final processing of waste: waste processing at the landfill location, returning waste to environmental media safely for the environment and human health by the sanitary landfill method, processing waste with environmentally friendly technology or according to the development of science and technology and the use of methane gas.

   As for Processing at the Landfill:

   a) Transportation: The garbage that has been collected is transported to the landfill using a garbage truck.
   b) Weighing: Garbage is weighed to find out its weight and volume.
   c) Sorting: Waste is sorted manually or mechanically to separate materials that can still be recycled or processed.
   d) Landfill: Untreatable garbage is piled up in large pits lined with clay liners to prevent groundwater pollution.
   e) Compaction: Waste is compacted using heavy equipment to minimize the space needed.

f) Closure: The garbage that has been piled up is covered with soil to prevent bad odors and methane gas from escaping into the atmosphere.

Until finally the final processing of waste:

a. Minimize environmental pollution: A well-managed landfill can minimize environmental pollution due to waste, such as bad odors, leachate, and methane gas.
b. Utilizing land: Landfills can be used to process waste that cannot be reprocessed and minimize the accumulation of waste in other places.

Government Efforts to Overcome Policy Obstacles to Waste Management Program in Telanaipura District, Jambi City

In every policy, there must be shortcomings or weak points of the policy, this is a challenge for local governments and related agencies to find ways to overcome this. Telanaipura District seeks to socialize to the sub-district to participate in supporting this 3R waste management program in order to raise public awareness with the existence of a regional regulation on waste management, because if the waste is processed properly the waste can become a useful material and have economic value, and also Telanaipura sub-district provides a waste bank at several points. And also the Environment Agency seeks to provide assistance for TPS 3R which is still active to improve services to the community in waste management.

In Regional Regulation Number 6 of 2012

CHAPTER. VII, About Supervision[8]

Article 14

1) The Governor shall supervise the person in charge of the business/activities of Environmental Management as stipulated in the laws and regulations in the field of Environment.

2) To carry out supervision as intended in paragraph (1), the Governor may delegate supervision to functional officials / technical agencies responsible for environmental management.

Article 15

1) To carry out supervision as intended in Article 14, the technical institution responsible for environmental management shall coordinate, prepare plans and cooperate with the Regency/City Government agencies responsible for environmental management.
2) The supervision mechanism as intended in paragraph (1) shall be further determined by the Regulation of the Governor of Jambi.

3. 2 Waste Management Responsibility For The Environment

[8] Indonesia, *Articles 14 and 15 of Regional Regulation (PERDA) Number 6 of 2012 concerning Supervision.*

1. Local Government

Responsibility means bearing everything that has happened or has been experienced. Legal responsibility is the process of taking responsibility for the attitude of legal acts.[9] In Article 9 of Regional Regulation (PERDA) Number 5 of 2020 concerning the Responsibilities of Regional Governments, it reads:

(1) The Regional Government is responsible for waste management.
(2) The Environment Agency and related OPD are responsible for implementing waste management and conducting guidance in the region by involving the Chairman of the RT,
(3) The Sub-district Head, Village Head, and Head of RT are responsible for community development in the field of waste management in their respective work areas,
(4) The village head is responsible for community development in the field of waste management by involving the Chairman of the RT in his work area.
(5) Coaching as referred to in paragraphs (3) and (4) includes guidance on community compliance regarding waste management in their respective areas.

2. Manufacturers

Changes in people's behavior in managing waste are very important today, because from time to time there is a tendency to rely on cleaners to manage waste. It is not uncommon to see people throwing garbage from the car while the vehicle is running, or throwing garbage from the motorbike into the river. This indicates that apathy towards waste management has reached the low and high economic strata from low to high education levels. The role of the community in waste management also needs to be increased through various activities such as the development of waste banks or independent waste management groups. Innovation in managing waste into a blessing also needs to be continuously improved, such as the use of methane gas from landfills as an alternative to renewable energy, recycling waste into goods with economic value, and so on.

Law Number 32 of 2009 concerning Environmental Protection and Management,[10] Part Two concerning Community Obligations to Waste Management,

Article 67: Everyone is obliged to maintain the sustainability of environmental functions and control pollution and/or environmental damage.

Article 68 : Every person who conducts business and/or activities is obliged to:

a. Providing information related to environmental protection and management in a correct, accurate, open, and timely manner;
b. Maintaining the sustainability of environmental functions; and

[9] Soerjono Soekanto, 1989*, Legal Aspects of Health (A Collection of Notes), IND-HILLCO Publisher, Jakarta, p. 124.*

[10] Indonesia, *Articles 67 and 68 of Law Number 32 of 2009 concerning Community Obligations for Waste Management.*

c. Comply with the provisions on environmental quality standards and/or standard criteria for environmental damage.

The implementation of waste management in accordance with Jambi City Regional Regulation Number 5 of 2020 concerning Waste Management, every community that does not comply with the existing regulations will be subject to sanctions for the treatment they make. In this case, it is stated in Article 46 paragraph (3) letters c, d, and f of Jambi City Regional Regulation Number 5 of 2020 concerning Waste Management which in the article contains:

c. Any person who intentionally or is proven to throw garbage from the vehicle, is subject to a minimum fine of Rp. 500,000 (five hundred thousand rupiah);
d. Any person who intentionally or is proven to dredge or scavenge garbage at TPS 3R/TPST/TPST Area and Landfill which results in garbage being scattered, throwing garbage outside the designated disposal place/location, is subject to a minimum fine of Rp. 100,000 (one hundred thousand rupiah);
f. Waste management that violates the provisions and requirements that have been set out in the permit, is subject to administrative sanctions in accordance with the provisions in the applicable permit.

4. JAMBI CITY WASTE MANAGENET TABLE 2021 AND 2022 [11]

Table 1 : Jambi city waste management table that is processed at the Talang Gulo (TPA) landfill

Variable	Value	Caption
population	60.923	2021
Waste generation a day	1.522,31 $M^{3.}$	423,45 tons
Waste processed by TPS 3R	27,6 tons	6,52 %
Waste is used by waste banks	0,28 tons/day	0,07 %
Waste is used by collectors	6,33 tons/day	1,49 %
Waste is processed at WTE	0,4 tons/day	0.09 %
Waste brought to the landfill	**330,58 tons/day**	**78 %**

5. Conclusion

The famous Final Processing Site (TPA) in Jambi City, Talang Gulo Landfill accommodates as much as 620,000 tons of waste with the first system in it, namely the Sorting Plant or sorting with a capacity of 35 tons per day. The next stage is the Composting Plant or composting as much as 15 tons per day, the third stage is the laendfild process. After knowing the waste that needs to be processed in each process, we need to realize the need to reduce waste, which is meant to reduce waste, namely, by doing the 3Rs (Reduce, Reuse, and Recyle). This activity is intended to reduce, use or reuse, and recycle waste.[12]

[11] Information Data, *Jambi Province Environmental Service, Jambi City, https://dlhd.jambiprov.go.id/. Accessed June 4, 2024.*

[12] Interview with a section of the UPTD TPA Talang Gulo, Jambi City, on June 3 2024.

Several influencing factors waste processing is considered as system bottlenecks are the spread of and population density, socio-economic and characteristics of the physical environment, attitudes, behavior as well culture that exists in society.

The law states that a healthy environment is the right of every citizen. Article 65 paragraph 1 of Law Number 32 of 2009 concerning Environmental Protection and Management[13], reads: "Everyone has the right to a good and healthy environment as part of human rights." In the article, it is explained that everyone deserves a good and healthy living environment for a better future and guaranteed health. A good and healthy environment can be realized, one of which is by realizing good waste management and the synergy of the movement to overcome it.

References

Book:

Yudiyanto & Yudistira, E. & Tania, A. L. 2019. *Pengelolaan Sampah Pengabdian di Kota Metro*. Institut Agama Islam Negeri Metro & Sai Wawai Publishing. Kota Metro. Lampung

Direktorat Jenderal Cipta Karya. 2015. *Roadmap tentang Persampahan (100-0-100) Pengembangan Pengelolaan Persampahan*. Direktorat Jenderal Cipta Karya. Kementerian Pekerjaan Umum dan Perumahan Rakyat.

Journal:

Mahyudin, Rizqi Puteri. 2017. "Study of Waste Management Problems and Environmental Impacts at TPA (Final Processing Site). Jukung (Environmental Engineering Journal), Vol. 3, no. 1 : 66-74. Lambung Mangkurat University. Banjarbaru. South Kalimantan. http://dx.doi.org/10.20527/jukung.v3i1

Chaerul M., Tanaka M., Shekdar A.V. 2007. "Municipal Solid Waste Management in Indonesia: Status and The Strategic Actions." Journal of the Faculty of Environmental Science and Technology. Vol. 12, no. 1 : 41-49. Okayama University. http://doi.org/10.18926/fest/11432

Surya, Adhi and Dewi Arifah Noor. 2019. "Waste Management and Processing at the Gudang Tengah Village Market Through the 3 R Concept and Environmental Technology". Kacapuri Journal (Civil Engineering Scientific Journal). Vol. 2, no. 2. Muhammad Al Banjari Kalimantan Islamic University. http://dx.doi.org/10.31602/jk.v2i2.2675

Hendra, Yulia. 2016. "Comparison of Waste Management Systems in Indonesia and South Korea: Study of 5 Aspects of Waste Management". Aspiration (Journal of Social Problems). Vol. 7, no. 1 : 1-18. https://doi.org/10.46807/aspiration.v7i1.1281

Law and Regulations:

Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan dan Pengelolaan Lingkungan

[13] Indonesia, *Law Number 32 of 2009 concerning environmental protection and management.*

Hidup.

Peraturan Daerah (PERDA) Kota Jambi Nomor 5 Tahun 2020 Tentang Pengelolaaan Sampah.

Peraturan Daerah (PERDA) Nomor 6 Tahun 2016 Tentang Pengelolaan Lingkungan Hidup di Provinsi Jambi.

Site:

Program Sanitasi di Kota Jambi, Kementrian PUPR Kembangkan TPA Sampah Talang Gulo dengan *Sanitary Lanfill*", https://sahabat.pu.go.id/eppid/page/kilas_berita/2991/Program Sanitasi-di-Kota-Jambi-Kementerian-PUPR-Kembangkan-TPA-Sampah-Talang-Gulo dengan-Sistem-Sanitary-Landfill, diakses tanggal 5 Juni 2022.