



Legal Study on Waste Management on the Coastal Dadap Indramayu Coast in Waste Reduction and Handling from the Perspective of Indramayu Regency Regional Regulation Number 12 of 2016

Satrio Maulana Ibrahim¹, Anggi Trisna Sagita², Deni Yusup Permana⁴, Diky Dikrurahman⁴

Gunung Jati Swadaya University, Cirebon, Indonesia. Email satrio.mibrahim33x@gmail.com

Gunung Jati Swadaya University, Cirebon, Indonesia. Email ariadianggi866@gmail.com

Gunung Jati Swadaya University, Cirebon, Indonesia. Email deniyusuppermana80@gmail.com

Gunung Jati Swadaya University, Cirebon, Indonesia. Email dikrurahmandiky@gmail.com

Corresponding Author E-mail: satrio.mibrahim33x@gmail.com

Abstract

Background. Waste is an urgent global issue, especially in coastal areas that serve as the front line of interaction between land and sea.

Aim. to identify weaknesses in policy implementation and understand the factors that hinder waste management. It is hoped that the waste problem at Dadap Beach can be overcome so that this coastal area can return to a clean, healthy, and productive environment.

Methods. This approach is empirical juridical, which means that researchers conduct direct studies at the research site to obtain and collect relevant data.

Result. Waste management in Indramayu Regency is regulated through Indramayu Regency Regional Regulation Number 12 of 2016 concerning the Management of Household and Household Waste. Waste reduction is an important first step in waste management. In accordance with Article 7 of Regional Regulation Number 12 of 2016, the community is required to sort household waste into two main categories, namely organic and inorganic waste. Waste handling includes the collection, transportation, and final management of waste that has been collected. Based on Article 16 and Article 21 of Regional Regulation Number 12 of 2016, the main responsibility for waste management is in the hands of the Regional Government through DLH. In addition to the obstacles that have been mentioned, there are other systemic challenges in waste management on the coast of Dadap Beach

Conclusion. Implementation of Regional Regulation Number 12 of 2016, Obstacles in Waste Management, Social and Economic Impact

Implication. It is hoped that the waste problem at Dadap Beach can be overcome so that this coastal area can return to a clean, healthy, and productive environment

Keywords: legal study, waste management, regional regulation, Dadap Beach, DLH

INTRODUCTION

Land directly influences human activities because it is a factor of production that usually plays a crucial role in societal building (Ani, 2024). Data from the United Nations Environment Programme (UNEP) shows that about 8 million tons of plastic waste flows into the ocean yearly, most of which comes from land. The coast is the area most affected by this waste because it acts as a place to accumulate waste from various sources, both from human activities and carried by ocean currents. This problem pollutes the environment and negatively impacts the ecosystem, public health, and the local economy.

In Indonesia, which is known as an archipelagic country with the second longest coastline in the world, the problem of coastal waste is a big challenge. Indramayu Regency, one of the West Java Province's coastal areas, faces serious waste management issues, especially at Dadap Beach. This beach, which should be one of the tourism potentials and a source of livelihood for the fishing community, actually experiences a decline in environmental quality due to the accumulation of garbage that worsens yearly.

The garbage that accumulates on Dadap Beach comes from local activities and external sources, such as garbage carried by sea currents from other regions. The most dominant type of waste is single-use plastics, such as bottles, plastic bags, and styrofoam, which are difficult to decompose and harmful to the environment. According to research by Wijaya (2020), around 70-80% of the waste that pollutes Indonesia's beaches is plastic. In Dadap Beach, this condition is exacerbated by the lack of waste management facilities, low public awareness, and weak law enforcement related to waste management.

The Indramayu Regency Government issued "Regional Regulation Number 12 of 2016 concerning the Management of Household Waste and Similar Household Waste" to answer this challenge. This regulation aims to provide a legal basis for waste management involving two main approaches: waste reduction and handling. However, implementing this regulation in the coastal area of Dadap Beach does not seem to be effective. Waste continues to pile up, while programs designed to support the implementation of these policies, such as public education and infrastructure development, are still limited.

One of the main challenges in waste management at Dadap Beach is the lack of community participation. Most coastal communities do not fully understand the importance of sustainable waste management. The behavior of littering is still a habit that is difficult to change. According to Wardhani (2019), education about the importance of waste reduction and processing at the household level is a crucial step that has not been fully realized in coastal areas.

In addition, local governments face obstacles regarding cross-sector coordination, provision of facilities, and supervision of business actors or the community who do not comply with the rules. The TPS (Temporary Shelter) available in this area has not accommodated the increasing volume of waste. On the other hand, law enforcement against violators, such as illegal waste disposal, is still weak. This creates additional challenges for waste reduction and handling efforts in coastal areas.

From a socio-economic perspective, waste at Dadap Beach also impacts the livelihood of the local community. Fishermen are often bothered by garbage that hinders the movement of their boats or damaged fishing gear. Meanwhile, the beach area polluted with garbage loses its attractiveness as a tourist destination, which directly impacts the income of people who depend on the tourism sector, such as traders and tourism service managers.

Seeing this problem, an in-depth study is needed to evaluate the implementation of "Regional Regulation Number 12 of 2016" in waste management on the coast of Dadap Beach. This study aims to identify weaknesses in policy implementation and understand the factors that hinder waste management. It is hoped that the waste problem at Dadap Beach can be overcome so that this coastal area can return to a clean, healthy, and productive environment.

LITERATUR REVIEW

In 2020, amid the global COVID-19 pandemic, numerous nations and jurisdictions instituted lockdown measures to restrict the movement of individuals and so mitigate the transmission of the virus. This resulted in an abrupt decrease in economic activity, leading to several persons losing their jobs and/or income. Likewise, participation trends saw significant alterations in the inland fisheries industry (Swanepoel et al., 2025). The adverse effects of COVID-19 on the South African economy may have altered the attributes of inland fisheries. Potts et al. (2022) posited that the pandemic likely diminished participation in recreational fisheries; nevertheless, it may have concurrently augmented the number of impoverished individuals

engaging in subsistence fishing to fulfill their nutritional needs. Inland fish resources may prove advantageous during crises, such as the economic depression caused by COVID-19 (Hara et al., 2021).

Hook-and-line fishing, utilizing rod and reel or handline methods, is a significant practice in both recreational and subsistence fishing sectors, supplying leisure resources. Nutrition and revenue for numerous individuals globally (Gundelund & Skov, 2021). COVID-19 undoubtedly altered hook-and-line fisheries globally, whereas shifts probably influenced the advantages and consequences associated with hook-and-line fishing in behavior and participation patterns. The alterations in hook-and-line fishers can be affected by many circumstances, including demographic shifts, fishing quality, and societal advancements (Gundelund & Skov, 2021; Potts et al., 2022). Alterations in the conduct of hook-and-line fishers during the COVID-19 pandemic have been recorded in the developed world (Potts et al., 2022). A decrease in fishing efforts occurred due to travel limitations in Australia (Ryan et al., 2021), while an increase in fishing efforts among younger individuals from metropolitan regions was noted in Denmark (Gundelund & Skov, 2021).

METHODS

Method of Approach

This study uses empirical law research methods. Empirical legal research, also known as field research, is oriented towards collecting empirical data directly from the field. This approach is empirical juridical, which means that researchers conduct direct studies at the research site to obtain and collect relevant data.

Research Specifications

This qualitative research aims to describe the facts, conditions, or phenomena that are the focus of the study. After the data is collected, a critical analysis is carried out to provide a systematic and synchronous explanation of the symptoms or facts based on the juridical framework. This method is designed to answer the problems raised in the research.

Research Object

This research aims to study waste management on the coast of Dadap Beach, Indramayu, to reduce and handle waste from the perspective of Indramayu Regency Regional Regulation

Number 12 of 2016. The research also includes the implementation of this rule by the Indramayu Regency Environmental Office, area managers, and community participation.

Research Location

The research locations include the Indramayu Regency Environmental Office and the Dadap Village Office. The agency's competence in providing information and solutions related to the problems raised is a factor in the selection of these locations.

Types and Sources of Legal Materials

The sources of legal materials in this study consist of:

1. Primary Material Sources

- a) The data was obtained through direct interviews with the community, the Indramayu Regency Regional Government, especially the Indramayu Regency Environmental Office, and the Dadap Village Office.
- b) Observation of the environmental conditions of the coastal area of Dadap Beach.

2. Secondary Material Sources

- a) Indramayu Regency Regional Regulation Number 12 of 2016 concerning the Management of Household Waste and Household Waste.
- b) Books, journals, legal theories, and opinions of experts related to research topics.

Legal Materials Collection Techniques

Several techniques were carried out in the collection of research data:

1. Observation was conducted to understand empirical phenomena related to waste management at the research site. Researchers record symptoms or facts using direct observation.
2. Interview. The interview was conducted face-to-face with relevant resource persons, such as Indramayu Regency Environmental Office officials, Dadap Village officials, and the local community.

According to Lexi J. Moleong, an interview is a conversation with a certain intention. It is conducted by two parties: the interviewer who asks the question and the interviewee who answers the question. The interview aims to explore in-depth information about the policies, implementation, and challenges of waste management in the coastal area.

DISCUSSION

Legal Basis in Waste Management in Indramayu Regency

Waste management in Indramayu Regency is regulated through Indramayu Regency Regional Regulation Number 12 of 2016 concerning the Management of Household and Household Waste. This Regional Regulation ensured that waste reduction and handling can be carried out systematically, integrated, and sustainably. Important, relevant articles include:

1. **Article 4:** Regulating the obligations of each individual and business entity to manage waste by complying with the principles of reduction, handling, and not littering.
2. **Article 7:** Emphasizing the role of the community in sorting waste into organic and inorganic at its source.
3. **Article 16** regulates the Regional Government's obligation to provide waste management facilities, including Temporary Shelters (TPS) and Integrated Waste Management Sites (TPST).
4. **Article 21:** Authorize the Environmental Service (DLH) to transport and manage waste from the TPS to the Final Disposal Site (TPA) after sorting at the village level.

The stages in waste management, according to Indramayu Regency Regional Regulation Number 12 of 2016 concerning the Management of Household Waste and Similar Household Waste, the stages are divided into:

- 1) Selection is the activity of grouping and separating waste according to the type, amount and/or nature of waste.
- 2) Collection is the activity of picking up and moving waste from the source of waste to a temporary shelter or integrated waste management site.
- 3) Transportation is the activity of bringing waste from a source or temporary shelter to an integrated waste management site to the final processing site.
- 4) Management:
 - a. Waste management sites with the 3R (Reduce, Reuse, Recycle) principle, hereinafter referred to as TPS 3R, are places where Regional-Scale Collection, Selection, Reuse, and Re-Recycling activities are carried out.
 - b. The integrated waste management site, hereinafter abbreviated as TPST, is where collection, selection, reuse, recycling, management, and final processing are carried out.

- 5) Final waste processing is the process of safely returning waste and/or residues from previous waste management to environmental media

This regulation aims to provide a legal basis for waste management involving two main approaches: waste reduction and handling. It is a guideline for waste management efforts in the coastal area of Dadap Beach, Indramayu, which faces serious challenges related to the volume of waste that continues to increase every year.

Waste Reduction is the Responsibility of the Community and Village Government

Waste reduction is an important first step in waste management. In accordance with Article 7 of Regional Regulation Number 12 of 2016, the community is required to sort household waste into two main categories, namely organic and inorganic waste. This aims to reduce the amount of waste that is directly thrown into the landfill.

Reduction Steps That Have Been Taken:

1. Socialization and Education

The Dadap Village Government has conducted socialization regarding waste sorting in the community, especially regarding the importance of sorting organic, inorganic, hazardous, and toxic materials (B3). Several village areas have provided yellow, red, and green sorted garbage bins to facilitate this process. However, some still litter, showing the need for more intensive education.

2. Construction of Waste Bank and 3R TPS

DLH Indramayu encourages the establishment of waste banks in villages, including Dadap. The waste bank functions as a collection point for waste that still has economic value, such as used plastics and bottles, to be recycled or resold. In addition, DLH also proposes the construction of a 3R TPS that allows waste to be processed locally before being disposed of in landfills.

3. Waste Utilization for Abrasion Containment

Local innovation is carried out in RW 03 Dadap Village, where waste is used as an abrasion barrier material. Waste is packaged using used wire or nets to prevent further pollution in coastal areas. Although this step is temporary, it shows that there is a creative effort from the village government to reduce the negative impact of waste.

Obstacles in Waste Reduction:

1) Lack of Public Awareness

Many people still throw garbage carelessly in rivers or coastal areas. This is contrary to Article 4 of Regional Regulation Number 12 of 2016, which prohibits indiscriminate disposal of waste.

2) Inadequate Facilities

The garbage cans provided are often damaged or lost, making it difficult for people to sort waste effectively.

Waste Management Becomes the Role of the Government and DLH

Waste handling includes the collection, transportation, and final management of waste that has been collected. Based on Article 16 and Article 21 of Regional Regulation Number 12 of 2016, the main responsibility for waste management is in the hands of the Regional Government through DLH.

Waste Handling Process in Dadap Village:

1. Waste Collection by the Village Government

The Dadap Village Government is in charge of collecting garbage from the community and storing it in a Temporary Shelter (TPS). In a day, Dadap Village produces 2-3 dump trucks of garbage, most of which are in the form of organic waste such as leaves and plastic waste.

2. Transportation by DLH

DLH is responsible for transporting waste from TPS to landfill. Every time it is transported, the village is charged a levy fee of IDR 250,000 per dump truck. However, the limited village budget is an obstacle in carrying out regular transportation.

3. Final Management at the Landfill

In landfills, organic waste is processed into compost even though the scale is still small. DLH has also proposed the construction of an RDF (Refuse-Derived Fuel) TPST, which allows waste to be processed into alternative fuel for the Indramayu PLTU.

Obstacles in Waste Management:

1) Fleet and Infrastructure Limitations

The available waste hauler fleet is inadequate to manage large volumes of waste. In addition, not all villages have adequate TPS or waste banks, so the waste handling process is hampered.

2) High Levy Fees

The cost of the waste transportation levy is a heavy burden for the village, considering that the volume of waste produced every day is very high.

Systemic Barriers in Waste Management

In addition to the obstacles that have been mentioned, there are other systemic challenges in waste management on the coast of Dadap Beach:

1. Geographical Position of Dadap Village

Dadap Village is located in the downstream area, so it receives garbage shipments from the upstream area through the river, especially during the rainy season. Waste carried by this current is often undetected and accumulates in coastal areas.

2. Budget Limitations

Budget limitations at both the village and local government levels have delayed the procurement of facilities such as TPS 3R, waste banks, and other waste management infrastructure.

3. Community Paradigm

The lack of public awareness to sort waste and dispose of it in its place is one of the main factors causing the accumulation of waste in coastal areas. Changing the paradigm of society requires time and a consistent approach through education and socialization.

Recommendations for Law-Based Waste Management

Based on legal studies and field conditions, here are some recommendations to improve the effectiveness of waste management in Dadap Village:

1. Increased Socialization

The village government and DLH need to increase socialization programs to encourage the community to comply with Article 4 and Article 7 of Regional Regulation Number 12 of 2016.

2. Strengthening Facilities and Infrastructure

The procurement and repair of facilities such as sorted garbage cans, TPS, and waste banks must be a priority to facilitate waste management at the community level.

3. Collaboration with the Private and Community

Collaboration with the private sector, environmental care communities, and donor agencies can help fund and implement waste management programs.

4. Village Budget Improvement

The village budget allocation for waste management needs to be increased, including to pay the levy for transporting waste to landfills.

5. Strict Law Enforcement

The application of sanctions in accordance with Regional Regulation Number 12 of 2016 needs to be enforced consistently to provide a deterrent effect to people who violate waste management rules.

With these steps, waste management in Dadap Village is expected to run more effectively and sustainably, in line with the legal mandate contained in Regional Regulation Number 12 of 2016.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results of a legal study on waste management on the coast of Indramayu Beach in the perspective of Indramayu Regency Regional Regulation Number 12 of 2016, the following conclusions can be drawn:

1. Implementation of Regional Regulation Number 12 of 2016

This Regional Regulation regulates the management of household waste and similar household waste through two main approaches: reduction and handling.

- a) Waste reduction is carried out through public education to sort waste into organic, inorganic, and B3, as well as the provision of facilities such as sorted garbage cans.
- b) Waste handling involves transportation from the TPS to the landfill which is DLH's responsibility, with financing through levies imposed on the village.

2. Obstacles in Waste Management

Waste management in Dadap Beach faces several main obstacles:

- a. Lack of public awareness: Littering is still often found, even though socialization has been carried out.
- b. Lack of supporting facilities: TPS 3R and waste banks are not optimally available, while existing garbage cans are often damaged or lost.
- c. Budget limitations: The levy fee for waste transportation is a heavy burden for the village.

d. Geographical position: Dadap Village is located downstream of the river, so it receives an overflow of garbage from the upstream area, especially during the rainy season.

3. Social and Economic Impact

Garbage that pollutes Dadap Beach has a bad impact on the marine ecosystem, disrupts fishermen's activities, and reduces the attractiveness of the beach as a tourist destination. This affects the economies of coastal communities that depend on the marine and tourism sectors.

Suggestions

To overcome the problem of waste on the coast of Dadap Beach, the following recommendations can be implemented:

- 1) Increasing Public Education and Awareness
- 2) Strengthening Facilities and Infrastructure
- 3) Collaboration with the Private Sector and the Community
- 4) Consistent Law Enforcement

BIBLIOGRAPHY

- Ani, K. J. (2024). Oral History and Conflicts in Abakaliki, Nigeria: The Role of Traditional Institutions in Achara Unuhu Izzih and Ezza Nwogharu Crisis. *E-Journal of Religious & Theological Studies (ERATS)*, 10.
- Daeng, R. (2021). *Analisi Yuridis Pengelolaan Limbah Medis Covid-19 Menurut Hukum Lingkungan Internasional= Legal Analysis of Medical Waste of Covid-19 Management According to International Environmental Law* (Doctoral dissertation, Universitas Hasanuddin).
- Fadhilah, A. N., & Kushidayati, L. (2023, November). Legal Protection for the Community Against Environmental Pollution due to Tofu Industry Waste. In *Proceeding Of ICCoLaSS: International Collaboration Conference on Law, Sharia and Society* (Vol. 2, No. 1, pp. 1-16).
- Fernando, A. S., Irianto, H., Adelina, A., & Nugraha, X. (2020). Legal Analysis On The Management Of Suroboyo Bus Public Transportation In Surabaya City. *Syariah: Jurnal Hukum dan Pemikiran*, 20(1), 72-89.
- Gundelund C and Skov C (2021) Changes in angler demography and angling patterns during the Covid-19 lockdown in spring 2020 measured through a citizen science platform. *Mar. Polic.* 131. <https://doi.org/10.1016/j.marpol.2021.104602>
- Hara M, Muchapondwa E, Sara J, Weyl O and Tapela B (2021) Inland fisheries contributions to rural livelihoods: an assessment of fisheries potential. market value chains and governance arrangements. WRC Report No. 2497/1/20. Water Research Commission, Pretoria

- Hasanah, U., & Yogyakarta, U. M. (2019). Efektivitas Penggunaan Sistem Manajemen Sampah Perkotaan Di Tpst (Tempat Pembuangan Sampah Terakhir) Kota-Kota Besar Indonesia. *Universitas Muhammadiyah Yogyakarta*.
- Herman, P. W., & Wahyuni, A. (2023). The Importance Of Health Legal Regulations On Hospital B3 Waste Management. *Jurnal Informatika Medis*, 1(1), 1-11.
- Indramayu Regency Regional Regulation No. 12 of 2016 concerning the Management of Household Waste and Household Waste.
- Lexy J. Moleong (2007). "Qualitative Research Methodology". Bandung: PT Remaja Rosdakarya.
- Mukti Fajar ND and Yulianto Achmad (2010), Dualism of Normative Law and Empirical Law Research. Yogyakarta : Student Library.
- Nilam Sari, N. (2023). *Analisis Manajemen Pengelolaan Tempat Penampungan Sampah Sementara Di Kabupaten Muaro Jambi* (Doctoral dissertation, Universitas Jambi).
- Potts WM, Saayman M, Saayman A, Mann BQ, Van Der Merwe P, Britz P and Bova CS (2022) Understanding the economic activity generated by recreational fishing in South Africa provides insights on the role of recreational fisheries for social development. *Fish. Manage. Ecol.* 29 (1) 29–43. <https://doi.org/10.1111/fme.12515>
- Rahardi, A., Pambudi, R. E., Septiawan, Y., Muktiawan, D. A., & Irfan, M. (2024). Implementasi Sistem Informasi Geografis Pemetaan Lokasi Pembuangan Sampah Legal Berbasis Website Di Kota Bandar Lampung. *Jurnal SIMADA (Sistem Informasi Dan Manajemen Basis Data)*, 7(1), 15-25.
- Riyan KL, Desfosses CJ, Denham AM, Taylor SM and Jackson G (2021) Initial insights on the impact of COVID-19 on boat-based recreational fishing in Western Australia. *Mar. Polic.* 132. <https://doi.org/10.1016/j.marpol.2021.104646>
- Rianto, Andi (2004). "Social and Legal Research Methods". Jakarta: Granit.
- Setiawati, H., Hamzah, A. H. P., & Nurhasanah, N. (2024). Exploration of trend methods and scenarios in the implementation of an Sistem Manajemen Lingkungan (SML) in the batik industry of Klampar, Pamekasan Regency. In *Forum for University Scholars in Interdisciplinary Opportunities and Networking* (Vol. 1, No. 1, pp. 519-526).
- Setyawan, A., & Ayu, A. M. (2022). Legal Development in Post-COVID-19 Environmental Friendly Medical Waste Management Efforts through Local Wisdom. *Journal Of Legal And Cultural Analytics*, 1(4), 267-280.
- Sukardi (2005). "Competency Research Methodology and Its Practice". Jakarta : PT. Bumi Aksara.
- Suryani, A. S. (2012). Implementasi Undang-Undang Persampahan Di Pd Kebersihan Kota Bandung: Analisis Manajemen Pengetahuan the Implementation of Solid Waste Regulation in Pd Kebersihan of Bandung City.
- Swanepoel, P. J., Barkhuizen, L. M., Ellender, B. R., Van As, L. L., & Weyl, O. L. F. (2025). Social demographic patterns and participation in the Gariep Dam fishery, South Africa, during the Covid-19 pandemic. *Water SA*, 51(1 January).
- Tebai, Y., Syauta, N. M., & Baho, D. (2022). Perlindungan Hukum Terhadap Pekerja Kebersihan Sampah Dikota Sorong Ditinjau Dari Undang-Undang Nomor 13 Tahun 2003: Legal

- Protection Of Waste Cleaning Workers In Sorong City Viewed From Law Number 13 Of 2003. *Jurnal Wos Kenem*, 1(2), 35-51.
- Trio, S., Surya, D., & Hernimawati, H. (2024). Public Private People Partnership (4ps) in Waste Management Services: A Review of Efficiency and Effectiveness. *Jurnal Manajemen Pelayanan Publik*, 8(3), 957-971.
- Wardhani, A. (2019). The Role of Education in Increasing Awareness of Waste Management in Coastal Areas. *Journal of Environmental Education*.
- Wijaya, S. (2020). The Impact of Plastic Waste on Marine Ecosystems. *Journal of Marine Ecology*.