

Pancasila as the Foundation for Banyumas Real Action in Implementing the SDGs by Means of Waste Management

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Abstract: *As a country with a large population, Indonesia faces various environmental issues, particularly those related to waste, the complexity of which continues to increase in line with rapid population growth, intensification of activities, and changes in people's consumption patterns. Although various control efforts have been carried out, their implementation is considered less than optimal, so ideal waste management needs to be integrated with technology tailored to local conditions, potential, and social needs. Banyumas Regency in Central Java, which has become a model for waste management in the Southeast Asian region, continues to face challenges in implementing such management, even though Central Java Province, which has the potential for large waste generation in each of its regencies, has issued Regional Regulation Number 3 of 2014 concerning Waste Management as a derivative of Law Number 18 of 2008 and encourages regulations at the district or city level to lead to more sustainable waste management. This study aims to analyze waste management in Banyumas through a qualitative approach by collecting data from literature reviews and policy documents to obtain an objective picture of the real conditions, challenges, and strategies for waste management in the region, which shows that the implementation of waste management procedures is hampered by the limitations and unsuitability of Final Disposal Sites, suboptimal management system transitions, and low commitment and awareness of the community as a whole so that to realize the vision of "Banyumas Zero Waste" in a concrete and sustainable manner requires strong commitment, increased environmental education, and enforcement of regulations to expand the implementation of environmentally friendly waste management sites.*

Keywords : *Waste management, Banyumas landfill, Integrated Waste Management Site (TPST), waste bank, Environmental Service.*

Abstrak: Sebagai negara dengan penduduk yang besar, Indonesia menghadapi berbagai persoalan lingkungan, terutama yang berkaitan dengan sampah, yang kompleksitasnya terus meningkat sejalan dengan pesatnya pertumbuhan populasi, intensifikasi aktivitas, serta perubahan pola konsumsi masyarakat. Meskipun berbagai upaya pengendalian telah dilakukan, implementasinya dinilai belum optimal sehingga pengelolaan sampah yang ideal perlu diintegrasikan dengan teknologi yang disesuaikan dengan kondisi, potensi, dan kebutuhan sosial setempat. Kabupaten Banyumas di Jawa Tengah, yang telah menjadi model pengelolaan sampah di kawasan Asia Tenggara, tetap menghadapi tantangan dalam pelaksanaan pengelolaan tersebut, padahal Provinsi Jawa Tengah yang memiliki potensi timbulan sampah besar di tiap kabupatennya telah menerbitkan Peraturan Daerah Nomor 3

Tahun 2014 tentang Penanganan Sampah sebagai turunan dari Undang-Undang Nomor 18 Tahun 2008 dan mendorong peraturan di tingkat kabupaten atau kota untuk mengarah pada pengelolaan sampah yang lebih berkelanjutan. Penelitian ini bertujuan menganalisis pengelolaan sampah di Banyumas melalui pendekatan kualitatif dengan mengumpulkan data dari kajian pustaka dan dokumen kebijakan guna memperoleh gambaran objektif mengenai kondisi nyata, tantangan, dan strategi pengelolaan sampah di wilayah tersebut, yang menunjukkan bahwa pelaksanaan prosedur pengelolaan sampah terkendala oleh keterbatasan dan ketidaklayakan Tempat Pembuangan Akhir, transisi sistem pengelolaan yang suboptimal, serta rendahnya komitmen dan kesadaran masyarakat secara keseluruhan sehingga untuk mewujudkan visi “*Banyumas Zero Waste*” secara konkret dan berkelanjutan diperlukan komitmen kuat, peningkatan pendidikan lingkungan, dan penegakan regulasi guna memperluas penerapan situs pengelolaan sampah yang ramah lingkungan.

Kata kunci: Pengelolaan Sampah, TPA Banyumas, Tempat Pengelolaan Sampah Terpadu (TPST), Bank Sampah, Dinas Lingkungan Hidup.

Introduction

Indonesia currently ranks fourth in the world as the most densely populated country. This highly concentrated population in certain areas gives rise to a variety of complex problems, including the management of community-generated waste, which has long been a major issue, particularly in urban areas fraught with social, cultural, and financial challenges. Rapid population growth, increased economic activity, and changes in the composition and characteristics of the waste produced have exacerbated these problems. Although various integrated and self-help-based waste management approaches have been widely developed and implemented, the results achieved have not been commensurate with existing needs. Under current conditions, the impact of community-generated waste management is a very urgent and proportionate issue that requires immediate attention.

The problem of waste has become not only a pressing environmental issue but also a highly complex one, especially in regions with high population growth and increasing economic activity. In many regions in Indonesia, waste management has even become a major obstacle to achieving sustainable development. Banyumas Regency in Central Java, for example, faces serious challenges in waste management, which in turn impacts environmental quality and the health of its residents. Ironically, this region was once recognized as a model for waste management in Southeast Asia.

According to data from the Central Statistics Agency (2021), the population of Central Java in September 2020 reached 36.52 million, an increase of 4.1 million compared to the population in 2010. Meanwhile, the Central Java Environmental Agency reported that in 2019 the province produced 5,604,080.65 m³ of waste per day, with 49.50% of it being disposed of without processing. To address this waste problem, the Central Java Provincial Government has established Regional Regulation Number 3 of 2014 concerning Waste Management in Central Java,

which is an elaboration of Law Number 18 of 2008 concerning Waste Management of the Republic of Indonesia and aims to protect public health and the environment. Although each district/city in the region has its own regional regulations regarding waste management, some regions still apply old regulations that have not been adapted to the principles of sustainable development (Permatasari & Wahyunengseh, 2022) .

A deep understanding of waste and its management is one of the important pillars in building awareness and encouraging the community's willingness to manage waste responsibly, in line with Article 10 of Banyumas Regency Regional Regulation Number 6 of 2012 which emphasizes that every member of the community has a subsidiary role in recognizing the basic principles of 3R waste management and various types of waste (Marlina et al., 2021) .

According to Law Number 18 of 2008 concerning Waste Management, representatives of postal and regional governments are responsible for planning and ensuring environmentally friendly waste management. Waste management also involves community participation, as waste is also generated by the community (Khofifah Kurnia Amalia, 2020) .

In general, waste management in Indonesia is grouped into two methods, namely *Sanitary Landfill* and *Open Dumping* . The *Sanitary Landfill method* is carried out by disposing of, burying, and compacting waste in a concave location, then covering it with soil, while *Open Dumping* is the practice of piling up waste in open land without further treatment which has the potential to cause wider negative impacts. Based on Law Number 18 of 2008 concerning Waste Management, every city or district government that still operates an *open dumping -based Final Disposal Site (TPA)* is required to prepare a closure plan within one year and replace it with a sanitation-based TPA. In line with its commitment to sustainable development, Banyumas Regency has realized the relocation of the Gunung Tugel TPA which previously implemented an *open dumping system* to the Kaliiori TPA. Considering the significant impact caused by waste, waste management in this region requires a more in-depth analysis, according to the Head of the Banyumas Regency Environmental Agency (DLH), the daily waste volume reaches 600 tons, originating from around two million residents assuming an average waste production of 0.3 kg per person per day, where only 45% (around 270 tons per day) is transported by DLH to the landfill, while the rest is diverted to various management channels, some to the recycling industry, waste collectors, waste banks, or Integrated Waste Management Sites (TPST), some are managed directly by the community (15% or 60 tons), composted (5% or 30 tons), and 35% (around 200 tons) are not managed at all (Laely Priatna et al., 2020) .

The waste problem can be addressed through systematic, gradual, and sustainable management, encompassing two main aspects: waste reduction and management. Waste reduction is achieved through the application of the 3R principle, which consists of recycling, reducing, and reusing waste. While waste

management encompasses a series of hierarchical activities as regulated in Law Number 18 of 2008 concerning Waste Management, which includes the stages of separation, collection, transportation, processing, and final handling (Anindita Meutiasari, NK et al., 2024) .

The 3R concept, which encompasses *Reduce*, *Reuse*, and *Recycle*, is the primary plan in waste management, with the goal of reducing the volume of waste ending up in landfills. By applying this principle, waste is no longer viewed solely as waste, but rather as a resource with economic value and environmental benefits. One concrete manifestation of the application of the 3R principle is seen in the existence of waste banks, which provide a space for the community to actively participate in waste management through the recycling process. Through waste banks, waste management not only contributes to environmental preservation but also encourages improved community welfare because the community can earn additional income from the collection and marketing of sorted waste, thereby helping to improve the quality of life while reducing poverty levels. Thus, waste banks are not merely a local solution to addressing waste issues, but rather a concrete action that contributes to the achievement of *the Sustainable Development Goals* , especially point 12 concerning Responsible Consumption and Production (Viranda et al., 2024) .

Research methods

This research was conducted using a qualitative method that relies on the main technique of literature study through the collection and review of various written sources such as books, journals, and policy documents related to waste management and Final Processing Sites (TPA).

A literature review is considered crucial because it is the basis for researchers in determining a research theme or title. It serves as the foundation for the entire research being presented. Generally, it explains ideas, previous research findings, and relevant materials to support the research being conducted. To develop a strong and focused conceptual design, researchers need to conduct a search for relevant data on the research topic. This stage is crucial for obtaining appropriate and useful information for the research being conducted (Ridwan et al., 2021) .

Results and Discussion

In an effort to realize waste management that guarantees the fulfillment of rights and obligations and integrates public publication and participation, Law Number 18 of 2008 concerning Waste Management was drafted which is based on an oriented and civilized analysis and is based on obedience, justice, safety, and commercial value, while being in line with applicable laws and regulations. However, in its implementation, the waste problem in Indonesia has developed into a challenging phenomenon that has not been fully resolved, so that now Indonesia

is still in a state of emergency due to the very rapid growth rate of the amount and variety of waste, which is in line with the increase in population and technological advances, while complementary efforts to the existing management system are still very dependent on the TPA system which has not yet reached balance (Ilmu & P-issn, 2022) .

Part of the waste management target in Banyumas Regency is to transform the open dumping system *into* a source-focused waste management method. Based on research by the Environmental Agency, the primary goal of this policy is to achieve *zero waste in Banyumas Regency* (Putranto et al., 2021) .

Analysis of Waste Management Policy in Banyumas Regency

In an effort to address the waste problem in Banyumas Regency, the Banyumas Regency Environmental Service refers to the Banyumas Regent Regulation Number 24 of 2023 concerning the Implementation of Waste Management which was issued after the operation of the Final Disposal Site was stopped, so that the village government was appointed as the party entrusted with carrying out waste management obligations according to their respective authorities and administrative areas, including by forming a Community Self-Help Group tasked with regulating waste management in the local area (Galuh Lalita Paramarta, 2024) .

This study revealed that the main problem in waste management lies in the lack of adequate Final Disposal Sites (TPA), considering that the Gunung Tugel Landfill in Banyumas Regency has exceeded its capacity and is no longer able to accommodate the increasing volume of waste due to a suboptimal waste management system. To date, the transition from an *open dumping system* that adheres to a collect-transport-dispose to TPA pattern to source-based waste management that aims to handle waste directly at its source to prevent generation has not been optimally implemented. Field findings indicate that waste generation is still around 70–80% and source-based management is not yet optimal, while coordination and shared responsibility among policymakers are also ineffective, as reflected in the utilization of Integrated Waste Management Sites (TPST) as the spearhead of source-based management that is still not optimal. Although the Kedungrandu TPST under the auspices of the Banyumas Regency Office has been operating well, the number of other TPSTs is still limited and their implementation is uneven. Meanwhile, at the community level, the perception that waste management is not the responsibility of individuals or households but is solely a government matter remains very strong (Putranto et al., 2021) .

The Gunung Tugel Landfill, located in Kedungrandu Village, Patikraja District, Banyumas Regency, is the only final disposal site that accepts all waste from the Purwokerto area. Although waste from markets and households is actually separated into organic and inorganic, all types of waste are mixed together at this landfill due to limited available fleet. Hazardous and toxic waste is not disposed of

at the Gunung Tugel Landfill, but is processed independently by the factories or hospitals that produce it. The site uses waste processing methods such as *open dumping* and *controlled landfill*, which have caused complaints from local residents due to unpleasant odors and health problems such as coughing. Although, according to a scavenger, the clean water used for toilets, drinking, and cooking in the area has not been contaminated. Considering the negative impacts of the *open dumping method*, including the emergence of methane gas, unpleasant odors, air pollution, and groundwater contamination by leachate, the Banyumas Regency Government began to abandon this approach by closing the Gunung Tugel Landfill in 2016, and since 2018 the government has built a number of Integrated Waste Management Sites (TPST) equipped with closed hangars to accommodate waste, where organic and inorganic waste that has been sorted is still utilized and provides income for the managers, while the residue that cannot be utilized is sent to the final disposal site (Laely Priatna et al., 2020).

This policy option makes communities not only waste producers but also co-responsible for the waste they produce. Although technically efficient waste management methods in this alternative have not been fully implemented, a fact that does not necessarily serve as a benchmark for waste management at the local level. Given that waste banks have demonstrated the ability of residents to take responsibility for collecting waste from their homes and processing it more thoroughly, their establishment should begin at the neighborhood or community level. Economically, this approach is considered very affordable because it does not require a large allocation of funds from the regional budget (APBD), although it must still be tailored to the capabilities of the village community. However, from a political perspective, the success of this alternative is not guaranteed if there are overlapping authorities, unclear parties responsible for monitoring technical implementation, and a lack of clarity regarding who bears primary responsibility. In this context, the role of the UPKP appears to have failed to achieve the expected results compared to its number of employees and the size of its service area. While administrative assessments are complicated by the need for clear SOP guidelines for implementation in the field, including provisions regarding the waste bank's obligation to submit results, the implementation methods used, and the parties involved in the process. Although the implementation of waste banks is basically possible, this approach should not be the main focus because its role is more effective at the micro scale, although it will face various challenges when implemented at the macro level in the Banyumas Regency area (Putranto et al., 2021).

Conclusion

Although Banyumas Regency has a strong legal basis for waste management sourced from Law Number 18 of 2008 concerning Waste Management and Banyumas Regent Regulation Number 24 of 2023 as its

implementing regulations, efforts to improve the implementation of these regulations are still hampered by various complex obstacles that are exacerbated by limited facilities and infrastructure such as TPA and TPST so that the implementation of regulations in the field has not been running optimally, which is evident from waste management practices that often do not meet standards and have a significant impact on the environment and public health.

A concrete step reflecting the Banyumas Regency Government's commitment to the landfill closure of Gunung Tugel, marking the end of open waste disposal practices that have been causing ecosystem damage. The closure of Gunung Tugel means Banyumas has begun the transition to a zero-waste management system. This means focusing on waste management through recycling, composting, and reducing waste volume at source. However, this transformation is not easy, especially considering the synergy between the three actors: the central government, the private sector, and the community. If collaboration between these three parties is weak, the process towards sustainable waste management could stagnate, and waste problems will persist.

This policy faces several obstacles that reduce its success rate, particularly low public understanding and participation in waste management, as many residents are still unaware of the importance of sorting waste at the source, both in households and businesses, resulting in organic and inorganic waste often being mixed and making it difficult to recycle. Coordination between policy makers has also not been optimal, given that agencies such as the Environmental Services of village and sub-district governments tend to work separately without adequate synergy, ultimately rendering programs such as waste collection and educational campaigns ineffective. Limited waste management facilities in various regions also hamper the implementation of this policy, as not all villages or sub-districts have access to adequate TPSTs, resulting in waste accumulation.

The study results indicate that the most effective policy is to build more waste processing facilities (TPST) and hangars in every village and sub-district. TPSTs aim to serve as local waste processing centers, requiring community participation in sorting, composting, and recycling. The presence of hangars can reduce the amount of waste sent to the main landfill by 30–50%. This policy can also encourage economic empowerment through the sale of compost and recycled materials.

Strong collaboration between local governments, communities, and relevant institutions is needed to expand TPST development across all districts. Environmental education through campaigns in schools, social media, and community activities needs to be encouraged to raise public awareness. Regulations and oversight should be strengthened with regular sanctions for violators to ensure smooth implementation. Banyumas Regency can realize the "Banyumas *Zero Waste*" vision in a concrete and sustainable manner by implementing these steps to create a cleaner, healthier, and more welcoming environment for future generations.

References

- Anindita Meutiasari, N.K., Kismartini, K., & Hanani, R. (2024). Urgensi Peran Stakeholders Dalam Pengelolaan Sampah. *Journal Of Public Policy And Management Review*, 1–11.
- Galuh Lalita Paramarta, S. (2024). Perbandingan Pengelolaan Sampah Di Negara Indonesia Comparison of Waste Management in Indonesia and. *Jurnal Hukum POSITUM*, 9(2), 88–105.
- Ilmu, J. K., & P-issn, P. G. (2022). 3 1,2,3. 05(01), 53–64.
- Khofifah Kurnia Amalia, S. (2020). Kajian Tentang Pengelolaan Sampah di Indonesia. *Kajian Tentang Pengelolaan Sampah Di Indonesia*, 03(03), 1–9. <https://ejournal.unesa.ac.id/index.php/swara-bhumi/article/view/35038>
- Laely Priatna, Wahyu Hariadi, & Elly Kristiani Purwendah. (2020). Pengelolaan Sampah di Tempat Pembuangan Akhir (TPA) Gunung Tugel, Desa Kedungrandu, Kecamatan Patikraja, Kabupaten Banyumas. *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma*, 22(1), 73–79. <https://doi.org/10.51921/chk.0gbewq68>
- Marlina, H., Rahmadani, I., & Rahmawati, D. E. (2021). Partisipasi Masyarakat dalam Pengelolaan Sampah di Kabupaten Banyumas Tahun 2019 Berdasarkan Perda Nomor 6 Tahun 2012. *Jurnal Pemerintahan Dan Kebijakan (JPK)*, 2(2), 72–80.
- Permatasari, A. A., & Wahyunengseh, R. D. (2022). Analisis Isi Kebijakan Perbandingan Peraturan Daerah Pengelolaan Sampah di Jawa Tengah Tahun 2017-2021. *Wacana Publik*, 2(2), 270. <https://doi.org/10.20961/wp.v2i2.66551>
- Putranto, F. R., Yuniningsih, T., Dwimawanti, I. H., Publik, D. A., Diponegoro, U., Profesor, J., & Soedarto, H. (2021). Juta Ton. *Journal Of Public Policy And Management Review*, 12(1), 73–89.
- Ridwan, M., AM, S., Ulum, B., & Muhammad, F. (2021). The Importance Of Application Of Literature Review In Scientific Research. *Jurnal Masohi*, 2(1), 42.
- Viranda, E., Novaria, R., & Soesiantoro, A. (2024). Implementasi Kebijakan Pengelolaan Sampah Sebagai Upaya Penerapan Sustainable Development Goals (Sdgs) Di Kecamatan Mulyorejo Kota Surabaya. *PRAJA Observer: Jurnal Penelitian Administrasi Publik (e- ISSN: 2797-0469)*, 4(04), 188–198. <https://doi.org/10.69957/praob.v4i04.1603>