SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop

Science and Environmental Journals for Postgraduate
Vol. 7 No. 1 (pp. 25-29) December 2024
p_ISSN 2655-5085
e_ISSN 2655-5239

Waste Management at Purus Padang Beach

Indri Gus Permata Sari[1]*, Eri Barlian[1], Elsa Yuniarti[1], Linda Handayuni[2], Eni Kamal[3], Widya Prarikeslan[1], Abdul Razak[1]

[1]Master of Environmental Science, Postgraduate School – Universitas Negeri Padang
[2]STIKES Dharma Landbouw Padang
[3]Faculty of Fisheries and Marine Sciences – Universitas Bung Hatta
*E–mail: indriguspsari@student.unp.ac.id

Received: 26 Nov. 2024, Revised: 28 Nov. 2024, Accepted: 30 Nov. 2024

ABSTRACT

This study investigates waste management challenges at Purus Beach, Padang City, West Sumatra, with the aim of identifying effective strategies to address environmental and sanitation issues caused by increased tourism and trading activities. A qualitative approach was employed, involving data collection through interviews and observations, with participants including representatives from the Padang City Environment and Forestry Service (DLHK), cleaning staff, traders, and tourists. The findings reveal that waste accumulation at Purus Beach primarily originates from household and industrial debris transported by rivers, exacerbated by poor public awareness and inadequate government policies. Current waste management efforts, such as the provision of segregated bins through CSR initiatives, remain insufficient. Key areas of concern include the lack of sustainable waste processing systems and ineffective regulatory enforcement. Recommendations include improving infrastructure, raising public awareness, fostering community participation, integrating technological innovations, and enforcing stricter policies, such as bans on single-use plastics.The study concludes that a comprehensive, long-term waste management approach is crucial for preserving coastal environments and supporting sustainable tourism. Effective waste management not only enhances environmental health but also contributes to economic and social development in coastal regions.

KeyWords: *Waste Management, Coastal, Purus Beach, Sustainable Tourism, Environmental Policy*

This work is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License

INTRODUCTION

One of the regional potentials that can be developed in Padang City lies in the tourism sector. Purus Padang Beach, strategically located in West Sumatra, serves as both a tourist attraction and an iconic destination for Padang City. This area supports various recreational activities, such as jogging, cycling, beach volleyball, futsal, surfing, and other sports. Additionally, it is a popular culinary tourism spot, offering seafood and grilled fish specialties alongside a relaxing atmosphere where visitors can enjoy the sunset and local snacks. According to Law No. 1/2014, which amended Law No. 27/2007 on the Management of Coastal Areas and Small Islands, coastal regions can be utilized for tourism purposes. Furthermore, the 2011 Padang City Coastal and Small Island Zoning Plan (RZWP3K) also designates portions of the coastal area for tourism (Putra et al., 2023). However, the current state of tourism facilities and infrastructure, particularly around Purus Padang Beach, requires significant improvements to enhance both quality and quantity. Developing adequate tourism infrastructure is crucial to implementing a beach tourism concept in West Sumatra that can generate a multiplier effect, improving

community welfare and attracting more visitors.

An increasing number of tourists and traders at Purus Beach has led to a corresponding rise in waste production. This issue is attributed to two primary factors: 1) poor public habits, including a lack of discipline and awareness regarding environmental management; and 2) inadequate governmental policies for waste management, as highlighted by Kahfi (2017). Current waste coordination policies often lack scientific methods, adversely affecting both environmental and public health. A comprehensive and systematic approach to waste and environmental management is necessary to foster community behavioral change. Legal clarity regarding the roles and responsibilities of the government, regional authorities, businesses, and society is essential to ensure balanced, effective, and efficient waste management (Kahfi, 2017).Coastal areas face significant waste-related challenges, particularly due to their proximity to populations. Most waste in these regions is generated by human activities, including household, tourist, and riverborne debris (Patuwo et al., 2020). It is estimated that 10% of land-based waste enters the sea, predominantly plastic, which degrades slowly and impacts environmental quality. Accumulated waste serves as breeding grounds for pests, causes air, water, and soil pollution, and poses health risks (Yuliadi et al., 2017). Addressing waste issues requires both government and community participation, as the volume of waste grows annually with population increases and rising living standards (Sahil et al., 2016).

Waste remains one of Indonesia's most pressing environmental challenges, particularly in urban areas. Improper waste disposal significantly harms ecosystems, threatening air, water, and soil quality. Unmanaged waste, a byproduct of human activity, grows in volume alongside population expansion. If not addressed, waste can severely disrupt and degrade the environment. Environmental pollution, including malodorous air, murky water, and littered soil, can progress from nuisance to a significant health hazard. Davis (1985) defines the beach as an area extending from the lowest point of sea water at low tide to land until it reaches the effective wave boundary. The coastline, influenced by tides, waves, and currents, is dynamic, with its position shaped by interactions among topography, rock properties, and natural forces. Dahuri (1996) emphasizes that coastal areas are vital for economic activities, including fisheries, ports, tourism, and waste disposal.

Law No. 27/2007, as amended by Law No. 1/2014, defines coastal areas as transitional zones between land and sea ecosystems, subject to changes on both sides. These areas include administrative sub-districts on land and extend up to 12 nautical miles into the sea. Human population growth exacerbates environmental challenges in these regions, with damage stemming from both natural and human-induced factors (Prawiro, 1980). Natural disasters like tsunamis and human actions such as deforestation, industrial waste disposal, and pollution contribute significantly to environmental degradation.Law No. 18/2008 outlines comprehensive waste management strategies from upstream (pre-production) to downstream (post-consumption). Improper waste disposal violates environmental regulations, causing harm to health, ecosystems, and communities. Addressing waste management issues requires a holistic approach to minimize environmental and health

risks effectively. According to WHO (2002), 1,000 people generate 2–4 m^3 of waste daily. When improperly disposed of, this waste pollutes soil, water, and air, threatening ecosystems and public health (Purwana, 2017). Effective management of coastal and small island areas, as stipulated by Law No. 27/2007, involves planning, utilization, supervision, and control across sectors and ecosystems. Sustainable waste management is essential not only to ensure cleanliness and health but also to support economic and environmental sustainability for future generations.

METHODS

This study was conducted at Purus Beach in Padang City, West Sumatra Province, utilizing a qualitative research approach. Data collection methods included interviews and observations (supported by documentation), which were analyzed to uncover comprehensive phenomena related to waste generation and management. The informants for this study comprised representatives from the Environment and Forestry Service (DLHK) Padang City, cleaning staff working in the beach area, as well as traders and tourists frequenting Purus Beach. These perspectives provided a holistic understanding of the waste management challenges and practices observed in the area.

RESULTS

Most environmental problems stem from human attitudes and behaviors that fail to adopt preventive measures. Environmental degradation often manifests visibly, such as piles of garbage in coastal areas. Ecosystems, which rely on balanced interactions among various components, can experience significant disruptions when exposed to one or more pollutants (Whitehead, 2013). Persistent pollution exacerbates these issues, ultimately leading to severe environmental damage. Living near accumulated solid waste not only compromises hygiene but also diminishes enthusiasm for life and motivation to care for the surrounding environment. Neglected waste tends to attract more waste, perpetuating unhygienic conditions. To prevent such issues, solid waste must be managed effectively and systematically. From the results of observations, the following is documentation of the current state of Purus Padang Beach.

Observations at Purus Padang Beach reveal alarming amounts of garbage, as documented in Figure 2. Interviews with informants indicate that much of this waste originates from marine debris carried downstream by rivers. This includes household and industrial waste discarded by the community, which accumulates along the shores of Purus Padang Beach. Efforts to address this issue include initiatives by the DLHK Padang City, which has facilitated segregated waste bins, ranging from plastic to cast-in models. Several Corporate Social Responsibility (CSR) programs have also contributed to providing these facilities. However, effective waste management requires meticulous planning. Key stages

include determining waste characteristics (type and volume), identifying the source of waste, evaluating potential hazards, implementing collection and transportation systems, and adopting sanitary disposal and processing methods.

Figure 2. Garbage on Purus Beach in Padang

At tourist sites, waste management strategies should encompass infrastructure improvements (such as strategically placed segregated bins), public education on proper waste disposal, community engagement (e.g., waste banks and regular cleanups), technological innovation (like reporting apps or recycling machines), and policy enforcement (e.g., banning single-use plastics and incentivizing proper waste management). Private sector involvement through CSR programs or sponsorships can further enhance these efforts. Presidential Regulation Number 83/2018 on Marine Waste Management outlines a national action plan for 2018-2025 (Akhir, 2018). This strategy emphasizes raising public awareness through education initiatives targeting civil servants, students, and educators. These measures aim to foster a clean, comfortable, and sustainable environment for tourists and local communities. Effective waste management has profound implications for environmental sanitation. It reduces disease, prevents water and soil pollution, mitigates unpleasant odors, minimizes flooding risks, and improves overall quality of life (Frazer-Williams et al., 2024; Rathod et al., 2025). Moreover, robust waste management supports sustainable development and promotes societal well-being, ensuring a healthier future for all.

CONCLUSIONS

According to the Law of the Republic of Indonesia No. 18/2008, waste is recognized as a national issue that must be managed comprehensively and integratively from upstream to downstream. This approach aims to ensure that waste management provides economic benefits, promotes public health, safeguards the environment, and fosters positive behavioral changes within communities. Effective coastal area management, when carried out in accordance with relevant regulations, can significantly enhance the success of such

efforts and increase the appeal of coastal regions. This improvement, in turn, contributes to boosting the income of local residents and regional economies. Maintaining beach cleanliness, particularly through proper waste management, is a critical component of this process. Sustainable coastal area management is essential for preserving these environments for future generations. Efforts should not be focused solely on immediate benefits but must prioritize long-term strategies that ensure the ongoing viability and enjoyment of coastal areas. By adopting forward-thinking and sustainable practices, coastal regions can remain both economically and environmentally valuable over time.

REFERENCES

Akhir, K. (2018). *A critical analysis of technological interventions towards the national action plan for marine litter management 2018–2025: Recommendations for addressing marine plastic litter in the 'New Balis' of Indonesia sustainably* [Dissertation proposal, World Maritime University].

Dahuri, R., Ginting, S. P., Rais, J., & Sitepu, M. J. (1996). *Pengelolaan sumber daya wilayah pesisir dan lautan secara terpadu.* Jakarta: Pradnya Paramita.

Davis Jr, R. A. (1985). Beach and nearshore zone. In *Coastal sedimentary environments* (pp. 379-444). New York, NY: Springer New York.

Frazer-Williams, R., Ogundiran, M. B., & Unuabonah, E. I. (Eds.). (2024). *Environmental Pollution and Public Health: Case Studies on Air, Water and Soil from an Interdisciplinary Perspective*. Elsevier.

Patuwo, N. C., Pelle, W. E., Manengkey, H. W. K., Schaduw, J. N. W., Manembu, I. S., & Ngangi, E. L. A. (2020). Karakteristik sampah laut di Pantai Tumpaan Desa Tateli Dua Kecamatan Mandolang Kabupaten Minahasa. *Jurnal Pesisir dan Laut Tropis, 8*(1).

Purwana, R. (2017). *Manajemen kedaruratan kesehatan lingkungan dalam kejadian bencana.* Depok: Rajagrafindo Persada.

Prawiro, R. H. (1983). *Ekologi lingkungan pencemaran.* Semarang: Satya Wacana.

Rathod, S. V., Saras, P., & Gondaliya, S. M. (2025). Environmental Pollution: Threats and Challenges for Management. *Eco-Restoration of Polluted Environment*. 1-34.

Putra, A., Dewata, I., Hermon, D., Barlian, E., Umar, G., Widodo, T., & Damanhuri, H. (2023). Activity Recommendations Based on an Environmental Approach in Zoning of Marine Protected Areas (MAPS) Pariaman City-Indonesia. *EnvironmentAsia*, *16*(3). 57-67.

Sahil, J., Al Muhadar, M. H. I., Rohman, F., & Syamsuri, I. (2016). Sistem pengelolaan dan upaya penanggulangan sampah di Kelurahan Dufa-Dufa Kota Ternate. *Jurnal BIOeduKASI, 4*(2). ISSN 2301-427.

Undang-Undang (UU) Republik Indonesia. (2008). *Undang-Undang Republik Indonesia Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah.*

Whitehead, A. (2013). Interactions between oil-spill pollutants and natural stressors can compound ecotoxicological effects. *Integrative and comparative biology*, *53*(4), 635-647.

World Health Organization (WHO). (2022). Environmental health in emergencies and disasters. In B. Wisner & J. Adams (Eds.), *World Health Organization.* Geneva.

Yuliadi, L. P. S., Nurruhwati, I., & Astuty, S. (2017). Optimalisasi pengelolaan sampah pesisir untuk kebersihan lingkungan dalam upaya mengurangi sampah plastik dan penyelamatan Pantai Pangandaran. *Jurnal Pengabdian Kepada Masyarakat, 1*(1). 14 - 18