

IMPLEMENTATION OF PANCASILA VALUES REGARDING PLASTIC WASTE MANAGEMENT AWARENESS AMONG THE COASTAL COMMUNITY OF TAPIAN NAULI I VILLAGE

Implementasi Nilai-Nilai Pancasila Terhadap Kesadaran Pengelolaan Sampah Plastik
Pada Masyarakat Pesisir di Desa Tapan Nauli I

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ABSTRACT

Plastic waste in Indonesia's coastal areas poses a serious threat to marine ecosystems and the livelihoods of fishers. Tapan Nauli I Village in Central Tapanuli, North Sumatra, faces an accumulation of plastic waste due to poor management practices and limited facilities. This study aims to identify the level of community awareness regarding plastic waste management and to analyze the implementation of *Pancasila* values in maintaining coastal environmental cleanliness. A descriptive approach supported by quantitative data was employed. Data were collected through observation, interviews, and documentation involving 40 respondents in June 2026. Interview and observation data were analyzed using a descriptive-qualitative method to describe the community's knowledge, attitudes, and waste management practices. Quantitative data from the 40 respondents served as supporting information and were presented as frequencies and percentages to illustrate response trends across the aspects studied. The results indicate that community awareness and knowledge regarding the dangers of plastic waste are good; the majority understand the ecological and economic impacts. However, a gap exists between knowledge and practice: 87.5% of respondents admitted to dumping waste into the sea or burning it, primarily due to limited disposal facilities and the lack of a proper management system. Religious and *Pancasila* values—specifically mutual cooperation (*gotong royong*), unity, and social responsibility—are deeply ingrained and motivate participation in cleanup activities, although such participation is not yet uniform. Major obstacles include structural factors (lack of facilities) and cultural factors (habits of high plastic usage). The study concludes that plastic waste management requires a holistic approach integrating infrastructure improvements, continuous participatory education, regulatory enforcement, and the strengthening of local values based on *Pancasila* to foster collective action and coastal environmental sustainability.

Keywords: plastic waste, community awareness, *Pancasila* values, coastal environment, waste management

ABSTRAK

Sampah plastik di wilayah pesisir Indonesia merupakan ancaman serius bagi ekosistem laut dan ekonomi nelayan. Desa Tapian Nauli I, Tapanuli Tengah, Sumatera Utara, menghadapi akumulasi sampah plastik akibat praktik pengelolaan yang tidak terkelola dan keterbatasan fasilitas. Penelitian ini bertujuan mengidentifikasi tingkat kesadaran masyarakat terhadap pengelolaan sampah plastik serta menganalisis implementasi nilai-nilai Pancasila dalam menjaga kebersihan lingkungan pesisir. Penelitian menggunakan pendekatan deskriptif dengan dukungan data kuantitatif. Data dikumpulkan melalui observasi, wawancara, dan dokumentasi terhadap 40 responden pada Juni 2026. Data hasil wawancara dan observasi dianalisis secara deskriptif kualitatif untuk menggambarkan pengetahuan, sikap, dan praktik pengelolaan sampah masyarakat. Data kuantitatif dari 40 responden digunakan sebagai data pendukung dan disajikan dalam bentuk frekuensi serta persentase untuk menggambarkan kecenderungan jawaban responden pada setiap aspek yang dikaji. Hasil penelitian menunjukkan bahwa kesadaran dan pengetahuan masyarakat mengenai bahaya sampah plastik tergolong baik; mayoritas memahami dampak ekologis dan ekonomi. Namun, terdapat kesenjangan antara pengetahuan dan praktik: 87,5% responden mengakui pernah membuang sampah ke laut atau membakar sampah, terutama karena keterbatasan fasilitas pembuangan dan minimnya sistem pengelolaan. Nilai agama dan Pancasila, terutama gotong royong, persatuan, dan tanggung jawab sosial, tertanam kuat dan memotivasi partisipasi dalam kegiatan kebersihan, meski partisipasi belum merata. Hambatan utama meliputi faktor struktural (kekurangan fasilitas) dan kultural (kebiasaan penggunaan plastik tinggi). Penelitian ini menyimpulkan bahwa pengelolaan sampah plastik memerlukan pendekatan holistik yang mengintegrasikan penguatan fasilitas infrastruktur, edukasi partisipatif berkelanjutan, penegakan regulasi, serta penguatan nilai lokal berbasis Pancasila untuk mendorong tindakan kolektif dan keberlanjutan lingkungan pesisir.

Kata Kunci: sampah plastik, kesadaran masyarakat, nilai Pancasila, lingkungan pesisir, pengelolaan sampah

INTRODUCTION

Plastic waste is an increasingly serious global environmental issue, particularly in Indonesia's coastal regions. Data indicates that Indonesia is one of the world's largest contributors of plastic waste to the ocean, with an estimated 1.29 million tons entering the sea annually (Wahyudin & Afriansyah, 2020). In coastal areas, plastic waste not only mars the beauty of beaches but also disrupts marine ecosystems, poses threats to the fish food chain, and directly impacts the livelihoods of fisherfolk and public health (Kusumawati *et al.*, 2018).

Microplastics derived from plastic waste also have the potential to enter the marine food chain and pose health risks to humans (Patuwo *et al.*, 2020). As Indonesia's state foundation, Pancasila embodies fundamental values that can serve as a moral basis for environmental stewardship. The five principles of Pancasila comprise Belief in the One and Only God; Just and Civilized Humanity; the Unity of Indonesia; Democracy Guided by the Inner Wisdom of Deliberations Among Representatives; and Social Justice for All the People of Indonesia. These values are closely linked to environmental concern—specifically the second principle, which emphasizes justice and human rights (including the right to a healthy environment), and the fifth principle, which prioritizes social justice and shared responsibility (Isnaeni, 2025).

Research on the Baduy community demonstrates that the value of **gotong royong** (mutual cooperation)—aligned with the fifth principle of Pancasila—is applied to preserve nature in accordance with the second principle. In Tuwang Village, integrating Pancasila values into environmental health programs has proven effective in raising public awareness and strengthening social cohesion (Sukhemi *et al.*, 2018). However, in coastal areas such as Tapian Nauli, the implementation of Pancasila values in managing plastic waste remains suboptimal. Although the value of **gotong royong** (mutual cooperation) is still practiced through communal cleanup activities, awareness regarding plastic waste reduction and the understanding of the "reduce, reuse, recycle" principles remain low. A lack of community initiative in managing plastic waste—stemming from insufficient knowledge—has led to an increasing accumulation of waste in the coastal area.

The significance of this research is based on several factors: (1) the unresolved plastic waste issue in the Tapian Nauli coastal area; (2) the negative impact of plastic waste on the marine environment and the livelihoods of fishermen; (3) the potential of **Pancasila** values to serve as a moral foundation for fostering environmental awareness; and (4) the need for an empirical study on the implementation of **Pancasila** within the context of coastal environmental management. This study aims to assess the awareness of the coastal community in Tapian Nauli I Village regarding plastic waste management and to examine the implementation of **Pancasila** values in maintaining the cleanliness of the coastal environment.

RESEARCH METHODS

This study was conducted in Tapian Nauli I Village, Central Tapanuli Regency, North Sumatra Province. The study area encompasses coastal community groups in Tapian Nauli I Village that are situated near the coast and engaged in fishing activities. Data collection techniques included observation, interviews, and documentation. Forty residents of Tapian Nauli I Village were interviewed for this study.

Data analysis employed a simple descriptive approach. Data were obtained through observation and questionnaire-based interviews covering knowledge levels—including their connection to the implementation of Pancasila values—as well as environmental conditions and issues. The data were analyzed qualitatively to describe the objective situation regarding community awareness and the implementation of Pancasila values in plastic waste management.

RESULT

Environmental Conditions and Key Issues

Research findings indicate that the residents of Tapian Nauli I Village identify waste—particularly plastic and household refuse discarded indiscriminately onto the beach or into the sea—as one of their most pressing environmental issues. This situation is evident from the trash scattered along the coastline and floating on the water's surface. For the coastal community of Tapian Nauli I, the presence of waste is viewed not merely as a matter of cleanliness or aesthetics, but as an issue linked to their social and economic activities. Respondents noted that marine pollution degrades water quality, disrupts fish habitats, potentially reduces catch yields, and causes fishing gear to become snagged or damaged by debris.

These findings demonstrate the community's strong connection to the marine environment, as the sea is a vital part of their lives and a source of livelihood. Consequently, changes in the marine environment are directly felt in their daily lives, particularly by those whose economic activities depend on fisheries.

Public Levels of Knowledge, Awareness, and Habits

The community's level of knowledge regarding the dangers of plastic waste is quite good. Most respondents understand that plastic waste can pollute the ocean, harm aquatic life, and damage the environment. Information about these dangers comes from various sources, including television, social media, the internet, personal experience during maritime activities, and village-based outreach programs. Despite this relatively good level of knowledge, a gap remains between knowledge and actual behavior. As many as 87.5% of respondents admitted to having discarded plastic waste into the sea or burned it. The most frequently cited reason for this was the lack of proper, adequate, and easily accessible waste disposal facilities.

At the household level, most residents do not have dedicated bins for plastic waste, and the sorting of organic and inorganic waste is not yet routinely practiced. Activities involving waste reduction, reuse, and recycling remain relatively low, with some respondents stating they have never engaged in them. On the other hand, the community shows a positive social attitude toward environmental cleanliness; respondents expressed a willingness to admonish or remind others who litter. Regarding waste management responsibility, the majority of respondents view it as a shared responsibility between the community and the government.

Implementation of Pancasila Values and Religious Teachings in Environmental Conservation

Research findings indicate that religious values and the principles of **Pancasila** serve as moral foundations for the community in maintaining environmental cleanliness. All 40 respondents stated that maintaining cleanliness is part of religious teachings and constitutes a moral responsibility toward the environment. This understanding is put into practice through efforts to keep homes, yards, and the surrounding area clean. The community also demonstrates an understanding of the social and economic impacts of dumping waste into the sea. Respondents recognize that marine waste disposal harms others—particularly fishermen—by potentially damaging fishing gear and disrupting fish stocks.

Awareness regarding the sustainability of marine resources is also relatively high. The community desires to preserve the marine environment so that it remains available for both current and future generations. When asked to identify the **Pancasila** value most crucial to maintaining marine cleanliness, **gotong royong** (mutual cooperation) was the most frequently cited answer, followed by unity, social justice, humanity, and responsibility. Community participation in beach cleanup activities varies; approximately half of the respondents stated they participate periodically—such as once a month or every few months—while others have never participated.

Regarding communication and deliberation, nearly all village areas have held meetings or discussions to address waste-related issues. Most respondents also reported having submitted proposals, complaints, or suggestions to the village government. Community proposals for resolving waste issues include providing disposal sites and waste management facilities, enhancing public education, reducing single-use plastic consumption, and enforcing rules and sanctions against littering. Respondents also believe that government support regarding facility provision and coastal area cleanliness management needs to be improved.

Obstacles, Preferred Forms of Education, and Community Expectations

Research findings indicate that the obstacles to plastic waste management in Tapan Nauli I Village can be categorized into structural and behavioral factors. Structural factors relate to limitations in waste management facilities and infrastructure—specifically the availability of disposal sites and the lack of an optimal waste management system. Meanwhile, behavioral factors stem from long-standing community habits and a lack of adequate understanding regarding waste reduction, sorting, and processing.

The community's reliance on plastic products in daily life is another factor contributing to the volume of waste generated. Residents desire educational activities that are practical, direct, sustainable, and tailored to local environmental conditions. Activities considered most effective include on-site outreach programs that feature real-world examples, actively involve the community and schools, and are conducted regularly.

Beach cleanup activities combined with education on the impact of waste and proper management practices are viewed as a form of education that meets the community's needs. Residents hope that within the next decade, the marine environment in Tapian Nauli I Village will be cleaner and free from accumulated waste, possess abundant and safe-to-consume fish stocks, and evolve into a healthy, pleasant, safe, and sustainable coastal environment.

DISCUSSION

Plastic Waste as an Environmental, Social, and Economic Issue for Coastal Communities

Research findings indicate that plastic waste in Tapian Nauli I Village cannot be viewed merely as an issue of environmental cleanliness. For communities whose lives are closely tied to the sea, waste pollution carries ecological, social, and economic dimensions. Waste entering the marine environment has the potential to disrupt aquatic ecosystems and, ultimately, affect the activities of communities reliant on marine resources.

This situation aligns with research by Phelan *et al.* (2020), which shows that coastal communities in Indonesia face plastic waste issues in their daily lives. Limited waste collection and management services are among the factors contributing to the potential for waste to enter coastal and marine environments. Beyond impacting environmental quality, the plastic waste problem can also affect the social lives and livelihoods of communities dependent on marine resources.

Findings in Tapian Nauli I Village also reveal that the community experiences the impact of waste firsthand, particularly through disruptions to fishing activities and the environments where they earn their livelihoods. This demonstrates that the plastic waste issue in coastal areas is a multidimensional problem requiring an integrated approach addressing environmental, social, and economic aspects. According to Borrelle *et al.* (2020), the leakage of plastic waste into the marine environment is a growing global issue that demands intervention across the entire value chain, from upstream to downstream. Reducing plastic pollution cannot be achieved solely through cleanup activities; it requires waste reduction at the source, improved waste management systems, and shifts in community consumption patterns.

Consequently, waste management in Tapian Nauli I Village must be positioned as an integral part of sustainable coastal area management. Resolving the issue requires more than just beach cleanup activities; it necessitates waste reduction at the source, the provision of management facilities, behavioral changes, and sustained engagement from both the community and the government.

The Gap Between Public Knowledge and Behavior

One significant finding of this study is the gap between the public's level of knowledge and their actual behavior. While the community is aware of the dangers of plastic waste, 87.5% of respondents admitted to having disposed of plastic waste into the sea or burned it. This finding indicates that possessing adequate knowledge does not automatically translate into proper waste management behavior.

This phenomenon aligns with research by Sulistyorini *et al.* (2025), which showed that coastal communities in Banyuwangi possessed knowledge regarding the impact of plastic waste yet faced challenges in adopting appropriate waste management practices. According to Sulistyorini *et al.* (2025), controlling plastic pollution requires a combination of increased

knowledge, behavioral change, the availability of facilities, and collaboration among stakeholders. These findings are further supported by Voronkova *et al.* (2025), who demonstrated that waste management behavior among Indonesian coastal communities is influenced not only by individual knowledge but also by community attachment, environmental concern, and the state of waste management infrastructure.

Consequently, the high percentage of respondents who have discarded or burned waste does not necessarily indicate a lack of environmental concern within the community. In the context of Tapan Nauli I Village, such behavior must also be understood in light of limited waste management facilities. This suggests that an approach focusing solely on individual behavioral change may prove ineffective unless accompanied by the provision of infrastructure that enables the community to practice proper waste management. According to Kaza *et al.* (2018), an effective waste management system requires the integration of community behavior with services for collection, transportation, processing, and final disposal. Therefore, efforts to enhance public knowledge must go hand in hand with improvements to the waste management service system.

The Importance of Waste Management Infrastructure

Limited waste disposal facilities were cited by respondents as a primary issue. This finding highlights that infrastructure is a crucial component in fostering sustainable waste management behavior. Phelan *et al.* (2020) explain that coastal communities in Indonesia facing inadequate waste collection services have limited options for managing household waste. Geographical conditions, a lack of facilities, and deficient waste management systems increase the likelihood of waste being discarded into or entering the coastal environment.

This reinforces research findings from Tapan Nauli I Village, indicating that raising awareness must go hand-in-hand with the provision of facilities. Waste bins, collection systems, sorting, transportation, and processing are interconnected components of a waste management system. According to Ferronato and Torretta (2019), inadequate waste management systems contribute to improper waste disposal practices, particularly in areas with limited infrastructure. Therefore, the development of waste management facilities must be accompanied by a service system that is consistent and easily accessible to the community. Given these conditions, waste management strategies in Tapan Nauli I Village should not be limited to public education but should also include the development of a village-based waste management system that is easily accessible to residents.

The value of *gotong royong* (mutual cooperation) as social capital

Research findings indicate that *gotong royong* (mutual cooperation) is the Pancasila value most widely regarded by the community as essential for maintaining marine cleanliness. This finding highlights the existence of social capital that can be leveraged for coastal environmental management. *Gotong royong* is highly relevant to environmental management because waste issues are collective in nature; waste discarded by a single individual can impact the rest of the community. Consequently, resolving these issues requires cooperation among households, fishers, community groups, schools, village authorities, and other stakeholders.

According to Ostrom (1990), the successful management of common-pool resources is closely linked to a community's ability to establish shared rules, develop cooperative mechanisms, and monitor the behavior of community members. In the context of Tapan Nauli I Village, the value of *gotong royong* can serve as social capital for building a community-based environmental management system. However, varying levels of participation in *gotong royong* activities suggest that this social capital has not yet been fully realized; while some community members participate actively, others remain passive. Therefore, mechanisms are

needed to foster more equitable participation—such as forming coastal cleanup groups, scheduling regular **gotong royong** activities, engaging community and religious leaders, and recognizing groups that successfully maintain environmental cleanliness.

The Role of Deliberation and Village Government

Research findings indicate that the mechanism of **musyawarah** (deliberation) is already functioning within the community. The majority of respondents have also submitted proposals, complaints, or suggestions to the village government. This situation serves as a vital asset for establishing community-based environmental governance. Waste management is an issue that requires a clear division of roles between the community and the government. The community plays a role in reducing waste at the source, sorting waste, refraining from indiscriminate dumping, and participating in cleanup activities. Meanwhile, the village government is responsible for providing infrastructure, establishing collection and transportation systems, formulating regulations, conducting education, and ensuring program sustainability.

According to Wilson *et al.* (2015), sustainable waste management requires good governance, institutional support, service systems, and community engagement. Consequently, it is insufficient for the village government merely to provide facilities; it must also establish systems for communication, education, oversight, and community participation. These research findings demonstrate that the community already has a platform to voice its aspirations. However, the perception that government support remains suboptimal highlights the need to strengthen policy implementation and the provision of facilities at the local level.

Practical and Sustainable Environmental Education

The community of Tapian Nauli I Village prefers direct, practical education over purely theoretical outreach sessions. Beach cleanup activities—complemented by explanations regarding waste types, the impact of waste on the marine environment, waste sorting, plastic reduction, and waste management practices—align well with the community's needs. According to Heidbreder *et al.* (2019), changing plastic-related behavior requires interventions that go beyond merely providing information; they must also foster habit changes and offer more environmentally friendly behavioral alternatives.

This practice-based educational approach is also consistent with findings by Sulistyorini *et al.* (2025), which indicate that increasing community knowledge must be supported by appropriate facilities and collaborative mechanisms to effectively bring about changes in waste management behavior.

Therefore, a suitable educational model for Tapian Nauli I Village is one based on practice and participation—for instance, through regular beach cleanups, waste-sorting demonstrations, the introduction of 3R principles (reduce, reuse, recycle), single-use plastic reduction, and household waste management, alongside the active involvement of schools and fisherfolk groups.

Community Expectations and Coastal Environmental Sustainability

The community's desire to keep the sea clean, ensure the continued availability of fish resources, and preserve the coastal environment for future generations reflects a commitment to sustainability. The sea is viewed not merely as an ecological space but also as a source of livelihood and an integral part of the community's social life. This awareness aligns with the concept of sustainable development, which emphasizes meeting the needs of the present generation without compromising the ability of future generations to meet their own needs—particularly within the context of the marine environment.

Furthermore, Borrelle et al. (2020) estimate that without adequate intervention, the flow of plastic waste into aquatic ecosystems will remain a major issue. Consequently, efforts to reduce plastic waste within coastal communities constitute a crucial component of the broader endeavor to ensure the sustainability of marine ecosystems. In light of these research findings and the existing literature, the most suitable strategy for Tapan Nauli I Village is an integrated approach. This approach combines the provision of facilities, continuous education, plastic use reduction, waste sorting and processing, the strengthening of *gotong royong* (mutual cooperation), the participation of schools and fisherfolk groups, and village-level regulations and oversight. Such an integrated approach is essential because the problem of coastal waste cannot be resolved solely by increasing public awareness; behavioral change requires the support of the social environment and the necessary facilities to enable the community to consistently practice proper waste management.

CONCLUSION

Based on the preceding discussion and analysis, it can be concluded that the community of Tapan Nauli I Village demonstrates a commendable level of awareness and knowledge regarding the issue of plastic waste in coastal areas. Religious values and the principles of Pancasila—particularly the spirit of *gotong royong* (mutual cooperation) and social responsibility—are reflected in the community's attitudes and participation in maintaining environmental cleanliness. However, the research findings reveal a persistent gap between knowledge, attitudes, and actual practices regarding plastic waste management. This is evidenced by the fact that some community members still dispose of waste directly into the sea or burn it. Observations and interviews indicate that this situation stems from limited waste management facilities and infrastructure, ingrained habits regarding plastic usage, and a lack of optimal management systems and policy support. These findings suggest that plastic waste management in Tapan Nauli I Village requires strengthening through the provision of waste management facilities, sustained community education and engagement, and a reinforced commitment to the values of mutual cooperation, unity, and social responsibility in preserving the coastal environment.

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