

The Concept of Participatory Communication in Reducing Plastic Waste in Nelayan I, Sungailiat District, Bangka Regency

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ABSTRACT

This study aims to formulate a participatory communication concept for plastic waste reduction in Nelayan I, Sungailiat Subdistrict, Bangka Regency. Using a descriptive qualitative approach, data were collected through in-depth interviews, focus group discussions (FGDs), and documentation involving community leaders, relevant government agencies, environmental organizations, and coastal residents. The findings indicate that although facilities such as the Reduce, Reuse, Recycle Waste Processing Site (TPS3R) have been implemented, significant challenges remain in managing plastic waste effectively due to the lack of economic incentives and a clear reward system. This study also highlights the importance of empowering women as agents of environmental change, as women demonstrate active participation in household waste sorting and community clean-up activities. In this context, a circular economy-based communication model that links waste management to household economic potential has proven effective in encouraging sustainable behavioral change. An inclusive, dialogical approach grounded in local experiences and involving community leaders and local authorities has become a key factor in the success of sustainable waste management programs in Nelayan I. The study concludes that participatory communication must take socio-economic and gender conditions into account, while ensuring the provision of economic incentives and social recognition for women's roles, in order to foster sustainable participation and effective behavioral change.

ARTICLE HISTORY

Submitted: 20 October 2025

Revised: 31 May 2026

Accepted: 31 May 2026

KEYWORDS

coastal environment,
collaborative strategy,
empowerment, participatory
communication, plastic waste

INTRODUCTION

Environmental pollution caused by plastic waste undoubtedly has negative impacts that can damage the earth's ecosystem both now and in the future. Plastic waste, which is not easily decomposed, is the main reason why this type of pollution poses a serious threat to the environment in the years to come. The quality of the environment has begun to deteriorate due to human behavior in fulfilling daily needs without considering its consequences for nature (Dewi & Syauki, 2022).

This condition indicates that the problem of plastic waste not only has ecological impacts but also requires structural handling and comprehensive policy measures. The United Nations Environment Programme (UNEP) records Indonesia as the second-largest producer of plastic waste after China, with millions of tons of plastic entering the ocean every year (Chotimah et al., 2022). Plastic waste threatens marine ecosystems and coastal livelihoods. Weak waste management systems, overcapacity landfills, and the lack of recycling facilities further exacerbate the situation (Chang, 2024). As a response, the government issued Presidential Regulation No. 83 of 2018, which targets a 70% reduction in marine plastic waste by 2025 (Fhadil & Arsyad, 2023).



Figure 1 Plastic Pollution in the Waters Surrounding Nelayan I, Sungailiat

Figure 1 vividly depicts the condition of plastic pollution around the Nelayan I harbor area. Various types of plastic waste such as plastic bags, mineral water bottles, and food packaging are clearly seen floating and accumulating between the wooden pillars of the pier. Unmanaged waste clogs drainage channels, triggers flooding, and becomes a breeding ground for disease. Although the government has established a waste bank, its effectiveness remains low. The volume of waste at the Kenanga landfill continues to increase, nearly encroaching on the roadside, with Sungailiat's daily waste reaching 60 tons (Antaranews.com, 2024).

This situation aligns with the statement of the Head of Nelayan I Sungailiat, Mr. Abdullah Ahadi, who explained that the negative impacts of plastic waste are felt in the estuary channel, as the entry and exit routes for fishing boats are often blocked. Pollution in the river has disrupted aquatic life such as crabs which have migrated due to unclean water, resulting in reduced fishermen's catches. On the other hand, the environment also suffers in terms of public health, as waste becomes a breeding site for mosquito larvae, leading to frequent dengue fever (DBD) outbreaks in coastal areas. He added that before the relocation to the Rusunawa housing complex, residents' houses were located along the shoreline, and household waste was directly dumped into the sea. This condition is exacerbated by the accumulation of waste in the waters of Fishermen's Pier I, caused by waste overflow from various estuary channels such as Nelayan I, Air Anyut, Jalan Laut, Kampung Pasir, and Nelayan II especially during the northern monsoon around December (Abdullah Ahadi, July 1, 2025).

These impacts indicate that the issue of plastic waste is not only ecological but also involves institutional and social aspects of waste management. Limited budgets and human resources hinder effective waste management. A predominantly top-down approach without community empowerment weakens the success of waste management programs, while community incentives and active participation are crucial (Murni et al., 2023). Therefore, a participatory approach that involves local communities in waste management programs is essential. Citizen-based alternative media can play a significant role in fostering awareness and behavioral change.

The key to reducing plastic waste lies in participatory communication that encourages active collaboration among communities, governments, non-governmental organizations (NGOs), and other stakeholders. However, the main challenge lies in communication gaps caused by the absence of clear guidelines, ambiguous policies, and ineffective feedback mechanisms (Qu, 2025). Such lack of clarity often leads to misunderstandings and delays in program implementation (Hidayati, 2024). In this context, effective collaboration must begin with a thorough understanding of all actors involved, as well as the internal and external environmental conditions. To achieve collaborative goals, all parties must possess a detailed and comprehensive understanding of the situation, individuals, communities, and other relevant aspects (Abdullah et al., 2025). Therefore, a participatory approach must be designed to ensure the inclusive involvement of all parties from planning to evaluation by utilizing communication channels that are adaptive to local characteristics.

Research on the concept of participatory communication in plastic waste reduction reveals several innovative findings that integrate participatory approaches for more effective plastic waste management. Previous studies indicate that participatory communication is effective in managing plastic waste through stakeholder engagement, social media utilization, and collective dialogue to build shared understanding (Qu, 2025). However, the dominance of governmental actors in mobilizing communities remains a challenge, even though the role of community leaders is considered crucial for the sustainability of social movements (Lubis et al., 2023). Close collaboration among government, communities, and local leaders is required to ensure the success of plastic waste reduction programs.

Communication strategy refers to intentional and planned communication actions or campaigns aimed at providing information or influencing others. The goal is to foster understanding and support for a concept, idea, or argument, which may also include products or services (Sari et al., 2024). A sustainable communication strategy must prioritize a participatory approach that fosters inclusive dialogue and ensures that all voices are heard in decision making (Irmayanti et al., 2024). Informal and enjoyable communication also plays an important role in strengthening emotional bonds among residents, thereby enhancing active participation (Fhadil & Arsyad, 2023). Plastic waste management requires empowerment-oriented communication based on active participation, emphasizing transparency and the involvement of all stakeholders (Yanti & Prastiwi, 2024).

Bottom-up communication, which involves communities at every stage of the program from planning to evaluation is key to ensuring inclusivity (Yanti & Prastiwi, 2024). Active participation is reflected in the implementation of waste banks that effectively reduce waste, raise environmental awareness, and provide socio economic benefits (Simamora et al., 2024). However, although many studies adopt dialogic and empowerment-based communication frameworks, few have explicitly referred to the theories of Freire or Servaes (Odoom et al., 2024; Suzina et al., 2020). In fact, the principles of Freire's dialogic communication and Servaes's communication for social change are aligned with participatory practices in plastic waste management.

The novelty of this research lies in the integration of Freire's and Servaes's theories to design a participatory communication concept that is bottom up and empowerment oriented. From Servaes's perspective, participatory communication positions the community as the starting point, where life problems are discussed within the community, and solutions must also emerge from within the community itself. The essence of this theory includes three core principles: bottom up, emphasizing that solutions originate from the people; empowerment, positioning the community as the subject rather than the object of development; and local relevance, ensuring that problems and solutions align with the community's socio-cultural context (Odoom et al., 2024).

While Servaes focuses on the community as the starting point for identifying problems and solutions, Freire emphasizes the importance of dialogical processes that encourage critical awareness and empowerment at every stage of communication. Freire's notion of popular education is a dialogic process that emphasizes critical thinking, collective reflection, and transformative action. This process is rooted in people's real-life experiences and aims to empower individuals as subjects of their own development (Suzina et al., 2020). Based on these ideas, the essence of participatory communication lies in the dialogic process that promotes critical consciousness, collective reflection, and transformative action, grounded in community experience. The ultimate goal is empowerment, where communities are positioned as active subjects leading social change rather than passive objects of development programs.

Both perspectives complement each other in constructing the foundation of participatory communication, where Servaes's bottom-up principle merges with Freire's dialogical and empowerment approach. This integration creates a contextual and relevant

communication model for sustainable social change. The concept is oriented toward identifying the real needs of coastal communities, particularly fishermen, as the basis for problem-solving. It emphasizes active participatory processes that transform communities from mere objects into subjects of development programs, communication design that is relevant to local socio-cultural contexts, and sustainable behavioral change through non-instructive approaches.

Thus, this research not only fills an academic gap in the application of participatory communication theory but also offers a practical and adaptive framework for plastic waste reduction in coastal areas. The combination of theoretical principles and local wisdom is expected to create inclusive and sustainable solutions with long-term impacts. The urgency of this study lies in formulating an optimal conceptual framework for participatory communication to reduce plastic waste volume in Nelayan I, Sungailiat District, Bangka Regency. The research focuses on developing a collaborative communication model that integrates the active roles of various stakeholders particularly fishing communities, local government authorities, and related actors in designing sustainable waste management solutions.

The objective of this research is to formulate and implement a participatory communication concept for reducing plastic waste in Nelayan I, Sungailiat District, Bangka Regency. The study focuses on collaborative strategies among fishermen, local government, and stakeholders to design sustainable solutions based on community needs and local coastal wisdom.

RESEARCH METHOD

This study employed a descriptive qualitative approach to explore and formulate a participatory communication concept for reducing plastic waste in Nelayan I, Sungailiat District, Bangka Regency. A qualitative approach was selected because it enables researchers to understand social phenomena from the perspectives of the participants and to examine communication processes, community participation, and stakeholder interactions within their natural context (Creswell & Poth, 2018).

The study utilized both primary and secondary data sources. Primary data were obtained through in-depth interviews with seven key stakeholders directly involved in plastic waste management and participatory communication activities in Nelayan I. Secondary data were collected through a Focus Group Discussion (FGD), government documents, reports, regulations, photographs, field documentation, scientific journals, books, and other relevant literature related to environmental communication and community participation.

Informants were selected using a purposive sampling technique, whereby participants were chosen based on their knowledge, experience, authority, and direct involvement in plastic waste management programs and community environmental activities (Patton, 2015). The seven key informants consisted of (1) Feggy Vera Lusianti, S.Si., Head of the Waste Management Division of the Environmental Agency (DLH) of Bangka Regency; (2) Edi Yuanto, M.AP., Head of the Building and Construction Services Division of the Public Works and Spatial

Planning Office (PUPR) of Bangka Regency; (3) Arinda Unigraha, Chairperson of "BECAK BABEL"; (4) Abdullah Ahadi, Head of Nelayan I Neighborhood; (5) Widya Handini, B.Sc., M.Sc., an environmental academic from Bangka Belitung; and (6–7) local residents and fishermen representing community perspectives. The number of informants was determined based on the principle of data saturation, where no substantially new information emerged from subsequent interviews, indicating that the collected data were sufficient to address the research objectives (Guest et al., 2020).

Data collection was conducted between June and July 2025 through three techniques: in-depth interviews, Focus Group Discussions (FGDs), and documentation. Semi-structured interviews were employed to allow participants to share their experiences and perspectives regarding plastic waste management, community participation, and communication practices. To enrich and validate the findings, an FGD was conducted on July 20, 2025, involving community leaders, neighborhood heads (RT), MSME actors, environmental volunteers, and local residents. Documentation was also used to support the analysis, including government reports, environmental program records, photographs, and regulatory documents related to waste management.

Data analysis followed the interactive model developed by Miles, Huberman, and Saldaña (2014), consisting of four stages: data collection, data condensation, data display, and conclusion drawing/verification. First, interview transcripts, FGD records, and documentation were compiled and organized. Second, the data were coded and condensed by identifying recurring themes and patterns related to participatory communication, stakeholder collaboration, community participation, institutional roles, socio-economic factors, and gender dimensions. Third, the categorized data were displayed in thematic matrices to facilitate interpretation and comparison among stakeholder perspectives. Finally, conclusions were drawn and continuously verified through comparison across data sources and field observations to ensure consistency and credibility.

To ensure the trustworthiness of the findings, several validation strategies were employed following Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability. Credibility was enhanced through source triangulation by comparing information obtained from government officials, community leaders, environmental activists, academics, fishermen, and local residents. Method triangulation was also conducted by comparing data obtained through interviews, FGDs, documentation, and literature review. In addition, member checking was undertaken by confirming key findings with several informants to ensure the accuracy of interpretations. Dependability was maintained through systematic documentation of the research process, while confirmability was strengthened by maintaining field notes and documentation records that could be traced and reviewed throughout the study.

Through these procedures, the study sought to provide a comprehensive and credible understanding of how participatory communication can contribute to reducing plastic waste and promoting sustainable environmental management in coastal communities.

RESULTS AND DISCUSSION

The Concept of Community-Based Participatory Communication to Improve the Effectiveness of Plastic Waste Management in the Coastal Area of Nelayan I, Sungailiat

The initial condition of plastic waste management in the coastal area of Nelayan I reflects the complexity of environmental problems that are not only ecological but also social and structural in nature. Prior to the implementation of the community-based participatory communication model, this area faced significant challenges in waste management, particularly plastic waste that continued to accumulate around residential areas and coastal waters. Similar conditions have been identified in various other coastal communities, where weak waste management infrastructure, limited integrated collection systems, and low levels of community participation have become major factors exacerbating plastic pollution in coastal areas (Abdulkadir et al., 2025).

The absence of an integrated waste management system, the lack of waste processing facilities, and the low level of public awareness regarding the importance of waste sorting and recycling were key factors that exacerbated the situation. This is consistent with findings indicating that weak waste management systems in coastal areas and developing countries are major contributors to plastic leakage into the marine environment, primarily due to limited infrastructure and inadequate management practices (Lau et al., 2020).

The area had even been categorized as a slum settlement. According to Article 1 point 9 and Article 5 paragraph (2) of Bangka Regency Regional Regulation Number 9 of 2017 concerning the Prevention and Quality Improvement of Slum Housing and Settlements (Bangka Regency Regional Regulation, 2017), an area may be classified as a slum settlement if it meets several technical indicators reflecting uninhabitable environmental conditions. These indicators include poor housing structure quality, high building density, and inadequate neighborhood road conditions. Additionally, slum areas are characterized by the absence of proper environmental drainage systems, substandard wastewater and solid waste management, and limited access to safe drinking water. The combination of these conditions indicates a level of slum severity that directly affects residents' quality of life and public health.

The situation worsens during the northern monsoon season, when sea currents carry waste from other areas and deposit it at the estuary and pier areas. This was confirmed by the Head of Nelayan I, Abdullah Ahadi, who stated the following:

"The Fishermen's I area serves as a strategic point for the entry and exit of fishing boats, causing waste to often become trapped in the estuary channels that branch out in several directions, such as Nelayan I, Sungainya, Air Anyut, Jalan Laut, Kampung Pasir, and Nelayan II. All these streams eventually converge at Fishermen's I, resulting in waste accumulation, especially during the northern monsoon season around December. During the community clean-up activity held in early December, the volume of collected waste reached 12 truckloads, reflecting the high level of waste accumulation in the area. The waste did not only originate from local residents but also came as runoff from outside the area." (Abdullah Ahadi, July 1, 2025)

A similar view was also expressed by the Environmental Agency (DLH), which has long observed waste management issues from a more technical perspective. Feggy Vera Lusianti, Head of the Waste Management Division of the Environmental Agency (DLH) of Bangka Regency, stated that although facilities such as the Reduce, Reuse, Recycle Waste Processing Site (TPS3R) and the Basayan Bangka Waste Bank have been established in the Nelayan I area, the problem of plastic waste generation remains relatively high. She explained that this condition is caused by suboptimal efforts to reduce waste at its source, particularly during the high tide and northern monsoon seasons.

This statement is consistent with the account of a local fisherman, who reported that during the northern monsoon season, the volume of plastic waste carried to the Nelayan I estuary can reach eight to ten truckloads. Although the TPS3R facility is already available at Gang Makam Nelayan, the resident noted that many people still mix waste without sorting it and lack discipline in disposing of it properly.

Conceptually, this condition indicates that the availability of waste management infrastructure does not automatically guarantee effective waste reduction if it is not accompanied by behavioral change and the strengthening of upstream-to-downstream management systems. Global studies show that plastic leakage into the marine environment is largely driven by weak local waste management systems and insufficient source-level waste reduction (Lau et al., 2020). Furthermore, research in sustainability studies emphasizes that community behavioral change is strongly influenced by social norms and culturally embedded value systems, indicating that effective environmental interventions must be systematic, participatory, and socially normative rather than merely focused on the provision of physical infrastructure (Saracevic & Schlegelmilch, 2021). Therefore, the issue in Nelayan I is not solely technical in nature but also involves social, behavioral, and communication dimensions that determine the success of sustainable plastic waste reduction efforts.

Abdullah Ahadi, Head of Nelayan I, also observed changes following the relocation program to the Rusunawa housing complex and the prohibition of waste disposal at previous dumping points. He emphasized that the current environmental condition is noticeably cleaner.

"The environmental condition in the Fishermen's I area began to improve after the installation of prohibition banners and protective fences at locations that previously served as waste dumping points, such as in front of the Krisi Integrated Health Post (Posyandu Krisi) and in front of Batavia. In addition, the enforcement of regional regulations that impose sanctions on residents who dispose of waste indiscriminately has strengthened rule enforcement efforts. The installation of fences also serves as a preventive measure to discourage people from dumping waste in inappropriate places." (Abdullah Ahadi, July 1, 2025)

However, behind this progress, several challenges remain as highlighted by environmental activists. As an environmental activist, Arinda Unigraha from "BCEK BABEL" stated that although waste-sorting activities through the waste bank have been initiated in Nelayan I, they have not yet reached all households. The absence of large-scale recycling

activities and the limited processing facilities have resulted in the continued accumulation of unmanaged plastic waste, both in residential areas and in surrounding water bodies. This condition indicates that the existing system has not comprehensively reached all segments of society and is not yet supported by adequate infrastructure to reduce waste generation at its source. This finding is consistent with research showing that plastic waste generation will continue to exceed management capacity if systems are not expanded to the household and community levels in a comprehensive manner (Borrelle et al., 2020).

Furthermore, studies in urban waste management emphasize that system effectiveness is largely determined by service coverage, community participation, and institutional integration, rather than merely the availability of physical facilities (Wilson et al., 2015). Therefore, the challenges in Nelayan I are not solely technical in nature but are also related to system capacity, service coverage, and the strengthening of inclusive and sustainable community-based governance.

These systemic limitations are further highlighted by academic perspectives. Widya Handini, B.Sc., M.Sc., argued that plastic waste management in the coastal area of Nelayan I has not yet functioned optimally at the systemic level. She explained that the absence of an integrated management system from upstream to downstream and the weak practice of household level waste segregation are the main factors contributing to the low effectiveness of waste management in the area. The core issues of plastic waste management in Nelayan I lie in residents' behavioral patterns, inadequate facilities, and seasonal geographical challenges, such as tidal fluctuations that bring in waste from surrounding areas. On the other hand, public awareness and environmental conditions have gradually improved due to regulatory initiatives such as the Slum Area Regional Regulation (*Perda*), residential relocation, and the enforcement of waste disposal prohibitions in strategic locations.

From a theoretical perspective, these findings affirm the importance of community-based participatory communication approaches, as articulated by Jan Servaes, who emphasizes that the identification of problems and solutions in the context of development must originate within the community itself (Odoom et al., 2024). The experience of Nelayan I demonstrates that without citizens' participation as active subjects, the development of infrastructure such as TPS3R facilities alone does not automatically lead to behavioral change or improve the effectiveness of waste management.

In addition, the dialogical approach proposed by Paulo Freire is also highly relevant, as change began to occur when residents were personally engaged in dialogue through facilitators and informal forums such as WhatsApp groups and mosque announcements. Behavioral change and improvements in the effectiveness of plastic waste management in Nelayan I can therefore be directly linked to the emergence of local, dialogic communication strategies, supported by political will and the active participation of community leaders. This demonstrates that the concept of participatory communication is not merely a dissemination strategy but a fundamental framework for social transformation grounded in collective awareness and the contextual understanding of coastal communities.

Communication Strategies and Community Approaches

Collaborative communication strategies constitute an integral part of development initiatives aimed at fostering high-quality relationships among stakeholders. Communication and collaboration are essential skills that must be continuously developed to ensure the effectiveness of participatory and community-based programs (Arifin et al., 2024). In the context of plastic waste reduction in Nelayan I, these collaborative communication strategies were deliberately designed to align with the social, cultural, and literacy characteristics of the local community.

To operationalize this approach, the Environmental Agency (DLH) of Bangka Regency and the Department of Public Works and Spatial Planning (PUPR) adopted informal and psychological strategies through field facilitators. These strategies were implemented through interpersonal interactions such as casual discussions, door-to-door visits, and active community involvement in collective activities, including gotong royong and environmental revitalization initiatives such as Natak Kampung. This non-instructive and context-sensitive approach has proven effective in building community trust, as it respects the lived experiences and everyday realities of local residents rather than imposing top-down directives.

On the other hand, environmental communication efforts were also strengthened by the role of local communities. "BECAK BABEL", for instance, adopted an integrated communication approach by utilizing various channels such as social media (Instagram), mass media (print, electronic, and radio), and direct campaigns to the public. This strategy aims to reach diverse segments of society from young people to general community groups so that environmental messages can be effectively and comprehensively conveyed.

The communication strategies carried out by community-based organizations like "BECAK BABEL" do not stand alone but are part of the broader dynamics of a social movement that is becoming increasingly institutionalized and organized. In this context, the institutionalization of social movements enables activists to develop themselves and strengthen networks, making movement demands more structured (Gunawan et al., 2015). Such efforts can expand through public education programs that open opportunities for collaboration among government, private sectors, and communities. The implementation of these interconnected networks ultimately enhances resource potential through stronger linkages among movements, mass media, and broader public participation.

Beyond institutional and community initiatives, environmental communication strategies have also flourished at the grassroots level through the roles of community leaders. At this level, figures such as Abdullah Ahadi, Head of Nelayan I and local RT chairperson, play a vital role in delivering environmental messages directly to residents. He explained that the forms of communication used include face-to-face interactions, the installation of banners prohibiting littering, the use of neighborhood WhatsApp groups, and information dissemination through mosque loudspeakers.

"Every year, we collaborate with "BECAK BABEL" to carry out clean-up or gotong royong activities, and people tend to understand better when they are gathered and given direct explanations. In addition, announcements made through the mosque are also

considered effective because they can be heard by all residents.” (Abdullah Ahadi, July 1, 2025).

This illustrates that traditional communication channels remain an effective and relevant tool within coastal communities. This is further supported by the statement of a local fisherman, who emphasized that communication using theories or technical terms is often not easily understood by the community.

“If it’s explained using theory, it’s hard to understand. But if it’s shown directly for example, by joining a clean-up activity or seeing how to sort the waste it’s easier to grasp.” (Feby, July 15, 2025).

This reflects the importance of a practice-based approach and concrete experience a core principle in Paulo Freire’s dialogical education, where awareness is built through real-life experience and collective reflection (Suzina et al., 2020). Widya Handini, B.Sc., M.Sc., an environmental academic from Bangka Belitung, emphasized that creating an equal dialogue space between the government and citizens is the key prerequisite for the success of community-based communication strategies. She highlighted that community forums such as neighborhood (RT/RW) meetings and village discussions should be utilized as open, two-way spaces for mutual interaction and respect.

Within Servaes’s theoretical framework, participatory communication can only be realized when messages are developed from within the community itself and conveyed in forms that are relevant to its social and cultural context (Odoom et al., 2024). Therefore, the success of community-based environmental management in areas such as Nelayan I largely depends on the ability of all stakeholders to build inclusive communication spaces where every voice is heard and every experience is valued. The synergy between dialogical approaches, recognition of local wisdom, and institutional support forms the foundation for creating sustainable social change.

These findings are consistent with research published in the Journal of Cleaner Production, which demonstrates that behavioral change in plastic waste reduction is strongly influenced by social norms, community engagement, and participatory-based interventions rather than merely the availability of physical infrastructure (Heidbreder et al., 2019). Furthermore, studies in Marine Policy emphasize that effective marine waste governance requires the integration of formal policy frameworks, community participation, and inclusive communication mechanisms to generate sustainable change at the local level (Siddons et al., 2018).

Thus, the effectiveness of communication strategies in Nelayan I relies on three main aspects: (1) a direct, contextual, and non-instructive approach; (2) the use of community-based informal media, such as WhatsApp groups and mosque loudspeakers, as complements to face-to-face communication; and (3) the involvement of local figures with social legitimacy who serve as bridges between residents and formal institutions. When these three aspects work synergistically, communication becomes not merely a process of information transfer but a

participatory process that fosters residents' critical and collective awareness in maintaining environmental cleanliness sustainably.

Community Participation and Engagement

Stakeholders in environmental management include individuals, groups, communities, or society either wholly or partially who have relationships and interests in environmental management, both within institutional frameworks and at the community level. This necessitates individuals who act within a framework of mutual understanding to mobilize and form movements that can respond to the concerns or grievances they have long experienced (Hidayaturahmi et al., 2023).

The understanding of the importance of stakeholder involvement is reflected in the dynamics of community participation in the coastal area of Nelayan I, which has begun to show a positive response to various community-based environmental management initiatives. Participation in plastic waste management in this coastal area demonstrates complex and evolving dynamics. From an institutional perspective, Feggy Vera Lusianti, Head of the Waste Management Division of the Environmental Agency (DLH) of Bangka Regency, noted that community participation has increased, particularly since the presence of active environmental facilitators who coordinate coastal clean-up activities, establish waste banks, and conduct waste-sorting education. This reflects that residents have started to respond positively to initiatives that are directly and consistently facilitated.

To gain a deeper understanding of the meaning and forms of participation, it is important to refer to theoretical perspectives that emphasize participation as a democratic and decentralized process. Participation involves providing suggestions and opinions during decision-making processes, as well as contributing in the form of goods, skills, and services (Djalal, F., & Supriadi, 2001). Participation also represents an effort to strengthen democracy through decentralization, emphasizing the need for bottom-up planning in which communities are directly involved in planning and developing their own environment (Aswasulsikin, 2017).

A similar approach has been implemented by non-governmental actors such as "BCEAK BABEL", which highlights the importance of direct community involvement in every stage of its activities. "BCEAK BABEL" actively engages residents from the stage of developing programs based on local needs to implementing clean-up actions and environmental education. This approach is carried out through participatory dialogue, in which residents are not merely the target of programs but become active partners directly involved in maintaining cleanliness and managing waste within their communities.

However, from the perspective of residents and fishermen, participation still tends to be pragmatic and incentive-driven. As stated by Suhardi Saun, Head of RT 03 in Nelayan I, the following observation illustrates this dynamic:

"When there are food packages or meals provided, many people come to join the gotong royong (community work). But when there's nothing, sometimes only a few show up."
(Suhardi Saun, July 15, 2025).

This reflects that community involvement has not yet fully grown out of critical awareness, but is instead influenced by residents' daily economic conditions and practical needs. In this context, incentives may be effective as initial triggers of engagement, but they are not yet strong enough to serve as the foundation for long-term participation. This finding aligns with previous research showing that community participation in rural areas tends to be influenced by economic incentives such as food or basic supplies which serve as the primary motivation for involvement (Firisa, 2022).

This reality underscores the importance of transitioning from incentive-based participation toward engagement rooted in critical awareness and ecological concern, as emphasized by Hidayaturahmi et al. (2023). They highlight the strategic role of communication and public dialogue in addressing weak environmental systems, the lack of awareness fostered through communication, the absence of meaningful public dialogue, and the low consideration for genuine community participation. Such weaknesses call for community-based stakeholder engagement to reinforce sustainable environmental governance.

Environmental scholar Widya Handini, B.Sc., M.Sc., stressed that participation should not only be viewed in terms of physical presence but also collective motivation. She noted that incentive systems must be complemented by empowerment strategies so that participation does not remain merely a transactional response, but evolves into autonomous and sustainable action. Empowerment, therefore, becomes a crucial element for moving beyond pragmatic participation toward a more critical, autonomous, and enduring form of community engagement (Mohan, G & Stokke, 2000).

The importance of cross-actor communication in participatory development lies in its ability to foster consensus and cooperation among stakeholders. Stakeholders tend to reach agreements more easily when engaging in dialogue with partners from other stakeholder groups, whereas communication confined within a single group often leads to disagreement or stagnation (Hadiyanto, 2008). In this context, interpersonal communication plays a crucial role in overcoming intergroup relational barriers, bridging positional differences, and building cross-institutional understanding. This reinforces the argument that the success of participatory communication is not determined solely by informal approaches and personal closeness but also by openness, inclusive network structures, and equitable collaboration among communities, facilitators, and government institutions.

From these findings, several conclusions can be drawn. Community participation in Nelayan I is situational and layered, ranging from pragmatic, incentive-based involvement to reflective engagement grounded in collective awareness. The roles of facilitators, local leaders, and adaptive communication systems are pivotal in steering participation from short-term responses toward sustainable social transformation. This indicates that communication is not merely about transmitting information but about creating spaces for collective learning and shaping citizens as active agents of change within their own environmental contexts.

The Role of Institutions and Community Activators

The role of formal institutions and community mobilizers has proven to be a crucial foundation in building participatory communication in the coastal area of Nelayan I. Therefore, strengthening local fishermen's institutional capacity through participatory approaches is seen as a key strategy to encourage comprehensive engagement of coastal communities (Yusuf et al., 2018). This idea is reinforced by the results of interviews with the Department of Public Works and Housing (PUPR) and the Environmental Agency (DLH) of Bangka Regency, which explicitly emphasized the importance of strengthening the capacity of institutional facilitators to establish closer relationships with residents and to communicate aspirations reciprocally. This indicates that the role of facilitators is not merely administrative but also communicative and relational.

In addition to facilitators, local community leaders such as RT (neighborhood heads) and Kaling (neighborhood coordinators) hold strategic positions as communication bridges between citizens and government. In an interview, Abdullah Ahadi, Head of Nelayan I, revealed that he actively coordinates directly with both the Environmental Agency (DLH) and the Public Works and Spatial Planning Office (PUPR), including in organizing community clean-up activities and reorganizing waste disposal sites. The moral support, social legitimacy, and close relationship with residents make the RT and Kaling key actors in mobilizing community participation. Their roles serve as effective connector bridging citizens' interests with government policies (Reynafis, 2025).

Complementing the roles of community leaders, environmental organizations also play a significant role in strengthening cross-sector collaboration at the local level. As an environmental organization, "BECAK BABEL" has established strong collaboration with various stakeholders in Nelayan I, including youth groups such as community youth organizations (*karang taruna*) and mosque youth groups (*remaja masjid*). They also collect community aspirations and provide cleaning facilities to strengthen the capacity of local institutions in addressing waste issues systematically. This is supported by (Lisa et al., 2024) whose study shows that effective partnerships between government and communities in waste management significantly reduce waste generation and enhance sustainability. Community participation and collaboration with both government and private sectors are identified as key factors for success.

From an academic perspective, Widya Handini emphasized that strengthening the capacity of local leaders, particularly RT (neighborhood heads) and Kaling (community coordinators), should be integrated into a well-planned cross-sector collaboration strategy. She noted that the sustainability of environmental programs largely depends on the ability of local leaders to articulate community needs to formal institutions and to maintain continuous dialogue between citizens and the state. This aligns with Servaes's perspective, which posits that communication for social change requires a collaborative structure that links the micro level (community) with the macro level (institutions). From the community's point of view, both fishermen and residents acknowledged that community work (*gotong royong*) or other communal activities only function effectively when led by respected and active local figures.

This demonstrates that personal legitimacy and exemplary leadership remain dominant factors in fostering collective awareness at the grassroots level.

In Freire's perspective, the success of community organization depends on the emergence of transformative subjects individuals capable of awakening critical consciousness and facilitating collective reflection. In this context, RT, Kaling, and facilitators act as "dialogical educators" who mediate between structural realities and the everyday experiences of the community. They are not merely program implementers but transformational actors who encourage communities to engage actively and articulate their interests.

Local mobilizers, both formal (facilitators) and informal (RT/Kaling), thus serve as the central driving force of the participatory communication model in Nelayan I. Their integrity, consistency, and communication competence are crucial determinants of the success of community-based environmental programs. Without their active presence and involvement, participatory communication risks becoming merely procedural, losing its transformative potential and social impact.

Socio-Economic and Gender Factors

The local socio-economic structure in Nelayan I is one of the main factors influencing the level of community participation in environmental management, particularly in plastic waste reduction activities. The economic instability of coastal communities creates barriers to participation, and the optimization of village government roles as well as the availability of participation opportunities are key to the success of coastal economic empowerment programs. Socio-economic factors directly both limit and open access to community participation (Omalia, 2025).

Most residents work as fishermen, market vendors, or small-scale home-based entrepreneurs such as onion peelers, relying on daily income. This condition makes participation in community clean-ups or environmental programs often perceived as an additional burden. One resident explained:

"If I join gotong royong (community work), I can't work that day, so I lose my daily income. So unless there's food or compensation, I'd rather work." (Interview, July 15, 2025)

This illustrates that without adequate socio-economic support or incentives, residents' willingness to participate in collective activities remains very limited. This finding aligns with previous studies showing that community cooperation among farmers and fishermen often depends on sufficient non-financial incentives or compensations, such as aid or food, due to time and resource constraints among daily-income workers (Nurhartini, 2019).

The Environmental Agency (DLH) and academics recognize this reality, suggesting that communication and participation strategies should be designed with flexible scheduling and both material and non-material incentives. As stated by Feggy Vera Lusianti from DLH:

"We understand that residents work for daily income, so if the schedule isn't flexible or if there's no stimulus, they tend not to attend." (Feggy Vera Lusianti, July 18, 2025)

This view was reinforced by Widya Handini, B.Sc., M.Sc., who emphasized that communication strategies must be sensitive to residents' economic realities and capable of bridging livelihood needs with environmental goals. Similarly, Arinda from "BEMER BEMER" highlighted the importance of designing environmental communication strategies that incorporate economic incentives as triggers for citizen participation. According to her, low community involvement in environmental programs stems from the absence of a clear reward and punishment system. "BEMER BEMER" promotes a circular economy-based strategy by linking waste management with household economic potential. This approach aligns with circular economy literature, which emphasizes that the transition toward sustainable waste management systems requires the integration of economic value, behavioral change, and inclusive system design (Kirchherr et al., 2017). Moreover, studies in environmental economics indicate that well-designed economic incentives can enhance community participation in environmental programs through direct benefit-based behavioral mechanisms (Ferraro & Price, 2013). Research conducted by the Bening Saguling Foundation further demonstrates that recycling and waste sorting based on resale value can increase local economic benefits; for instance, plastic waste can be transformed into higher-value handicrafts, creating direct financial incentives for residents (Wardani & Kusmayadi, 2024). Thus, waste is no longer perceived merely as refuse but as a source of economic value capable of driving sustainable behavioral change.

From a gender perspective, women in the coastal area of Nelayan I hold significant potential as agents of environmental change. Despite facing a double burden between domestic responsibilities and economic activities, women demonstrate relatively consistent participation in household waste sorting and community clean-up initiatives. International literature shows that women's involvement in natural resource governance positively correlates with improved environmental management quality and stronger institutional sustainability at the local level (Agarwal, 2009). Research in Conservation Biology also finds that women's participation in environmental management groups significantly enhances conservation effectiveness and compliance with collective rules (Leisher et al., 2016). These findings are consistent with previous studies indicating that women's active engagement in environmental management contributes to cleaner, more organized, greener, and more sustainable communities (Setyawati & Priyo Siswanto, 2020). Therefore, when women are provided with equal space and supported both structurally and symbolically, their contributions can strengthen collective awareness and improve environmental quality within the community in a sustainable manner.

Theoretically, Paulo Freire's ideas emphasize that critical awareness cannot develop in spaces that ignore individuals' socio-economic realities. Education and communication must be grounded in people's daily lives, including their work dynamics and gender roles within families. Meanwhile, Jan Servaes reminds us that participatory development can only succeed when it ensures social justice in the distribution of roles, time, and resources (Odoom et al., 2024). Therefore, communication strategies in areas such as Nelayan I must integrate

economically sensitive and gender-inclusive approaches as essential components of a sustainable participation model.

Thus, socio-economic challenges and gender issues should not be seen merely as obstacles but as contextual factors that must be strategically managed. Approaches that are responsive to residents' real conditions will enhance the legitimacy and effectiveness of participatory communication at the community level. Going forward, the integration of fair incentives, flexible participation mechanisms, and the empowerment of women's roles will be key to expanding the base of the environmental movement in coastal areas.

CONCLUSION

This study demonstrates that the concept of community-based participatory communication can significantly enhance the effectiveness of plastic waste management in the coastal area of Nelayan I, Sungailiat. This strategy has proven effective in addressing the structural, social, and ecological challenges faced by the local community particularly in an area that was previously categorized as a slum settlement. Through a dialogical approach, the roles of facilitators, local leaders, and community organizations such as "BECAK BABEL" have become key drivers in transforming behavior and fostering collective awareness among residents regarding the importance of environmental management. The success of these programs does not solely depend on the availability of infrastructure such as TPS3R facilities and waste banks but more importantly on the ability to build contextual, relational, and experience-based communication that recognizes residents as active subjects of change.

The researcher emphasizes that communication in the context of environmental management should not be understood merely as a one-way transfer of information, but rather as an empowerment process that cultivates critical consciousness through equitable interaction. Communication approaches that integrate sensitivity to socio economic conditions and gender inclusivity have been shown to be more effective in creating sustainable participation. Participatory communication strategies must be able to bridge the gap between livelihood needs and environmental preservation, while also ensuring equitable spaces for women as agents of change.

Based on these findings, it is recommended that local governments and other stakeholders strengthen the capacity of local leaders and facilitators through training in participatory communication that is responsive to the community's socio-cultural context. Furthermore, the development of circular economy-based incentive systems and the social recognition of women's roles should be made integral components of community based environmental policies. The integration of these strategies will not only improve the effectiveness of waste management programs but also strengthen social cohesion and ecological awareness among coastal communities in a sustainable manner.

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