



Communication Governance-Based Community Development for Sustainable Coastal and Marine Resource Utilization in Bintan Regency

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Received: 17 May 2026

Revised: 20 May 2026

Accepted: 7 July 2026

Abstract

This study addresses the limited integration of communication governance and community development in coastal and marine resource management in Bintan Regency, Indonesia. It aims to explain how information flow, institutional coordination, participation, deliberation, transparency, and feedback mechanisms support sustainable resource utilization. The study applies a qualitative descriptive-analytical design combining field-based stakeholder inquiry, observation, focused discussion, policy-document review, official statistics, and scientific literature. Data were analyzed through qualitative content analysis, the Socio-Ecological Systems framework, and validated SWOT classification. The findings show that Bintan has strong formal conservation foundations through the East Bintan Marine Protected Area and Bintan II conservation area, yet implementation is constrained by fragmented communication, uneven community understanding of zoning, limited local facilitation capacity, and weak feedback channels among government, fishers, tourism actors, and conservation partners. The article contributes an integrated communication governance model for community-centered coastal management, emphasizing participatory forums, locally understandable conservation messages, community monitoring, and adaptive coordination as practical pathways for sustainable marine resource governance.

Keywords: Coastal Governance; Communication Governance; Community Development; Marine Resource Management

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INTRODUCTION

Coastal and marine governance is fundamentally a communication problem as much as an ecological or administrative problem. In archipelagic regions, conservation rules, tourism interests, fisheries practices, local knowledge, and community livelihoods meet through everyday exchanges among government agencies, coastal residents, tourism businesses, and conservation partners. When communication is fragmented, formal regulations may exist but remain poorly understood, weakly translated into local practice, or contested by communities whose livelihoods depend on marine resources. For this reason, communication governance is treated in this article as a strategic mechanism for building shared meaning, public trust, collaborative problem solving, and sustainable coastal action (Mefalopulos 2008; Servaes 2020).

Bintan Regency is a significant case because its administrative territory is highly archipelagic and marine-oriented. BPS Kabupaten Bintan reports that the regency covers 1,318.21 km² and consists of 272 islands, while its coastal economy is closely connected to tourism, fisheries, and marine-based livelihoods (BPS Kabupaten Bintan 2024). Tourism pressure is also increasing: in November 2025, foreign tourist arrivals reached 16,867 visits, while domestic tourist visits from January to November 2025 increased from 480,655 trips to 680,701 trips compared with the same period in 2024 (BPS Kabupaten Bintan 2026b). At the same time, Bintan is part of a growing conservation landscape, including the East Bintan Marine Protected Area and the Bintan II conservation area, which requires stronger communication between formal institutions and coastal users (Kementerian Kelautan dan Perikanan 2022, 2024, 2025).

The sustainability of coastal and marine resource utilization in Bintan is challenged by tourism expansion, plastic pollution, destructive fishing practices, weak zoning compliance, and climate-related ecological changes. Each pressure produces not only environmental stress but also communication governance problems. Tourism growth creates unequal information and bargaining power between investors, local government, and coastal communities. Plastic pollution reflects weak public communication on responsibility, behavioral change, and enforcement. Destructive fishing is linked to limited trust, inadequate reporting mechanisms, and insufficient community-based surveillance. Climate change requires scientific information to be translated into locally actionable adaptation messages (Syakti et al. 2019; Asio et al. 2025).

Table 1. Coastal and Marine Governance Pressures in Bintan Regency

Main Pressure	Communication Governance Issue	Community Development Implication	Strategic Response
Tourism expansion	Uneven coordination among government, tourism actors, and coastal communities; limited translation of carrying-capacity concerns into public dialogue.	Unequal benefit distribution, community distrust, and increased ecological pressure in tourism zones.	Sustainable tourism dialogue, community-based benefit sharing, and transparent monitoring of coastal carrying capacity.
Plastic pollution	Weak public communication on	Declining coastal quality, risks to	Environmental education,



Main Pressure	Communication Governance Issue	Community Development Implication	Strategic Response
	waste responsibility, limited feedback from communities, and fragmented waste-governance messaging.	marine biota, and reduced community confidence in coastal management.	participatory clean-ups, village-level waste campaigns, and recurring feedback forums.
Destructive fishing	Limited trust in enforcement, weak community reporting channels, and insufficient fisher-to-government communication.	Habitat degradation, declining fisheries productivity, and conflict between conservation rules and livelihood needs.	Community surveillance, fisher-based conservation communication, and negotiated compliance mechanisms.
Climate change impacts	Scientific information is not always translated into locally meaningful adaptation guidance.	Increased vulnerability of coastal livelihoods and reduced preparedness for ecosystem change.	Climate literacy, local adaptation forums, and practical risk communication.
Institutional fragmentation	Sectoral programs are not fully integrated, and feedback channels between government levels are often discontinuous.	Overlapping authority, weak implementation, and community confusion over responsibilities.	Multi-stakeholder communication platform linking national policy, provincial authority, district facilitation, and village action.

Source: Synthesized from field-oriented stakeholder inquiry, official policy documents, BPS statistics, and relevant coastal governance literature; Author analysis, 2026.

The evidentiary basis of Table 1 is therefore not a stand-alone assumption. The pressure categories were developed from the interaction between official conservation policy, statistical context, literature on Bintan and Indonesian coastal management, and field-oriented stakeholder analysis. The table clarifies that community development cannot be reduced to welfare programming; it is a governance process that changes community capacity, agency, empowerment, and collective action. Through repeated dialogue, understandable conservation messages, and feedback mechanisms, communities can move from passive policy recipients into active resource stewards (Reed et al. 2018; Sulaiman et al. 2024).

Previous studies on Indonesian coastal governance have examined marine protected areas, conservation effectiveness, island tourism, plastic waste, and ecological vulnerability. However, fewer studies have explicitly explained how communication governance operates as a bridge between formal marine policy and community development in Bintan. This article responds to that gap by placing communication dimensions at the center of coastal governance analysis, rather than treating communication merely as socialization after policy decisions have already been made (Bennett 2019; Newig et al. 2018).

Communication governance in this study is operationalized through six analytical dimensions: information flow, deliberation, transparency, participation, coordination, and

feedback mechanisms. Information flow refers to how rules, ecological risks, and program decisions move among institutions and communities. Deliberation concerns the availability of dialogue spaces for negotiating resource use. Transparency relates to clarity of zoning, authority, and program objectives. Participation addresses community involvement in planning, implementation, and monitoring. Coordination examines cross-sectoral and cross-level institutional alignment. Feedback mechanisms refer to how local concerns, monitoring results, and ecological changes return to decision makers.

Community development is treated as the social outcome of these communication processes. Effective communication can strengthen coastal residents' knowledge of conservation rules, increase confidence to participate in decision-making, improve collective monitoring, and encourage livelihood adaptation. Conversely, poor communication can create mistrust, low compliance, and weak ownership of conservation initiatives. In this sense, communication governance is not peripheral to coastal sustainability; it is a mechanism through which community capacity and ecological protection are jointly produced (Berkes 2009; Armitage, Berkes, and Doubleday 2007).

The Socio-Ecological Systems perspective is relevant because Bintan's coastal governance involves interdependence among marine ecosystems, resource users, institutional rules, economic incentives, and communication practices. Coral reefs, seagrass beds, mangroves, and turtle habitats cannot be managed only as biophysical objects; they are embedded in livelihoods, tourism systems, policy authority, and local knowledge. This perspective enables the study to examine how governance communication affects ecological outcomes and how ecological changes generate social and institutional feedback (Ostrom 2009; Basurto, Gelcich, and Ostrom 2013).

Based on this background, this study aims to analyze how communication governance-based community development can support sustainable coastal and marine resource utilization in Bintan Regency. The analysis is guided by three research questions: (1) How do institutional coordination and authority arrangements shape communication governance in Bintan coastal management? (2) How does communication governance influence community participation, capacity, and collective action in sustainable marine resource utilization? (3) What strategic alternatives can strengthen adaptive, participatory, and community-centered coastal governance in Bintan Regency?

METHODS

This study uses a qualitative descriptive-analytical design that combines field-oriented empirical inquiry with document-based policy and literature analysis. The research site is Bintan Regency, Riau Islands Province, with attention to coastal communities, tourism zones, and marine conservation areas connected to East Bintan and Bintan II. The design is appropriate because the study seeks to interpret communication processes, stakeholder relations, institutional coordination, community participation, and the interaction between social and ecological systems rather than to measure causal effects statistically (Sheydayi and Dadashpoor 2023; Partelow 2015).

Primary data were developed through semi-structured stakeholder interviews, field observations, and focused discussions with categories of actors involved in coastal and marine resource governance. The participant categories included local government and marine-related



institutions, coastal community representatives, small-scale fishers, tourism actors, conservation groups, and academic or research partners. Participants were selected purposively based on their involvement in policy implementation, resource use, community facilitation, conservation activity, or coastal livelihood practices. To protect confidentiality, participant identities were anonymized and the analysis reports stakeholder categories rather than personal names.

The interview guide focused on six themes: communication of conservation rules, stakeholder coordination, community participation, local ecological knowledge, tourism and waste-related pressures, and perceived barriers to sustainable marine resource use. Field observations were used to note communication practices, visible coastal pressures, community interaction patterns, and the practical translation of conservation messages. Focused discussions helped clarify whether emerging themes reflected individual perceptions or wider stakeholder experiences. Before participation, informants were informed about the purpose of the study, confidentiality, voluntary participation, and the academic use of anonymized data.

Secondary data consisted of ministerial decrees on conservation areas, national policy instruments, BPS statistical publications and tourism releases, local government information, scientific literature, and previous studies on coastal governance, marine protected areas, development communication, community development, blue economy policy, seagrass and coral reef management, plastic pollution, and sustainable resource utilization. The use of secondary data was intended to contextualize field evidence and to prevent the analysis from relying on subjective impressions alone (Liu, Chen, and Xiao 2024; Panigrahi and Mohanty 2012).

Table 2. Data Sources, Analytical Roles, and Validation Procedures

Data Source	Analytical Role	Validation / Credibility Procedure
Stakeholder interviews	Identify perceptions of information flow, coordination, participation, and communication gaps.	Cross-checked with observation notes, focused discussions, and policy documents.
Field observations	Record visible coastal pressures, communication practices, and community interaction patterns.	Compared with stakeholder explanations and literature on Bintan coastal governance.

Focused discussions	Clarify collective views on conservation communication, local capacity, and implementation barriers.	Used to confirm or refine emerging categories from interviews.
Policy documents and official statistics	Establish legal, institutional, ecological, tourism, and administrative context.	Prioritized official sources from KKP and BPS and compared with scientific literature.
Scientific literature	Provide conceptual support for SES, communication governance, community development, and SWOT analysis.	Irrelevant references were removed and replaced with coastal-governance-relevant sources.

Source: Author elaboration, 2026.

Data analysis was conducted in three stages. First, qualitative content analysis was used to code empirical and documentary material into communication-governance themes: information flow, deliberation, transparency, participation, coordination, and feedback. Second, these themes were mapped into the Socio-Ecological Systems framework by connecting resource systems, resource units, governance systems, actors, interactions, and outcomes. Third, SWOT analysis was used to classify internal strengths and weaknesses as well as external opportunities and threats affecting communication governance-based community development.

To reduce the subjectivity commonly associated with SWOT analysis, the classification of strengths, weaknesses, opportunities, and threats was not derived from a single source. Items were included only when they appeared consistently across at least two forms of evidence, such as policy documents and interviews, observations and literature, or official statistics and stakeholder interpretation. The study did not apply numerical weighting; instead, it used qualitative prioritization based on recurrence, relevance to communication governance, and direct connection to Bintan's coastal conditions. This procedure allows the SWOT matrix to function as a transparent analytical tool rather than a merely descriptive list.

Figure 1 summarizes the research process. It shows that the study begins from a communication governance problem, integrates primary and secondary data, applies triangulation, maps findings through SES and SWOT analysis, and produces strategic recommendations for participatory, adaptive, and community-centered coastal governance.

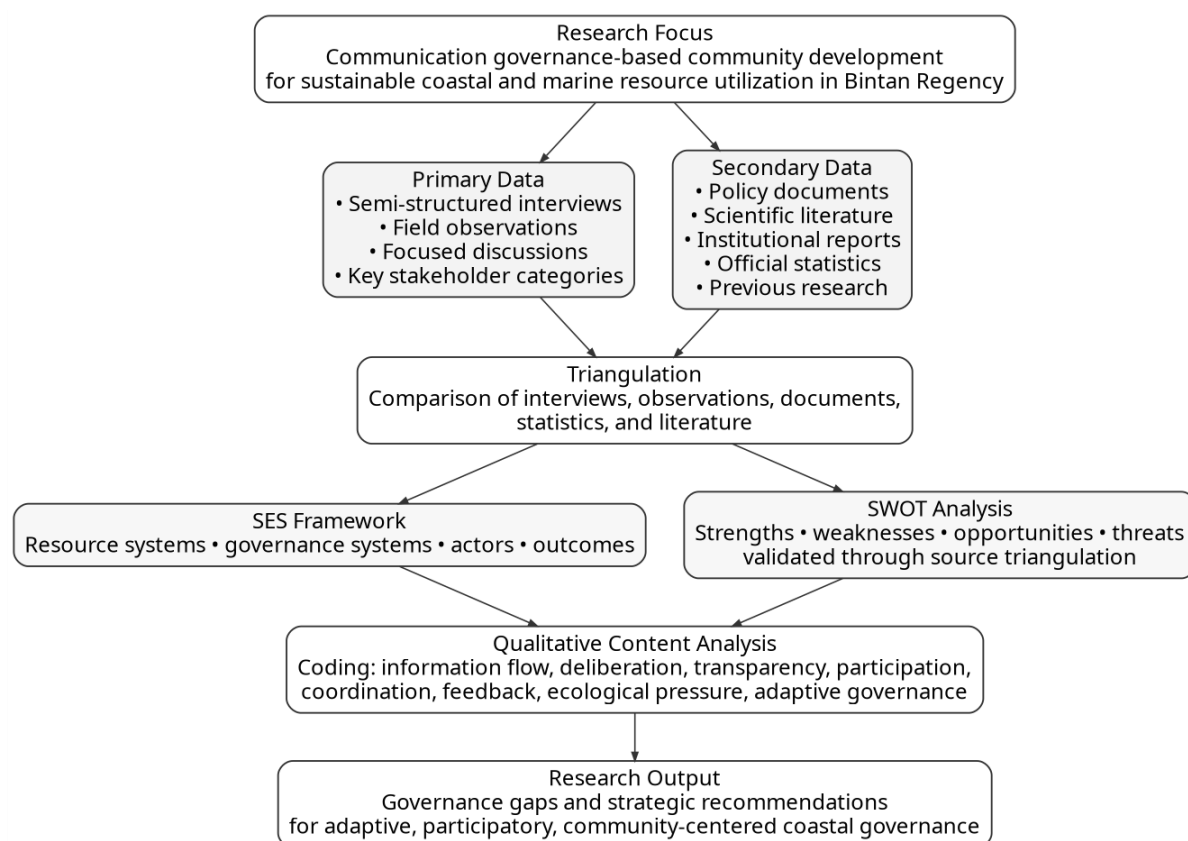


Figure 1. Research Flow of Communication Governance-Based Community Development for Sustainable Coastal and Marine Resource Utilization

Source: Author, 2026.

RESULTS AND DISCUSSION

Institutional Conditions and Communication Governance Policies in Bintan Regency

Coastal and marine governance in Bintan Regency is supported by a multi-level policy framework. The East Bintan Marine Protected Area was designated through Ministerial Decree of Marine Affairs and Fisheries Number 18 of 2022, while the Bintan II conservation area was established through Ministerial Decree Number 87 of 2024. The Bintan II conservation area covers 843,609.30 hectares and includes core zones, limited-use zones, and rehabilitation zones intended to protect coral reefs, seagrass beds, mangroves, turtle habitat, and sustainable fisheries (Kementerian Kelautan dan Perikanan 2024, 2025). These policy instruments confirm Bintan's strategic position in Indonesia's marine conservation landscape.

The institutional issue is not the absence of formal regulation, but the challenge of translating regulation into locally understood and collectively practiced governance. Conservation zoning requires coastal users to understand boundaries, allowable activities, restrictions, reporting channels, and livelihood implications. When this information is not communicated repeatedly and in locally meaningful forms, zoning tends to be understood as a distant administrative rule rather than as a shared conservation agreement. This finding confirms that communication governance must accompany legal designation, especially in

marine areas where users, authorities, and ecological conditions interact continuously (Lumbantoruan, Noviyanti, and Gigentika 2023; Jompa et al. 2023).

Authority arrangements also shape the scope of district-level action. Marine conservation authority is strongly connected to national and provincial policy, but Bintan Regency can still play an important facilitation role through community development, local environmental education, village-level dialogue, coastal waste governance, tourism coordination, and participatory monitoring support. Thus, district government should not be seen as replacing provincial marine authority, but as a communication bridge that connects conservation policy with everyday coastal practices. This bridging role is critical because community compliance depends on trust, clarity, and perceived fairness as much as on legal enforcement.

Field-oriented stakeholder analysis indicates three recurring communication gaps. First, conservation messages are often more formal than practical, so communities may know that protected areas exist without fully understanding zoning consequences for daily activities. Second, coordination between tourism development, waste management, fisheries, and conservation programs remains sectoral. Third, feedback from coastal residents and fishers is not always converted into policy adjustment or program learning. These gaps explain why policy instruments may be strong at the legal level but uneven at the implementation level.

Figure 2 presents the institutional communication flow required for Bintan's coastal governance. The model clarifies that national policy, provincial authority, district facilitation, community participation, tourism responsibility, and conservation knowledge need to be connected through a communication governance hub. This hub is not a new bureaucracy; it represents the practical functions of information sharing, deliberation, transparency, coordination, participation, and feedback that should operate across existing institutions.

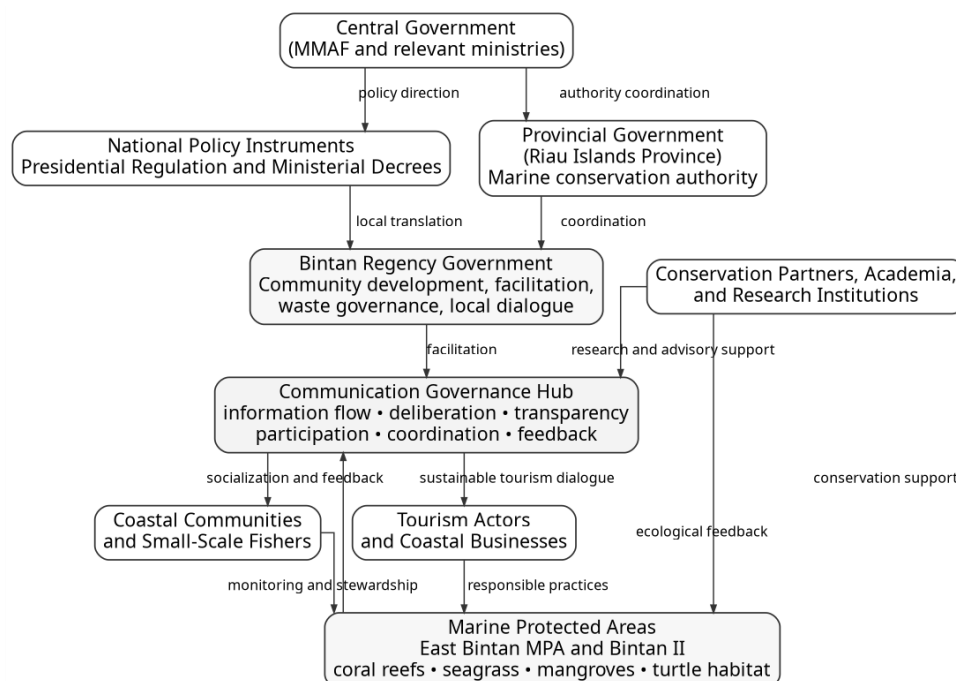


Figure 2. Institutional Communication Flow of Coastal and Marine Governance in Bintan Regency

Source: Author, 2026.

Socio-Ecological Systems (SES) Analysis in Coastal Governance in Bintan Regency

Within the SES framework, Bintan's coastal governance is understood as a dynamic relationship between ecological systems, governance arrangements, resource users, interactions, and outcomes. Coral reefs, seagrass beds, mangroves, and turtle habitats are not separate from social systems; they are linked to fisher livelihoods, tourism revenues, conservation rules, waste practices, local ecological knowledge, and institutional capacity. This interdependence means that ecological degradation often signals a breakdown in communication, coordination, and collective action as well as a biophysical problem (Ostrom 2009; Basurto, Gelcich, and Ostrom 2013).

Seagrass ecosystems illustrate the connection between ecosystem services and communication governance. Seagrass beds support small-scale fisheries, stabilize shorelines, store carbon, and provide habitat for marine organisms. However, their protection depends on whether communities and tourism actors understand their ecological function, whether local knowledge is exchanged with scientific monitoring, and whether participatory monitoring is linked to clear feedback mechanisms. Without communication, seagrass conservation can remain invisible because damage is often less publicly recognized than damage to coral reefs or beaches (Lukman et al. 2021; Strachan, Lilley, and Hennige 2022).

Coral reef and mangrove governance also requires communication that connects ecological evidence with everyday choices. Coral reef restoration and MPA effectiveness depend on community support, sustainable fishing, tourism compliance, and the credibility of monitoring data. Mangrove rehabilitation requires repeated engagement because planting activities can fail when communities are not involved in site selection, maintenance, or benefit-sharing arrangements. In both cases, communication is the pathway through which conservation knowledge becomes community action (Razak et al. 2022; Rifai et al. 2024).

Table 3. SES Components, Observed Conditions, and Governance Recommendations in Bintan Regency

SES Component	Observed Condition in Bintan	Analytical Interpretation	Governance Recommendation
Resource systems and units	Coral reefs, seagrass beds, mangroves, turtle habitat, fisheries resources, and coastal tourism areas.	Ecosystem services support livelihoods and tourism but are vulnerable to pollution, fishing pressure, and weak compliance.	Integrate ecological monitoring with community-based reporting and locally understandable conservation messages.
Governance systems	National decrees designate conservation areas; provincial authority manages marine conservation; district institutions facilitate local programs.	Formal authority is strong, but implementation depends on cross-level communication and community translation.	Create routine coordination forums linking province, district, villages, communities, and tourism actors.
Actors / users	Fishers, coastal households, tourism operators, local	Actors have different interests, knowledge, and	Use deliberative forums, co-learning activities, and



	government, conservation partners, and research institutions.	incentives; unmanaged differences can create conflict or low compliance.	benefit-sharing discussion to build trust.
Interactions	Tourism use, fishing, waste disposal, rehabilitation activities, monitoring, and policy socialization.	Interaction quality determines whether regulations are accepted as shared responsibility or external control.	Strengthen participatory monitoring, complaint channels, and feedback into program evaluation.
Outcomes	Potential for ecological protection and livelihood resilience, but also risk of degradation under fragmented communication.	Sustainability depends on adaptive learning across ecological and social feedback.	Adopt adaptive governance with periodic review of zoning communication, carrying-capacity messages, and local participation.

Source: Author analysis using the SES framework, 2026.

Table 3 distinguishes observed conditions, analytical interpretation, and recommendations to avoid mixing description with normative indicators. The SES analysis shows that governance performance is shaped by feedback loops. If tourism pressure increases without effective communication on carrying capacity, ecological stress can intensify and reduce community confidence in conservation rules. If fishers perceive zoning as externally imposed, compliance may decline even when regulations are formally valid. Conversely, transparent information, participatory monitoring, and responsive feedback can produce a reinforcing loop in which ecological recovery improves livelihoods and strengthens governance legitimacy.

The SES analysis therefore supports the central argument that sustainable coastal governance in Bintan requires adaptive communication. Adaptive communication means that institutions do not only disseminate policy, but also listen to community feedback, translate technical information into local language, adjust messages according to ecological change, and use monitoring results to improve coordination. This approach links ecological resilience with community agency and institutional learning (Meilana et al. 2023; Trialfhianty, Quinn, and Beger 2025).

SWOT Analysis of Communication Governance-Based Coastal Management in Bintan Regency

SWOT analysis was used to identify strategic alternatives rather than to produce a simple list of internal and external conditions. Strengths and weaknesses were classified as internal factors related to Bintan's institutional and community capacity, while opportunities and threats were classified as external factors related to policy momentum, tourism growth, ecological pressure, and wider marine governance dynamics. To minimize subjectivity, each item was triangulated with policy documents, official statistics, stakeholder-oriented analysis, and relevant literature.

The matrix shows that Bintan's main strength lies in its formal conservation foundation and growing policy recognition. Its main weakness is not the absence of policy, but uneven communication capacity, limited local facilitation, and fragmented sectoral implementation. Opportunities arise from the blue economy agenda, conservation financing, marine tourism demand, and research partnerships. Threats emerge from waste, mass tourism, destructive practices, climate stress, and declining community trust when communication fails.

Table 4. SWOT Matrix of Communication Governance in Bintan Coastal Management

Internal / External	Opportunities (O)	Threats (T)
Strengths (S)	SO Strategy: Use existing MPA policy, zoning instruments, and conservation recognition to build participatory tourism, fisher engagement, and blue-economy communication platforms.	ST Strategy: Use formal conservation authority and community development programs to improve waste communication, carrying-capacity awareness, and compliance with sustainable fishing rules.
Weaknesses (W)	WO Strategy: Address fragmented communication through regular multi-stakeholder forums, local facilitators, simplified zoning messages, and collaboration with universities and conservation partners.	WT Strategy: Reduce implementation risk by establishing feedback channels, community monitoring, transparent complaint mechanisms, and adaptive coordination across government levels.

Source: Author analysis based on triangulated SES and SWOT coding, 2026.

Table 5. Prioritized Strategic Alternatives Derived from SWOT Analysis

Strategy Type	Strategic Alternative	Communication Governance Focus
SO	Develop a Bintan coastal communication forum linking conservation policy, tourism management, fisher groups, village actors, and research institutions.	Deliberation, coordination, and shared agenda setting.
WO	Prepare simplified zoning and conservation messages for coastal villages, tourism operators, and fishers.	Information flow, transparency, and local translation of rules.
ST	Integrate waste governance, tourism carrying capacity, and fisher compliance into recurring public communication campaigns.	Risk communication, behavioral change, and compliance support.
WT	Create a feedback and grievance mechanism for communities affected by	Feedback, trust building, and adaptive policy learning.

	zoning, tourism pressure, pollution, or rehabilitation programs.	
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Source: Author analysis, 2026.

The SO strategy positions conservation policy as a platform for collaboration rather than merely as a regulatory instrument. The WO strategy addresses the main implementation gap by improving the clarity and frequency of conservation communication. The ST strategy responds directly to ecological threats by connecting them with practical communication interventions for waste, tourism carrying capacity, and fisher compliance. The WT strategy is especially important because fragmented communication can intensify distrust; therefore, feedback and grievance channels should be institutionalized so that community concerns can be heard before they become conflict.

These strategies indicate that communication governance is not limited to public relations. It includes structured dialogue, social learning, cross-sector coordination, and mechanisms through which community experience can influence policy implementation. In Bintan, strategic communication must be continuous, two-way, and locally embedded because coastal communities evaluate conservation not only through legal language but also through livelihood impacts, fairness, and the reliability of institutional response.

Communication Governance-Based Community Development Model for Sustainable Marine Resource Utilization

The findings support a community development model in which communication functions as the connective mechanism between policy, ecological knowledge, and collective action. The model begins with transparent information: communities need clear explanations of conservation zones, fishing restrictions, tourism impacts, waste responsibilities, and ecological risks. It then requires deliberation: local actors must have space to discuss how conservation rules affect livelihoods and how sustainable practices can be negotiated. Participation follows through community monitoring, coastal clean-up initiatives, village-level adaptation forums, and fisher-based conservation reporting.

For waste governance, communication interventions should move beyond episodic campaigns and become part of regular coastal responsibility programs. Messages should connect plastic waste with fisheries productivity, tourism quality, public health, and marine biodiversity. For tourism carrying capacity, communication should involve tourism operators, village actors, and local government in monitoring visitor pressure, coastal cleanliness, and benefit sharing. For fisher compliance, communication should prioritize trust-building, locally understandable zoning maps, negotiated reporting channels, and recognition of fisher knowledge as part of conservation practice (Purba et al. 2019; Maharja et al. 2024).

The model also requires institutional learning. Feedback from communities, monitoring data, and field observations should be returned to decision-making forums so that programs can be adjusted. If communication only flows from government to communities, governance remains top-down. If communication flows both ways and is connected to institutional response, communities are more likely to perceive conservation as legitimate. This is the point at which communication governance becomes community development: it increases knowledge, builds agency, supports collective action, and improves the capacity of coastal communities to participate in sustainable marine resource utilization.



In practical terms, Bintan Regency can strengthen this model by appointing local communication facilitators, developing village-level conservation messages, integrating tourism and waste communication into coastal programs, supporting community monitoring groups, and building partnerships with universities and conservation organizations. These interventions are feasible within district-level roles because they focus on facilitation, education, community empowerment, and local coordination rather than on taking over provincial marine authority.

CONCLUSION

This study concludes that communication governance-based community development is a strategic foundation for strengthening sustainable coastal and marine resource utilization in Bintan Regency. Bintan already has a strong formal conservation basis through the designation of marine protected areas, zoning arrangements, and national policy support. However, the effectiveness of these instruments depends on the ability of institutions to communicate conservation rules, listen to local concerns, coordinate across authority levels, and translate ecological information into community action. The central finding is that governance failure in Bintan is not only ecological or regulatory, but also communicative.

The theoretical contribution of this article lies in integrating communication governance, community development, and the Socio-Ecological Systems perspective within a coastal and marine context. For Islamic communication and community development studies, the article shows that trust, deliberation, accountability, stewardship, and collective responsibility can be operationalized through participatory coastal governance. Communication is therefore not merely a channel for disseminating policy, but a moral and institutional process that shapes community agency, ecological care, and shared responsibility for marine resources.

The practical implication is that Bintan stakeholders should prioritize routine multi-stakeholder forums, simplified conservation communication, community-based monitoring, waste-governance campaigns, tourism carrying-capacity dialogue, fisher compliance support, and transparent feedback mechanisms. The study is limited by its qualitative design and by the absence of long-term ecological measurement within the manuscript corpus; therefore, future research should combine longitudinal community data, spatial ecological indicators, and comparative analysis across coastal villages. Even with these limitations, the study offers a practical governance model for connecting conservation policy, community empowerment, and sustainable marine resource use in Bintan Regency.

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