

Article

Legal Visibility and Governance in Island-Chain Survival Patterns among Maritime Mobile Communities-Field Observations in Semporna from an SDG Perspective

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Abstract: Maritime mobile communities, particularly the Bajau people, face unique socio-legal and environmental challenges in rapidly developing coastal regions. Using Semporna, Sabah, Malaysia, as a primary field site, this study investigates the precarious status of these populations within island-chain environments. We analyze their living conditions and governance structures through three critical perspectives: the United Nations Sustainable Development Goals (SDGs), marine regulatory technology, and legal visibility. Our findings reveal that current marine management frameworks actively perpetuate systemic inequalities through selective institutional inclusion and spatial discrimination. Specifically, economically lucrative zones such as tourist areas, commercial markets, and primary navigation routes are swiftly identified and rigorously regulated. In stark contrast, the fundamental needs of mobile communities—including adequate housing, reliable water supply, electricity access, and proper waste disposal—remain severely marginalized and fail to achieve equivalent institutional prioritization. Furthermore, while the establishment of protected areas and tourism infrastructure has increased the regulatory visibility of certain marine spaces, it has simultaneously encroached upon and severely limited the spatial domains available for traditional fishing practices and maritime mobility. Consequently, we argue that the implementation of SDG 6, SDG 12, and SDG 14 in such contexts must transcend a singular conservation logic. Policymakers must prioritize holistic ecological protection, equitable infrastructure provision, and the formal institutional recognition of mobile populations to ensure genuine livelihood security and sustainable development.

Keywords: maritime communities; marine governance; legal visibility; sustainable development; island environments

Received: 21 May 2026

Revised: 07 July 2026

Accepted: 19 July 2026

Published: 22 July 2026



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1. Introduction

In recent years, efforts to enhance ecological protection, promote marine tourism, and improve governance over maritime activities have intensified across Southeast Asian waters. These initiatives have led to the establishment of protected areas, the expansion of diving tourism, the regulation of waterways, and the implementation of restrictions on nighttime movement. As a result, previously open marine spaces have been transformed into managed zones characterized by boundaries, permits, and specific functional classifications [1]. While these measures are often presented as strategies for ecological preservation and sustainable development, their impact can vary significantly depending on the local context and the individuals affected by these changes.

The Bajau people, who have lived in harmony with the sea for generations, exemplify a community deeply connected to maritime environments [2]. Their livelihoods have traditionally revolved around fishing, trading, and kinship networks, all facilitated by their mobility across the sea. For this sea-oriented community, the ocean is not merely a resource but a shared space that fosters familial and communal bonds as well as economic exchanges. However, the classification of marine areas into protected zones, parks,

regulated waterways, and controlled regions has disrupted their traditional practices. Activities once guided by experience and customary knowledge now face new challenges, including permit requirements, identity verification, and regulatory oversight, which impose significant constraints on their way of life.

The Semporna region and its surrounding islands provide a striking contrast between the development of tourist infrastructure and the living conditions of local communities [1]. Tourist areas benefit from stable roads, consistent electricity, and basic commercial facilities, creating an environment conducive to leisure and economic activity. In contrast, nearby Bajau communities experience limited access to essential services, such as intermittent water supply, frequent nighttime power outages, and inadequate waste management systems. Despite their geographical proximity to these well-developed tourist zones, these communities remain excluded from the resources and institutional support that could improve their quality of life.

These disparities are not always immediately apparent but manifest in subtle ways. For instance, while tourists enjoy vibrant nightlife in urban centers, local residents must prioritize charging their devices before electricity is cut off. Similarly, markets in tourist areas are subject to strict regulations regarding pricing, hygiene, and operational permits, which often exclude traditional boat traders from participating in the formal economy. Additionally, the rising demand for seafood driven by tourism has increased its market value, yet local fishermen frequently find themselves unable to benefit from these higher prices, remaining on the periphery of economic exchange networks. These everyday challenges highlight the need for institutional stakeholders to better understand and address the nuanced impacts of these governance measures on local communities.

This article aims to bridge the gap between the broader discourse on sustainable development goals and the specific realities of island-chain settings [3]. By examining ecological indicators for marine conservation, economic benefits from tourism, and identity-related challenges faced by local communities, it sheds light on how these initiatives reshape daily practices such as water access, electricity usage, waste management, trade, and fishing routes. These changes underscore the complexities and contradictions inherent in implementing sustainable development policies at the local level.

How are institutions distributed across the main island, its surrounding islands, and maritime environments under a unified marine governance framework? What legal and administrative mechanisms are employed to regulate specific areas, activities, and populations, and how do these measures affect communities that rely on mobility and adaptability? Furthermore, how do these spatial and regulatory differences influence the localized implementation of sustainable development goals related to water management, responsible consumption, and marine conservation?

2. Research Design and Data Sources

2.1. Research Design

This study employs an exploratory case study approach, focusing on the Semporna region, which includes coastal tourist areas, Bajau communities, and surrounding islands. Data collection methods involved short-term participant observation, informal interviews, and photographic documentation. Observations covered various aspects such as water supply, evening electricity availability, waste management practices, seafood trading activities, community spatial arrangements, boat operations, and infrastructure in tourist areas. The primary objective of this research is not to achieve statistical precision but to identify recurring structural patterns within a limited scope. The researcher acted as a non-intrusive observer, gathering data through natural conversations and walk-through observations without the use of formal questionnaires or active participation in community decision-making processes [4]. Participants in the study included fishers, household members within the community, users of local infrastructure, and individuals

engaged in marine-resource-related occupations. This approach ensures a nuanced understanding of the socio-environmental dynamics in the region.

The study incorporates spatial comparisons by examining tourist areas, markets, fringe communities in older town areas, and island locations within the same temporal framework. This approach minimizes the influence of seasonal, weather-related, and market-driven variations on the findings. The analysis does not aim to categorize spaces as superior or inferior but rather seeks to understand why adjacent spaces are treated differently. For instance, while both tourist areas and residential communities share a marine environment, the former benefits from structured amenities such as roads, lighting, and regular maintenance, whereas the latter often depends on household-level solutions for basic needs. This contrast highlights the disparities in resource allocation and infrastructure development, prompting further inquiry into the underlying factors that contribute to such differences. By adopting this comparative lens, the research aims to uncover the socio-economic and environmental dynamics shaping these spaces.

2.2. Data Sources

All the data were treated systematically to ensure coherence and relevance. Field notes were categorized into key areas such as water resources, electricity, waste management, fishing livelihoods, spatial boundaries, and institutional management. These categories were further consolidated into four overarching themes: infrastructure disparities, access to marine resources, governance frameworks, and gaps in achieving sustainable development goals. Visual materials, such as images, were utilized to emphasize spatial inequalities and the distribution of facilities, serving as illustrative tools rather than quantitative evidence. The paper includes limited direct interview excerpts and field documents to provide insights into institutional dynamics and individual experiences. Brief references highlight challenges faced by residents, including water shortages, power outages, and waste disposal issues [5]. On-site notices, physical barriers, market regulations, and infrastructure layouts are used to demonstrate how institutional arrangements manifest in spatial contexts. However, the analysis avoids romanticizing community life, emphasizing that mobility does not equate to freedom and poverty should not be misconstrued as a cultural trait. The central inquiry focuses on understanding why populations living in marine environments lack adequate public services despite increasing tourism and conservation efforts. It also examines how local knowledge, while sufficient for daily survival, remains excluded from formal planning processes.

This approach bridges the gap between theoretical concepts and practical field experiences, grounding the analysis in real-world contexts and offering directions for future research. Nonetheless, the study has limitations. The duration of fieldwork was brief, the scope of interviews was narrow, and certain areas could not be thoroughly examined due to restrictions imposed by management regulations. Additionally, government policy documents were not exhaustively analyzed, which constrains the depth of institutional insights. Consequently, the findings of this paper should be interpreted as identifying mechanisms and formulating problems rather than establishing generalized causal relationships. Future research could benefit from extended fieldwork, broader interview samples, and a more comprehensive review of policy documents to deepen the understanding of institutional dynamics and community interactions within marine environments [6].

3. Survival Structures in Island-Chain Space

Infrastructure disparities in island-chain spaces are closely tied to tourism development and geographical factors. In Semporna, newer urban areas and tourist zones benefit from more stable roads, lighting, shops, and public facilities, while older town fringes and Bajau communities rely on temporary or semi-permanent systems. Basic resources such as water, electricity, and waste disposal are not consistently accessible from centralized sources, highlighting gaps in institutional resource management. Water

supply in these communities often depends on localized solutions such as water towers, pumping equipment, rainwater collection, and groundwater usage [7]. Residents explained that water is available only at specific times, with pumps operating briefly in the morning and occasionally in the afternoon. This irregularity forces families to store water in advance, structuring daily routines around supply schedules. In contrast, tourist areas enjoy stable piped water systems, ensuring visitors rarely encounter such uncertainties.

Electricity infrastructure exhibits similar disparities. Residential communities face time-limited access to electricity during nighttime hours, with lighting reduced after 10 p.m. and household appliance usage requiring careful planning. These limitations impact essential aspects of daily life, including children's education, communication, nighttime safety, and family care. Conversely, tourist zones maintain uninterrupted nighttime lighting and provide consistent electricity for catering and transportation services, reflecting the prioritization of commercial activities over residential needs [8].

Waste disposal systems further underscore the absence of stable institutional frameworks. Local communities lack fixed waste collection mechanisms, leading to practices such as centralized burning or the disposal of household waste into the sea. Residents expressed frustration, noting that the issue was not a lack of awareness about marine pollution but the absence of viable alternatives for waste management [9]. This situation highlights the necessity of a comprehensive support system encompassing waste collection, sorting, recycling, and regulatory oversight to address environmental challenges effectively.

Market spaces demonstrate a higher degree of institutional control compared to other areas. Notices within markets clearly outline regulations regarding price tags, stall hygiene, smoking, spitting, operating licenses, and off-site transactions. Administrators enforce these rules through fines, removal of stalls, or revocation of licenses, ensuring a relatively orderly environment. However, this formal order does not extend to the shore or boats, where Bajau fishermen often unload and trade goods directly from their vessels without entering the formal market system. This exclusion from regulated spaces creates a parallel economy that operates outside institutional oversight [10].

Living spaces also serve as physical and social boundaries. In some Bajau communities located on the main island, fences or walls separate residential areas from roadside spaces, with transactions frequently occurring on the shore or aboard boats. While seafood often moves from boats to markets and eventually into the tourism consumption chain, fishermen themselves rarely access the more profitable stages of commerce. These spatial boundaries not only delineate physical separations but also influence how labor outputs are valued and exchanged, often marginalizing local communities in economic processes.

The division of roles within these communities further reflects the impact of spatial and economic boundaries [11]. Field observations indicate that women often engage in low-paid shore-based activities such as shellfish processing, while men are more likely to undertake fishing and maritime transport. Tourism-driven increases in seafood prices result in higher costs for local communities, yet these price hikes do not necessarily translate into proportional benefits for fishermen. Revenue generated from tourism is distributed along the market chain, leaving local communities with limited economic opportunities and rising living expenses (Figure 1).



Figure 1. Maritime Settlements and Mobile Livelihood Spaces.

Island settlements exhibit unique architectural practices shaped by local knowledge and environmental conditions. Houses are typically constructed using wood, bamboo, coconut leaves, and other simple materials, with construction techniques passed down through kinship networks and oral traditions. These structures, while lacking formal engineering designs, are adapted to tides, wind patterns, and family needs, reflecting a deep experiential logic. However, this traditional approach is often dismissed as backward or temporary within formal infrastructure planning, undermining its potential value as a source of localized governance insights [12].

Fishing livelihoods are significantly influenced by spatial rezoning initiatives [7]. The establishment of protected areas, diving zones, and navigation routes alters traditional fishing patterns, restricting access to previously available waters and imposing fees in certain zones. These changes force fishermen to take longer detours, increasing fuel and time costs while reducing the predictability of catches. For those relying on small boats and familiar routes, such reclassifications directly impact household income and food security, underscoring the challenges posed by spatial governance decisions.

4. Legal Visibility and Regulatory Technologies: A Dual Effect

In the Semporna area, structured rules and guidelines are present but inconsistently applied. Business operations within markets are governed by specific rules, movement across sea routes is subject to restrictions, and curfews are enforced to some extent. However, the application of these measures is uneven. Areas associated with tourism, market regulation, and maritime safety tend to have clearer management frameworks [6]. In contrast, aspects central to the daily lives of the Bajau community, such as access to water, waste management, housing, and legal documentation, are characterized by fragmented and ambiguous governance.

This phenomenon can be described as selective visibility. The Bajau community becomes highly visible when restrictions are enforced, such as when they enter regulated marine zones, approach market perimeters, or breach spatial boundaries. Conversely, their visibility diminishes when they require essential services and protections, such as consistent water supply, waste disposal systems, education, healthcare, and legal residency. Legal visibility, therefore, is not a singular concept but encompasses both "managed visibility," where control is exercised, and "protected visibility," where rights and services are ensured.

Selective visibility often leads to a misallocation of responsibility. For instance, when waste from the community ends up in the ocean, the narrative of governance tends to place blame on the residents. However, a deeper inquiry into why the waste was not integrated into formal collection systems reveals underlying issues such as inadequate public investment, unclear service boundaries, and challenges in identity recognition. Similarly, when fishermen are penalized for entering traditional fishing grounds, the focus often shifts to individual accountability. Broader questions, such as why these areas were reclassified, whether compensation mechanisms are sufficient, and whether viable alternative livelihoods are available, are frequently addressed with less urgency.

This intermediate position within institutional frameworks means that the Bajau community cannot be categorized as entirely outside the system or fully integrated into it. They are required to adhere to specific rules in certain contexts but may find themselves unable to access resources through the same regulatory structures. Their participation in the tourism economy highlights this paradox, as their contributions are integral to the market, yet they lack proportional bargaining power to benefit from its growth. The concept of legal visibility is instrumental in uncovering this duality of being both acknowledged and overlooked within governance systems.

Technological tools used for regulatory purposes have further contributed to this imbalance. Instruments such as navigational markers, protected-area boundaries, vessel movement regulations, and curfews enhance the manageability of maritime spaces. These tools also promote marine safety, ecological conservation, and predictability in tourism activities. However, for communities reliant on flexible mobility, such as the Bajau, rigid rules tied to registration, permits, or fixed schedules can push traditional practices toward the margins of legality.

The issue does not lie in the technology itself but in its application. The critical questions revolve around who controls these tools, the objectives they serve, and how they interact with institutional mechanisms to address the needs of communities with limited resources. When regulatory technologies are employed solely to delineate boundaries and enhance enforcement efficiency, without providing avenues for negotiation, compensation, alternative livelihoods, or basic services, the burden of ecological conservation is disproportionately shifted onto already disadvantaged mobile communities [6].

Limited legal visibility also restricts the incorporation of local knowledge into governance frameworks. Traditional practices such as house construction, understanding tidal patterns, historical fishing grounds, and kinship-based collaboration are rarely reflected in formal planning documents or policy metrics. The issue is not the absence of rules within these practices but that their regulatory frameworks differ from modern administrative systems. When governance structures prioritize quantifiable, registrable, and fee-based forms of spatial usage, the experiential knowledge of maritime mobile communities is undervalued and excluded from decision-making processes.

5. Local Fractures in SDG Implementation

Access to clean drinking water and sanitation facilities, as outlined in SDG 6, remains uneven across different regions. While tourist areas often benefit from stable water supplies, many communities experience timed water supply, highlighting that infrastructure challenges cannot be solely attributed to natural resource scarcity. The availability of water is influenced by factors such as the quality and reach of pipe networks, the functionality of pumping equipment, the allocation of maintenance responsibilities, and the level of financial investment [5]. Additionally, whether a community is prioritized as part of long-term governance strategies plays a significant role in determining access to these essential services. This disparity underscores the need for integrated approaches that address systemic issues rather than focusing solely on resource availability.

SDG 12 emphasizes responsible consumption and production, yet achieving this goal requires more than encouraging behavioral changes among residents. The ecological strain caused by waste entering the ocean is exacerbated by the absence of fixed collection

points, efficient sorting facilities, and affordable waste treatment options. Without these foundational systems, individual efforts to adopt environmentally friendly practices often fail to translate into sustained action. Framing the waste problem as merely a matter of residents' habits overlooks the deeper systemic issues, such as the lack of public infrastructure and support mechanisms. Addressing these root causes is essential for fostering meaningful and lasting environmental improvements.

Marine ecological protection, as outlined in SDG 14, is crucial but must be balanced with considerations for livelihood security. Measures such as expanding protected areas, promoting diving tourism, and regulating waterways can mitigate ecological risks but may inadvertently reduce access to traditional fishing grounds. Without mechanisms for community participation, compensation for affected livelihoods, and the development of alternative income sources, these protective measures risk being perceived as exclusionary. Ensuring that ecological protection strategies are inclusive and account for the needs of local communities is vital for achieving sustainable outcomes that do not compromise traditional ways of life.

The challenges associated with implementing the SDGs in this context stem not from the ineffectiveness of the goals themselves but from their lack of interconnectedness. Water and sanitation, consumption and production, and marine ecology are often treated as separate policy domains, yet the daily realities of communities such as the Bajau people reveal their interdependence. For instance, inadequate maintenance of water towers impacts sanitation, insufficient waste collection affects marine environments, and restricted access to fisheries threatens household incomes. Addressing improvements in isolated indicators does not necessarily lead to broader social justice. A more integrated approach that considers the interconnected nature of these issues is essential for meaningful progress.

Localizing the SDGs should involve more than merely showcasing indicators or naming projects after them [4]. For communities facing systemic challenges, the feasibility of achieving these goals depends on addressing complex and often overlooked issues. Questions such as whether housing without formal property rights can access public services, whether mobile fishermen can participate in conservation discussions, whether traditional knowledge can be incorporated into governance frameworks, and whether individuals without complete registration can receive basic healthcare are critical to ensuring inclusivity. If these gray areas are not addressed in policy design, the goals risk remaining abstract and disconnected from the realities of those they aim to support.

6. Conclusions

This article uses the Semporna island-chain context to examine the institutional position of maritime mobile communities under the combined influence of ecological protection, tourism development, and regulatory technologies. The study finds that the Bajau people face neither simple poverty nor a simple absence of law, but rather a structured pattern of selective institutional inclusion. They are made visible in relation to maritime movement, territorial ordering, and market regulation, yet they remain comparatively less visible in the provision of public services, administrative recognition, and formal welfare support. This conclusion indicates that marine governance cannot rely only on spatial demarcation, boundary enforcement, and technological surveillance as primary tools of management. For mobile communities, effective governance requires negotiable and adaptive institutional interfaces, including infrastructure improvement, waste-collection support, fisheries-access negotiation, community-participatory conservation, and the systematic documentation of traditional knowledge. In this context, legal visibility has practical value only when governance is accompanied by meaningful institutional support, service access, and procedural inclusion. Otherwise, increasingly precise boundaries and more intensive monitoring may improve administrative control without producing greater social stability, livelihood security, or long-term community resilience.

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