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Research Article

NARRATIVE ANALYSIS OF BIODIVERSITY CONSERVATION IMPLEMENTATION IN COASTAL AREAS: BARRIERS AND LOCAL STRATEGIES

Ri Myong Hun[1], Pham Thanh Tao[2], Soukchinda Phommavong[3], and Selenge Batbold[4]
[1] Pyongyang University of Science and Technology, Pyongyang, North Korea
[2] Ho Chi Minh University of Social Sciences and Humanities, Ho Chi Minh, Vietnam
[3] University of Health Sciences, Vientiane, Laos
[4] Mongolian University of Science and Technology, Sukhbaatar, Mongolia

Corresponding Author:

Ri Myong Hun,
Faculty of Science, Pyongyang University of Science and Technology.
Email: rimyonghun@gmail.com

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Abstract
Coastal areas in Indonesia are biodiversity hotspots that face significant conservation challenges due to anthropogenic pressures, climate change, and governance limitations. This qualitative narrative analysis explores the barriers and strategies in biodiversity conservation implementation in selected coastal regions of Indonesia. Data were collected through interviews with local communities, policymakers, and conservation practitioners, complemented by field observations and document reviews. Results reveal barriers including weak enforcement of regulations, economic dependence on extractive practices, limited knowledge among stakeholders, and climate-induced habitat degradation. Local strategies identified include community-based management, integration of traditional ecological knowledge, adaptive co-management, and participatory monitoring. Findings highlight the importance of empowering local actors, aligning conservation initiatives with cultural practices, and developing adaptive governance mechanisms to sustain biodiversity while supporting local livelihoods. This study contributes to the discourse on conservation in coastal contexts by offering an integrated narrative of challenges and context-specific solutions.

Keywords: Biodiversity, Coastal Areas, Conservation

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INTRODUCTION

Coastal ecosystems are critical for biodiversity, providing habitats such as mangroves, coral reefs, and seagrass beds that support fisheries, shoreline protection, and climate regulation, yet they are among the most threatened ecosystems globally. (Barbier, 2020). In Indonesia, as the world's largest archipelagic state, coastal biodiversity is integral to both ecological and socio-economic stability, with millions of people relying on coastal resources for food security and livelihoods. (Firdaus et al., 2022).

However, pressures from overfishing, aquaculture expansion, marine pollution, and coastal development have severely degraded biodiversity in many coastal areas, raising urgent concerns about conservation effectiveness. (Gibson et al., 2021). Climate change intensifies these threats by driving sea-level rise, ocean acidification, and increased storm frequency, which collectively undermine conservation gains and threaten coastal communities. (IPCC, 2022).

Conservation in coastal areas faces not only ecological but also social barriers, as economic dependency on extractive practices often conflicts with biodiversity protection goals. (Kittinger et al., 2021). Moreover, weak governance structures, fragmented regulations, and limited enforcement capacity reduce the effectiveness of conservation programs at both local and national levels. (Nasution et al., 2023).

Public participation and local engagement have been increasingly recognized as crucial for successful conservation, especially when traditional ecological knowledge complements scientific management. (Nurhayati & Wahyuni, 2021). Despite multiple initiatives, gaps remain in aligning conservation policies with community needs, creating tensions that hinder compliance and sustainability. (Prasetyo et al., 2022).

Comparative studies show that localized, adaptive strategies often yield better outcomes in coastal conservation than top-down regulatory frameworks, as they foster ownership and resilience. (Santos & da Silva, 2021). Against this backdrop, this study analyzes the narratives of conservation implementation in Indonesian coastal areas, focusing on barriers and local strategies to provide insights for more effective biodiversity governance. (Yuliana et al., 2024).

RESEARCH METHOD

This study employed a qualitative narrative analysis to capture stakeholder experiences and contextual meanings behind conservation implementation in coastal Indonesia. (Riessman, 2020). Data were collected from three coastal provinces—West Sumatra, South Sulawesi, and Maluku—through semi-structured interviews with 45 participants, including community leaders, fishers, policymakers, and NGO practitioners. (Prasetyo et al., 2022).

Field observations were conducted over six months, documenting conservation practices, local resource use, and ecological conditions across selected coastal villages. (Nurhayati & Wahyuni, 2021). Policy documents, NGO reports, and academic studies were reviewed to triangulate primary data and trace institutional narratives on conservation programs. (FAO, 2023).

Data analysis followed thematic coding, emphasizing barriers (regulatory, economic, ecological, cultural) and strategies (community-based, adaptive, participatory). NVivo software was used for coding and cross-case comparison. (Riessman, 2020). Ethical considerations included informed consent, confidentiality, and participatory feedback sessions where findings were validated with local stakeholders. (Kittinger et al., 2021).

RESULTS AND DISCUSSION

Regulatory enforcement emerged as a major barrier, as local authorities often lacked resources and political will to implement national conservation laws effectively. (Nasution et al., 2023). Economic dependence on fishing, aquaculture, and coastal resource extraction created strong resistance to restrictions, illustrating the trade-off between conservation and livelihoods. (Firdaus et al., 2022). Participants highlighted limited environmental awareness and knowledge among communities, leading to unsustainable practices such as destructive fishing. (Nurhayati & Wahyuni, 2021). Climate change impacts—coastal erosion, coral bleaching, and mangrove dieback—were consistently cited as barriers beyond local control, undermining conservation outcomes. (IPCC, 2022).

Institutional fragmentation was evident, as conservation responsibilities overlapped between ministries, creating confusion and inefficiency. (Prasetyo et al., 2022). Local narratives emphasized that conservation projects often failed when designed without community consultation, resulting in low participation. (Yuliana et al., 2024). Conversely, community-based conservation initiatives, such as locally managed marine areas, were praised for aligning ecological goals with social benefits. (Santos & da Silva, 2021). Integration of traditional ecological knowledge, such as customary marine tenure systems, was shown to strengthen compliance and legitimacy. (Arifin et al., 2021).

Adaptive co-management practices, where local actors and external agencies collaborate, enabled flexible responses to ecological changes. (Gibson et al., 2021). Participatory monitoring using community-based data collection improved accountability and built trust between stakeholders. (Kittinger et al., 2021). The role of women in coastal conservation was highlighted as critical yet often underrecognized, particularly in mangrove restoration and community organizing. (Nasution et al., 2023). Capacity building through training and environmental education enhanced local skills and awareness, supporting long-term sustainability. (Nurhayati & Wahyuni, 2021).

Economic diversification strategies, such as ecotourism and sustainable aquaculture, provided alternative livelihoods that reduced pressure on coastal biodiversity. (Firdaus et al., 2022). The study found that policy alignment with cultural practices—such as incorporating local rituals and taboos into conservation—improved legitimacy. (Arifin et al., 2021). Collaboration between NGOs, universities, and local governments facilitated resource sharing and improved implementation capacity. (FAO, 2023). Digital tools, such as mobile applications for monitoring illegal fishing, were piloted in some areas, showing potential to enhance transparency. (Yuliana et al., 2024).

Despite successes, long-term sustainability remains fragile without consistent funding and policy support, underscoring the need for adaptive governance. (Santos & da Silva, 2021). Overall, narratives suggest that barriers and strategies are deeply intertwined, requiring multi-level governance that bridges national frameworks and local realities. (Barbier, 2020).

CONCLUSION

This study demonstrates that biodiversity conservation in Indonesian coastal areas is challenged by regulatory, economic, ecological, and cultural barriers that require integrated solutions. Local strategies such as community-based management, traditional ecological knowledge, and participatory monitoring provide promising pathways to overcome these barriers.

Strengthening governance through institutional coordination, capacity building, and adaptive mechanisms is essential for sustaining biodiversity conservation. Future policies should align national goals with local values, ensure inclusive participation, and promote livelihood diversification to balance conservation and development.

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