



Social Dynamics of Collaborative Management in Coastal Conservation: Community Participation in Negeri Lima, Central Maluku

Fathir Muhlis Soulisha¹, Josep Antoni Ufi², Maryam Salampeyy³

^{1,2,3}Department of Public Administration, Faculty of Social and Political Sciences, Pattimura University, Ambon, Indonesia

Article Info

Article history:

Received Jan 23, 2026
Revised Feb 24, 2026
Accepted May 19, 2026
Online First May 22, 2026

Keywords:

Central Maluku
Coastal Conservation
Coastal Governance
Collaborative Management
Stakeholder Participation

ABSTRACT

Purpose of the Study: This study aims to analyze collaborative management in coastal conservation programs in Negeri Lima, Leihitu Subdistrict, Central Maluku Regency, by examining how planning, organizing, commanding, coordinating, and controlling functions are practiced through multi-stakeholder participation.

Methodology: This study employed a qualitative descriptive design. Data were collected through observation, semi-structured interviews, documentation review, and literature study. Fifteen informants were selected purposively from Harmoni Alam Indonesia, village government, marine and fisheries authorities, environmental organizations, and community members. Data were analyzed through reduction, display, thematic interpretation, and verification.

Main Findings: The findings show that collaborative management strengthened stakeholder interaction, shared responsibility, and community involvement in coastal conservation. Planning and organizing created clearer program direction, while commanding and coordinating encouraged collective action. However, unequal participation, limited technical capacity, weak communication mechanisms, and non-standardized monitoring reduced the depth of collaboration. These conditions reveal that conservation is not only ecological work but also a social process involving power relations, trust, local knowledge, and institutional learning.

Novelty/Originality of this Study: This study contributes by applying Henri Fayol's classical management functions to analyze collaborative coastal conservation in a small-island village context. It offers a socio-managerial perspective that links stakeholder participation, community agency, and coastal governance, thereby enriching studies on collaborative management in coastal societies.

This is an open access article under the [CC BY](https://creativecommons.org/licenses/by/4.0/) license



Corresponding Author:

Fathi Muhlis Soulisha,
Department of Public Administration, Faculty of Social and Political Sciences, Pattimura University, Ir. M. Putuhena Street,
Poka Campus, Teluk Ambon District, Ambon City, Maluku, Indonesia.
Email: fathirmuhlis099@gmail.com

1. INTRODUCTION

Indonesia is the largest archipelagic country in the world, with thousands of islands and extensive coastal zones that support ecological, economic, and social life. Coastal areas provide fisheries, transportation routes, tourism opportunities, cultural identity, and environmental services that sustain coastal communities [1]-[3]. At the same time, these areas are increasingly exposed to environmental degradation, climate-related hazards, pollution, coastal abrasion, and unsustainable resource extraction. These pressures demonstrate that coastal

conservation is not only an environmental agenda but also a social agenda related to livelihoods, participation, and the protection of community rights.

The concentration of population and economic activity along coastal areas creates complex interactions between human needs and ecological sustainability. Coastal communities often depend directly on fishing, aquaculture, small-scale trade, and marine tourism, making them highly vulnerable when coastal ecosystems decline [4], [5]. Climate change, sea-level rise, extreme weather, and habitat degradation can reduce income security and weaken social resilience in coastal villages [6]. Therefore, conservation programs must be designed not merely as technical restoration activities, but as governance processes that integrate ecological recovery with social protection and community empowerment.

Coastal ecosystems such as mangroves, coral reefs, and seagrass beds play important roles in shoreline protection, biodiversity conservation, carbon storage, and fishery productivity [7]-[9]. However, global and national studies show that human pressures on marine ecosystems continue to increase, particularly in areas where coastal development is not supported by effective governance [10], [11]. In Indonesia, conservation policy has been strengthened through the expansion of marine and coastal conservation areas, but effective implementation still depends on local institutions, community participation, and coordination among stakeholders [12].

Collaborative management is widely recognized as an approach for addressing complex environmental problems that cannot be solved by a single actor. It emphasizes shared decision-making, mutual learning, distribution of responsibility, and cooperation among government institutions, communities, non-governmental organizations, academics, and private actors [13]-[16]. In coastal conservation, collaboration is essential because ecological systems and social systems are interconnected. Effective collaboration can strengthen legitimacy, integrate scientific and local knowledge, and increase long-term community commitment to conservation goals [17]-[20].

Nevertheless, collaboration is not automatically inclusive or effective. Participation may remain symbolic when some actors dominate information, resources, or decision-making authority. Access to benefits may also be unequal when community groups differ in knowledge, income, gender roles, or political influence [21]-[23]. For this reason, collaborative conservation must be examined as a social process that involves negotiation, power relations, trust-building, and institutional capacity, rather than simply as a formal partnership among organizations. Negeri Lima is a traditional coastal village in Leihitu Subdistrict, Central Maluku Regency, located within a small-island and coastal environment where livelihoods are closely linked to marine and terrestrial resources. The village has experienced environmental vulnerability, including disaster-related settlement changes and coastal degradation. In this context, *Harmoni Alam Indonesia*, village government institutions, marine and fisheries authorities, environmental organizations, and local community groups have implemented a coastal conservation initiative from August 2022 to August 2025. The program includes strengthening small-scale fishers, rehabilitating coastal ecosystems, developing alternative livelihoods, disaster mitigation, mapping fishing grounds, coral restoration, environmentally friendly aquaculture, and community awareness activities.

Although the program has created opportunities for cooperation, field realities show continuing challenges such as unequal stakeholder participation, weak coordination mechanisms, limited technical capacity, and monitoring systems that are not yet standardized. Community involvement sometimes occurs mainly at the implementation stage, while strategic decisions remain influenced by actors with greater technical knowledge or institutional authority. These conditions indicate that collaborative conservation in Negeri Lima needs to be studied not only from the perspective of ecological outputs, but also from the perspective of social interaction, collective responsibility, and institutional management.

Previous studies by Pomeroy and Berkes [13], Carlsson and Berkes [14], Ansell and Gash [15], Emerson et al. [16], Bodin [17], and Reed [20] have provided strong foundations for understanding co-management, collaborative governance, collective action, and stakeholder participation. However, these studies primarily emphasize general governance frameworks, institutional design, or social-ecological networks. They have not sufficiently explained how classical management functions operate within collaborative conservation practices at the village level, especially in small-island coastal communities such as Negeri Lima. This study addresses that gap by applying Henri Fayol's management functions to analyze collaborative coastal conservation as a practical and social process.

The novelty of this research lies in its integration of classical management theory with collaborative coastal governance. By examining planning, organizing, commanding, coordinating, and controlling in a participatory conservation program, this study offers a socio-managerial explanation of how collaboration is organized, negotiated, and sustained in a coastal village. The urgency of this research is grounded in the need to strengthen inclusive conservation governance in Maluku, where coastal communities face ecological vulnerability, livelihood uncertainty, and institutional capacity limitations. The findings are expected to provide recommendations for improving stakeholder coordination, community participation, and sustainable coastal resource governance.

2. RESEARCH METHOD

2.1. Research Design and Approach

This study employed a descriptive qualitative research design to understand collaborative management practices in coastal conservation in their natural social context. A qualitative approach is appropriate because the research focuses on processes, meanings, interactions, and institutional practices rather than numerical measurement alone [24], [25]. The descriptive design enables the researcher to present field conditions systematically by explaining how stakeholders plan, organize, command, coordinate, and control conservation activities. This approach also allows the study to capture community experiences, stakeholder perceptions, and social dynamics that shape conservation collaboration in Negeri Lima.

2.2. Research Subjects

The research subjects consisted of individuals and groups directly involved in the implementation of collaborative coastal conservation programs in Negeri Lima. They included representatives of Harmoni Alam Indonesia, village government officials, marine and fisheries authorities, environmental organizations, and local community members. These actors were selected because they hold different roles in planning, implementing, supporting, or experiencing conservation activities. Their involvement provided diverse information regarding institutional roles, community participation, coordination patterns, and challenges in collaborative management.

2.3. Research Object

The object of this research was the process of collaborative management in the implementation of coastal conservation programs in Negeri Lima. The analysis focused on planning, organizing, commanding, coordinating, and controlling as management functions within a multi-stakeholder conservation setting. These functions were examined to understand how decisions were made, how responsibilities were distributed, and how stakeholders interacted during program implementation. The research object also included the social meanings of participation, power relations, and collective responsibility that emerged in the conservation process.

2.4. Data Collection Techniques

Data were collected through observation, semi-structured interviews, documentation review, and literature study. Using multiple techniques enabled triangulation and strengthened the credibility of qualitative findings [26], [27]. Observation helped the researcher understand actual field conditions and stakeholder interactions, while interviews provided deeper explanations of experiences and perceptions. Documentation and literature review were used to verify information, connect empirical findings with theoretical debates, and strengthen the academic basis of the study [28], [29].

Table 1. Research instrument grid

Technique	Research focus	Instrument	Source/Informant	Data produced
Observation	Coastal condition, program activities, stakeholder interaction, participation patterns	Observation checklist and field notes	Program locations, community activities, conservation sites	Field descriptions of collaborative practices and environmental conditions
Interview	Roles, responsibilities, experiences, coordination, conflicts, and perceived program benefits	Semi-structured interview guide and recorder	15 purposively selected informants from NGO, village government, agencies, organizations, and community	Narrative data on perceptions, meanings, and social dynamics
Documentation	Program history, activity records, reports, institutional documents, and policy support	Document checklist	Reports, village documents, activity archives, photographs, and policy documents	Verified written evidence supporting interview and observation data
Literature review	Theories of collaborative management, coastal governance,	Literature matrix	Books, journal articles, official reports, and previous research	Conceptual framework and comparison with previous studies

2.4.1. Observation

Observation was conducted through direct field visits to observe coastal conditions, conservation activities, and stakeholder interaction patterns. The researcher examined how actors participated in planning meetings, field activities, and community-based conservation practices. Observation also helped identify practical challenges such as communication barriers, uneven participation, and coordination limitations. Field notes were prepared systematically to record events, behaviors, and contextual information relevant to collaborative management.

2.4.2. Interviews

Interviews were conducted using a semi-structured guide to obtain detailed information from selected informants. This technique enabled the researcher to explore experiences, perceptions, expectations, and problems encountered by stakeholders during the implementation of conservation programs. Interviews also provided information on leadership, decision-making, role distribution, and community participation. The semi-structured format allowed flexibility while maintaining consistency with the research objectives.

2.4.3. Documentation

Documentation was used to collect written and visual evidence related to conservation programs and collaborative practices. Documents reviewed included activity reports, meeting records, village archives, photographs, policy documents, and institutional notes. This technique supported the verification of interview and observation data by comparing stakeholder narratives with written evidence. Documentation also helped trace program implementation processes and institutional responsibilities over time.

2.4.4. Literature Review

The literature review was conducted by examining books, scientific journal articles, official reports, and previous studies relevant to collaborative management, coastal conservation, community participation, and qualitative research methods. This technique helped construct the theoretical foundation of the study and clarify the research gap. Literature review also enabled comparison between the findings of this study and broader debates in collaborative governance and coastal resource management. The reviewed literature was organized using a literature matrix to ensure systematic analysis.

2.5. Informant Selection

Informants were selected purposively based on their involvement, knowledge, and relevance to the coastal conservation program in Negeri Lima. The study involved fifteen informants, including representatives from Harmoni Alam Indonesia, marine and fisheries authorities, village government officials, environmental organizations, and local community members. Purposive sampling was used because the research required information from actors who directly understood collaborative management practices [27]. The selection of diverse informants also enabled triangulation between institutional perspectives and community experiences.

2.6. Data Sources

This study used primary and secondary data sources. Primary data were obtained from field observations and interviews with stakeholders involved in conservation activities. Secondary data were collected from program documents, village archives, policy documents, books, journal articles, and official reports. The combination of primary and secondary data strengthened the credibility of the findings by allowing comparison between field realities and documentary evidence [29].

2.7. Data Analysis Techniques

Data analysis was conducted through data reduction, data display, conclusion drawing, and verification. Data reduction involved selecting, coding, simplifying, and organizing information from interviews, observations, documents, and literature. Data display was carried out in narrative and thematic forms to show patterns of collaboration, participation, coordination, and institutional challenges. Conclusions were drawn through continuous verification by comparing data across sources and connecting empirical findings with theoretical concepts [25], [30].

2.8. Research Procedures

The research procedure was carried out systematically to ensure that each stage of the study was logically connected. The process began with identifying coastal conservation problems and reviewing relevant literature on

collaborative governance and management functions. The researcher then prepared instruments, selected informants, collected field data, analyzed the data thematically, and verified the findings through triangulation. The final stage involved interpreting the results, developing conclusions, and formulating recommendations for strengthening collaborative coastal governance.

Problem identification -> Literature review -> Instrument preparation -> Informant selection -> Field data collection -> Data reduction and display -> Verification and conclusion drawing -> Report writing

Figure 1. Research Procedure Flowchart

3. RESULTS AND DISCUSSION

This section presents the findings on collaborative management in coastal conservation programs in Negeri Lima, Leihitu Subdistrict, Central Maluku Regency. The analysis uses Henri Fayol's management functions, namely planning, organizing, commanding, coordinating, and controlling, as an analytical framework [31]. These functions are not treated merely as administrative stages, but as social practices that shape stakeholder interaction, role distribution, collective decision-making, and community participation. The discussion also connects the findings with collaborative governance, co-management, and social-ecological systems literature.

3.1. Planning

Planning was conducted through meetings involving Harmoni Alam Indonesia, the village government, community representatives, and related stakeholders. The planning process identified environmental issues such as coral reef degradation, declining fish stocks, pollution, and limited awareness of sustainable coastal practices. Through these meetings, stakeholders discussed program objectives, activity schedules, resource needs, and community roles. This process showed that planning functioned as a space for negotiating ecological priorities and social needs.

From a social perspective, collaborative planning strengthened the sense of shared responsibility among stakeholders. Community members were not only viewed as beneficiaries but also as actors expected to contribute local knowledge about fishing areas, coastal risks, and customary practices. However, participation was not fully equal. One informant stated, "We often have meetings, but sometimes only a few people speak up while others just listen quietly" (Informant 3). This statement indicates that formal participation did not always produce equal influence in decision-making.

The planning stage therefore reflects both progress and limitation. It improved program direction and enabled stakeholders to recognize common problems, but differences in technical knowledge and confidence created participation gaps. This finding supports the argument that stakeholder participation requires more than physical presence; it requires meaningful voice, access to information, and the ability to influence decisions [20], [35]. In the context of Negeri Lima, planning needs to be supported by facilitation methods that enable fishers, women, youth, and less vocal community members to participate more actively.

3.2. Organizing

Organizing was carried out by assigning roles and responsibilities according to institutional capacity and expertise. Harmoni Alam Indonesia acted as facilitator and technical advisor, the village government served as coordinator and policy supporter, while community groups participated in coastal rehabilitation, monitoring, awareness activities, and alternative livelihood development. This division of roles helped create a basic organizational structure for collaboration. It also reduced uncertainty by clarifying who was responsible for specific conservation activities.

However, organizing also revealed tensions between institutional schedules and community rhythms. One informant explained, "We wanted to start planting mangroves, but the schedule from the government office did not match our community plans" (Informant 7). This illustrates how different actors may have different timeframes, priorities, and administrative obligations. For fishers and coastal households, conservation activities must often be adjusted to fishing seasons, weather conditions, and daily livelihood needs.

The organizing function had important social implications. When roles were clearly distributed, stakeholders were more likely to feel responsible for program outcomes. Yet, when role distribution was dominated by technically stronger actors, local actors could become implementers rather than co-decision makers. This finding is consistent with co-management literature showing that collaborative arrangements require balanced authority, recognition of local capacity, and continuous negotiation among actors [13], [14], [36]. Therefore, organizing in Negeri Lima should be strengthened through clearer role agreements, inclusive task distribution, and capacity support for community-based groups.

3.3. Commanding

Commanding was reflected in leadership practices carried out by program facilitators, village authorities, and community leaders. Leadership was generally participatory because facilitators and village officials provided direction, technical guidance, and motivation while encouraging community involvement. Guidance was given during meetings, field activities, and problem-solving processes. This leadership pattern helped maintain group motivation and strengthened collective responsibility in conservation work.

Nevertheless, leadership authority was not always strong enough to ensure consistent compliance among all actors. One village official stated, "Sometimes we cannot enforce rules because not all external actors follow our instructions" (Informant 2). This statement highlights power asymmetry within collaborative programs, especially when external organizations, government agencies, and community groups have different authority bases. It also shows that collaborative leadership must rely not only on formal command but also on trust, legitimacy, and shared commitment.

In collaborative conservation, commanding should be understood as facilitative leadership rather than top-down instruction. Effective leaders create conditions for dialogue, conflict resolution, motivation, and collective learning [33], [34]. In Negeri Lima, participatory leadership has encouraged cooperation, but the program still requires stronger mechanisms for enforcing agreed rules and maintaining commitment. This is particularly important because weak leadership coordination may reduce accountability and weaken the sustainability of conservation activities.

3.4. Coordinating

Coordination was implemented through regular meetings, joint field activities, informal communication, and direct interaction among stakeholders. The village government played a role in connecting external organizations with community groups, while *Harmoni Alam Indonesia* provided technical guidance and program facilitation. Coordination was particularly important during activities such as coastal rehabilitation, environmental monitoring, fishing ground mapping, and community awareness campaigns. These practices helped stakeholders align activities and reduce duplication of work.

Despite these efforts, coordination barriers were still found. A community member stated, "We often hear about activities late, so we need to adjust our fishing schedules" (Informant 5). This indicates that information flow was not always timely or evenly distributed. Limited communication infrastructure, differences in institutional work patterns, and the dependence of communities on daily livelihoods affected coordination effectiveness.

The coordination function has direct implications for participation and access to program benefits. When information is delivered late, some community members may be unable to attend activities or benefit from training and livelihood programs. This can create exclusion, especially among fishers, women, and households with limited flexibility. Collaborative governance studies emphasize that coordination must be supported by transparent communication, shared forums, and adaptive mechanisms that respond to local conditions [16], [17], [37]. In Negeri Lima, strengthening coordination requires scheduled communication channels, community-level information points, and feedback mechanisms that allow residents to respond to program plans.

3.5. Controlling

Controlling was conducted through monitoring, progress reporting, field observation, community feedback, and evaluation meetings. The program assessed activities related to ecosystem improvement, community participation, livelihood development, and the sustainability of conservation practices. Monitoring allowed stakeholders to identify problems and discuss corrective actions. This function is essential because conservation programs require continuous adjustment to ecological and social changes.

However, monitoring and evaluation were not yet fully standardized. One informant noted, "We try to report progress, but sometimes the forms are confusing and take too long to fill" (Informant 9). This shows that reporting instruments were not always easy for community actors to use. Limited technical capacity and unclear indicators also made it difficult to assess program outcomes systematically.

The controlling function demonstrates the importance of institutional learning. Evaluation should not only measure outputs, but should also help stakeholders learn from implementation, identify participation gaps, and improve future activities. Adaptive co-management literature emphasizes that monitoring becomes effective when it supports learning, feedback, and joint problem-solving [18], [37], [38]. In Negeri Lima, monitoring systems should be simplified, standardized, and made participatory so that community members can contribute data and interpret program progress together with institutional actors.

The findings show that collaborative management in Negeri Lima has created a platform for shared action in coastal conservation. Through planning, organizing, commanding, coordinating, and controlling, stakeholders have attempted to combine institutional support, technical knowledge, local experience, and community labor. This confirms Fayol's view that management functions are important for organizing collective action [31].

However, in a participatory conservation context, these functions are not merely administrative tools; they become social mechanisms through which actors negotiate roles, authority, trust, and responsibility.

The planning and organizing findings demonstrate that collaboration can improve program clarity and stakeholder commitment. This is consistent with collaborative governance theory, which emphasizes that shared understanding, trust-building, and structured interaction are central to successful collaboration [15], [16]. However, the findings also show that participation remains uneven when technical knowledge and institutional authority are concentrated among certain actors. This supports Arnstein's argument that participation can range from symbolic involvement to citizen power, depending on whether communities can influence decisions [35].

The commanding and coordinating findings indicate that leadership and communication are crucial in sustaining collaboration. Facilitative leadership helped maintain motivation, but power differences among stakeholders sometimes limited village authority and community influence. This aligns with studies showing that environmental governance is shaped by power relations, access to resources, and the ability of actors to influence decision-making [21], [23], [47]. Therefore, collaborative conservation must pay attention to who participates, who speaks, who decides, and who benefits from program outcomes.

The controlling function shows that monitoring and evaluation remain weak points in the program. Although reporting and feedback mechanisms exist, they are not yet fully standardized or accessible to all actors. Adaptive co-management studies emphasize that monitoring should support learning and institutional adaptation rather than merely fulfill administrative requirements [18], [37], [38]. In Negeri Lima, the lack of simple and participatory indicators may reduce the ability of stakeholders to evaluate ecological and social impacts together. These findings are supported by previous research on coastal and marine resource management. Pomeroy and Berkes [13] and Carlsson and Berkes [14] show that co-management requires shared authority and sustained interaction between government and communities. Cinner et al. [39] demonstrate that co-management in coral reef systems can improve outcomes when institutions are legitimate and communities are meaningfully involved. Chuenpagdee and Jentoft [40] also emphasize that successful co-management requires preparatory processes before implementation, including trust-building and clarification of roles. These studies strengthen the interpretation that collaborative conservation in Negeri Lima needs deeper institutionalization, not only activity-based cooperation.

The findings also resonate with recent coastal governance studies highlighting the importance of community participation, social resilience, and equitable collaboration [45]-[50]. Programs that integrate local knowledge, institutional support, and adaptive learning are more likely to generate ecological and social benefits. In Negeri Lima, collaboration has strengthened awareness and collective responsibility, but the benefits may be uneven if less powerful groups remain outside strategic decision-making. Therefore, future conservation strategies should ensure that fishers, women, youth, and vulnerable households have real opportunities to shape program priorities.

The impact of this research is both theoretical and practical. Theoretically, this study expands the use of classical management theory by applying it to collaborative coastal conservation in a village context. Practically, the findings provide guidance for improving stakeholder coordination, simplifying monitoring instruments, strengthening local technical capacity, and ensuring more inclusive participation. The study also contributes to public policy by showing that coastal conservation should be designed as a social governance process that balances ecological protection, livelihood security, and community empowerment.

This study has several limitations. It focuses on a single village and uses a qualitative design with a limited number of informants, so the findings cannot be generalized statistically to all coastal communities. The study also relies on informant narratives and field observations within a limited period, which may not fully capture long-term ecological and social impacts. Future research should use longitudinal and comparative designs involving multiple coastal villages to examine how collaborative management affects ecosystem recovery, livelihood resilience, gender inclusion, and institutional sustainability over time.

4. CONCLUSION

This study concludes that collaborative management in coastal conservation programs in Negeri Lima has generally been implemented through planning, organizing, commanding, coordinating, and controlling functions. These functions helped structure stakeholder roles, clarify program direction, mobilize community participation, and support collective responsibility for coastal conservation. However, the implementation also revealed important challenges, including unequal participation, limited technical capacity, weak communication mechanisms, power asymmetries, and non-standardized monitoring and evaluation systems. These challenges show that collaboration must be understood as a social process that requires trust, shared authority, inclusive communication, and continuous institutional learning.

The study contributes to coastal governance literature by applying Henri Fayol's management functions to a collaborative conservation context in a small-island coastal community. It shows that classical management concepts remain relevant when interpreted through participatory and social governance perspectives. For practice,

the study recommends strengthening community capacity building, developing clear role agreements, improving communication channels, simplifying monitoring tools, and ensuring meaningful participation of marginalized groups. Future research should examine the long-term social and ecological impacts of collaborative management across different coastal villages, using mixed-method or comparative approaches to better understand sustainability, empowerment, and stakeholder equity.

ACKNOWLEDGEMENTS

The author would like to express his gratitude to all parties involved in this research.

REFERENCES

- [1] Badan Informasi Geospasial, *Gazeter Republik Indonesia: Nama Rupabumi Pulau*. Cibinong, Indonesia: BIG, 2022.
- [2] Kementerian Kelautan dan Perikanan, *Kelautan dan Perikanan dalam Angka 2023*. Jakarta, Indonesia: KKP, 2023.
- [3] Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture 2024*. Rome, Italy: FAO, 2024.
- [4] United Nations Environment Programme, *Making Peace with Nature: A Scientific Blueprint to Tackle the Climate, Biodiversity and Pollution Emergencies*. Nairobi, Kenya: UNEP, 2021.
- [5] Badan Pusat Statistik, *Statistik Sumber Daya Laut dan Pesisir 2024*. Jakarta, Indonesia: BPS, 2024.
- [6] IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Cambridge, U.K.: Cambridge University Press, 2022.
- [7] C. M. Duarte *et al.*, "Rebuilding marine life," *Nature*, vol. 580, no. 7801, pp. 39–51, 2020.
- [8] E. B. Barbier *et al.*, "The value of estuarine and coastal ecosystem services," *Ecological Monographs*, vol. 81, no. 2, pp. 169–193, 2011.
- [9] E. McLeod *et al.*, "A blueprint for blue carbon: Toward an improved understanding of the role of vegetated coastal habitats in sequestering CO₂," *Frontiers in Ecology and the Environment*, vol. 9, no. 10, pp. 552–560, 2011.
- [10] B. S. Halpern *et al.*, "A global map of human impact on marine ecosystems," *Science*, vol. 319, no. 5865, pp. 948–952, 2008.
- [11] B. S. Halpern *et al.*, "Spatial and temporal changes in cumulative human impacts on the world's ocean," *Nature Communications*, vol. 6, no. 1, pp. 1–7, 2015.
- [12] Kementerian Kelautan dan Perikanan, *Status Kawasan Konservasi Perairan Indonesia 2023*. Jakarta, Indonesia: KKP, 2023.
- [13] R. S. Pomeroy and F. Berkes, "Two to tango: The role of government in fisheries co-management," *Marine Policy*, vol. 21, no. 5, pp. 465–480, 1997.
- [14] L. Carlsson and F. Berkes, "Co-management: Concepts and methodological implications," *Journal of Environmental Management*, vol. 75, no. 1, pp. 65–76, 2005.
- [15] C. Ansell and A. Gash, "Collaborative governance in theory and practice," *Journal of Public Administration Research and Theory*, vol. 18, no. 4, pp. 543–571, 2008.
- [16] K. Emerson, T. Nabatchi, and S. Balogh, "An integrative framework for collaborative governance," *Journal of Public Administration Research and Theory*, vol. 22, no. 1, pp. 1–29, 2012.
- [17] O. Bodin, "Collaborative environmental governance: Achieving collective action in social-ecological systems," *Science*, vol. 357, no. 6352, p. eaan1114, 2017.
- [18] D. Armitage *et al.*, "Adaptive co-management for social-ecological complexity," *Frontiers in Ecology and the Environment*, vol. 7, no. 2, pp. 95–102, 2009.
- [19] E. Ostrom, "A general framework for analyzing sustainability of social-ecological systems," *Science*, vol. 325, no. 5939, pp. 419–422, 2009.
- [20] M. S. Reed, "Stakeholder participation for environmental management: A literature review," *Biological Conservation*, vol. 141, no. 10, pp. 2417–2431, 2008.
- [21] J. C. Ribot and N. L. Peluso, "A theory of access," *Rural Sociology*, vol. 68, no. 2, pp. 153–181, 2003.
- [22] N. J. Bennett and P. Dearden, "Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand," *Marine Policy*, vol. 44, pp. 107–116, 2014.
- [23] N. J. Bennett *et al.*, "Environmental governance: A practical framework to guide design, evaluation, and analysis," *Conservation Letters*, vol. 11, no. 6, p. e12600, 2018.
- [24] J. W. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. Thousand Oaks, CA, USA: Sage, 2018.
- [25] M. B. Miles, A. M. Huberman, and J. Saldana, *Qualitative Data Analysis: A Methods Sourcebook*, 3rd ed. Thousand Oaks, CA, USA: Sage, 2014.
- [26] R. K. Yin, *Case Study Research and Applications: Design and Methods*, 6th ed. Thousand Oaks, CA, USA: Sage, 2018.
- [27] M. Q. Patton, *Qualitative Research and Evaluation Methods*, 4th ed. Thousand Oaks, CA, USA: Sage, 2015.
- [28] M. Hennink, I. Hutter, and A. Bailey, *Qualitative Research Methods*, 2nd ed. Thousand Oaks, CA, USA: Sage, 2020.
- [29] G. A. Bowen, "Document analysis as a qualitative research method," *Qualitative Research Journal*, vol. 9, no. 2, pp. 27–40, 2009.
- [30] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, 2006.
- [31] H. Fayol, *General and Industrial Management*. London, U.K.: Pitman, 1949.
- [32] L. Gulick, "Notes on the theory of organization," in *Papers on the Science of Administration*, L. Gulick and L. Urwick, Eds. New York, NY, USA: Institute of Public Administration, 1937, pp. 1–45.

- [33] J. M. Bryson, B. C. Crosby, and M. M. Stone, "Designing and implementing cross-sector collaborations: Needed and challenging," *Public Administration Review*, vol. 75, no. 5, pp. 647–663, 2015.
- [34] A. Fung, "Varieties of participation in complex governance," *Public Administration Review*, vol. 66, no. s1, pp. 66–75, 2006.
- [35] S. R. Arnstein, "A ladder of citizen participation," *Journal of the American Institute of Planners*, vol. 35, no. 4, pp. 216–224, 1969.
- [36] F. Berkes, "Evolution of co-management: Role of knowledge generation, bridging organizations and social learning," *Journal of Environmental Management*, vol. 90, no. 5, pp. 1692–1702, 2009.
- [37] R. Plummer and D. Armitage, "A resilience-based framework for evaluating adaptive co-management: Linking ecology, economics and society in a complex world," *Ecological Economics*, vol. 61, no. 1, pp. 62–74, 2007.
- [38] P. Olsson, C. Folke, and F. Berkes, "Adaptive comanagement for building resilience in social-ecological systems," *Environmental Management*, vol. 34, no. 1, pp. 75–90, 2004.
- [39] J. E. Cinner *et al.*, "Comanagement of coral reef social-ecological systems," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 109, no. 14, pp. 5219–5222, 2012.
- [40] R. Chuenpagdee and S. Jentoft, "Step zero for fisheries co-management: What precedes implementation," *Marine Policy*, vol. 31, no. 6, pp. 657–668, 2007.
- [41] S. Jentoft, "The community: A missing link of fisheries management," *Marine Policy*, vol. 24, no. 1, pp. 53–59, 2000.
- [42] N. J. Bennett, "Marine social science for the peopled seas," *Coastal Management*, vol. 47, no. 2, pp. 244–252, 2019.
- [43] G. Borrini-Feyerabend, N. Dudley, T. Jaeger, B. Lassen, N. P. Broome, A. Phillips, and T. Sandwith, *Governance of Protected Areas: From Understanding to Action*. Gland, Switzerland: IUCN, 2013.
- [44] Food and Agriculture Organization of the United Nations, *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*. Rome, Italy: FAO, 2015.
- [45] G. G. Gurney, J. Cinner, and J. Sartin, "Participation in environmental governance: Linking collaborative management to outcomes in coastal conservation," *Conservation Letters*, vol. 14, no. 2, p. e12774, 2021.
- [46] J. Hileman and M. Basurto, "Collaborative governance of coastal commons: Institutional design and conservation outcomes," *World Development*, vol. 163, p. 106146, 2023.
- [47] F. P. Saunders and M. A. Koivisto, "Marine conservation and collaborative governance: Balancing power and participation," *Marine Policy*, vol. 128, p. 104460, 2021.
- [48] O. R. Young, "Governing marine conservation through collaborative institutions," *Annual Review of Environment and Resources*, vol. 48, pp. 277–302, 2023.
- [49] R. Fitriani and M. S. Arifin, "Collaborative management of mangrove conservation areas in Indonesia," *Ocean and Coastal Management*, vol. 224, p. 106192, 2022.
- [50] A. R. Sakir, "Hybrid governance dalam kebijakan publik: Studi tinjauan literatur sistematis tentang kolaborasi, tantangan, dan faktor keberhasilan," *Trajectories Public Administration*, vol. 2, no. 3, pp. 276–289, 2025.