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Enhancing Green Spaces Through Stakeholder Engagement: Institutionalizing Coastal Governance and Equitable Resource Access for Mangrove Park Development in Makato, Aklan

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A B S T R A C T

This study examined stakeholder engagement as a mechanism to enhance green-space governance in the proposed Makato Mangrove Park in Makato, Aklan, Philippines. Employing a participatory qualitative case study design with a single-case, multiple-site approach, the research analyzed semi-structured interviews and focus group discussions with forty-three stakeholders conducted from November 15–25, 2025. Findings showed strong potential for community stewardship constrained by episodic participation, regulation gaps, and institutional fragmentation. Two evidence-based policy instruments were developed: the Action Plan for Sustainable Mangrove and River Governance for Makato Coastal Barangays and the Policy and Planning Strategies for Sustainable Mangrove and River Governance. These instruments are intended to strengthen participatory mangrove governance, equitable resource access, and sustainable coastal planning.

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INTRODUCTION

Green spaces are essential to climate adaptation planning because they provide environmental benefits, such as climate change mitigation, biodiversity conservation, and thermal regulation (Aslanoğlu et al., 2025). Defined as natural or semi-natural vegetated areas dominated by primary vegetation (Mensah et al., 2016), they serve as buffers against ecological degradation. However, Global Forest Watch (2022) reported a 12% global decline in tree cover from 2001 to 2022, equivalent to 459 million hectares lost and 195 billion tons of CO_2 emissions. In the Philippines, tree cover loss reached 1.42 million hectares or 7.6% during the same period, while mangrove cover declined from 450,000 hectares in 1920 to 311,400 hectares (Climate.gov.ph, 2024). These trends stress the vital requirement for sustainable governance of green spaces, particularly in ecologically sensitive mangrove ecosystems.

The importance of mangrove conservation is reinforced by the Philippine regulatory structures. The 1987 Philippine Constitution recognizes the right to a balanced and healthful ecology, while Republic Act No. 7160, or the Local Government Code, devolves environmental management functions to Local Government Units and promotes participatory governance. At the provincial level, the Aklan Environment Code institutionalizes sustainable environmental governance through Forest Land Use Plans (FLUP), co-management arrangements, and partnerships with civil society organizations.

Despite these policies, mangrove governance in Makato, Aklan, remains largely activity-based rather than institutionally embedded. Stakeholder participation is often limited to episodic mangrove planting and cleanup drives, with weak inclusion in routine barangay and municipal planning. This creates a governance divide between policy intent and actual local practice, particularly during the pre-development stage of the proposed Makato Mangrove Park.

Accordingly, this study positions stakeholder engagement as a central mechanism for improving green space governance in Makato, Aklan. Utilizing a purposive sample of coastal stakeholders from four barangays, the research produces evidence-based barangay action plans and policy strategies to support the sustainable establishment of the proposed Makato Mangrove Park. These outputs contribute to improving knowledge on participatory and institutionalized mangrove governance.

THEORETICAL REVIEW

Stakeholder engagement has become a central concept in environmental governance, particularly in managing natural resources where multiple actors hold competing interests. This study is anchored in Freeman's Stakeholder Theory, which defines stakeholders as any group or individual who can affect or be affected by the achievement of organizational objectives (Freeman, 1984).

In public governance, stakeholder theory helps explain how government institutions, communities, and private actors interact in policy implementation, distribution, and decision-making. Bryson (2004) also emphasized that stakeholder analysis is useful for identifying key actors, their interests, and their potential influence on governance outcomes.

Recent studies show that meaningful stakeholder engagement improves environmental management when supported by clear institutions and coordinated leadership. Khamisu et al. (2024) found that stakeholder participation contributes to sustainability outcomes when roles, accountability systems, and performance monitoring are established. Badru et al. (2023) likewise noted that participation lacking institutional coordination often leads to fragmented implementation. In mangrove governance, Nijamdeen et al. (2024) identified collaborative co-management as one of the most effective approaches for harmonizing ecological protection and local interests.

Methods used in previous studies commonly include qualitative case studies, participatory approaches, surveys, and governance assessments. These methods are useful in understanding local experiences, perceptions, and institutional challenges in community-based resource management. Participatory qualitative approaches are particularly relevant in coastal communities where governance issues are determined by local knowledge, livelihoods, and place-based realities.

Despite growing literature on mangrove conservation, many studies focus on rehabilitation outcomes, biodiversity, or post-establishment ecotourism management. Limited attention has been given to stakeholder engagement during the pre-development stage of proposed mangrove parks, especially at the barangay level in Philippine coastal municipalities. This gap is significant because early stakeholder participation can shape the legitimacy, compliance, and long-term sustainability of environmental programs.

To address this gap, the present study examines stakeholder engagement in the proposed Makato Mangrove Park in Makato, Aklan. It provides evidence-based barangay action plans and policy strategies to strengthen participatory green space governance and sustainable mangrove management.

Conceptual Framework

Figure 1 illustrates the conceptual framework, showing how the study pinpoints key aspects of stakeholder engagement as the main mechanism for attaining enhanced green spaces in Makato, Aklan.

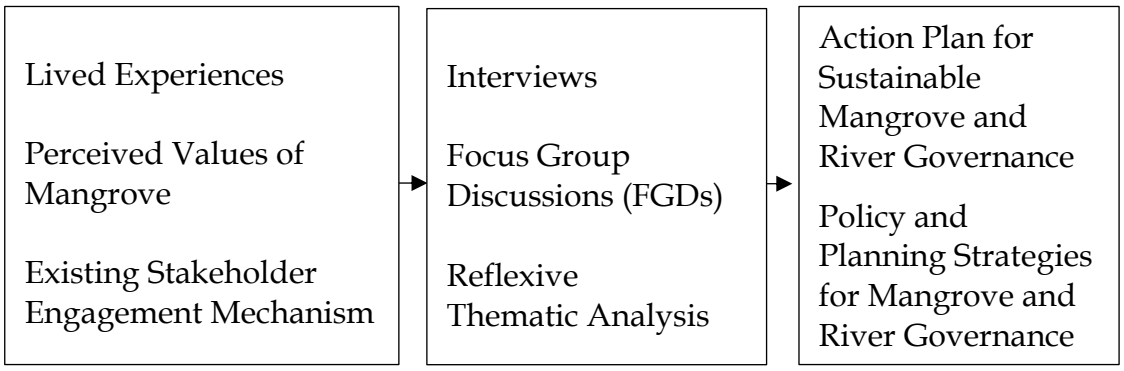

Figure 1. Conceptual Framework of Stakeholder Engagement in Mangrove Governance

METHODOLOGY

This section discusses the research design, locale of the study, participants of the study, research instrument, data gathering and procedure, and data analysis.

Research Design

This study used a participatory qualitative case study design to examine stakeholder engagement within the governance framework of the proposed Makato Mangrove Park in Makato, Aklan. It adopted a single-case, multiple-site approach, focusing on the four (4) coastal barangays of the Municipality of Makato, Aklan, as a bounded governance system. The reflexive thematic analysis framework of Braun and Clarke (2006) guided the development of a situational understanding of stakeholder engagement, with particular attention to institutionalization pathways, governance challenges, and community-led policy solutions.

Locale of the Study

The research was conducted in the coastal barangays of Alibagon, Baybay, Cajilo, and Tugas in the Municipality of Makato, Aklan. According to the Forest Land Use Plan (FLUP) 2015–2024, Barangay Alibagon, although among the smaller barangays in total land area, contains the largest area classified as forest land (mangrove) at 317.91 hectares. Barangay Tugas consists of 259.68 hectares, while Baybay and Cajilo have 179.33 hectares and 153.27 hectares of mangrove forest, respectively.

Figure 2. Mangrove areas (highlighted in light green) in the Municipality of Makato, Aklan, were identified through the 2023 DENR-PhilSA Mangrove Mapping System. The map is presented for reference and contextualization of the study.

Participants of the Study

The study involved forty-three (43) participants selected through purposive and snowball sampling. Participants included barangay officials, fisherfolk, fishpond owners, men and women with at least five years of experience using mangrove areas for resources such as food, fuel, or transportation, youth representatives aged 18–30, a conservation volunteer, and representatives from formal People's Organizations and informal fisherfolk

associations. Of the forty-three (43) participants, twelve (12) served as key informants (KIs) and participated in semi-structured interviews. These key informants were distributed evenly across the four barangays, with three (3) per barangay. The key informants were primarily barangay officials and fisherfolk leaders with at least 5 years of experience in mangrove-related activities. In Barangay Cajilo, an ecotourism enterprise operator was also included as a key informant because of the area's mangrove-related ecotourism activities.

Research Instrument

This study used qualitative research methods to address the research questions and examine institutional relations and policy strategies for stakeholder engagement in mangrove governance. Specifically, semi-structured interviews and focus group discussions (FGDs) were used to generate in-depth, context-sensitive data from diverse stakeholder groups.

The interview and FGD guides were content-validated by five (5) experts to ensure clarity, relevance, and alignment with the study's objectives and the Statement of the Problem. The experts included a Municipal Agriculturist, a Municipal Environment and Natural Resources Officer (MENRO), a Project Development Officer from the Municipal Planning and Development Office (MPDC), a Punong Barangay from a coastal barangay, and an academic expert in behavioral sciences and qualitative research.

A pilot test with community members, including a Punong Barangay, was conducted to improve the clarity and relevance of the instruments. Feedback focused on the appropriateness of the questions, contextual relevance to local mangrove governance, and the adequacy of the items in collecting stakeholder perceptions, institutional mechanisms, and policy considerations. Revisions were incorporated prior to data collection. FGDs were further used to explore common experiences, local obstacles to participation, and community-led ideas about mangrove management and green space development.

Data Analysis

The study employed reflexive thematic analysis, as proposed by Braun and Clarke (2006), to interpret qualitative data from key informant interviews (KIIs) and focus group discussions (FGDs). Consistent with the principles of RTA, the analysis was conducted as a recursive, interpretive, and reflexive process, wherein themes were actively constructed through sustained engagement with the dataset rather than derived from a purely mechanical or code-reduction procedure. While the phases are presented linearly, the analysis involved recursive movement across stages, consistent with the reflexive and interpretive nature of thematic analysis.

Following Braun and Clarke's six phases of thematic analysis, the process began with data familiarization, during which the researcher repeatedly reviewed field notes and transcriptions from interviews and FGDs conducted across Barangays Alibagon, Baybay, Cajilo, and Tugas. This stage allowed the researcher to gain an in-depth understanding of participants' narratives

regarding mangrove conservation, stakeholder participation, and local governance experiences.

The second phase involved generating initial codes, where significant statements from participants were identified and manually coded. Coding was conducted manually through repeated line-by-line examination of participant narratives to preserve contextual meanings and local expressions embedded in the data. Initial semantic codes were developed from recurring statements and subsequently refined into broader interpretive categories through iterative comparison across interviews and focus group discussions. This iterative process enabled the researcher to identify converging and diverging perspectives related to stakeholder engagement, governance practices, conservation efforts, and equitable resource access.

In the third phase, searching for themes, related codes were grouped together to identify broader patterns across the dataset. Codes were clustered into emerging thematic categories representing stakeholder perceptions of engagement effectiveness, institutional mechanisms for conservation, implementation challenges, and proposed policy and planning strategies for mangrove governance.

The fourth phase involved reviewing themes, during which the preliminary themes were examined against the coded extracts and the entire dataset to ensure they accurately reflected the participants' narratives. During this stage, themes were refined, merged, or reorganized to improve coherence and analytical clarity. Reflexive memoing and analytic note-taking were employed throughout the coding and theme refinement process to document emerging interpretations, contextual observations, and researcher reflections during analysis. This reflexive approach supported analytic transparency and strengthened the interpretive depth of the thematic construction.

The fifth phase focused on defining and naming themes, where the refined themes were articulated to capture the central patterns emerging from the data. These themes served as the basis for the thematic narrative.

Finally, the sixth phase involved producing the report, during which the themes were synthesized into an interpretive-analytical framework that represented patterns of stakeholder engagement and governance dynamics in Makato's coastal barangays.

Analytic rigor was further strengthened through triangulation of data obtained from key informant interviews, focus group discussions, field observations, and community validation activities. The convergence of multiple data sources enabled the researcher to examine the consistency of patterns across stakeholder accounts and governance contexts within the selected coastal barangays.

Consistent with the study's participatory orientation, preliminary themes were subsequently presented to selected participants, including a Punong Barangay, fisherfolk leaders, and a youth representative during the community validation phase to verify the accuracy of the interpretations and to provide additional contextual insights. Feedback from these consultations was incorporated into the final refinement of the themes to ensure that the findings

accurately reflect the lived experiences, governance realities, and contextual perspectives of the participating stakeholders.

RESULTS

Using Braun and Clarke's (2006) thematic analysis, the interview transcripts of stakeholders from Makato, Aklan's coastal barangays, were analyzed, allowing patterns of meaning to emerge through sustained analytical engagement. As is standard in qualitative research, the study focuses on the institutional and social circumstances of participation, including how external agencies, municipal governance, and barangay leadership influence stakeholder involvement.

Table 1. Institutionalizing Conservation Efforts through Stakeholder Engagement

Theme	Key Insight	Implications
Institutionalizing Waste Management Systems	Waste management remains informal and irregular.	Requires regulated, regular barangay-led systems.
Strengthening Monitoring and Enforcement Support Mechanisms	Monitoring and enforcement support lack assigned actors.	Institutional accountability is needed.
Balancing Livelihood and Environmental Protection	Conservation is perceived to threaten livelihoods	Must integrate livelihood support.
Enhancing Biodiversity Restoration and Protection	Biodiversity loss weakens ecosystem recovery.	Requires restoration and protection controls.

Table 2. Institutionalizing Equitable Resource Access through Stakeholder Engagement

Theme	Key Insight	Implications
Ensuring Inclusive Distribution of Assistance	Access to support is perceived as unequal.	Needs transparent allocation systems.
Strengthening Permit and Regulatory Systems	Inconsistent permits undermine fairness.	Requires enforceable rules.
Addressing External Pressures and Resource Abuse	Competition limits local access.	Strengthen regulation and control.
Ensuring Policy Continuity and Monitoring	Short-term programs weaken equity.	Sustained monitoring is essential.

Table 3. Proposed Barangay Ordinances for Mangrove and River Governance

Ordinance Focus	**Purpose**	**Gap Addressed**
Waste Management Regulation	Standardize Disposal Practices	Informal systems
Monitoring and Enforcement	Assign accountability actors	Weak enforcement
Permit Regulation	Ensure fair access	Unequal regulation
Biodiversity Protection	Prevent destructive practices	Resource degradation
Livelihood Support	Provide alternatives	Livelihood conflict
Enforcement Support Strengthening	Strengthen implementation	Weak compliance
Local Program Alignment	Ensure sustainable programs	Episodic efforts

The findings collectively demonstrate that stakeholder engagement remains largely participatory but insufficiently institutionalized. Across coastal barangays, conservation efforts and resource access are shaped by fragmented systems, inconsistent enforcement, and unequal distribution of support. These gaps highlight the need to institutionalize governance through structured waste management, monitoring mechanisms, enforceable regulations, and sustained policy implementation to achieve both conservation and equitable resource access.

As summarized in Table 3, these governance gaps are translated into policy-oriented outputs in the form of proposed ordinances that provide concrete mechanisms for institutionalizing stakeholder engagement within formal coastal governance systems.

DISCUSSION

Stakeholder engagement has become a central concept in environmental governance, particularly in managing natural resources where multiple actors hold competing interests. This study is anchored in Freeman's Stakeholder Theory, which defines stakeholders as any group or individual who can affect or be affected by the achievement of organizational objectives (Freeman, 1984).

Recent studies show that meaningful stakeholder engagement improves environmental management when supported by clear institutions and coordinated leadership. Khamisu et al. (2024) found that stakeholder participation contributes to sustainability outcomes when roles, accountability systems, and performance monitoring are established. Badru et al. (2023) likewise noted that participation without institutional coordination often leads to fragmented implementation. Similarly, Grigolienė et al. (2025) emphasized that weak institutional coordination and the absence of accountability structures contribute to fragmented sustainability governance in coastal municipalities.

The findings of this study reflect these patterns. Stakeholder engagement in Makato's coastal barangays remains largely activity-based rather than institutionally embedded. Participation is often limited to episodic mangrove

planting and clean-up drives, with weak integration into routine barangay and municipal planning. This creates a governance gap between policy intent and actual local practice. These findings support the observations of Badru et al. (2023), who found that participation mechanisms become ineffective when they are not integrated into formal governance structures and institutional coordination systems. Similarly, Reed et al. (2018) emphasized that stakeholder engagement in environmental governance becomes sustainable only when participation is embedded within continuous governance and implementation processes.

The results further show that conservation efforts and equitable resource access are influenced by weak enforcement mechanisms, fragmented systems, and uneven distribution of support. These conditions align with the findings of Zakaria et al. (2025) and Nijamdeen et al. (2024), who observed that limited enforcement capacity, institutional fragmentation, and unequal participation weaken both environmental sustainability and social equity in coastal governance systems. These conditions also reflect broader coastal governance literature, in which weak institutional safeguards and a lack of coordination undermine effective resource governance and conservation implementation.

In this context, institutionalizing stakeholder engagement requires structured governance mechanisms, including formalized waste-management systems, designated monitoring and enforcement roles, clear regulatory frameworks, and sustained policy implementation. These mechanisms transform participation from episodic activities into continuous governance processes that support long-term conservation and equitable resource access. The findings reinforce the argument of Friess et al. (2016) and Arifanti et al. (2022) that mangrove governance becomes more effective when stakeholder participation is formally integrated into local planning systems, enforcement structures, and long-term environmental management strategies.

The proposed policy and planning strategies, including the barangay action plan and the seven proposed ordinances, operationalize these institutional requirements. By translating stakeholder insights into formal governance instruments, these outputs provide a framework for strengthening coastal governance and institutionalizing stakeholder participation in mangrove conservation and equitable resource management in Makato, Aklan.

CONCLUSIONS AND RECOMMENDATIONS

Stakeholders involved in Makato's green space governance and mangrove conservation represent a heterogeneous group, differing in roles, interests, levels of involvement, socioeconomic backgrounds, and dependence on mangrove and coastal resources. These differences influence stakeholders' perspectives on environmental governance and their participation in conservation initiatives. Consequently, stakeholder engagement in the municipality is determined by diverse capacities and viewpoints rather than by a single, unified community.

Stakeholders may support environmental management initiatives and participate in a variety of conservation-related activities. These include participating in planting campaigns, monitoring developments, and organizing communities to promote mangrove preservation. However, understanding,

availability of opportunities, accessibility of resources, and the degree of support from local governance institutions all affect how much and how consistently people participate.

Although conservation programs exist, sustaining stakeholder involvement and ensuring effective governance pose several challenges. These include inconsistent participation across barangays, uneven implementation of environmental legislation, insufficient financial and technical resources, dependence on coastal resources for subsistence, and ongoing environmental issues such as inappropriate waste disposal. As a result, stakeholder participation is not consistently coordinated or equitably experienced across communities.

To improve governance of green spaces and mangrove conservation in Makato, stakeholders provided practical recommendations. They stressed the need for routine monitoring systems, enhanced agency coordination, consistent enforcement of environmental legislation, and transparent management structures. Additionally, they highlighted the importance of livelihood support, fair participation, and alternative economic opportunities to promote compliance and sustainability.

Although stakeholder participation in green space governance and mangrove conservation is widespread and effective in Makato, its impact is determined by institutional constraints, governance conditions, and regional social and economic factors. Stakeholder experiences underscore the need for a more organized, consistent, and integrative approach to environmental governance that enhances coordination, strengthens institutional processes, and advances ecological sustainability and societal well-being.

The Local Government Unit (LGU) of Makato should enhance policy integration and governance coherence through aligning barangay-level initiatives with municipal frameworks such as the Forest Land Use Plan (FLUP), Local Climate Change Action Plan (LCCAP), and local tourism development plans. The LGU should also provide sustained technical assistance, capacity-building support, and dedicated funding mechanisms to strengthen the implementation and continuity of environmental programs across barangays.

Mangrove-dependent stakeholders, including fisherfolk and community members, should be formally integrated as active partners in environmental governance through structured, institutionalized participation in planning, monitoring, and decision-making processes.

FURTHER STUDY

This study is limited to selected coastal barangays of Makato, Aklan, Philippines, and focuses on governance processes and stakeholder perspectives rather than biophysical assessments of mangrove ecosystems. Future studies may examine the implementation of the proposed policy measures and assess their long-term ecological, social, and governance outcomes.

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