



Community-Based Collaborative Management in Central Sulawesi Grand Forest Park

Nur Azizah^{1*}, Golar², Sudirman Daeng Massiri², Imran Rachman², Andi Sahri Alam²

¹Master of Agricultural Science Program, Postgraduate School, Tadulako University, Palu, Central Sulawesi, Indonesia

²Faculty of Forestry, Tadulako University, Palu, Central Sulawesi, Indonesia

*Corresponding author E-mail: nurazizah.smanli@gmail.com

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ABSTRACT

Community-based collaborative management is increasingly adopted in conservation governance. However, previous studies have examined Collaborative Governance and Co-Management separately, providing limited understanding of how collaborative processes and authority-sharing interact in state-managed conservation areas. This study analyzed community-based collaborative management in Central Sulawesi Forest Park by integrating both perspectives. A descriptive qualitative case study involved 23 purposively selected informants representing government, Forest Farmer Groups, village governments, local communities, and civil society organizations. Data were collected through interviews, observations, questionnaires, and document analysis, analyzed using an interactive qualitative approach, and validated through source and method triangulation. Across eight analytical dimensions, collaborative governance facilitated stakeholder dialogue, institutional arrangements, facilitative leadership, and community participation, while co-management was reflected in shared management responsibilities, access to conservation benefits, and social learning. However, strategic authority remained with government under the legal framework for conservation management, whereas communities primarily performed operational roles. Community-based collaborative management has been effectively implemented through complementary governance rather than equal decision-making authority. This study integrates Collaborative Governance and Co-Management into a unified analytical framework and provides a context-specific interpretation of shared authority, showing that authority sharing in state-managed conservation areas is achieved through complementary roles, with governments retaining strategic authority and communities undertaking substantial operational responsibilities.

Keywords: collaborative governance; co-management; community-based collaborative management; Central Sulawesi Grand Forest Park.

1. INTRODUCTION

Central Sulawesi Grand Forest Park (Tahura Sulawesi Tengah) is a state-managed conservation area that supports biodiversity conservation while providing ecological, educational, research, recreational, and socio-economic functions (Qodriyatun, 2019; Rafiuddin et al., 2023). However, increasing land-use change, forest resource utilization, tenure conflicts, and competing stakeholder interests have made conservation management increasingly complex (Rahman et al., 2018; Desmiwati & Christian, 2019; Friedman et al., 2020). These challenges highlight the need for collaborative management that actively engages local communities and multiple stakeholders to achieve effective and sustainable conservation governance (C. C. Kelman et al., 2023).





Community-based collaborative management has emerged as an approach for addressing conservation challenges by promoting collaboration among governments, local communities, civil society organizations, academics, and other stakeholders. Its effectiveness depends on stakeholder dialogue, institutional arrangements, facilitative leadership, clearly defined roles, and coordination mechanisms (Carlsson & Berkes, 2005; Kelman et al., 2023). These characteristics are explained through the complementary perspectives of Collaborative Governance and Co-Management. Collaborative Governance emphasizes collaborative processes such as dialogue, trust building, facilitative leadership, and institutional design (Ansell & Gash, 2007), whereas Co-Management focuses on sharing responsibilities, authority, rights, and benefits in natural resource management (Borrini-feyerabend et al., 2004; Ringsmuth et al., 2019).

Although both perspectives have been widely applied in conservation research, they have generally been examined independently. Consequently, limited attention has been given to understanding how collaborative processes influence authority-sharing mechanisms, particularly in state-managed conservation areas where legal mandates shape governance arrangements (Matnuri et al., 2023; Beeton et al., 2024; Blanco et al., 2025). Previous studies in Central Sulawesi Grand Forest Park have focused on community participation, tenure conflicts, policy implementation, and stakeholder roles (Rahman et al., 2018; Maria et al., 2020; Rafiuddin et al., 2023), but have not comprehensively explained the interaction between Collaborative Governance and Co-Management or examined how shared authority operates in conservation management.

Therefore, this study analyzes community-based collaborative management in Central Sulawesi Grand Forest Park by integrating Collaborative Governance and Co-Management into a unified analytical framework. Beyond combining these perspectives, the study advances a context-specific understanding of shared authority in state-managed conservation areas, thereby contributing to conservation governance theory and providing insights for strengthening collaborative management in legally mandated conservation settings.

To address the identified research gap, this study develops an integrated conceptual framework that combines the process-oriented perspective of Collaborative Governance with the implementation-oriented perspective of Co-Management. The framework serves as the analytical foundation for examining how collaborative processes shape authority-sharing mechanisms in community-based collaborative management within Central Sulawesi Grand Forest Park. The conceptual framework of this study is presented in Figure 1. The conceptual framework of this study is presented in Figure 1.

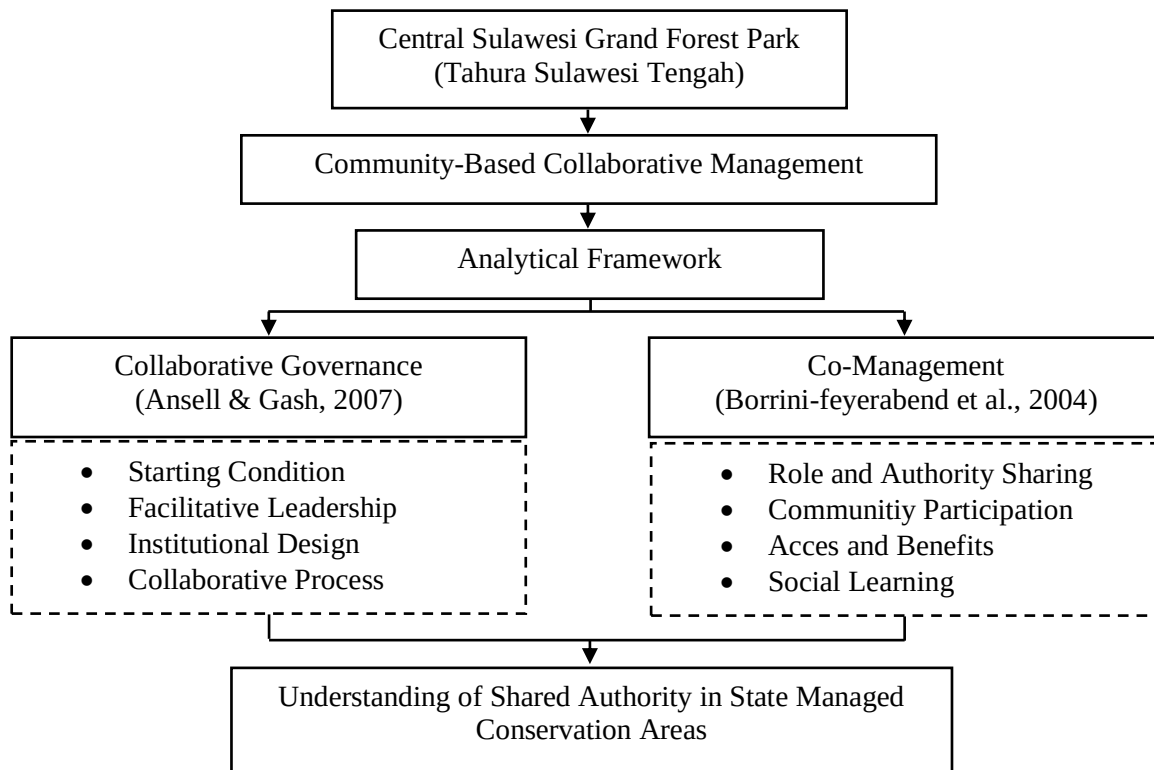


Figure 1. Conceptual Framework

2. RESEARCH METHOD

Research Design

This study employed a descriptive qualitative approach using a case study design to obtain an in-depth understanding of the collaborative governance process and the implementation of co-management principles in community-based collaborative management within Central Sulawesi Grand Forest Park. A qualitative case study was considered appropriate because it enables an intensive exploration of stakeholder interactions, institutional arrangements, and authority-sharing mechanisms within their real-life conservation context (Sugiono, 2022; Pandawa et al., 2022).

Study Area and Research Period

The research was conducted in Central Sulawesi Grand Forest Park, Indonesia, particularly in four communities directly interacting with the conservation area: Kawatuna and Vatutela (Palu City), and Ngatabaru and Loru (Sigi Regency). Data collection was undertaken from December 2025 to February 2026.

Research Informants



Informants were selected using purposive sampling because the study sought rich, experience-based information rather than statistical representation. Selection was based on four criteria: (1) direct involvement in Grand Forest Park management; (2) knowledge of institutional and social dynamics related to conservation management; (3) responsibility or authority in management implementation or decision-making; and (4) willingness to participate.

A total of 23 informants participated in the study, comprising representatives of the Central Sulawesi Grand Forest Park Management Unit (UPTD Tahura), Forest Farmer Groups (Kelompok Tani Hutan/KTH), village governments, and the civil society organization Relawan untuk Orang dan Alam (ROA). These stakeholder groups were selected because they represent the principal actors involved in collaborative conservation management. Data collection continued until thematic saturation was achieved, indicating that additional interviews no longer generated new themes relevant to the research objectives. The distribution of research informants is presented in Table 1.

Table 1. Research Informants

No.	Informant Group	Role in Collaborative Management	Number
1	Central Sulawesi Grand Forest Park Management Unit (UPTD Tahura)	Responsible for implementing conservation policies, coordinating management activities, and facilitating collaboration among stakeholders.	2
2	Leaders of Forest Farmer Groups (KTH)	Represent community organizations engaged in collaborative management and coordinate conservation activities at the village level.	4
3	Members of Forest Farmer Groups (KTH)	Participate in conservation activities, including ecosystem rehabilitation, forest monitoring, sustainable forest resource utilization, and other collaborative management initiatives.	12
4	Village Governments	Facilitate coordination between local communities and the Grand Forest Park Management Unit and support community participation in conservation programs.	4
5	Relawan untuk Orang & Alam (ROA)	Represents a civil society organization that supports community empowerment, environmental education, and conservation initiatives.	1
Total			23

(Source: Author, 2026)



Data Collection

Primary data were collected through semi-structured interviews, questionnaires, field observations, and document analysis, while secondary data consisted of regulations, policy documents, management reports, and relevant scientific literature. Employing multiple data sources enabled a comprehensive understanding of community-based collaborative management and enhanced the credibility of the findings through methodological triangulation (Miles et al., 2014; Creswell & Poth, 2018).

Semi-structured interviews served as the primary data collection technique because they allow researchers to explore participants' experiences while maintaining consistency through a structured interview protocol. An interview guide was developed based on the analytical dimensions of Collaborative Governance proposed by Ansell & Gash, (2007) and the Co-Management framework proposed by Borrini-feyerabend et al., (2004) Open-ended questions enabled participants to explain their experiences while ensuring that all interviews addressed the same analytical dimensions.

Questionnaires were used as a complementary data collection instrument to capture participants' perceptions regarding the eight analytical dimensions examined in this study. The questionnaire consisted of closed-ended statements measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Rather than being statistically analyzed, questionnaire responses were used to support the interpretation of qualitative findings and strengthen data triangulation. Field observations documented stakeholder interactions, conservation activities, and community participation, whereas document analysis was conducted to verify evidence obtained from interviews and observations and to provide institutional and policy context (Surawy-Stepney et al., 2023).

Trustworthiness of the Data

To enhance the trustworthiness of the findings, this study employed source triangulation, method triangulation, and member checking. Source triangulation compared information obtained from different stakeholder groups, whereas method triangulation compared evidence from interviews, questionnaires, observations, and documentary sources. Member checking was conducted by confirming preliminary interpretations with selected key informants to ensure that the findings accurately reflected participants' perspectives (Miles et al., 2014).

Data Analysis

Data were analyzed using an interactive qualitative data analysis approach, involving data condensation, data display, and conclusion drawing conducted iteratively throughout the research



process. The findings were subsequently interpreted using the Collaborative Governance framework proposed by Ansell & Gash, (2007) together with the Co-Management framework developed by Borrini-feyerabend et al., (2004) enabling an integrated analysis of collaborative processes and authority-sharing mechanisms in community-based collaborative management.

3. RESULTS AND DISCUSSION

Collaborative Governance in Central Sulawesi Grand Forest Park

1. Starting Conditions

Starting conditions of community-based collaborative management in Central Sulawesi Grand Forest Park are characterized by unequal authority distribution, mutual incentives for participation, and previous experiences of cooperation despite ongoing tenure conflicts. Although strategic authority remains under the responsibility of the Grand Forest Park Management Unit (UPTD Tahura), local communities actively participate in rehabilitation, environmental monitoring, conservation education, and community-based tourism through collaborative management arrangements.

These findings support the Collaborative Governance framework proposed by Ansell & Gash, (2007) which identifies power asymmetry, participation incentives, and prior interactions as key starting conditions influencing collaborative processes. Similar findings have been reported by (Matnuril et al., 2023; Beeton et al., 2024; Blanco et al., 2025; and Limahelu et al., 2025) who found that collaboration in conservation management can be sustained despite institutional differences when stakeholders share tangible ecological and socio-economic benefits.

However, unlike these previous studies, the present study demonstrates that authority asymmetry is not merely a condition that can be accommodated but rather a fundamental starting condition that supports collaboration. This occurs because, in legally mandated conservation areas, unequal authority is an institutional consequence of governance arrangements that clearly distinguish the government's strategic responsibilities from the communities' operational roles.

These findings extend the Collaborative Governance framework by suggesting that, within state-managed conservation areas, authority asymmetry should not necessarily be viewed as an obstacle to collaboration. Instead, when supported by clear legal mandates and complementary stakeholder roles, unequal authority can function as an enabling institutional condition that facilitates collaborative governance and strengthens long-term conservation management.



2. Facilitative Leadership

Facilitative leadership in Central Sulawesi Grand Forest Park is reflected in the ability of the Grand Forest Park Management Unit (UPTD Tahura) to sustain stakeholder communication, coordinate conservation programs, and strengthen community capacity through regular meetings, conservation outreach, Forest Farmer Groups (KTH), rehabilitation programs, and technical assistance. These efforts have enabled continuous collaboration among government agencies, local communities, village governments, and supporting organizations despite tenure-related challenges and differences in stakeholder interests.

These findings support the Facilitative Leadership dimension of Collaborative Governance, which emphasizes leadership as a mechanism for sustaining communication, coordinating stakeholders, and maintaining collaborative processes (Ansell & Gash, 2007). Similar findings have been reported in recent conservation governance studies, where facilitative leadership strengthens stakeholder engagement, trust, and coordinated action in managing protected areas (Kelman et al., 2023; Beeton et al., 2024).

However, unlike previous studies, this research demonstrates that facilitative leadership in a legally mandated conservation area extends beyond facilitating dialogue and consensus building. Because strategic authority remains formally vested in government institutions, leadership primarily functions as an institutional bridge that translates statutory conservation mandates into collaborative action through continuous coordination and community capacity building. This institutional role explains why collaboration can be sustained despite unequal authority distribution among stakeholders.

This finding extends the Facilitative Leadership dimension of Collaborative Governance by suggesting that, in state-managed conservation areas, leadership effectiveness depends not only on building consensus but also on aligning formal authority with community participation. Consequently, facilitative leadership should be understood as an institutional mechanism that enables collaboration without requiring the redistribution of formal decision-making authority.

3. Institutional Design

Institutional design of community-based collaborative management in Central Sulawesi Grand Forest Park is characterized by clear formal regulations, defined stakeholder roles, and established coordination mechanisms through management regulations, the Grand Forest Park Long-Term Management Plan, and Forest Farmer Groups (KTH). These institutional arrangements provide a formal basis for collaboration; however, community participation remains concentrated



in program implementation, while strategic planning and policy decisions continue to be exercised by the Grand Forest Park Management Unit.

These findings support the Institutional Design dimension of Collaborative Governance, which emphasizes that clear rules, role clarity, and structured participation are essential for effective collaboration (Ansell & Gash, 2007). Similar findings have been reported in recent conservation governance studies, where formal institutional arrangements strengthen coordination and stakeholder commitment while maintaining accountability in protected area management (Kelman et al., 2023; Beeton et al., 2024).

However, this study demonstrates that, in a legally mandated conservation area, institutional design primarily functions to legitimize collaboration rather than redistribute strategic authority. Because conservation regulations assign policy responsibility to government institutions, communities participate mainly in operational management within formally defined institutional arrangements. This finding extends the Institutional Design dimension of Collaborative Governance by suggesting that institutional effectiveness in state managed conservation areas depends less on equal decision-making authority than on clear legal mandates, well defined stakeholder roles, and coordinated implementation mechanisms.

4. Collaborative Process

The collaborative process in Central Sulawesi Grand Forest Park has developed through continuous interaction among the Grand Forest Park Management Unit, local communities, village governments, and supporting organizations. Regular dialogue, joint conservation activities, rehabilitation programs, community-based tourism, and environmental education have fostered shared understanding, strengthened stakeholder relationships, and generated tangible ecological and socio-economic benefits. Nevertheless, active participation remains concentrated among organized community groups, particularly Forest Farmer Groups (KTH).

These findings support the Collaborative Process dimension of Collaborative Governance, which emphasizes that sustained dialogue, trust building, shared understanding, and intermediate outcomes are essential for maintaining collaboration (Ansell & Gash, 2007). Similar findings have been reported in recent conservation governance studies showing that continuous stakeholder interaction strengthens collective commitment and improves conservation outcomes (Kelman et al., 2023; Blanco et al., 2025)

However, this study demonstrates that collaborative processes in a legally mandated conservation area are strengthened not only through dialogue but also through repeated joint implementation of conservation activities. Continuous collaboration in rehabilitation,



environmental monitoring, conservation education, and community-based tourism enables stakeholders to build trust through shared experience while producing tangible ecological and livelihood benefits. This finding extends the Collaborative Process dimension of Collaborative Governance by suggesting that, in state-managed conservation areas, collaboration is reinforced through shared practice as well as communication. Consequently, sustained collaborative action becomes as important as dialogue in maintaining long-term stakeholder commitment.

Overall, the findings demonstrate that Collaborative Governance in Central Sulawesi Grand Forest Park is sustained through complementary governance roles rather than equal authority distribution. This finding extends the Collaborative Governance framework by showing that, in state-managed conservation areas, effective collaboration depends on the integration of legal authority, facilitative leadership, institutional arrangements, and continuous collaborative processes. The key Collaborative Governance findings are presented in Table 2.

Table 2. Collaborative Governance Findings

Dimension	Main Finding	Theoretical Contribution
Starting Conditions	Legal mandates enable authority asymmetry without hindering collaboration.	Authority asymmetry can facilitate collaboration in state-managed conservation areas.
Facilitative Leadership	Leadership bridges statutory authority and community participation.	Leadership translates formal authority into collaborative action.
Institutional Design	Formal institutions provide legitimacy and role clarity for collaboration.	Institutional effectiveness depends on legal legitimacy and clear stakeholder roles.
Collaborative Process	Continuous joint practices sustain trust and long-term collaboration.	Collaboration is reinforced through shared practice, not dialogue alone.

(Source: Author, 2026)

Co-Management in Central Sulawesi Grand Forest Park

1. Role and Authority Sharing

Co-management in Central Sulawesi Grand Forest Park is characterized by the sharing of management roles and responsibilities rather than equal decision-making authority. While the Grand Forest Park Management Unit (UPTD Tahura) retains formal authority over policies and strategic decisions, local communities actively contribute to rehabilitation, monitoring, conservation, and community-based tourism through Forest Farmer Groups (KTH). This arrangement enables communities to participate directly in protected area management while government institutions maintain statutory responsibility.



These findings are consistent with the Co-Management framework, which defines co-management as the sharing of management functions and responsibilities among stakeholders rather than the equal transfer of authority (Borrini-feyerabend et al., 2004). Recent studies similarly show that protected area governance commonly combines community participation with government authority within existing legal and institutional frameworks (Jompa et al., 2023; Huber et al., 2023). Similar patterns have also been reported in Indonesian conservation areas (Rafiuddin et al., 2023; Limahelu et al., 2025).

However, this study demonstrates that, in legally mandated conservation areas, unequal authority is not a limitation of co-management but an institutional arrangement that enables complementary governance roles. Government institutions retain strategic decision-making authority, while communities assume substantial operational responsibilities. Consequently, this study extends the Co-Management perspective by suggesting that the effectiveness of co-management should be assessed based on shared management responsibilities rather than equal decision-making authority.

2. Community Participation

The community participation in Central Sulawesi Grand Forest Park is characterized by active involvement in rehabilitation, conservation, forest monitoring, and community-based tourism, while strategic decision-making remains under the authority of the Grand Forest Park Management Unit (UPTD Tahura). Thus, community participation is primarily reflected in substantive contributions to protected area management rather than equal involvement in formal decision-making.

These findings are consistent with the Co-Management perspective, which emphasizes meaningful stakeholder participation in natural resource management (Borrini-feyerabend et al., 2004). Recent studies likewise show that participation in protected area management is shaped by institutional arrangements and is strengthened when communities are actively engaged in management practices (Jompa et al., 2023; Huber et al., 2023).

However, this study demonstrates that, in a legally mandated conservation area, effective participation is determined by meaningful operational engagement rather than equal decision-making authority. Because conservation regulations allocate different responsibilities to government and communities, participation is realized through complementary management roles. This finding extends the Co-Management perspective by suggesting that, in state-managed conservation areas, participation should be assessed by the quality of community contributions to management rather than by the degree of authority sharing.



3. Access and Benefit Sharing

Access and benefit sharing in Central Sulawesi Grand Forest Park is characterized by regulated community access rather than unrestricted resource use. Local communities are permitted to utilize conservation areas through legally recognized arrangements, particularly Forest Farmer Groups (KTH), enabling them to obtain ecological and livelihood benefits while maintaining the conservation function of the protected area.

These findings are consistent with the Co-Management perspective, which emphasizes that access rights and benefit sharing are fundamental to sustaining community engagement in natural resource management (Borrini-Feyerabend et al., 2004). Recent studies likewise indicate that protected area governance is more effective when community access is embedded within appropriate institutional arrangements and generates tangible benefits that support both conservation and local livelihoods (Fidler et al., 2022; Prado et al., 2022; Huber et al., 2023).

However, this study demonstrates that, in a legally mandated conservation area, access should not be interpreted as unrestricted resource rights. Instead, regulated access functions as an institutional mechanism that simultaneously safeguards conservation objectives and provides legitimate community benefits. This finding extends the Co-Management perspective by suggesting that the effectiveness of access and benefit sharing depends on balancing legal access with conservation responsibilities rather than expanding unrestricted resource use.

4. Shared Learning

The shared learning in Central Sulawesi Grand Forest Park occurs through continuous interaction among the Grand Forest Park Management Unit (UPTD Tahura), local communities, and supporting organizations. Communities contribute local ecological knowledge to rehabilitation and community-based tourism, while government agencies strengthen conservation awareness through technical assistance and environmental education. This reciprocal learning improves field implementation but remains largely confined to operational activities rather than strategic planning.

These findings are consistent with the Co-Management framework, which identifies mutual learning and adaptive improvement as essential components of collaborative resource management (Borrini-Feyerabend et al., 2004). Similar evidence has been reported in recent protected area governance studies, showing that continuous stakeholder learning strengthens adaptive management through knowledge exchange and collaborative (Roux et al., 2023).

However, this study demonstrates that, in Central Sulawesi Grand Forest Park, shared learning remains primarily operational, improving program implementation rather than shaping strategic planning. This finding extends the Co-Management perspective by suggesting that, in



state-managed conservation areas, the effectiveness of shared learning depends not only on knowledge exchange but also on its institutional integration into long-term governance and policy adaptation.

Overall, the findings suggest that effective co-management in Central Sulawesi Grand Forest Park is achieved through complementary management responsibilities, regulated community participation, and continuous shared learning rather than equal decision-making authority. Table 3 presents the key co-management findings and their theoretical contributions.

Table 3. Co-Management Findings and Contributions

Dimension	Main Finding	Theoretical Contribution
Role and Authority Sharing	Communities share operational management, while government retains strategic authority.	Co-management is reflected in complementary management roles rather than equal authority.
Community Participation	Communities actively contribute to conservation implementation despite limited strategic involvement.	Meaningful participation is defined by substantive contribution rather than equal decision-making power.
Access and Benefits	Regulated access generates ecological and livelihood benefits that sustain community support.	Legal access and shared benefits strengthen long-term collaboration.
Shared Learning	Continuous learning improves management practices through knowledge exchange and adaptation.	Learning reinforces adaptive co-management despite limited institutional change.

(Source: Author, 2026)

4. CONCLUSIONS

This study demonstrates that community-based collaborative management in Central Sulawesi Grand Forest Park is effectively implemented through complementary governance that integrates government authority with active community participation. Rather than depending on equal decision-making authority, collaboration is sustained through legally defined stakeholder roles, facilitative leadership, institutional support, meaningful participation, equitable benefit-sharing, and shared learning. These findings suggest that collaborative effectiveness in state-managed conservation areas depends on complementary stakeholder roles within an established legal framework, thereby extending the Collaborative Governance and Co-Management perspectives.



The findings highlight the importance of strengthening community capacity, institutionalizing stakeholder communication, expanding meaningful participation, promoting equitable benefit-sharing, and reinforcing shared learning within existing conservation regulations. Accordingly, protected area managers and policymakers should strengthen institutional mechanisms that support complementary stakeholder roles while maintaining statutory conservation responsibilities. This study is limited to a single case study of Central Sulawesi Grand Forest Park. Future research should examine collaborative management across different protected area contexts and governance systems using comparative, quantitative, or mixed-method approaches to further validate and refine these findings.

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