

Designing an Intermediate Forest Governance Institution: Strengthening Coordination between Central, Provincial, and Technical Units in West Kalimantan

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Abstract

The implementation of Indonesia's Forestry and Other Land Use (FOLU) Net Sink 2030 agenda requires effective coordination across government levels, forestry institutions, and non-governmental stakeholders. However, institutional fragmentation may constrain the integration of forest management, climate mitigation, and regional development. This study examines the coordination challenges affecting FOLU Net Sink 2030 implementation in West Kalimantan and develops a conceptual model of an Intermediate Forest Governance Institution to address these challenges. Using a qualitative case study design, data were collected through focus group discussions (FGDs), semi-structured in-depth interviews, document analysis, and secondary regional statistics. The data were analyzed thematically. The findings identify four interconnected governance challenges: sectoral coordination among institutions with different mandates; limited capacity of Forest Management Units (FMUs/KPHs) to coordinate across institutional boundaries; fragmented data, monitoring, and climate-financing arrangements; and collaborative initiatives that remain largely project-based and dependent on individual leadership. These challenges are compounded by the province's extensive and diverse forest landscapes and uneven local implementation capacities. In response, the study proposes an Intermediate Forest Governance Institution as a bridging mechanism with six core functions: integrating vertical and horizontal coordination; facilitating data integration and regional monitoring; strengthening landscape-based multistakeholder collaboration; facilitating green and climate finance; building institutional capacity at the site level; and connecting forest governance with FOLU Net Sink 2030 and green economic development. The study contributes a context-specific conceptual model for addressing coordination gaps in multilevel forest governance. Its implementation requires further assessment of legal feasibility, institutional mandates, accountability arrangements, and operational effectiveness.

Keywords: Adaptive Forest Governance; Collaborative Governance; Forestry And Other Land Use; Intermediate Forest Governance; West Kalimantan;

INTRODUCTION

The transformation of global forest governance increasingly emphasizes the integration of ecological, economic, and social objectives as a prerequisite for achieving the Sustainable Development Goals (SDGs), particularly SDG 13 (Climate Action), SDG 15 (Life on Land), SDG 8 (Decent Work and Economic Growth), and SDG 12 (Responsible Consumption and Production). In this context, the forestry sector is no longer viewed merely as a source of natural resources but as a strategic instrument for climate change mitigation, biodiversity conservation, green and resilient economic development, and low-carbon development (FAO, 2022; IPCC, 2023). In line with this global policy direction, Indonesia has positioned the forestry sector as a primary pillar for achieving its greenhouse gas net-sink target by 2030 through the Forestry and Other Land Use (FOLU) Net Sink 2030 agenda, while simultaneously supporting sustainable forest management and community welfare.

The implementation of FOLU Net Sink 2030 requires governance arrangements capable of integrating policies, institutional mandates, resources, and implementation across multiple administrative levels. In practice, forest governance involves a complex network of actors, including the central government, provincial and district governments, Forest Management Units

(FMUs), Technical Implementation Units (TIUs), local communities, Indigenous Peoples, private-sector organizations, and civil society. The diversity of these actors and their respective responsibilities creates challenges in coordinating policy implementation, integrating data and financing, and aligning conservation objectives with regional economic development. Consequently, the effectiveness of forest governance depends not only on the availability of regulations and technical instruments but also on the institutional capacity to facilitate collaboration across organizational and territorial boundaries.

The importance of institutional collaboration is reflected in the collaborative governance framework developed by (Ansell & Gash, 2008). Drawing on a comparative analysis of collaborative governance arrangements, they emphasize the significance of institutional design, facilitative leadership, trust-building, and sustained interaction among stakeholders in achieving collective outcomes. This framework provides a useful analytical foundation for understanding forest governance, where no single institution possesses all the authority, resources, and knowledge required to address complex environmental challenges. However, collaborative processes require institutional arrangements that can sustain cooperation beyond individual projects and informal relationships. In the context of Indonesian forestry, this raises an important question concerning how collaboration can be institutionalized to connect national policy priorities with subnational and field-level implementation.

Empirical evidence from Indonesia shows a significant correlation between governance, decentralization policies, and the effectiveness of forest management. A comprehensive study by (Suwarno et al., 2015) in Central Kalimantan Province confirmed that spatial variations in the quality of governance at the district level are closely correlated with fluctuations in deforestation rates. Their findings indicate that variations in governance quality across districts were strongly associated with differences in deforestation, highlighting the importance of institutional accountability, transparency, monitoring, and effective checks and balances. The study also underscores the relevance of strengthening Forest Management Units (FMUs) as part of efforts to improve forest governance. Although the research focuses on Central Kalimantan, its findings offer relevant insights for West Kalimantan, where the implementation of forestry policies similarly requires coordination among institutions operating at different administrative levels.

At the landscape level, a study by (Riggs et al., 2018) examined forest governance challenges in Eastern Indonesia and highlighted the complexity of coordinating institutional commitments and engaging civil society. Their study illustrates the importance of addressing power asymmetries and strengthening collaboration among government agencies, nongovernmental organizations, private-sector actors, and local communities. This perspective is particularly relevant to forest governance because ecological landscapes and their associated social and economic systems do not necessarily correspond to administrative boundaries. Effective landscape governance therefore requires coordination mechanisms that can connect different institutional interests, facilitate collective action, and accommodate the diversity of stakeholders involved in forest management.

Taken together, these studies provide complementary insights into forest governance. The theory of collaborative processes and facilitative leadership proposed by (Ansell & Gash, 2008) was empirically supported by (Suwarno et al., 2015), who demonstrated the importance of governance quality and institutional accountability in Indonesia's decentralized forestry system. Meanwhile, (Riggs et al., 2018) expanded on this analysis by highlighting the complexity of the challenges of stakeholder coordination and collaboration in landscape governance. Nevertheless, these studies do not directly examine the specific institutional role of a permanent intermediary mechanism designed to strengthen both vertical coordination between central and subnational governments and horizontal coordination among forestry institutions and other stakeholders in the implementation of FOLU Net Sink 2030 in West Kalimantan.

Although previous research has extensively examined collaborative forest governance and sustainable landscape management, limited attention has been paid to the role of bridging institutions in strengthening vertical and horizontal coordination within Indonesia's multilevel forest governance system. This gap is particularly important given the complexity of institutional mandates, the need for cross-sectoral policy integration, and the challenges of coordinating implementation across extensive and socio-ecologically diverse forest landscapes. Governance effectiveness under these conditions depends not only on formal institutional arrangements but also on the capacity to facilitate adaptive collaboration, institutional learning, and policy coherence across organizational boundaries.

The urgency of strengthening forest governance has become even greater with the emergence of performance-based financing mechanisms, including nature-based financing and results-based climate finance, which require integrated, transparent, and accountable institutional capacities at the subnational level (World Bank, 2023). These mechanisms depend on credible monitoring systems, coordination among implementing agencies, and clear accountability for results. Consequently, in West Kalimantan, institutional strengthening should be regarded not merely as an administrative necessity but as a strategic prerequisite for implementing FOLU Net Sink 2030 and supporting the transition toward a green economy.

Against this background, this study aims to analyze the need for establishing an Intermediate Forest Governance Institution as a bridging mechanism to strengthen coordination among the central government, provincial government, Forest Management Units (FMUs), and Technical Implementation Units (TIUs) in West Kalimantan. It also seeks to propose an adaptive forest governance model based on multi-stakeholder collaboration and landscape integration to enhance coordination across governance levels, improve institutional coherence, and support the implementation of FOLU Net Sink 2030.

RESEARCH METHODS

Research Design and Data Collection

This study employed a qualitative case study design to examine the need for an intermediate forest governance institution capable of strengthening coordination among the central government, provincial government, Forest Management Units (FMUs), and Technical Implementation Units (TIUs) in supporting the implementation of Indonesia's FOLU Net Sink 2030. A case study approach was selected because it enables an in-depth investigation of complex governance arrangements within their real-world institutional context (Yin, 2018).

West Kalimantan Province was purposively selected as the case study because it represents one of Indonesia's most institutionally complex forest governance landscapes. The province encompasses extensive forest areas managed under multiple governance regimes, including conservation forests, production forests, social forestry areas, and private concessions. It also involves diverse stakeholders across different administrative levels and has become an important arena for collaborative initiatives such as social forestry, landscape-based management, and jurisdictional approaches. These characteristics make West Kalimantan a suitable empirical setting for examining institutional coordination challenges associated with Indonesia's FOLU Net Sink 2030.

Data were collected through three complementary methods: Focus Group Discussions (FGDs), semi-structured in-depth interviews, and document analysis. The combination of these methods enabled methodological triangulation and facilitated a comprehensive understanding of institutional dynamics from multiple perspectives.

The FGD was held on March 30 and 31, 2026, at the West Kalimantan Governor's office in collaboration with the National Forestry Council, involving representatives from the Ministry

of Forestry, provincial government agencies, Forest Management Units (KPH), Technical Implementation Units (UPT), universities, private sector organizations, civil society organizations, and local communities. Discussions explored institutional coordination challenges, vertical and horizontal policy integration, landscape governance, data and financing integration, and the institutional requirements for strengthening cross-level collaboration in implementing Indonesia's FOLU Net Sink 2030.

Semi-structured interviews were conducted with key informants to capture governance experiences, institutional capacities, collaborative leadership practices, and implementation constraints that were not always revealed during group discussions. The interview protocol was informed by theories of collaborative governance, complexity leadership, adaptive leadership, emotional intelligence, and cultural intelligence to better understand leadership capacities required in multi-actor environmental governance (Avolio et al., 2009; Bratianu et al., 2024; Paiuc, 2021a, 2021b; Syamsir et al., 2025; Uhl-Bien et al., 2007).

To complement the primary data, secondary data were obtained from Statistics Indonesia (BPS) of West Kalimantan Province, including district-level Gross Regional Domestic Product (GRDP), geographical characteristics, village profiles, and regional development indicators. Relevant policy documents, regulations, government reports, and academic literature were also reviewed to establish the conceptual and institutional context of the study.

Data Analysis

The collected data were analyzed using thematic analysis following the procedures proposed by (Braun & Clarke, 2006). The analysis consisted of data familiarization, initial coding, theme development, theme refinement, and interpretation. This iterative process enabled the identification of recurring institutional patterns, coordination challenges, governance gaps, and opportunities for institutional innovation.

The interpretation of empirical findings was guided by an integrated analytical framework combining collaborative governance (Ansell & Gash, 2008; Emerson & Nabatchi, 2015), complexity leadership (Uhl-Bien et al., 2007), adaptive leadership (Heifetz et al., 2009), emotional intelligence (Avolio et al., 2009), and cultural intelligence (Bratianu et al., 2024; Paiuc, 2021a). These complementary perspectives provided analytical lenses for examining how leadership capacity, institutional relationships, and stakeholder interactions shape coordination effectiveness across different governance levels.

Particular attention was given to identifying vertical and horizontal coordination problems, institutional fragmentation, overlapping mandates, barriers to policy integration, and the institutional characteristics required for an intermediate governance mechanism capable of enhancing coordination between national and subnational actors in implementing Indonesia's FOLU Net Sink 2030.

Validity and Reliability

The trustworthiness of the study was strengthened through multiple strategies based on an established qualitative research framework (Lincoln et al., 1985). Credibility was enhanced through methodological and data source triangulation by integrating FGDs, interviews, document analysis, and secondary statistical data. Information obtained from different stakeholder groups was continuously compared to identify convergence and divergence in institutional perspectives.

Dependability was supported through the use of a semi-structured interview protocol and systematic documentation of data collection and analytical procedures, enabling transparency throughout the research process. Confirmability was strengthened by maintaining an audit trail of coding decisions and by grounding thematic interpretations in empirical evidence obtained from multiple sources. Transferability was addressed by providing a detailed description of the institutional and governance context of West Kalimantan, allowing readers to assess the applicability of the findings to other jurisdictions with similar forest governance characteristics.

These validation procedures improve the robustness of the findings and increase confidence that the proposed intermediate forest governance institution is grounded in empirically verified governance challenges rather than individual stakeholder perceptions alone.

RESULTS AND DISCUSSION

Results

Fragmentation of Forest Governance and Coordination Challenges

The findings from the focus group discussions (FGDs) and semi-structured interviews indicate that the principal governance challenge in implementing Indonesia's Forestry and Other Land Use (FOLU) Net Sink 2030 agenda in West Kalimantan is the limited integration of existing collaborative initiatives. Programs involving social forestry, jurisdictional approaches, landscape-based management, and village-based green economic development have created opportunities for collaboration. However, coordination among the institutions involved remains predominantly sectoral, with limited integration of planning, implementation, monitoring, and evaluation.

The findings identify differences in institutional mandates, planning systems, and operational arrangements as important barriers to coordination. These differences affect the relationships between central government institutions, the provincial government, Forest Management Units (FMUs/KPHs), forestry Technical Implementation Units (UPTs), and non-governmental stakeholders. The FGD discussions also highlighted the need to strengthen landscape-based governance and improve coordination across sectors and licensing regimes.

The geographical and socioeconomic characteristics of West Kalimantan further complicate governance coordination. The province encompasses extensive forest areas with different legal and management statuses, while administrative territories, infrastructure, and local development capacities vary across districts and villages. These conditions create different implementation requirements across landscapes and reinforce the need for coordination mechanisms that can accommodate territorial differences.

Table 1 presents the reported forest-area data for West Kalimantan from 2022 to 2025. In 2025, the table records approximately 8.315 million hectares of forest and related designated areas, comprising approximately 3.914 million hectares of protected and conservation areas and 4.401 million hectares of cultivation areas. This extensive and diverse landscape requires coordination among institutions with different responsibilities for conservation, forest utilization, community empowerment, and regional development.

Table 1. Forest Area in West Kalimantan Province (hectares), 2022–2025

Region Status	2022	2023	2024	2025
A. Protected Forest	3,739,050	3,735,149	3,914,668	3,914,420
. Nat. Reserve & Conservation Area	1,446,975	1,443,074	1,635,114	1,634,867
Land	-	1,443,074	1,447,219	1,446,971
Sea	-	-	187,896	187,896
. Protected Forest	2,292,075	2,292,075	2,279,553	2,279,553
B. Cultivated Area	4,418,982	4,418,982	4,401,039	4,401,039
. Rested Production Forest	2,123,733	2,123,733	2,120,118	2,120,118
. Common Production Forest	2,110,372	2,110,372	2,097,609	2,097,609
. Conversion Production Forest	184,878	184,878	183,312	183,312
Total	8,158,032	8,154,131	8,315,707	8,315,459

Source: (Central Bureau of Statistics of West Kalimantan Province, 2026)

Taken together, the findings indicate that the coordination problem is not simply the absence of collaborative programs. Rather, it concerns the limited integration of those programs within a governance arrangement that connects institutions across administrative levels and policy sectors.

Collaborative Leadership and Institutional Capacity

The findings indicate that forest governance in West Kalimantan involves participation from government agencies, the private sector, academic institutions, civil society organizations, and local communities. Nevertheless, the collaborative arrangements described in the study remain largely sector-specific or project-based. Their continuity and coordination are therefore vulnerable to changes in leadership, program priorities, and institutional engagement.

The interviews also point to the importance of interpersonal communication, social sensitivity, and an understanding of local cultural contexts in facilitating coordination among stakeholders. These capabilities are relevant in a governance environment where actors operate under different institutional mandates and bring different priorities and perspectives to forest management.

At the institutional level, FMUs occupy an important operational position in forest management. However, the findings identify constraints on their ability to coordinate across organizations, particularly in relation to authority, human and financial resources, and access to integrated information systems. Meanwhile, forestry UPTs continue to perform functions according to their respective mandates. The interaction between these arrangements creates challenges for horizontal coordination and the integration of implementation activities.

The findings suggest that effective collaboration requires more than stakeholder participation in individual programs. It also requires arrangements that can maintain communication, facilitate knowledge exchange, and sustain coordination beyond the duration of specific projects or individual leadership initiatives.

Data Integration, Landscape Management, and Climate Finance

The findings identify data integration and financing coordination as additional challenges in implementing FOLU Net Sink 2030 in West Kalimantan. The study reports that institutions involved in forest governance operate through different mandates and implementation arrangements, while the integration of information, monitoring, and financing mechanisms remains limited.

The regional context underscores the significance of these challenges. According to Table 2, West Kalimantan recorded approximately 708,399.52 hectares of critical land in 2025, compared with approximately 743,737.10 hectares in 2024 and 968,113.28 hectares in 2022. The 2025 data identify Ketapang, Sanggau, and Sintang among the regencies with the largest reported areas of critical land.

Table 2. Critical Land Area by Regency/Municipality in West Kalimantan Province, 2025

Regency	Critical Land (hectares)		
	Inside Settlement	Outside Settlement	Total
Sambas	8,830.39	5,465.03	14,295.42
Bengkayang	13,898.86	14,766.76	28,665.62
Landak	17,668.39	24,806.44	42,474.83
Mempawah	2,104.53	1,995.85	4,100.38
Sanggau	68,035.28	57,961.48	125,996.76
Ketapang	116,267.07	40,859.25	157,126.25
Sintang	49,539.01	50,189.11	99,728.12
Kapuas Hulu	46,286.11	40,371.01	86,657.13
Sekadau	28,232.67	33,449.04	61,681.71
Melawi	60,866.35	13,973.19	74,839.54
Kayong Utara	5,804.20	1,804.93	7,609.14
Kubu Raya	1,048.21	2,114.49	3,162.70

Pontianak	—	—	—
Singkawang	322.52	1,739.42	2,061.94
West Kalimantan			
2025	418,903.52	289,496.00	708,399.52
2024	455,677.93	288,059.17	743,737.10
2023	455,677.93	288,059.17	743,737.10
2022	694,125.46	273,987.82	968,113.28
2021	694,125.46	273,987.82	968,113.28

Source: (Central Bureau of Statistics of West Kalimantan Province, 2026)

The extent and distribution of critical land indicate the importance of coordinating rehabilitation, sustainable forest management, and community-based economic development across administrative boundaries. Such activities involve different institutions and may require compatible planning priorities, monitoring arrangements, and performance indicators.

The findings also identify coordination challenges involving climate-financing instruments, including REDD+, carbon markets, and results-based climate finance. The study reports that institutional fragmentation and limitations in technical and administrative capacity can constrain the integration of these instruments with subnational forest governance and regional development priorities.

These findings suggest that landscape management, data integration, and financing cannot be treated as separate implementation concerns. They are interconnected components of the institutional arrangements needed to coordinate forest-related programs across governance levels.

Identified Need for an Intermediate Forest Governance Institution

The findings point to a need for a governance mechanism that can connect central government institutions, the provincial government, FMUs, forestry UPTs, and other relevant stakeholders. Participants in the FGDs emphasized the need to improve cross-sectoral coordination and strengthen integration among institutions involved in implementing FOLU Net Sink 2030.

The study identifies three interrelated institutional constraints: limited coordination across levels of government, fragmented horizontal collaboration among stakeholders, and insufficient integration of data, monitoring, and financing arrangements. Existing institutions have their respective mandates and operational responsibilities, but the findings indicate that coordination across these responsibilities remains a challenge.

FMUs are positioned close to field-level forest management, but the study identifies constraints on their capacity to coordinate across institutional boundaries. Forestry UPTs, meanwhile, operate according to their respective sectoral responsibilities. These arrangements highlight the need for a mechanism that facilitates coordination without necessarily transferring or duplicating the statutory mandates of existing institutions.

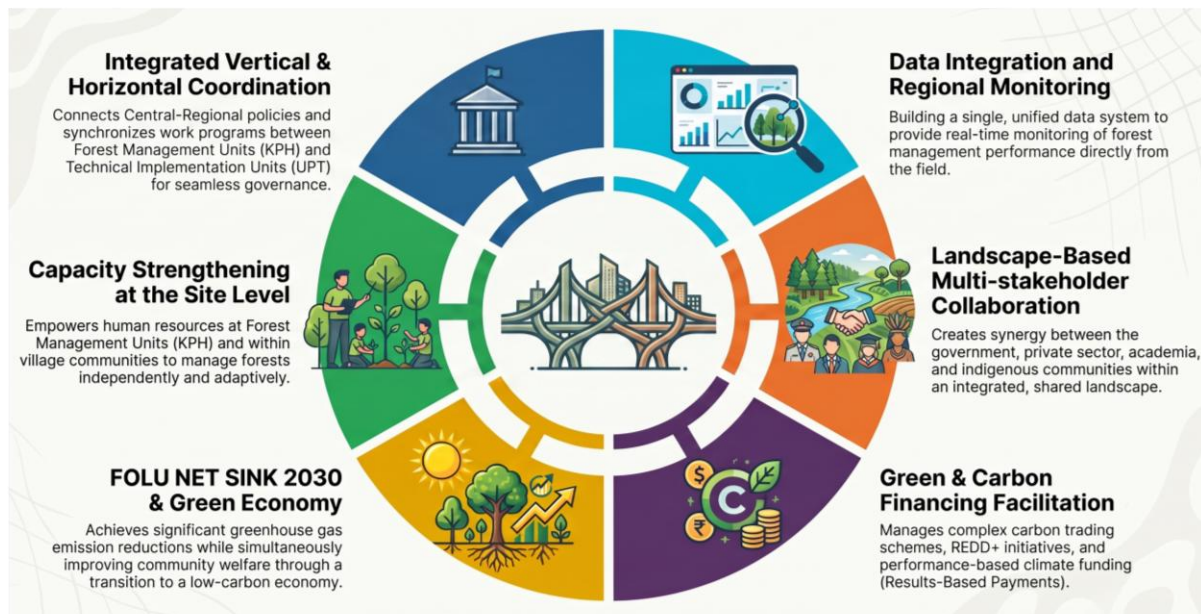


Figure 1. Proposed Intermediate Forest Governance Institution Model Based on Lessons from West Kalimantan (*figur was generated by notebooklm*)

Based on these findings, the study proposes an Intermediate Forest Governance Institution as a conceptual institutional arrangement for strengthening vertical and horizontal coordination. The proposed model encompasses six functions:

- 1) Integrated vertical and horizontal coordination: connecting central and regional policies with field-level implementation and facilitating collaboration among regional stakeholders.
- 2) Data integration and regional monitoring: improving the availability and integration of forest-related information to support monitoring and evidence-based decisions.
- 3) Landscape-based multistakeholder collaboration: facilitating interaction among government institutions, communities, academic institutions, the private sector, and civil society.
- 4) Green and climate-financing facilitation: supporting coordination related to carbon markets, REDD+, and results-based climate finance.
- 5) Capacity strengthening at the site level: supporting FMUs and local communities in developing the capacities required for coordinated and adaptive forest management.
- 6) Support for FOLU Net Sink 2030 and the green economy: connecting climate-mitigation objectives with sustainable forest management and local economic development.

These functions represent a proposed institutional design derived from the governance challenges identified in the study. They should be understood as a conceptual model requiring further institutional, legal, and operational assessment, rather than as an already established institution or a demonstrated intervention.

Discussion

Institutional Fragmentation as a Multilevel Governance Problem

The findings suggest that the implementation challenges associated with FOLU Net Sink 2030 in West Kalimantan should be understood as a multilevel governance problem rather than exclusively as a technical forest-management issue. The existence of collaborative initiatives does not automatically produce integrated governance when the participating institutions continue to operate through different mandates, planning systems, and implementation arrangements.

This interpretation is consistent with (Ansell & Gash, 2008) collaborative governance framework, which emphasizes the importance of institutional design, facilitative leadership, trust-building, and a structured process of collaboration. Their framework helps explain why the presence of multiple stakeholders is not sufficient in itself: collaboration requires arrangements

through which actors can establish shared objectives, deliberate over competing interests, and sustain collective action.

The study by (Emerson & Nabatchi, 2015) conceptualize collaborative governance regimes as systems involving principled engagement, shared motivation, and capacity for joint action. Applied to West Kalimantan, this perspective suggests that the central institutional question is not merely how to increase participation, but how to organize participation so that it produces coordinated planning, implementation, monitoring, and learning.

The findings also resonate with (Suwarno et al., 2015), whose study of Central Kalimantan examines the relationship between governance, decentralization, and deforestation. Although the present study concerns a different province and a specific institutional proposal, both studies situate forest-management challenges within broader governance arrangements. The comparison reinforces the relevance of examining how authority and coordination interact in Indonesia's decentralized forest-governance context.

An analysis of forest governance requires a holistic approach that integrates ecological, social, economic, and institutional dimensions. The findings of (Riggs et al., 2018) indicate that governance challenges in the forest landscapes of Eastern Indonesia are significantly influenced by the broader institutional and landscape contexts, while (Boedhihartono et al., 2018) emphasize that conservation practices must take into account the complex realities of tropical landscapes. These various studies reinforce the argument that landscape assessments must involve an integrative, multidimensional approach.

The contribution of the present study is to focus this broader governance problem on the proposed role of an intermediate institution connecting vertical coordination between levels of government with horizontal coordination among regional actors. The study does not demonstrate that such an institution has already improved governance outcomes. Rather, it identifies a potential institutional response to the coordination challenges reported in West Kalimantan.

The Intermediate Institution as a Bridging Mechanism

The proposed Intermediate Forest Governance Institution should be understood as a bridging mechanism rather than automatically as a new bureaucratic organization. Its rationale rests on the reported gap between the responsibilities of existing institutions and the need to coordinate their activities across administrative levels, sectors, and landscapes.

From a collaborative governance perspective, an effective bridging mechanism would need to provide a structured forum for joint planning, information exchange, problem-solving, and follow-up on collective decisions (Ansell & Gash, 2008; Emerson & Nabatchi, 2015). Its value would depend not on the creation of an additional organizational layer alone, but on whether it could improve the connections among existing institutions while respecting their legal mandates.

This distinction has important policy implications. Before establishing a new institution, policymakers should assess whether existing coordination forums, provincial mechanisms, or interagency arrangements could be strengthened to perform the proposed functions. The institutional options should be compared in terms of legal authority, coordination capacity, accountability, administrative costs, and continuity.

If a new or strengthened mechanism is pursued, its mandate should be defined clearly. At a minimum, the design should specify its membership, decision-making procedures, relationship with existing institutions, reporting arrangements, and authority to convene relevant actors. It should also clarify whether it has a coordination and facilitation role or any formal decision-making authority. These distinctions are essential to avoid overlapping responsibilities and additional administrative complexity.

The proposed institution should also incorporate local communities and Indigenous Peoples into its coordination processes. Their participation should extend beyond consultation to meaningful involvement in identifying landscape priorities, evaluating implementation, and

discussing the distribution of benefits and risks. This would help ensure that institutional integration serves ecological objectives alongside local livelihood and development considerations.

Accordingly, the principal institutional innovation proposed by this study is the formalization of a bridging function across existing governance arrangements. Whether that function should be implemented through a new body or an enhanced existing mechanism remains a question for legal and institutional feasibility assessment.

Collaborative and Adaptive Leadership in Forest Governance

The findings indicate that cross-institutional coordination is influenced not only by formal mandates but also by the ability of actors to communicate, negotiate, exchange knowledge, and maintain working relationships. These findings suggest that leadership is an important enabling condition for collaborative forest governance.

Complexity Leadership Theory provides a useful perspective for interpreting this relationship. According to (Uhl-Bien et al., 2007), leadership in complex environments must shift from a purely hierarchical approach toward facilitating interaction, learning, and organizational adaptation. This approach aligns with the reality of forest governance in West Kalimantan, which is characterized by institutional fragmentation and diverse operational contexts. Through this perspective, the urgency of leadership that functions as a facilitator across organizational boundaries becomes more clearly articulated in achieving integrative governance.

The study by (Avolio et al., 2009) provide a broader review of leadership theories and research, emphasizing the diversity of leadership processes and the importance of examining leadership in its organizational context. Their work supports treating leadership as a relevant analytical dimension without assuming that any single leadership model can independently resolve institutional fragmentation.

Adaptive leadership also offers a comprehensive interpretive framework for understanding the dynamics of organizational change. This concept, as formulated by (Heifetz et al., 2009) distinguish the challenges of adaptation from problems that can be resolved solely through existing technical expertise and established procedures. In the present case, improving coordination may require changes in institutional routines, shared priorities, and patterns of interaction—not merely new technical systems or additional meetings.

The reported importance of local cultural understanding can also be interpreted through the cultural-intelligence literature. The study by (Paiuc, 2021a, 2021b) discusses cultural intelligence as a competency relevant to inclusive and multinational leadership, while (Rockstuhl et al., 2011) examine its relationship with cross-border leadership effectiveness. These studies provide a conceptual basis for considering how leaders navigate differences in values, expectations, and communication styles.

However, the application of these studies to forest governance must remain proportionate to the evidence. Much of the cited cultural- and emotional-intelligence literature examines organizational or international leadership settings rather than forest-governance institutions in Indonesia. Consequently, cultural intelligence and emotional intelligence should be treated as potentially relevant leadership capacities, not as empirically established causal explanations for coordination outcomes in West Kalimantan.

The practical implication is that institutional reform and leadership development should be complementary. A bridging mechanism may provide the organizational space for collaboration, but its effectiveness would still depend on facilitative leadership, procedural clarity, institutional commitment, and opportunities for collective learning.

Integrating Landscape Governance, Data, and Climate Finance

The findings connect institutional coordination with three substantive requirements of FOLU Net Sink 2030 implementation: landscape-based management, integrated monitoring, and coordination of climate finance. These requirements are interdependent because emission-

reduction and forest-management activities take place across landscapes and involve multiple institutions.

A general framework by (Ostrom, 2009) provides a comprehensive analytical tool for evaluating the sustainability of socio-ecological systems. This evaluation is conducted through a structured examination of the dynamic interactions among four key components: the resource system, resource units, the governance system, and the actors involved. Furthermore, (McGinnis & Ostrom, 2014) discuss the development and continuing challenges of the social-ecological systems framework. These perspectives are relevant because forest governance cannot be adequately assessed by examining institutions separately from ecological conditions and the communities that depend on forest resources.

For West Kalimantan, the reported distribution of forest areas and critical land reinforces the importance of territorial coordination. Rehabilitation, conservation, sustainable production, and community-based economic activities may operate across administrative and institutional boundaries. A bridging mechanism could help align priorities and monitoring arrangements across these activities, provided that it is supported by clear responsibilities and reliable information.

The financing dimension introduces its own complexities, which expand the scope of institutional requirements in environmental governance. A study by the (World Bank, 2023) reveals that the implementation of results-based climate finance is correlated with the effectiveness of mitigation policies in developing countries. In line with this, the (United Nations Environment Programme, 2026) broadens the scope of its analysis to include the macro-level transition toward a nature-based economy and the significance of global financial mobilization. These sources provide a basis for discussing why financing mechanisms need to be connected with governance capacity, monitoring, and accountability.

Nevertheless, the present study does not establish that the proposed institution would directly increase access to climate finance or improve emissions outcomes. Such effects would depend on additional conditions, including eligibility requirements, the quality and consistency of monitoring data, financial-management capacity, safeguards, and the allocation of responsibilities among implementing institutions.

The policy implication is therefore to treat data integration and climate-finance coordination as specific functions to be assessed within the proposed institutional design. Relevant performance measures could include the interoperability of information systems, the regularity of joint monitoring, the completion of interagency action plans, the traceability of financing, and the reporting of verified environmental and social outcomes.

Toward an Adaptive Forest Governance Model for FOLU Net Sink 2030

The findings and theoretical discussion point toward an adaptive forest governance model based on coordination across institutional levels, collaboration among stakeholders, and integration of landscape-level priorities. This model is consistent with the understanding of tropical landscapes as complex settings in which conservation, production, and local livelihoods must be addressed together (Boedhihartono et al., 2018).

The proposed model should not be interpreted as a claim that all existing sectoral arrangements must be replaced. Instead, it provides a framework for assessing how existing institutions can coordinate their respective mandates more effectively. This approach is important because an additional coordination mechanism could itself increase institutional complexity if its functions, authority, and accountability were not clearly specified.

The model can be operationalized through four mutually reinforcing components.

First, institutional coordination should establish regular procedures for joint planning, resolving implementation barriers, assigning responsibilities, and following up on decisions. Coordination should connect central and provincial priorities with field-level implementation while retaining the legal responsibilities of existing institutions.

Second, integrated information and monitoring should support the exchange of compatible data, transparent progress reporting, and evidence-based adjustments to implementation. The design should identify data owners, access arrangements, validation procedures, and the responsibilities for monitoring and reporting.

Third, inclusive landscape collaboration should provide meaningful opportunities for local communities, Indigenous Peoples, academic institutions, private-sector actors, and civil society to contribute to planning and implementation. Participation should be accompanied by transparent procedures for handling competing interests and documenting decisions.

Fourth, adaptive learning and accountability should enable participating institutions to review implementation progress, identify coordination failures, revise joint activities, and assess environmental and socioeconomic outcomes. This component would help distinguish a functioning governance mechanism from a coordination forum that convenes stakeholders without producing sustained implementation.

The model's performance should be assessed against indicators that reflect its intended functions. These may include the regularity of coordination meetings, the proportion of agreed actions completed, the availability of integrated monitoring data, the participation of relevant stakeholders, the resolution of cross-agency implementation barriers, and the quality of environmental and social reporting. Emissions reductions, rehabilitation outcomes, and livelihood improvements should be assessed separately using appropriate data and verification methods.

This approach also clarifies the study's theoretical contribution. Collaborative governance explains the processes through which actors can work together; complexity and adaptive leadership perspectives help interpret the need for facilitation and learning in uncertain institutional environments; and the social-ecological systems framework emphasizes the interaction between governance arrangements, ecosystems, and communities (Ansell & Gash, 2008; Heifetz et al., 2009; McGinnis & Ostrom, 2014; Uhl-Bien et al., 2007). The proposed intermediate institution connects these perspectives through a specific institutional design question: how can coordination across governance levels be organized to support landscape-based forest management?

The contribution remains conceptual and context-specific. Further research is needed to assess legal feasibility, compare alternative institutional arrangements, and evaluate whether the proposed mechanism improves coordination and implementation outcomes in practice. Comparative studies across provinces could subsequently examine which institutional features are transferable to other forest-governance settings in Indonesia.

Policy Implications

The findings have several implications for forestry policymakers and the West Kalimantan provincial government.

First, policymakers should undertake an institutional mapping exercise to identify existing coordination mechanisms, their mandates, membership, authority, and performance. This assessment should precede the establishment of a new body and determine whether the identified coordination gaps can be addressed by strengthening existing arrangements.

Second, the proposed bridging mechanism should have a clear mandate and accountability structure. Its responsibilities should focus on coordination, facilitation, information integration, and monitoring unless a separate legal basis explicitly grants additional authority. The relationship between the mechanism, FMUs, forestry UPTs, provincial agencies, and other stakeholders should be documented to minimize duplication.

Third, an integrated monitoring and information framework should connect landscape priorities with implementation responsibilities and measurable indicators. The framework should establish data standards, reporting schedules, validation procedures, and institutional responsibility for maintaining the information system.

Fourth, coordination of climate finance should be linked to transparent financial management, credible monitoring, and appropriate environmental and social safeguards. The proposed mechanism could facilitate communication among relevant actors, but access to financing and the achievement of verified results would remain dependent on the applicable requirements of each financing instrument.

Finally, institutional reform should be accompanied by capacity development for collaborative leadership and inclusive engagement. Such development should strengthen the ability of participants to negotiate priorities, exchange knowledge, manage institutional differences, and sustain collaboration across administrative and cultural boundaries. Overall, the study proposes an intermediate forest governance institution as a potential means of addressing coordination gaps in West Kalimantan. Its value will depend on whether it strengthens existing institutional relationships, improves the integration of data and implementation, supports inclusive landscape governance, and establishes clear mechanisms for accountability. These propositions require further institutional assessment and empirical evaluation before the model can be considered an effective intervention for FOLU Net Sink 2030.

CONCLUSION

This study identifies institutional fragmentation, limited vertical and horizontal coordination, and fragmented data and climate-financing arrangements as key challenges to implementing Indonesia's FOLU Net Sink 2030 agenda in West Kalimantan. The findings highlight the need for stronger institutional mechanisms to connect central and provincial governments, Forest Management Units (FMUs), Technical Implementation Units (TIUs), and non-governmental stakeholders in landscape-based forest governance.

The study's main contribution is the conceptual proposal of an Intermediate Forest Governance Institution (IFGI) as a bridging mechanism to facilitate cross-level coordination, data integration, multi-stakeholder collaboration, monitoring, and climate-finance coordination. Its effectiveness would depend on a clear mandate, accountability arrangements, inclusive participation, and integration with existing institutions. The proposed model should therefore be preceded by an assessment of existing coordination mechanisms and its legal and institutional feasibility.

The study suggests that strengthening collaborative and adaptive leadership, institutional capacity, and integrated monitoring is essential to support more coherent forest governance in West Kalimantan. Although the IFGI model offers a context-specific approach to addressing coordination gaps, its operational feasibility and effectiveness require further empirical evaluation before its application in other provinces can be recommended.

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