



AN ANALYSIS OF SUSTAINABLE PEATLAND GOVERNANCE POLICY IN KUBU RAYA REGENCY

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Abstract: Kubu Raya Regency, as one of the regions with a substantial extent of peatland areas, faces significant challenges in achieving sustainable peatland governance. This study aims to analyze policies related to sustainable peatland governance in Kubu Raya Regency by examining regulatory frameworks, institutional arrangements, policy implementation, and the constraints encountered by local governments. The research employs a descriptive qualitative approach through document analysis of laws and regulations, regional planning documents, and official government reports. The findings indicate that the policy framework for peatland governance in Kubu Raya Regency is in place and aligned with national policies; however, its implementation remains suboptimal. Major challenges include limited cross-sectoral coordination, inadequate institutional capacity, and economic pressures on peatland utilization. This study concludes that strengthening policy integration, enhancing institutional capacity, and promoting community participation are key factors in achieving sustainable peatland governance in Kubu Raya Regency.

Kata Kunci:
Tata Kelola Lahan
Gambut
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Analisis Kebijakan;
Pemerintahan daerah.

Abstrak: Kabupaten Kubu Raya sebagai salah satu wilayah dengan luasan lahan gambut yang signifikan menghadapi tantangan dalam mewujudkan tata kelola lahan gambut yang berkelanjutan. Penelitian ini bertujuan untuk menganalisis kebijakan tata kelola lahan gambut berkelanjutan di Kabupaten Kubu Raya, dengan menelaah aspek regulasi, kelembagaan, implementasi kebijakan, serta hambatan yang dihadapi pemerintah daerah. Metode penelitian yang digunakan adalah pendekatan kualitatif deskriptif melalui studi dokumentasi terhadap peraturan perundang-undangan, dokumen perencanaan daerah, serta laporan resmi pemerintah. Hasil penelitian menunjukkan bahwa kerangka kebijakan tata kelola lahan gambut di Kabupaten Kubu Raya telah tersedia dan mengacu pada kebijakan nasional, namun implementasinya belum optimal. Kendala utama meliputi keterbatasan koordinasi lintas sektor, kapasitas kelembagaan, serta tekanan ekonomi terhadap pemanfaatan lahan gambut. Penelitian ini menyimpulkan bahwa penguatan integrasi kebijakan, peningkatan kapasitas kelembagaan, dan pelibatan masyarakat menjadi faktor kunci dalam mewujudkan tata kelola lahan gambut yang berkelanjutan di Kabupaten Kubu Raya.

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INTRODUCTION

Peatlands are unique ecosystems that store vast amounts of carbon, support biodiversity, and simultaneously function as living spaces and sources of livelihood for local communities. Consequently, peatland policies consistently operate at the intersection of environmental conservation and economic utilization (Syahza et al., 2020). Peatlands play a crucial role in maintaining environmental balance, particularly as carbon sinks, regulators of hydrological systems, and habitats for biodiversity. In Indonesia, peatlands are predominantly distributed across Sumatra and Kalimantan, including Kubu Raya Regency in West Kalimantan Province. The presence of peatlands in this region represents both a significant ecological asset and a major challenge for regional development (Sommer & Frank, 2024).

Ecologically, peatlands play a vital role in maintaining climate stability, water quality, and biodiversity, their degradation leads to increased greenhouse gas emissions, recurrent fires, and other ecological disasters (Monteverde et al., 2022). In Indonesia, peatland degradation has been largely driven by land conversion for plantation development, repeated fire events, and spatial planning practices that disregard the ecological carrying capacity of peat ecosystems (Masganti, 2020). Consequently, peatland management policies have been oriented toward several key objectives: the protection of areas with high conservation value (such as peat domes and deep peat), the restriction of drainage through improved water management interventions (including rewetting and canal blocking) to prevent emissions and fires, and the integration of socio-economic considerations through the promotion of peat-friendly livelihood strategies, such as paludiculture and horticultural cultivation on shallow peatlands (Sujianto et al., 2024).

Pressure on peatlands has intensified alongside the growing demands of economic development, the expansion of plantation sectors, and infrastructure development. Uncontrolled peatland utilization has resulted in a range of environmental problems, including forest and land fires, ecosystem degradation, and increased greenhouse gas emissions (Ekardt et al., 2020). These conditions underscore the need for peatland management to adopt an integrated, sustainability-oriented policy approach (M. Arphin Dita et al., 2025).

Although peatlands cover only approximately 3% of the global land surface, they store around 30% of terrestrial carbon, making their conservation and restoration critical to climate change mitigation and the achievement of the Paris Agreement targets (Tanneberger et al., 2021). In Indonesia, extensive peatland drainage for plantation development and other economic activities has generated significant CO₂ emissions, land subsidence, recurrent fires, and biodiversity loss (Evers et al., 2017). In response, the national peatland governance framework has increasingly prioritized rewetting and ecosystem-based management over drainage-dependent land use (Temmink et al., 2023). This policy direction is reflected in Government Regulation No. 57/2016 on the Protection and Management of Peat Ecosystems, Presidential Regulation No. 1/2016 on the establishment of the Peatland Restoration Agency (BRG, now BRGM), and subsequent national peatland restoration programs. These instruments emphasize the protection of deep peat and peat domes as core conservation zones, the regulation of drainage systems, and the integration of buffer zones and paludiculture-based livelihood strategies to align ecological restoration with sustainable regional development (Abdurrahim et al., 2025).

Multilevel governance has become an important approach in Indonesia's peatland management, particularly after the establishment of the Peatland Restoration Agency (BRG), which was later strengthened as the Peatland and Mangrove Restoration Agency (BRGM), in response to recurrent peatland fires and haze. However, the implementation

of multilevel governance remains challenging (Alfajri et al., 2025). In peatland-dominated areas such as Kubu Raya Regency, West Kalimantan, these challenges are evident in weak coordination between governance levels (national, provincial, district, and village) and among sectoral institutions, as well as in overlapping roles and fragmented policy implementation. Moreover, differences between formal regulations and informal power relations, combined with diverse economic interests, often reduce policy consistency at the local level. These conditions limit effective collaboration and hinder fair policy outcomes for local communities that depend on peatland resources (Zulkarnaini et al., 2024). Similar to broader policy patterns in Indonesia, the Kubu Raya case reflects regulatory contradictions in which sustainability-oriented peat protection policies coexist with development practices that continue to prioritize short-term economic benefits. As a result, peatland fires and haze remain recurring problems, indicating persistent governance weaknesses at the local level (Puspitaloka et al., 2021).

In peatland-dominated provinces such as Riau, a recurring challenge is weak collaboration between government and private sector actors. Private-led programs often reflect the interests of specific groups, resulting in overlapping initiatives and fragmented interventions that raise concerns about the long-term sustainability of peatland management practices (M. Arphin Dita et al., 2025). A similar pattern can be observed in Kubu Raya Regency, West Kalimantan, where peatland governance is shaped by limited coordination among stakeholders and partial implementation of programs across administrative levels. In both contexts, peatland policy ideally should clearly recognize the strategic importance of peat ecosystems, identify key governance and legal challenges, and formulate policy objectives that protect ecological functions while ensuring social justice and the sustainable use of peatland resources for local communities (Utami et al., 2023).

Kubu Raya Regency in West Kalimantan is largely dominated by peatland ecosystems and functions as an important agricultural area, while also being highly prone to peatland fires. Peatlands in this region are used for food production, smallholder farming, and plantation activities, but they are highly vulnerable to degradation, fires, and carbon emissions (Nur Rahmadhanti et al., 2025). Approximately 60% of the regency's area consists of peatlands, with about 89,000 ha of peat swamp forest remaining and continuing to decline due to land-use conversion (Tampubolon, 2020). Peat depth varies from shallow to very deep peat, and areas with peat depth greater than 3 m are more suitable for protection rather than intensive land use (Gumilar et al., 2023). Peat soils are generally acidic, highly porous, and low in essential nutrients, requiring careful water management. (NUSANTARA et al., 2018)

Kubu Raya Regency in West Kalimantan is largely dominated by peatland ecosystems and functions as an important agricultural area, while also being highly prone to peatland fires. Kubu Raya Regency represents one of the peat-dominated regions in West Kalimantan with significant ecological and socio-economic challenges. According to data from the Central Bureau of Statistics, Kubu Raya Regency covers an area of approximately 6,985 km² and consists of several districts where peatland ecosystems dominate the landscape, particularly in Sungai Kakap, Rasau Jaya, Sungai Raya, and Terentang (BPS Kubu Raya, 2023). Peatlands in this region play an important role in supporting local livelihoods, including smallholder agriculture, horticulture, fisheries, and plantation activities. However, these ecosystems are highly vulnerable to environmental pressures. Fire monitoring data from the Ministry of Environment and Forestry (KLHK) show that West Kalimantan, including Kubu Raya Regency, consistently records peatland fire hotspots during the dry season, largely associated with land clearing

practices and drained peat conditions (Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia, 2022). In addition, peatland conversion for agriculture and plantations has continued to reduce peat swamp forest coverage and alter natural hydrological systems, thereby increasing the risks of peat degradation, land subsidence, and greenhouse gas emissions (Badan Restorasi Gambut dan Mangrove, 2023). These empirical conditions indicate that peatland governance in Kubu Raya must address not only ecological restoration but also the socio-economic realities of communities that depend on peatland resources for their livelihoods.

Kubu Raya Regency represents one of the most peat-dominated regions in West Kalimantan. Several studies show that peatlands occupy a very large proportion of the regency's territory. Estimates indicate that peatland area in Kubu Raya ranges between 342,984 ha to more than 523,000 ha, accounting for approximately 49–60% of the total administrative area of the regency. The extensive distribution of peat ecosystems makes Kubu Raya one of the priority areas for peatland management and restoration in Indonesia (Saputra, 2024). In addition to its ecological importance, the region also experiences significant environmental pressures. Historical data from the Regional Disaster Management Agency (BPBD) indicate that 342 forest and land fire incidents occurred between 2015 and 2019, with an average of around 60 fire cases per year across several districts of Kubu Raya (Surya Atmaja, 2023). The high occurrence of fires is closely associated with the large extent of peat soils that become highly flammable when drained during the dry season.

Land-use change also contributes to increasing ecological vulnerability in the region. Long-term analysis shows that peat swamp forest areas in the Kubu Raya landscape have declined by about 13.6%, from 391,902 ha to 328,078 ha, mainly due to the expansion of oil palm plantations, smallholder rubber plantations, agricultural fields, and mixed cropping systems (Pemerintah Kabupaten Kubu Raya, 2021). These empirical conditions demonstrate that peatland governance in Kubu Raya must address not only ecological restoration but also land-use pressures and community livelihood dynamics that continue to drive peatland transformation. (Muharrama & Widjonarko, 2023).

These conditions indicate that regional development policies in Kubu Raya need to be aligned with peatland characteristics. (Astuti et al., 2020) Spatial planning and development programs should prioritize the protection of deep peat areas, control drainage and land conversion, and promote land uses that are compatible with peat ecosystems. (Astiani et al., 2020) Integrating peatland protection into the RPJMD and RTRW is essential to reduce fire risk, limit environmental degradation, and support sustainable livelihoods for local communities. (Handayani, 2022)

Kubu Raya Regency has been designated as a major target for peatland restoration under Indonesia's Peatland Restoration Agency (BRG). Community based initiatives, including the Peat Care Villages program, demonstrate generally positive public attitudes toward restoration and paludiculture practices (Juliarsih et al., 2022). In Punggur Kecil Village (Sungai Kakap), local knowledge manifested through traditional canal-based water management and mixed cropping systems such as rice, horticulture, and tree cultivation has contributed to maintaining peatland sustainability (Megawati et al., 2020). In addition, conservation education and the promotion of zero burning agriculture in Limbung and Kapur villages have significantly increased community awareness by nearly 90% and strengthened local capacity for peatland fire prevention (Tavita et al., 2022).

These initiatives are directly relevant to key performance indicators of peatland restoration policy, including (1) the extent of rewetting and effective water management, (2) the reduction of fire incidence and burned areas, (3) the adoption of sustainable peat-

friendly livelihoods such as paludiculture, and (4) improvements in community knowledge and participation in peatland management. Despite these positive outcomes, the large extent of peatlands in Kubu Raya and ongoing pressures from land-use conversion, fires, and unsustainable water management indicate that policy performance remains uneven. Therefore, existing studies emphasize the need to strengthen restrictions on deep peat conversion, expand zero-burning agriculture and paludiculture practices, institutionalize local knowledge, and scale up education and restoration programs to improve the overall effectiveness and sustainability of peatland restoration policies in the region (Ivansyah et al., 2025).

Kubu Raya Regency is predominantly characterized by peatland ecosystems with a high degree of ecological vulnerability (Sanudin et al., 2023). Despite the existence of various regulatory and institutional frameworks, peatland governance in this region continues to face persistent environmental pressures, including degradation, fire occurrence, and unsustainable land-use practices. Consequently, peatland governance has emerged as a strategic issue within the broader agenda of sustainable regional development. This study seeks to examine the extent to which existing peatland governance policies effectively promote sustainable management practices and to identify the key implementation challenges that hinder their performance at the local level.

RESEARCH METHOD

This study adopts a qualitative approach using a descriptive research design to obtain an in-depth understanding of peatland governance policies at the regional level. The qualitative design is appropriate for examining policy processes, institutional arrangements, and regulatory frameworks that shape peatland management. Since the primary focus of this study is the analysis of governance structures and policy implementation, the research relies on document analysis as the main method of data collection (Uda et al., 2020).

The research data were collected from multiple secondary sources, including national and regional regulations related to peatland management, regional development planning documents (RPJMD and RTRW), official reports issued by government institutions, policy briefs, and relevant academic publications. These documents were selected because they represent formal policy instruments and institutional guidelines that directly influence peatland governance practices at the regional level.

To enhance the robustness and credibility of the findings, this study applies data triangulation through the use of diverse documentary sources originating from different institutions, including central government agencies, regional government bodies, and academic studies. Cross-verification among these sources allows the identification of consistent policy patterns and reduces potential bias associated with relying on a single type of document.

The analysis is guided by Edward III's policy implementation framework, which examines four key dimensions: communication, resources, disposition, and bureaucratic structure (Edward III, 1980). Data analysis follows the qualitative analysis procedure proposed by Miles and Huberman (1994), consisting of data reduction, data display, and conclusion drawing. This analytical framework enables a systematic interpretation of policy documents to assess regulatory arrangements, institutional coordination, policy implementation mechanisms, and the constraints affecting sustainable peatland governance in Kubu Raya Regency.

Given that this research focuses on the institutional and regulatory dimensions of

peatland governance, document analysis provides sufficient and relevant evidence to understand policy design and implementation dynamics. The use of multiple documentary sources and established analytical frameworks ensures the validity and reliability of the research findings.

RESULT AND DISCUSSION

The findings indicate that peatland governance policies in Kubu Raya Regency are closely aligned with Indonesia's national peatland management framework and have been formally integrated into regional development and spatial planning documents. At the national level, peatland governance is guided by Government Regulation No. 57/2016 on the Protection and Management of Peat Ecosystems, which emphasizes peatland protection, ecosystem function restoration, and restrictions on peatland drainage. These principles are further reinforced through presidential regulations and national restoration programs implemented by the Peatland and Mangrove Restoration Agency (BRGM).

To enhance the validity of the findings, this study applies documentary triangulation, which involves cross-verifying information derived from multiple sources of policy documents, academic publications, and institutional reports. The triangulation process compares regulatory texts, regional development planning documents, and empirical findings reported in scientific studies related to peatland governance in West Kalimantan. This approach allows the identification of consistent patterns and discrepancies across different sources, thereby strengthening the reliability of the analysis and reducing potential bias associated with reliance on a single documentary source. Through this triangulated interpretation, the study ensures that policy analysis reflects not only formal regulatory frameworks but also the broader governance dynamics documented in previous empirical studies.

The persistence of implementation gaps cannot be understood solely as a technical or administrative issue but must also be interpreted through broader political, economic, and social dynamics. Economically, peatland areas in Kubu Raya support various livelihood activities such as smallholder agriculture, oil palm cultivation, and horticulture, which create strong incentives for continued land use and drainage practices. These economic interests often conflict with environmental protection policies, particularly when local communities and small-scale farmers depend on peatland cultivation as a primary source of income.

From a political perspective, peatland governance involves multiple institutions operating across national, provincial, and district levels, which often results in overlapping mandates and fragmented authority. Such institutional fragmentation may weaken policy enforcement and reduce coordination effectiveness among agencies responsible for environmental management, spatial planning, and agricultural development.

Socially, peatland management is closely linked to local knowledge systems and traditional land-use practices. Communities in peatland villages have historically developed adaptive practices such as mixed cropping systems and canal-based water management. However, formal policies sometimes fail to fully integrate these local practices into governance frameworks, which can reduce community engagement and create a gap between policy objectives and on-the-ground practices.

At the regional level, Kubu Raya Regency has incorporated these national directives

into key planning instruments, including the Regional Medium-Term Development Plan (RPJMD) and the Regional Spatial Plan (RTRW). These documents normatively recognize peatlands as environmentally sensitive areas that require protection while allowing limited and regulated utilization. Overall, the regulatory framework in Kubu Raya has formally accommodated the principles of sustainable peatland protection and use. However, as discussed in subsequent sections, the translation of these normative commitments into effective and consistent implementation remains a critical governance challenge.

Table 1. Document-Based Analysis of Peatland Governance in Kubu Raya Regency

No	Document	Level	Key Substance	Implementation Issues	Policy Implication
1.	PP No. 71/2014 PP No. 57/2016	National	Peatland protection, protection functions in cultivation zones, and mandatory restoration requirements	Insufficient detailed data and monitoring capacity	Enhancing local enforcement capacity and high resolution spatial data integration is essential for effective regulatory implementation
2.	Permen LHK P.14/2017	National	The designation of peatland functions based on biophysical mapping	Inconsistencies between national and subnational spatial mapping	Strengthening vertical and horizontal map harmonization mechanisms is critical to reduce spatial governance conflicts
3.	Permen LHK P.16/2017	National	Technical guidelines and peatland restoration	Limited funding and technical capacity	Institutionalized financing and local capacity building are required to sustain peatland restoration efforts
4.	RPPEG Nasional 2020–2049	National	The long-term direction of peatland management	Targets are not yet fully integrated into regional frameworks	Bridging long-term national targets with medium-term regional planning improves policy coherence
5.	RTRW Kubu Raya 2016–2036	Region	Protected and cultivation zoning of peatlands	Zoning conflicts and existing land-use practices	Adaptive spatial planning is needed to reconcile ecological protection with land-use realities
6.	RPJPD Kubu Raya 2009–2029	Region	The vision of sustainable development	Peatland issues that remain inadequately measured	Translating sustainability visions into peat-specific indicators enhances strategic accountability
7.	RPJMD Kubu Raya 2019–2024	Region	Environmental and village development programs	Sectoral implementation by local government agencies (OPDs)	Mainstreaming peatland governance across sectoral programs prevents fragmented implementation
8.	Perbup No. 11/2020	Region	AMDAL/UKL–UPL obligations	Weaknesses in regulatory compliance and monitoring	Strengthening compliance monitoring is essential to improve regulatory effectiveness
9.	Program Gambut Lestari Pemkab	Region	Peatland-based village empowerment programs	Fiscal dependence	Institutionalizing community based programs within formal budgeting systems ensures sustainability

10.	Publikasi CIFOR-ICRAF	Nat./Int.	Empirical evidence and good practices	Not yet institutionalized in regulations	Strengthening science policy interfaces supports evidence-based local governance
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Sources: Data analyzed by the researchers

A. Implementation of Policies at the Regional Level

At the implementation stage, the local government has undertaken various measures, including controlling land use through spatial planning, implementing forest and land fire prevention programs, and monitoring land-clearing activities. However, the effectiveness of these policy interventions remains limited due to competing sectoral interests and constraints in institutional and resource capacity.

Overall, the table demonstrates that sustainable peatland governance in Kubu Raya Regency is supported by a relatively comprehensive regulatory and planning framework; however, persistent implementation gaps continue to undermine its effectiveness. While national regulations and strategic documents provide strong normative guidance, their translation into local action is constrained by inconsistencies in spatial data, fragmented sectoral implementation, and limited institutional capacity. Regional planning instruments such as the Regional Spatial Plan (RTRW) and the Regional Medium-Term Development Plan (RPJMD) play an important mediating role but have not yet fully resolved tensions between ecological protection objectives and existing land-use practices. Moreover, the reliance on project-based programs and externally driven initiatives suggests that peatland governance remains insufficiently institutionalized within local planning and budgeting systems. These findings indicate that the central challenge lies not in the availability of policies, but in strengthening governance mechanisms that align regulatory intent, spatial planning, and implementation capacity across administrative levels.

Table 2. Analytical Focus Areas of Sustainable Peatland Governance in Kubu Raya Regency

No	Analytical Aspect	Analytical Findings	Policy Implications (Analytical Interpretation)
1.	Regulatory Framework	Peatland management regulations in Kubu Raya demonstrate a high degree of vertical alignment with national policies; however, this alignment is not accompanied by strengthened operational instruments at the regional level.	Regulatory strength remains largely normative and declarative, without specific technical instruments and operational arrangements, regulations are insufficient to drive behavioral change among actors at the implementation level.
2.	Institutional Arrangement	Fragmentation of authority among regional government agencies (OPDs) results in sectoral peatland management, despite peatland issues being inherently cross-sectoral and cross-jurisdictional.	The absence of an integrated institutional arrangement weakens the regional government's coordination capacity and reduces the effectiveness of policies that require an ecosystem-based approach.
3.	Policy Implementation	Policy implementation is predominantly manifested through short term programs and projects rather than through the strengthening of long-term governance systems.	A project-based approach generates temporary achievements but lacks the structural capacity required to ensure the long-term sustainability of peatland management.
4.	Governance Constraints	Key constraints stem from inconsistencies in spatial data, limited institutional capacity, and overlapping cross-sectoral policies.	These constraints indicate that peatland governance challenges are not merely environmental or technical issues, but fundamentally problems of policy governance and intergovernmental coordination.

Sources: Data analyzed by the researchers

Based on the findings summarized in the table, it can be synthesized that peatland governance in Kubu Raya Regency is supported by a regulatory framework that demonstrates a relatively high degree of vertical alignment with national policies; however, this alignment has not been accompanied by the strengthening of operational instruments at the regional level. As a result, regulations tend to function more as normative foundations rather than as effective mechanisms for guiding on the ground management practices. From an institutional perspective, the fragmentation of authority among regional government agencies has led to sectoral policy implementation, thereby weakening coordination capacity and constraining the application of ecosystem based approaches that are essential for peatland management. Furthermore, policy implementation that relies predominantly on short term programs and projects indicates that the achievements attained remain largely temporary and have not been institutionalized within long term governance systems. In addition, policy sustainability is further constrained by spatial data inconsistencies, limited institutional capacity, and overlapping cross-sectoral policies, which collectively underscore that the primary challenges of peatland management in Kubu Raya extend beyond environmental or technical issues to encompass broader problems of policy governance and the effectiveness of intergovernmental coordination.

In addition to institutional challenges, the socio-economic dimension plays a critical role in shaping peatland governance outcomes. Peatland policies directly affect local communities whose livelihoods depend on peat-based agriculture and natural resource utilization. Policies aimed at restricting peatland drainage or land conversion may improve ecological sustainability but can also generate economic trade-offs for smallholder farmers if alternative livelihood options are not adequately supported. Previous studies in peatland regions of West Kalimantan indicate that community-based initiatives, including peat care villages and sustainable agriculture programs, can enhance local participation and reduce fire risks when local communities are actively involved in governance processes. Therefore, strengthening community participation and incorporating local knowledge into peatland management strategies are essential to ensure that governance approaches remain socially inclusive while maintaining ecological sustainability.

B. Strengthening Sustainable Governance

Based on the analysis using Edward III's policy implementation model, strengthening sustainable peatland governance in Kubu Raya Regency requires improvements across four key dimensions: communication, resources, disposition, and bureaucratic structure. Effective governance depends on clearer and more consistent policy communication across sectors and administrative levels to ensure a shared understanding of peatland management objectives. In addition, strengthening institutional resources particularly technical capacity, budget allocation, and data availability is essential to support effective implementation.

From the perspective of disposition, stronger commitment from implementing actors is needed to balance environmental protection goals with local development priorities. Furthermore, improvements in bureaucratic structure, especially in inter-agency coordination and role clarity, are critical to reducing fragmentation in policy execution. These efforts should be supported by cross-sectoral policy integration and active community participation to ensure that peatland governance is not only environmentally sustainable but also socially inclusive and institutionally effective. Table

3 summarizes the analysis of sustainable peatland governance policy implementation in Kubu Raya Regency based on Edward III's framework.

Table 3. Analysis of Sustainable Peatland Governance Policy Implementation Based on Edward III's Model in Kubu Raya Regency

Edward III Dimension	Analytical Focus	Key Analytical Findings	Policy Implication (International Journal Style)
Communication	Clarity, consistency, and shared understanding of policy	Policy communication remains largely administrative, resulting in uneven operational interpretation among sectoral agencies and village governments, particularly regarding the balance between peat protection and economic land use	Policy effectiveness requires a shift from formal regulatory transmission to structured, cross-sectoral communication mechanisms that promote a shared operational interpretation of peatland governance objectives
Resources	Availability of human, financial, and informational resources	Limited technical expertise, constrained local budgets, and outdated spatial data weaken implementation capacity and increase reliance on short-term, project-based interventions	Sustainable peatland governance depends on institutionalized budget allocation, strengthened local technical capacity, and integrated spatial data systems to reduce dependency on external funding cycles
Disposition	Commitment and attitudes of policy implementers	Implementers exhibit ambivalent commitment, as formal environmental objectives compete with economic growth pressures and investment priorities	Aligning environmental protection goals with economic incentives is essential to minimize policy compromise and enhance long-term commitment among implementing actors
Bureaucratic Structure	Coordination, authority, and institutional arrangement	Fragmented authority and weak inter-agency coordination undermine accountability and slow decision-making in managing a cross-sectoral ecosystem issue	Establishing a dedicated coordination mechanism or lead institution with clear authority is critical to improving policy coherence, accountability, and adaptive governance

Sources: Data analyzed by the researchers

Based on the synthesis presented in the table, the implementation of peatland governance can be critically understood through the four dimensions of Edward III, which collectively reveal structural and systemic weaknesses in policy execution. From the communication dimension, policy transmission remains predominantly administrative, resulting in fragmented interpretations among sectoral agencies and village governments and limiting the development of a shared operational understanding of peat protection objectives. In terms of resources, constraints in technical expertise, local budget capacity, and the availability of up-to-date spatial data significantly weaken implementation

capability and reinforce dependence on short-term, project-based interventions rather than sustainable governance mechanisms. The disposition of implementers further reflects ambivalence, as formal commitments to environmental protection are frequently compromised by competing economic growth and investment pressures, indicating a misalignment between policy goals and incentive structures. Finally, the bureaucratic structure dimension highlights that fragmented authority and weak inter agency coordination reduce accountability and slow decision-making in addressing peatlands as a cross sectoral ecosystem issue. Taken together, these dimensions demonstrate that the primary challenge of peatland policy implementation lies not in policy formulation, but in strengthening communication mechanisms, institutional resources, implementer commitment, and coordinated bureaucratic structures to support coherent and adaptive peatland governance.

These findings suggest that improving peatland governance in Kubu Raya requires a shift from predominantly regulatory approaches toward more integrated governance strategies. First, strengthening spatial data integration and monitoring systems is necessary to support evidence-based decision-making. Second, institutional coordination mechanisms should be enhanced through clearer role distribution among sectoral agencies and the establishment of cross-sectoral coordination platforms. Third, peatland governance should increasingly incorporate socio-economic considerations by promoting sustainable livelihood alternatives such as paludiculture and community-based land management initiatives. Finally, policy implementation would benefit from stronger science-policy interfaces that facilitate the integration of academic research, local knowledge, and policy design to support adaptive peatland governance.

CONCLUSION

This study finds that, at a normative level, sustainable peatland governance in Kubu Raya Regency is supported by a relatively comprehensive regulatory framework and planning documents at both national and regional levels. However, the presence of these policies does not automatically ensure effective peatland management at the implementation stage. Analysis based on Edward III's policy implementation model reveals that implementation gaps remain the primary challenge, driven by weak substantive policy communication, limited institutional resources, ambivalent attitudes of implementing actors toward peatland protection objectives, and a fragmented and poorly coordinated bureaucratic structure.

This study shows that peatland governance in Kubu Raya Regency has been formally integrated into national policies and regional planning instruments such as the RTRW and RPJMD, indicating a strong normative commitment to sustainable peatland management. However, the effectiveness of policy implementation remains limited due to fragmented institutional arrangements, inconsistencies in spatial data, limited technical and financial resources, and reliance on short-term program-based interventions.

The findings also reveal that peatland governance challenges are influenced by broader economic, political, and social dynamics, particularly the dependence of local communities on peat-based livelihoods and the limited integration of community participation in policy implementation. Therefore, strengthening peatland governance in Kubu Raya requires improved cross-sectoral coordination, stronger institutional capacity, integrated spatial data systems, and the promotion of sustainable livelihood alternatives. Overall, the main challenge lies not in policy availability but in enhancing governance mechanisms to ensure more effective and sustainable policy implementation.

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