



Governance Dynamics of Natural Resources in Promoting Sustainable Economic Development in Indonesia

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ABSTRACT

This study analyzes the dynamics of natural resource governance in encouraging sustainable economic development in Indonesia with a case study in East Kalimantan Province as a mining-based area. Using a qualitative approach through in-depth interviews and analysis of policy documents, this study identifies the main challenges in the form of overlapping central-regional authority, regulatory fragmentation, and dominance of short-term economic orientation. The findings show that although the principles of sustainable development have been adopted normatively, their implementation has not been optimal due to weak multilevel coordination and integration of economic-environmental policies. This study emphasizes the importance of regulatory harmonization, institutional capacity strengthening, and increased transparency to ensure that natural resource management contributes to sustainable economic development in Indonesia.

INTRODUCTION

Natural resource wealth (SDA) can theoretically become strategic capital to accelerate economic growth, expand the fiscal base, and support improved welfare. However, the trajectory of development in resource-rich countries is often marked by a paradox: short-term economic benefits can go hand in hand with institutional vulnerabilities, distribution inequality, and ecological pressures that undermine the prospects for sustainable development. In the Indonesian context, various studies have emphasized that the quality of governance—including norms, institutions, authority structures, and decision-making processes—is the main determinant of whether the use of natural resources produces inclusive added value or deepens socio-environmental problems (Noor et al., 2025). Empirical findings at the provincial level also indicate the symptoms of resource curse in areas rich in mining resources, where natural resource dependence is correlated with lower sustainable development achievements than more diversified areas (Rahma et al., 2021).

The urgency of strengthening governance is increasingly prominent as the sustainable development agenda demands consistent integration between economic, social, and environmental goals. Governments and development partners explicitly emphasize the need for an integrated approach in achieving the SDGs and strengthening collaboration across levels of government and stakeholders (United Nations in Indonesia, n.d.; UNDP Indonesia, 2024). On the other hand, the need for sustainable development data is also increasing as a basis for policy formulation and achievement evaluation, as shown by the publication of SDGs indicators provided by national statistics agencies (Central Statistics Agency [BPS], 2023). The convergence between the demands of the transition to a low-carbon economy, improved environmental protection standards, and the pressure to maintain investment competitiveness places natural resources governance as a highly dynamic and compromising policy arena.

These dynamics have become more complex within the framework of Indonesia's multilevel governance, especially in the mining sector. The division of central-regional authority, changes in licensing design, and the linkage of mining regulations with other sectors (environment, forestry, spatial planning, and local government) often lead to overlap, fragmentation, and policy uncertainty at the implementation level. Legal-institutional studies on coal licensing cases in East Kalimantan show that regulatory uncertainty and the tendency of legislative capture can make licensing instruments ineffective as a control tool, even transforming into a mechanism that legitimizes environmental damage (Nasir, 2022). At the same time, increasing public attention to the ecological impact of the natural resources-based sector is prompting a more assertive enforcement response; for example, the revocation of resource-based corporate permits attributed to violations of environmental regulations after major disasters shows that natural resource governance is also affected by real political pressures and social risks (Financial Times, 2026).

In this national landscape, East Kalimantan Province is a relevant locus because it is one of the centers of extractive activities and at the same time a space

for central-regional policy contestation. In addition to the technical challenges of environmental impact control, the region presents more fundamental governance problems: cross-agency coordination, integration of economic-environmental policies, transparency of licensing, and the relationship of interests between states, industry players, and affected communities. Governance issues also intersect with the issue of vulnerability to the rights and access of local/indigenous communities in resource management conflicts—a dimension that confirms that sustainability is not only an environmental issue, but also an issue of justice and legal certainty (Aryandini & Parvez, 2023, in Putri, 2024, as discussed in the *Frontiers* study; see Putri, 2024; Aryandini & Parvez, 2023, cited in Princess, 2024, reviewed by Putri et al., 2025).

Although the literature on natural resources in Indonesia is growing, there is still a research gap in the explanation of "how" and "why" governance works (or doesn't work) at the implementation level—especially in linking multilevel coordination mechanisms, licensing design, and integration of economic-environmental policies with sustainable development agendas. Many quantitative studies are strong in measuring the symptoms of resource curse (Rahma et al., 2021), but they require qualitative deepening to map the processes, actors, and institutional practices that shape policy outcomes in the field. Therefore, this study focuses on the analysis of natural resource governance dynamics in encouraging sustainable economic development in Indonesia with a case study of East Kalimantan Province. With a qualitative approach—through in-depth interviews and analysis of policy documents—this study aims to explain the overlapping pattern of central-regional authority, regulatory fragmentation, dominance of short-term orientation, and its consequences for the integration of economic-environmental policies. The results of the research are expected to make a conceptual contribution to the study of natural resource governance and provide applicable policy implications for strengthening regulatory harmonization, institutional capacity, and transparency in the management of Indonesia's natural resources..

LITERATURE REVIEW

Natural Resources Governance and Sustainable Economic Development

Recent literature places natural resource governance as a determinant of whether extraction results in long-term value creation or deepens ecological vulnerability and inequality. In the Indonesian context, the complexity of environmental governance is understood as the interaction of social-ecological-institutional systems that require cross-sectoral policy instruments, not just a hierarchical approach based on formal regulations (Triyanti et al., 2023). This perspective is relevant for extractive economic regions such as East Kalimantan, because sustainability is not just an issue of "compliance", but rather a matter of how economic-environmental policy coordination is built to manage externality risks, conflicts of interest, and commodity dependency paths.

Multilevel Governance Dynamics

Recent studies show that mining governance in Indonesia is greatly influenced by the design of decentralization and changes in the central-regional

authority relationship. Efforts to strengthen mineral and mineral policies for sustainability often lead to the proliferation of regulations and changes in institutional mandates, which at the implementation level can lead to insynchronization of standards of supervision, licensing, and post-mining environmental restoration (Akhmaddhian et al., 2023). Empirically, the sustainable mining governance model is also understood to require governance reform and strengthening decentralized performance so that policies do not stop as normative adoption, but become a cross-actor practice (Sujono et al., 2025). Two major findings from this literature confirm: (i) multilevel coordination is a prerequisite, not a complement; (ii) institutional reform needs to be accompanied by an accountability mechanism that can be audited by the public.

Regulatory Fragmentation, Symbolic Legality, and Enforcement Problems

A number of studies underscore the paradox of "dense regulation, low compliance" in extractive governance. Recent socio-legal research on tin governance (Bangka Belitung) shows how a seemingly complete legal architecture can operate in a performative manner—formal procedures run, while illegal extraction practices and impunity persist—due to fragmentation of authority and selective enforcement (Rahayu et al., 2025). Although the locus is different, this argument is important as an analytical lens for East Kalimantan: when short-term economic orientation is dominant, legal instruments risk becoming "administrative legitimacy", rather than controlling ecological impacts. Thus, the study of East Kalimantan needs to read the overlap of authority and regulatory fragmentation not only as a technical problem, but as the political-institutional dynamics that shape the incentives of the perpetrators.

Transparency and accountability of the extractive sector

The literature and policy reports of the past five years affirm transparency as an important strategy for improving extractive governance—particularly at vulnerable points such as licensing, state revenues, and revenue distribution. Indonesia through EITI encourages systematic disclosure and partial mainstreaming through extractive data portals, including encouraging the disclosure of permit registers and cross-agency data integration architecture (EITI Indonesia, 2024). However, the EITI Validation report also shows that the quality of implementation of transparency standards can be held back by institutional capacity, administrative-legal barriers to the disclosure of certain contracts and data, and the sustainability challenges of institutionalizing processes (EITI, 2024). In line with this, the World Bank's project monitoring document on EITI transition support and mainstreaming in Indonesia emphasizes the existence of administrative and legal constraints on data disclosure (e.g. contracts and certain receipts data) that require targeted intervention and strengthening of inter-agency data exchange arrangements (World Bank, 2023). For the East Kalimantan study, this literature group focuses on how transparency is "translated" into accountability: whether permitting, reclamation compliance, and regional revenue data are available, interoperable, and used in cross-level decision-making.

Integration of Economic-Environmental Policies and a Just Transition Agenda in the Coal Region

For coal-based provinces, sustainability issues are increasingly related to the agenda of economic diversification and energy transition. A recent policy study on the coal transition in Indonesia assesses the economic-social impact of mine closures and emphasizes the need for inclusive just transition policies in coal-producing provinces, including East Kalimantan, so that shifts in economic structure do not increase the vulnerability of vulnerable groups and workers (IISD, 2025). This literature expands the framework of natural resource governance: sustainability in extractive areas is not sufficiently supported by environmental instruments alone, but demands the integration of regional development policies, labor markets, social protection, and alternative sector investment strategies.

Synthesis, Research Gap, and Study Position (East Kalimantan)

Overall, the literature in the last five years shows three main problem nodes that are aligned with the focus of this research. First, tensions in multilevel governance and the design of power-sharing between central and local governments have been shown to affect the effectiveness of policy coordination in the mining sector (Akhmaddhian et al., 2023; Sujono et al., 2025). Second, regulatory fragmentation and the phenomenon of "symbolic legality" indicate that the existence of a formal legal apparatus is not always directly proportional to the effectiveness of ecological impact control in the field (Rahayu et al., 2025).

Third, extractive sector transparency practices—although they have been strengthened through various initiatives—have not automatically resulted in substantive accountability without support for institutional strengthening and cross-agency data system integration (EITI, 2024; EITI Indonesia, 2024; World Bank, 2023). These findings confirm that the problem of natural resource governance is not solely a lack of regulation, but is closely related to coordination capacity, consistency of implementation, and institutional design that underpins policy processes.

However, there is a significant research gap, especially in the context of East Kalimantan Province as a mining-based area. Studies that specifically map the coordination mechanisms between the central government, local governments, and non-state actors in the entire mining policy cycle—from licensing, supervision, environmental restoration, to economic benefit distribution—are still relatively limited. In addition, research that directly links the dynamics of coordination with the integration of economic and environmental policies in implementation practice has also not been explored in depth.

Therefore, this study is positioned to contribute to three main aspects, namely mapping the dynamics of multilevel coordination and identifying governance bottlenecks, evaluating the gap between the normative adoption of sustainable development principles and the reality of their implementation, and formulating policy implications that emphasize the importance of regulatory harmonization, institutional capacity strengthening, and operationalized transparency in the context of management natural resources in East Kalimantan as a representation of national dynamics.

METHODOLOGY

This study uses a qualitative approach with a case study design to analyze the dynamics of natural resource governance in encouraging sustainable economic development in Indonesia, with East Kalimantan Province as the empirical locus. The qualitative approach was chosen because this research focuses on an in-depth understanding of policy processes, institutional interactions, power relations, and governance implementation practices in the context of multilevel governance. This approach allows for the exploration of meaning, perception, and institutional dynamics that cannot be reduced to mere quantitative variables (Creswell & Poth, 2023). The case study design was used because the research aims to understand contemporary phenomena in real-life contexts, particularly when the boundaries between governance phenomena and policy contexts cannot be clearly separated (Yin, 2023).

The research locus is focused on East Kalimantan Province as one of the regions with high dependence on the coal and oil and gas mining sector, which empirically represents the dynamics of natural resource management in Indonesia. The selection of locus was carried out purposively by considering the structural relevance, intensity of extractive activities, and the complexity of central-regional relations in the governance of the mining sector.

Research data was collected through in-depth interviews, document analysis, and regulatory review. Interviews were conducted with key informants who were selected using purposive sampling techniques, with criteria of having direct involvement or decision-making capacity in natural resource management. The informants include representatives of the central government, local governments, environmental supervisory agencies, mining industry players, and academics or representatives of civil society. The purposive technique was chosen because it allows researchers to obtain information that is rich and relevant to the research focus (Campbell et al., 2020).

The documents analyzed include laws and regulations in the mining and environmental sectors, regional policies, agency performance reports, extractive sector transparency reports, and regional development planning documents. Document analysis was carried out to understand the normative construction of policies and compare them with implementation practices in the field.

The data analysis process is carried out thematically through the stages of data organization, initial coding, theme development, theme review, and interpretation of meaning (Braun & Clarke, 2021). Thematic analysis was chosen because it is flexible and allows the identification of multilevel coordination patterns, regulatory fragmentation, oversight mechanisms, and integration of economic-environmental policies in governance practices. The analysis process is iterative and reflective, with researchers constantly comparing interview data and documents to find consistency or inconsistencies in findings.

To ensure the credibility and validity of the data, this study applies triangulation of sources and methods, namely comparing information from various informants and verifying findings with official policy documents. In addition, member checking is limited to a few informants to ensure the accuracy of interpretation and reduce researcher bias (Nowell et al., 2020). Trail audits are

designed to document the process of collecting and analyzing data systematically. The research also pays attention to ethical aspects, including informed consent, the confidentiality of informant identities, and the use of data solely for academic purposes.

This research does not aim to make statistical generalizations, but rather to produce analytical generalizations that explain governance mechanisms in the context of extractive-based regions and provide conceptual implications for strengthening national policies (Yin, 2023). With this approach, the research is expected to be able to identify governance bottlenecks, gaps between norms and implementation, and opportunities for institutional reform in encouraging sustainable economic development in Indonesia.

RESEARCH RESULTS

The results show that the dynamics of natural resource governance in East Kalimantan Province cannot be understood as a mere issue of administrative division of authority, but as an institutional configuration that results in asymmetrical coordination patterns, cross-sector policy fragmentation, and distortion of fiscal incentives that systemically affect the implementation of sustainable economic development. The thematic analysis produced three main structural mechanisms that explain the gap between normative sustainability commitments and implementation practices in the field, namely administrative centralization–operational decentralization gap, regulatory fragmentation and compliance formalism, and fiscal dependency trap.

Administrative Centralization–Operational Decentralization Gap

The research found that the centralization of licensing authority in the mining sector has created administrative consolidation at the central level, but is not followed by operational integration at the regional level. Formally, strategic authority is concentrated at the center, while the social, ecological, and political burdens remain borne by local governments. A provincial official explained:

"In terms of formal authority, permits are indeed handled by the central government. But when there is a social impact or land conflict, the community comes to the local government. This creates a situation where social responsibility is decentralised, while legal control is centralistic." (INF-Pemda01, interview, February 12, 2025)

This gap results in what can be categorized as an operational coordination deficit. Local governments have high public expectations, but limited access to the main controlling instruments. The central office acknowledges the existence of a systemic transition:

"The goal of centralization is standardization and strengthening control. However, the integration of the supervisory system between the central and regional governments is still in the consolidation stage." (INF-Center03, interview, March 3, 2025)

These findings show that the governance problem does not only lie in the design of regulations, but in the absence of a stably institutionalized coordination mechanism in a multilevel governance system.

Regulatory Fragmentation and Compliance Formalism

The second dimension shows that the large number of cross-sectoral regulatory instruments does not automatically improve the quality of environmental control. On the contrary, regulatory complexity results in a formalistic pattern of administrative compliance. An environmental watchdog stated:

"Most companies meet document obligations. However, substantive ecological impact evaluation often depends on cross-agency monitoring and coordination capacity." (INF-Supervisor04, interview, February 28, 2025)

Local academics add critical analysis:

"We see a tendency towards document-based compliance. Regulations work, but they don't always ensure ecological sustainability. This shows that there is a gap between legal compliance and ecological performance." (INF-Academic05, interview, February 18, 2025)

This phenomenon shows that the governance of the extractive sector in East Kalimantan still tends to operate within the framework of procedural governance instead of performance-based governance. This means that policy success is measured more by administrative compliance than substantive sustainability achievements.

Fiscal Dependency Trap and Policy Incentive Distortion

The most structural finding is the fiscal dependence on the extractive sector that creates short-term policy incentives. This dependence affects the orientation of regional strategic decisions. A member of the local legislature said:

"Fiscal reality cannot be ignored. The mining sector is still a major contributor. Without real diversification, drastic restrictions will have a direct impact on public spending capacity." (INF-DPRD07, interview, February 20, 2025)

Civil society activists highlight the dilemma:

"Sustainability commitments often clash with annual revenue needs. As long as the fiscal structure is still dependent on extraction, it will be difficult to fully shift policy orientation." (INF-LSM09, interview, February 25, 2025)

This condition forms what can be conceptualized as a fiscal dependency trap, where short-term incentives slow down the structural transformation towards a sustainable economy.

Transparency without Full Accountability

Research shows that there is an increase in public data access related to licensing and reporting. However, transparency has not been fully converted into substantive accountability. A supervisory official stated:

"Data is available, but the integration between systems is not optimal. The follow-up process often involves multiple agencies, so policy responses are not always quick." (INF-Supervisor04, interview, February 28, 2025)

Industry representatives gave another perspective:

"We need regulatory consistency. Transparency must be balanced with legal certainty so as not to cause investment uncertainty." (INF-Industri06, interview, March 5, 2025)

These findings suggest that procedural transparency has not fully resulted in enforcement credibility, which is a key component in sustainable governance.

Identified Governance Dynamics Model

Based on empirical findings, this study identifies a governance pattern that can be categorized as the "Centralized-Administrative but Fragmented-Operational Governance Model." This model describes an institutional configuration in which there is a consolidation of formal authority at the central level, but it is not accompanied by the integration of operational coordination at the implementation level. At the same time, governance in the mining sector is still characterized by fragmentation of cross-sector regulations that lead to overlapping institutional mandates, structural fiscal dependence on extractive sectors that affect policy orientation, and transparency practices that tend to be procedural without fully generating substantive accountability. This configuration explains why, although the principles of sustainable development have been normatively adopted in various policy documents, their implementation still faces structural barriers stemming from institutional design, economic incentives, and coordination mechanisms that have not yet been fully integrated.

Overall, the results of the study show that the transformation towards sustainable economic development in extractive-based areas is not enough to be carried out through formal regulatory changes alone. The necessary reforms should touch the structural dimensions of governance, including the harmonization of multilevel coordination between central and regional governments, the integration of cross-sectoral supervisory systems, the restructuring of fiscal incentives to reduce dependence on the extractive sector, and the strengthening of substantive and consistent accountability mechanisms. Without comprehensive interventions in these aspects, the gap between normative commitments to sustainability and implementation practices on the ground will continue to recur in the natural resource governance cycle in Indonesia.

DISCUSSION

The findings of this study show that the dynamics of natural resource governance in East Kalimantan reflect an imbalance pattern between the consolidation of administrative authority and the fragmentation of operational implementation. The Centralized-Administrative but Fragmented-Operational Governance model identified in this study can be explained through a multilevel governance perspective that emphasizes the importance of vertical and horizontal integration in complex governance systems (Hooghe & Marks, 2021). In the Indonesian context, fiscal and administrative decentralization that runs in parallel with the tendency to re-centralize strategic sectors such as mining creates an ambiguous configuration of authority and has the potential to produce a coordination deficit.

Theoretically, effective natural resource governance requires consistency between institutional design, regulatory capacity, and accountability mechanisms (Sovacool et al., 2022). However, the results show that the centralization of formal authority does not automatically strengthen the effectiveness of supervision if it is not accompanied by the integration of information systems and the clarity of coordination mechanisms across levels of government. This is in line with the argument that institutional reforms that are structural without strengthening operational capacity risk resulting in institutional layering, i.e. the addition of rules without improving policy performance (Béland et al., 2020).

The fragmentation of cross-sectoral regulation found in this study also reinforces the findings of the literature on the complexity of extractive governance in developing countries. The OECD (2023) emphasizes that the extractive sector is often at the crossroads of various policy regimes—environmental, energy, fiscal, and spatial planning—that require an integrated policy approach (policy coherence for sustainable development). Without cross-sectoral harmonization, compliance tends to be administrative and formalistic, rather than based on measurable ecological achievements. This condition explains why in this study it was found that procedural compliance is predominant compared to performance-based environmental governance.

The dimension of structural fiscal dependence on the extractive sector also shows the relevance of the political economy of natural resources approach. Recent literature suggests that regional income dependence on extractive commodities creates short-term policy incentives that can slow economic diversification and sustainable transition (Cust & Mihalyi, 2021). In the context of East Kalimantan, the findings on the fiscal dependency trap indicate that the transformation towards a sustainable economy requires not only stricter environmental regulations, but also the restructuring of the fiscal incentive system and the development of alternative economic bases. This is in line with a World Resources Institute study (2022) which emphasizes that the success of the transition in coal-based regions is highly dependent on the design of planned long-term fiscal and investment policies.

Furthermore, findings regarding procedural transparency that have not fully resulted in substantive accountability can be understood through the concept of accountability gap. Fox (2020) emphasized that transparency will only have an

impact if it is followed by the mechanism of answerability and enforceability. In this study, although licensing and reporting data are available, cross-system integration and enforcement consistency are not optimal, so the credibility of sanctions is still limited. These findings are also in line with the study of Kolstad and Wiig (2022) which showed that extractive sector transparency in developing countries often faces challenges in converting information into effective regulatory action.

Conceptually, the governance models identified in this study contribute to the natural resource governance literature by highlighting the tension between administrative consolidation and operational fragmentation. In contrast to the approach that sees centralization as a solution to weak oversight, this study shows that the effectiveness of governance is largely determined by the quality of multilevel coordination, cross-sectoral policy integration, and alignment of fiscal and environmental incentives. Thus, sustainable economic development in extractive-based areas requires systemic and interdependent reforms.

The policy implications of these findings underscore the need to strengthen vertical and horizontal coordination mechanisms through the integration of data-based surveillance systems, harmonization of cross-sectoral regulations, and fiscal scheme reform that encourages economic diversification. In addition, strengthening substantive accountability through consistency of law enforcement and performance-based transparency is a prerequisite for increasing the credibility of natural resource governance. Without structural interventions on these dimensions, the risk of reproducing the gap between normative commitment and policy implementation will continue to recur in the extractive governance cycle in Indonesia.

CONCLUSIONS AND RECOMMENDATIONS

This study shows that natural resource governance in East Kalimantan Province reflects the pattern of the Centralized-Administrative but Fragmented-Operational Governance Model, which is the consolidation of formal authority at the central level that is not fully followed by the integration of operational coordination at the implementation level. Fragmentation of regulations across sectors, fiscal dependence on extractive sectors, and transparency that has not been converted into substantive accountability are the main factors hindering the transformation towards sustainable economic development.

These findings confirm that the success of sustainable development is not only determined by the adoption of policy norms, but by the alignment of institutional design, multilevel coordination capacity, and restructuring of regional economic incentives. Therefore, natural resource governance reform needs to be directed at regulatory harmonization, integration of supervisory systems, and strengthening consistent accountability mechanisms to reduce the gap between normative commitments and implementation practices in Indonesia.

ADVANCED RESEARCH

This research has several limitations. First, the focus on one case study in East Kalimantan Province limits empirical generalizations to all natural resource-based areas in Indonesia. Although the findings provide an analytical

generalization, variations in institutional and fiscal contexts between provinces can result in different governance dynamics. Second, the qualitative approach used emphasizes the depth of process analysis and institutional relationships, but has not quantitatively measured the impact of governance on economic and environmental performance indicators. Third, limited access to internal surveillance data and certain fiscal information has the potential to limit more detailed exploration of the effectiveness of policy enforcement.

Based on these limitations, further research can develop extractive-based inter-regional comparative studies to test the consistency of the governance models identified in this study. A mixed methods approach is also recommended to integrate quantitative analysis of sustainable development indicators with qualitative findings on multilevel coordination mechanisms. In addition, future research can deepen studies on fiscal incentive reform, digital-based supervision system integration, and regional economic diversification strategies in the framework of post-extractive transition. This approach is expected to be able to enrich theoretical contributions and expand policy implications in strengthening sustainable natural resource governance in Indonesia.

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