Proceedings Academic Universitas Jambi
Volume 2, Issue 3, September, 2026

Paradoxes in the Implementation of Sustainable Development in Indonesia

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Abstract

Background: Sustainable development is development that satisfies the needs of economic growth, social development, and environmental protection. However, sustainability in developing nations such as Indonesia is often at odds with environmental preservation. **Purpose:** The research aims to identify the types of paradoxes in implementing sustainable development in Indonesia, explore their causes, and identify strategies to reduce them. The technique used in the present research was Qualitative Descriptive-Analytical, based on a literature review. The material was drawn from journals, books, and publications from countries and international organizations on organic justice, sustainable development, and political ecology. **Results:** Learning analyses show four broad paradoxes - a trade-off between enhancing governance capacity for conservation and the interests of macroeconomic growth; antagonism between renewable energy transition and fossil fuel dependency; conflicts among conservation-based development policies aimed at reversing underdevelopment in specific regions with local welfare needs; contradictions between government sustainability commitments and real policy action. These contradictions are the basis for economic pressures and social inequalities, reliance on natural resources, and poor governance systems. **Conclusion:** The obstacles to implementing sustainable development in Indonesia include structural, institutional, and political issues. It is well understood that until additional sustainable development prospects are provided, strengthening governance, policy consistency, local communities' participation, and a realistic-paced green transition are essential to avoid sustainability paradoxes.

Keywords: Sustainable Development; Paradox; Political Ecology; Environmental Governance

Cite This Article

Chandra NA. (2026). Paradoxes in the Implementation of Sustainable Development in Indonesia. Proceedings Academic Universitas Jambi, 2(3): e59973. DOI: 10.22437/proca.v2i3.59973

Editor

Dr. Erisa Kurniati, M.Pd.

Article info

Received: August 4, 2026 . Revised: August 26, 2026 . Accepted: September 1, 2026

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INTRODUCTION

Background: Sustainable development is defined as the balance between economic growth, social development, and environmental conservation. But in underdeveloped nations such as Indonesia, sustainability often presents a paradox between objectives and environmental safeguarding. Purpose: To identify the kind of paradox in implementating the sustainable development in Indonesia, to research the reasons and find the methods that reduce the paradoxes. This research used Qualitative Descriptive-Analytical as the following technique, using a literature study approach. The data was obtained from journals, books, and publications of governments and international organizations in the fields of sustainable development and political ecology. Results: The analyses identify four major paradoxes: a contradiction between economic growth and environmental conservation; a conflict between renewable energy transition and fossil fuel reliance; tensions between underdevelopment-related conservation policies and local population welfare; and contradictions between sustainability pledges of governments and actual policy implementation. All these contradictions are worsened by wider economic pressures, societal inequity, reliance on natural resources and poor systems of governance. Conclusions The implementation of sustainable development in Indonesia has been affected by structural, institutional and political kind of problems. It is commonly known that enhancing governance; increasing policy coherence, involving local people and promoting genuine speed of green transition are very important to minimize the sustainability paradoxes and to create more equitable and sustainable development possibilities. The country's reliance on fossil fuels and resource-based sectors [6] continues to provide hurdles for long-term systematic energy and economic transition to renewable energy and green development. The consequence is often a situation where economic development pays for ecological sustainability.

These circumstances constitute what might be labelled as sustainability paradoxes, where the competing aims manifest on a triangle among man, environment and economy[7]. Paradoxes become more obvious when strategies for sustainability produce additional social and ecological challenges. Conservation regulations may limit access of local populations to natural resources and industrial growth to decrease poverty alone may lead to environmental damage [4]. These paradoxes reveal that sustainable development is not just a technological challenge, but a structural and political problem of conflicting interests and uneven power relations [8].

Therefore, this research aims to understand the nature of sustainability paradoxes in Indonesia, their development, and how to reduce contradictions. This research use the perspective of political ecology and sustainable development theory to better understand the issues underlying the economic, social and political factors that impact sustainability implementation throughout developing nations such as Indonesia.

METHODS

This research design is a qualitative, descriptive-analytic study with the purpose of examining the paradoxes in achieving sustainable development in Indonesia. We choose this technique because the qualitative approach aims to get a deep knowledge of complex social, political and environmental processes, rather than scientifically quantify variables [9]. The descriptive-analytical approach defined criteria where the

researcher historically recounts current situations and makes the criticism on numerous associated aspects that lead to the sustainability conundrum [10].

This study used a library research approach based on a variety of academic and institutional resources that encompass the domains of sustainable development, political ecology, environmental governance and development studies. We consequently gathered data from scholarly journals, academic books, government reports and policy papers and publications of international organizations such as the UNDP, OECD and UNEP. The secondary data analysis enabled the research to contextualize patterns, theoretical views and empirical results in relation to the issue at hand.

Data collection was done by documentation and literature review approaches [10]. The relevant literature was appraised for its reliability, relevance and contribution to the larger issue of sustainability dilemmas in developing nations (Indonesia in particular). Subsequently, the data were categorized and classified based on the widely recognized themes like economic development, environmental degradation, energy transition if any; social conflict, institutional governance.

Data analysis include processes including data reduction, data display and making conclusions [11]. Data reduction is the selection and simplification of information relevant to the study subject. Then, the facts were described in a narrative style for interpretation and critical thinking. Finally, the conclusion presents the identified repetitions, inconsistencies and results that link the economic, social and environmental elements of sustainable development.

To avoid bias the triangulation of sources was done, examining the references and material originating from various organizations. Furthermore, the literature examined for this research was limited to respectable and peer-reviewed academic sources to lend greater credibility to the analysis. However, this is a theoretical analysis on the basis of the literature and not on field observation. Hence, the findings mainly reflect the theoretical and literature-based viewpoints on sustainability dilemmas in Indonesia.

RESULTS

The results of this research show that the implementation of sustainable development in Indonesia is marked by several types of paradoxes relating to the economic, environmental, social and institutional elements. These paradoxes reflect the interplay of development goals with the structural realities of a developing nation that remains heavily reliant on natural resources.

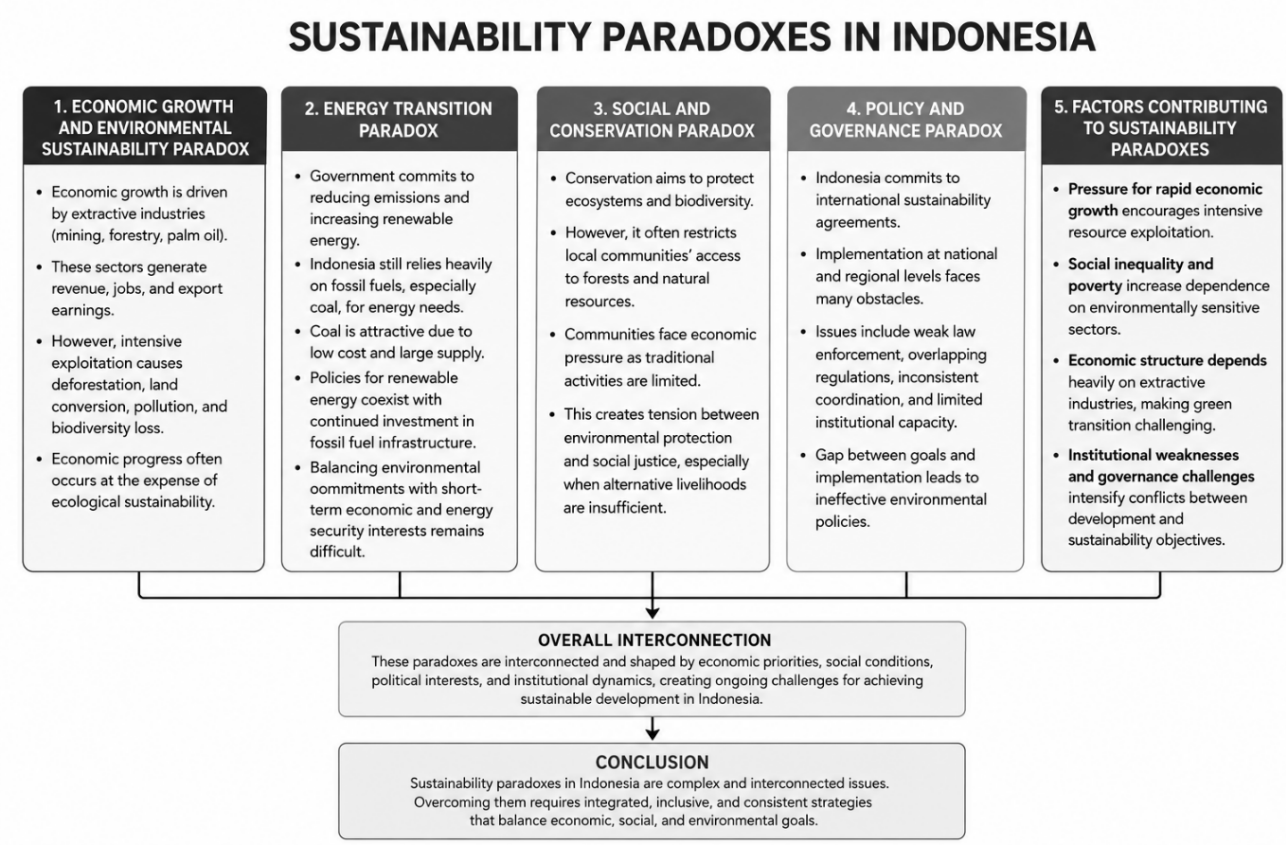

Figure 1. Sustainability Paradoxes in Indonesia

Economic Growth and Environmental Sustainability Paradox

One of the primary paradoxes identified in the research was that economic development and environmental sustainability are contradictory. Extractive sectors such as mining, forestry and palm oil plantations are on the route of a strong support for Indonesia economic growth. They are important for national income, are job creators and generate export income. But ongoing use of natural resources has accelerated environmental deterioration such as deforestation, land conversion, air and water pollution and loss of biodiversity.

The contradiction between growth and sustainability is evident in the expansion of palm oil across the islands of Kalimantan and Sumatra in Indonesia. The palm oil sector is significant to national economic growth by increasing exports, creating employment opportunities, and boosting regional income [12]. Indonesia has been able to ascend the rank and has even become one of the major palm oil producers in the world [12] But the other side, absolutely. The spread of palm oil plantations is now one of the primary causes of deforestation, peatland damage and forest fires [with some ties to biodiversity loss] . [13], [14]. The severe consequence of the economic expansion that was pursued by exploiting natural resources could be witnessed with forest and land fires in 2015 [15]. The use of fire technology for land clearance produces haze pollution in neighboring nations and also results in large carbon emissions [15], [13]. Additionally, the presence of palm oil plantations leads to deforestation [12], and palm oil poses a hazard to wildlife native to Sumatra, including orangutans and Sumatran tigers [13]. This circumstance suggests that economic expansion from the palm oil industry typically compromises environmental sustainability [12], [13].

An illustration of this contradiction can be seen briefly in the life cycle of palm oil plants. The sector has increased revenue and economic productivity in certain regions, but has also become a significant driver of deforestation and carbon emissions. This results in a scenario where economic progress frequently comes at the price of ecological sustainability.

Energy Transition Paradox

The research also explains a contradiction in Indonesia's energy transition strategies. On the other side, KAB has vowed to reduce greenhouse gas emissions and enhance renewable energy usage in the national energy mix. At the same time, Indonesia's substantial dependence on fossil fuels, especially coal for industrial and residential energy, remains.

This may be best shown in Central Sulawesi, i.e. the Indonesia Morowali Industrial Park (IMIP). This is a fairly disputed instance of this energy transition dilemma in Indonesia. It may be transformed into industrial park that enable nickel manufacturing to make electric car batteries and for the green energy transition of all nations in the globe [16]. However, it is still reliant on captive coal-fired power plants and causes significant carbon emissions [16], [17]. Besides, worldwide research and publications have pointed out that the growth of IMIP has been linked to deforestation [16], saltwater pollution, coastal ecosystems disturbance [17], and more social conflict and occupational accidents [18], [19]. The Financial Times [16] has dubbed Indonesian nickel, which is generated with a huge carbon impact from fossil fuels, as "dirty nickel". This shows its aim to create clean energy vs. the coal dependent industrialization techniques.

Coal is available from enormous supply volumes and is still an economically attractive cheaper source of energy. This why that future policies to promote renewable energy so frequently include more investment in fossil fuel infrastructure. This conflict demonstrates the problems of integrating short-term economic and energy security demands with long-term commitments (environmental in this example).

Social and Conservation Paradox

Contact sonya@bdnow.com. However, the contradiction of conservation and social concerns may be seen in Kerinci Seblat National Park (KSNP) Indonesia; conservation laws that seek to protect biodiversity in KSNP limit local populations usage of forest resources on which their livelihoods rely. We also prevent them [XX] from utilizing or create excellent agricultural landwork in the oft-exploded national park region which is source of hazard that will impose upon their livings, [20]. Widiono et al. Many households depended on agricultural and forest resources and experienced economic hardship when conservation regulations limited or prohibited their traditional practices. This case study is an example of how conservation may lead to social and economic strain on a family if appropriate alternative livelihood option is not available.

A more serious conclusion is the confrontation between conservation and the wellbeing of local populations. Conservation plans are designed to safeguard ecosystems and biodiversity, but they often restrict access to the woodlands and natural resources that local residents depend on for their livelihoods.

Sometimes, the conservation restrictions restrict local or indigenous communities' capacity to continue with the subsistence activities of the land such as

farming, fishing, or resource exploitation. They experience economic hardship. This creates a contradiction between ideals of environmental conservation and social justice especially if alternative economic options are not supplied.

Policy and Governance Paradox

The paradox from the perspective of policy and governance in Indonesia is shown in a sustainability gap between commitment to sustainability and real policy implementation. Despite the plethora of environmental rules enacted by Indonesia and its participation in global sustainable development programs, implementation remains hampered by institutional and governance problems. Iskandar et al. state that the fundamental cause for the problems in environmental policy-making and implementation is the insufficient law enforcement [21]. Similarly, overlapping rules across competing agencies, fragmented authority, poor interdepartmental coordination, and low institutional capacity have been cited as particular challenges to successful environmental governance [22], [23], [24], [25]. Together, these governance failures may result in uneven and insufficient implementation of critical environmental legislation. Consequently, environmental regulations typically do not meet their aims and a gap between normative sustainability goals and obtained results in reality is present [21], [22], [23], [24], [25].

The data also provide indications of non-implementation of sustainability promises. Indonesia has formally signed up to a slew of global climate change and sustainable development accords, but institutional impediments in operation typically hamper political will at the national and local level.

Five aspects of governance were found to be problematic: insufficient law enforcement, regulatory duplication, poor policy coordination and low institutional capability. These constraints result in conceptual and normative inconsistencies between goals and practice in the area of sustainability. This means that environmental policy occasionally fails to adequately meet its objectives.

Factors Contributing to Sustainability Paradoxes

Paradox Of Sustainability: Wasteland The rise of sustainability paradoxes in Indonesia is driven by a number of interconnected causes. Secondly, the economic growth still continues to be pursued in a quick manner with a predisposition of exploiting natural resources especially in the mining sector resulting in conflicts between purposes of economic development and environmental conservation [26]. Second, the variety of communities and sensitivity to economic vulnerabilities undermine sustainability programs by increasing the stakes of implementation for local livelihoods and increasing the proportion of the population depending on sectors vulnerable to environmental deterioration [27]. Third, the 28 Indonesian economy is strongly dependent on resource-based businesses, and research has repeatedly shown that this sort of dependency on extractive resource riches is a major hurdle to shifting to an inclusive green economy. At the same time, governance and institutional shortcomings such as poor policy consistency and lack of integration of environmental issues into natural resource governance aggravate sustainability tensions [30]. Sustainability paradoxes in Indonesia therefore need to be seen not as single issues but instead as multi-scalar difficulties driven in part by economic objectives, social circumstances, extractive growth paths and institutional dynamics [26], [27], [28], [29], [30].

Research and Findings147 The research identified various areas in which the sustainability paradoxes develop in Indonesia. We also prevent them [XX] from utilizing or create excellent agricultural landwork in the oft-exploded national park region which is source of hazard that will impose upon their livings, [20]. Widiono et al. Many households depended on agricultural and forest resources and experienced economic hardship when conservation regulations limited or prohibited their traditional practices. This case study is an example of how conservation may lead to social and economic strain on a family if appropriate alternative livelihood option is not available.

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DISCUSSION

The purpose of this article is to empirically show the premise that sustainable development in Indonesia includes certain contradictions of economic growth, environmental conservation, social welfare and institutional governance as related. These paradoxes are expressions of the problem a resource dependent country has while trying to achieve competing development objectives [2]. The paradoxes found in this research are not isolated problems but rather overlap and aggravate the broader systemic problems that have been plaguing the development system of Indonesia.

The main result is a paradox, no doubt, of becoming richer while living within our means. The Indonesian economy is still heavily reliant on extractive industries, including mining, forestry and palm oil plantations. While these sectors are some of the major employers, exporters and producers of foreign money in many countries, they also have tremendous externalities since they lead to deforestation, loss of biodiversity and pollution[3]. This conclusion is in line with recent reports showing economic expansion in many poor nations is still strongly associated with excessive resource use and environmental deterioration [31]. Indonesia indicates that methods of growth-oriented development entail that short-term productive benefits come at the expense of a common objective for environmental sustainability in the future.

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of growth-oriented development entail that short-term productive benefits come at the expense of a common objective for environmental sustainability in the future. This is the nature of political ecology where scholars argue that environmental issues are due to power relations, resource allocation and social inequality [33].

Moreover, the research points out that institutional and governance failures compound numerous sustainability paradoxes. While Indonesia is aware of international accords on sustainability, the implementation of these agreements at the national and regional levels is still impeded by tremendous hurdles. The influence of environmental governance is reduced by insufficient law enforcement, overlaps in regulation and choices amongst mandates, weak coordination amongst decision making processes as well as low institutional capacity [8]. The results show that the sustainability concerns are not just technical or environmental problems but also institutional and political problems, calling for systemic transformation [5,21].

These paradoxes are interconnected and hence, sustainable development in Indonesia cannot be seen in a uni dimensional perspective. Economic, environmental, social and political issues are continually interacting with each other [2]. The economic expansion pursuit that does not care much about the environmental restrictions tends to put two-fold pressures on the woreda ecosystem while regulations that aim at conservation may result in disparities [4]. Weak governance structures, however, provide a challenge to the implementation of integrated sustainability measures as well.

Therefore, this research argues for a comprehensive and integrated approach to sustainable development. Among others, it is necessary to strengthen environmental governance, improve institutional coordination, enhance inclusive involvement and promote green economic transformation in order to address these sustainability paradoxes in Indonesia [3]. Sustainable development does not mean simply expansion, but it is also a path that is protective of ecological and promotes social fairness. In the absence of unified policies, unreasonable trade-offs and contradictory paradoxes between development and sustainability would be increasingly common and less readily addressed.

CONCLUSIONS

This research indicates that the implementation of sustainable development in Indonesia has shown numerous and contradictive paradoxical features such as between economic growth with environmental sustainability, social welfare and institutional governance . More in particular, the findings provide evidence that the development model of Indonesia continues to be based on extractive industries and fossil fuels as important contributors to economic growth, but also that it generates biodiversity loss and ecological fragility. Moreover, conservation efforts may also create tensions when local populations lose their access to natural resources without sufficient economic alternatives. In addition, the mentioned gap between sustainability in theory and reality is exacerbated by inadequate governance, uneven policy implementation and institutional gaps.

In addition, other general reasons related to these sustainability dilemmas are recognized, such as the growing push for rapid economic expansion and the exploitation of natural resources, combined with social inequities. These results imply that sustainability difficulties in Indonesia are not just environmental problems but

also structural and political problems produced by the aims of capitalist growth and the current governance dynamics. Hence, sustainable development has to address the fundamental challenges of economic growth, environmental conservation and social justice in such a way that no one is sacrificed in the name of the others.

The research suggests enhancing environmental governance, boosting policy coordination, promoting the transition to renewable energy and increasing community involvement in resource management to address these goals. Future development initiatives must be based on long-term sustainability, not on short-term economic needs. More flexible, inclusive and context-based policies would allow Indonesia to reduce these trade-offs between development and sustainability so that Indonesia may move towards a more egalitarian and sustainable future.

CONFLICT OF INTEREST

The authors declare that the study was undertaken in the absence of business or financial ties that may be interpreted as a possible conflict of interest.

FUNDING

Funding This research did not receive any particular grant from any of the funding agencies in the public, commercial, or not-for-profit sectors.

DECLARATION OF ARTIFICIAL INTELLIGENCE USE

The research employs the following capabilities using artificial intelligence (AI) technologies and methodologies: Manuscript writing assistance: We have employed AI-based language models (ChatGPT) for the following:

1. Improvement of the language, i.e. polishing of writing to improve the grammar, structure and readability of the work);
2. Summarizing content (helping to express facts and conclusions from the literature simply);
3. Technical writing aid (consulting on how to properly arrange and structure your academic work).

The authors rigorously reviewed all processes using AI assistance to make sure the findings were legitimate and trustworthy. The final selections, interpretations, analyses and findings in this paper are the authors' alone.

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