

LITERATURE REVIEW ON SOCIAL AND ECOLOGICAL IMPACTS OF HYDROPOWER DEVELOPMENT IN CONSERVATION AREAS: Policy Perspective And Local Wisdom In Kerinci Regency

*TINJAUAN PUSTAKA DAMPAK SOSIAL DAN EKOLOGIS PEMBANGUNAN
TENAGA HIDRO DI KAWASAN KONSERVASI:
Perspektif Kebijakan dan Kearifan Lokal di Kabupaten Kerinci*

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Abstract

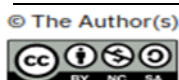
This research examines the social and ecological implications of hydropower development in Kerinci Seblat TNKS, one of Indonesia's most important conservation areas. Although hydropower is promoted as a green investment solution to meet national energy needs, conflicts arise between environmental interests, economic growth, and improving community welfare. Several previous papers have examined and studied the effectiveness of conservation policies that incorporate local wisdom and community welfare in the context of infrastructure development. This paper uses the literature review method and the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach to assess the socio-economic impacts and environmental conflicts associated with hydropower development. The results show that hydropower development has the potential to damage ecosystems and cause social tensions, so an inclusive and adaptive policy approach is needed. This paper shows that conservation policies that integrate the perspectives of local communities can achieve sustainable development without compromising ecosystems and social welfare.

Keywords: Social Cost, Hydropower, Conservation, Policy Structuration, Social Capital, Local Wisdom

Abstrak

Penelitian ini mengkaji implikasi sosial dan ekologis pembangunan PLTA di TNKS Kerinci Seblat, salah satu kawasan konservasi terpenting di Indonesia. Meskipun PLTA dipromosikan sebagai solusi investasi hijau untuk memenuhi kebutuhan energi nasional, konflik muncul antara kepentingan lingkungan, pertumbuhan ekonomi, dan peningkatan kesejahteraan masyarakat. Beberapa makalah sebelumnya telah mengkaji dan mengkaji efektivitas kebijakan konservasi yang mengintegrasikan kearifan lokal dan kesejahteraan masyarakat dalam konteks pembangunan infrastruktur. Makalah ini menggunakan metode tinjauan pustaka dan pendekatan PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) untuk mengkaji dampak sosial-ekonomi dan konflik lingkungan yang terkait dengan pembangunan PLTA. Hasil penelitian menunjukkan bahwa pembangunan PLTA berpotensi merusak ekosistem dan menimbulkan ketegangan sosial, sehingga diperlukan pendekatan kebijakan yang inklusif dan adaptif. Makalah ini menunjukkan bahwa kebijakan konservasi yang mengintegrasikan perspektif masyarakat lokal dapat mencapai pembangunan berkelanjutan tanpa mengorbankan ekosistem dan kesejahteraan sosial.

Kata Kunci: Biaya Sosial, PLTA, Konservasi, Strukturisasi Kebijakan, Modal Sosial, Kearifan Lokal



Introduction

Hydropower development around the Kerinci Seblat National Park (TNKS) conservation area is a dilemma as a solution to fulfill national energy needs and accelerate economic development, which has the potential to damage the ecosystem of endemic flora and fauna that live and grow in conservation areas. Deforestation, habitat fragmentation, and declining biodiversity put conservation and development initiatives at risk of inevitable conflict, threatening ecosystem balance and jeopardizing the sustainability of natural resources important to local communities. (Blouch, 2010; Linkie et al., 2003; Silvia & Aus Rinteln, year). without

In order to increase national energy capacity, hydropower development in conservation areas is considered a strategic solution. However, on the other hand, this effort creates a major conflict between the need for energy development and environmental conservation and biodiversity preservation. This highlights the huge challenge of balancing economic growth and infrastructure development with ecological and social sustainability, which is the main focus of this study.

Although claimed to be a green investment, hydropower development does not fully benefit local communities. Deforestation, as a logical consequence of infrastructure development, not only damages ecosystems but also eliminates the livelihoods of people who have been living side by side with nature. Habitat fragmentation further worsens ecological conditions and endangers endangered and protected species that depend on ecosystem sustainability. Similarly, communities dependent on agriculture and fisheries lose access to natural resources, triggering social conflicts. (Hellin et al., 2018; Ribeiro Anaisse et al., 2024).

Ecosystem degradation and water quality degradation along the watershed resulted in biodiversity loss. Socially, biodiversity loss and water quality degradation due to pollutants from dam operations have affected aquatic life, impacting the ecosystem. (Andrade Navia et al., 2024; Fanari, 2021; Ntuli et al., 2021) In addition, hydropower development can lead to population relocation, loss of traditional livelihoods, and marginalization of local communities, further exacerbating social inequalities. Environmental degradation and increased risk of floods and landslides can lead to loss

of property and lives. (Cvetković et al., 2021; Echendu, 2022; Ndayiragije & Nkunuzimana, 2024; Sawaneh & Fan, 2021),

The ecological significance of the TNKS in maintaining the sustainability of rare and endangered species faces threats from human activities and environmental changes, such as human-wildlife conflict and environmental degradation, which require innovative conservation strategies, technological modernization, and community engagement to ensure the sustainability of biological ecosystems. (Anwar et al., 2024; Figel et al., 2024; Rizwar et al., 2024; Shulhany et al., 2024; Suhardono et al., 2024)

The marginalization of communities in energy fulfillment further exacerbates social, economic, and inequality conditions and damages local cultural identity. Therefore, an in-depth study of the social, economic, and ecological impacts of hydropower development policies in TNKS conservation areas in Indonesia is needed. In addition, a cultural study of environmental management based on local wisdom is needed to formulate a more inclusive and sustainable

conservation strategy. (Diab et al., 2022; Kenedy & Deffinika, 2022.

Biodiversity conservation policies in Indonesia are under significant pressure from national strategic projects (PSN), which prioritize infrastructure development over environmental protection. This tension is particularly evident in Kerinci Regency due to restrictions on local communities' access to natural resources around hydropower projects. Current conservation approaches have been criticized for being top-down, ignoring local wisdom, and failing to integrate policies within social systems, especially in conserving biodiversity, which is critical for food security and cultural heritage. (Borelli et al., 2024).

Social and economic disparities in hydropower development around conservation areas often lead to conflicts between national energy needs, environmental conservation, and the social welfare of communities. These tensions result from differing priorities in energy provision and ecological balance that increasingly restrict communities' access to resources. Restricting people's access to resources can trigger conflicts that are increasingly costly and even fatal. (Akampurira, 2023; Liu et al., 2017;

Ribeiro Anaisse et al., 2024; Thondhlana & Cundill, 2017).

The complexity of policy issues in the provision of clean energy as a renewable energy source in an effort to reduce dependence on fossil fuels requires continuous policy evaluation to address social inequalities and ensure equitable development. Previous research has been written on the impacts of the Belo Monte dam in Brazil, where the hydropower project negatively impacted local communities, with over 59% of residents reporting no improvement in social conditions with the operation of the hydropower plant, and 86.8% experiencing increased energy prices. (Cavallini Johansen & F. Moran, 2025).

Hydropower development around the TNKS conservation area has incurred enormous social and ecological costs. Ecological impacts include habitat destruction, changes to the hydrological cycle, and loss of biodiversity, which are consequences of hydropower development (Wei, 2024a; Zhang, n.d.). In another paper, river hydropower development in Nepal has exacerbated social and political inequalities, requiring an inclusive planning process involving affected communities (Crotoft et al., 2021). Hydropower development often ignores environmental risks, leading

to increased social marginalization and unequal distribution of risks (Huber, 2019).

Hydropower, as a key component in the global energy transition and a national development priority, requires policies that are fair to the interests of local communities and the environment. Addressing these challenges requires a holistic approach that integrates social, ecological, and economic considerations into policy evaluation and ensures that the benefits of hydropower are fairly distributed. (Qiu, 2024). This requires collaborative governance and state intervention to reduce power asymmetries. (Jiménez-Inchima et al., 2021; Larosa et al., 2022).

Adapt local wisdom-based conservation policies to PSN pressures by integrating traditional knowledge and practices into modern conservation efforts. These policies not only preserve culture but also increase community resilience to environmental challenges. (Pearnpitak et al., 2024; Utari et al., 2024)))Such as changes in natural river flows that affect water availability and quality, leading to habitat fragmentation and changes in sediment deposition (Arifin & Rahman, 2020; Wei, 2024, ecosystem Changes that result in biodiversity

loss, as well as socio-economic impacts such as cultural displacement and unequal economic benefits. (Yang, 2024; Zanotti & Knowles, n.d.).

Previous studies on hydropower development in conservation areas have largely focused on technical and economic aspects, such as energy potential, costs, and financial benefits. However, there has been a lack of in-depth studies on the social impacts, local wisdom values, and conflicts arising from such development policies. The lack of attention to these aspects creates an imbalance in research, potentially creating significant social tensions and increasing the risk of widespread ecological damage.

In addition, existing research and literature often focus too much on technical and economic aspects, while social aspects and local wisdom tend to be ignored. Top-down conservation policies without considering the perspectives of local communities can trigger resistance and potential conflicts between stakeholders. Therefore, it is crucial to balance national energy needs with socio-ecological sustainability in conservation areas, such as TNKS. This research will examine how hydropower development in

conservation areas, especially in Kerinci Seblat TNKS, can be carried out sustainably without compromising ecosystem sustainability and the social welfare of local communities. This approach is expected to help manage resource conflicts more fairly and sustainably by considering social, economic, and political factors in an integrated manner, thus supporting sustainable and inclusive conflict resolution efforts (Fernanda et al., n.d.; Ibeh et al., 2023).

This research aims to provide a comprehensive understanding of the social interaction between hydropower development and biodiversity conservation by identifying benefits and costs. By doing so, it is hoped that inclusive and adaptive policies will be created to achieve a balance between energy development, environmental conservation, and community welfare in conservation areas to create environmentally friendly energy while taking into account community welfare, so that it can contribute to renewable energy production and economic development. In Burundi, the focus on energy production capacity sometimes ignores socio-environmental impacts, potentially biasing investment interests.. (Akalili &

Sari, 2021; Ndayiragije & Nkunzimana, 2024)..

The opportunities and challenges of hydropower development around the TNKS conservation area, especially related to social-ecological impacts and the integration of local wisdom into sustainable conservation policies. This research highlights the need for inclusive and adaptive policies that ensure hydropower projects contribute to sustainable energy solutions while maintaining community welfare and environmental sustainability. (Chakraborty, 2024).

Hydropower development is considered technically and financially feasible, with a potential generating capacity of 480 MW. (Yunardi & Sudiarto, 2022) which is very significant in supporting renewable energy while still paying attention to ecological conservation and social justice. The feasibility of hydropower development must be supported by economic viability and the potential for large energy output, including the potential for population displacement, changes in local biodiversity, and social disruption. (Han et al., 2022; Shkurti, 2022).

This approach can contribute to environmental sustainability within a sustainable development framework.

(Afrizal, 2015; Ríos, 2024). Social capital plays an important role in community engagement and willingness to support hydropower projects. Strong interpersonal relationships and community engagement can increase local support for sustainable energy initiatives. (Ferico Firdauzi et al., 2024), and ensure that hydropower projects meet the needs and aspirations of local communities (Uzorka et al., 2024).

Methods

This research used a systematic literature review approach designed to review and summarize biodiversity conservation policies and socio-economic impacts associated with hydropower development in Kerinci Seblat National Park. This method was chosen as it allows researchers to explore, integrate, and evaluate information from various academic sources, previous research, and relevant policies.

To provide a more in-depth and comprehensive view, the literature review process included a series of structured steps, from the identification of clear research questions, the selection of appropriate databases, to the establishment of strict inclusion and exclusion criteria

to ensure the relevance and quality of included studies. Next, the researcher applied the literature review technique to explore and identify key themes and patterns that emerged from the information collected, thus providing richer insights into the issue under study.

In this paper, the author not only collected data, but also critically analyzed each of the selected studies, assessing their applicability, weaknesses and relevance to the research context to distill and integrate the diverse findings into a cohesive conceptual framework, thereby identifying knowledge gaps, causal factors of social and ecological conflicts and complex cause-and-effect relationships between hydropower development, conservation policies and local communities.

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to explore and identify key themes and patterns that emerged from the information collected, thus providing richer insights into the issue under study.

In order to refine this method, the researcher not only collected data at a glance but also conducted a critical analysis of each selected study, assessing its applicability, weaknesses, and relevance to the research context. This analytical technique serves to distill and integrate diverse findings into a coherent conceptual framework, thereby identifying knowledge gaps, causal factors of social and ecological conflicts, and complex cause-and-effect relationships between hydropower development, conservation policies, and local communities.

This method was chosen because it is in line with the research objectives, which are exploratory and systematic in exploring existing relevant literature, in order to develop a solid theoretical basis and uncover experiences and empirical findings from previous studies. This approach also enabled the researcher to develop recommendations based on evidence and comprehensive analysis, and helped generate a

holistic picture of the problem, so that proposed solutions could be more targeted and contextualized. Thus, this structured literature review is not only a data collector, but also a critical analysis process that strengthens the validity and reliability of the entire research.

To provide a more in-depth and comprehensive view, the literature review process was structured and systematic, encompassing several key stages. First, a specific and clear research question was identified to determine the focus of the study and direct the data search process. Second, the researcher selected relevant and reliable databases and literature sources to ensure the diversity and quality of the data collected. Thirdly, strict inclusion and exclusion criteria were set to filter out studies that were eligible and relevant to the research objectives, thus increasing the validity and reliability of the analysis results.

Next, content analysis techniques were applied to explore and identify key themes, patterns, and relationships that emerged from the selected literature. This analysis did not simply summarize the findings but also critically evaluated the applicability, weaknesses, and suitability of each study to the

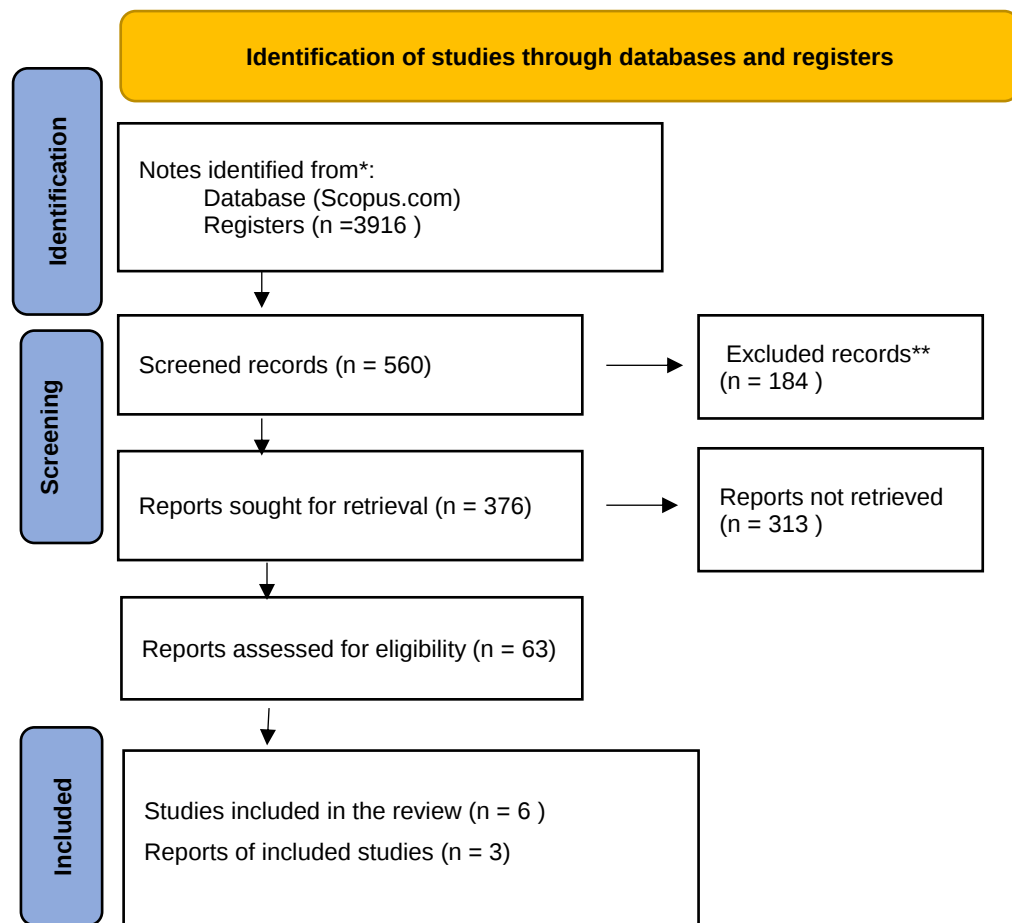
research context. As such, the process was able to identify knowledge gaps, contributing factors to social and ecological conflicts, and complex cause-and-effect relationships between hydropower development, conservation policies, and local communities.

This approach was chosen because it suited the exploratory nature of the research objectives and required a systematic literature search to develop a solid theoretical basis. In addition, these steps allow for the integration of data from various sources, resulting in a full and complete picture of the phenomenon under study. The integration of data collection, critical analysis, and synthesis of findings supports the development of evidence-based recommendations that are accurate and contextualized.

Through this structured and systematic process, the literature review serves not only as a data collector but also as an analysis mechanism that strengthens the validity of the entire research. Thus, this method ensures that the research results are not only relevant and reliable but also capable of making meaningful contributions to the development of policy strategies and

targeted solutions in the context of sustainable development.

Figure 1: Research flowchart



Through a systematic literature review approach, this research aims to provide an in-depth understanding of the complex relationship between hydropower development, conservation policies, and the resulting socio-economic impacts. The research also highlights the importance of considering the perspectives of local communities in sustainable decision-making, in the hope of generating better recommendations for equitable and

sustainable policy development in the future. These recommendations are expected to involve not only effective resource management techniques but also to strengthen the involvement of local communities in policy development processes that impact environmental sustainability and social welfare.

Data collection was conducted by searching Scopus-indexed scientific journals using the keywords "Social""Costs""Hydropower""Conserv

ation" with the result of 63 articles selected, including studies on conservation policies, socioeconomic impacts of infrastructure projects on local communities, as well as structuration theory in the context of environmental policy. Furthermore, the selection of literature used was chosen based on certain criteria, namely thematic relevance related to conservation policies, conflicts of interest in national strategic projects (PSN), and local wisdom-based approaches. The literature used was only published within the last five years to ensure that the information obtained is relevant to current policy dynamics.

After collecting relevant literature, we proceeded with a systematic literature review method to thoroughly identify key themes, emerging patterns, and significant relationships between implemented policies and their impacts on communities and the environment. Within this framework, a structuration theory approach was used to explore how local communities' responses to conservation policies can be influenced by existing development pressures, and how external and internal factors interact in this context. To ensure the process was structured and transparent, the researchers

followed the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). This method maintains the validity and reliability of findings by systematically organizing all stages of data collection and review. The initial stage begins with the identification and selection of appropriate literature from various databases and related sources. After that, an initial screening was conducted based on relevance and eligibility criteria, so that from an initial number of 184 reports or studies, 376 records remained that met the initial requirements. Next, a more in-depth screening process was conducted by assessing the relevance and eligibility of the studies based on the predefined inclusion and exclusion criteria, leaving only 11 reports deemed suitable for in-depth analysis. Finally, the quality and relevance of each report were evaluated, and only three studies met all criteria for inclusion in the final analysis. This selection process reflects the gradual progression from initial identification to selected studies, demonstrating a commitment to transparency and consistency with the methodological principles of systematic reviews. The importance of this revision of numbers and stages lies in ensuring the entire

process can be scientifically accounted for and facilitates interpretation of the results for both stakeholders and readers.

Results and Discussion

Hydropower development in the Kerinci Seblat National Park (TNKS) conservation area is a multidimensional challenge involving social, economic, and ecological aspects. In this context, such projects aim to meet national energy needs and promote economic growth, but often have major negative impacts on the environment. Such impacts include deforestation, habitat fragmentation, and changes in the hydrological cycle that can increase the risk of natural disasters such as floods and landslides. A thorough environmental assessment is therefore necessary to ensure that development does not damage already vulnerable ecosystems.

Socio-economically, local communities are the most affected by this development. They lose access to vital natural resources that support their livelihoods, and face problems with access to clean water. This situation can trigger tensions and conflicts both among residents and between communities and project managers, demanding fairness in the

distribution of benefits and management of these resources. Top-down approaches that ignore the role and knowledge of local communities often exacerbate these tensions.

In addition, this paper highlights that local communities, through their local wisdom and traditional practices, can contribute to maintaining ecosystem balance if they are actively involved in decision-making. Inclusive conservation technologies and policies will help minimize social tensions while enhancing the sustainability of such conservation practices, as affirmed in the study's conclusions and results section.

In its research methods, this paper applies a systematic literature review and the PRISMA approach, which enables a comprehensive review of studies on the social-ecological impacts of hydropower development. This approach helps to identify the various social benefits and costs that arise, and examines the important role of inclusive policies and recognition of local wisdom in achieving sustainable development. Thus, this paper emphasizes that the success of hydropower development in conservation areas depends not only on technical and economic aspects, but also on the

implementation of policies that actively involve communities and pay attention to their socio-cultural aspects to avoid conflicts and wider environmental damage.

Hydropower development in the TNKS conservation area reflects a typical dilemma between national strategic interests and environmental sustainability. The project is promoted as a green investment and part of the transition to sustainable energy sources. However, in practice, the project has the potential to threaten the TNKS conservation area by causing ecosystem damage and prolonged habitat fragmentation. Meanwhile, increasingly strict conservation regulations on local communities are often enforced repressively and without regard to the social dynamics that develop on the ground. On the other hand, these large projects gain legitimacy and higher priority from the government and investment actors, seemingly ignoring the rights and knowledge of surrounding communities.

Within the framework of structuration theory, conservation policies should be seen as the result of dynamic interactions between social structures and agents, where local communities have an important role in maintaining environmental

sustainability. Unfortunately, in practice, the policy tends to place the state as the main actor while ignoring the dynamics and local knowledge that have been part of traditional and sustainable conservation efforts. Communities around the TNKS are often at a crossroads, between accepting the impacts of development that harm them or defending their territorial rights that are increasingly threatened by national and economic interests.

In this context, social capital built through local wisdom can be an important instrument in conflict management and achieving sustainability. Indigenous and tribal communities around the TNKS area have implemented tradition-based environmental protection mechanisms, such as customary laws in forest management and sustainable agricultural practices, that have proven to be able to maintain ecosystems traditionally. However, conservation policies that do not pay attention to these aspects actually increase the distance between the interests of the state and the reality of local people's lives. Therefore, an approach that is able to balance national energy needs, environmental preservation, and improving people's welfare is needed to avoid

suppression of the rights of guardians of the ecological balance of indigenous peoples and local the region. communities who have been acting as

Table 1: Relevant research

No	Title	Summary	Research gap	Method
1	Impacts of Hydroelectric Power Plants on Ecosystems and Methods for Mitigation (Wei, 2024c) <i>Architectural Engineering and Science</i>	This research investigates the ecological impacts of hydropower, highlighting issues such as habitat destruction, hydrological changes, and changes in water quality that threaten biodiversity and disrupt local ecosystems. The research emphasizes the socio-economic challenges faced by indigenous communities affected by these developments.	It identifies critical gaps in knowledge about how hydropower projects can coexist with the natural environments they often disrupt. It emphasizes the need for more comprehensive studies that explore the long-term ecological impacts of hydropower development and the effectiveness of various mitigation strategies in different ecological contexts.	This method involves returning the ecosystem to its original state before it was disturbed by hydropower development. They include actions such as replanting native vegetation, restoring altered water flows, and rehabilitating affected wildlife populations. The involvement of local communities in these restoration activities is emphasized to ensure that the benefits are felt locally and help the ecosystem recover.
2	Feasibility study of 350 MW Kerinci Hydropower (Yunardi & Sudiarto, 2022b) <i>International Journal of Applied Electrical Power Engineering (IJAPE)</i>	The feasibility study of the 350 MW Kerinci hydropower plant, which focuses on the potential utilization of the Batang Merangin river flow, shows that the optimum electrical power that can be generated is 366.27 MW, with an annual energy production of 1,443.86 GWh. This study emphasizes the importance of renewable energy	The study does not address the long-term environmental impacts of the Kerinci hydropower development, such as impacts on local ecosystems, fish populations, and water quality, which are critical for a comprehensive sustainability assessment.	A survey was conducted at the hydropower project site in Batang Merangin sub-district, Kerinci district, Jambi province, to collect data for the feasibility study. This included assessing the potential of the Batang River flow for hydropower generation.

		sources in meeting Indonesia's growing electricity demand.		
3	Research on Ecological Operation of Reservoirs Based on Indicators of Hydrological Changes (Han et al., 2022) <i>MDPI Sustainability</i>	This research emphasizes the need for reservoir operation strategies that balance hydropower production with ecological benefits for downstream rivers, highlighting the development of an ecological index (EI) based on Indicators of Hydrological Change (IHA) to measure ecological objectives and improve reservoir management.	This paper does not address the long-term ecological impacts of the proposed reservoir operation strategy on various aquatic species and their habitats, which could provide a more comprehensive understanding of the ecological sustainability of the downstream river.	This paper develops an ecological index (EI) based on the Indicator of Hydrological Change (IHA) to measure ecological objectives downstream, which is critical for integrating ecological considerations into reservoir operation strategies.

The success of hydropower development and conservation policies relies heavily on effective collaboration between the government, local communities, and other stakeholders. By integrating the views and knowledge of local communities, we can achieve solutions that not only meet energy needs but also ensure social and biodiversity sustainability. Indigenous knowledge-based approaches and community involvement in the planning and implementation of hydropower projects must be enhanced. Involving communities not only as beneficiaries but also as key

drivers in natural resource conservation can improve the sustainability and successful implementation of such projects.

In addition, education and capacity building of local communities in natural resource management should be a major focus of development policy. By instilling the necessary skills and knowledge, communities can effectively contribute to maintaining ecosystems and promoting sustainable development. Ultimately, the success of hydropower projects and conservation policies should not only be measured by achieving energy sufficiency, but also

by the ability to create strong social networks, maintain community welfare, and protect biodiversity.

By prioritizing these values, Indonesia has the opportunity to create a more sustainable and inclusive development model. This model will not only support global efforts in environmental conservation and poverty alleviation, but also be able to balance national energy needs with social and ecological sustainability. Therefore, it is imperative to adopt a more holistic and people-oriented approach in development policies, especially in biodiversity-rich conservation areas, in order to create equitable and sustainable development.

Conclusion

An in-depth assessment of the social and ecological costs of hydropower development in the Kerinci Seblat National Park (TNKS) conservation area reveals significant tensions between the need to increase national energy capacity, environmental conservation efforts, and the socio-economic well-being of local communities. The hydropower project is at great risk of causing profound ecological disruption, including changes to the hydrological

cycle and loss of biodiversity, which is an important asset for ecosystem balance. In addition, adverse socio-economic impacts such as cultural displacement, loss of access to natural resources, and unequal distribution of economic benefits could increase social injustice and conflict at the community level.

From these findings, this research emphasizes the urgent need to transform current sub-optimal conservation policies into more inclusive and adaptive ones. The proposed policies should consider not only environmental aspects but also the social welfare of local communities. A holistic approach that integrates communities' traditional knowledge and practices into modern conservation strategies is essential for creating policies that are more environmentally friendly and socio-economically sustainable. By adopting such a framework, Indonesia has the opportunity to develop a sustainable and equitable development model, which is able to balance the fulfillment of energy needs with the preservation of ecosystems on an ongoing basis.

In line with the research objectives, using the literature review method and the PRISMA approach, emphasis is placed on the importance

of local community involvement in every stage of natural resource management. Giving communities an active role in decision-making and strengthening cooperation with stakeholders are strategic steps to ensure development and conservation go hand in hand without compromising community welfare or ecosystem sustainability. In addition, the application of comprehensive environmental assessments should be an integral part of every development project, so that ecological and socio-economic impacts can be minimized and carefully managed. With this more inclusive approach, conservation policy in Indonesia will be better able to cope with pressures from national strategic projects, while protecting community rights and ecosystem sustainability, promoting fair and equitable development for the sustainability of life in conservation areas.

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