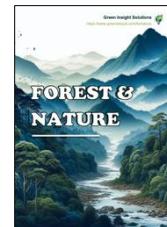




# FOREST AND NATURE

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## REVIEW ARTICLE

### Sustaining Customary Forest Governance in Indonesia: A Systematic Literature Review of Legal Recognition and Functional Authority in Riau Province

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#### ARTICLE INFO

**Article History:**

Received: 7 December 2025

Revised: 13 January 2026

Accepted: 20 January 2026

**Keywords:**

Customary institutions

Forest governance

Hybrid governance

Indigenous peoples

Institutional bricolage

**Citation:** Suworno, E., El Amady, M. R., Qomar, N., & Roslinda, E. (2026). Sustaining Customary Forest Governance in Indonesia: A Systematic Literature Review of Legal Recognition and Functional Authority in Riau Province. *Forest and Nature*, 2(1), 17-27.

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#### ABSTRACT

Despite global recognition of their crucial role, indigenous institutions in Riau Province, Indonesia, face intense pressure from agribusiness expansion, revealing a critical gap between constitutional recognition and functional authority in customary forest governance. This study aims to analyze the structural and functional roles of customary institutions in Riau's forest management and identify challenges and opportunities for their integration into national policy. Using a systematic qualitative literature review and content analysis, it synthesizes evidence from literature (2000-2025). The research findings are quite striking: Customary institutions in Riau play a very significant strategic role. They regulate ecological-spiritual zoning, enforce laws based on customary norms, and resolve conflicts restoratively. These functions are clearly essential elements for sustainable forest management. However, the gap remains. On the one hand, recognition of land ownership rights is indeed growing. However, the formal integration of customary institutions into state institutions remains very limited. The results of this study concluded that the goal of community-based forest management must go beyond mere recognition of land rights. It needs to encourage the emergence of hybrid governance. To achieve equitable and sustainable forest management—both in Riau Province, Indonesia and in the global context—bridging the gap between legal recognition and truly effective customary institutional authority is essential.

## 1. Introduction

At the global level, there is a clear paradigm shift in forest management. Previously, the management model based on the state has shifted to a more inclusive principle that recognizes the value of indigenous institutions and local communities. This is not a baseless action. Empirical evidence repeatedly shows that indigenous institutions can manage forests. The structure of customary institutions demonstrates the effectiveness of value-based regulations, known sanctions, and field-tested deliberative mechanisms to maintain ecosystems. The argument that local knowledge is relevant to sustainable forest socio-economic systems is supported by research from across the world. To give an example, Panglima Uteun in Aceh, the principle of awiq-awiq in Bayan, Lombok, and others, as reported by different investigators (Aswita et al., 2022; Harly, 2023; Panzaru, 2024). In fact, a study on the Hemaq Beniung Customary Forest by Zulfiani et al. (2025) found that its sustainability is highly dependent on the effectiveness of implementing local regulations, *awig-awig*, and customary regulations in general. Interestingly, similar patterns are also found in other locations.

In Indonesia, this paradigm shift was strengthened by the Constitutional Court (MK) Decision No. 35/PUU-X/2012. This decision is historic, changing the classification of customary forests from state forests in forestry policy. A turning point in the history of forestry policy in Indonesia is the opening of great opportunities for indigenous peoples to manage land and forests as objects regulated and managed under the customary system. This decision does not immediately go smoothly, but it still requires support in other forms than a Constitutional Court decision. It needs strong political commitment and regulatory support from stakeholders at the central and regional levels, as well as from indigenous peoples from civil society. This will happen if more equitable and participatory forest governance is seen as a must (Myers et al., 2017; Usman et al., 2018).

At the regional level, implementing the Constitutional Court's decision poses its own complexities. The process of legal recognition through the Regional Regulation is often protracted and complicated because of the layers of local government bureaucracy whose lineage is often circular and unclear. As a result, uncertainty about the rights of indigenous peoples has increased significantly. In addition, land tenure conflicts are widespread and increasingly severe, threatening forest sustainability due to overlapping claims to protected areas and company concessions. This situation is marred by weak collaboration between customary institutions and state institutional programs that should support one another (Asmin et al., 2019; Budiman et al., 2021). Concretely, the results of research by Massiri et al. (2025) in Lore Lindu National Park clearly show that the success of conservation partnerships is influenced by the clarity of social agreement and the recognition of existing local institutional structures. However, both aspects are often overlooked in forestry policy frameworks and practices.

Most previous research has focused on documenting the organizational structures of indigenous peoples and their ecological knowledge, or on the legal challenges of customary forest recognition. However, there is still a shortcoming that lies in the lack of integration between micro-ethnography and macro-policy analysis. The absence of this integrated study has resulted in substantial fragmentation of knowledge. As a result, our knowledge of the development of the relationship between customary institutions and the political landscape remains very limited, especially when discussing the implementation of policies in the institutional realm (Arizona et al., 2019).

Riau is a diverse province in terms of indigenous peoples, namely the *Talang Mamak*, *Sakai*, *Petalangan*, and *Bonai* tribes, all of which still maintain a well-functioning institutional system. This region is seen as a living laboratory for exploring local institutional dynamics. In addition, this province is a dynamic agrarian epicenter, where the development of the agro-industry directly collides with customary territories. Based on these observations, Riau shows a different side of the currency: Challenges and progress in implementing policies following the Constitutional Court Decision 35/2012. On the one hand, there are the recognized *Gimbo Pomuan* and *Imbo Putui* Customary Forests, while on the other hand, many other indigenous peoples are struggling to obtain legal recognition.

Theoretically, this research seeks to further contribute to the general discourse on common-pool resources and legal pluralism. In doing this, institutional bricolage corridors are used, primarily to build an understanding of how the symptom of interaction between customary and state systems gives rise to integrated or hybrid institutions. Thus, the results of this study can lead to strong recommendations because they are based on direct evidence for decision-makers, for example, on how to design equitable benefit-sharing schemes and effective collaborative management practices (Korol and Korol, 2025; Wahyudi et al., 2021). Our research is focused on the institutional potential of Riau's indigenous peoples. In detail, what we can learn is how this institutional potential can operate and be integrated into formal governance systems, resulting in forest management that is not only sustainable but also fair. Based on the background description, this study has two main objectives, namely: First, to analyze the function and institutional structure of customary institutions in forest management in indigenous communities in Riau; Second, to analyze the main challenges and strategic opportunities, as well as how these customary institutions can be strengthened in the current national forestry policy map.

## 2. Materials and Methods

### 2.1. Research Design and Approach

In general, this study applies a qualitative content analysis method, which is then clarified using a systematic literature review. The merger was intentional to bring together empirical and conceptual

evidence on the role of indigenous institutions in forest management in Riau Province. Such a system would not only deepen our knowledge of each case study on indigenous peoples in Riau but also enable us to examine the complex interactions between indigenous institutions and formal forestry policies. In general, this proposed method is best classified as systematic-qualitative, that is, a method that not only helps us understand the synthesis of the knowledge found but also produces organized, thematic data (Finfgeld-Connell, 2014; Graneheim et al., 2017).

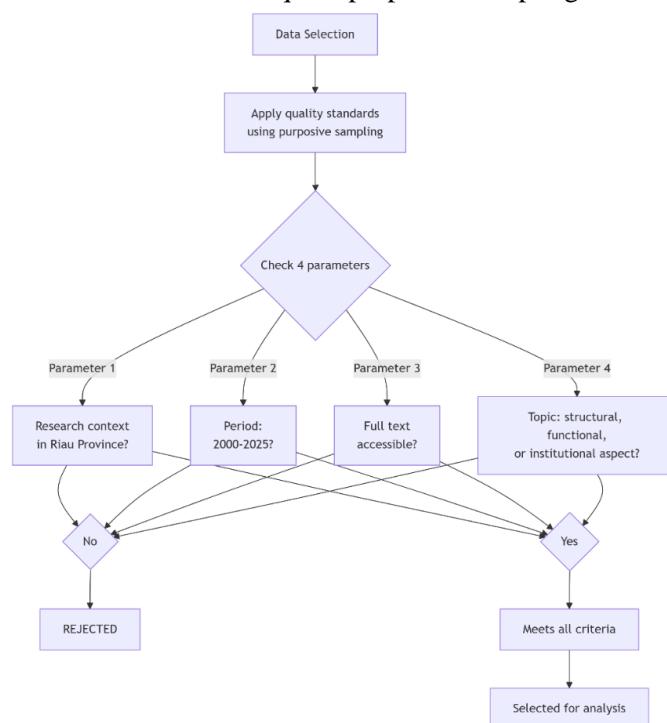
Content analysis is a primary method for detecting patterns, themes, and institutional dynamics that color the scattered literature. This method can be used for fusion between an inductive approach, derived from the data itself, and a deductive approach, geared towards rolling that theory through the data. The flexibility of this method enables an in-depth analysis of the measured patterns and the uncovering of the narrative meaning embedded in the data. Of course, this method is particularly suitable for studying complex topics with many dimensions, such as the management of customary forests (Kibiswa and Naupess, 2019; Lochmiller, 2021).

## 2.2. Data Collection Sources and Techniques

In particular, secondary data for this study were obtained through a systematic literature search, which focused on reliable sources. These sources include technical reports from non-governmental organizations, reference books, official government policy documents, articles in national and international scientific journals, and seminar materials. There are three main methods used in data collection. This includes systematic searches using well-chosen keywords, snowballing techniques to follow references, and analyzing documents in their diversity to obtain the most relevant data.

## 2.3. Data Selection

Data selection is applied to the material to be analyzed, and its quality must remain within a specified range. Four parameters are the main guidelines here. The first is that the research context should exist in Riau province. Second, the period must start in 2000 and end in 2025. Third, access to the full text of the material must be provided. Furthermore, the research topic should relate to a structural, functional, or institutional aspect. Here, in fact, the purposive sampling method is effective at filtering the relevant literature, selecting only those that meet the research's academic and thematic standards. To visualize this multi-stage filtering process, the following flowchart outlines the sequential application of the four selection parameters and the subsequent purposive sampling method (Fig. 1).



**Fig. 1.** Data selection and screening process.

#### 2.4. Data Analysis Methods

Data analysis is carried out through a series of logical and systematic steps. In order, the stages include data collection, coding, categorization, and finally extracting the main themes that emerge. In addition, this research draws on three complementary theoretical frameworks. The first is Ostrom's Institutional Analysis and Development (IAD) Framework, used to assess forest management principles. Second, the theory of legal pluralism is used to examine interactions among existing legal systems. The latter uses the concept of institutional bricolage to help us understand how incorporating traditional and modern elements into institutional practice in the field is feasible.

#### 2.5. Validity and Reliability Assurance

To ensure the study's validity and reliability, two steps were taken. The first step is to triangulate data sources by comparing different types of data. The second step is to conduct a thorough, documented audit of the data collection and analysis process to enable retracing. The combination of these two steps ensures the credibility of the information gathered from the literature and of the analysis process.

### 3. Results and Discussion

#### 3.1. Indigenous Organizational Structure: Diversity of Forms and Capabilities for Adaptive

Based on analyses of several studies, this study found an "interesting" picture. Even though they are in the same province, the customary institutions in Riau vary in structure. More than that, the structure is not something static. They develop in response to their environment's dynamics and often operate in parallel. Its distinctive feature lies in its leadership system, which is based on a complementary division of roles. This pattern, in essence, reflects the ability to adapt to social-ecological changes (Putra, 2022; Rafi et al., 2020). The complexity of the customary leadership system is evident in the configuration of customary government leadership. *Ninik Mamak*, or *Batin*, is the highest-ranking individual in life among the indigenous people of Riau. They are the custodians of ecological-spiritual wisdom, and they have full authority to establish, design and enforce forbidden areas, such as the *Rimbo Larangan* (prohibition forest) (Syafi'i et al., 2017; Yasir et al., 2022).

The people of *Talang Mamak* have a system known as the *tigo sajarangan* furnace. This system itself is an interesting phenomenon because it integrates three distinct elements: Tradition, religion, and government. The three leaders in one unit, traditional stakeholders, religious leaders, and heads of government, work collaboratively with one goal in maintaining the balance of people's lives (Mustafid et al., 2024). Meanwhile, in the *Rumbio* area, law enforcement is carried out by *Dubalang*. They serve as customary law enforcers and, at the same time, regional supervisors to monitor unlawful activities in these prohibited areas (Savitri and Rozi 2021). As for external affairs, such as relations with the government or corporations, will be handled by the traditional head (Rafi et al., 2020).

In indigenous peoples, the spiritual dimension is felt to be very thick in their daily lives. *Imams* or *Malim* play a role in ensuring this dimension is integrated into resource management by implementing certain rituals (Putra, 2022). Then there is the Customary Hall, a deliberative institution that serves as a forum for collective discourse on important decisions. Its main responsibilities include establishing customary regulations, determining sanctions, and managing customary territories (Basri et al., 2022).

In addition, customary institutions are also not static. The constant dynamics and adaptation of indigenous institutions actually attest to their ability to engage in institutional bricolage. For example, in Sentajo, the younger generation is being prepared to participate in customary deliberations focused on water resource conservation (Yasir et al., 2022). In another country, the *Imbo Putui* Customary Forest, indigenous institutions work with non-governmental organizations (NGOs) to strengthen community engagement in participatory mapping activities, while strengthening women's organizations in water resource conservation (Marnelly et al., 2025). According to the IAD Framework (Panzaru, 2024), the effectiveness of the structure is also referred to as each association's ability to produce "rules-in-use" and monitoring systems that comply with its own community. Legitimacy and internal sanction also stem from strong roots: History, spirit, and accessibility that all stretch far beyond the individual.

### 3.2. Indigenous Institutional Strategies for Ecosystem Governance

The existence of indigenous institutions has both cultural and strategic significance for conservation and sustainable management. Strong evidence shows that they are becoming a vital tool for community-based forest management (Parinding and Parinding, 2025). One of the main strategies they use is the customary zoning system. It divides the region into *rimbo*, sacred areas, *rimbo* conservation areas, and *rimbo* production areas. These are collectively limited by customary rules, with the main function serving as a regulatory tool grounded in ecological wisdom (Matsna et al., 2023).

Regarding this zoning system, a study compares two conditions. In the first case, it is a forest area with conventional spatial planning. The second is a forest area with customary zoning. There is a significant difference: The level of damage at the first location is higher than at the second location (Sulistyo et al., 2014). In addition, zoning practices are essentially a reflection of traditional ecological knowledge (TEK). It has been proven to meet three requirements simultaneously: Economic needs, conservation, and religion. In more detail, the TEK limits are more specific, such as which types of trees may be cut down, when the hunting season opens, and how land rotation should be carried out (Verschuuren, 2021).

The mechanism for enforcing customary rules derives its main legitimacy from the community's views and beliefs. This mechanism serves to carry out the supervisory and social sanction functions (Nurdin et al., 2023). Violations of the rules can be subject to various sanctions, ranging from financial fines and social punishments such as exclusion to spiritual punishments involving purification ceremonies. It is important to note that customary rules and sanctions are not uncommonly more effective than state sanctions, as Ostrom (Panzaru, 2024) has shown. In *Imbo Putui*, violations are never narrowly identified. It has always been described as a disturbance to the cosmological balance that must be restored, and of course, as a violation of the law (Tanati, 2019).

The process of resolving conflicts among indigenous peoples is carried out through deliberation. The parties who disagree sit together and deliberate to find a peaceful solution. In this area, customary institutions in *Rumbio* and *Ghimbo Pomuan* are often used to mediate conflicts between companies and communities. This task is very likely to be carried out in the region due to the social legitimacy of these institutions, which can increase the community's bargaining power (Syafei et al., 2023). Substantially, the restorative approach has a much different focus. Restorative focuses more on repairing damaged relationships than on who wins and who must lose (Kusumaningsih and Wuntu, 2025).

Indigenous peoples have a distinctive paradigm of nature conservation, grounded in ecological-spiritual conservation, with spiritual prohibitions and norms considered sacred by custom. Forbidden areas are not only physically restricted from exploitative activities, but also elevated to the sacred realm. Often, these "belief-based threats" are much more effective and efficient at preventing harm compared to formal "state" threats (Billet et al., 2023). This can be considered a component of local political ecology. In this case, conservation is governed by deep values embedded in the collective consciousness across different countries and does not occur for economic reasons or other material gains or losses. So, for the people of *Talang Mamak*, clearing land without customary formalities is considered not just a prohibition, but a direct insult to their ancestors (Fios et al., 2021).

How is this traditional local knowledge preserved from one generation to the next? This process takes place through the service of the cultural mechanisms that live among them. Participation in traditional deliberations, youth involvement in traditional rituals through storytelling, and the implementation of annual rituals are all channels for the transmission of ecological and cultural knowledge (Akhmar et al., 2023). It is through this mechanism that, if preserved, the inheritance of indigenous values, as so-called cultural biodiversity, is a real, shared, synergistic interaction between a community's biodiversity and culture. In this way, knowledge of plant cycles, hunting calls, medicinal tree varieties, and forest ceremonial ordinances is inherited (Hosen et al., 2020).

### 3.3. Organizational Interactions: Interactions with Countries and Markets

This study identifies various paradoxes and complex dynamics in the interactions among customary institutions, the state, and the formal market system. As explained above, since the issuance of the Constitutional Court Decision 35/2012, the recognition of customary forests—such as *Gimbo Pomuan* and *Imbo Putui*, as well as others still in process—has increased formal legal recognition in the region (BRWA, 2023). However, a finding no less important than the results of this study is that recognition

of territory is not necessarily accompanied by recognition of customary institutions. Many indigenous institutions have their areas mapped by BRWA, but this initiative has not been recognized as an official partner in preparing forest management plans at the site level through the establishment of the Forest Management Unit work plan.

Furthermore, from a legal pluralist perspective, this situation appears to involve regulatory fragmentation and overlapping authority conflicts (Swenson, 2018). For example, in terms of zoning arrangements, official government forest zoning maps often cause problems in the field, as areas are historically and culturally considered protected or sacred by indigenous peoples. In contrast, the government allocates it as an industrial plantation forest (HTI) concession area (Fikri, 2024). The use of government authority that ignores the interests and noble values of indigenous peoples is one of the triggers for tenure conflicts. In many government programs, customary institutions are currently placed only as “complementary” to government social forestry programs, rather than as equal primary authority holders in forest management.

However, this does not mean that there is no hope at all. This research also identified several integration patterns that are fairly new and promising. The direct involvement of *Ninik Mamak* in verifying the legality of timber and surveillance areas, for example, proves a co-management practice that can flourish. This pattern has so far been applied in several forest management units (FMUs) (Wahyudi et al., 2021). On the other hand, in peat conservation, there is a breakthrough, especially in the payment for environmental services (PES) scheme, where indigenous peoples in Kampar Regency are seeking to build a partnership based on the ecosystem services they manage (Nugroho et al., 2022). There are innovations at the local government level. In addition, the Kampar Regency government has issued a Regent Regulation that expressly includes customary institutions in the village development process (Daulay et al., 2023).

### 3.4. Sustainability Challenges: Endogenous Dysfunction and Exogenous Stress

Beyond its strategic role, the sustainability of customary institutions also faces various challenges. From the outside, such strong exogenous pressures are coming, especially from the expansion of oil palm plantations and industrial plantations. This expansion broke the interwoven social and ecological threads that had been built over the centuries. There is no denying that the existence of large corporations with their homogeneous and often closed economic and legal systems, sometimes directly and often indirectly, undermines the authority and space of customary institutions. The licensing system for large companies—top-down licensing that excludes indigenous peoples—further alienates indigenous institutions from the decision-making centers that should be involved (Rositah et al., 2021).

From within, endogenous dysfunction has also begun to erode the resilience of customary institutions. The most visible indicator is the decline in intergenerational knowledge transmission. The younger generation is mostly preferring careers in the formal sector in cities, as they tend to be more economically promising and privileged. This is a natural thing. However, the consequences are certainly very serious, namely hindering the process of rejuvenating local leadership. Similarly, the content of local wisdom often receives little serious attention in formal education. As a result, the loss of traditional ecological knowledge (TEK) is accelerating. In fact, this TEK is one of the main pillars of customary institutions, especially in forest management (Anugrahsari et al., 2020).

### 3.5. Towards Hybrid Governance: Combining Opportunities to Improve

Based on the findings disclosed above, this study proposes an alternative model, hybrid governance. The hybrid governance framework is built on three integrated principles that serve as its foundation. The first principle is the principle of coexistence. This principle requires the existence of customary institutions and state institutions, which must be recognized and treated as two systems that complement each other and, in this case, should not deny each other. It offers a way out of the dynamics of exclusive marginalization. The second principle is subsidiarity. As the name suggests, it refers to decentralization, in which decision-making authority is placed at the institutional level where more resources are managed (Varga, 2025). The third principle is the principle of complementarity. This principle emphasizes that integration must be reciprocal and complementary. With this principle, it serves as the foundation for uniting the excellence of science with a modern, structured administrative system and invaluable traditional ecological knowledge (Hoagland, 2017).

Some concrete implementation steps that can be considered to support the above principles are as follows: First, accelerating the comprehensive recognition of customary territories and institutions. This stage can be achieved by creating a legal instrument that simplifies the verification of customary forests while recognizing customary institutions as legal position holders. Second, the establishment of a permanent forum. This forum should provide a place where indigenous institutions can actively and sustainably contribute to the planning and monitoring process of forest management (Wahyudi et al., 2021). The goal, in addition to sharing knowledge, is also to realize a collaborative management framework at the appropriate level.

Furthermore, the third is to integrate traditional values into planning. Customary values and zoning systems must be formally recognized and integrated into the region-based development planning system. For example, it is recognized in the regional spatial plan (*Rencana Tata Ruang Wilayah/RTRW*) document, and this recognition is intended to foster appreciation through an ecosystem service incentive scheme that encourages customary institutions to implement these values in the field (Sulistyawan et al., 2018). Fourth, cultural and institutional revitalization programs. Through this program, customary law documentation, the opening of customary schools, and internship opportunities for the younger generation can be carried out. All of these programs aim to ensure leadership regeneration and the sustainability of TEK transmission (Wang and Liu, 2024). Finally, strengthening capacity and networking. This final step is to strengthen the internal capacity of indigenous institutions through training, advocacy, and institutional negotiation training. In addition, it is necessary to establish and activate networks among indigenous institutions as spaces for learning, exchange, and collective solidarity (Mardahtullah et al., 2025).

In the end, strengthening customary institutions is not just a symbolic cultural agenda. Based on the synthesis of the analysis carried out in this study, we find a very strong argument for a strategic sustainable development agenda. The future of forest governance in Riau – and perhaps in many other places – depends heavily on our collective recognition and ability to develop a hybrid institutional model. It can include and blend traditional and modern elements, such as the principles of collaborative forest management and PES incentive schemes. It must be a smart model that allows the two to coexist without undermining the local legitimacy that is its main soul and support.

#### 4. Conclusion

Riau's customary institutions have proven to provide several strategic functions that are very important for the management of forest ecosystems. These functions include: (1) Regulatory functions through ecological-spiritual zoning systems (prohibitions, reserves) that have proven effective in providing optimal allocation of space and resources; (2) The law enforcement function based on social legitimacy and customary sanctions, can produce a high level of compliance; (3) Conservation functions that are not separated from moral principles, where conservation behavior forms the moral-cultural obligations of indigenous peoples; and (4) The function of conflict resolution through customary deliberation that emphasizes recovery and maintaining social cohesion. However, the journey is not as smooth as the concept or as it should be. Serious obstacles and threats stem from the still weak legal recognition of the authority of customary institutions, their fragmentation and overlap, and the persistent intense pressure from the extractive industry. These threats severely threaten the above key functions. Thus, the way forward must be clearer. Strengthening the sustainability of customary institutions can no longer be partial or merely symbolic; It should be focused on two main things: the explicit formal recognition of their strategic functions, and the substantial integration of those strategic functions – not just formalities – into a continuous collaborative management scheme operating at the site level. In this way, indigenous institutions are allowed adequate space and capacity to optimize and, at the same time, preserve their original contributions—a priceless contribution to conservation efforts and the achievement of truly fair and sustainable forest governance.

**Acknowledgments:** We are grateful to the Faculty of Forestry and Science, Lancang Kuning University, for facilitating and financing part of this research.

**Author Contributions:** E.S.: methodology, formal analysis, writing – original draft preparation, project administration, funding acquisition; M.R.: conceptualization, writing – review and editing; N.Q.: methodology, formal analysis, resources; E.R.: conceptualization, resources; methodology, formal analysis.

**Funding:** This research was financially supported by the Faculty of Forestry and Science, Lancang Kuning University, as mandated by Decree Number 231.A/Fahutsains/Pen/VI/2025.

**Data Availability Statement:** The data supporting this study are available from the corresponding author upon reasonable request.

**Conflicts of Interest:** The authors declare no conflict of interest.

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