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The existence of customary forests within the context of the mukim customary law in Aceh, Indonesia: Contemporary perspectives and future challenges on climate change

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The existence of customary forests within the context of the mukim customary law in Aceh, Indonesia: contemporary perspectives and future challenges on climate change.

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ABSTRACT

This research focuses on the existence of customary forests within the context of the mukim customary law system in Aceh, Indonesia. Mukim, as the traditional institutions in Aceh, hold the responsibility to protect the customary forest. The study examines contemporary perspectives on managing and protecting customary forests in the face of climate change and considers future challenges. Customary forests are integral to the local communities, providing ecological, economic, social, and cultural benefits. Their governance is deeply rooted in the mukim customary law, a traditional legal system governing multiple villages within a mukim area, overseen by a mukim leader. Despite legal recognition, customary forests face numerous challenges from external pressures and internal dynamics. This research to (1) analyze the current legal framework supporting the recognition and management of customary forests in Aceh, (2) assess the role of customary law in the governance and conservation of customary forests, (3) identify contemporary challenges, including land conflicts, climate change impacts, infrastructure development, legal enforcement, and socio-cultural shifts. The research employed a qualitative approach, examining legal documents, government policies, and academic literature on customary forests and mukim customary law. Interviews with local leaders, community members, and government officials provided primary data on current practices and challenges. Detailed case studies of specific mukim areas illustrated successful practices and critical issues in forest management. This study bridges traditional practices and modern legal frameworks, supporting Aceh's sustainability of customary forests. By addressing the strengths and challenges within the mukim customary law, this research seeks to support community resilience against external pressures and contribute to broader discussions on indigenous rights and environmental conservation. The key deliverables of this project are of significant importance. They include a comprehensive report that details the legal, social, and environmental aspects of customary forest management within the mukim customary law framework. This report provides an in-depth analysis of current implementations, their effectiveness, and the challenges communities face in sustainably managing these forests. Additionally, actionable policy recommendations are proposed for policymakers, focusing on enhancing legal protections, fostering community participation, and addressing challenges like environmental degradation and climate change. Finally, the study contributes to academic discourse, enriching the field of customary forest management and indigenous law in Indonesia.

INTRODUCTION

Background

Indigenous forests in Indonesia, including those in Aceh, play a crucial role as cultural heritage and vital components of the global ecosystem (Ismi, 2013). Land is a fundamental asset in Indonesia, underpinning the nation's development and the societal significance, particularly within customary law communities. According to the Ministry of Environment and Forestry (KLHK), in 2023, Indonesia's forest area spans 125.7 million hectares, or 65.5% of the country's land area, including the forests of Aceh (https://indonesia.go.id/kategori/budaya/8494/simontana-inovasi-digital-penjaga-kelestarian-hutan-indonesia?lang=1).

Based on KLHK Decree Number: 580/MENLHK/SETJEN/SET.1/12/2018, Aceh's designated forest is 3,551,329 hectares, or 55 percent of its land area. However, Aceh's forest cover has been declining; the HAKA Foundation, an NGO monitoring Aceh's forests, reported a loss of 72,124 hectares from 2018 to 2023, with 8,906 hectares lost in 2023 (https://www.mongabay.co.id/2024/04/21/tutupan-hutan-aceh-berkurang-bencana-alam-mengancam/). This decline risks carbon storage, water cycle regulation, climate stability, and biodiversity and contributes to global warming.

Although several formal government policies have been implemented to control the rate of deforestation through the concept of sustainable forestry development, such as Law No. 32/1999 on Environmental Protection and Management, Law No. 41/1999 on Forestry, and Law No. 18/2013 on Prevention and Destruction of Forests, empirical evidence shows that the rate of deforestation continues to increase every year.

In this context, Aceh's *mukim* customary institutions can potentially mitigate forest loss through local wisdom and traditional practices (Mansur et al., 2023). However, securing legal recognition for customary institutions and forests has often been delayed. For instance, the *mukim* institution achieved legal status only after years of advocacy since 2017, and recognition of its customary forests was only granted on September 7, 2023, while forest loss continued annually.

Forest management, particularly of customary forests in Aceh, is governed by *mukim* customary law, where *mukim* institutions play an essential role in controlling deforestation (Yanti et al., 2022). This system is part of a broader traditional legal structure, (Nurdin, 2019; Ramadhan & Perkoso, 2015), emphasizing environmental protection, sustainability, and preservation (Fauzi Rahmat, 2023). However, deforestation persists, despite many government policies controlling it (Saweri et

al., 2023). Consequently, it poses ongoing climate risks such as floods and landslides, which impact various Indonesian regions, including indigenous communities in Aceh.

Mukim customary law guides indigenous communities in sustainable forest management, reflecting a centuries-old symbiotic relationship with the environment. Customary forests hold not only ecological but also spiritual and social value. This management system incorporates practices like resource access restrictions (*pantang larang*), sustainable resource use, and the enforcement of local rules that uphold forest sustainability. However, in the recent decades, indigenous forests, including those in Aceh, face increasing threats from climate change, manifesting in rising temperatures, altered rainfall patterns, and more frequent natural disasters such as extreme drought or flood which damages the structure and function of the forest. These changes affect forest ecosystems by stressing plant and animal species, disrupting biodiversity, and increasing wildfire risks.

In addition to climate pressures, indigenous forests are threatened by deforestation and land conversion for agriculture, plantations, and settlements. Such activities degrade forest area, soil quality, and ecosystem balance. Unsustainable land uses, such as oil palm plantations, disrupt customary management practices, threatening the preservation of existing *mukim* customary law. For instance, oil palm plantations in several Aceh regions are linked to flooding, which, while debated scientifically, is attributed by *Mukim* Batu-Batu residents in Subulussalam City to land clearing by oil palm companies. This flooding has disrupted local transportation and destroyed landmarks, like the Silangit-langit waterfall, vital for eco-tourism and indigenous livelihoods (Interview, *Mukim* Batu-Batu, Subulussalam, 2024).

In light of these challenges, evaluating how *mukim* customary law can adapt to climate change and modern pressures is essential. This research addresses critical questions on customary forests within *mukim* customary law and identifies the challenges they face from climate impacts. It also explores solutions and strategies to ensure customary forests continue providing ecological, social, and cultural benefits to local communities. With the rise of global issues such as climate change, understanding how *mukim* customary law can adapt to these pressures is vital for preserving the integrity and function of indigenous forests.

By examining the the relationships between *mukim* customary law, forest management, and climate resilience, this research aims to identify effective approaches to protect customary forests and address challenges posed by climate change.

LITERATURE REVIEW

Climate change is one of the most significant ecological and social challenges of the 21st century (Dietz et al., 2020; Surmaini et al., 2023). Various initiatives, such as the Reducing Emissions from Deforestation and Forest Degradation (REDD+) program and indigenous community-based forest management in regions like Melanesia, Indonesia, and other Southeast Asian countries, have been implemented to address this challenge (World Wildlife Fund, 2014). (Rato, 2021; Wong et al., 2023). However, REDD+ faces significant challenges, particularly misaligned incentives and limited stakeholder engagement. On the other hand, customary forest management grounded in local wisdom has positively impacted forest conservation. However, it encounters barriers to community participation, rights recognition, and policy implementation. Studies on REDD+ in Melanesia indicate benefits, such as community development and job creation, though obstacles still need to be addressed (Rato, 2021), such as insufficient incentives and policy misalignment with local interests (Wong et al., 2023). These issues have led to low community participation in the REDD+ program. Addressing these issues requires policies that strengthen property rights, promote equity, and offer competitive financial incentives for conservation.

The Role of Traditional Knowledge in Climate Change Adaptation

Traditional knowledge has been recognized as a critical component in climate change adaptation, facilitating collaboration between scientists and indigenous communities (Legionosuko et al., 2019). Such partnerships enable mutually beneficial knowledge exchange; however, research indicates that these discussions often focus on social aspects, overlooking cultural, legal, and governance dimensions crucial to equitable partnerships. Free, prior, and informed consent (FPIC) is essential for sustainable and fair collaborations (Maldonado et al., 2014). Traditional knowledge plays an important role in helping local communities adapt to climate change (Mandala et al., 2020). In Indonesia, where indigenous communities heavily depend on natural resources, traditional knowledge is vital for sustainably understanding and managing ecosystem changes (Haslinah et al., 2023).

Indigenous communities possess detailed knowledge of local weather patterns and soil conditions. Lubis (2022) highlighted how some Indonesian indigenous communities employ agricultural techniques like shifting cultivation, which allows soil regeneration and helps reduce land degradation, maintaining land productivity during uncertain weather. Additionally, traditional knowledge aids in biodiversity conservation, which is crucial for long-term ecosystem stability. For example, Berkes et al. (2000) found that indigenous communities often conserve diverse plant and animal species,

which supports food security and local resources (Hasid et al., 2022). By preserving biodiversity, these communities foster environments more resilient to climate change.

Indigenous peoples also have local knowledge to detect early signs of natural disasters, such as earthquakes, floods, and droughts (Sukmala & Zuriyani, 2023). In coastal areas, communities use traditional methods to detect wind and wave changes that signal storms or tsunamis, enabling early preventative measures. This knowledge is invaluable as climate change leads to more frequent disasters (Risky Surya Pratama et al., 2022). Indigenous communities in peatland regions, like those in Kalimantan and Sumatra, understand how to manage peatlands without draining or damaging them, employing sustainable methods that contrast with environmentally harmful plantation practices (Pinem, 2016; Foresta et al., 2000). Such knowledge is vital for peatland restoration efforts, as degraded peat is a significant carbon emission source.

Traditional knowledge also includes knowledge of plant species resistant to extreme weather. For example, indigenous communities in Papua plant endemic trees that enhance carbon sequestration and benefit local ecosystems (Nugroho, 2016; Soendjoto et al., 2022). Research by Mansur et al. (2019), aligns with these findings, noting that well-managed customary forests serve as natural carbon sinks, critical for climate mitigation.

Efforts to Reduce Deforestation in Indonesia

In Indonesia, efforts to curb deforestation include involving customary institutions and recognizing traditional knowledge in forest management. Recognizing and protecting customary forests are essential to realizing indigenous rights, as demonstrated in Central Kalimantan (Farina et al., 2024). However, this system faces challenges, such as overlapping licenses that disadvantage indigenous communities (Ridwan et al., 2023)hingga saat ini belum ada Peraturan Daerah (PERDA. Customary law-based forest management holds significant potential for climate change mitigation by involving local communities as forest rangers (Ifrani et al., 2019). In West Papua, however, limited customary forest areas and insufficient government recognition present obstacles to effective community-based forest management. While an accelerated social forestry program has been implemented, it primarily emphasizes village forests, leaving customary forests with limited attention. The recognition of customary forests is considered an important measure towards more equitable and sustainable forest management in West Papua.

Research by Wijaya et al. (2017) evaluated the Indonesian government's forest moratorium policy, which restricts primary forest and peatland clearance. While the policy has reduced deforestation,

challenges remain in monitoring and enforcement, particularly at the local level (Berliani et al., 2016). Strengthening local monitoring and government capacity is necessary to enhance the policy's effectiveness.

Strengthening the Role of Customary Institutions in Forest Management

Constitutional Court Decision No. 35/2012 strengthened customary institutions' roles in forest management in Indonesia (Arfa et al., 2016). These institutions are now responsible for monitoring, conflict resolution, and decision-making in forest resource management. Collaboration among stakeholders is essential to protect indigenous rights and ensure sustainable forest management. However, the role of customary institutions in forest conservation faces challenges, primarily as many community members work for companies encroaching on their territories (Gorby et al., 2023). Despite these challenges, customary institutions work to raise awareness of the importance of forest protection. In Aceh, the Pawang Hutan customary institution has managed forest resources since the Sultanate of Iskandar Muda, actively involving the community in sustainability efforts (Azwir et al., 2016; Yulia & Herinawati, 2022). Recent initiatives to promote customary law in regions with extensive forests aim to increase community awareness of sustainable forest management.

In Bukit Marang Customary Forest in Landak District, indigenous customs, including values, norms, ethics, and specific regulations, have proven effective for forest conservation (Resti et al., 2022). Customary institutions like Temenggung, Pasirah, and Pangaraga use a values-based approach to enforce conservation through customary law. However, customary law-based forest management faces challenges, including insufficient incentives and limited recognition of customary rights (Angelsen et al., 2013). This study emphasizes the need for policies that integrate traditional knowledge and involve indigenous communities in forest management to ensure the success of environmental programs.

Strengthening customary institutions is crucial for mitigating climate change and sustaining forest ecosystems. The *Mukim* Customary Institution in Aceh, in particular, plays a critical role in preserving customary forests; however, research on this topic remains limited. These institutions are responsible for enforcing customary laws governing forest use and protection and monitoring community activities to prevent environmental degradation. Additionally, the *Mukim* customary institution empowers the community, promoting awareness of forest conservation through educational initiatives. Community involvement in decision-making is a central focus of this institution, fostering a sense of ownership and responsibility for forest protection. However, social

and economic changes, conflicts with external interests, and insufficient policy support present obstacles. Comprehensive research is needed to explore the challenges faced by *mukim* customary institution in managing Aceh's customary forests and develop recommendations that strengthen its role in natural resource conservation.

RESEARCH METHOD

Types of research

This study employed a qualitative method with a case study approach to facilitate an in-depth understanding of the phenomena and dynamics involved in customary forest management under *Mukim* customary law in Aceh. The case study approach enabled an exploration of the specific context in which customary law operates, examining how climate change and other factors influence such forest management practices.

Research Location

This research was conducted across various regions in Aceh Province, Indonesia, where *Mukim* customary law governs the management of customary forests. These locations were strategically chosen to reflect diverse practices in customary forest management and the challenges encountered by local communities, particularly in climate change.

Interviews

Interviews were carried out with indigenous leaders, community representatives, environmental observers, and other relevant stakeholders, including local government officials and members of non-governmental organizations (NGOs). These interviews aimed to gather information on forest management practices under customary law, perceptions of climate change impacts, and the challenges associated with implementing *Mukim* customary law.

Field Observation

Researchers visited customary forest sites to observe environmental conditions, management practices, and interactions between local communities and their forests. These observations provided a more comprehensive understanding of *Mukim* customary law in practice and insights into the impacts of climate change that may not be fully captured through interviews.

Document Analysis

The analysis included laws, regulations, government policies related to customary forests, previous

research reports, and traditional records from indigenous communities. This provided a historical and legal context to better understand the development of Mukim customary law and customary forest management and the interaction between national and local policies and customary practices.

Data Analysis

Qualitative data from interviews and observations were analyzed using thematic analysis to identify key patterns, themes, and categories related to customary forest management and climate change impacts. Data from various sources—interviews, observations, and documents—were compared and verified to ensure accuracy and credibility. Where applicable, qualitative analysis software was used to systematically categorize and analyze the data, supporting the reliability of the findings.

Validity and Reliability

The validity was maintained by selecting relevant informants, utilizing diverse data collection techniques, and triangulating data from multiple sources. Reliability was enhanced through precise recording of interviews, detailed documentation of observations, and a consistent data analysis process.

Results

What is Mukim?

Historically, the mukim in Aceh is referenced in the Kanun Syarak manuscripts of the Aceh Kingdom from the 16th-17th centuries. The *mukim* served as one of the governmental structures of the Aceh Kingdom, overseeing several villages. However, following Indonesia's independence, Law 5/1979 ceased to recognize local institutions except for villages, weakening the *mukim* structure. The *mukim* was revitalized after the Indonesian reformation 1998, when Aceh was granted special autonomy and privileges. Under this new policy, the *mukim* operates beneath the sub-district head, overseeing multiple villages.

The *mukim* is a traditional institution in Aceh that plays a crucial role in supporting government programs and enforcing customary law at the *mukim* level. It is led by a chairperson known as Imeum *Mukim*. In implementing government programs, the Imeum *Mukim* typically receives directives from the sub-district head or coordinates with village heads within the *mukim* area. The Imeum *Mukim* often supervises development activities across villages in their jurisdiction. In the enforcement of customary law, the Imuem *mukim* has two primary authorities. First, it handles unresolved customary cases elevated from the village level. Second, it enforces customary law in cases that fall directly under *mukim* authority, such as disputes over village boundaries, violations involving the *mukim*'s customary forests, regulation of irrigation for rice fields, and breaches of the river customary prohibitions.

Given the extensive area under the *mukim*'s jurisdiction, specifically for the second authorities, Imuem *mukim* is supported by some customary leaders. Each sector has a designated leader under the *mukim*: the forest unit is led by the Panglima Uteun or Pawang Glee, the rice field unit by the Kejruen Blang, the plantation unit by the Petua Seuneubok, and the river unit by the Panglima Krueng. Each of these leaders has specific duties regulated by the *mukim*. For instance, in the forest sector, the Panglima Uteun is responsible for ensuring that the indigenous community follows all provisions of customary forest law. For further details, see Figure 1.

Figure 1. The relationship between government structure and Mukim Institutions

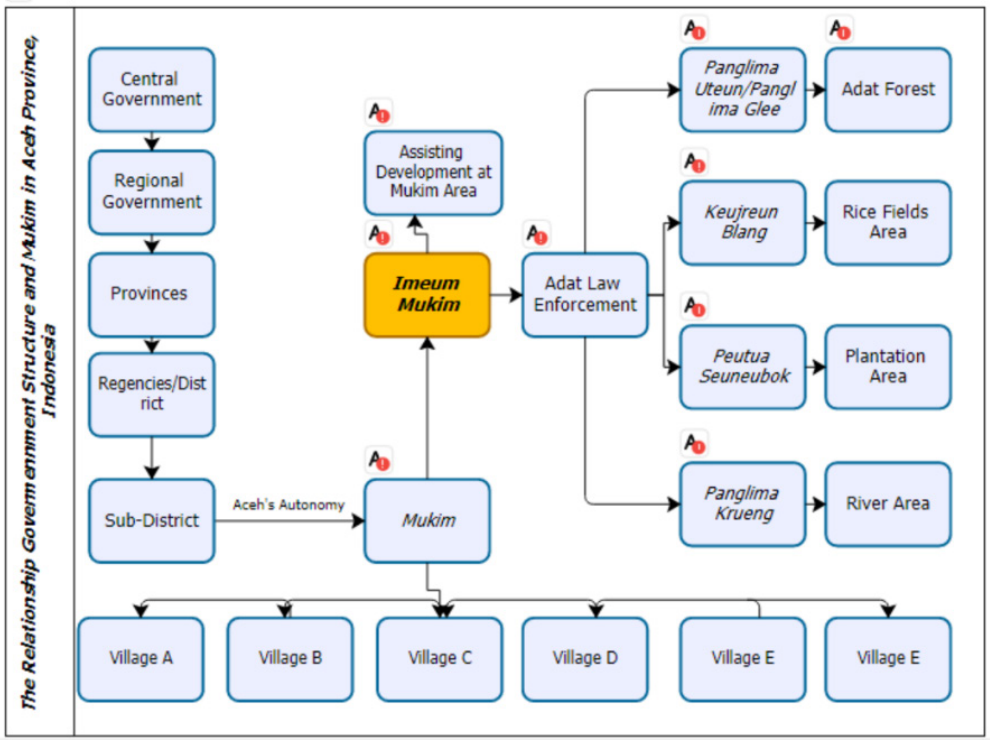


Figure 1 illustrates the government structure in Indonesia, from the central government to the village level. In Aceh, with special privileges and autonomy granted through Law No. 44/1999 and Law No. 11/2006, the *mukim* institution exists under the subdistrict head and above the village government, a unique structure not found in any other Indonesian province.

Figure 1 also highlights that the *mukim*, led by the Imeum *Mukim*, has both a regional development role and the authority to act as a customary leader. In fulfilling its customary leadership function, the *mukim* is supported by customary leaders as mentioned previously. Each customary leader reports to the Imeum *Mukim*, who addresses any customary law violations within their respective sectors.

The study's findings indicate that the *mukim* customary institution remains actively engaged in upholding customary law in Aceh, thereby strengthening its role in protecting and monitoring customary forests against illegal logging and legal encroachment. This commitment is evident in the dedication of the Imeum *Mukim* to coordinate and enhance their organization to achieve forest protection goals. NGOs, such as the Indigenous Peoples Community Network (JKMA), the World Resources Institute (WRI), HUMa, and the Forest, Nature, and Environment of Aceh (HaKA Foundation), play a critical role in empowering the *mukim* and raising awareness about the importance of their role in sustaining forest health. Consequently, the *mukim* customary forest has become a pioneering force in controlling deforestation, with positive impacts on reducing global warming, maintaining forest ecosystems, and preserving biodiversity, thus ensuring **ecological equilibrium**.

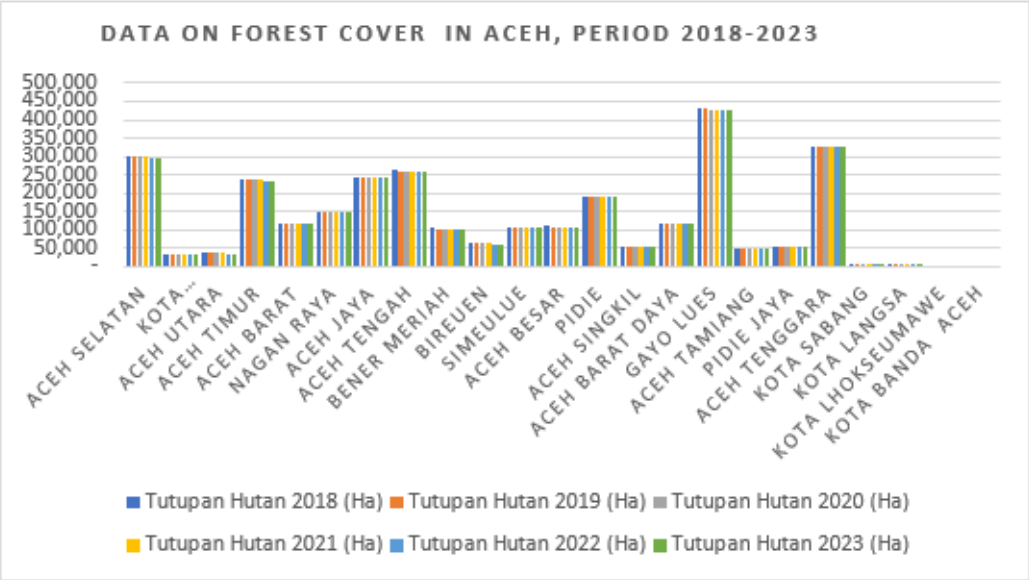
Geographical Conditions of Forests in Aceh

Its location and tropical climate deeply shape the geography of Aceh's forests. Situated on the western tip of the Indonesian island of Sumatra, Aceh is bordered by the sea to the west, north, and east, with a central mountain range that creates a rich array of ecosystems, including tropical rainforests. Its varied topography—from coastal lowlands to inland mountainous regions—supports diverse forest vegetation, particularly in the densely forested, biodiversity-rich Bukit Barisan Mountains.

Aceh's wet tropical climate, characterized by high annual rainfall, fosters lush vegetation and a variety of tree species, such as meranti and teak. The forests are also home to numerous endemic species, including Sumatran orangutans, Sumatran tigers, and Sumatran elephants, along with a range of medicinal plants and timber-yielding trees. However, these forests face significant threats, such as deforestation for agriculture, oil palm plantations, illegal logging, and natural disasters like forest fires, which can damage ecosystems and reduce forest cover.

Several forest areas, including the Gunung Leuser National Park, have been designated national parks and conservation areas. These areas play a crucial role in preserving biodiversity and protecting rare species. Moreover, the forests in Aceh are not just a natural treasure, but also a source of livelihood and a cultural and spiritual asset for local communities. This social and economic value further underscores the importance of conservation efforts to sustain these invaluable forest resources and biodiversity.

Figure 2. Data on Forest Cover (*tutupan hutan*) in Aceh, Period 2018-2023



Based on the data in Figure 2, forest cover in various regions of Aceh has declined from 2018 to 2023. In South Aceh, for example, forest cover decreased from 301,256 hectares in 2018 to 295,397 hectares in 2023. Regions with high forest cover percentages, such as Gayo Lues (77%) and Aceh Tenggara (79%), also experienced slight declines. However, they remain the areas with the most extensive forest cover in Aceh. In Gayo Lues, forest cover decreased from 430,220 hectares in 2018 to 427,003 hectares in 2023.

On the other hand, regions with smaller forest cover, like Langsa City and Sabang City, showed forest cover percentages of 9% and 24%, respectively, and experienced minimal changes over this period. Other areas with low forest cover, such as North Aceh and Aceh Tamiang, exhibited similar patterns, with 13% and 23% forest cover percentages.

While most regions witnessed gradual declines in forest cover, some areas, such as Pidie Jaya and Simeulue, remained relatively stable. Simeulue, for instance, saw only a minor decrease from 106,980 hectares in 2018 to 105,086 hectares in 2023. This general decline in forest cover across Aceh highlights ongoing environmental degradation that warrants further attention.

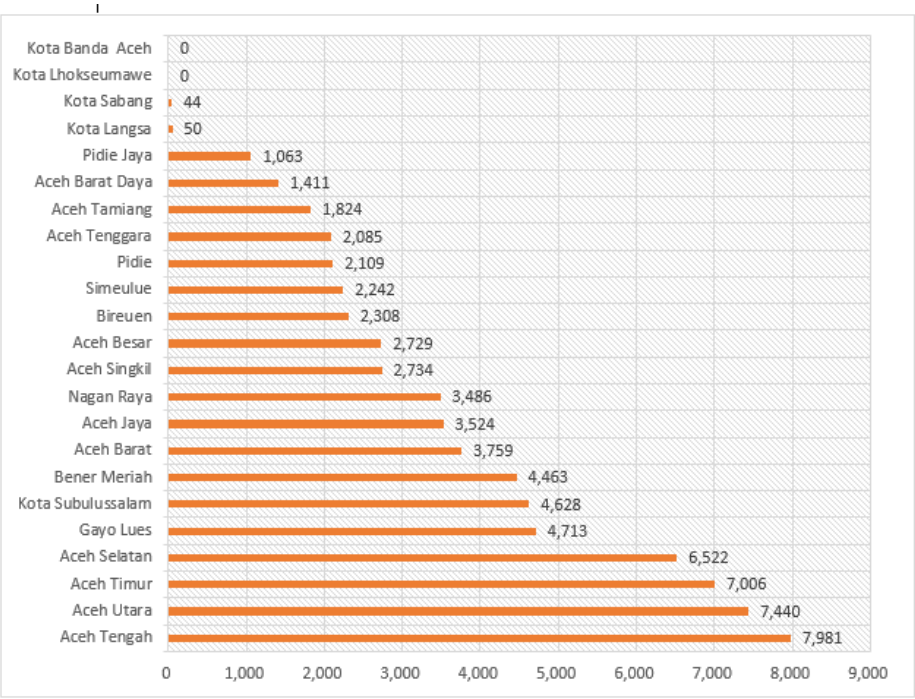
The data from 2018 to 2023 reveal an alarming downward trend in forest cover in various regions of Aceh. The significant loss in South Aceh, from 307,774 hectares to 295,397 hectares, underscores the adverse effects on local ecosystems and natural resources. Although areas like Gayo Lues and Southeast Aceh still maintain high forest cover (77% and 79%, respectively), the observed decline, though small, signals ongoing environmental degradation. This decline can be attributed to factors

such as agricultural expansion, oil palm plantations, forest encroachment, and unsustainable economic activities, which contribute to biodiversity loss and increase the risk of natural disasters. In areas with smaller forest cover, such as Langsa City and Sabang City, the stability in forest percentages does not necessarily indicate healthier conditions but may reflect restricted access to forest resources or limited rehabilitation efforts. The decline in high-cover areas, alongside the stability in low-cover areas, underscores the critical need for urgent action to develop effective and sustainable forest management strategies. Responsible resource use is key to preserving our forests for future generations.

While regions like Pidie Jaya and Simeulue exhibited minimal change, the overall decline in Aceh's Forest cover underscores the need for stronger forest protection policies and reforestation initiatives. This instability poses challenges to environmental sustainability, threatens forest-dependent communities, and intensifies climate change impacts, increasing the likelihood of natural disasters.

Bireuen District also experienced a downward trend, with forest cover declining from 62,918 hectares in 2018 to 61,043 hectares in 2023—a loss of 2,308 hectares. In Subulussalam City, forest cover decreased from 35,588 hectares in 2018 to 32,064 hectares in 2023, representing a loss of 4,628 hectares over six years. Figure 3 highlights the rate of forest cover loss from 2014 to 2023.

Figure 3. Total deforestation rate in Aceh Province, Period 2018-2023



Data on forest cover loss across various districts and municipalities in Aceh from 2018 to 2023 in Figure 1 reveal trends that differ by region. The total deforestation over these six years reached 72,124 hectares. Several districts, including Central Aceh, North Aceh, East Aceh, South Aceh, Gayo Lues, and Subulussalam City, experienced significant annual forest cover losses. For instance, Central Aceh saw a total forest cover reduction of 7,981 hectares, peaking in 2019 with a loss of 2,539 hectares before declining to 469 hectares by 2023. In East Aceh, deforestation peaked in 2019 with 1,493 hectares lost, gradually reducing to 611 hectares by 2023, for a total loss of 7,006 hectares. Meanwhile, in Subulussalam City, total forest loss over this period was 4,628 hectares, with the highest rate of deforestation occurring in 2018 at 1,104 hectares, decreasing to 911 hectares by 2023.

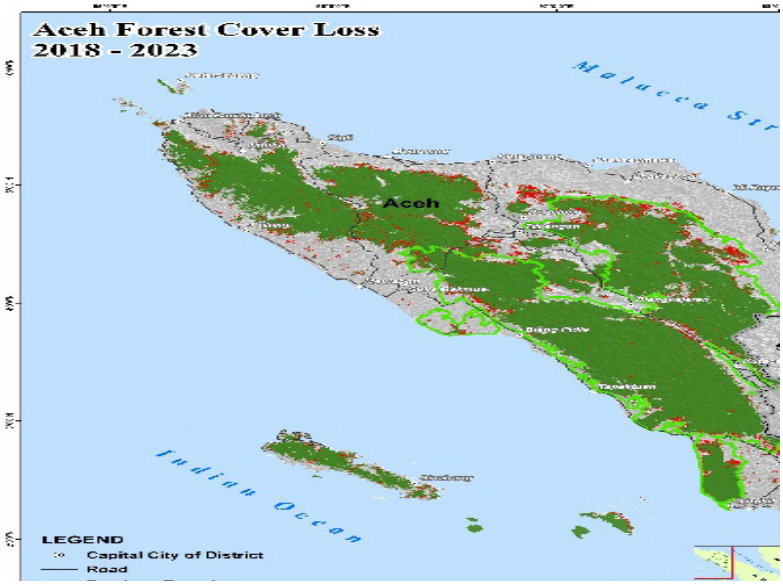


Figure 4. Map Aceh Forest Cover Loss, Period 2018-2023
Source: Yayasan HAkA, 2024

Figure 5: *Mukim* Batu-Batu, Sultan Daulat sub-district, Subulussalam city.
Source: Earthworm Foundation, and Yayasan HAkA, 2024.

In contrast, areas such as Sabang City, Langsa City, and Pidie Jaya recorded relatively minor forest cover losses over the period. Major urban centers like Sabang and Langsa showed minimal change, with forest cover loss limited to just a few hectares each year, suggesting that these cities may experience lower pressures on forest resources compared to districts with larger forested areas.
Overall, the data indicate that despite some efforts to curb forest loss, deforestation remains a significant challenge in Aceh, especially in districts with large forest cover. Contributing factors may include economic activities, land encroachment, and ineffective law enforcement. A critical issue highlighted by the deforestation data from 2018 to 2023 is the high rate of forest cover loss in numerous districts, particularly in East Aceh, Central Aceh, North Aceh, and Gayo Lues. The significant deforestation in these areas likely results from extensive land clearing for agricultural and plantation expansion, as well as encroachment by local communities driven by economic constraints. Insufficient monitoring and enforcement against illegal activities, such as logging, further exacerbate the issue.

Another pressing concern is the lack of substantial forest restoration efforts. Although deforestation rates are decreasing in certain areas, there has been no corresponding increase in reforestation or rehabilitation initiatives. Local communities' reliance on forests for agriculture and logging complicates the issue; without sustainable livelihood alternatives, it will be challenging to halt deforestation. The resulting forest cover loss also raises the risk of environmental disasters, including floods and landslides, which affect local communities and can damage infrastructure, increasing economic losses. Some areas show a sharp rise in forest loss in certain years, such as in South Aceh and Gayo Lues, indicating the ineffectiveness of natural resource management and spatial planning policies.
Another pressing concern is the lack of substantial forest restoration efforts. Although deforestation rates are decreasing in certain areas, there has been no corresponding increase in reforestation or rehabilitation initiatives. Local communities' reliance on forests for agriculture and logging complicates the issue; without sustainable livelihood alternatives, it will be challenging to halt deforestation. The resulting forest cover loss also raises the risk of environmental disasters, including floods and landslides, which affect local communities and can damage infrastructure, increasing economic losses. The weaknesses in forest protection policies and lack of robust law enforcement indicate that current efforts are insufficient to address deforestation effectively in Aceh.

The Indigenous *Mukim*'s Role in Customary Forest Protection

The role of Indigenous Peoples in forest protection is widely discussed in various research,

though the forms, roles, and challenges faced differ among communities, including the *mukim* in Aceh. Customary forests are areas managed by indigenous or local communities following traditional practices and laws. In Aceh, *mukim* customary law represents the traditional authority and administrative divisions used by local communities. The Government of Aceh has recognized *mukim* customary law under regional autonomy, supporting the management and protection of customary forests to maintain cultural heritage and environmental sustainability.

Achieving formal recognition for the *mukim* institution as the governing body of the *mukim* customary law community presents significant challenges, as *mukim* is only recognized in Aceh. The state requires regional regulations to formally acknowledge all customary institutions, making government recognition of *mukim* customary law communities a difficult process. A recent example is the acknowledgment of eight *mukim* institutions in Aceh and the legalization of their customary forests—a hard-fought struggle. Collaborations with various NGOs, including Syiah Kuala University, played an important role in persuading the central government to recognize *mukim* institutions and their forests. After over seven years of effort, on September 7, 2023, they were granted recognition for 22,549 hectares of customary forest. The decree was presented by President Joko Widodo on August 18, 2023, in Jakarta, underscoring the government's inability to fully protect forests as deforestation continues annually.

Government recognition is crucial for Indigenous institutions. This is a prerequisite governed by policies regarding the acknowledgment of Indigenous Peoples and customary forests. Historically, the *mukim* institution dates back to the 16th–17th centuries during the reign of the Iskandar Muda Kingdom, predating its legal status. The *mukim* customary law community's approach to forest protection reflects the deep connection between Indigenous Peoples and their natural environment. Customary forests are not only valued as natural resources but also as sacred cultural heritage. Indigenous peoples have a rich understanding of forest ecosystems, which has been transmitted through generations. For these communities, protecting customary forests is integral to their identity, fostering a strong ethical responsibility toward conservation.

Recognition of indigenous peoples' rights to customary forests is critical to this protection. Governments and legal institutions need to continue to recognize and respect more of these rights, enabling the communities to have a greater control over the management of their forest resources. In this context, the legalization of customary forests is critical to establish official recognition to the rights of local communities, ultimately encouraging them to be more engaged in protecting and conserving forests. In the modern context, with legal support, communities will feel more empowered and motivated to protect their environment. Furthermore, indigenous knowledge is vital to sustainable forest management. Indigenous communities employ harvesting techniques and conservation practices that prioritize biodiversity and ecosystem sustainability.

With an understanding of interspecies relationships, they manage resources sustainably, reducing environmental damage.

Mukim communities have long upheld customary laws to protect forests. For example, in the *Mukim* Paloh customary forest, activities such as land clearing, hunting rare animals, tree cutting, mining, and burning are prohibited. Cutting trees within 50 meters of rivers or with a diameter above 50 cm is also forbidden. Violations are met with fines and confiscation of logging tools (*Imeum Mukim* Paloh, 2024). Furthermore, *Imeum Mukim* Paloh also mentioned that, "Traditionally, land clearing involved controlled burning, known locally as *teumetet/seumeuron*, under strict supervision to prevent forest fires". However, such practice of burning must also be strictly monitored to prevent widespread fires. Companies like PT Khalista Alam, which caused extensive fires, have faced penalties through legally binding court decisions. (Farhan & Hoebink, 2019).

Similar taboos exist in *Mukim* Beungga, Pidie; Beutong Ateuh Blang Galang, Nagan Raya; and other *Mukim* areas in Aceh, with variations in fine amounts and enforcement practices. In *Mukim* Beungga, for instance, fines for illegal logging are set at Rp 500,000 (*Mukim* Beungga, 2023). Meanwhile, *Mukim* Beutong Ateuh Blang Galang imposes fines of 1 million rupiah for local residents and 2 million for outsiders (*Mukim* Beutong Ateuh, 2022).

The Paloh community's wisdom includes *narit maja* (ancestral proverbs), such as "*Uteun ta lindung krueng tajaga, bek koh kayee lam uteun, bek cungkee batee lam krueng*," meaning "The forest and river must be protected, for they support life" (*Mukim* Paloh, 2023). *Narit maja* means that the forest must be protected because there is wood supporting human life, and the river must be protected because there are stones supporting the river to prevent erosion. As a community with strong religious values, they observe forest activity restrictions, *pantang larang*, around Fridays and 10 days before the Eid al-Adha holiday to respect the forest's sanctity. Such beliefs are observed not only out of fear of customary sanctions but also from fear of misfortune befalling violators and their families.

Similar *pantang larang* exist in *Mukim* Beungga, Pidie; Beutong Ateuh Blang Galang, Nagan Raya; and other *mukim* areas in Aceh, with variations in fine amounts and enforcement practices. In *Mukim* Beungga, for instance, fines for illegal logging are set at IDR 500,000 following the above sanction (*Mukim* Beungga, 2023, 2024). Meanwhile, *Mukim* Beutong Ateuh Blang Galang imposes fines of 1 million rupiah for local residents and 2 million for outsiders (*Mukim* Beutongateuh, 2022, 2023). In addition, *Mukim* Juli Selatan, Bireun Regency, notes that protecting the forest safeguards wildlife and reduces human-wildlife conflicts, especially as they reside in elephant

habitats. Protecting forests helps preserve these habitats, minimizing encounters between elephants and humans.

Government recognition of customary forests has also reinforced prohibitions against oil palm cultivation within these areas. Despite continuous resistance to oil palm plantations, *Mukim* communities face ongoing threats from commercial interests. Therefore, it is essential that indigenous communities are involved in policy-making, integrating traditional practices into modern conservation strategies, to ensure effective forest management. Government-indigenous collaboration can lead to more inclusive, sustainable policies. By considering indigenous perspectives in decision-making, conservation programs can better align with local needs and strengthen community-government relations. In the long term, this approach can balance economic development with environmental conservation, ensuring the sustainability of customary forests for future generations. Thus, customary law communities' approach to forest protection offers a viable model for achieving ecological and social sustainability. Through this balance, humanity can coexist harmoniously with nature, fostering *ecosystem* and ecological equilibrium.

Contemporary Perspectives and Future Challenges

Under *mukim* law, the cultural significance of customary forests is essential for preserving the cultural practices and traditional knowledge of the community. These forests are not merely natural resources; they hold profound spiritual value and embody the identity of the communities that inhabit them. Often considered sacred, they serve as sites for rituals and as a vital connection between communities and their ancestors. This deep emotional bond enhances the community's commitment to forest preservation.

From an environmental perspective, customary forests are vital for biodiversity conservation, providing habitats for diverse species of flora and fauna. These ecosystems not only offer ecological benefits but also support community livelihoods through sustainably harvested resources. Additionally, indigenous forests contribute to water cycle regulation and carbon sequestration, which are critical for climate change mitigation. By maintaining ecosystem equilibrium, these forests deliver essential ecosystem services to the local environment and support global climate stability.

Contemporary challenges, such as climate change and forest cover loss due to deforestation, make culturally grounded approaches to indigenous forest management increasingly urgent. Integrating traditional knowledge with modern conservation practices can enhance the effectiveness of conservation efforts and strengthen community resilience. Thus, recognizing and protecting the rights of indigenous peoples in forest management is crucial—not only to sustain their culture but also to protect the environment. This approach benefits indigenous peoples and contributes to

global sustainability and conservation goals.

Recognizing indigenous peoples' rights to customary forests is critical in protecting these areas from deforestation. The government can support this process by formally legalizing the customary rights of local communities. With legal recognition, communities will likely feel more empowered and motivated to protect and preserve their forests, which are integral to their cultural identity and way of life. Additionally, fostering sustainable forest management through the active involvement of Indigenous communities can help reduce forest pressures. Community-based management programs that blend traditional knowledge with modern conservation practices can enhance the effectiveness of forest resource management. In addition, training and education on sustainable techniques can further strengthen communities' capacities to protect their forests.

Building awareness of the importance of indigenous forests in biodiversity conservation and climate change mitigation is equally essential. Through educational programs and public campaigns, communities can better understand forest conservation's importance. Education on the negative impacts of deforestation should be integrated into school curricula and community programs. The government can also offer incentives to communities committed to preserving their customary forests, such as financial support, market access for non-timber forest products, and technical guidance on sustainable agricultural practices. By providing these incentives, communities may be more motivated to engage actively in forest conservation efforts.

Collaboration with non-governmental organizations (NGOs) focused on environmental and Indigenous rights can further support forest conservation programs. NGOs can assist in building community capacity, shaping policies, and monitoring activities that could endanger forests. Strengthening law enforcement against illegal activities, such as logging and land clearing for agriculture, is also essential. The government should strictly apply existing laws and prosecute violators to establish a strong deterrent.

Development policies should integrate robust environmental considerations, prioritizing forest conservation and the rights of indigenous communities. Harmonizing economic development with forest ecosystem preservation and Indigenous survival can make conservation efforts more effective and sustainable. With their profound knowledge of and connection to forests, indigenous communities play a central role in conservation and sustainable resource management. For instance, the *mukim* customary law community's contribution has been instrumental in advancing the international Reducing Emissions from Deforestation and Forest Degradation (REDD+) program. Recognizing the *mukim* institution's role in forest stewardship could be further encouraged

by compensating communities as part of the REDD+ initiative.

CONCLUSION

In the face of current challenges such as climate change and deforestation (Adnan & Dadi, 2023) and climate change can alter these natural interactions. When disturbances exceed their natural range of variation, the change in forest structure and function may be extreme. Each disturbance affects forests differently. Reducing Emissions from Deforestation and Forest Degradation (REDD+, the concept of *mukim* customary law communities in protecting customary forests serves as a culturally rooted approach that preserves traditional practices while adapting to modern needs. Customary forests in Aceh are more than natural resources; they hold profound spiritual and cultural value, connecting communities to their ancestral heritage. The *mukim* customary law system, which governs the management of these forests, allows communities to maintain ecological and social equilibrium through traditional practices, including prohibitions on cutting trees near rivers and restrictions on certain forest activities during specific times.

The presence of customary forests supports biodiversity, regulates water cycles, and aids in carbon sequestration, all of which are crucial for mitigating climate change. Formal government recognition of indigenous rights, as seen in the recognition of customary forests on September 7, 2023, marks a significant step toward strengthening Indigenous autonomy over forest territories and enhancing their motivation to engage in conservation. This legal support not only reinforces customary rights but also enhances conservation efforts through partnerships with organizations such as NGOs and universities.

Future challenges, including threats from plantation expansion and resource exploitation, necessitate a synergy between traditional knowledge and modern forest management approaches. Collaboration between indigenous communities and the government can enrich sustainable and inclusive forest management policies, fostering a balance between economic development and environmental conservation. Therefore, the concept of customary law communities, as embodied by the *mukim* customary institution in customary forest management, offers not only an effective model for forest protection but also an adaptive solution that supports ecosystem sustainability amid climate change.

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