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PENGEMBANGAN HUTAN DI KAWASAN TAHURA POCUT MEURAH INTAN DAN PENANGGULANGANNYA

FOREST DEVELOPMENT IN TAHURA POCUT MEURAH INTAN AREA AND ITS COUNTERMEASURES

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Abstract

Forest development remains a significant challenge in Indonesia, including in the Pocut Meurah Intan Forest Park (Tahura), Aceh. This Tahura is one of the conservation areas that has high biodiversity and essential functions for surrounding communities and regional ecosystems. Tahura Pocut Meurah Intan is located in Aceh Besar District and Pidie District, with an area of approximately 6,300 hectares. The results showed that forest destruction in TAHURA Pocut Meurah Intan was caused by several primary factors, namely: Illegal logging: Illegal logging activities for commercial purposes are the leading cause of damage to forest ecosystems. Land encroachment: Changes in forest function to agricultural or residential land are carried out by the surrounding community due to limited productive land. Illegal mining activities: Unregulated mining in the TAHURA area causes damage to the soil structure and contributes to forest degradation. Impacts include ecosystem degradation, biodiversity loss, and social conflict. Countermeasures require community-based management, strengthened regulations, and economic diversification through ecotourism. The involvement of local communities and modern technology can support both conservation and sustainable welfare.

Keywords: *Tahura Pocut Meurah Intan, Development, Management.*

Abstrak

Pengembangan hutan masih menjadi tantangan besar di Indonesia, termasuk di Taman Hutan Raya (Tahura) Pocut Meurah Intan, Aceh. Tahura ini merupakan salah satu kawasan konservasi yang memiliki keanekaragaman hayati tinggi dan fungsi penting bagi masyarakat sekitar serta ekosistem daerah. Tahura Pocut Meurah Intan terletak di Kabupaten Aceh Besar dan Kabupaten Pidie, dengan luas sekitar 6.300 hektar. Hasil penelitian menunjukkan bahwa kerusakan hutan di TAHURA Pocut Meurah Intan disebabkan oleh beberapa faktor utama, yaitu: Penebangan liar: Kegiatan penebangan liar untuk tujuan komersial menjadi penyebab utama kerusakan ekosistem hutan. Perambahan lahan: Perubahan fungsi hutan menjadi lahan pertanian atau pemukiman dilakukan oleh masyarakat sekitar akibat terbatasnya lahan produktif. Kegiatan penambangan liar: Penambangan liar di kawasan TAHURA menyebabkan kerusakan struktur tanah dan degradasi hutan. Dampaknya antara lain degradasi ekosistem, hilangnya keanekaragaman hayati, dan konflik sosial. Penanggulangan memerlukan pengelolaan berbasis masyarakat, penguatan regulasi, dan diversifikasi ekonomi melalui ekowisata. Keterlibatan masyarakat lokal dan teknologi modern dapat mendukung konservasi sekaligus kesejahteraan berkelanjutan.

Kata Kunci: Tahura Pocut Meurah Intan, Pengembangan, Pengelolaan.

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INTRODUCTION

Forests play a vital role in life, both in terms of ecology, economy, and society. As irreplaceable natural resources, forests are the main support for the balance of the global ecosystem. However, forest destruction remains a significant challenge in Indonesia, including in the Pocut Meurah Intan Grand Forest Park (Tahura), Aceh. This Tahura is one of the conservation areas that has high biodiversity and essential functions for the surrounding community and regional ecosystems. Tahura Pocut Meurah Intan is located in Aceh Besar Regency and Pidie Regency, with an area of approximately 6,300 hectares.

Forest destruction in Tahura Pocut Meurah Intan not only leads to biodiversity loss but also results in environmental degradation. Soil erosion, decreased water quality, and disruptions to the hydrological cycle are among the negative impacts observed. Furthermore, this forest destruction also exacerbates the threat of climate change due to increased carbon emissions from deforestation (Wijaya *et al*., 2021). The leading causes of forest destruction in this area involve economic, social, and policy factors. Encroachment activities are often carried out by communities that depend on natural resources to fulfill their needs. Meanwhile, weak law enforcement and a lack of supervision provide a loophole for people to exploit this conservation area (Siregar *et al*., 2020).

Before being designated as a Tahura area, the area was a protected forest area of 3,100 ha, a limited production forest 1,0of 20 ha, a permanent production forest 1,1of 00 ha, and the remaining 1000 ha was another use area located in the Seulawah Agam forest group in Aceh Besar Regency, with a total area of 6200 ha. The idea of Tahura development in the NAD province was initiated by the recommendation of the Governor of the Aceh Special Region in 1995, which was proposed to the Minister of Forestry of the Republic of Indonesia.

Around Tahura Pocut Meurah Intan, there are nine villages, including Lamtamot Village, Panca Village, Lam Kubu Village, Lhok Asan Village, Lamteuba Village, UPT Panca, Suka Mulia Village, Suka Damai Village, and Saree Village. The Tahura Pocut Meurah Intan area is situated at an altitude of 500-1,800 meters above sea level, characterized by an undulating to slightly hilly topography. In general, the Tahura area has a slope of 0-8% with an area proportion of 8%, a slope of 8-15% with an area proportion of 14%, a slope of 15-25% with an area proportion of 44%, a slope of 25-40% with a proportion of 19% and a slope exceeding 40% with an area proportion of 15%. Based on elevation data, an area of 3,19.53 hectares is in the range of 0-500 meters above sea level, 1,760.94 hectares are in the range of 500-1000 meters above sea level, 1,110.00 hectares are in the range of 1000-1500 meters above sea level and 155.87 hectares are in the range of 1500-2000 meters above sea level (Gunawan, *et al.*, 2020).

Tahura management is divided into six blocks, based on Permen LHK No. P76, which outlines the criteria for National Park management zones and Management Blocks for Nature Reserves, Wildlife Reserves, Botanical Forest Parks, and Nature Tourism Parks. Public awareness about the importance of forest sustainability also needs to be increased through

education programs and environmental campaigns. Increased public understanding of the benefits of forests is expected to lead to more environmentally conscious behavior (Fadli *et al*., 2020). In this context, the need for synergy between government policies, community participation, and technological support is crucial to the success of preventing forest destruction in Tahura Pocut Meurah Intan. This conservation effort is not only important for the sustainability of the local ecosystem but also has a global impact on environmental sustainability.

Based on the above background, further research and studies on the social-ecological dynamics in this area are expected to provide more targeted solutions. Through a holistic approach, Tahura Pocut Meurah Intan can be restored and managed sustainably for the benefit of future generations.

RESEARCH METHODS

Place and Time

This research was conducted from August 5 to September 10, 2024, in Tahura Pocut Meurah Intan, located in the Aceh Besar and Pidie Districts of Aceh Province.

Materials and Tools

The materials used were the Area Map of Tahura Pocut Meurah Intan to identify the location of forest damage. Supporting Documents: Annual report of the forestry service. Satellite data and aerial imagery (if available), secondary literature books, journals, and articles related to forest destruction and conservation. An interview form containing questions for resource persons, such as forestry officers and local communities. Observation guide: special notes to record observations in the field. For visual documentation of forest destruction and activities in the field.

Tools used include a GPS (Global Positioning System), a voice recorder, and a Drone (Optional) to obtain aerial imagery of the research site. A laptop, data processing software, and a meter are used to measure the affected area, as well as communication devices.

Sampling Technique

This research employs a descriptive-qualitative approach (Hasan, 2013), which aims to describe the condition of forest destruction and its countermeasures in the Tahura Pocut Meurah Intan area. Data were collected from various sources, including official documents, agency reports, and interviews with relevant parties.

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Types and Sources of Data

The types and sources of data used in this research include primary data, which are derived from in-depth interviews and observations, and secondary data, comprising documents, archives, literature, and previous research results (such as journal articles) related to this research. Primary data, namely data obtained directly in the field through interviews/questionnaires and direct observation.

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Data Collection Technique

a. Field observation: Conducted to identify types of damage such as illegal logging, land encroachment, forest fires, illegal building, and collection of non-timber products (NTFPs).
b. Interviews: Interviewees included forestry officials, local communities, and environmental activists.
c. Documentation: Secondary data collection from government reports, journals, and academic articles.

Data Analysis Technique

The data obtained was analyzed qualitatively to identify the patterns, impacts, and effectiveness of the countermeasures that have been carried out (Fernandes *et al.*, 2018). This analysis was conducted through several stages:

a. Data Reduction: Simplification of data relevant to forest destruction and countermeasures.
b. Data Presentation: Data is presented in the form of narratives, tables, and graphs to facilitate interpretation.
c. Conclusion Drawing: Summarizing the findings related to the research objectives.
d. Stages of Implementation
    1. Preparation
        a. Apply for a research permit to the relevant institution.
        b. Arranging a schedule for conducting the research.
    2. Data Collection
        a. Conducting observations and interviews in the field.
        b. Collecting supporting documents from trusted sources.
    3. Analysis and Interpretation
        a. Processing field data using descriptive methods.
        b. Comparing results with related literature and reports.
    4. Report Preparation
        a. Compile the research results in the form of a complete report.
        b. Include recommendations based on the results of the analysis.
        c. This implementation method is designed to provide a comprehensive picture of the forest condition and the effectiveness of the countermeasures that have been taken.

RESULTS AND DISCUSSION

Causes of Forest Destruction in the Pocut Meurah Intan TAHURA Area

The results show that forest destruction in TAHURA Pocut Meurah Intan is caused by several primary factors, namely: illegal logging. Illegal logging activities for commercial purposes are the primary cause of damage to forest ecosystems. Land encroachment: Changes in forest function to agricultural or residential land are carried out by the surrounding community due to limited productive land. Illegal mining activities: Unregulated mining in the TAHURA area causes damage to the soil structure and contributes to forest degradation.

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Field studies have identified that weak supervision by management and a lack of public awareness of the importance of forest conservation exacerbate this situation.

Illegal Logging is one of the most prevalent forms of forest destruction in the Pocut Meurah Intan TAHURA area. This logging is done without official permission and often involves organized networks. Based on the data obtained, timber from illegal logging is exported outside the region and abroad for use in construction, furniture, and other purposes. The impact of illegal logging is severe, particularly in terms of the loss of primary forest cover, which serves as a carbon sink (Gunawan *et al*., 2020). Declining biodiversity, especially species of flora and fauna that depend on large trees. Increased risk of natural disasters such as landslides and flash floods. Law enforcement efforts against perpetrators of illegal logging are often hampered by weak supervision and limited resources (Kartodihardjo *et al*., 2020).

In addition to the primary factors, uncontrolled land use change also contributes significantly to forest destruction in this area. The increasing economic needs of the community often encourage actions that are detrimental to the environment, such as land clearing for oil palm plantations or intensive agriculture. Unfortunately, these activities are often carried out without.

Regarding the long-term impact on the ecosystem. A lack of law enforcement is another contributing factor. Some perpetrators of forest destruction who are caught often receive light sentences, which does not have a deterrent effect. This provides opportunities for other perpetrators to continue carrying out illegal activities. In addition, land conflicts between local communities and area managers often complicate conservation efforts in TAHURA Pocut Meurah Intan.

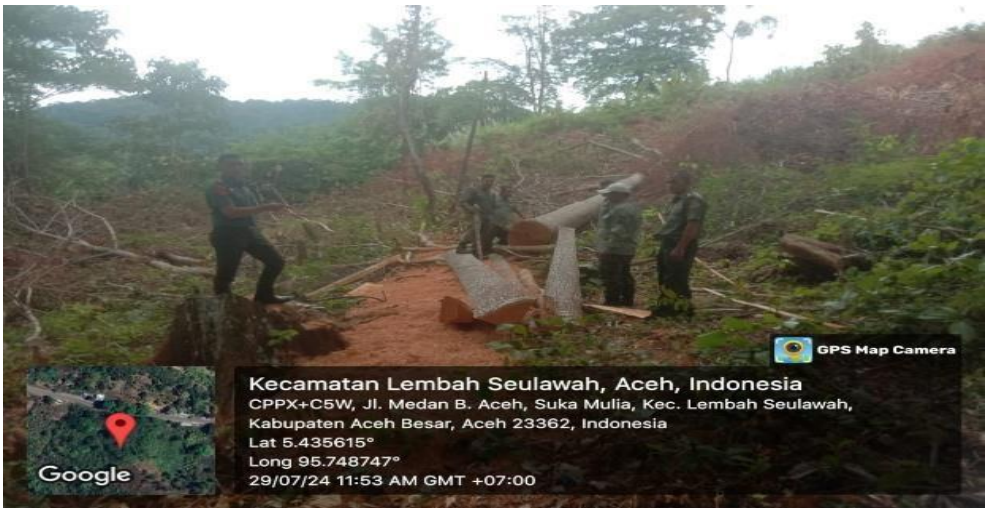

Figure 1. Illegal Logging

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Figure 2. Forest Fire

Impact of Forest Destruction on Ecosystems in TAHURA Pocut Meurah Intan

Social impacts are also felt by the surrounding community, particularly those who rely on forest resources for their daily livelihoods. The loss of non-timber forest products, such as rattan and wild honey, has deprived many families of their primary source of income. In addition, changes in forest function also reduce communities' access to clean water, as forest destruction disrupts the hydrological cycle (Wibisono *et al.*, 2019).

On a broader scale, forest destruction in TAHURA Pocut Meurah Intan contributes to increased carbon emissions. The loss of vegetation cover leads to the release of carbon that was previously stored. Trees are being released into the atmosphere, exacerbating global climate change. Areas that were once carbon sinks are now becoming sources of emissions, contributing to the overall environmental burden.

Forest destruction has significant impacts on ecosystems, such as:

a) **Loss of biodiversity:** Many endemic species of flora and fauna are threatened with extinction due to the loss of their natural habitat.
b) **Soil degradation:** Deforestation leads to soil erosion and loss of land fertility.
c) **Microclimate changes:** Loss of forest cover leads to changes in rainfall and temperature patterns around the area.
d) **Floods and landslides:** Removal of vegetation leads to uncontrolled water flow, increasing the risk of natural disasters.
e) Data shows that 35% of degraded forest areas no longer have the potential for natural recovery in the short term, requiring human intervention (Kartodihardjo *et al.*, 2020).

Figure 3. Land Encroachment

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Strategies to Mitigate Forest Destruction in Pocut Meurah Intan TAHURA

In addition to technical measures, a social approach is also critical. One of them is to involve indigenous peoples in the management of forest areas. Indigenous communities often have local wisdom that can support environmental sustainability. Community-based management programs have been successful in several places and can be adopted in TAHURA Pocut Meurah Intan.

The government also needs to strengthen regulations related to forest conservation, including by providing economic incentives to communities that protect forests. For example, payment for environmental services (PES) programs can provide financial compensation for Local communities that protect forest areas. This not only raises awareness but also creates incentives for active participation in environmental conservation (WWF Indonesia, 2022). Several effective strategies have been proposed to tackle forest destruction, including:

1. **Strengthening surveillance:** Increasing the number of forest patrol officers and applying technology such as drones to monitor illegal activities.
2. **Forest rehabilitation:** Replanting local species to restore biodiversity and ecosystem function.
3. **Community education:** Training and outreach programs on the importance of forests and how to use resources sustainably.
4. **Multi-stakeholder cooperation:** Collaboration between the government, NGOs, local communities, and the private sector to implement conservation policies.

The implementation of these strategies has yielded positive initial results, including increased community awareness and a 15% decrease in illegal logging activities over the last two years.

Illegal Exploitation of Non-Timber Forest Products

The illegal exploitation of non-timber forest products (NTFPs) in the Pocut Meurah Intan TAHURA area is driven by the economic needs of surrounding communities, inadequate monitoring, and high market demand. Communities often harvest NTFPs, such as rattan, wild honey, and resin, excessively without regard for sustainability. This occurs due to the lack of alternative livelihoods, while conservation areas are not equipped with strict regulations and technology-based monitoring systems. Pressure from local and international markets has also encouraged the massive extraction of NTFPs, often using methods that damage forest habitats and ecosystems. The impacts of this illegal exploitation are felt in various aspects. Ecologically, the uncontrolled extraction of rattan and other products leads to the degradation of the forest understorey, affecting plant regeneration and animal habitats in the area.

Socially, conflicts between local communities and area managers often occur due to different views on forest management rights. Economic impacts are also felt when over-exploitation leads to the scarcity of NTFPs, thereby decreasing the long-term income potential of communities. Countermeasures have been proposed to minimize these problems, including community-based forest management and livelihood diversification. Community

forestry (HKm) schemes can provide management rights to local communities while prioritizing NTFP sustainability. In addition, the development of NTFP-based ecotourism, such as processed honey products or rattan handicrafts, can be a new source of income that does not damage the forest. Education on the importance of conserving and sustaining NTFPs must also be improved through counseling and training (Kartodihardjo *et al*., 2020).

Studies in other conservation areas in Indonesia, such as Gunung Leuser National Park, show that community empowerment through ecotourism and NTFP management integrated with conservation can reduce illegal activities. With a similar approach, TAHURA Pocut Meurah Intan can protect its ecosystem while improving the welfare of surrounding communities. Strict law enforcement is also necessary to provide a deterrent effect against perpetrators of illegal exploitation, thereby ensuring the sustainability of NTFPs in this area.

CONCLUSION

Forest destruction in TAHURA Pocut Meurah Intan is caused by illegal exploitation of NTFPs, weak supervision, and community economic needs. The impacts include ecosystem degradation, biodiversity loss, and social conflict. Countermeasures require community-based management, strengthened regulations, and economic diversification through ecotourism. The involvement of local communities and modern technology can support conservation and sustainable welfare.

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