



Examining the impact of Adat law on forest preservation in the Leuser ecosystem, Aceh: An analytical approach

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ARTICLE HISTORY

Received: 28 February 2024

Revised: 01 April 2024

Accepted: 09 April 2024

Published: 10 April 2024

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DOI:

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ABSTRACT: The role of customary law in preserving forests and the environment plays an important role in protecting biodiversity and ecosystem health. This study aims to (1) identify the rules that have been practised by indigenous communities in conserving forests and the environment in the Leuser region of Aceh. (2) discover the role of customary law in conserving forests and the environment in the Leuser region of Aceh. This research uses a descriptive qualitative approach with interview, observation and documentation methods. This study shows that customary law in the Leuser Region has an important role in conserving forests and the environment. These roles include regulating the use of natural resources based on indigenous community agreements, sustainable area management by establishing the laws of blang penjemuren (forest area for drying agricultural products), bur perutemen (forest area for collecting wood), bur perempusen (forest area for farming), blang perueren (forest area for cattle), and aih aunen (forest area for collecting water sources). The findings offer some basis for how other local communities can adopt customary law in nature conservation to address the upcoming sustainable development agenda.

KEYWORDS: Customary law, Environmental conservation, Aceh leuser forest area.

Introduction

Nature and forest conservation are important for social, economic, ecological and global purposes. Natural resource conservation is the wise use of the earth's resources by humans. It involves managing valuable and important ecosystems such as timber, fish, topsoil, grasslands, minerals, forests, watersheds, and wildlife (Maru et al 2020). Scientists and conservationists are looking for effective ways to improve biodiversity conservation in human-dominated landscapes in response to the increasing loss of biodiversity worldwide. One approach that has received much attention is recognising the role of traditional cultural practices, beliefs and customs in biodiversity protection and management (Huang et al 2020). There are

approximately 370 million people belonging to 5,000 different groups in 90 countries. Asia accounts for 70% of the world's indigenous peoples (Gabriel et al 2020).

Indigenous peoples have a long history with their lands, which have directly supported their livelihoods. Moreover, they tend to have a reciprocal relationship with nature, rather than viewing nature as something that exists to serve humans, as most modern cultures have historically considered things (Sneed 2019; Service et al 2014; Lamini et al 2019). However, the loss of forest and wildlife resources worldwide is at an alarming rate and 70 million hectares of primary forests are estimated to have been lost worldwide between 1995 and 2015 (Mohebalian, P. M., & Aguilar, F. X. 2018).

While most forests were destroyed to support the growth of the timber industry, other forests are threatened by forest fires (Stevens et al 2018). Progressive forest degradation leads to loss of biodiversity, landscape beauty and ecological functions, including the provision of goods and services that fulfil human needs. Biodiversity decline negatively impacts rural livelihoods and threatens the food, energy and health security of local communities (Pudyatmoko et al 2018). Factors driving biodiversity loss can also exacerbate land degradation, loss of habitat for migratory species, reduced soil fertility, and lead to lost tourism opportunities (Fisher et al 2014). Nationalisation of forest resources has created several challenges for local people who have inherited traditional forests for generations, access to forests for corporate resources and forest conservation (Beckert et al., 2014; Faye et al., 2016; Riggs et al., 2016).

The root causes of forest resource management conflicts are the gap between formal government institutional structures and informal structures of local communities, as well as the lack of legal recognition of informal institutions by the government (Harada et al., 2022). For example, the case of mangrove restoration in Thailand shows how weak and unequal relationships between actors can create gaps between policy design and implementation, leading to inefficient environmental management (Thompson, 2018). A case in Malawi shows how policies that lack ownership and understanding of the complexity of local institutions can lead to disruptive practices related to resource use and social conflict (Kamoto et al., 2013). When issuing forest concession rights, the government grants rights to businesses without first verifying their management and settlement by local people; this leads to conflicts between companies and neighbouring communities (Dhialhaq et al., 2014).

The last question concerns the presence of stem forests and local habitats in conservation forests. For example, in South and Southeast Asian countries such as Indonesia and Nepal, some national parks were established at

a time when local populations were settling within their borders and exploiting forest resources. However, national parks often restrict local communities' access to forest resources (Mehring et al., 2011). Although traditional forests have long been home to indigenous peoples, due to unclear land boundaries, forests and indigenous peoples are vulnerable to exploitation by companies that want their resources (Beckert et al., 2014). Local rural communities have long been regarded as destroyers of the natural environment and forests because they support local needs (Jinlong et al., 2012).

Forest management in Indonesia has not been able to realise the constitutional mandate, resulting in uncontrolled forest destruction. There is an urgent need to implement a sound forest management system (Jinlong et al., 2012). Applying this knowledge can help ensure that forest resources continue to provide a range of goods and services (environmental, social, cultural and spiritual) for future generations (Liu et al., 2007; Parrotta & Agnoletti, 2007). Indigenous protected forests, which are conserved and managed by local communities based on traditional practices and beliefs, have both social and ecological functions (Gao et al., 2013). It is important for the government to recognise the cultural and ecological value of forests and integrate local regulations and village regulations into the current policy framework to improve forest management (cultural protection) through supporting measures such as subsidies and conservation strategies. Forests illustrate the cultural importance of forest ecosystem services and the role of culture in forest conservation (Chen et al., 2020). Therefore, the participation of indigenous peoples in scientific assessments, policy planning, and discussions will be crucial in finding better ways for sustainable development (Von et al 2019).

Based on previous research related to the role of customary law in conserving forests and the relevant environment conducted by (Resti, et al 2022: Lestawi, et al 2020; Lestawi, et al 2020; Suriyani, M., & Hayati, V 2023). In the research conducted by (Resti, et al 2022)

shows that the form of local wisdom of indigenous peoples consists of 7 forms; Values, norms, ethics, beliefs, customs, customary law and special rules. Then there are 3 common law institutions in Sidas A Hamlet including; Temenggung, Pasirah and Pangaraga. They each play a role in cases of violations of values, norms and ethics, beliefs, customs, customary law, and special rules and make decisions regarding violations of conservation of the Bukit Marang customary forest area in Sidas A Village.

Further research conducted by (Chandra, F. 2020) This explains that the role of customary law communities through customary law in environmental protection is needed in Indonesia. Customary law communities must be maximised both as organisers and as protectors and law enforcers, because before the existence of this country, customary law communities had their own traditions and ways of life that coexisted with nature. Then research from (Lestawi, et al 2020) Forest conservation efforts in Bali cannot be separated from the existence of local wisdom. Customary law, such as the decisions of Hindu religious leaders in Bali, is one of the local wisdoms upheld by the community. This research examines the values of indigenous local wisdom and explores forest conservation from a Hindu perspective. The research was conducted in three villages in Bali, namely Tenganan village, Manggis Sari village and Sangeh village. These villagers believe that the forest is a sacred area that must be properly guarded and conserved.

Research conducted by (Suriyani, M., & Hayati, V 2023) shows that, along with the

Research methods

This research was conducted in Pining District, Gayo Lues Regency, Aceh Province, Indonesia. Pining is an area that still preserves the traditions of its ancestors. Pining sub-district is located almost 2 hours from Belangkejeren city in Gayo Lues district. Pining sub-district is a buffer zone of the Leuser Forest in Aceh which has high biodiversity in this area. Data were collected through interviews with local community leaders and literature study of customary law texts governing forest

times, many maritime customary laws have been neglected. Fishing communities often violate maritime customary law. Thus ignoring local wisdom that needs to be preserved. There is a need to revitalise maritime customary law for fishing communities in the fishing waters of East Aceh Regency to prevent the loss of values such as local wisdom that exists in fishing communities. Therefore, the role of Panglima Laot must be strengthened, the role of the local government in supporting the application of marine customary law and fisheries management, as well as the awareness of the fishing community to prioritise marine customary law as a sign of local wisdom. Empirical legal research is used as the research method.

Based on several studies that have been conducted in recent years to explore the role of customary law from around the world in forest and environmental conservation. However, efforts to systematically analyse all the studies are still lacking. In addition, the trends and patterns of studies on the role of customary law in nature conservation have also not been answered. Therefore, this research aims to systematically review and analyse the role of customary law in nature conservation. To achieve this goal, two research objectives were outlined: (1) to identify the rules that have been practised by indigenous communities in conserving forests and the environment in the Leuser region of Aceh. (2) to discover the role of customary law in conserving forests and the environment in the Leuser region of Aceh.

protection, customary law, forest utilisation rules and customary sanctions for people destroying forests and the environment in Pining District. Data analysis was conducted qualitatively. This research used observation, interview and documentation methods. The equipment needed included stationery, audio recorders, cameras, observation guides and interview guides (Arikunto, 2013). At various points in qualitative research, the researcher acts as a planner, implementer, data collector, analyst, data interpreter, and research reporter (Moleong, 2012).

Research findings

From the results of research with several informants in the field by asking questions about the role of customary law in forest conservation in the leuser pining area, Aceh. As for the research results obtained through the interview process, the researchers obtained the following results:

Customary Area Law in Forest Conservation in the Leuser Area of Pining, Aceh

According to Abu Kari, chairman of the Pining Tiger Forum, Pining District, Gayo Lues Regency, "Protecting the environment is a legacy from our ancestors that has become a tradition since ancient times, this can be seen if we understand the poems of our ancestors, first the Gayo people saved the forest. For example, the poem does not fall on the shoots of ni aih, so that there will be no danger (do not fall on the shoots of the river, so that there will be no danger).

Then the next verse is good for the forest because of the rhino, so that the cacak tamahan urum kule (good for the forest because of the rhino, so that it is good plus the tiger). Our forest also has a spatial layout in its management because the area here is a buffer zone for the Leuser forest, the people here call it Blang Penjemuren, Aih Aunen, Blang Peruweren, Bur Perutemen and Bur Perempusen. So it is all regulated by customary law in order to maintain and protect the preservation of natural resources in the Pining customary area," said Abu Kari.

In line with Abu Kari's opinion, Ila Namsu, secretary of the Pining Tiger Forum, Pining District, Gayo Lues Regency, said "The close relationship between the local population and the surrounding nature can be traced back to the origins of the community's traditional knowledge on environmental conservation in Pining Village. Pining villagers rely heavily on local natural resources, including forests, rivers, and biodiversity. So the Pining community has been protecting their environment since the time of their ancestors, which is a local policy in protecting the Pining leuser forest area," said Ila Namsu.

In line with the opinions of Abu Kari and Ila Namsu, Ahmad Nur as the head of Pining Village, Pining Sub-district, Gayo Lues District said "So the origin of this Pining Village regulation on environmental conservation can be traced that the Pining community who live side by side with nature, they have studied and observed the environment since our ancestors were here. We rely on natural resources to fulfil our daily needs, including food, medicine and building materials. The customary forest management system through forest spatial planning (Bur Perutemen, Bur Perueren, Blang Penjemuren, Bur perempusen and aih aunen). This traditional practice is the local wisdom of the Pining Village community in preserving the environment. We choose and plant trees that provide economic and ecological benefits, such as fruits that can be sold and timber to meet personal needs / community homes within the provisions of the rules not exceeding 8 tonnes of wood and not exceeding 15 tonnes of wood for social needs and or public facilities. We also protect forests to preserve biodiversity and stop landslides. It is part of our culture and still passed down from generation to generation that Pining villagers have local wisdom to protect the environment. The villagers in Pining have shown that environmental conservation can be done sustainably through the use of these traditional practices," said Ahmad Nur.

In line with the opinions of Abu Kari, Ila Namsu, and Ahmad Nur, Arman as the secretary of Pining Village, Pining Sub-district, Gayo Lues District said "The local wisdom of the Pining community in protecting the local environment comes from our long interaction with the surrounding nature and their cultural heritage. Through a combination of natural resource dependency factors and traditional knowledge, the Pining community has developed local wisdom and laws that play an important role in protecting the local environment. Environmental sustainability and community quality of life are at the centre of our practices, passed down from generation to generation," said Arman.

The explanations given by Abu Kari, Ila Namsu, Ahmad Nur, and Arman above are in line

with the documents/scripts researchers found during field observations.



Figure 1. Pining Customary Forest Village Rules Document

This document is a Pining customary forest Village Regulation document that researchers found during field observations in Pining Village. This document contains customary rules or customary law that regulates cooperation in the protection and preservation of natural resources in the customary area in Pining, which is agreed upon by all villages in the area. The boundaries of Pining's customary forest are regulated in Article 15, namely (1) State Forest is a forest located on unencumbered land that does not include customary forest; (2) Prohibited forest is a forest area that has a mystical history so that it is forbidden to carry out any activities in this area which is believed for generations, for example the "bur tengku tue" forest area (3) Tanoh Edet, is land within the Mukim area which is controlled and regulated by Customary Law (4) Forests belonging to each village are; a. Bubung Lime; b. Karang Putih; c. Uning Suri; d. Geguk; e. Simpang Uyem, Aih Lebah and Bur Bulet; f. Pucuk Aih Pining; g. Bur Pucuk Aih Kute. (5) Forest boundaries between villages are agreements between villages, in determining the boundaries are determined by deliberation and ratified by the government and marked by natural boundaries such as arul and rivers and or other natural boundaries. The distribution of forest morphology is in Ekan Village, Uring Village, Gajah Village, Lesten Village, Pertik Village, Pining Village, Papelah Village, Pintu Rime Village, and Pasir Putih Village.



Figure 2 Pining Customary area division document

The picture above shows the division of forest areas according to their respective functions and rules, which are explained article by article relating to the rules for management, conservation and the prohibitions and sanctions imposed on the community intentionally or not committing these violations. The following are the regulations for each Pining forest area. For more information about the division of forest areas, please see the following table.

Blang Penjemuren	Blang Perutemen
Blang Perueren	Aih Aunen

Table 1. Forest division of the Pining leuser area, Aceh

The table above shows that there is a division of forest areas according to their respective functions. Each area has customary rules that should not be violated by local communities and outsiders. For example, in carrying out plantation activities, the plantation must be fenced and it is not allowed in the area to raise livestock, and vice versa in raising pet animals such as cows / buffalo / goats, they cannot be in the agricultural area because they can damage the plants of the surrounding community. It is also the same with the Blang perutemen area which is the location of the forest area to be able to take wood, both in the needs for private homes and for public facilities, but must not exceed the statutory limits and must replant trees that have been cut down. Finally, the aih aunen area is a river that flows in the middle of the forest and villagers whose beauty must be maintained from all forms that cause pollution so that this river water has rules and sanctions in its use.

Blang Perutemen Area Regulation

The Blang Perutemen area or forest area for taking wood has prohibitions and taboos that have been regulated in the Pining customary forest village regulation, this is regulated in articles 16, 17, 18, 19, 20, 21, 22, 23, and 24 which reads:

- 1) Every person is prohibited from cutting down trees and or clearing land in the village area and or village-owned forest without the permission of the local Pengulu Kampung as stipulated in Article 16.
- 2) Every person who is not a resident of the local village and or a resident of another village is prohibited from cutting down and taking wood in the village area and or local village forest as regulated in Article 17.
- 3) Every person who is a local village resident is allowed to take timber in the village area and village-owned forests outside the State forest after obtaining permission from the Pengulu Kampung in accordance with applicable rules and regulations, with the allocation of timber for building houses, building public facilities, and or for other public/social interests regulated in article 18.
- 4) Every person is prohibited from trading timber originating from a village outside the Pining sub-district as stipulated in Article 19.
- 5) That the amount of timber that is allowed to be taken as referred to in article 20 in Article 18 above is;
 - a. Not exceeding 8 tonnes of wood for personal/home needs
 - b. Not exceeding 15 tonnes of wood for social needs and or public facilities
- 6) Every person is prohibited from burning or committing acts that can cause forest fires in forest areas and pine forests as stipulated in Article 21.
- 7) Everyone is prohibited from cutting down bee nesting trees and carrying out any activities that can disturb the comfort of bee nesting houses that have been protected by custom and have been given ownership / management rights to other people / parties regulated in article 22.

- 8) Every person is prohibited from cutting down trees and clearing land in places with a land slope of 40 per cent or 45 degrees regulated in article 23.
- 9) Every person is prohibited from cutting down trees and clearing land in places with a land slope of 40 per cent or 45 degrees as stipulated in Article 24.

The Pining Customary Area is a customary area that has been determined by the indigenous community in protecting and preserving the environment. Each Pining customary area has customary rules in the management and utilisation of its natural resources with the intention that the environment and forests remain sustainable and sustainable. And there are sanctions for people who intentionally or unintentionally commit violations or damage the environment in the area.

Customary sanctions if local and outside communities who violate the restrictions on the rules in the Blang Perutemen area that have been previously determined will be imposed customary sanctions, this is regulated in articles 49, 50, 51, 52, 53 which reads:

- 1) Anyone who deliberately violates the provisions referred to in Article 16 will have their activities stopped until permission is obtained from the local Pengulu Kampung.
- 2) Anyone who deliberately violates the provisions referred to in Article 17, Article 18, Article 19 and Article 20 shall be subject to customary sanctions in the form of:
 - a. A fine of up to Rp 10,000,000 (ten million rupiah).
 - b. Confiscation/seizure of the tools used.
 - c. The timber from the development is confiscated/seized as village property.
- 3) Any person who deliberately violates the provisions referred to in Article 22 shall be handed over to the authorities as stipulated in Article 51.
- 4) Anyone who intentionally or due to negligence cuts down bee nesting trees that have been protected by adat and given a

sign of property rights as referred to in Article 23 shall be subject to customary sanctions in the form of:

- a. Compensation to the owner.
 - b. Replanting a similar tree as many as 10 (ten) trunks.
 - c. The felled tree is confiscated/seized as village property.
- 5) Anyone who deliberately violates the provisions referred to in Article 24 will be handed over to the authorities as stipulated in Article 53.

Blang Perueren Area Regulation

The Blang Perueren grazing area has restrictions and taboos that have been regulated in the Pining customary forest village regulation, this is regulated in articles 33 and 34 which read:

- 1) Everyone is prohibited from taking, transporting materials such as wood, rattan, stones and or other objects that can damage the grass and or can damage, change the function of the grazing area in the area regulated in article 33.
- 2) The maintenance of livestock is regulated in article 34:
 - a. Livestock can be kept in areas that have been determined as places for raising livestock.
 - b. At night, livestock must be placed in cages / confined.
 - c. During the farming season, every livestock animal that is released in the cage must be tied.

Customary sanctions if local and outside communities violate the prohibitions of the rules in the Blang Perueren area that have been previously determined, customary sanctions will be imposed, this is regulated in article 57 which reads: Anyone who deliberately violates the provisions referred to in Article 36 will have his livestock confiscated and will be returned after paying a fine of one hundred thousand rupiah (IDR 100,000), per head as regulated in article 57.

Regulation of the Bur Perempusen Area

Agricultural and cultivation areas have prohibitions and taboos that have been regulated in the Pining customary forest village regulation, this is regulated in articles 26, 27, 28, 30, and 31 which read:

- 1) It is prohibited to clear land, cut trees and or take timber in the upstream river area as regulated in article 26.
- 2) Every person who is not a local resident/resident outside the village is prohibited from clearing land in the local village area regulated in article 27.
- 3) Every person is prohibited from carrying timber and rattan across rice fields during the paddy season and agricultural land/plantations that have been planted, as stipulated in Article 28.
- 4) Every person who owns agricultural/plantation land adjacent to residential areas is obliged to build a fence around their agricultural/plantation land as stipulated in Article 29.
- 5) Every adult female resident and teenager is required to wear a headscarf when in the rice fields and or on agricultural land / plantations regulated in article 30.
- 6) Every person is prohibited from taking and destroying garden products and or plantation land that does not belong to him regulated in article 31.

Customary sanctions if local and outside communities violate the prohibitions of the rules in the Aih Aunen area that have been previously determined, customary sanctions will be imposed, this is regulated in articles 44, 45, 46, 47 which read:

- 1) Anyone who deliberately violates the provisions referred to in Article 26 will be sanctioned as regulated in Article 54:
 - a. A stern reprimand,
 - b. Discontinued and,
 - c. Replanting with hardwood plants.
- 2) Anyone who deliberately violates the provisions referred to in Article 27 shall be sanctioned with a fine of ten million rupiah (Rp 10,000,000), regulated in Article 55.

- 3) Any person who intentionally violates the provisions as referred to in Article 28, Article 29, Article 30, Article 31 and Article 35 shall be sanctioned with a reprimand as stipulated in Article 56.

Regulation of Aih Aunen Area

Rivers and Grooves in Pining that must be protected and preserved because they have an important impact on people's lives are regulated in article 7 concerning the Aih Aunen Springs, Rivers and Grooves Area in the Pining Customary Forest Village regulation, including: (1) Arol Relem River; (2) Simpang Pangoh; (3) Simpang Latong; (4) Simpang Uyem; (5) Arul Cengis; (6) Arul Tengku tue; (7) Aih Sesingi; (8) Aih Lebah; (9) Aih Pasir Putih; (10) Aih Putih; (11) Aih Pining; (12) Aih Kute; (13) Arul Kulem; (14) Aih Uning; (15) Aih Kulit; (16) Aih Pepelah; (17) Arul Kute Batak; (18) Aih uring; (19) Aih Tekukur; (20) Aih Porotan; (21) Aih Gajah; (22) Aih Incen; (23) Aih Telege Batu; (24) Aih Lesten. Then it is explained again in article 8 regarding water sources in Pining that must be protected and preserved because they have an important impact on people's lives, namely: (1) Sesingi; (2) Cengis; (3) Air Lebah.

The Aih Aunen Springs, Rivers and Grooves area has prohibitions and taboos that have been regulated in the Pining customary forest Village regulation, this is regulated in articles 9, 10, 11, 12, and 13 which read:

- 1) Every person is prohibited from catching fish by using poison, using anesthetics, using bombs, using strum (electrical contact) and or using other fishing gear that can damage fish habitat in rivers, streams and or other springs regulated in article 9.
- 2) Every person is prohibited from washing agricultural tools containing poisons and or pesticides in rivers, streams and or other springs regulated in article 10.
- 3) Every person is prohibited from throwing garbage in all rivers, river channels and springs throughout the pining customary area as stipulated in article 11.

- 4) Every person is prohibited from planting trees and or clearing land within 100 (one hundred) metres of springs, watersheds and streams, except for pre-existing plantations, but the owner of the plantation is required to plant trees and or bamboo and or other plants to protect the springs and streams regulated in article 12.
- 5) Every person is prohibited from taking gravel, sand and/or other excavated C materials from springs, watersheds and streams that are the source of the community's livelihood without the permission of the landowner and the local village headman, as stipulated in Article 13.

Customary sanctions if local and outside communities violate the prohibitions of the rules in the Aih Aunen area that have been previously determined, customary sanctions will be imposed, this is regulated in articles 44, 45, 46, 47 which read:

- 1) Anyone who deliberately violates the provisions referred to in article 9 shall be fined a minimum of one million (1,000,000) per person and a maximum fine of ten million rupiah (Rp. 10,000,000,) per person and all fishing equipment shall be confiscated for destruction as stipulated in article 44.
- 2) Any person who intentionally violates the provisions as referred to in Article 9, specifically for Lesten Village, shall be fined a minimum of one buffalo per person or a maximum fine of ten million rupiah (Rp. 10,000,000) per person and all fishing equipment shall be confiscated for destruction as stipulated in Article 45.
- 3) Any person who deliberately commits a violation of the provisions referred to in Article 10 and Article 11 shall be subject to customary sanctions in the form of a stern warning as stipulated in Article 46.
- 4) Any person who intentionally violates the provisions referred to in article 12 shall be subject to customary sanctions in the form of a stern warning and

restoring the area by replanting similar trees as much as ten times the number of trees cut down as stipulated in article 47.

- 5) Anyone who deliberately violates the provisions as referred to in Article 13 shall be subject to customary sanctions in the form of a stern warning and a fine of 1 (one) goat as stipulated in Article 48.



Figure 3. Documentation with an invitation to protect the environment "Pining Forest belonging to the Indigenous People of Pining is prohibited from mining until the Day of Judgement"

The picture above is documentation that researchers took during field observations, which shows the commitment of indigenous peoples in maintaining and protecting nature and the environment so that it is not eroded due to community activities that carry out mining activities in the Pining area.

Based on the above statement, the researcher can conclude that Pining Village has a customary law in forest conservation in the Leuser area of Pining, Aceh that has lived and become a tradition of the Pining indigenous community, as evidenced by the verses of the Gayo people who sing about the importance of protecting the environment and the rules that have been made by the local indigenous community. This is evident from the interviews with Abu Kari, Ila Namsu, Ahmad Nur, Arman and the contents of the Pining customary village regulation document/manuscript above. Customary law in preserving nature and forests in the leuser area of Pining, Aceh is contained in the rules of the division of customary areas which include Blang Penjemuren (forest area for drying agricultural products so as not to be

disturbed by animals), Aih Aunen (river area on the edge of the Leuser forest for bathing and drinking water), Blang Pereuweren (forest area for livestock), Bur Perutemen (forest area where wood is collected for household use and firewood), and Bur Perempusen (forest area for farming). Local communities and communities outside Pining are required to follow the rules and penalties outlined by this folk wisdom. Each customary area that has been formed and agreed upon by the indigenous community has rules for its management and conservation and has customary sanctions if there are people proven to have intentionally or unintentionally committed violations and destruction of nature and forests in the Pining customary area, Aceh.

The Role of Customary Law in Forest and Environmental Conservation in the Leuser Region, Aceh

According to Abu Kari as the chairman of the Pining Tiger Forum, Pining District, Gayo Lues Regency said "The role of customary law is very effective in enforcing the rules in preserving the environment in our area, this is evident in addition to the community already having enough awareness in protecting nature and forests with this customary law the coating community to be more concerned about protecting the environment and not destroying it because there are already rules and sanctions that lurk if there are people who deliberately or accidentally violate the applicable rules that have been agreed upon together", said Abu Kari.

In line with Abu Kari's opinion, Ila Namsu as the secretary of the Pining Tiger Forum, Pining District, Gayo Lues Regency said "Yes, it is true that this customary law has a very important role in disciplining the community to protect and preserve the environment. For example, the law in the aih aunen area where people are prohibited from washing agricultural tools that contain chemicals that can pollute river water. Then it is forbidden to take sand, gravel and stones from the river. It is forbidden to cut down trees in the upper reaches of the river with the aim that this river is not polluted and remains beautiful. So that with this regulation, the river is better protected from pollution and damage caused by human activities," said Ila Namsu.

In line with the opinions of Abu Kari and Ila Namsu, Ahmad Nur as the head of Pining Village, Pining Sub-district, Gayo Lues District said "If we pay attention when we go to the Pining area around us we can observe green trees, cool air, and clean water. This is our awareness in protecting nature and forests and the good thing is that awareness is reinforced by the existence of laws in every area in this pining area. Because there are rules or laws that are very instrumental in overcoming environmental problems so that people do not utilise natural resources as they please in exploiting this natural wealth," said Ahmad Nur.

In line with the opinions of Abu Kari, Ila Namsu, and Ahmad Nur, Arman as the secretary of Pining Village, Pining Subdistrict, Gayo Lues Regency said "Yes, it is very effective, with this rule the community is more orderly in utilising, managing, and preserving nature and forests in this Pining area. For example, rules on the prohibition of hunting rare animals, prohibition of fishing using poison, prohibition of cutting down forests in slope areas, as well as rules and sanctions in utilising forest products. This will result in the community loving nature even more and utilising it sustainably for our children and grandchildren to enjoy in the future," said Arman.

The explanations given by Abu Kari, Ila Namsu, Ahmad Nur, and Arman above are in line with the documents/scripts researchers found during field observations.

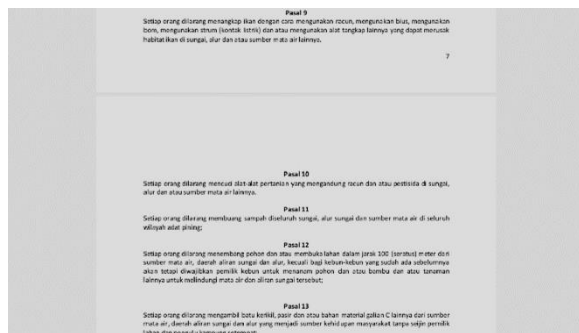


Figure 4. Rules for the Aih Aunen Spring, River and Stream Area

The picture above is the law/rule of the Aih Aunen area which consists of several articles governing and prohibitions in the area to protect and preserve the environment, especially the

river area so that it is not damaged and polluted due to irresponsible human actions.

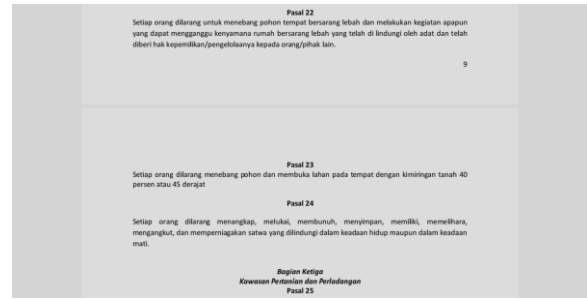


Figure 5. Blang Penjemuren Debt Area Rules

The picture above is a rule in the Blang Penjemuren debt area which contains articles that regulate and prohibit those who are especially in the Blang Penjemuren area to protect from hunting, injuring, killing, storing, maintaining, and trading protected animals alive or dead. As well as the rule of not cutting down trees where bees nest that have been protected by custom.

Based on the above statement, the researcher can conclude that Pining Village has customary law and plays an important role in forest conservation in the Pining Leuser area. Customary law in the Leuser Region plays a number of important roles in conserving the forest and its environment. Firstly, customary law in the Leuser Region includes rules, and guidelines that have evolved over the years to manage how natural resources are used. In particular, this entails limiting overly intensive extractive activities and the use of conventional techniques to maintain ecosystem balance. In this regard, indigenous communities in the Pining Leuser area have established internal rules and policies in the utilisation of forests and natural resources to maintain ecological balance in the area. Secondly, based on accumulated local wisdom, customary law regulates local governance. This includes creating strict protected areas, such as natural protected areas or traditional forests, which play an important role in safeguarding the environment and biodiversity. In the Leuser region, communities have designated blang pemjemuren, bur pemempusen, blang perueren and aih aunen areas. The third customary law is to enforce customary sanctions. To restore ecological

balance, such sanctions may take the form of applicable fines, prohibitions, or reconciliation measures.

Discussion

Based on the results of the research conducted by the researchers, there is some information found regarding the problems in this article. The information that the researcher obtained is true and what it is and was sought directly in the field by conducting interviews both from the informants of the Pining Forest and River Guardians Forum, the Village Government. The following is a discussion of the information that has been obtained by researchers during the research process in Pining Village, Pining District, Gayo Lues Regency.

Customary Laws and Regulations for Forest and Environmental Conservation in the Leuser Region, Aceh

Indigenous peoples' laws and regulations are built and shaped on their cultural values and dependence on the environment. This also significantly influences the way indigenous peoples protect their environment, which ultimately leads to good nature conservation practices. In modern nature conservation, it is important for humans to gain useful knowledge and information as an output of education. However, most indigenous peoples do not have access to modern education, or they choose not to use it due to their cultural beliefs (Sadeka et al, 2020). Customary Law refers to the traditional rules that govern the lives of the indigenous people of a region. In many parts of Indonesia, including Aceh, customary law plays an important role in forest and environmental conservation. The Leuser region in Aceh is one example where customary law plays a role in maintaining environmental and ecosystem sustainability. The applicable law in Pining divides the forest area into 4 areas, each designated area has its own regulations that have been agreed upon by the indigenous community, among the 4 areas are Blang Penjemuren, Blang Perutemen, Blang Perueren, Bur Perempusen and Aih Aunen.

Blang Penjemuren is a place to dry rice before it is made into rice. This place is specifically for women to dry rice. Usually the rice is dried in groups from several households with only two girls guarding it to prevent it from being disturbed by animals. This is because in Gayo custom there is a term "my son, your son" which means that the girls and young men of a village belong together in using their labour. This is a manifestation of the Gayo tribe's sense of brotherhood. Blang Penjemuren is positioned on the edge of the residential area of a village, directly adjacent to the forest closest to the village. This place can also be called "Dewal". Here, a place for harvested rice is made or called "Keben". The reason the rice is placed outside the village is that if something happens to the village such as a fire, the rice can survive as the staple food to sustain life. "Keben" serves as a place for the young men of "Sebujang" to sleep together ton nome sebujang (bachelor boy's bed). The goal is that if something happens to the village, the youth are easy to call because they sleep in one place. In line with research from (Lestawi, et al 2020) on forest conservation efforts in Bali cannot be separated from the existence of local wisdom. Customary law, as a decision of Hindu religious leaders in Bali, is one of the local wisdoms maintained by the community. This study examines the values of local wisdom embraced by indigenous peoples and examines forest conservation from a Hindu perspective. The research was conducted in three villages in Bali, namely Tenganan Village, Manggis Sari Village, and Sangeh Village. The inhabitants of these villages believe that the forest is a sacred area that must be properly guarded and preserved.

Blang Perutemen which means a forest area to collect firewood "Utem". Only from this forest area can firewood and wood for other purposes be taken. The condition is that this forest area must not be located in the upper reaches of the river so that it will not damage water sources. The custom also stipulates that people should not carelessly collect wood from the forest. "selective cutting of wood i uten kati selisih mara bahaya" (cutting wood in the forest must be selected, not carelessly so that the danger of natural disasters does not occur). In

the "Blang Perutemen" forest area, all the wood needed can be taken, including wood for making houses. However, there is a procedure for taking wood here. Whoever wants to cut down, must re-plant the type of wood in accordance with the amount cut down. In fact, before cutting down there is even a special ceremony aimed at asking permission from the owner and ruler of the forest "empu ni tempat" which is usually led by a forest handler. In line with research conducted by (Resti, et al 2022) shows that the forms of local wisdom of indigenous peoples consist of 7 forms; Values, Norms, Ethics, Beliefs, Customs, Customary Law and Special Rules. Then there are 3 customary law institutions in Sidas A Hamlet consisting of; Temenggung, Pasirah and Pangaraga. Each has a role if there is a violation of values, norms and ethics, beliefs, customs, customary law and special rules and makes decisions for each violation in preserving the Bukit Marang Customary Forest Area in Sidas A Hamlet.

Blang Perueren is a forest area specifically for raising livestock. Usually, this area is determined by the agreement of community leaders who are believed to be able to raise cattle or buffalo that do not disturb other people's gardens. In Gayo Lues District, the area called Blang Nangka used to be a "Bur Perueren" area. In Pining sub-district, we can still see "Bur Perueren Berang Salam". This is in line with the opinion that says Indigenous people also consider any large tree on a piece of land as sacred. As a result, whenever they need to clear land for new settlers, they avoid cutting down large trees. However, according to modern knowledge, this action can help maintain the strength of the soil because it is pinched by the roots of large trees, as well as avoid landslides (Iskandar et al 2018).

Blang Perempusen is a forest area specifically owned by a family in the business of cultivating agricultural land. This forest area is formed and determined by agreement with the village community so that a certain amount of land is agreed upon. Provisions in clearing agricultural/plantation land, namely: (1) Every person is prohibited from opening new land for agriculture/plantations without the permission

of the Pengulu Kampung; (2) Permission to open new land can only be given by the Pengulu Kampung to local villagers after fulfilling the terms and conditions; (3) Permission to open new land is given by the Pengulu after obtaining approval from the Jema opat; (4) Any person who is a resident of another village cannot be given permission to open new land in the local village; (5) The area of new land that can be given to each village resident is 2 (two) square hectares; (6) Any resident who has received a land clearing permit of 2 (two) square hectares is not allowed to expand his land again if the land is abandoned and or the land is not utilised/planted and or not completed; (7) Any land that has been cleared and pegged/staked but not utilised and or abandoned by the owner for 1 (one) consecutive year, can be taken, utilised/cultivated and owned by other residents.

In line with research conducted by (Chandra, F. 2020) which explains in this study the role of customary law communities through customary law is needed in environmental conservation in Indonesia. Customary law communities must be optimised, both as managers, protectors, and enforcers, because before the existence of this country, customary law communities had their own traditions and ways of life that coexisted with nature. Five things need to be done to optimise the role of indigenous peoples in environmental management and protection: a. Quality of human resources; b. Legislation; c. role of government; d. role of corporations; e. Law enforcement. According to Ibarra et al. (Ibarra et al, 2011), indigenous people have used crop rotation to ensure they have enough food throughout the year. This will also help the soil stay fertile. There are also indigenous peoples who have practised mixed farming to increase food production in their communities. This method not only saves time, but also requires fewer human resources (Lin et al, 2020).

This is in line with the research results (Suparmini et al., 2015) which show how the Baduy tribe is still very dependent on nature and continues to work to maintain its balance. The area division guideline into three areas, reuma

area (settlement), heuma area (moor and fertile land), and leuweung kolot area (old forest) displays the local wisdom of Baduy community in managing natural resources. A sustainable way of life is made possible by the synergistic integration of various aspects of Baduy community life in Kanekes. Regarding the interaction between socio-cultural life, economy, and environmental management, the view of Baduy community is mostly in line. Baduy community still upholds their custom as an element of local wisdom, and the custom develops into a fortress for them in facing modernisation, including in terms of protecting their environment. Baduy community is involved in four types of technology, knowledge, agriculture, and conservation behaviour, as well as four types of conservation practices. All of them are done with full awareness on the basis of customs and pikukuh provisions that have been ingrained in the soul of Baduy community.

Aih Aunen is a river area that serves as a source of water for the Gayo people. In addition to bathing, the river also functions in several ways, including as a source of food. In this rule, the river must also be preserved and not spread toxins. This is necessary because many households cannot install clean water into the house. They use the river as a source of drinking water. Widows and orphans living below the poverty line rely on the river as a source of life, especially side dishes. In the river, they "mengegi, nyekot, and rodok". In Gayo society, the river as a bathing place is also divided into two, namely Aunen Benen (bathing place for women only) and Aunen Rawan (bathing place for men only). It is in this bathing place that we can find various stories about the life of the Gayo tribe. This is in line with the explanation from Abas (Abas et al, 2022) who explained that basically, the upper reaches of the river are considered sacred and have great spiritual significance for indigenous people, especially native Asians. As a result, they rarely fish or bathe upstream to avoid the wrath of water spirits. However, in modern lore, this practice is defined differently, where avoiding the use of river water upstream reduces the discharge of pollution from upstream, which then accumulates downstream. Water, according to

indigenous peoples, is a sacred gift that connects all life. All indigenous peoples uphold water and perform sacred ceremonies to ensure that water is honoured and these water ceremonies are passed on to future generations (David & Ploeger, 2014).

One case that has occurred in the violation of the pinning customary forest is the poisoning of fish in the pinning river area, so that the community received customary sanctions in the form of returning as many seeds as they took or the community poisoned. This is in accordance with the findings of Franco and Minggu (Franco & Minggu, 2019), who found that indigenous Bruneians consider hornbills sacred, believing that their presence in the forest will bring good luck and peace to the community and the forest. As a result, they learnt to track and identify hornbills based on their feeding habits and food remains. Indigenous peoples have also inherited a systematic way of hunting from their ancestors. According to Agatha (Agatha, 2016), indigenous people only fish or hunt adult animals to survive. This will allow animals to reproduce without limit while also maintaining the balance of the natural ecosystem (Timoti et al, 2017).

The Role of Customary Law in Forest and Environmental Conservation in the Leuser Region, Aceh

Customary law plays a significant role in environmental and forest conservation in Aceh's Leuser region. With one of the largest tropical rainforest ecosystems in Southeast Asia and high levels of biodiversity. The current protection of ecosystems and natural resources in the region is greatly aided by customary law. Customary law in the Leuser Region plays a number of important roles in the conservation of the forest and its environment. Firstly, customary law in the Leuser Region includes rules, and guidelines that have evolved over the years to manage how natural resources are used. In particular, this entails limiting overly intensive extractive activities and the use of conventional techniques to maintain ecosystem balance. In this regard, indigenous communities in the Pining Leuser area have established internal rules and policies in the utilisation of forests and natural resources to maintain ecological balance

in the area. Secondly, based on accumulated local wisdom, customary law regulates local governance. This includes creating strict protected areas, such as natural protected areas or traditional forests, which play an important role in safeguarding the environment and biodiversity. In the Leuser region, communities have designated *blang pemjemuren*, *bur pemempusen*, *blang perueren* and *aih aunen* areas. The third customary law is to enforce customary sanctions. To restore ecological balance, such sanctions can be in the form of applicable fines, prohibitions, or acts of reconciliation. This is in line with research conducted by (Chandra, F. 2020) which explains in this study the role of customary law communities through customary law is needed in environmental conservation in Indonesia. Customary law communities must be optimised, both as managers, protectors, and enforcers, because before the existence of this country, customary law communities had their own traditions and ways of life that coexisted with nature. Five things need to be done to optimise the role of customary law communities in environmental management and protection: a. Quality of human resources; b. Legislation; c. role of government; d. role of corporations; e. Law enforcement.

Conclusion

Customary law in the Leuser Region plays an important role in forest and environmental conservation. These roles include regulating the use of natural resources based on customary community agreements, sustainable area management by establishing *blang penjemuren* (forest area for drying agricultural products), *bur perutemen* (forest area for collecting timber), *bur perempusen* (forest area for farming), *blang perueren* (forest area for cattle), and *aih aunen* (forest area for collecting water sources), safeguarding boundaries to prevent over-exploitation, and principles of harmony with nature contained in customary law norms. In addition, customary law also involves communities in environmental decision-making and imposes customary sanctions for violations of conservation norms.

Disclosure statement

The authors declare no conflict of interest.

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