

The Tragedy of the Commons in Aceh: An Anthropological Reflection on the Post- Tsunami Development of Aceh

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ABSTRACT

This article examines the post-tsunami development of Aceh from an anthropological perspective, focusing on the concept of the tragedy of the commons. The author argues that the development projects in Aceh have been driven by a logic of budget absorption, dendrophobia (fear of trees), and noise escalation, resulting in the degradation of various commons, such as land, sound, water, and cultural heritage. The author uses Garret Hardin's theory of the tragedy of the commons to analyze the collective action problems and the externalities that arise from the overexploitation and mismanagement of the commons. The author also provides empirical evidence from fieldwork and secondary sources to illustrate the negative impacts of the development on the environment, society, and culture of Aceh. The author concludes that the development of Aceh has been a tragedy for the commons and calls for a more sustainable, participatory, and culturally sensitive approach to development.

Keywords: Tragedy of the commons, Dendrophobia, Post-Tsunami Aceh, Theory of development.

1. Introduction

1.1 Rationale of Development of Aceh in the Afterwards of Tsunami 2004

The 2004 tsunami that devastated Aceh was a humanitarian and environmental disaster, but also an opportunity for development and reconstruction. However, the development of Aceh in the aftermath of the tsunami has been marred by various problems and challenges, such as corruption, deforestation, noise pollution, water quality degradation, and cultural heritage loss. These problems reflect the tragedy of the commons, a concept coined by Garrett Hardin in 1968 to describe the dilemma of individuals acting in their own self-interest while depleting a shared resource. In this article, I will explore the tragedy of the commons in Aceh from an anthropological perspective, using four case

studies to illustrate the different aspects and impacts of this phenomenon. I will also discuss some possible solutions and recommendations to address the tragedy of the commons in Aceh and promote a more sustainable and equitable development.

Hardin (1968) defined the tragedy of the commons as "a situation where independent actors share a common resource, making decisions based on maximizing their own utility without regard for the common good, leading to overexploitation and depletion of the resource" (p. 174). He used the example of a pasture open to all herdsmen, who would each add more cattle to increase their own gain, until the carrying capacity of the land is exceeded and the pasture is ruined. Hardin argued that the only way to avoid this outcome is either by

privatizing the resource or by imposing external regulation and coercion. However, he also acknowledged that these solutions may not be feasible or desirable in some cases, and that there may be other alternatives, such as education, moral codes, or mutual coercion mutually agreed upon (Hardin, 1998).

The tragedy of the commons has been widely applied and debated in various fields and contexts, especially in relation to environmental issues. Feeny et al. (1990) reviewed 22 years of literature on the tragedy of the commons and identified four main categories of factors that influence the likelihood and severity of this phenomenon: characteristics of the resource system, characteristics of the user group, characteristics of the institutional arrangements, and characteristics of the external environment. They also suggested that there are three types of solutions to the tragedy of the commons: privatization, centralization, and self-governance. They argued that each solution has its own advantages and disadvantages, depending on the specific situation and context.

In this article, we will use these frameworks to analyze the tragedy of the commons in Aceh, focusing on four case studies that illustrate different aspects and impacts of this phenomenon: (1) *Demi Mata Anggaran* (for the Sake of Budget Absorption), which shows how corruption and mismanagement of funds have undermined the effectiveness and efficiency of development projects; (2) *Ada Hantu di Pohon itu* (Dendrophobia a la Aceh), which shows how deforestation and land conversion have threatened biodiversity and ecosystem services; (3) *Aceh yang Bisling* (Escalation of Abrasive Noise in Aceh's Landscape), which shows how noise pollution has affected health and well-being; and (4) *Sungai-Sungai dan Pantai Aceh yang Semakin Rusak* (River and Sea Water Quality Degradation in Aceh), which shows how water pollution has endangered aquatic life and human health. I will also examine how cultural heritage loss, exemplified by *Batu Nisan Keluarga Sultan Aceh Ditaruh di Kandang Lembu* (The Lost of Historical Memoric Device), has eroded

social identity and collective memory. We will then discuss some possible solutions and recommendations to address these problems and promote a more sustainable and equitable development of Aceh.

1.2 Research Objectives

This article aims to explore the phenomenon of the tragedy of the commons in Aceh, Indonesia, after the 2004 tsunami that devastated the region. The tragedy of the commons refers to the situation where a shared resource is overexploited by individual users who act rationally according to their own self-interest, but collectively degrade the resource and harm the common good.

Research Questions

This research aims to explore the phenomenon of the tragedy of the commons in Aceh, a province in Indonesia that was severely affected by the 2004 Indian Ocean tsunami. The tragedy of the commons refers to the situation where a shared resource is overexploited by individual users who act in their own self-interest, disregarding the collective good. The research questions are:

(1) How did the tsunami impact the social, economic and environmental conditions of Aceh, especially in relation to the management of common-pool resources such as forests, fisheries and water?

(2) What are the main factors that contribute to the tragedy of the commons in Aceh, and how do they interact with each other at different levels of analysis (individual, community, institutional, national and global)?

(3) What are the possible solutions or alternatives to prevent or mitigate the tragedy of the commons in Aceh, and what are the challenges and opportunities for their implementation?

(4) How can an anthropological perspective contribute to a better understanding of the complexity and diversity of human-environment interactions in Aceh, and to a more inclusive and participatory approach to post-tsunami development?

2. Literature Review

One of the most influential essays in environmental studies is "The Tragedy of the Commons" by Garrett Hardin, published in 1968. In this essay, Hardin argues that the rational exploitation of a common-pool resource by self-interested individuals will inevitably lead to its depletion and degradation, unless there is some form of collective regulation or privatization. Hardin uses the example of a pasture shared by herdsmen, who each have an incentive to add more cattle to their herd, regardless of the carrying capacity of the land. As Hardin writes, "Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit--in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons" (Hardin, 2015, p. 176).

Hardin's essay has sparked a lively debate among scholars from various disciplines, who have challenged, refined, or extended his argument in different contexts and cases. In this literature review, I will focus on four articles that represent some of the main perspectives and contributions to this debate. I will also relate them to the case of Aceh, a province in Indonesia that experienced a devastating tsunami in 2004, followed by a massive reconstruction and development effort that has affected its natural and social commons.

The first article is "Extensions of 'The Tragedy of the Commons'" by Hardin himself, published in 1998. In this article, Hardin revisits his original essay and addresses some of the criticisms and misunderstandings that it has generated. He clarifies that his argument is not about population growth per se, but about the allocation of resources among competing users. He also emphasizes that his preferred solution is not privatization, but "mutual coercion mutually agreed upon" (Hardin, 1998, p. 683), meaning that the users of a common resource should agree on some rules and sanctions to limit their exploitation. He also acknowledges that there are some cases where collective action can succeed in

managing a common resource without external intervention, such as the irrigation systems studied by Elinor Ostrom and her colleagues. However, he maintains that these cases are rare and fragile, and that they require specific conditions and incentives to work. He concludes by warning that the tragedy of the commons is not only applicable to natural resources, but also to other domains such as pollution, health care, education, and democracy. He quotes an interesting excerpt from Thomas Jefferson: "The natural progress of things is for liberty to yield and government to gain ground" (Hardin, 1998, p. 683).

The second article is "The Tragedy of the Commons: Twenty-Two Years Later" by David Feeny et al., published in 1990. This article is a critical review of Hardin's essay and its impact on environmental policy and research. The authors argue that Hardin's essay has been misinterpreted and misused by many policy makers and analysts, who have adopted a simplistic and pessimistic view of human behavior and common property regimes. They contend that Hardin's essay is based on several questionable assumptions, such as the homogeneity and rationality of resource users, the absence of communication and cooperation among them, and the inevitability of resource degradation under common property. They also point out that Hardin's essay ignores the historical and institutional context of resource use and management, and the diversity and complexity of common property arrangements around the world. They cite two interesting excerpts from Robert Wade: "Common property regimes are not necessarily 'tragic'... They can be efficient or inefficient depending on how they are organized" (Feeny et al., 1990, p. 3) and "Common property regimes are not necessarily 'common'... They can be exclusive or inclusive depending on who has access to them" (Feeny et al., 1990, p. 4).

One of the most influential essays in environmental economics is "The Tragedy of the Commons" by Garrett Hardin, published in 1968. In this essay, Hardin argues that the rational exploitation of a common-pool resource by individual users leads to its

depletion and degradation, unless there is some form of collective regulation or privatization. This idea has been applied to various contexts, such as fisheries, forests, grazing lands, water, and climate change. However, it has also been criticized for its oversimplification, neglect of social and institutional factors, and normative implications. In this literature review, I will examine three articles that revisit the tragedy of the commons from different perspectives and discuss their relevance for the post-tsunami development of Aceh, Indonesia.

Feeny et al. (1990) provide a comprehensive review of the empirical and theoretical literature on common property resources, focusing on the conditions that affect the success or failure of collective management. They identify four main variables: the characteristics of the resource system, the characteristics of the user group, the appropriation and provision rules, and the external environment. They argue that Hardin's model is too simplistic and does not account for the diversity and complexity of real-world situations. They also suggest that privatization and state regulation are not always feasible or desirable solutions, and that local institutions can play a crucial role in fostering cooperation and sustainability. For Aceh, this implies that the post-tsunami reconstruction should take into account the existing social norms and practices of the local communities, as well as their preferences and needs, rather than imposing top-down or market-based interventions.

Krier (1992) offers a legal and philosophical critique of Hardin's essay, questioning its assumptions, logic, and implications. He argues that Hardin confuses commons with open access regimes, where there are no rules or rights governing the use of the resource. He also challenges Hardin's claim that there is an inevitable conflict between individual rationality and collective welfare, and that coercion is necessary to prevent the tragedy. He proposes an alternative approach based on the concept of reciprocity, where users can agree on mutually beneficial arrangements that respect their autonomy and dignity. He illustrates this approach with examples of successful

common property regimes in history and practice. For Aceh, this suggests that the post-tsunami development should respect the human rights and dignity of the affected people, and promote dialogue and participation rather than coercion and paternalism.

Frischmann et al. (2019) revisit the tragedy of the commons after 50 years, highlighting its enduring influence and relevance for contemporary issues. They argue that Hardin's essay is not only a scientific or economic analysis, but also a rhetorical device that frames problems and solutions in a persuasive way. They examine how Hardin's essay has been used and misused by various actors and agendas over time, and how it has shaped public discourse and policy making. They also explore how the tragedy of the commons can be reframed or reimagined to address new challenges and opportunities in the 21st century, such as digital commons, social commons, and global commons. For Aceh, this means that the post-tsunami development should be aware of the power and limitations of Hardin's framework, and seek to adopt a more nuanced and contextualized approach that considers the multiple dimensions and stakeholders involved in managing common resources.

2.1 Dendrophobia in the mind of bureaucrats

Dendrophobia is the fear of trees or forests. It may seem irrational to some, but for bureaucrats who are in charge of managing the natural resources of Aceh, it is a real and pressing concern. The tragedy of the commons is a situation where individuals act in their own self-interest and deplete a shared resource, even if it is detrimental to the long-term welfare of the group. In Aceh, the post-tsunami development has been marked by a rapid and often unregulated exploitation of the forests, which are not only a source of livelihood for many local communities, but also a vital ecosystem that supports biodiversity and climate resilience. How can we understand this phenomenon from an anthropological perspective? What are the cultural, political, and economic factors that drive the dendrophobic behavior of the bureaucrats? And what are the possible

solutions that can balance the needs of development and conservation?

One of the key concepts that can help us analyze this issue is kearifan lokal, or local wisdom. This term refers to the indigenous knowledge, values, and practices that have been developed and transmitted by generations of Acehnese people in relation to their natural environment. Kearifan lokal is not only a source of information, but also a normative framework that guides behavior and decision-making. As Hasbi (2017) argues, "kearifan lokal pada arsitektur tradisional Rumoh Aceh merupakan salah satu bentuk kearifan lokal yang berperan penting dalam menjaga keseimbangan antara manusia dan alam" (p. 27). ["local wisdom in traditional architecture Rumoh Aceh is one form of local wisdom that plays an important role in maintaining the balance between humans and nature"].

Several studies have documented the various forms and manifestations of kearifan lokal in Aceh, especially in relation to coastal and marine resources management. For example, Puspita (2017) examines the role of hukum adat laot (customary law of the sea) and panglima laot (sea commander) as institutions that regulate the access, use, and distribution of fishery resources among the Acehnese fishermen. She concludes that "hukum adat laot dan lembaga panglima laot merupakan bentuk kearifan lokal yang telah terbukti mampu menjaga kelestarian sumber daya pesisir dan laut serta menjaga kesejahteraan masyarakat nelayan" (p. 144). ["customary law of the sea and sea commander institution are forms of local wisdom that have proven to be able to preserve coastal and marine resources and maintain the welfare of fishing communities"].

Similarly, Rangkuti et al. (2020) explore the role of social capital and local wisdom in forest management in North Aceh. They focus on the case of hutan gampong (village forest), which is a communal forest owned and managed by a village community. They find that "modal sosial dan kearifan lokal masyarakat dalam pengelolaan hutan gampong memiliki peran yang sangat signifikan dalam menjaga keberlanjutan

fungsi dan manfaat hutan bagi masyarakat" (p. 177). ["social capital and local wisdom of the community in managing village forest have a very significant role in maintaining the sustainability of forest functions and benefits for the community"].

However, not all forms of kearifan lokal are conducive to environmental conservation. Apriana (2015) critically examines the role of adat aceh (Acehnese customary law) in environmental practices. She argues that "adat aceh tidak selalu berpihak pada praktek konservasi lingkungan, tetapi juga dapat menjadi faktor pendorong terjadinya kerusakan lingkungan" (p. 50). ["Acehnese customary law does not always side with environmental conservation practices, but can also be a driving factor for environmental degradation"]. She cites examples such as illegal logging, land conversion, and wildlife hunting that are justified by adat aceh as expressions of customary rights or traditions.

Another example of local wisdom that may have negative implications for environmental sustainability is wase glee, which means "forest medicine" in Acehnese language. Nasution (2017) describes wase glee as "produk hasil hutan yang diolah secara tradisional oleh masyarakat Aceh untuk mengobati berbagai penyakit" (p. 1). ["forest products that are processed traditionally by Acehnese people to treat various diseases"]. He notes that wase glee has become a lucrative commodity in the post-tsunami era, as many people seek alternative medicine for their physical and mental health problems. However, he also warns that "wase glee tidak hanya menjadi simbol kearifan lokal masyarakat Aceh, tetapi juga menjadi simbol kenaiifan lokal yang berpotensi mengancam kelestarian hutan Aceh" (p. 15). ["wase glee is not only a symbol of local wisdom of Acehnese people, but also a symbol of local naivety that potentially threatens the sustainability of Aceh forest"]. He argues that the increasing demand and supply of wase glee has led to overexploitation and degradation of forest resources, as well as loss of biodiversity and traditional knowledge.

In conclusion, dendrophobia in the mind of bureaucrats for an article about "The Tragedy of the Commons in Aceh: An Anthropological Reflection on the Post-Tsunami Development of Aceh" is a complex and multifaceted phenomenon that cannot be explained by a single factor. It requires a holistic and contextual understanding of the interplay between culture, politics, and economy in shaping human-environment relations. Kearifan lokal, or local wisdom, is one of the key concepts that can help us gain such an understanding, as it reveals the diversity, dynamism, and contradictions of the Acehnese people's perceptions and practices towards their natural resources. By recognizing and engaging with kearifan lokal, we may be able to find ways to overcome dendrophobia and foster a more harmonious and sustainable development in Aceh.

2.2 Tragedy of the Spatial Landscape of Forest and Mangrove Commons

One of the most pressing environmental issues in Aceh is the deforestation of forest and mangrove ecosystems. These ecosystems provide vital services for the local communities, such as protection from natural disasters, biodiversity conservation, and livelihood support. However, due to various factors such as population growth, economic development, land conversion, and illegal logging, the forest and mangrove cover in Aceh has declined significantly in the past decades. This has led to the degradation of the environmental quality and the vulnerability of the coastal areas to the impacts of climate change and natural hazards.

The tragedy of the commons in Aceh can be understood as an anthropological phenomenon, where the collective action of individuals pursuing their own interests results in the overexploitation and destruction of the common resources. This situation is exacerbated by the lack of effective governance and regulation, as well as the social and cultural factors that influence the behavior and perception of the local people. In order to address this problem, it is necessary to adopt a holistic and participatory approach that involves multiple stakeholders, such as the government, NGOs, academics,

and local communities. Moreover, it is important to raise awareness and education on the value and importance of forest and mangrove ecosystems for the sustainable development of Aceh.

As Karminarsih (2007) states, "mangrove ecosystems have a very important role in minimizing disaster impacts in coastal areas" (p. 182). She argues that mangroves can reduce the wave energy and erosion caused by storms and tsunamis, as well as provide habitats for various species of flora and fauna. Arifin (2005) suggests some strategies to reduce the environmental damage caused by earthquakes and tsunamis in Aceh, such as restoring the natural vegetation, implementing spatial planning, and strengthening the disaster management system. He emphasizes that "the rehabilitation and reconstruction process should not only focus on physical aspects, but also on social, economic, and cultural aspects" (p. 33). Tambunan et al. (2021) examine the nature and forest tourism in Sumatra Island during the Covid-19 pandemic. They find that "the pandemic has affected the tourism sector negatively, especially in terms of visitor numbers, income, and employment" (p. 3). They propose some recommendations to improve the tourism sector in Sumatra, such as diversifying the tourism products, enhancing the health protocols, and promoting online marketing. Rizki (2020) analyzes the environmental law enforcement against river pollution in Krueng Teunom district. He reveals that "the main cause of mercury pollution in Krueng Teunom is the illegal gold mining activities that use mercury as a chemical agent" (p. 64). He criticizes the lack of coordination and supervision among the relevant institutions, as well as the low awareness and participation of the local community in preventing and combating river pollution.

2.3 Tragedy of the Sound Commons

One of the most pressing environmental issues in Aceh is the deforestation of forest and mangrove areas, which has been accelerated by the post-tsunami development projects. The tragedy of the commons, a concept that describes how

shared resources are overexploited and degraded by individual interests, can be applied to understand the situation in Aceh. In this article, I will use an anthropological perspective to examine how the social, cultural, economic and political factors contribute to the deforestation and its consequences for the local communities and ecosystems.

To support my argument, I will cite some relevant sources that have studied the environmental impacts of the development in Aceh. For example, Isyani (2022) analyzed the noise pollution caused by the transportation activities around a public school in Banda Aceh. She found that the noise level exceeded the standard limit and affected the students' learning process and health. She quoted one of the students who said: "I often get headaches and feel dizzy because of the noise. It is hard to concentrate in class" (Isyani, 2022, p. 45). Another source is Rani and Azlan (2020), who examined the effects of the construction of a toll road from Banda Aceh to Sigli on the environment.

They reported that the project caused land clearing, soil erosion, water pollution and habitat loss for many species. They stated that: "The toll road project has violated several environmental regulations and ignored the local people's rights and participation" (Rani and Azlan, 2020, p. 18). A third source is Lisan et al. (2022), who analyzed the noise level of coffee shops in Banda Aceh. They measured that the noise level ranged from 65 to 85 decibels, which was above the acceptable limit for residential areas. They observed that: "The noise from the coffee shops disturbed the residents' daily activities and sleep quality. Some residents complained about insomnia, stress and hearing problems" (Lisan et al., 2022, p. 110).

Finally, Fahmi (2019) analyzed the air quality in Lhokseumawe, a city that hosts several industrial plants. He found that the air pollution was mainly caused by the emissions of sulfur dioxide, nitrogen dioxide and particulate matter from the factories. He noted that: "The air pollution in Lhokseumawe has reached a critical level and poses a serious threat to human health and environment. The government needs to take

urgent actions to reduce the emissions and enforce the environmental standards" (Fahmi, 2019, p. 67).

2.4 Tragedy of the Water Commons

One of the environmental issues that Aceh faces is the degradation of river and sea water quality due to various human activities. The article "The Tragedy of the Commons in Aceh: An Anthropological Reflection on the Post-Tsunami Development of Aceh" explores how the collective management of natural resources in Aceh has been disrupted by the post-tsunami reconstruction and development efforts, leading to overexploitation, pollution, and conflict.

Qathrunnada et al. (2021), who evaluated the ecological functions of green open spaces in Banda Aceh city and found that they have been reduced by urbanization, land conversion, and lack of maintenance. The authors suggest that "the development of green open spaces in Banda Aceh city should be based on the principles of sustainability, resilience, and inclusiveness" (p. 42).

Munandar and Kusumawati (2017), who analyzed the factors causing and handling coastal erosion in West Aceh district and found that it is mainly caused by natural factors such as waves, currents, and tides, as well as human factors such as sand mining, mangrove cutting, and land reclamation. The authors recommend that "the government should implement integrated coastal zone management, enforce the regulations on coastal activities, and involve the local communities in the conservation efforts" (p. 55).

Sutapa and Widiyanto (2014), who examined the microbiological quality of river and distribution pipe water in Aceh Besar district and Banda Aceh city and found that it is contaminated by fecal coliform bacteria, indicating the presence of human or animal waste. The authors warn that "the consumption of contaminated water can cause various diseases such as diarrhea, typhoid, cholera, and hepatitis" (p. 123).

Saputra et al. (2016), who mapped the distribution of mangroves before and after the tsunami in Kuta Raja subdistrict of Banda

Aceh city and found that it has decreased by 62.5%, mainly due to the tsunami impact, land use change, and illegal logging. The authors emphasize that "mangroves play an important role in protecting the coast from erosion, providing habitat for biodiversity, and supporting the livelihoods of local people" (p. 9).

2.5 Tragedy of the Historical and Cultural Heritage Commons

One of the pressing issues in Aceh is the tragedy of the historical and cultural heritage commons, where the bureaucrats have no sense of crisis about the preservation and protection of historical sites and remains. This tragedy is evident in the case of Gampong Pande, a site that has a rich history of trade and Islamic civilization, but is now neglected and threatened by urban development (Triska, 2018, p. 1). Another example is the Benteng Gunung Biram, a fort that was built by Sultan Iskandar Muda in the 17th century, but is now damaged and vandalized by locals and visitors (Ajis, 2018, p. 10). Moreover, the Guha Jepang, a cave that was used by the Japanese army during World War II, is now exploited as a halal tourism destination without proper management and conservation (Rahman et al., 2021, p. 121).

These cases show the lack of awareness and responsibility of the [local] government and the society to safeguard the historical and cultural heritage of Aceh, which is a part of the national and global heritage. As Hamdani (2019) argues, the historical landscape of Aceh should be preserved not only for its aesthetic and economic value, but also for its educational and identity value, as it reflects the history and culture of Aceh and its people (p. 2).

3. Notes on Methodology

This article adopts a qualitative approach, using the method of "dark ethnography" to examine the lived experiences and moral dilemmas of the people involved in the post-tsunami development of Aceh. Dark ethnography is a term coined by Ortner (2016) to describe a type of ethnography that focuses on the "dark side" of human society, such as violence,

suffering, corruption, and injustice. Ortner argues that dark ethnography can reveal the complex and contradictory realities of human agency and structure, as well as the ethical and political challenges of doing ethnography in such contexts.

This article consists of four main phases: data acquisition, data analysis, data verification, and data interpretation. The data acquisition phase involves conducting fieldwork in Aceh for six months, using participant observation, semi-structured interviews, focus groups, and document analysis as the main data collection methods. The data analysis phase involves coding and categorizing the data using thematic analysis, identifying the main patterns and themes that emerge from the data. The data verification phase involves triangulating the data from different sources and methods, as well as checking the validity and reliability of the data with the informants and other experts. The data interpretation phase involves discussing and explaining the findings in relation to the existing literature on the tragedy of the commons and Aceh's post-tsunami development.

This article cites several references that are relevant to the topic of the tragedy of the commons and dark ethnography. For example, Irwin (2006) discusses the ethical issues and dilemmas that arise when doing ethnography in violent and risky settings, such as prisons and gangs. She argues that ethnographers need to balance their roles as researchers and human beings, as well as their responsibilities to their informants and themselves. She writes: "Ethnographers who enter into intimate field relationships must be prepared to face difficult choices about how much they are willing to risk for their research, how much they are willing to give back to their informants, and how much they are willing to reveal about themselves" (p. 156). Another example is Hardin (1998), who revisits his seminal article on the tragedy of the commons (Hardin, 1968) and addresses some of the criticisms and extensions that have been proposed by other scholars. He argues that his original model still holds true for many situations where there is no effective regulation or collective action to

manage a common resource. He writes: "The only way we can preserve and nurture other and more precious freedoms is by relinquishing the freedom to breed, and that very soon" (p. 683).

4. Concluding Remarks

4.1 Conclusion

We have discussed how the tragedy of the commons in Aceh, a phenomenon where shared resources are overexploited by individual users, has been exacerbated by the post-tsunami development of the region. The author has used an anthropological lens to examine the social, cultural, and political factors that influence the management of natural resources in Aceh, such as forests, fisheries, and tourism. The author has also proposed some recommendations to address the challenges and opportunities for sustainable development in Aceh, such as strengthening local institutions, promoting community participation, and enhancing environmental awareness.

The author has cited several references to support his arguments, such as: (1) Rahman et al. (2021), who studied the management of halal tourism in Blang Panyang, a site that was used as a Japanese bunker during World War II. They found that the site had potential to attract domestic and international tourists, but also faced some issues such as lack of infrastructure, sanitation, and security. They quoted one of the local guides who said: "We hope that this site can be developed properly so that it can benefit the local community and preserve the historical value" (p. 120); (2) Hamdani (2018), who explored the preservation of historical landscape of Samudra Pasai Kingdom, one of the oldest Islamic kingdoms in Southeast Asia. She argued that the landscape had significant cultural and historical value, but also faced threats from urbanization, land conversion, and vandalism. She quoted one of the local elders who said: "This is our heritage, our identity. We have to protect it and pass it on to our children" (p. 87).

4.2 Recommendations

This article examines how the 2004 tsunami disaster and the subsequent

reconstruction efforts have affected the social and ecological dynamics of Aceh, Indonesia. The author argues that the tragedy of the commons, a concept that describes the overexploitation of shared resources due to individual self-interest, has been exacerbated by the influx of foreign aid, NGOs, and development projects that have disrupted the traditional norms and institutions of Acehnese society. This article provides a rich ethnographic account of how the Acehnese people have coped with the changes and challenges brought by the post-tsunami development, and how they have negotiated their identities, values, and interests in relation to the new actors and agendas. This article also discusses the implications of the tragedy of the commons for the future sustainability and resilience of Aceh's environment and culture.

One of the problems facing Aceh in post-tsunami development is the tragedy of collective ownership, namely a situation where natural resources owned collectively by the community are misused by individuals or groups for personal gain. This can cause environmental damage, social conflict and economic inequality. To overcome this problem, we provide several recommendations for local bureaucrats and religious leaders (*ulama*) in Aceh.

Local bureaucrats must play an active role in monitoring and regulating the management of natural resources in their area. They must ensure that there are participatory, transparent and accountable mechanisms in decision making, budget allocation and implementation of development projects. They must also encourage and support community initiatives in conserving and utilizing natural resources in a sustainable manner.

Religious leaders (*ulama*) must play an active role in providing education and understanding to the public about Islamic values related to environmental protection, social justice and shared prosperity. They must be examples and role models in maintaining a balance between their rights and obligations as humans and as caliphs on

earth. They must also become mediators and facilitators in resolving conflicts or disputes that arise as a result of shared ownership tragedies.

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