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Laboratorium Sejarah
Departemen Sejarah, Fakultas Ilmu Budaya
Universitas Andalas, Padang, Indonesia

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Green Historiography in Indonesia: Evolution and Adaptation of Environmental History

Albertus Hutagalung*, Universitas Andalas, Indonesia
Erniwati, Universitas Negeri Padang, Indonesia
Haldi Patra, Universitas Negeri Padang, Indonesia
Fini Fajri Mulyani, Universitas Negeri Yogyakarta, Indonesia

ABSTRACT

This study examines the evolution of environmental history as a historiographical response to the global ecological crisis and the limitations of anthropocentric approaches in conventional history writing. It seeks to understand how the global development of environmental history has influenced the direction, methodology, and character of its adaptation in Indonesia. Using a qualitative and reflective literature-based method with a comparative historiographical approach, this article analyzes key global works, primarily from the United States and Europe. It compares them with Indonesian scholarship to trace the trajectory of this emerging field. The findings reveal that while Indonesia possesses a rich ecological past, environmental historiography remains underdeveloped due to the limited availability of ecological primary sources, the dominance of socio-economic paradigms, and the absence of specialized academic platforms. Nevertheless, works by scholars such as Peter Boomgaard demonstrate that environmental history provides a critical lens for reinterpreting the interaction between power, society, and nature within colonial and postcolonial contexts. The study concludes that environmental history can serve as both a theoretical and methodological alternative to mainstream Indonesian historiography. It promotes a green historiography that integrates ecological perspectives into national history, enriches historiographical debates, and contributes to sustainability through eco-pedagogy and interdisciplinary collaboration.

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***CORRESPONDENCE AUTHOR**

albertroshat21@gmail.com

INTRODUCTION

Global ecological crises, ranging from climate change and species extinction to massive deforestation, have prompted social scientists and humanities scholars to re-examine the relationship between humans and nature (Rae et al., 2022; Washington & Kopnina, 2022). Amidst these challenges, environmental history has emerged as a branch of historiography that offers a cross-disciplinary approach to reading the traces of human and environmental interactions throughout time (Roberts et al., 2021). This field not only shifts the focus of historiography from the center of humans (anthropocentrism) to the reciprocal relationship between humans and nature but also elevates nature as the subject of history itself. As one of the pioneers of environmental history, Worster states that history must be understood as a complex interaction between human culture and the natural world (Worster, 1988). Likewise, *The Organic Machine: The Remaking of the Columbia River* emphasizes that nature is not merely a passive backdrop, but an active entity that shapes and is shaped by human actions (White, 2011).

In the context of global historiography, environmental history has developed with an interdisciplinary paradigm that combines ecology, geography, and anthropology (Oliver, 2020). In the United States, this approach encompasses studies of conservation, landscape colonization, and energy politics; in Europe, it extends to studies of historical climate change and cultural relations to nature (Ellis, 2021). However, in Indonesia, environmental history studies have not developed widely. Boomgaard's studies include Explorations in the Environmental History of Indonesia (1997) and *Frontiers of Fear: Tigers and People in the Malay World, 1600-1950* (2001), which became the primary, reference in describing how the interaction between humans, wildlife, and colonial policies shaped the ecological landscape in the Dutch East Indies (Boomgaard 1997; Boomgaard, 2001). The environmental history approach in Boomgaard's work opens up space to understand the relationship between colonial power and nature as part of a mutually influencing historical process. However, it has not yet produced a strong methodological foundation

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in the tradition of writing Indonesian history. This creates a gap, namely, the lack of conceptual reflection and systematic evaluation of the position of environmental history in the Indonesian historiographic landscape.

This gap is the starting point of this article. A more systematic mapping of how environmental history has developed globally, as well as its position and contribution in the Indonesian context, is needed. To what extent have concepts such as nature as a historical agent, Anthropocene, or multispecies history been introduced and applied in Indonesian historiography? Why is Indonesian history still dominated by economic, political, social, and cultural paradigms and has not fully opened itself to an ecological approach? Therefore, the focus of this article is: How can the evolution of environmental history globally open up space for the formation of a new historiographic paradigm in Indonesia that is more inclusive of nature as a historical subject?

The author argues that environmental history in Indonesia has great potential to develop as an alternative approach to the dominant historical narrative, provided it adopts an appropriate global conceptual framework and remains rooted in the local context. By mapping the trajectory of environmental history historiography from the international world to Indonesia, this article aims to develop an epistemological and methodological framework that can serve as a starting point for the development of "green historiography" in Indonesia. Thus, this article not only reflects on the position of environmental history in the Indonesian academic realm but also encourages the creation of writing with new themes in Indonesian historiography that are more ecologically oriented.

METHOD

This article was compiled using a qualitative approach through exploratory and reflective library research (Zed, 2008). The primary objective is to examine the development of environmental history as a historiographic paradigm and to explore the potential for its integration into the study of Indonesian history.

The primary sources were selected based on three criteria: (1) their status as a scholarly work in the global development of environmental history; (2) their direct relevance to Indonesian historiography (e.g., Boomgaard and subsequent publication of the EDEN project); and (3) their publication in peer-reviewed journals or the academic press to ensure scientific credibility. This combination allows for global and local field mapping.

The comparative framework is applied by juxtaposing the global trajectory of environmental history, especially in the United States and Europe, with its acceptance and adaptation in Indonesia. It involves identifying common themes (such as conservation, human-nature relations, and colonial ecological policies) and highlighting differences in scope, methodological orientation, and epistemological emphasis. Through this process, this article places Indonesian scholarship in a broader international debate.

Interpretations were validated through cross-reading of multiple sources to avoid over-reliance on single narratives. Triangulation was applied by comparing colonial archives, secondary historiographical debates, and interdisciplinary studies in anthropology, ecology, and geography. Furthermore, historiographical interpretations were checked against theoretical frameworks such as the Anthropocene and multispecies history to ensure consistency

Through this method, this article not only aims to summarize the development of discourse but also to engage in scientific debate by offering theoretical and methodological positions that can enrich the historiographical treasury in Indonesia.

RESULT AND DISCUSSION

Environmental History as a Historiographic Paradigm

Environmental history emerged as a response to the limitations of traditional historiography, which often separated humans from nature. Donald Worster (1988) emphasized the importance of viewing history as an interaction between human societies and the natural environment, encompassing three dimensions: nature as an active force, the consequences of human activities, and human perceptions of nature. This approach broadens the scope of historiography by incorporating ecological factors as a crucial element in historical analysis. Amid a global ecological crisis and growing awareness of the historical impact of human activity on the environment, the environmental history approach offers a methodological instrument for reading the past more holistically. By placing the interaction between

humans and nature at the center of the analysis, this approach goes beyond narratives that are solely oriented toward political, military, or economic power. In this context, environmental history is not only about "what happened", but also "how" and "why" the relationship between humans and nature was formed and changed over time.

In the Indonesian context, the environmental history approach is applied by Peter Boomgaard in *Oriental Nature, its Friends, and its Enemies: Conservation of Nature in Late–Colonial Indonesia, 1889–1949* (1999). Boomgaard examines the nature conservation policies implemented by the Dutch colonial government in the Dutch East Indies in the late 19th to mid-20th centuries. He highlights how colonial economic and political interests often influenced these conservation efforts, as well as how perceptions of nature shaped the approaches implemented. This study shows that colonial conservation policies were driven not only by environmental concerns but also by the desire to control natural resources and local populations. The establishment of national parks, hunting bans, and the establishment of nature reserves were forms of "colonial biopolitics", in which nature was controlled to serve Dutch colonial interests (Hubbard & Brooks, 2021; Lavadinović et al., 2021).

What is interesting about Boomgaard's study is how he uses colonial archives, forestry officials' reports, and European naturalists' notes to construct a critical environmental historical narrative. For example, he shows that the establishment of the Wildlife Reserve in Sumatra cannot be separated from the orientalist perception that considered tropical nature as something exotic and in need of taming. Conservation, in this context, became a means of strengthening colonial claims of power, not merely preserving ecosystems. This challenges the dominant narrative that often considers conservation as a neutral or morally good act (Boomgaard, 1999).

From a historiographical perspective, studies such as these demonstrate that environmental history not only presents a new dimension in historical writing but also offers an epistemological critique of traditional ways of understanding the relationship between humans and nature (Cederqvist et al., 2020). This approach opens up the opportunity to re-examine colonial policies from a more holistic perspective that is not only political or economic but also ecological. This makes environmental history an essential tool for uncovering forms of ecological power and re-articulates the agency of nature as part of history. Methodologically, environmental history requires the collection of data across disciplines, including colonial archives, agricultural statistics, and historical maps, as well as zoological records. This data is then processed with a critical historical approach that links the ecological context with socio-political developments (Heise, 2008). In this way, environmental history becomes not just a "green" history but a new way of thinking that challenges the dominance of human-centric narratives in historical narratives.

Environmental Historiography in Indonesia: Foundations and Developments

The study of environmental history in Indonesia, as a branch of science that examines the historical interaction between humans and nature, has a relatively recent foundation compared to its development in the Western world. Globally, environmental history emerged as an academic discipline in the 1970s, pioneered by historians such as Roderick Nash and Donald Worster in the United States, who emphasized the reciprocal relationship between humans and the environment over a long timescale (Schiffhauer, 2008). Significant developments occurred in the 1990s, marked by the emergence of global awareness of environmental issues and the incorporation of ecological perspectives into Indonesian history. Historians such as Nancy Lee Peluso, in *Rich Forest, Poor People: Resource Control and Resistance in Java,* explores the relationship between forest management, political power, and local communities in Java (Peluso, 1992). This approach introduces a more focused analysis of socio-ecological dynamics, including conflicts over natural resources. At the same time, issues such as forest fires, the expansion of palm oil plantations, and mining encourage historians to examine the long-term impacts of human activities on the environment.

In Indonesia, this study began to receive attention at the end of the 20th century, coinciding with an increasing awareness of environmental crises, including deforestation, pollution, and changes in land use (Ilman et al., 2016). The foundations of environmental historiography can be traced to the pioneering works of Peter Boomgaard and colleagues, particularly the Ecology, Demography, and Economy in Nusantara (EDEN) project and *Paper Landscapes: Explorations in the Environmental History of Indonesia* (Boomgaard et al., 1997). These studies illustrate how colonial governance, wildlife management, and demographic change reshaped ecological landscapes. Boomgaard's analysis of conservation policies reveals that what appeared to be environmental protection was often a form of colonial biopolitics, designed to control both natural resources and indigenous populations. This reading moves beyond a descriptive view of conservation as a "neutral" act, revealing its embeddedness in structures of colonial domination.

Entering the 2000s, the dominance of foreign historians has not been broken. However, this does not mean that there are no works by Indonesian historians related to environmental history. Themes related to forests, environmental change, ecological agriculture, epidemics, and urban environmental development have been written about. In the form of doctoral dissertations related to environmental history, they have also been produced. One of the dissertations that raises this theme is a dissertation written by Warto, *Eksploitasi Kolonial dan Perubahan Masyarakat Desa Hutan di Keresidenan Rembang 1865-1940*. The dissertation was later published as a book titled *Desa Hutan Dalam Perubahan: Eksploitasi Kolonial Terhadap Sumber Daya Lokal di Karesidenan Rembang 1865-1940* (Warto, 2009).

Studies, such as Ann Laura Stoler's work on plantations in North Sumatra, highlight the exploitation of natural resources by Dutch colonialists and their impact on local communities and ecosystems (Stoler, 2005). In addition, research on the forced cultivation system (*cultuurstelsel*) in Java offers early insights into how colonial policies influenced the agrarian landscape and human-environmental relations. In this period, studies were still focused on economic and political aspects rather than ecology. Local contexts, such as cultural diversity and the spiritual relationship of indigenous peoples with nature, also influence the adaptation of environmental history studies. For example, a survey of the *subak* system in Bali demonstrates how tradition-based water management has supported environmental sustainability before modernization (Roth, 2014). In addition, interdisciplinary approaches that combine history with anthropology, ecology, and geography are gaining popularity, as evident in works on customary forest management in Kalimantan or the migration patterns of coastal communities (King & Ibrahim, 2019) and Nawiyanto in *Environmental Change in a Frontier Region of Java: Besuki, 1870-1970* (Nawiyanto, 2007).

Several of Nawiyanto's writings in various journals demonstrate his presence as an environmental historian. Although still limited, the emergence of works by Indonesian historians, combined with advances in information technology, has become a bright spot in the development of ecological history in Indonesia. Although it has developed, environmental historiography in Indonesia still faces challenges, such as the limited availability of archival sources that explicitly record ecological data and the lack of integration of environmental perspectives in the national history curriculum. However, with the increasing ecological crises, such as climate change and ecosystem damage, this study remains relevant in contributing to the global discourse.

Potential and Urgency of Environmental History Development in Indonesia

Indonesia, as an archipelagic country with rich biodiversity and landscapes, offers excellent potential for the development of environmental history studies. Indonesia's ecological richness spans a wide range of periods, from pre-colonial to contemporary times, reflecting the complex relationship between humans and the environment. For example, the agrarian traditions of indigenous peoples, such as the *subak* system in Bali (Hidayah, 2024) or the forest management practices of the *Dayak Community* (Anwar et al., 2023), demonstrate sustainable practices that have persisted for centuries. Environmental history studies can explore how these practices contributed to the sustainability of ecosystems and how colonialism, industrialization, and modernization changed these dynamics.

One of the main potentials is the development of locality-based historiographic studies. As shown in Mojosari's study in Mojokerto Regency, the environmental history of small towns can reveal the critical role of the region in supporting larger entities, both in terms of environmental and socio-economic aspects. The book *Kawasan Mojokerto dalam Kajian Sejarah Tematik*, written by (Juanda, 2021), demonstrates that local environmental history narratives can complement historiography that has so far focused on major cities. This approach enables historians to examine the distinctiveness of regions, such as the history of tobacco, sugarcane, or coffee in various areas of Indonesia, which possess not only economic but also ecological and cultural significance.

Additionally, the potential for developing environmental history lies in its relevance to global issues, such as climate change and sustainability. Indonesia faces significant environmental challenges, including deforestation, a water crisis, and sea level rise, that threaten its coastal areas. The study of environmental history can provide insight into how past societies adapted to environmental changes by examining historical adaptation strategies, such as water resource management or rainfall-based cropping patterns. Historians can contribute to sustainable contemporary solutions.

Several key factors drive the urgency of developing green historiography in Indonesia. First, the dominance of political narratives in Indonesian historiography has limited understanding of other aspects of past life, including the

relationship between humans and the environment. Indonesian historiography needs to expand its scope to encompass the history of everyday life and the environment, thereby making the historical narrative more comprehensive. Environmental history can fill this "blank space" by highlighting how the environment influences the social, cultural, and economic development of Indonesian society.

Second, the increasing global awareness of environmental crises, such as global warming and biodiversity loss, demands a historical approach that is relevant to these issues. Environmental history is not only academically pertinent but also has practical implications in education and policy. For example, research by Hermana (2019) emphasizes that the concept of Environmental History (Green History) is essential in forming students' awareness of the importance of building students' ecological intelligence, preserving the environment (understanding how nature sustains life), and understanding to influence their decision-making skills in everyday actions (decision-making skills). By teaching environmental history, the younger generation can understand the impact of human decisions on the environment and learn to make more responsible decisions.

Third, the lack of academic forums for environmental history studies in Indonesia is both a challenge and an urgency. Although projects such as Economy, Demography, and Ecology in Nusantara (EDEN), led by Peter Boomgaard in 1992, have laid the foundation for environmental historiography, publications and special discussion forums remain limited. An article by Ridhoi (2023) highlights concerns about the lack of representation of environmental studies in Indonesia compared to a similar tradition in the United States, which has had journals such as Environmental History since the 1970s. Therefore, the development of academic platforms, such as journals or specialized conferences, is urgently needed to encourage further research and discussion.

Challenges and Recommendations

Despite its great potential, the development of environmental history in Indonesia faces several challenges. First, the lack of specific primary data sources on the environment in the past often makes research difficult. Second, the lack of training for historians in interdisciplinary methods, such as ecology or geography, can limit the depth of analysis. Third, low public awareness of the importance of environmental history can hinder public support for environmental conservation. To address these challenges, several recommendations can be considered:

Ecopedagogy-Based Curriculum Development

The title of a work should be written according to its original title, so if the title is written in Indonesian, it must also be written in Indonesian as it is originally written, and does not need to be changed into English, even though this article is written in English. In addition, titles in foreign languages are written in italics. Integrating environmental history into the history education curriculum, as proposed by Supriatna in *Ecopedagogy: Membangun Kecerdasan Ekologis dalam Pembelajaran IPS* (2017). Rather than simply studying political or social events, students will be invited to understand how human interactions with their environment have shaped civilization throughout history. They will explore the impact of human activities on nature, past climate change, and conservation efforts that have been made. This approach not only enriches students' understanding of history but also instills a deep appreciation for the environment and their responsibilities as global citizens. Thus, the Ecopedagogy-based curriculum is expected to produce a generation that is more concerned and proactive in preserving the Earth.

Establishment of Academic Forum

Establish a journal or forum specifically for environmental history in Indonesia, similar to the Journal of Environmental Science, which publishes general environmental studies. Currently, environmental history studies in Indonesia are still dispersed across various disciplines, including history, geography, sociology, and environmental science. As a result, this lack of centralization hampers the development of specific methodologies, theories, and discussions in the field of environmental history. A dedicated journal or forum could become a hub of activity, attracting researchers from diverse backgrounds to collaborate, exchange ideas, and share their findings.

According to White in *The Historical Roots of Our Ecological Crisis* (1967), history plays a vital role in understanding the contemporary ecological crisis. Studying how human interactions with the environment have evolved is essential for formulating sustainable solutions. In Indonesia, which has a rich biodiversity and a history of

human-environment interactions, environmental history research has great potential to reveal meaningful patterns and provide valuable lessons.

The establishment of this special journal or forum will not only increase the prominence and recognition of environmental history as an independent discipline but also enhance its visibility and impact. Still, it will also encourage more in-depth and focused research. This will enable historians to contribute more significantly to the understanding of environmental issues in Indonesia, encompassing topics such as deforestation, natural resource management, and the impact of climate change on past societies. The expected benefits are:

1) Encourage interdisciplinary research: Be a bridge for researchers from various disciplines to collaborate on environmental history issues.

2) Improving publication quality: Providing a rigorous peer-review platform to ensure the quality and relevance of published research.

3) Building a scientific community: Facilitating networks among researchers, students, and practitioners interested in environmental history.

4) Influencing policy: Providing a scientific database that policymakers can use in formulating better environmental management strategies.

Interdisciplinary Collaboration

Building a strong foundation for environmental history in Indonesia requires more than just a curriculum and academic platform; it also necessitates close interdisciplinary collaboration. Encouraging collaboration between historians, ecologists, and social scientists is key to producing research that is not only historically profound but also ecologically comprehensive and socially relevant. Traditionally, these fields have often operated in silos. Historians focus on archives and narratives of the past, ecologists analyze natural systems and biological processes, while social scientists examine societal dynamics and interactions. However, contemporary environmental issues and their histories are complex, transcending the boundaries of single disciplines.

Utilization of Digital Technology

In today's digital era, the use of digital technology offers excellent opportunities for documenting and mapping local environmental history. This approach not only enhances the efficiency and accessibility of data but also enables complex visualizations and in-depth analysis, similar to how technology is utilized in climate risk mapping in Probolinggo (Widodo et al., 2015). Environmental history, often involving extensive spatial and temporal data, benefits significantly from the capabilities of digital technologies. Traditional methods of archival documentation and oral narratives can be enhanced and expanded through the use of digital tools. In the context of environmental history, similar approaches can be employed to reconstruct and visualize how historical climate change impacted the people of Probolinggo, or how specific economic activities transformed landscapes and natural resources over time. By harnessing these technologies, we can create dynamic "time maps" that illustrate the spatial and temporal evolution of human relationships with the environment, ultimately providing valuable lessons for environmental management in both the present and the future.

CONCLUSION

This article has shown that environmental historiography provides not only a practical and moral response to ecological crises but also a significant theoretical contribution to Indonesian historiography. By tracing the global evolution of environmental history and examining its partial adaptation in Indonesia, the study calls for a paradigmatic shift toward what may be termed green historiography. This framework recognizes nature as an active historical agent, challenges anthropocentric narratives, and expands the analytical scope of Indonesian history beyond dominant socio-economic and political paradigms. Theoretically, the contribution lies in positioning environmental historiography as both a critique of and an alternative to prevailing traditions of Indonesian historical writing. It encourages scholars to reconsider categories of analysis, to engage with concepts such as the Anthropocene and multispecies history, and to

situate Indonesia within broader global debates on the ecological turn in historiography. At the same time, the study acknowledges several limitations.

First, the availability of ecological primary sources in Indonesia remains limited, which makes reconstructions of past environmental dynamics heavily reliant on colonial archives and secondary works. Second, the continued dominance of socio-economic historiography has constrained the integration of ecological perspectives, thereby limiting opportunities for methodological innovation. Third, as this article is primarily based on a literature review, it cannot fully capture local practices and oral traditions that could further enrich environmental narratives. These limitations underscore the urgency of further research. Expanding archival exploration, employing interdisciplinary methods, and establishing dedicated academic platforms are essential steps for the future development of the field. By doing so, Indonesian environmental historiography can grow from a marginal subfield into a central paradigm, contributing not only to the enrichment of national historical narratives but also to global efforts in addressing the intertwined crises of ecology and society.

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