

THE ROLE OF ETHNOECOLOGY IN SUPPORTING A GREEN ECONOMY

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Article Info

Received: Sep 10, 2025
Revised: Nov 9, 2025
Accepted: Dec 10, 2025
Online Version: Feb 23, 2026

Abstract

Ethnoecology is understood as a study that positions the relationship between local communities and the natural environment as a whole built through traditional knowledge, value systems, and ecological practices passed down across generations. This study aims to examine in depth the contribution of ethnoecology to supporting the implementation of a green economy, particularly through optimizing local wisdom in sustainable natural resource management. The research approach applied is qualitative, using literature review and case study methods, through a systematic review of scientific articles, policy documents, and relevant previous research findings. The research findings indicate that ethnoecological practices play a significant role in maintaining environmental sustainability, increasing the sustainability of natural resource utilization, and strengthening the economic base of local communities. Local knowledge rooted in ecological experience has been shown to encourage more environmentally friendly economic practices, reduce the rate of resource exploitation, and open up opportunities for economic development based on local potential. The analysis and discussion indicate that mainstreaming ethnoecology within a green economy policy framework can strengthen sustainable development efforts that are participatory and equitable. Therefore, this study concludes that ethnoecology is a strategic element that needs to be comprehensively integrated into the planning and implementation of development policies to support the success of a green economy.

Keywords: Green Economy, Local Wisdom, Traditional Knowledge



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| Journal Homepage | https://research.adra.ac.id/index.php/jmf |
| How to cite: | Kamakaula, Y. (2025). The Role of Ethnoecology in Supporting a Green Economy. <i>Journal Markcount Finance</i> , 4(1), 54–63. https://doi.org/10.70177/jmf.v4i1.3293 |
| Published by: | Yayasan Adra Karima Hubbi |

INTRODUCTION

Global development today faces various fundamental issues, such as environmental degradation, the climate crisis, and increasingly complex social and economic inequalities. Development patterns that rely on excessive exploitation of natural resources have placed serious pressure on the sustainability of ecosystems. This situation has prompted the emergence of a sustainable development approach that seeks to harmonize economic, social, and environmental interests (Rohman, 2024). Within this framework, sustainability is influenced not only by technological innovation but also by the existence of knowledge systems and social values that develop within society. Development approaches that neglect socio-cultural aspects tend to fail to ensure long-term ecological balance. Therefore, the integration of ecological and social dimensions is a crucial element in the contemporary development agenda (Filgueira, 2025; Melo, 2025).

The green economy has emerged as a sustainable development paradigm that emphasizes efficient resource utilization, emission reduction, and equitable distribution of development benefits. This concept is seen as an alternative solution to encourage economic growth while simultaneously protecting the environment. Implementing a green economy requires fundamental changes in production and consumption patterns to be more environmentally friendly. However, in practice, the green economy approach is often dominated by technological and modernization perspectives. This situation results in local knowledge, long adapted to the environment, receiving less attention. Yet, local communities possess rich empirical experience in managing natural resources sustainably (Ajiningrum, 2025; Albuquerque, 2024).

Ethnoecology emerged as an approach that positions the interaction between local communities and the natural environment as an interconnected system. This study highlights the importance of traditional knowledge, cultural values, and ecological practices passed down through generations in natural resource management. This knowledge has been proven to maintain long-term environmental balance. Ethnoecology views nature not merely as an economic object, but as an integral part of the social and cultural life of communities. Thus, the ethnoecological approach has strong relevance in supporting development oriented toward ecological sustainability and social justice (Chakocho, 2025; Ramya, 2022).

Local wisdom, the foundation of ethnoecology, plays a strategic role in supporting the implementation of a green economy. Various traditional practices, such as sustainable agricultural systems, management of customary territories, and wise use of natural resources, reflect the principles of a green economy. These practices not only contribute to environmental preservation but also strengthen the economic conditions of local communities. Therefore, ethnoecology has the potential to bridge the gap between economic development and environmental conservation. The integration of ethnoecology into a green economy also opens up space for the development of a more inclusive and sustainable community-based economy (Armstrong, 2025; Taqwim, 2025).

Despite its enormous potential, ethnoecology's contribution to supporting a green economy has not yet been fully recognized in development policies. Many green economy initiatives focus on technological development and large-scale investment, while under-emphasizing the social and cultural dimensions. This approach has the potential to create social tensions and reduce local community participation. Yet, the success of green economy implementation depends heavily on the active involvement of local communities. Therefore,

studies are needed that position ethnoecology as a crucial element in strengthening the green economy, particularly in sustainable natural resource management (Bijukumar, 2025; Santi, 2022).

This research aims to comprehensively analyze the role of ethnoecology in supporting the implementation of a green economy through the utilization of local wisdom. The study focuses on how traditional ecological knowledge can promote sustainable and environmentally friendly economic practices. The research approach used is qualitative, employing literature review and case study methods. The analysis process is conducted through an in-depth review of scientific literature, policy documents, and relevant previous research findings. This approach allows for a deeper understanding of ethnoecology's contribution to a green economy framework (Bogotá-Gregory, 2024; Silva, 2022).

This research aims to gain a more comprehensive understanding of ethnoecology's role as a social and cultural foundation for a green economy. This study focuses not only on conceptual development but also emphasizes practical implications for the formulation of development policies. Integrating ethnoecology into a green economy is expected to produce a development model that is more responsive to local conditions. Furthermore, this approach has the potential to increase community economic resilience while maintaining environmental sustainability. Thus, ethnoecology can be viewed as an alternative strategy for addressing the challenges of sustainable development (Putri, 2025; Uskelwar, 2024).

Several previous studies have discussed the link between local wisdom and environmental sustainability. The first study emphasized the role of traditional knowledge in natural resource conservation but did not explicitly link it to the concept of a green economy. The second study examined the green economy from a macro-policy perspective but did not adequately address the role of local communities and ethnoecological approaches. The third study examined ethnoecology within a local cultural context but remained limited to ecological aspects without integrating economic dimensions. Unlike these studies, this study specifically examines the integration of ethnoecology and the green economy within a single analytical framework. It positions local wisdom as a strategic element in supporting sustainable and inclusive green economic development (Alrhoun, 2025; Fatmawati, 2024).

RESEARCH METHOD

This study applies a qualitative approach to deeply examine the contribution of ethnoecology in supporting the implementation of a green economy. This approach was chosen because it provides a platform for understanding the ecological values, meanings, and practices that develop within communities and their relationship to sustainable development. The research is not directed at testing quantitative hypotheses, but rather at understanding the phenomena contextually. Therefore, a qualitative approach is deemed appropriate for examining the relationship between local wisdom, traditional knowledge, and green economy policies. The research focuses on conceptual and empirical analysis obtained from various data sources (Efendi, 2024; Sudikan, 2024).

This research uses literature review and case study methods as the primary data collection strategies. The literature review was conducted through a systematic review of various academic sources, including scientific journals, books, and policy documents relevant to the themes of ethnoecology and the green economy. Case studies were used to provide empirical illustrations of the application of ethnoecology in sustainable natural resource

management. Case selection was based on contextual suitability and the availability of adequate information. The use of these two methods allows for a more comprehensive and in-depth analysis (Ferreira, 2022; Sudikan, 2024).

Data collection was conducted by searching for literature with academic credibility and high relevance to the research focus. Data sources included reputable journal articles, research reports, and policy documents published by official institutions. The obtained data were then grouped into several thematic categories, such as ethnoecology, local wisdom, and green economy. This grouping aims to simplify the analysis process and maintain integration between concepts. Thus, the relationship between ethnoecology and the green economy can be analyzed systematically (Baránková, 2025; Zhyla, 2025).

RESEARCH FLOW FOR ETHNOECOLOGY & GREEN ECONOMY

Qualitative Approach: Literature Review & Case Studies

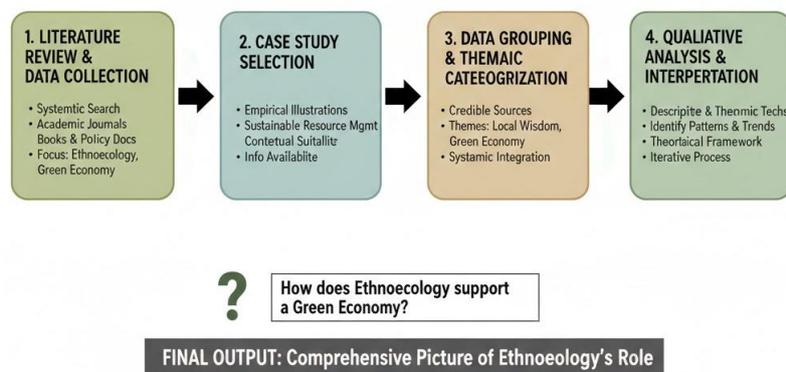


Figure 1. Research Flow

The data analysis phase was conducted using descriptive and thematic qualitative analysis techniques. The grouped data were analyzed to identify patterns, trends, and key concepts related to the research objectives. The results were then interpreted based on the theoretical framework and previous research findings. The analysis process was conducted iteratively to ensure the clarity and consistency of the results. Through this approach, the research is expected to provide a comprehensive picture of the role of ethnoecology in supporting the development of a green economy (Pontón-Cevallos, 2022; Zeineddine, 2022).

RESULTS AND DISCUSSION

Research findings demonstrate that ethnoecological practices contribute significantly to environmental conservation efforts. Local knowledge developed within communities enables people to regulate interactions between nature and the environment in a balanced and sustainable manner. These practices reflect a cautious approach to utilizing natural resources within the environment's carrying capacity. Ethnoecology not only represents cultural values but also serves as an effective ecological management system. Within a green economy framework, ethnoecology serves as a foundation of values that support sustainable development.

This research found that ethnoecology contributes to increasing the sustainability of natural resource use. Traditional ecological knowledge enables communities to implement non-exploitative management practices. These practices include limiting resource use and employing simple, environmentally friendly technologies. These practices align with green

economic principles, which emphasize sustainability and efficiency. Therefore, ethnoecology serves as a social mechanism to prevent environmental damage.

The research results show that ethnoecology has a positive impact on strengthening the local economy. Utilizing resources based on local wisdom encourages economic development aligned with regional potential. This practice increases economic resilience and expands community livelihoods. These findings confirm that environmental sustainability can go hand in hand with improving economic well-being. Thus, ethnoecology is relevant in supporting an inclusive green economy.

Local knowledge derived from ecological experience has been shown to encourage environmentally friendly economic practices. Communities develop production systems that consider the balance of nature and the sustainability of resources. These practices play a role in suppressing overexploitation and mitigating environmental impacts. These findings demonstrate that traditional knowledge has strategic value in sustainable development. In the context of a green economy, this approach is adaptive and contextual.

Table 1. Forms of Ethnoecological Practices and Their Contribution to the Green Economy

| Ethnoecological Practice | Environmental Aspects | Economic Aspects |
|---|---------------------------------------|------------------------------------|
| Customary-based land management | Maintaining ecosystem balance | Ensuring production sustainability |
| Seasonal resource utilization | Reducing overexploitation | Improving economic efficiency |
| Environmentally friendly traditional technology | Suppressing environmental degradation | Lowering production costs |

This research reveals that ethnoecology opens up opportunities for economic development based on local potential. Sustainable resource utilization encourages the growth of economic activities that align with regional characteristics. This strengthens community economic independence and reduces external dependence. In a green economy, this approach supports inclusive and equitable development. Therefore, ethnoecology plays a role in local economic transformation.

The research results show that integrating ethnoecology into green economy policies can strengthen sustainable development. Mainstreaming local knowledge into public policy increases the effectiveness of green economy implementation. This approach also encourages community participation in natural resource management. Policies aligned with local values tend to be more acceptable to communities. This underscores the importance of socio-cultural aspects in a green economy.

Table 2. The Role of Ethnoecology in Supporting the Pillars of the Green Economy

| Pillars of the Green Economy | The Role of Ethnoecology |
|-------------------------------------|---------------------------------------|
| Environmental sustainability | Maintaining ecosystem balance |
| Economic growth | Developing the local economy |
| Social justice | Strengthening community participation |

Research findings confirm that ethnoecology promotes participatory development. Local communities play an active role as subjects in natural resource management. This approach fosters a sense of responsibility for environmental sustainability. In a green economy,

community participation is a crucial factor for successful development. Thus, ethnoecology supports equitable resource governance.

THE ROLE OF ETHNOECOLOGY IN SUPPORTING
THE PILLARS OF THE GREEN ECONOMY



Key Insight: Ethnoecology is foundational value system for sustainable development.
(Source: Research Finding, 2025)

Figure 2. Main Research

Overall, the research findings confirm the strategic role of ethnoecology in supporting a green economy. Ethnoecology contributes not only to environmental conservation but also to economic empowerment and social justice. Integrating ethnoecology into a green economy offers an alternative solution for sustainable development. These findings suggest that a green economy will be more effective if it is based on local wisdom. Therefore, ethnoecology should be positioned as a key element in sustainable development strategies.

DISCUSSION

Research results show that ethnoecological practices play a crucial role in environmental conservation efforts. Traditional ecological knowledge held by local communities serves as a guideline for wisely managing natural resources. This knowledge emerges from long-term interactions between humans and the environment, making it contextual and adaptive. Various forms of management based on local wisdom have proven effective in maintaining ecosystem balance. Within a green economy framework, ethnoecological practices align with the principles of sustainability and ecological efficiency. Therefore, ethnoecology can serve as an ecological foundation for economic development oriented toward environmental sustainability (Englehardt, 2023; Rumayomi, 2025).

Research findings reveal that ethnoecology makes a significant contribution to ensuring the sustainable use of natural resources. Traditional management patterns implemented by local communities are generally based on the principles of precaution and long-term sustainability. Resource utilization is carried out in a controlled manner in accordance with environmental capacity. This approach allows for the natural regeneration of natural resources. From a green economy perspective, these utilization patterns are highly relevant because they emphasize resource efficiency and sustainability. Thus, ethnoecology serves as a social mechanism that limits the exploitation of natural resources (Souza, 2023; Thiel, 2023).

In addition to its environmental impact, ethnoecological practices also play a role in strengthening the economic foundations of local communities. Utilizing natural resources

based on local wisdom encourages the growth of economic activities that align with regional characteristics. These economic activities are generally community-based and provide direct benefits to local communities. This approach increases economic resilience while reducing dependence on external economic systems. In the context of a green economy, strengthening local economies based on ethnoecology supports the creation of inclusive economic development. Therefore, ethnoecology plays a strategic role in the economic dimension of sustainable development (Khoja, 2024; Majumder, 2024).

Local knowledge, formed from the ecological experiences of communities, has been shown to encourage the emergence of more environmentally friendly economic practices. This knowledge influences production and consumption patterns, ensuring they remain in harmony with the natural balance. The resulting economic activities tend to produce less waste and minimize environmental impact. Furthermore, the application of local knowledge can reduce the rate of natural resource exploitation. These findings demonstrate that ethnoecology not only has cultural value but is also relevant in the context of green economic development. Integrating local knowledge into economic systems is a strategic step towards sustainability.

This research also shows that ethnoecology opens up space for economic development based on local potential. Traditional practices can be developed into innovative, environmentally conscious economic activities. This local-potential-based economic development provides economic benefits while maintaining the sustainability of community culture. Within a green economy framework, this approach aligns with the principles of utilizing local resources and reducing the carbon footprint. Therefore, ethnoecology can be a significant source of innovation in green economic development. This approach affirms the position of local communities as the primary subjects of development (Fernandes, 2022; Sponsel, 2024).

The discussion confirms that integrating ethnoecology into green economic policies has the potential to strengthen sustainable development that is participatory and equitable. Involving local communities in the policy formulation process allows for the creation of policies that are more appropriate to the local social and ecological context. Ethnoecology provides a framework of values and practices that encourage active community participation. In the long term, this approach can increase the effectiveness of green economic policies and minimize social conflict. Therefore, mainstreaming ethnoecology into green economic policies is a strategic step in realizing sustainable development (Guachamin-Rosero, 2023; Toledo, 2024).

CONCLUSION

The research results show that ethnoecology plays a crucial role in supporting the implementation of a green economy. Traditional ecological knowledge held by local communities has proven effective in maintaining a balance between natural resource utilization and environmental conservation. Ethnoecological practices, passed down through generations, are able to limit the overexploitation of natural resources. These findings confirm that ethnoecology aligns with green economy principles that emphasize ecological sustainability. Thus, ethnoecology not only has cultural value but also holds strategic significance for sustainable development.

In addition to its role in preserving the environment, ethnoecology also contributes to strengthening the local economy. Utilizing natural resources based on local wisdom encourages

the creation of environmentally friendly and long-term economic activities. This approach increases community economic resilience while supporting inclusive and equitable development. In the context of a green economy, strengthening local economies based on ethnoecology provides a relevant alternative to conventional development patterns. Therefore, ethnoecological integration plays a crucial role in supporting the overall success of a green economy.

In general, this study confirms that ethnoecology needs to be positioned as a strategic component in the formulation and implementation of development policies. Integrating ethnoecology into green economy policies has the potential to strengthen sustainable development that is participatory and equitable. The active role of local communities as owners and practitioners of traditional knowledge is a key factor in the success of this integration.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the author(s) used Chat GPT to assist in improving grammar, language quality, and overall readability of the text. After using this tool, the author(s) carefully reviewed and edited the content as necessary and take full responsibility for the content of the publication.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests of personal relationships that could have appeared to influence the work reported in this paper.

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