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MORALITY BEFORE KNOWLEDGE

Environmental conservation of Baduy indigenous society in disaster mitigation and food self-sufficiency based on local wisdom

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ABSTRACT

Background: The Baduy people have life values and a way of survival by adhering to customary laws that are inherited from generation to generation. This study examines the environmental conservation practices of the Baduy indigenous community as a form of disaster mitigation and food self-sufficiency based on local wisdom, highlighting their ecological resilience and sustainable resource management practices. **Methods**: Using a qualitative ethnographic approach, data were collected through indepth interviews, field observation, and literature review, to explore local wisdom practices and their implications for sustainability outcomes. **Findings:** In this study, disaster mitigation refers to systematic efforts to reduce disaster risks through both structural and non-structural approaches. Within indigenous contexts, mitigation is embedded in cultural practices, spatial arrangements, and ecological ethicts that function preventively rather than reactively. Thus, mitigation in the Baduy context is operationalized through land-use restrictions, settlement zoning based on topography, and sustainable agricultural systems. These practices are reinforced through customary knowledge passed down across generations, which guides community behavior in managing environmental risks. The integration of ecological awareness and traditional norms strengthens community resilience and ensures long-term sustainability of natural resources while minimizing vulnerability to disasters such as floods, landslides, and environmental degradation in daily life. **Conclusion**: These findings provide practical implications for policymakers, especially in integrating indigenous land-use systems into regional spatial planning and strengthening local food resilience strategies amid global environmental change. **Novelty/Originality of this article:** Importantly, this study highlights that the Baduy model offers transferable principles for community-based disaster risk education, particularly in land-use zoning, ecological ethics, and localized food systems.

KEYWORDS: Baduy; environmental conservation; ethnography; disaster mitigation; food self sufficiency.

1. Introduction

In recent years, the world has faced major challenges related to the threat of natural disasters and food crises. These challenges are in line with the world's increasing trust in indigenous peoples who practice traditional lifestyles (Dirgahayu et al., 2023). The Baduy indigenous people are known to uphold customary law in carrying out sustainable environmental conservation practices. Its existence in the Banten area is still maintained to this day in Indonesia This community has customary laws that have long been obeyed and obeyed by its people (Yulia et al., 2023). The Baduy indigenous people as part of the world community face deep problems on how to survive in the midst of an increasingly worrying

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global environmental crisis (Johnson et al., 2018). Baduy customary law that has been inherited from generation to generation seeks to regulate and protect the environment by providing customary sanctions for violators. Although it is not written, Baduy customary law is binding on its people (Yulia et al., 2023). Many studies have been carried out on this matter, but studies on the local wisdom of the Baduy indigenous people in responding to environmental changes in disaster mitigation efforts and food self-sufficiency have not been carried out (Keske, 2021). Therefore, it is important to dig deeper into how to overcome these problems by the Baduy community.

Indigenous knowledge has been widely recognize as an effective approach in disaster risk reduction and climate adaptation across global context (Bang, 2024; Markolinda et al., 2025; Shaw, 2016; Iloka, 2016). Indigenous communities such as those in the Amazon, Sub-Saharan Africa, and Northern Canada have demonstrated similar resilience through localized ecological knowledge and food sovereignty systems (Bwambale et al., 2022; Malard-Adam et al., 2024). However, unlike many stuies that treat indigenous knowledge as context-specific, this research position the Baduy system as a structured and potentially replicable model. Therefore, this study not only contributes to Indonesian discourse but also situates the Baduy within a broader global framework of indigenous-based disaster mitigation and food resilience (Rittelmeyer et al., 2024). The purpose of this study is to examine the role of local wisdom of the Baduy indigenous people in disaster mitigation and food self-sufficiency efforts. This research focuses on environmental conservation practices by the Baduy community in maintaining the balance of the environmental ecosystem, and how these practices can support disaster mitigation and food self-sufficiency. It is hoped that this research can make a positive contribution to efforts to preserve nature and improve the quality of life of the Baduy indigenous people in a sustainable manner, and can be a model for communities in other regions.

The urgency of this research is based on the fact that more and more people are experiencing negative impacts from environmental damage. The theories that have been developed in the context of indigenous peoples have not yet applicatively and significantly provided solutions to problems. This research seeks to reveal local wisdom as an effort to mitigate disasters and food self-sufficiency as a solution to current global problems by developing more environmentally friendly and sustainable methods. The hypothesis is that the local wisdom of the Baduy indigenous people can provide effective solutions in dealing with environmental crises in disaster mitigation efforts and increasing food security in a sustainable manner. Previous studies demonstrate that indigenous communities integrate ecological knowledge, social norms, and spatial planning as part of disaster mitigation strategies (Cuaton & Su, 2020; Karnoto et al., 2025). The Baduy indigenous people are known for their lifestyle that is tied to nature and ancestral traditions for generations. Their local value system, norms, and knowledge include sustainable management of natural resources (Dirgahayu et al., 2023). Environmental conservation in this case refers to the efforts of the Baduy indigenous people in preserving nature by taking preventive measures to prevent environmental damage, such as prohibiting cutting down trees indiscriminately, protecting forests by considering them sacred, and limiting the types of plants that can be planted in customary territories (Keske, 2021). Nature empowerment is carried out through environmentally friendly planting patterns with agricultural land management that not only prioritizes agricultural products, but also sustainable ecosystem balance (Sulistiadi et al., 2024).

The disaster mitigation strategy and food self-sufficiency of the Baduy indigenous people are carried out by preventing landslides, maintaining the purity of streams and spring water sources, and sustainable planting patterns (Phillipps et al., 2021). The Baduy community not only focuses on abundant food products, but also considers the sustainability of nature, managing the soil and adjusting the types of crops according to local natural conditions. Getting used to living naturally and not exploiting natural resources makes the environment friendly to humans (Iskandar et al., 2023). Ethnography comprehensively examines the social, cultural and behavioral patterns of a group. This study uses ethnography to understand more deeply the life of the Baduy people in managing

natural resources (Johnson et al., 2018). Ethnography allows researchers to gain richer and more authentic insights into the local wisdom of the Baduy indigenous people in maintaining environmental sustainability. This is done as an effort to mitigate disasters and food self-sufficiency (Lindawati et al., 2024). In this study, disaster mitigation refers to systematic efforts to reduce disaster risks through both structural and non-structural approaches. Within indigenous contexts, mitigation is embedded in cultural practices, spatial arrangements, and ecological ethicts that function preventively rather than reactively (Panda et al., 2023). Thus, mitigation in the Baduy context is operationalized through land-use restrictions, settlement zoning based on topography, and sustainable agricultural systems.

2. Methods

2.1 Research design and data collection

The Baduy community with local traditions and knowledge that has been passed down from generation to generation has a unique environmental management system. The social and cultural behavior of the Baduy indigenous people is the object of this study. The researcher focuses on aspects of environmental conservation, disaster mitigation, and food self-sufficiency based on local wisdom. This study uses a qualitative method with an ethnographic approach to explore the social and cultural life of the Baduy indigenous people, especially in environmental conservation practices. This approach allows researchers to be directly involved and get a comprehensive picture of food self-sufficiency and disaster mitigation efforts by the Baduy community, as well as the social and cultural dynamics that shape sustainable conservation practices (Dirgahayu et al., 2023; Keske, 2021). Ethnography provides holistic contextual data on the relationship between local wisdom in managing natural resources, meeting food needs, and preserving the environment (Lindawati et al., 2024).

The study collected primary data through in-depth interviews with indigenous leaders, local farmers, and Baduy communities, as well as first-hand observations of their conservation practices and food security (Pandey et al., 2022). In addition, secondary data is obtained from research reports, government policies, and academic literature related to disaster mitigation and food security. The collection of these two types of data provides a broad perspective on the relationship between local wisdom, government policy, and food security theory, and validates the findings from the interviews (Phillipps et al., 2021).

2.2 Data validity and data analysis

To ensure data validity, this study employed triangulation techniques by cross-verivying interview data with direct field observation and secondary literature. For instance, statements from indigenous leaders regarding land-use restrictions were compared with observed settlement patterns and documented customary rules. This triangulation strengthens the objectivity and credibility of qualitative findings.

Data analysis was carried out thematically to identify patterns of local wisdom related to disaster mitigation and food security, by grouping data based on the main themes that emerged in the interviews. Local wisdom includes traditional farming methods, sustainable management of natural resources, and how the Baduy people overcome the challenges of natural disasters and food security (Johnson et al., 2018).

3. Results and Discussion

Humans and nature have a very close relationship and influence each other. Nature provides all basic human needs, such as breathing air, water for life, and fertile soil for farming. These relationships are not only physical, but also emotional and spiritual. The relationship between humans and nature must be built with mutual respect and balance.

Nature is not something that can be exploited indefinitely, but a partner that must be cared for wisely for the sake of mutual survival. The results of the interviews show that the Baduy indigenous people are very tied to customary law and local wisdom, especially in environmental conservation. Similar models of food resilience based on local wisdom have been identified in various regions, indicating that such systems are adaptable and scalable (Trott & Mulrennan, 2024). The Baduy community runs a sustainable planting pattern that is not only results-oriented, but also pays attention to nature conservation. Following this, the results of data processing of interviews with the Baduy indigenous people are in the form of basic ideas, conceptualization, categorization, and thematicization.

Table 1. Coding scheme and thematic analysis of keywords related to Baduy local wisdom

No	Keywords	Conceptualization	Categorize	Thematization
1	Forest value	The importance of maintaining the ecosystem	Customary law	Culture and tradition
2	Farming	Traditional farming practices	Produce	Livelihood
3	House	Traditional Baduy architecture	Customary law	Culture and tradition
4	Protected forests	The importance of maintaining the ecosystem	Environment	Environmental conservation
5	Baduy bird	Local wisdom in fauna conservation	Environment	Environmental conservation
6	Protecting the environment	Environmental awareness	Environment	Environmental conservation
7	Customary sanctions	Compliance with customary rules	Customary law	Culture and tradition
8	Traditional ceremony	Compliance with customary rules	Customary law	Culture and tradition
9	Fast	Religious and spiritual rituals	Customary law	Culture and tradition
10	Rice barn	Agricultural product storage system	Agriculture	Livelihood
11	Selling	Traditional economic transaction system	Economics	Economic welfare
12	Product	The products of the Baduy people	Economics	Economic welfare
13	Garbage	Environmental waste management	Environment	Environmental conservation
14	Building	Traditional architecture and spatial planning	Customary law	Culture and tradition
15	Education	Education system based on local wisdom	Social	Culture and tradition

Based on the processing of interview data in the form of main ideas, conceptualization, categorization, and thematicization, the researcher connects the research aspects, the main findings and their relevance to the main objectives as presented in Table 2. In addition to the interview data above, the researcher found a living guideline in harmony with the nature of the ancestral heritage through the ancient manuscript of Warugan Lemah (L 622 crate 88). This script teaches us to take care of nature, as well as plan settlements well. The ancient manuscript of Warugan Lemah contains the wisdom teachings of ancestors that are in harmony with the principles of the Baduy Tribe in maintaining the balance of nature. The prohibition of leveling the land is one of the ways they respect the earth, so that it remains sustainable and prevents damage. A teaching that teaches us the importance of living in harmony with nature for a sustainable future.

Table 2. Key findings on Baduy local wisdom in environmental conservation, disaster mitigation, and food security

Research aspects	Key findings	Relevance to research objectives
Local wisdom in environental conservation	The Baduy people have strict customary rules related to the use of forests, sustainable agriculture, and the prohibition of indiscriminate tree logging.	Showing that local wisdom can function as an effective form of conservation, preventing environmental damage.
Disaster mitigation	Environmental conservation practices by the Baduy people function to maintain the balance of the ecosystem that prevents natural disasters such as landslides and floods.	Local wisdom contributes to disaster mitigation efforts by maintaining natural sustainability that supports environmental stability.
Food self-sufficiency	The Baduy people manage agricultural fields independently by using natural techniques, without chemical fertilizers, and maintaining plant diversity to meet food needs.	It shows that local wisdom also supports food security by managing natural resources sustainably.
The relationship between conservation and food security	Sustainable forest and agricultural land management ensures the continuity of agricultural yields, such as rice, aromatic ginger (Kaempferia galanga), and ginger, which can fulfill food needs.	It is concluded that environmental conservation practices support the sustainability of food security in the Baduy community.
The role of customary in environmental management	Customary rules prohibiting the sale of forests and sustainable agricultural practices strengthen environmental sustainability and food security.	Adat plays an important role in maintaining a balance between environmental conservation and food security in the Baduy community.

3.1 Environmental conservation in the local wisdom of the Baduy indigenous society

The results of the interviews show that the life of the Baduy people is very tied to local wisdom and environmental conservation principles. Based on interviews with interviews, the Baduy people have agricultural traditions that are carried out sustainably and pay great attention to nature conservation . They manage agricultural land traditionally, with the main crops being rice, as well as spice crops such as kencur, ginger, and bananas. These agricultural products are stored in the barn as a reserve for the needs of the indigenous and family. They also have very strict customary rules regarding the use of natural resources, such as the prohibition of cutting down trees indiscriminately in forests that are considered "forbidden forests". In addition, the Baduy community has mutual cooperation activities to maintain environmental cleanliness and respect customary rules related to agriculture and hygiene.

> *What is not allowed is not because of the Pu'un's rules, but it has existed since the past, passed down by our ancestors. Therefore, according to our ancestors' mandate, it is indeed forbidden (Informant A).*

The data obtained shows that the Baduy people carry out farming activities in a very structured and guided manner by customary rules that have been passed down from generation to generation. Plants planted must be in accordance with customary provisions, and some types of crops, such as coffee and cloves, are prohibited from being planted (Sulistiadi et al., 2024). In their tradition, rice has a central role, and the produce is rarely sold, more used for personal consumption and customary activities. They also avoid the use of chemical fertilizers, replacing them with natural materials to deal with pests. In every agricultural activity, people follow certain days that are considered good according to

custom to work in the fields, as well as avoid days that are considered abstinent. The following are the findings of research on environmental conservation of the Baduy indigenous people in local wisdom as an effort to mitigate disasters and food self-sufficiency (Purnamasari et al., 2023).

The relationship between the main findings and the research objectives in the above data shows that environmental conservation in the Baduy community is not only carried out through rules that regulate the use of natural resources, but also through daily behavior patterns that support the sustainability of nature. The prohibition on indiscriminate felling of trees and the use of natural materials for agriculture reflects concern for the sustainability of forests and soils. This shows that the local wisdom possessed by the Baduy people has succeeded in maintaining the balance of nature, and this practice is relevant to the environmental conservation issues that are the focus of this research.

3.2 Local wisdom of the Baduy indigenous society in disaster mitigation and food self-sufficiency

The Baduy community has a system in disaster mitigation and food self-sufficiency. Based on interviews with several sources, they implement sustainable agricultural patterns by relying on food reserves stored in family rice barns (Trott & Mulrennan, 2024). In addition, traditional ceremonial activities that are carried out every year function as a form of gratitude for the harvest and as a means to maintain harmony with nature. They also set planting and harvesting times based on a traditional calendar that refers to certain days that are considered auspicious Mutual cooperation activities in the village, which are carried out on certain days, also play a role in maintaining food security and creating strong social solidarity among the community (Chanza & Musakwa, 2022).

Beyond production, the Baduy food system is characterized by a controlled internal distribution mechanism. Agricultural yields, particularly rice, are not freely traded but stored in communal or family barns and allocated based on subsistence needs and customary obligations. This system minimizes market dependency and ensures food availability during crisis periods such us crop failure or natural disasters (Utami et al., 2025). This internal distribution model reflects a form of "closed-loop food security system," where production, storage, and consumption are regulated within the community, thereby increasing resilience against external shocks. In the Baduy community, there is an expression that reflects their philosophy of life that always prioritizes balance and harmony in life. Everything must be adjusted so that it is not excessive or lacking, so as to create harmony in society. This principle is not only applied in social life, but also in the way they manage nature and resources. By applying this concept, the Baduy people maintain a balance between human needs and environmental sustainability.

> *In the Baduy community, there is a saying: "Gede sandang dicokot, panjang temenan dipotong, pendek temenan disambung." This expression means that everything should be adjusted to maintain balance and harmony according to necessity (Informant B).*

This principle can also be interpreted as a teaching to live simply and not greedy. If something is excessive, then it needs to be reduced; If it is less, then it needs to be added to taste. This value is applied in daily life, including in building houses, farming, and customs. This philosophy also teaches the importance of helping each other and sharing in the community. That way, people's lives remain harmonious and far from social inequality. Traditional ceremonies and sustainable farming methods function as a form of mitigation against potential disasters arising from environmental damage. The existence of food reserves stored in barns also plays an important role in facing the famine season, so that people still have sufficient food sources even if there is a disaster or crop failure. In this case, the Baduy people have succeeded in implementing the principle of food self-sufficiency that prioritizes nature preservation (Pandey et al., 2022).

Disaster mitigation and food self-sufficiency efforts in Baduy are closely related to deep traditions and customary rules. Sustainable farming practices and mutual cooperation activities in maintaining cleanliness and food security illustrate high social resilience and collective awareness of the importance of protecting nature as part of disaster mitigation efforts (Dirgahayu et al., 2023). The sustainability of their agricultural system, which does not depend on modern technology but on local wisdom, is an example of how indigenous peoples can adapt to environmental challenges. Disaster mitigation in the Baduy community is carried out in a conventional way, in accordance with the principles of their local wisdom.

> *Here, it's different. Even when an earthquake occurs, the houses remain sturdy. Although the buildings are simple, they never get damaged by earthquakes (Informant C).*

In building environmentally friendly settlements, the Baduy people use resources wisely. Maintaining the balance of nature and avoiding damage are the keys to a better future. The ancient manuscript of Warugan Lemah contains the wisdom teachings of ancestors that are in harmony with the principles of the Baduy community. The prohibition of leveling the land is one of the ways they respect the earth so that it remains sustainable and prevents damage. A teaching that teaches us the importance of living in harmony with nature for a sustainable future (Nuryanto et al., 2021). The spatial principles found in the Warugan Lemah manuscript show strong alignment with modern disaster risk reduction frameworks, particularly in avoiding high-risk zones such as floodplains, unstable soils, and steep slopes. These principles are consistent with contemporary spatial planning regulations and earthquake-resistant construction guidelines, which emphasize site selection as a primary mitigation strategy. This indicates that indigenous knowledge systems are not only culturally relevant but also scientifically valid, and can complement modern engineering and spatial planning approaches (Ali et al., 2021). This indicates that indigenous knowledge system are not only culturally relevant but also scientificially valid, and can complement modern engineering and spatial planning approaches.

This Warugan Lemah manuscript contains rules for establishing settlements based on land topography and land slope. The topography of flat land (Samara Dadaya) and sloping land to the north (Talaga Hangsa) is considered good for settlements (Nuryanto, 2023). Sloping ground should be left as it is. Meanwhile, the topography of the land that is not good for settlements includes: si bareubeu, talaga kahudanan, jagal bahu, tunggang laya, dan sri madayung. Si Bareubeu: The territory is under the flow of the river. Si Bareubeu refers to soil that is labile or easily shaken, usually consisting of soil layers that are not dense and prone to shifting. This type of soil is often found in areas that have a high water content or are on top of a thick layer of clay. If used for settlements, building structures will easily crack or even collapse due to soil instability. In addition, this land also tends to be difficult to support heavy loads, so building a house or infrastructure on it is very risky. Therefore, areas with the characteristics of Si Bareubeu should be avoided for settlements.

Talaga Kahudanan: Residential areas dividing rivers. Talaga Kahudanan is a term for the soil of a former swamp or lake that is covered with mud deposits and organic matter for a long time. Although it looks dry on the surface, the soil in this area still has a high moisture content and an unstable structure. During the rainy season, this land can return to swamp, causing puddles that are difficult to recede and increasing the risk of flooding. If used as a settlement, houses and buildings will be at risk of subsidence (sinking) or even sinking over time. Therefore, before building on this type of soil, significant soil improvements, such as drying and compaction, are required. Jagal Bahu: The ground gaped so that there was a gap separating the settlement area. Jagal Bahu Refers to areas with steep slopes and prone to landslides, especially in hilly or mountainous areas. The soil in this area tends to be unstable due to its extreme slope, so when there is heavy rain, landslides can occur easily. Settlements in areas like this are very dangerous because buildings can collapse due to soil movement. In addition, road access in this area is often difficult and at risk of being cut off due to landslides. Therefore, Butcher Shoulder is not an ideal location for settlements, unless mitigation efforts are carried out such as the construction of terraces or soil retaining walls.

Tunggang Laya: Residential area facing the sea. Tunggang Laya is a term for soil that is in an open area without sufficient vegetation protection, so it is susceptible to erosion and strong winds. The soil in these areas is often dry, easily eroded by rainwater, and infertile for agriculture or reforestation. If used as a residential location, the risk of disasters such as sandstorms or dust storms can increase, especially in the dry season. In addition, due to the lack of vegetation cover, the soil in this area cannot absorb water properly, thus increasing the potential for flash floods during heavy rains. Therefore, settlements in the Tunggang Laya area require greening efforts to make them more stable and livable. Sri Madayung: The area between two rivers. Sri Madayung refers to land in areas that are often affected by floods or are near rivers with strong currents. Soils in this region tend to be prone to erosion by water flows, causing abrasion and periodic changes in land shape. If it is used as a settlement, houses will be at risk of being submerged in floods or even washed away when the water discharge increases. In addition, the condition of the soil that is always wet can reduce the carrying capacity of the building, thus making the structure unstable. Therefore, settlements in the Sri Madayung area should be built with a special foundation system or avoided completely.

3.3 Local wisdom of the Baduy indigenous society in social activities

The Baduy people they are very concerned about the cleanliness of the environment and ensure that every social and customary activity is carried out with full respect for nature and each other. Activities such as traditional ceremonies and mutual cooperation are carried out to maintain social and ecological balance in their communities. In addition, the customs and norms that exist in Baduy are very profound, including the dress code that distinguishes between the Inner and Outer Baduy Baduy as well as the restrictions they apply to the felling of trees and the use of other natural resources. The values held by the Baduy people have a great influence on the way they manage their environment and social life. Traditional practices carried out by the Baduy people are not only related to traditional ceremonies, but also reflect their awareness of the importance of preserving nature (Sodikin, 2017). This can be seen from customary rules that limit the use of natural resources and sustainable agricultural management. The mutual cooperation activities they carry out are also part of their culture that prioritizes togetherness and helps each other in maintaining social and economic resilience.

The life of the Baduy people is greatly influenced by traditional traditions and principles that maintain the sustainability of nature and their social resilience. Through traditional practices that have been preserved for generations, they have succeeded in maintaining the balance of nature and preserving local wisdom which also functions for disaster mitigation and food self-sufficiency. This shows that the Baduy community can be an example for people in other regions in protecting their environment (Lindawati et al., 2024). Based on the description above, it is known that the Baduy people have an environmental conservation system that is greatly influenced by their local wisdom. This conservation is not only limited to the aspect of nature conservation, but also integrates traditional principles that are practiced in daily life, such as the prohibition of cutting down trees indiscriminately and maintaining environmental cleanliness. Farming activities carried out in a natural way without the use of chemical fertilizers and maintenance of protected forests carried out by the Baduy community (Afriani et al., 2022). The close relationship between local wisdom and disaster mitigation and food self-sufficiency is also clearly seen, where the Baduy people maintain the sustainability of nature and regulate food consumption patterns independently (Phillipps et al., 2021). Their produce, although mostly unsold, plays a role in ensuring food self-sufficiency for families and communities. This is the basis for disaster mitigation efforts carried out through the maintenance of forests that function as natural buffers.

This research is in line with several previous studies that emphasize the importance of local wisdom in disaster conservation and mitigation efforts, as found in a study by Suryani (2019) on the local wisdom of indigenous peoples in Bali in preserving nature and

preventing natural disasters. However, the excellence of this research lies in the direct relationship between nature conservation and the fulfillment of food needs independently in the Baduy community. In addition, this study also delves deeper into the relationship between customs and sustainable agricultural patterns that indirectly support food security and disaster mitigation which has not been widely explored in the existing literature (Azizah et al., 2025). Reflection from the results of this study shows that although the Baduy people live in limited access to modern technology, they have succeeded in maintaining the sustainability of nature and food through a lifestyle that is very tied to local wisdom (Pandey et al., 2022). This illustrates that the traditional way of life that still prioritizes nature preservation can be an important model in disaster mitigation efforts and independent food fulfillment. In this context, the purpose of this research proves to be important, because it not only explores local potential in environmental conservation, but also shows how culture and customs can play a role in creating food security in the midst of the challenges of environmental change.

The implications of the results of this study are very significant in the context of developing environmental and food security policies based on local wisdom. This research can be the basis for policy design that takes into account the potential of local wisdom in overcoming environmental and food challenges. For example, in policies that support the sustainability of organic farming, the use of environmentally friendly technologies, and the wise management of natural resources (Yulia et al., 2023). In addition, the results of this study can be the basis for education and training programs for other indigenous peoples to adopt environmentally friendly lifestyles and support food security. The reason why the results of this study show a strong pattern of relationship between local wisdom and environmental conservation efforts lies in the life principles of the Baduy people who highly value the harmonious relationship between humans and nature. With strict customary rules prohibiting indiscriminate felling of trees, maintaining environmental cleanliness, and farming methods that do not damage nature, the Baduy people show that the local wisdom they hold can provide real solutions to environmental and food problems. The existence of traditions such as joint fasting and traditional ceremonies involving the entire Baduy community also shows their commitment to nature preservation and the sustainability of their lives as a community (Ramdani et al., 2024).

Based on the results of this study, the action that needs to be taken is to map and strengthen local wisdom as part of the solution to the environmental crisis and food security. One of the steps that can be taken is to encourage the government and related institutions to explore more deeply the potential of local wisdom in other regions as part of disster mitigation and food security policies. In addition, it is important to carry out cultural preservation efforts that prioritize natural sustainability, by providing space for indigenous peoples to continue to carry out their traditions in natural resource management based on local values. The Baduy model can be conceptualized into three transferable component: ecological zoning based on traditional knowledge, subsistence-oriented food systems with internal distribution, and socio-cultural enforcement through customary law. These components provide a conceptual framework that can be adapted to other indigenous and rural communities facing similar environmrntal risks.

4. Conclusions

The main findings in this study are very surprising, as it shows that the Baduy people, who are known for their limited access to modern technology, have succeeded in preserving the environment and food security through a conservation system that is very close to their local wisdom. What was originally seen as a simple traditional life turns out to have a very effective system in maintaining the balance of nature and ensuring food self-sufficiency. The Baduy people not only managed to survive, but also showed a unique model of how traditional traditions passed down from generation to generation can be a real solution in disaster mitigation and food fulfillment independently. This research makes a great contribution to scientific development, both theoretically and practically. Theoretically, this

study enriches the understanding of the relationship between local wisdom and natural sustainability, especially in the context of disaster mitigation and food security. This opens up new insights into the potential of local wisdom as a solution to global challenges faced related to climate change and food crises. In practical terms, this research provides a solid basis for the development of policies based on local wisdom in sustainable natural resource management. Thus, the results of this study can be used as a reference for policy makers, environmental organizations, and other indigenous peoples to apply similar conservation principles in their respective contexts.

Although this study provides significant insights, there are some limitations that need to be noted. One of them is the limitation in geographical coverage that is only focused on the Baduy people, so it cannot represent all indigenous peoples in Indonesia or the world. In addition, this study relies more on interviews conducted over a certain period of time, so it cannot cover the dynamics of social and cultural changes that may occur in the future. Therefore, further research can build on these findings by expanding geographical scope, observing cultural changes, and involving a more in-depth approach to the long-term impacts of conservation practices carried out by indigenous peoples in a broader context. Specifically, this study recommends that 1) local governments integrate indigenous land zoning systems into regional spatial planning; 2) community-based food storage systems be adopted in rural resilience programs; 3) indigenous ecological knowledge be formally recognized in disaster mitigation policies, 4) collaborative governance models be developed between indigenous communities and state institutions.

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References

Afriani, R. I., Listiawati, L., Mukhlis, A., Lesmana, I. S., Yuliah, Y., & Surachman, S. (2022). Efforts to improve the economic life of the Baduy community through the agriculture sector in Kanekes Village, Lebak District Banten. *International Journal of Engagement and Empowerment (IJE2), 2*(3), 346–353. https://doi.org/10.53067/ije2.v2i3.87

Ali, T., Buergelt, P. T., Paton, D., Smith, J. A., Maypilama, E. L., Yuŋgirrŋa, D., ... & Gundjarranbuy, R. (2021). Facilitating sustainable disaster risk reduction in Indigenous communities: Reviving Indigenous worldviews, knowledge and practices through two-way partnering. *International journal of environmental research and public health*, *18*(3), 855. https://doi.org/10.3390/ijerph18030855

Azizah, C., Lizar, C. A., Robo, S., Zuraihan, Arsyani, I., Iqbal, M., ... & Ismahadi. (2025). Indigenous Wisdom in Flash Flood Adaptation and Mitigation: Insights from the Gayo Highlands, Indonesia. *EGUsphere*, *2025*, 1-18. https://doi.org/10.5194/egusphere-2024-3774

Bang, H. (2024). Sustainable development goals, disaster risk management, and indigenous knowledge: A critical assessment of the interlinkages. *Sustainable Earth Reviews, 7*, 1–17. https://doi.org/10.1186/s42055-024-00101-x

Bwambale, B., Mertens, K., Tibasiima, T. K., & Kervyn, M. (2022). The socio-epistemic process of indigenous disaster risk reduction: Evidence of adapting yet endangered indigenous strategies. *International Journal of Disaster Risk Reduction*, *75*, 102953. https://doi.org/10.1016/j.ijdrr.2022.102953

Chanza, N., & Musakwa, W. (2022). Revitalizing indigenous ways of maintaining food security in a changing climate: Review of the evidence base from Africa. *International Journal of Climate Change Strategies and Management, 14*(3), 252–271. https://doi.org/10.1108/IJCCSM-06-2021-0065

Cuaton, G. P., & Su, Y. (2020). Local-indigenous knowledge on disaster risk reduction: Insights from the Mamanwa indigenous peoples in Basey, Samar after Typhoon Haiyan in the Philippines. *International Journal of Disaster Risk Reduction*, *48*, 101596. https://doi.org/10.1016/j.ijdrr.2020.101596

Dirgahayu, D., Karman, & Budhirianto, S. (2023). Potential of Indonesian indigenous community local wisdom for food security. *IOP Conference Series: Earth and Environmental Science, 1230*(1). https://doi.org/10.1088/1755-1315/1230/1/012023

Iloka, N. G. (2016). Indigenous knowledge for disaster risk reduction: An African perspective. *Jàmbá: Journal of Disaster Risk Studies*, *8*(1), 1-7. https://hdl.handle.net/10520/EJC196287

Iskandar, A. H., Suja'Ie, A. F., & Agusta, I. (2023). Redesigning consolidated data for handling extreme poverty in rural areas based on SDGs Desa. *Journal of Community Positive Practices, 23*(1), 96–115. https://doi.org/10.35782/JCPP.2023.1.08

Johnson, T., Lora-Wainwright, A., & Lu, J. (2018). The quest for environmental justice in China: Citizen participation and the rural–urban network against Panguanying's waste incinerator. *Sustainability Science, 13*(3), 733–746. https://doi.org/10.1007/s11625-018-0545-6

Karnoto, B., Purwanto, A., & Budiaman, B. (2025). Integrating indigenous knowledge with modern disaster risk reduction systems for enhanced community resilience. *International Journal of Environmental Sciences, 11*, 87–99. https://doi.org/10.64252/jf3bj759

Keske, C. (2021). Boreal agriculture cannot be sustainable without food sovereignty. *Frontiers in Sustainable Food Systems, 5*. https://doi.org/10.3389/fsufs.2021.673675

Lindawati, Anugrah, I. S., Tarigan, H., Indraningsih, K. S., Purwantini, T. B., & Hariyanto, W. (2024). Huma rice management model and food security system of Baduy indigenous communities, Indonesia. *BIO Web of Conferences, 119*. https://doi.org/10.1051/bioconf/202411902004

Malard-Adam, J., Adamowski, J., Tuy, H., & Melgar-Quiñonez, H. (2024). Modelling indigenous small-scale agriculture and food systems in Guatemala: Hybrid Bayesian inference for data-poor regions. *Agricultural Systems, 221*, 104102. https://doi.org/10.1016/j.agsy.2024.104102

Markolinda, Y., Sawirman, S., Ramadani, M., Yusya, F., Husna, N., Azmi, F., Surya, F., Taufiqurrahman, R., & Panjaitan, M. (2025). Indigenous knowledge for disaster mitigation and climate threats in Mentawai, Indonesia. *Jàmbá: Journal of Disaster Risk Studies, 17*. https://doi.org/10.4102/jamba.v17i1.1877

Nuryanto. (2023). Intangible cultural heritage values in the Sunda Wiwitan ritual and ancient Sundanese manuscripts as basic concepts of traditional building in Indonesia. *International Journal of Intangible Heritage, 18*, 173–189. https://doi.org/10.35638/ijih.2023.18.012

Nuryanto, Dwijendra, N. K. A., Paturusi, S. A., & Adhika, I. M. (2021). Technic and mystics of tukang wangunan in Sundanese traditional houses in Indonesia (Case study: Baduy tribe community-Banten). *Civil Engineering and Architecture, 9*(2), 533–544. https://doi.org/10.13189/cea.2021.090226

Panda, G. K., Chatterjee, U., Bandyopadhyay, N., Setiawati, M. D., & Banerjee, D. (Eds.). (2023). *Indigenous knowledge and disaster risk reduction: Insight towards perception, response, adaptation and sustainability*. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-26143-5

Pandey, D. K., Momin, K. C., Dubey, S. K., & Adhiguru, P. (2022). Biodiversity in agricultural and food systems of jhum landscape in the West Garo Hills, North-eastern India. *Food Security, 14*(3), 791–804. https://doi.org/10.1007/s12571-021-01251-y

Phillipps, B., Skinner, K., Parker, B., & Neufeld, H. T. (2021). An intersectionality-based policy analysis examining the complexities of access to wild game and fish for urban Indigenous women in Northwestern Ontario. *Frontiers in Communication, 6*. https://doi.org/10.3389/fcomm.2021.762083

Purnamasari, M., Huang, W. C., & Priyanto, B. (2023). The impact of government food policy on farm efficiency of beneficiary small-scale farmers in Indonesia. *Agriculture, 13*(6). https://doi.org/10.3390/agriculture13061257

Ramdani, F., Setiani, P., & Sianturi, R. (2024). Towards understanding climate change impacts: Monitoring the vegetation dynamics of terrestrial national parks in Indonesia. *Scientific Reports, 14*(1). https://doi.org/10.1038/s41598-024-69276-9

Rittelmeyer, P., Caretta, M. A., Dowler, C., Vora, S., Seigerman, C., Reddy, E. B. U., NR, L., Parajuli, J., Srinivasan, J., Priya, R., & Mukherji, A. (2024). Adaptation to water-induced disaster: Exploring local knowledge and Indigenous knowledge-led strategies. *AlterNative: An International Journal of Indigenous Peoples, 20*. https://doi.org/10.1177/11771801241235332

Shaw, R. (2016). Community-based disaster risk reduction. *Oxford Research Encyclopedia of Natural Hazard Science*. https://doi.org/10.1093/acrefore/9780199389407.013.47

Sodikin. (2017). Traditional wisdom of adat law Baduy community in farming system in Kanekes Village, Leuwihdamar Lebak Banten. *Jurnal Cita Hukum, 5*(1), 89–108. https://doi.org/10.15408/jch.v5i1.5398

Sulistiadi, A., Sudibjo, N., & Parani, R. (2024). Holistic management of the leadership of Pu'un Badui tribe exploration. *Revista de Gestao Social e Ambiental, 18*(6). https://doi.org/10.24857/rgsa.v18n6-131

Trott, N., & Mulrennan, M. E. (2024). "Part of who we are…": A review of the literature addressing the sociocultural role of traditional foods in food security for Indigenous people in Northern Canada. *Societies, 14*(3). https://doi.org/10.3390/soc14030034

Utami, I., Anshori, N., Saptaningtyas, H., & Astuti, S. (2025). A food resilience model integrating local wisdom and sociotechnical dynamic systems: Case study flood-affected communities in the Bengawan Solo area. *Progress in Disaster Science, 26*, 100413. https://doi.org/10.1016/j.pdisas.2025.100413

Yulia, R., Prakarsa, A., & Ali, M. (2023). Restoring the conflicts among societies: How does Baduy society settle criminal cases through restorative justice? *Academic Journal of Interdisciplinary Studies, 12*(3), 193–203. https://doi.org/10.36941/ajis-2023-0071

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