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Hifzil Al-Bi'ah in Mesiwah Pare Gumbo: The Contribution of Deah Dayak Ecoteological Practices to Sustainable Food Security

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Abstract:

This study examines *Mesiwah Pare Gumboh*, a rice ritual of the Dayak Deah community in Liyu Village, South Kalimantan, as a living form of ecotheology and its contribution to sustainable food security, in dialogue with the Islamic principle of *Hifzil Al-Bi'ah* (environmental preservation). Using a qualitative ethnographic approach, data were gathered through participant observation, in-depth interviews with 10 key informants, and document analysis, and then analyzed using Miles, Huberman, and Saldaña's interactive model. The findings show that the ritual functions as a community-based food security system grounded in conservation norms, regenerative shifting cultivation with long fallow periods, and a moral economy of mutual cooperation that supports fair food distribution and SDG 2 (Zero Hunger). However, cultural commodification through tourism and tensions between indigenous knowledge and national agricultural policies may threaten its spiritual and ecological values. The study recommends protecting customary territories, integrating Dayak Deah ecological wisdom into education and agricultural extension, and establishing collaborative policy forums. It contributes an inclusive ecotheological framework, a local-wisdom-based food security model, and a stronger case for cultural and spiritual approaches to achieving the SDGs.

Keywords: ecotheology; food security; indigenous wisdom; regenerative agriculture; Sustainable Development Goals.

INTRODUCTION

Indonesia is a country rich in natural resources, particularly in the agricultural sector. With a land area of 191.09 million hectares, approximately 50.19%, or approximately 95.90 million hectares, has the potential to be used for agricultural purposes (Gultom & Harianto,

2022). This potential presents Indonesia with a significant opportunity to achieve national food security. Food security is an essential basic need and is regulated by Food Law Number 7 of 1996 and Government Regulation Number 68 of 2002 (Chaireni, R., Agustanto, et al., 2020). With its vast land potential and strong regulatory framework, Indonesia has an adequate foundation to develop national food security, provided that natural resource management is carried out sustainably.

The Food and Agriculture Organization (FAO) also emphasizes that food security is an absolute prerequisite for sustainable national development (Wowiling, 2022). However, despite this potential, Indonesia faces serious challenges, including climate change, land degradation from unsustainable agricultural practices, dependence on food imports, and declining interest in the agricultural sector among the younger generation (Purwaningsih, 2008). These conditions threaten the nation's ability to meet the need for sufficient, safe, nutritious, and equitable food for all.

The Sustainable Development Goals (SDGs) established by the United Nations place food security as one of its primary objectives, namely Goal 2, which focuses on eradicating hunger, achieving food security, improving nutrition, and promoting sustainable agriculture (Selvitri et al., 2021). Achieving this goal requires the involvement of various parties, including local communities and indigenous peoples, who possess local wisdom in managing natural resources sustainably. This approach is considered capable of balancing human needs with environmental preservation.

The Dayak Deah community, who live in Liyu Village, Halong District, Balangan Regency, is an indigenous community with traditions and environmental management systems closely linked to nature. They employ traditional agricultural systems such as shifting cultivation, which not only maintain soil fertility but also preserve the ecosystem (Lagiman, 2021). In their daily lives, they view nature not only as an economic resource but also as a spiritual entity that must be respected and preserved (Lionanda, 2023). These values are reflected in various rituals and customs that are passed down through generations.

One of the most important traditional rituals for the Dayak Deah people is Mesiwah Pare Gumboh, a rice harvest thanksgiving tradition rich in spiritual and philosophical values (R. Sinambela, 2024). ritual is a form of ecotheology implementation, namely beliefs and practices that connect religious aspects with environmental conservation, or what is known in Islamic terms as Hifzil Al Bi'ah (environmental preservation). Through Mesiwah Pare Gumboh, the community not only expresses gratitude for the abundant harvest, but also carries out various ritual stages aimed at maintaining soil fertility, spiritually repelling pests, and ensuring the sustainability of food production (Soehadha, 2010). This practice demonstrates how local wisdom and traditional spirituality can be effective mechanisms in maintaining environmental sustainability and food security.

Several previous studies have highlighted various aspects related to indigenous communities and food security. For example, Mathilda (2021) found that "shifting cultivation is a form of local wisdom that can serve as a basis for developing a theology oriented towards environmental conservation" (Mathilda, 2021). Lionanda's (2023) research highlights the social and economic empowerment of Dayak communities through the development of cultural tourism based on traditional festivals such as Mesiwah Pare Gumboh, but focuses more on the economic and social aspects (Lionanda, 2023). Meanwhile, Chaireni et al. (2020) emphasize the importance of integrating local wisdom into sustainable food security strategies in Indonesia (Chaireni, Nugroho, et al., 2020). However, there are not many studies that specifically

examine Mesiwah Pare Gumboh as an implementation of ecotheology and its role as Hifzil Al Bi'ah in the context of environmental conservation and food security holistically.

The novelty of this research lies in its multidisciplinary approach, combining ecotheological studies with the traditional practices of Mesiwah Pare Gumboh as a model for environmental conservation within the framework of sustainable food security. This research not only describes ritual and cultural aspects but also examines how the spiritual and religious values of the Dayak Deah community significantly contribute to sustainable natural resource management and the achievement of sustainable development goals (SDGs 2). Thus, this research offers a new perspective that integrates ecological, social, and spiritual dimensions in environmental and food management in indigenous communities.

Research on Mesiwah Pare Gumboh as an implementation of ecotheology is crucial to uncover how the cultural and spiritual values of the Dayak Deah community contribute to environmental conservation and food security. This study not only provides insight into sustainable local practices but can also serve as a reference for developing sustainable agricultural models that integrate cultural and religious aspects. Furthermore, the results of this research are expected to strengthen recognition of intangible cultural heritage, which holds strategic value in supporting sustainable development and achieving SDGs 2 at the local and national levels.

Departing from the richness of local wisdom that lives and breathes in the Dayak Deah community in Liyu Village, this research delves into the practice of Mesiwah Pare Gumboh as a real manifestation of ecotheology. This traditional ritual is not merely a tradition, but a concrete embodiment of the principle of Hifzil Al Bi'ah (environmental preservation) integrated with spirituality and culture. The research focuses on revealing how this practice significantly contributes to sustainable food security while maintaining ecosystem harmony. Therefore, this research is entitled "Hifzil Al Bi'ah in Mesiwah Pare Gumboh: Contribution of the Dayak Deah Tribe's Ecotheological Practices to Sustainable Food Security".

Specifically, this study aims to: (1) describe in detail the ritual practices and real contributions of Mesiwah Pare Gumboh as a living ecotheology; (2) analyze the role of spiritual and cultural values as the main drivers in environmental conservation through this ritual; and (3) examine the integration between ecotheological aspects and local wisdom in sustainable natural resource management.

The benefits of this research are expected to be felt practically and theoretically. Practically, this research can strengthen recognition of the local wisdom of the Dayak Deah community and provide valuable considerations for policymakers and environmental practitioners in designing development strategies that integrate ecological, cultural, and spiritual sustainability. Meanwhile, theoretically, this research is expected to enrich the body of knowledge in the fields of ecotheology, cultural anthropology, and food security studies with a multidisciplinary approach, while also serving as a reference for further research.

In order to make the study more in-depth and focused, this research is limited to exploring the practice of Mesiwah Pare Gumboh in Liyu Village, Balangan Regency, with an emphasis on ritual aspects, spiritual values, and its contribution to the environment and food security, without discussing in-depth economic analysis or comparisons with other communities.

The position of this research also becomes clear when compared to previous studies. Mathilda's (2021) study on shifting cultivation emphasizes purely ecological aspects, while Lionanda (2023) views similar festivals from the perspective of economic empowerment and tourism. Chaireni et al. (2020) discuss the integration of local wisdom into food security in

general. This is where this research's uniqueness and contribution lies: with a specific focus on the spiritual-ecoteological dimension of the Mesiwah Pare Gumboh ritual, this study offers a holistic perspective that connects the intersections of faith, culture, environmental conservation, and sustainable food security.

The World Health Organization (WHO) states that food security is supported by three main pillars: food availability, food accessibility, and food utilization (utility). Food availability refers to the ability of an individual or community to have sufficient food supplies to meet basic daily needs. This pillar emphasizes the importance of stable food production, adequate food reserves, and a good storage system to prevent food shortages in the short or long term. In this context, the existence of rice barns (upak) in the Dayak Deah community, which can store harvests for years, demonstrates the existence of a strong and sustainable food availability system (Hakim, 2014).

The practice of Mesiwah Pare Gumboh strengthens food accessibility by emphasizing togetherness, mutual cooperation, and a prohibition on selling harvests to ensure food availability for all community members. This ensures that every family has relatively equal access to staple foods without relying on external markets (Hakim, 2014).

Food utilization (utility) refers to a community's ability to process and utilize food properly to provide optimal nutritional benefits. Food utility encompasses processing methods, hygiene, food quality, and community knowledge of nutritional value. In the Dayak Deah community, food utilization is not only biological but also spiritual and cultural. Rice is not simply viewed as a food source, but as a gift of nature that must be respected through various rituals and traditional practices. The use of natural ingredients, avoidance of chemical pesticides, and respect for natural cycles demonstrate that food utilization is carried out in a manner that aligns with the principles of sustainability and environmental preservation (Hakim, 2014)

Local wisdom is a set of values, knowledge, and perspectives on life born from a community's long experience interacting with its natural and social environment. It encompasses more than just traditions or customs, but also a system of knowledge passed down from generation to generation and serving as a guide for making life decisions, such as how to manage land, determine planting times, process natural resources, and maintain a balanced relationship between humans, nature, and transcendent forces. In this context, local wisdom is a crucial resource that enables communities to survive and adapt to their environmental conditions sustainably (Bahardur, 2018).

The characteristics of local wisdom are: (1) it must combine knowledge of virtue that teaches people about ethics and moral values; (2) local wisdom must teach people to love nature, not to destroy it; and (3) local wisdom must come from older members of the community (Bahardur, 2018).

The connection with ecotheology is that ecotheology is an approach that combines religious values with ecological awareness in viewing the relationship between humans and nature. This concept emphasizes that humans are not absolute rulers of the earth, free to exploit all resources, but rather stewards (caliphs) responsible for the preservation of God's creation. Thus, nature is not positioned merely as an economic object, but as part of the divine order that must be cared for, its balance maintained, and its existence glorified (Vella & Rizal, 2024).

In the Christian tradition, ecotheological principles are reflected in Proverbs 3:19–22, which describes God's creation of the earth with wisdom, prudence, and order. This verse teaches that human life must be in harmony with God's wisdom contained in the universe.

Humans are called to protect and care for the earth, not to slowly destroy it through greed, overexploitation, and disregard for environmental balance. Nature is seen as part of the manifestation of divine wisdom, so destroying it is tantamount to violating divine principles themselves (Vella & Rizal, 2024).

This view aligns with the Islamic teachings contained in the Qur'an, Surah Al-A'raf, verses 56–59, which expressly forbid humans from causing damage to the earth after God created it in a state of balance. In Islam, humans are entrusted with the role of khalifah fil ardh (leader on earth), tasked with ensuring the prosperity, care, and preservation of nature. The prohibition against damaging the environment is not only ecological but also theological and moral, as any damage to nature is seen as a betrayal of God's trust. This is the basis for the emergence of the concept of Hifz Al-Bi'ah (environmental protection), which can be positioned as an important aspect of the maqā (observance of the law).yesid al-syarī'ah (the main objectives of sharia) (Vella & Rizal, 2024).

METHOD

To delve into the heart of the Mesiwah Pare Gumboh practice and the ecotheological meanings that live within it, this study adopted a qualitative ethnographic approach. This approach was chosen as the most appropriate methodological compass to interpret the complexity of the ritual not as an isolated event, but as a cultural node embedded in the social, ecological, and spiritual networks of the Dayak Deah community (Creswell & Poth, 2018). The research field was centered in Liyu Village, South Kalimantan, with an intensive temporal focus during the peak of the festival on July 19-21, 2025, although engagement continued until September to understand the context of the preparations and their impact.

In an effort to build a holistic and valid understanding, the data collection strategy was designed based on the principle of triangulation (Denzin & Lincoln, 2017). The core of the field experience is total participant observation, where the researcher is not merely present as a passive observer, but participates in the pulse of the festival—from the solemnity of the Nyerah Ngemonta Parade, the fervor of the Fire Bathing Attraction, to the excitement of the cultural parade. This direct presence allows for rich recording of the nuances of behavior, interaction dynamics, and symbolic meanings that can only be captured in their authentic context (DeWalt & DeWalt, 2011).

This depth of observation was then enriched through in-depth interviews with ten purposively selected key informants (Patton, 2015). They—from the Traditional Chief and Demang, the guardians of tradition, to farmers, committee members, and even visitors—provided a multi-dimensional mosaic of perspectives on the ritual. Furthermore, a documentary study of festival archives, official reports, and customary records supplemented the primary data with the necessary historical and administrative context (Bowen, 2009). The primary instrument in this entire process was the researcher's own sensitivity, honed through living with the community by staying at the RT Head's house, aided by semi-structured interview guidelines and reflective field notes.

The vast amount of qualitative data collected was then navigated through an interactive analysis process modeled by Miles, Huberman, and Saldaña (2020). This process began with data reduction, where interview recordings and observations were sifted through to identify essential themes. These themes were then presented in a matrix and descriptive narrative to map emerging relationships and patterns (Miles et al., 2020). Crucially, initial findings were

not left hanging; they were verified through member checking—re-discussing with key informants—to ensure the researcher's interpretations aligned with the meanings assigned by the cultural owners themselves (Lincoln & Guba, 2018). This cycle of reduction, presentation, and verification proceeded iteratively, guiding the researcher toward conclusions that were not only descriptive, but also interpretative and contextual. Ultimately, this entire methodological journey is designed to answer the central question: how the spiritual structure in Mesiwah Pare Gumboh forms a concrete ecological practice and contributes to sustainable food security, thereby connecting very specific local wisdom with universal discourses on ecotheology and development.

RESULTS AND DISCUSSION

Implementation of Pare Gumboh Mesiwah Practice

In the heart of the Meratus Mountains, where morning mist still shrouds the peaks of primary forest, the Dayak Deah people of Liyu Village, Halong District, perform a sacred ritual that marks time and maintains cosmic balance: Mesiwah Pare Gumboh. This ritual is far more than a mere harvest celebration; it is a collective consciousness embodied in action, a living, breathing ecotheology. As a manifestation of the principle of Hifzil Al Bi'ah (environmental preservation), Mesiwah Pare Gumboh represents a profound dialectic between humans, ancestors, nature, and the Creator, a value system that has for centuries ensured ecological sustainability and food security. In the past five years, this ritual has undergone a significant transformation from a family ceremony to a major communal festival, an evolution that has strengthened its function as a social, spiritual, and ecological node amidst the tide of modernization (Lionanda, 2023). Exploration of its implementation reveals a sophisticated environmental philosophy, where every stage of the ritual—from land clearing to thanksgiving feasts—is woven with threads of wisdom that keep the cycle of life turning.

Etymologically, "Mesiwah" means party or thanksgiving, "Pare" means rice, and "Gumboh" means together. Therefore, this phrase can be understood as a "collective thanksgiving feast for the rice harvest." However, its true meaning is more deeply embedded in the ontology of the Dayak Deah community. As one of the ritual organizers put it, "This is a ritual for all our farmers who planted rice this year. We pray for success, for freedom from pests and disasters, and for blessings" (YD, wawancara, 2025). This statement is not merely a pragmatic hope, but rather an acknowledgment of absolute dependence on transcendent forces and the ecosystem. This ritual has roots in the ancient past, but crystallized in 2019 when the village decided to consolidate various family celebrations into one grand village festival. This decision, as explained by a traditional elder, was motivated by a spirit of togetherness and efficiency: "The Mesiwah Pare has been around since our ancestors, the gumboh was only made in 2019… In the past, there might have been a lot of people, so it wouldn't have been possible to finish it in a month, but now, even if there are thousands of people, the gumboh can be finished" (AA, wawancara, 2025). This transformation demonstrates an adaptive cultural dynamic, where the spiritual core of the ritual is maintained, while the format of its implementation is modernized to meet the challenges of the times without eroding its essence.

The implementation of Mesiwah Pare Gumboh cannot be separated from the entire traditional agricultural cycle of the Dayak Deah people, which begins with land clearing or babat alas. This process itself is a ritual steeped in ecological ethics. Before a machete touches a tree trunk, a traditional leader will recite a mantra requesting permission to the spiritual

entities that guard the forest: the Root God, the Wood God, the Sun God, and the Water God (AA, interview, 2025). This practice reflects a deep ecosophy, namely the view that nature is not an inanimate object to be exploited arbitrarily, but rather a living subject with a soul and with which to communicate. A similar approach is found in various indigenous communities of the archipelago who uphold the principle of memayu hayuning bawono (caring for the beauty of the world) (Sofyan, 2022). The next stage, controlled burning (ngarun), is carried out with extreme caution and involves hundreds of residents to monitor the fire to prevent it from spreading. After burning, the land is left to rest for three to four months, allowing the ash to naturally fertilize the soil. This practice, often misunderstood as environmental destruction, is actually a sophisticated form of ecologically based land management. One village head explained, "The reason they do shifting cultivation is because they rely on the natural fertility of nature. Burning the ash can stimulate soil fertility (humus), which can improve it." (SR, interview, 2025). Recent research by Mathilda (2021) confirms that shifting cultivation with sufficient fallow periods actually increases soil biodiversity and supports secondary forest regeneration, making it a sustainable agricultural practice suited to tropical ecosystems (Mathilda, 2021).

The core of this agricultural cycle is the Melatu Wini ritual, the process of sowing rice seeds accompanied by mantras and prayers in the Bawo language. “Melatu Wini is the activity of planting rice,” explained a neighborhood association (RT) head (YT, interview, 2025). This activity is not merely an agricultural technique, but a sacred initiation that connects the seeds with the power of ancestors and nature. In this phase, local knowledge of phenology—reading natural signs to determine planting times—plays a crucial role. For example, the position of certain stars in the sky marks the appropriate planting season (YT, interview, 2025). This wisdom, derived from accumulated observations across generations, demonstrates a high level of understanding of local ecological cycles, a valuable asset in an era of climate uncertainty (IPCC, 2022). Setelah kurang lebih empat setengah bulan, tibalah puncak dari seluruh rangkaian: Mesiwah Pare After approximately four and a half months, the entire series culminates: the Mesiwah Pare Gumboh itself. This ritual serves as a space where the community not only gives thanks for the harvest but also renews its collective commitment to maintaining harmony with nature.

What makes Mesiwah Pare Gumboh a powerful manifestation of ecotheology is the close integration of spiritual values, customary norms, and ecological practices. The spirituality of the Dayak Deah people is immanent; God and ancestral spirits are present in every element of nature. Therefore, environmental preservation is a logical consequence of piety. Practices such as the use of tapung tawar (a mixture of chicken blood, flowers, and oil) and mantras to repel pests—for example, the chant “hampangau bulik sana ikam ke matahari pajah”—are not mere superstition. They are forms of integrated pest management based on local wisdom that avoid reliance on chemical pesticides, thus preserving the health of the soil and natural biota (D. Sinambela, 2024). This approach aligns with the principles of agroecological sustainable agriculture, which emphasize the utilization of natural ecological processes and the reduction of external inputs (Gliessman, 2018). The rejection of chemical pesticides is not simply an ecological consideration but also part of a religious ethic that prohibits the defilement of sacred land (Wezel et al., 2020).

From a food security perspective, the contribution of Mesiwah Pare Gumboh and its surrounding agricultural system is multidimensional. First, the shifting cultivation system with its diversified crops (rather than monoculture) creates resilience against crop failure. If

one type of crop is attacked by pests, others can still survive. Second, knowledge of local rice varieties and other food crops (tubers, forest vegetables) ensures a diverse food and nutritional source (Royyani, 2014). Third, by relying on natural fertility and local inputs, this system is economically self-sufficient, less vulnerable to fluctuations in the prices of chemical fertilizers and pesticides. Fourth, the accompanying rituals and structures of mutual cooperation strengthen social cohesion, which is the backbone of community resilience in the face of crises (Chaireni, Nugroho, et al., 2020). In the context of the threat of a global food crisis and environmental degradation, this model, held by the Dayak Deah, offers a highly relevant alternative. Recent research by Fisher et al. (2023) showed that indigenous food systems globally have a significant contribution to food security and biodiversity, while also having a low carbon footprint (Fisher et al., 2023).

Mesiwah Pare Gumboh, therefore, is a living text written not on paper, but in the cultural and ecological landscape of Liyu Village. It is the embodiment of practical ecotheology, where the religious doctrine of preserving nature (Hifzil Al Bi'ah) does not need to be imported because it is embedded in the DNA of local culture. Government recognition through the "Kharisma Event Nusantara" program by the Ministry of Tourism and Creative Economy is a positive step, but more importantly, ensuring that the ecological and socio-cultural essence of this ritual is not eroded by the commodification of tourism (Lionanda, 2023). The challenge ahead is to document, revitalize, and transform the wisdom contained in Mesiwah Pare Gumboh into more inclusive and contextual agricultural and environmental development policies. As suggested by recent studies on the integration of local wisdom in sustainable development, countries need to build equal partnerships with indigenous communities, recognize and protect their traditional management areas, and incorporate their ecological knowledge into agricultural education curricula and training programs (Santosa et al., 2024).

In conclusion, the Dayak Deah community's Mesiwah Pare Gumboh performance is a symphony that balances spiritual, ecological, and social tones. This ritual teaches that sustainability is not merely a technical concept, but rather the fruit of a respectful and reciprocal relationship with the entire web of life. Within their dance movements and mantra chants lies an ancient yet highly sophisticated recipe for addressing the threat of food and climate crises—a recipe that culminates in the realization that humans are not masters of nature, but rather part of it and must act responsibly and with gratitude.

Contribution of Mesiwah Pare Gumboh Practices to the Achievement of the SDGs

In the global roadmap to sustainable development, Sustainable Development Goal (SDG) number 2—which aims to end hunger, achieve food security and improved nutrition, and advance sustainable agriculture—is often considered the domain of macro-policy and technological intervention. However, on the slopes of the Meratus Mountains, the Dayak Deah community in Liyu Village has woven an answer to this global challenge through a local knowledge architecture called Mesiwah Pare Gumboh. This ritual is not just a celebration; it is a living food system, precisely integrating principles of ecology, spirituality, and social justice. This practice offers a vital counter-narrative perspective: that solutions to the food and environmental crises can actually be sourced from often-ignored traditional wisdom. As a concrete manifestation of ecotheology and the principle of Hifzil Al-Bi'ah (environmental preservation), Mesiwah Pare Gumboh demonstrates how an indigenous community can organically achieve, and even exceed, the targets of SDGs 2 through food governance rooted

in respect for nature and communal solidarity (Fisher et al., 2023). A thorough exploration of its contributions reveals an elegant blueprint for sustainable food security, built not on market logic, but on a foundation of ecological ethics and transgenerational responsibility.

The core of Mesiwah Pare Gumboh's contribution to SDG 2 lies in its sophisticated and thoughtful post-harvest management system. The Dayak Deah community views rice not as a commodity, but as a life entrusted to them by their ancestors and the Creator. This ontological view gives rise to a set of rigorous conservation practices. Harvest storage takes place in traditional barns called upak or kindai, specially designed structures made from wood and tree bark. A village head explained, "I'm sure each family has one... made from tree bark... one and a half meters in diameter" (SR, interview, 2025). The technical excellence of this upak is astonishing: with optimal drying techniques (sun drying for up to three days), rice can maintain its quality—white color and nutrients—for more than six years (SR, interview, 2025). This material knowledge, which harnesses the natural properties of tree bark to control temperature and humidity, constitutes a form of appropriate technology that is sustainable and fossil-free. This practice directly supports SDG 2.4, which aims to ensure sustainable food production systems and the implementation of resilient agricultural practices that increase productivity and help maintain ecosystems (Das et al., 2021). By creating long-term food reserves, communities build a resilient buffer against the increasing threat of crop failure due to climate change (IPCC, 2022).

Even more revolutionary is the customary norm that explicitly prohibits the sale of staple crops. An elder asserted, “Because in our tradition, the Dayak Deah people are forbidden to sell their crops… to ensure that food reserves are sufficient… in case next year’s crop failure occurs” (S, interview, 2025). This prohibition is a radical food security strategy, firmly separating subsistence from the logic of commodification. Within the SDGs framework, it is a direct implementation of the principle of “sustainable access to safe and nutritious food” (target 2.1) by localizing and protecting food sources from global market volatility. This norm is supported by a deep belief system, namely the belief that rice has a spirit (semangat padi) that would be harmed if treated as a commodity. This integration of ecological ethics, spirituality, and social norms creates a powerful lock-in mechanism, protecting the system from the damage of excessive individualization and commercialization. Similar practices, where local wisdom functions as a common-pool resource institution, are also found in other indigenous communities in Indonesia that have successfully maintained their food security (Sahide et al., 2020).

This local wisdom is reinforced by the moral economy of mutual cooperation and redistribution. After the Mesiwah Pare Gumboh ritual, there is a procession of bringing rice into a communal granary, where each family contributes a portion of the harvest based on the agreement of the customary council (SR, interview, 2025). This communal reserve serves as a social safety net for disadvantaged families or those experiencing disaster. Thus, in addition to availability, food access, a crucial pillar of food security, is also institutionally guaranteed through customary norms. This approach aligns with recent research emphasizing that food security is not only about productivity, but also about equitable governance and an inclusive distribution system, particularly in the face of shocks such as the pandemic (Clapp & Moseley, 2022). By combining sophisticated individual storage with a solidaristic communal granary, the Dayak Deah community is building a resilient and equitable food system.

Concretely, the contributions of these practices can be mapped to the three main targets of SDGs 2 with impressive precision.

First, regarding target 2.1 (ending hunger and ensuring access to safe and nutritious food). The system established through Mesiwah Pare Gumboh effectively eliminates structural hunger within the community. The prohibition on selling rice and mandatory storage ensure the availability of staple foods year-round. Furthermore, their multi-species agricultural system—not only rice, but also corn, various tubers such as ferns, fruits such as jackfruit and cempedak, and protein from river fish and forest products—ensures food diversity. This diversity is key to adequate nutrition. This local biodiversity-based diet, as documented by Fanzo et al. (2021), is not only more nutritious but also more adaptive to climate change than vulnerable monoculture systems (Fanzo et al., 2021). Thus, the target of "nutritious food" is achieved organically through consumption patterns guided by ecological wisdom.

Second, regarding target 2.3 (increasing the productivity and income of small-scale food producers). Although the Dayak Deah community is not market-oriented for staple rice, their system is not static. They demonstrate high adaptability. Some non-food forest products or certain surpluses from secondary crops can be traded. More importantly, income and well-being are measured in a more holistic framework: year-round food security is the highest form of wealth. By avoiding reliance on expensive chemical inputs (fertilizers and pesticides), they minimize production costs and debt vulnerability. This model supports small-scale farmer sovereignty by redefining "productivity" not simply as yield per hectare, but as a sustainable ratio of nutritional output to ecological and financial inputs. This approach is gaining momentum in the current global agricultural discourse, which is shifting the focus from industrial intensification to an agroecology that empowers smallholder farmers (Mockshell & Kamanda, 2018).

Third and most central, related to target 2.4 (sustainable food production systems and resilient agricultural practices). This is where Mesiwah Pare Gumboh and the Dayak Deah agricultural cycle shine. The entire sequence—from clearing the forest with ancestral permission, controlled burning, fallow period, Melatu Wini, to harvest—is a prototype of regenerative agriculture. The shifting cultivation system they practice, often wrongly criticized, is actually a brilliant adaptation to tropical forest ecosystems that become poor in nutrients when continuously cultivated. The long fallow period (decades) allows for the complete regeneration of secondary forests, storing carbon, and restoring soil fertility. This practice is a concrete form of restorative agriculture. Recent studies have shown that well-managed shifting cultivation systems by indigenous communities have a low ecological footprint and actually support biodiversity conservation (Heinimann et al., 2020). By combining it with phenological knowledge (reading the constellations to determine planting times), communities create a system that is in harmony with the rhythms of nature, a form of true resilience.

In the grand narrative of sustainable development, often dominated by techno-economic language—efficiency, decarbonization, and the circular economy—a dimension that lies at the heart of true resilience is often overlooked: the spiritual dimension and meaning. This is where ecotheology and the concept of Hifzil Al-Bi'ah offer a critical and constructive lens. Both are not merely theoretical concepts, but operational frameworks that are alive and throbbing in the practices of communities such as the Dayak Deah community in Liyu Village through Mesiwah Pare Gumboh. The transcendence of this ritual's contribution to the Sustainable Development Goals (SDGs) lies precisely in its ability to interweave the sacred with the profane, the spiritual with the ecological, creating an intrinsic environmental ethic that has real impact. While conventional development paradigms often separate humans from nature,

viewing the environment as a 'resource' to be managed—or exploited—ecoteology and Hifzil Al-Bi'ah invite us to see a more organic and mutually sustaining relationship. The practice of Mesiwah Pare Gumboh thus becomes a living laboratory, empirical evidence that authentic sustainability is born from a worldview that honors life in all its interconnectedness (Kearns, 2021). A deeper exploration of the convergence of this spiritual framework with the global agenda will not only enrich academic understanding but also offer a way out of the impasse in SDG implementation, which often ignores the cultural and psycho-spiritual dimensions of local communities (Turzo, 2025).

Ecotheology: From Academic Discourse to Grounded Communal Praxis

Ecotheology, as a discipline that explores the intersection of theology, ethics, and ecological issues, has evolved from a mere textual study of world religions into a movement demanding a transformation of practice. Essentially, ecotheology seeks to answer the fundamental question: what is humanity's religious and moral responsibility to the threatened earth (Gushee & Lutz, 2023). It critiques the anthropocentrism at the root of the ecological crisis and offers various theocentric, biocentric, or ecocentric alternatives. In the Christian context, for example, stewardship theology has developed, emphasizing human responsibility as stewards of God's creation, or ecological liberation theology, which views the oppression of the earth and humans as two sides of the same coin (Boff, 2019). In Eastern traditions and indigenous spiritualities, ecotheology often does not need to be declared a formal theology; it manifests itself in cosmologies that view the universe as a sacred unity, of which humans are an integral part, not the rulers. This shift from a theology of nature to a theology of and with nature is crucial (Rasmussen, 2020).

The practice of Mesiwah Pare Gumboh is a perfect embodiment of the second type of ecotheology—an implicit theology embedded in rituals, mantras, and customary norms. This ritual does not depart from dogmatic formulations, but from the direct and collective experience that abundant harvests are the fruit of a harmonious reciprocal relationship with supernatural forces and nature itself (Kailo, 2025). When a Dayak Deah farmer recites a mantra before cutting down a tree, asking permission from the "Root God, Wood God, Sun God, and Water God," what occurs is a profound ecotheological performativity. This act confirms that the forest is a sovereign subject, possessing a personhood that must be respected. This is the antithesis of modern extractive logic. The belief that rice has a spirit (the spirit of rice) and therefore is forbidden to be traded is more than just superstition; it is an ontological foundation that protects food from commodification, as well as a highly effective conservation mechanism. In ecotheological terms, this is referred to as the "sacralization of nature," a process in which natural elements are elevated into the sacred realm, giving rise to taboos and prohibitions that serve as tools for sustainable management (Berkes, 2018). Thus, the ecotheology of the Dayak Deah people is not a preached theory, but rather an ethic lived and practiced in their agricultural cycle, making every stage from clearing the forest to harvesting an ecological liturgy.

While ecotheology is general, the concept of Hifzil Al-Bi'ah offers a specific framework of Islamic tradition that is highly aligned with the spirit of the sustainable era. Literally meaning "preserving the environment," Hifzil Al-Bi'ah is one of the contemporary maqashid al-shari'ah (higher objectives of sharia) developed by scholars as an extension of the five classical objectives (protecting religion, life, intellect, progeny, and property). This concept emphasizes that environmental protection is a religious obligation (fardh kifayah) with an worship

dimension (Auda, 2019). Its foundations can be traced back to the Qur'an and Hadith, such as the principle of humans as khalifah (representatives) on earth (Q.S. Al-Baqarah: 30) whose duty is to prosper (isti'mar) and not to destroy (ifsad), as well as the prohibition of causing damage on earth (Q.S. Al-A'raf: 56, 85). In a more operational context, Hifzil Al-Bi'ah includes principles such as prohibiting waste (israf), preventing harm (darar), and pursuing the path of balance (mizan) in all actions (Ozdemir, 2022).

What is interesting is how these universal Islamic principles find strong resonance in the local practice of Mesiwah Pare Gumboh, even though the Dayak Deah community is not a Muslim society. This shows that transcendental ecological values are often universal and manifested in various forms of local wisdom (Pattnaik, 2024). The prohibition on selling staple crops, for example, is a concrete form of preventing israf (waste) and ensuring distributive justice. The shifting cultivation system with long fallow periods reflects the principle of mizan (balance), allowing time for nature to recover, thus maintaining soil fertility for future generations. The ritual of asking for permission before exploiting resources is a form of respect for the mandate as a caliph, who must act responsibly and with the awareness that true ownership belongs to the Almighty Creator. In other words, Mesiwah Pare Gumboh can be read as a substantive practice of Hifzil Al-Bi'ah, albeit wrapped in Dayak cultural idioms and symbolism. This convergence is crucial to demonstrate that religion and local wisdom are not polar opposites, but rather potential allies in addressing the ecological crisis. A recent study by Ilyas et al. (2023) showed that the effectiveness of conservation programs often increases when religious and local values are integrated, as they tap into deeper levels of motivation and commitment than mere material incentives or legal regulations (Ilyas et al., 2023).

The Sustainable Development Goals (SDGs) agenda is an ambitious global consensus, but its implementation at the local level often faces serious challenges in the form of cultural resistance, contextual incompatibility, and an overly technocratic approach (Immler & Sakkers, 2022). This is where dialogue with the spiritual framework of ecotheology and Hifzil Al-Bi'ah through practices such as Mesiwah Pare Gumboh becomes crucial. The sustainable development that is to be achieved must not only be ecologically and economically sustainable, but also culturally and spiritually sustainable (Hariram et al., 2023). This means that it must be meaningful to the communities that implement it, aligned with their value systems and worldviews (Escobar, 2020).

The practices of the Dayak Deah community offer valuable lessons. First, their food security (SDG 2) is built on a strong spiritual foundation. Belief in the spirit of rice and the prohibition against selling it create an automatic buffer system that protects the community from market fluctuations and crop failures. This is an organic form of food sovereignty, where control over the food system rests entirely with the community, motivated by cultural and sacred logic, not market logic (Patel, 2023).

Second, in terms of responsible consumption and production (SDG 12), their agricultural systems, which minimize external inputs, rely on natural fertilizers from controlled burning, and strongly respect natural cycles, are a clear example of a biosphere-based circular economy. Third, regarding life on land (SDG 15), shifting cultivation systems with long fallow periods are, in fact, a centuries-old strategy for biodiversity and carbon stock conservation, contrary to the negative stigma often attached to them (Queiroz et al., 2025).

Therefore, development approaches that aim to support the achievement of the SDGs in indigenous communities' territories must shift from an interventionist paradigm to a recognition and facilitation paradigm. Rather than replacing traditional agricultural systems

with monoculture technology packages that require chemical fertilizers and pesticides, which actually damage ecosystems and create dependency, a wiser policy is to protect, revitalize, and scale existing wisdom principles. This means recognizing indigenous territories, strengthening local institutions such as customary councils, and documenting traditional ecological knowledge for integration into educational curricula and extension programs (Teku, 2026). The role of the state and non-governmental organizations is to be enablers that create space for local cosmologies to continue to live and thrive, rather than social engineers that impose a single universal model (Paužuolienė et al., 2024).

Implications and Future Directions: Toward a Dialogic and Transformative Ecotheology

Reflections on Mesiwah Pare Gumboh in light of ecotheology and Hifzil Al-Bi'ah lead us to several fundamental implications. First, in the academic realm, a more inclusive and comparative approach to the study of religion and ecology is needed. Ecotheology should not be merely an internal conversation of major religions, but must actively dialogue with the spirituality and wisdom of indigenous communities around the world. Such studies will enrich the theological treasury while providing a stronger ethical foundation for ecological action (Kessler, 2022). Second, in the educational realm, there is a need for integration of local ecological wisdom and religious values into formal and non-formal education to instill environmental ethics from an early age, forming a generation that is not only technocratically intelligent but also ecologically and spiritually wise (Adams et al., 2020).

Third, and most importantly, is the realm of policy and advocacy. Stakeholders must view practices like Mesiwah Pare Gumboh not as tourist-attracting folklore objects, but rather as strategic partners in achieving national and global sustainable development goals. Recognition of customary governance systems and traditional management areas must be embodied in concrete regulations. Furthermore, Indonesia's cultural and environmental diplomacy in international forums can make this local wisdom-based food security model a soft power tool, demonstrating leadership in integrating tradition with modernity (Firnadi, 2025).

In closing, this journey into Mesiwah Pare Gumboh, ecotheology, and Hifzil Al-Bi'ah teaches us that the path to true sustainability may not lie in the technological discoveries of the future, but in the time-tested wisdom of the past, embedded in ritual. In the Dayak Deah people's thanksgiving dance, in the mantras whispered to rice seeds, and in the towering granaries filled with reserves for the next seven years, lies an alternative epistemology—a way of knowing, being, and caring that is most needed in this Anthropocene era. They remind us that the earth is not a hotel we live in, but a home we inherit from our ancestors and are obligated to hand over in good condition to our children and grandchildren. By maintaining rituals like Mesiwah Pare Gumboh, we are not merely preserving a tradition; we are nurturing the possibility of a more just, sustainable, and meaningful future for all beings.

CONCLUSION

This research starts from an effort to deconstruct the narrative of sustainable development that is often trapped in a technocratic paradigm, by asking a fundamental question: How can the practice of local wisdom with spiritual nuances be an effective mechanism for achieving sustainable food security? Through an ecotheological approach, this research reveals that the Mesiwah Pare Gumboh in the Dayak Deah community in Liyu Village is not just a harvest thanksgiving ritual, but a comprehensive socio-ecological system that successfully integrates spiritual, cultural, and ecological dimensions in a complete life cycle. The main findings of this

research confirm that this ritual functions as a concrete manifestation of the principle of Hifzil Al-Bi'ah (environmental preservation), which organically contributes to the achievement of the targets of Sustainable Development Goals (SDGs) 2, especially in eliminating hunger, ensuring access to nutritious food, and advancing sustainable agriculture. The core of its contribution lies in three pillars: (1) a food buffer system based on customary norms that prohibits the sale of staple rice and relies on the barn (upak) for long-term reserves; (2) a regenerative production system through shifting cultivation that respects fallow periods and phenological knowledge; and (3) a moral economy of mutual cooperation that ensures equitable distribution and access to food at the community level. Thus, this research answers that true sustainability stems from a local cosmology that views food as a sacred gift and nature as a life partner that must be protected, not as a resource to be exploited.

In terms of theoretical implications, this research provides three significant contributions to the body of knowledge. First, it enriches the discourse of ecotheology by demonstrating that environmental theology is not solely centered on the texts of heavenly religions, but can also thrive in the form of ritual practices and immanent spirituality of indigenous communities. Second, this research strengthens the framework of ecological anthropology by demonstrating how social institutions and customary norms function as robust adaptive mechanisms in managing common-pool resources. Third, it fills a gap in food security studies by introducing a "culturally-based food security" approach, which emphasizes that food independence is not only determined by productivity, but by value systems, local knowledge, and social cohesion.

At the practical level of implications, the findings of this study offer an alternative roadmap for policymakers, development practitioners, and environmental activists. The main recommendation is the need for a paradigm shift from a top-down intervention approach to the recognition and facilitation of indigenous knowledge systems. Concretely, this means: (1) Recognition and legal security of the customary management areas of the Dayak Deah community as a prerequisite for maintaining their ecosystem and agricultural cycle; (2) Integration of local ecological wisdom into the education curriculum and sustainable agricultural extension programs; and (3) Development of a strategic partnership model between the government and indigenous communities, where rituals such as Mesiwah Pare Gumboh are not only positioned as tourist attractions, but as living laboratories for innovation in community-based food security and conservation policies.

However, this research is not without limitations. First, the study's scope, limited to a single village (Liyu Village), means its findings cannot necessarily be generalized to the entire Dayak Deah community or other indigenous communities without further comparative studies. Second, the study's focus on ritual and socio-ecological aspects results in a less in-depth analysis of broader political economic dimensions—such as power relations, pressures from extractive investments, or regional market dynamics. Third, this study relies primarily on qualitative data from interviews and participant observation, so quantitative measurements of the ecological impacts (e.g., forest regeneration rates or carbon stocks) of the shifting cultivation system they practice have not been conducted.

Based on these limitations, suggestions for further research can be directed at several agendas. First, comparative studies are needed that map variations in similar practices in other Dayak Deah communities or different ethnic groups in Kalimantan, to identify universal and contextual principles of local ecotheology. Second, interdisciplinary research that integrates ethnographic approaches with environmental science (such as measuring biodiversity, soil fertility, and carbon cycling) is crucial to provide quantitative empirical evidence that

strengthens the sustainability claims of traditional systems. Third, an in-depth study of these communities' adaptation strategies in the face of pressures from modernization, climate change, and government policies often biased toward industrial agriculture would be invaluable for designing realistic, context-specific sustainability strategies. Ultimately, Mesiwah Pare Gumboh teaches us that the future of food and environmental security lies not only in future technological innovations, but also in the tested wisdom of the past, embedded in rituals. Nurturing these rituals is tantamount to nurturing a possibility for a more just, sustainable, and meaningful world order.

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