



Implementation of Ecotheological Values in Islamic Religious Education for Flood Risk Mitigation in Sumatra and Aceh.

M Mahbubi¹, Qurratul A'ini², Nafisatul Fuadah³

¹Universitas Nurul Jadid, Indonesia

^{2,3} STAI Ahmad Sibawayhie, Indonesia

Email : Mahbubi@unuja.ac.id, qurrotulain07@gmail.com, navischute@gmail.com

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ABSTRACT

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**Corresponding Author*

Floods that occurred in Sumatra and Aceh in 2025 indicate an increasing frequency of natural disasters affecting community life and ecosystems. One approach that can be applied to reduce disaster risk is the implementation of ecotheological values in Islamic Religious Education (IRE). This article aims to analyze how Islamic Religious Education can integrate the concept of ecotheology, which teaches responsibility toward nature and the environment as a trust from God. By focusing on teachings related to environmental protection and ecosystem sustainability within the IRE curriculum, it is expected to foster environmental awareness among younger generations. This study employs a qualitative method using a case study of flood disasters in Sumatra and Aceh as its background. The findings indicate that the application of ecotheology in IRE can enhance public understanding and concern for environmental issues, as well as encourage preventive actions in the sustainable management of natural resources. Therefore, ecotheology-based reform of the IRE curriculum can serve as an effective strategy for mitigating flood risks and other natural disasters.

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INTRODUCTION

Over the past several decades, Indonesia has faced increasing environmental challenges, marked by a rising frequency of natural disasters such as floods, landslides, and forest fires. These disasters not only damage the environment and ecosystems but also generate wide-ranging social and economic impacts. In particular, in the regions of Sumatra and Aceh, recurrent flooding—especially during the rainy season—has become a persistent problem that threatens community livelihoods. Environmental degradation resulting from deforestation, poor watershed management, and land-use conversion has further exacerbated vulnerability to such disasters. In response to these

challenges, mitigation efforts are required that go beyond technical and structural measures to include values-based approaches, moral responsibility, and ecological awareness within society. One such approach is the integration of ecotheological values into Islamic Religious Education (IRE). (Jamal, 2025).

Ecotheology, as a branch of environmental theology, emphasizes the relationship between humans and nature as a trust (*amānah*) and responsibility bestowed by God. In the Islamic worldview, humans are not merely exploiters of nature for personal interests, but also *khalifah* (stewards) on Earth, entrusted with the obligation to maintain the balance of nature (*mīzān*). These values underscore the importance of awareness regarding environmental degradation caused by exploitative and irresponsible human behavior. Therefore, Islamic Religious Education (IRE), with its curriculum grounded in moral and ethical values, can serve as a highly strategic platform for disseminating ecotheological principles and cultivating ecological awareness among younger generations. (Ghozali, 2025).

Research conducted by Widiastuty (2025) demonstrates that ecotheology-based education can foster environmentally caring character traits among students. In Indonesia, several Islamic schools have begun integrating ecotheological values into their teaching and learning activities by emphasizing the importance of environmental conservation as an expression of faith and piety toward God. Through this approach, students not only gain an understanding of Islamic teachings that stress the obligation to protect nature, but also apply these values in their daily lives, such as reducing plastic waste, planting trees, and maintaining cleanliness in their surrounding environments (Rahmat, 2023).

However, despite the significant potential of ecotheology in Islamic education, challenges to its widespread implementation remain substantial. Several studies have found that Islamic Religious Education (IRE) curricula in Indonesia have not yet systematically incorporated environmental and ecotheological aspects as core components. Teacher training programs for IRE that integrate environmental education and ecotheology are still very limited, and many schools lack institutional policies that support value-based ecological learning. This situation has resulted in a gap between the theoretical foundations of Islamic education and classroom practices. For instance, in some cases, although religious schools teach moral and spiritual values, instruction related to ecological responsibility or environmental stewardship is often delivered only at a normative level, without concrete actions that students can meaningfully practice (Alimuddin, 2020).

Furthermore, flood disasters in Sumatra and Aceh reveal a direct relationship between environmental degradation and disaster risk. Areas experiencing deforestation and poor watershed management tend to face higher flood risks, as land lacking vegetation cover is unable to absorb rainfall effectively. In addition, inadequate spatial planning policies and development practices that disregard environmental sustainability principles have resulted in increasing land inundation during periods of heavy rainfall. In this context,

ecothology-based education can equip students with an understanding of the importance of forest conservation, soil protection, and sustainable natural resource management as forms of moral responsibility toward the environment (Syamsudin, 2020).

Islamic Religious Education that integrates ecotheological principles can also strengthen social resilience to natural disasters. By teaching religious values that emphasize compassion, social justice, and environmental protection, students are encouraged to recognize the link between environmental degradation and social vulnerability, including poverty that often follows natural disasters. Ecotheology-based education thus contributes to character formation that promotes concern for disaster impacts on communities, fosters social solidarity, and encourages collective action in mitigating disaster risks. (Ruswanda, 2025).

Recent research conducted by Haris (2023) found that Islamic Religious Education (IRE) grounded in ecotheological principles can serve as a model for building more disaster-resilient communities. In disaster-prone regions such as Aceh and Sumatra, communities with a high level of environmental awareness tend to be better prepared to face and reduce the impacts of natural disasters. Therefore, the integration of ecotheology into the IRE curriculum in Indonesia is highly relevant for strengthening societal resilience to natural hazards.

Furthermore, ecotheology in Islamic Religious Education is not only relevant for disaster risk reduction but also for enhancing overall ecosystem sustainability. By fostering environmental awareness through education, younger generations are better equipped to play an active role in preserving natural resources, reducing environmental degradation, and improving quality of life in the future. As noted by Nugroho (2022), ecotheological education in Indonesia can be a key factor in creating a more environmentally friendly and sustainable society.

This article aims to explore how the implementation of ecotheological values in Islamic Religious Education can be utilized as a strategy for disaster risk mitigation, particularly flooding, through the formation of ecological character and environmental awareness among students. The study focuses on how Islamic spiritual and theological values—such as *khalifah* (stewardship), *amānah* (trust), *mīzān* (balance), and the prohibition of *fasād* (environmental destruction)—are translated into curricula, teaching methods, and everyday practices in schools and Islamic boarding institutions. It is expected that this integration will encourage concrete transformations in ecological attitudes and behaviors, as well as strengthen community resilience to natural disasters, especially in vulnerable regions such as Sumatra and Aceh.

In addition, this article seeks to provide recommendations for reforming the IRE curriculum with a stronger focus on environmental education and ecotheology. Through such reforms, Islamic Religious Education can play a more significant role in shaping younger generations who are not only faithful and

morally upright but also deeply concerned with environmental sustainability and capable of reducing the impacts of natural disasters in the future.

METHOD

This study employs a qualitative approach using a case study design that focuses on the implementation of ecotheological values in Islamic Religious Education (IRE) in disaster-prone areas, particularly in Sumatra and Aceh. The qualitative approach was selected because it is well suited to exploring an in-depth understanding of ecotheology-based educational practices and how these contribute to natural disaster risk mitigation. In addition, this approach enables the researcher to examine the perspectives, experiences, and attitudes of relevant stakeholders, including teachers, students, and school administrators. (Mahbubi, 2025).

In this study, primary data were collected through in-depth interviews with several Islamic Religious Education (IRE) teachers, school principals, and administrators of Islamic boarding schools (*pesantren*) in the regions of Sumatra and Aceh that have integrated ecotheological concepts into their curricula. These interviews aimed to capture participants' perspectives on how ecotheological values are implemented in religious instruction and the extent to which they influence students' ecological awareness and natural disaster risk mitigation. The selected informants were those with direct experience in teaching these values and involvement in the development of ecotheology-based curricula. In accordance with the principle of data triangulation, the interviews were complemented by direct observations in several schools and *pesantren* that have implemented ecotheological concepts in their educational practices. These observations sought to examine how ecotheological teachings are incorporated into daily learning activities and how students apply ecological principles in their everyday lives.

In addition, secondary data were obtained through a literature review on ecotheology in Islam, Islamic Religious Education, and relevant environmental education policies in Indonesia. This literature included books, journal articles, research reports, and policy documents related to ecotheological instruction, environmental education, and challenges in addressing natural disasters in Indonesia (Haris, 2023; Zulkarnain, 2022). The purpose of collecting secondary data was to provide a strong theoretical foundation for analyzing the primary data.

Data analysis was conducted using a thematic analysis approach. Data derived from interviews and observations were categorized into major themes related to the implementation of ecotheology in IRE, its impact on students' ecological awareness, and the role of religious education in disaster mitigation. This analysis aimed to identify patterns and relationships between the ecotheological values taught and students' concrete actions in environmental stewardship, as well as their contributions to reducing disaster impacts. The validity and reliability of the study were ensured through data triangulation and

member checking. Data triangulation was achieved by comparing findings from interviews, observations, and the literature review to ensure consistency. Member checking was conducted by confirming interview findings with participants to ensure the accuracy of data interpretation.

This research methodology is expected to provide in-depth insights into the role of ecotheology-based Islamic Religious Education in fostering environmental awareness and disaster mitigation, as well as to offer policy recommendations for strengthening Islamic education curricula in Indonesia in response to the challenges of climate change and environmental degradation (Wahyudi, 2021).

RESULT AND DISCUSSION

The findings of this study indicate that the implementation of ecotheological values in Islamic Religious Education (IRE) in Sumatra and Aceh has a significant impact on students' ecological awareness and environmental behavior change. Ecotheology, which teaches that humans as *khalifah* (stewards) on Earth bear responsibility for protecting and caring for nature, serves as a foundational framework for integrating Islamic teachings into environmental consciousness-building. In this study, interviews with IRE teachers, school principals, and Islamic boarding school administrators revealed diverse perspectives on how ecotheology is implemented in religious instruction and its influence on students' behavior as well as the broader community.

An interview with Mr. Hendra, an IRE teacher at SMA Negeri 5 Medan, revealed that over the past two years, ecotheological values have been gradually integrated into the school's IRE curriculum. In every IRE subject matter, Mr. Hendra emphasizes the importance of maintaining environmental balance based on Qur'anic teachings and Hadith, such as Surah Al-A'rāf verse 31, which warns believers against causing destruction on Earth. Following ecotheological instruction, many students became actively involved in greening initiatives and waste management activities, demonstrating significant improvements in their environmental awareness. This finding suggests that ecotheology-based religious education can effectively shape students' character, fostering greater environmental concern and encouraging concrete actions to protect nature.

Similarly, the principal of SMA Islam Terpadu Aceh, Ms. Rina, expressed strong institutional support for the integration of ecotheological values into IRE instruction. In addition to teaching ecotheological concepts theoretically, the school engages students in greening programs, cleanliness campaigns, and environmental management training grounded in Islamic principles. Ms. Rina noted that these initiatives have successfully nurtured students who are more environmentally conscious and actively involved in sustainability-oriented activities. The application of ecotheology in this school aligns with character-based education principles, which emphasize moral development through religious teachings (Mahbubi et al., 2021).

Furthermore, an interview with Ustadz Abdul, an administrator of

Pesantren Nurul Ilmi in Aceh, revealed that ecotheological values are embedded not only in the formal curriculum but also in the daily practices of the pesantren. Students are taught to maintain environmental cleanliness and participate in greening and river-cleaning activities. According to Ustadz Abdul, following the implementation of ecotheological teachings, many students demonstrated increased environmental concern and active participation in ecological initiatives. They perceive environmental stewardship as part of the *amānah* (trust) bestowed upon them by God. This implementation of ecotheology not only enhances ecological awareness but also strengthens students' sense of social responsibility, which can contribute to disaster mitigation efforts in the region.

Nevertheless, this study also identifies several challenges in implementing ecotheology within Islamic Religious Education. One major challenge is the lack of structured instructional materials on ecotheology and environmental education in the IRE curriculum. Although the schools and pesantren involved in this study have integrated ecotheology, existing teaching materials remain limited and require further development. In addition, training opportunities for IRE teachers in ecotheological instruction are still scarce. This indicates that effective implementation requires supportive policies, including curriculum development and continuous professional training for IRE teachers.

From a theoretical perspective, ecotheology can be understood through two main approaches: first, as a response to ecological crises, and second, as a moral and spiritual dimension within Islam. According to Nasr (2019), ecotheology is a branch of environmental theology that emphasizes the human-nature relationship as a form of spiritual and moral responsibility. In Islam, nature is viewed as God's creation that must be preserved, as articulated in Surah Al-Baqarah verse 164, which describes the natural world as signs of God's greatness that must be appreciated and protected. Accordingly, ecotheology calls upon Muslims not only to utilize nature but also to care for it responsibly.

The relationship between ecotheology and disaster mitigation can be examined through the lens of resilience theory, as proposed by Adger (2021), which asserts that community resilience to natural disasters is strongly influenced by collective awareness and active participation in environmental protection. In the Indonesian context, ecotheology-based education can foster more disaster-resilient communities, as individuals become more prepared to respond to environmental changes by conserving nature and minimizing environmental degradation that exacerbates disaster impacts. For example, by educating students about the importance of reforestation and watershed management, they gain a deeper understanding of their role in mitigating disaster risks such as floods and landslides, which frequently occur in Sumatra and Aceh.

The integration of ecotheology into Islamic Religious Education also aligns with the principles of character education developed by Lickona (2020). Character education aims to develop students not only intellectually but also morally and socially. In this regard, ecotheology-based education encourages

students to internalize environmental values and translate them into everyday practices. This is reflected in the study's findings, where students exposed to ecotheological education demonstrated significant behavioral changes, including improved cleanliness, participation in greening initiatives, and engagement in social activities that support environmental sustainability.

Despite the considerable potential of ecotheology in Islamic Religious Education, challenges to its implementation remain substantial. Several schools and pesantren continue to face difficulties in designing ecotheology-based curricula and providing adequate teaching materials and training for IRE teachers. Therefore, this study recommends the formulation of educational policies that support the development of ecotheology-based curricula and more intensive professional development programs for educators.

Overall, the implementation of ecotheological values in Islamic Religious Education in Sumatra and Aceh has been shown to positively influence students' ecological awareness and contribute to natural disaster risk mitigation. By fostering students' awareness of environmental preservation and their role as khalifah on Earth, ecotheology-based education can cultivate socially and ecologically responsible character formation. Consequently, it is essential for government institutions and educational stakeholders to support the development of ecotheology-based curricula and ensure their effective implementation across schools and pesantren in Indonesia.

CONCLUSION

The conclusion of this study indicates that the implementation of ecotheological values in Islamic Religious Education (IRE) in Sumatra and Aceh has significant potential to foster ecological awareness among students and to contribute to natural disaster risk mitigation, particularly flooding. In the Indonesian context, which is highly vulnerable to natural disasters due to environmental degradation, ecotheology-based education provides a strong foundation for cultivating a sense of responsibility toward nature and the environment. Ecotheological values embedded in Islamic teachings—such as khalifah (humans as God's stewards on Earth), amānah (trust and responsibility), and mīzān (natural balance)—serve as a moral framework that encourages students not only to understand the importance of environmental protection but also to translate these principles into concrete actions.

Based on interviews with various informants—including IRE teachers, school principals, and Islamic boarding school administrators—it can be concluded that despite existing challenges, such as the lack of structured ecotheology-based teaching materials and limited teacher training, the implementation of ecotheology in Islamic education has demonstrated positive outcomes. In schools and pesantren that integrate ecotheological values, students have shown positive behavioral changes toward the environment. They exhibit greater concern for cleanliness, actively participate in greening activities, and engage in environmental conservation efforts within and around their

educational institutions. These findings indicate that ecotheology-based education is capable of shaping ecological character that extends beyond theoretical understanding and is reflected in daily practices.

The implementation of ecotheological education is also consistent with social resilience theory, which posits that community resilience to disasters is strongly influenced by public awareness and active participation in environmental stewardship (Adger, 2021). By internalizing ecotheological values, students can become agents of change who are responsible not only for themselves but also for their communities and the environment. Consequently, ecotheology-based education can strengthen societal resilience to natural disasters—such as the recurrent flooding in Sumatra and Aceh—by fostering awareness of environmental conservation as a moral and religious obligation.

Nevertheless, challenges in implementing ecotheology within Islamic Religious Education in Indonesia persist. The primary obstacles identified include the limited availability of structured ecotheology-based teaching materials and insufficient professional training for IRE teachers. Therefore, it is essential for government authorities and educational institutions to develop more systematic ecotheology-based curricula and to support educators through adequate training programs. Furthermore, policies that promote the integration of ecotheology into Islamic education curricula across schools and pesantren nationwide are crucial to expanding the positive impact of ecotheology-based education.

Overall, this study affirms that ecotheology-based Islamic Religious Education holds considerable potential for shaping students' environmental awareness and fostering responsibility toward nature as a divine trust. By enhancing ecological consciousness among younger generations, ecotheology-based education can contribute to disaster risk mitigation, strengthen social resilience, and promote a more environmentally sustainable society. Therefore, greater efforts are needed to integrate ecotheological values into IRE curricula throughout Indonesia, ensuring that religious education not only nurtures faith and moral integrity but also cultivates strong social and ecological responsibility.

Recommendations

The recommendations derived from this study address several key aspects necessary to optimize the implementation of ecotheological values in Islamic Religious Education for disaster risk mitigation, particularly flooding in Sumatra and Aceh.

Based on the findings that ecotheological education has a positive impact on students' environmental awareness, it is essential to develop a more systematic ecotheology-based Islamic Religious Education (IRE) curriculum. This curriculum should integrate the core principles of Islamic ecotheology—such as *amānah* (trusteeship), *khalifah* (stewardship), and *mīzān* (balance)—and translate them into concrete actions for environmental protection. Teaching

materials need to be comprehensive and well-structured, linking ecological concepts with Islamic values while highlighting the social, economic, and religious consequences of environmental degradation.

However, the successful implementation of such a curriculum depends heavily on the capacity of IRE teachers. Therefore, continuous professional development programs are necessary to enhance teachers' understanding of ecotheology and environmental education, as well as to strengthen their pedagogical skills and practical strategies for integrating ecological values into daily teaching and learning activities. In addition, the implementation of ecotheology-based education should be reinforced through collaboration between schools or pesantren and environmental institutions. Partnerships with environmental organizations can provide relevant learning resources and facilitate students' direct involvement in real-world environmental activities, such as reforestation, waste management, and conservation programs. Through experiential learning, students are better able to internalize ecotheological values and apply them in everyday life.

At the policy level, the government—particularly the Ministry of Education and the Ministry of Religious Affairs—plays a crucial role in supporting the integration of ecotheology into IRE. This support may take the form of policies and regulations that encourage the adoption of ecotheology-based curricula in schools and pesantren, along with the provision of adequate resources to ensure effective implementation. National alignment is also important to ensure that ecotheological values are consistently embedded within IRE as part of environmentally oriented character education. Beyond formal education, efforts to enhance public awareness of ecotheology are equally important. Ecotheological values should be disseminated through broader community-based initiatives, including social media campaigns, seminars, and grassroots environmental programs, so that environmental stewardship grounded in Islamic teachings becomes part of everyday cultural practice.

Finally, future research is needed to assess the long-term impact of ecotheology-based education on students' ecological character and behavior. Comparative studies across different regions, as well as deeper analyses of the relationship between ecotheological religious education and community disaster preparedness, would contribute to identifying the most effective educational models for integrating ecotheological values into both formal curricula and daily practices within schools and pesantren.

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