

The Urgency Of Education Management In Developing Islamic Ecotheology Education In The Coastal Communities of Pekalongan

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Abstract

Climate change and environmental degradation pose serious threats to coastal areas, including Pekalongan, which faces phenomena such as tidal flooding (*rob*), coastal abrasion, and land subsidence. These conditions directly affect the socio-economic life of the community and the continuity of education. Islamic ecotheology education emerges as a strategic approach to fostering ecological awareness through the integration of Islamic values, such as the concepts of *khalīfah*, *amanah*, and *mīzān*. However, the practice of Islamic ecotheology education in coastal communities remains partial, unstructured, and insufficiently sustainable. This study employs a descriptive qualitative approach, collecting primary data through interviews and field observations, as well as secondary data from literature and relevant documents. Data analysis is conducted thematically using the POAC framework (Planning, Organizing, Actuating, Controlling) to understand the urgency of educational management in developing Islamic ecotheology education in the coastal community of Pekalongan. The results indicate that systematic educational management enables contextual program planning, cross-institutional organization, community-based educational activities, and continuous evaluation and supervision. The implementation of this model strengthens the internalization of Islamic values in ecological behavior, promotes collective participation, and generates tangible actions such as waste management, mangrove rehabilitation, and environmental education in pesantren and mosques. Thus, educational management plays a strategic role in ensuring that Islamic ecotheology education is not merely a moral discourse but also an instrument for social and ecological transformation for the coastal community of Pekalongan. A development model based on community engagement, local wisdom, and the synergy of formal and non-formal institutions serves as a vital foundation for building ecological resilience and sustainable environmental awareness.

Keywords: educational management, Islamic ecotheology, coastal community, ecological behavior.

Introduction

Climate change and environmental degradation have become major threats to Indonesia's coastal regions, including the city of Pekalongan, which continues to experience various extreme phenomena such as tidal flooding (*rob*), coastal abrasion, and land subsidence that increase every year. This damage not only

endangers the sustainability of the physical environment but also affects the socio-economic aspects of the community, such as the loss of housing, disruptions to educational activities, and declining productivity in the fisheries sector and home industries. In this context, environmental education integrated with spiritual values particularly Islamic ecotheology education has become increasingly relevant. Islamic ecotheology offers the perspective that humans bear a theological responsibility as khalīfah to preserve the balance of nature (*mīzān*) and prevent environmental destruction (*fasād fi al-ard*). The role of Islamic values in ecological education has been shown to strengthen moral awareness and environmentally friendly behavior within communities.

However, several studies indicate that ecological education practices based on Islamic principles within communities are still carried out in a partial, unstructured manner and lack deep engagement with the local context. Educational programs such as outreach activities, thematic studies, or social actions are often conducted sporadically without long-term planning, resulting in limited contributions to meaningful changes in ecological behavior. Albar (2024) emphasizes that the greatest weakness lies in the lack of ecological education designs that are oriented toward the social and ecological needs of coastal communities. This lack of integration has caused the concept of Islamic ecotheology to remain insufficiently internalized in daily community life, especially in areas that are highly vulnerable to ecological disasters.

One of the key factors behind the weak internalization of ecotheological values is the absence of systematic educational management. In many cases, environmental education activities are not supported by clear planning, coordination among stakeholders, or consistent monitoring mechanisms. In fact, educational management serves as a foundation to ensure that Islamic ecotheological values are properly translated into curriculum design, learning methods, community training modules, and community-based activities. Syukri (2024) asserts that without well-directed management, education programs based on religious values easily lose focus, struggle to be sustainable, and fail to produce significant changes in ecological behavior.

For the coastal communities of Pekalongan, the urgency of managing ecotheological education becomes even more pressing because they live in highly dynamic and high-risk ecological conditions. The community's vulnerability caused by environmental degradation requires an educational approach that is not only informative but also empowering and community-based. Islamic ecotheological education must serve as an instrument of social transformation that strengthens community resilience through the integration of spiritual values, coastal culture, and concrete ecological actions. Mohamed (2024) emphasizes that synergy

between Islamic values and ecological literacy is a highly effective strategy in shaping environmental behavior in vulnerable regions.

Thus, the role of educational management becomes crucial in designing, organizing, implementing, and evaluating Islamic ecotheological education for the coastal communities of Pekalongan. Systematic management through the POAC approach allows the educational process to run more purposefully, grounded in local ecological data, involving multiple stakeholders, and oriented toward sustainability. This article aims to analyze the urgency of educational management in developing Islamic ecotheological education while offering an implementation model that aligns with the characteristics of coastal communities.

Methods

This study employs a descriptive qualitative approach with the aim of deeply understanding how educational management contributes to the development of Islamic ecotheological education in the coastal communities of Pekalongan. The qualitative approach was chosen because issues related to ecology, Islamic theology, and the social dynamics of coastal communities require contextual and interpretive understanding that cannot be fully explained through numerical data alone. Through this approach, the researcher can explore meanings, perceptions, and patterns of ecological behavior within the community in relation to Islamic values and the existing educational management system.

This study uses two types of data: primary and secondary data. Primary data were obtained through interviews and field observations with community leaders, Islamic education teachers, mosque administrators, environmental communities, and residents affected by tidal flooding (rob). Semi-structured interviews were conducted to allow the researcher to explore participants' experiences and views on the planning, implementation, and evaluation of Islamic value-based environmental education programs in coastal areas. Observations were carried out at several coastal points in Pekalongan to directly examine ecological conditions, socio-religious practices, and ongoing environmental education activities.

Meanwhile, secondary data were collected through literature studies of journals, research reports, local government documentation, and other publications related to coastal ecological conditions, Islamic educational management, and environmental education implementation. Data analysis was conducted through processes of data reduction, data presentation, and conclusion drawing using thematic analysis to identify key patterns related to the urgency of educational management in developing Islamic ecotheology in coastal Pekalongan.

Data collection employed triangulation methods, including both source triangulation and technique triangulation, to ensure the validity and consistency of findings. Triangulation was performed by cross-checking interview results, observations, and documents so that the interpretations produced are reliable and valid. Data validity was further strengthened through member checking, in which

participants reviewed the preliminary findings to ensure there were no misinterpretations or researcher bias.

The collected data were analyzed using thematic analysis. The analysis process involved repeatedly reading the entire dataset, identifying significant patterns, and developing key themes relevant to educational management and the development of Islamic ecotheology. Four main themes guided the analytical framework, namely the POAC components (Planning, Organizing, Actuating, Controlling), adapted to the context of coastal community education. This framework assists the researcher in identifying the forms of planning for ecotheology programs in coastal areas, the patterns of community and religious institutional organization, strategies for implementing environmental education activities, and the mechanisms of evaluation and monitoring applied.

All research procedures were conducted in accordance with ethical research standards, including maintaining the confidentiality of participant identities, obtaining research permission from relevant authorities, and ensuring that the study does not harm the coastal community. With this methodology, the research is expected to produce a comprehensive and in-depth analysis of the urgency of educational management in strengthening Islamic ecotheological education in the coastal communities of Pekalongan.

Results and Discussion

Ecological and Social Conditions of Coastal Communities in Pekalongan

1. Findings on Environmental Damage and Coastal Challenges

The coastal area of Pekalongan faces significant ecological pressures due to tidal flooding (rob), coastal abrasion, and land subsidence. Based on Sentinel-1 imagery analysis and the DInSAR method, the rate of land subsidence in coastal Pekalongan reaches an average of about 5.37 cm per year, indicating that land subsidence is the dominant factor worsening tidal inundation its impact is even greater than sea-level rise (Andari et al., 2023). This condition aligns with research on coastal vulnerability strategies showing that the vulnerability index in northern Pekalongan is very high, primarily influenced by erosion and subsidence (Wahyuni et al., n.d.).

Physical interventions such as the construction of sea walls have been implemented, but changes in coastal morphology shown through hydromorphological modeling indicate that such structures affect current and sediment patterns after construction, potentially shifting problems of coastal abrasion and accretion along the shoreline (Safikri et al., 2025). Socialization and mitigation of tidal flooding also remain challenging; studies on the implementation of tidal flood control programs highlight policy and infrastructure constraints as well as difficulties in coordination among local stakeholders (Ramadhanni et al., 2015).

From a socioeconomic perspective, these ecological threats have profound impacts on coastal communities. A study on the resilience of the coastal community of Wonokerto, Pekalongan, shows that many households face low economic resilience because their livelihoods depend on coastal sectors (e.g., fishing, aquaculture). Adaptation to tidal flooding is often carried out through survival strategies such as raising house floors, community clean-up activities, and limited relocation (Reviana & Rudiarto, 2020). Another study indicates that tidal flooding directly disrupts social facilities such as schools; inundation forces learning activities to shift or pause, especially when drainage systems cannot function properly due to low land elevation (Ashrida et al., n.d.). Furthermore, research on the needs of communities affected by rob reveals that some residents are forced to evacuate temporarily or permanently when tidal floods inundate their homes, and local economic activities such as batik production and trading are also disrupted (Ismanto et al., 2021).

2. Levels of Environmental Awareness and Ecological Behavior

Although tidal flooding and its ecological impacts are strongly felt by coastal communities in Pekalongan, levels of ecological awareness and environmentally friendly behavior remain complex. A community engagement study found that residents understand waste related issues but are not yet fully prepared to implement long-term sustainable waste management; many waste-disposal behaviors remain impulsive, and cleanliness campaigns have not succeeded in building lasting habits (Pasya et al., 2025).

Behavioral data from coastal communities also show low waste-sorting practices. According to a study on coastal settlement characteristics, around 73.2% of residents dispose of waste properly but without sorting it, and only a small portion (about 3.1%) practice the 3R principles (Reduce, Reuse, Recycle) (Husna et al., 2025). This indicates that although basic awareness exists, concrete actions in waste management are still limited.

Additionally, local literature on ecological responsibility based on Islamic values particularly the concept of *khalīfah fi al-ard* remains minimally explored in recent empirical studies, revealing a gap in theological ecological education within coastal communities. Moreover, some climate-adaptation policy studies note that the government tends to delegate adaptation responsibilities to local communities, yet collective participation remains weak due to dependence on formal instructions and technocratic support rather than the emergence of bottom-up collective awareness (Nurhidayatullah & Sugiyanto, 2023).

Dependence on government and institutional assistance is also evident in rob risk management; adaptation systems are often initiated top-down as part of climate adaptation policy, while community based bottom-up initiatives have not become fully independent or sustainable. This indicates that although

environmental consciousness exists, a full transformation toward sustainable ecological behavior has not yet occurred across coastal communities in Pekalongan.

Analysis of the Urgency of Educational Management for the Coastal Communities of Pekalongan

Educational management holds significant urgency in the development of Islamic ecotheology education, particularly in coastal communities that face ecological pressures. Through well-directed management, ecotheology programs can be arranged contextually so they align with the socio-ecological conditions of coastal regions and the needs of communities affected by tidal flooding, abrasion, and other forms of environmental degradation. Good planning allows Islamic ecotheological values to function not only as normative teachings but also to be integrated into the curriculum, learning strategies, and community empowerment activities. This is in line with contemporary studies on Islamic educational management that emphasize the importance of professionalism in planning and managing educational institutions so they can respond to current challenges faced by the Muslim community, including environmental issues. Research by Sahrul Haj Hidayat (2024) shows that Islamic educational management acts as a system that unifies institutional values, structure, and operations, allowing education to function effectively and sustainably in addressing the real problems faced by coastal communities.

Furthermore, the integration of Islamic ecotheological principles such as the concepts of *khalīfah fi al-ard*, trustworthiness (*amanah*), and balance (*mīzān*) requires a management design that can bridge theological teachings with concrete ecological actions. Studies on eco-Islamic institutions highlight that Islamic-based education requires planned management to ensure that ecological values within Islam are truly implemented in practice, in institutional culture, and in community participation. Without proper management, Islamic values concerning the environment remain only moral discourse rather than becoming an organized social movement (Hermawansyah, 2025). Effective educational management also encourages the participation of various community components such as schools, mosques, religious leaders, fishermen's groups, and local organizations to work together in a collaborative ecological movement because management provides a clear structure for coordination, communication, and division of roles.

On the other hand, when ecotheology education programs are not managed systematically, the impact can be seen in activities that fail to continue, that occur sporadically, and that lack innovation. Programs without long-term planning and management tend to stop once a project or momentum ends, making them unable to produce lasting changes in ecological behavior. Limited coordination among

community elements also results in low participation, especially among strategic groups such as youth, religious teachers, and fishermen. Without evaluation and supervision, programs lack feedback for improvement, making them ineffective in addressing the root causes of environmental damage, such as household consumption patterns, waste management, and coastal economic practices. These conditions are reinforced by various studies on educational management that note that the absence of managerial structure causes education to lose direction, effectiveness, and sustainability (Sadiah et al., 2023).

Within this context, the POAC framework (Planning, Organizing, Actuating, Controlling) becomes highly relevant for designing comprehensive Islamic ecotheology education. Through the planning stage, the ecological and social needs of coastal communities can be mapped, including which Islamic values should be emphasized. Organizing enables the formation of institutional structures involving religious leaders, environmental communities, schools, and the wider coastal society. The actuating stage ensures that educational programs and ecological actions run effectively, such as Islamic studies on environmental ethics, mangrove planting, waste-management training, and coastal clean-up campaigns. Meanwhile, the controlling stage provides mechanisms for evaluation and improvement to maintain program sustainability. Research by Loviana (2024) indicates that the POAC approach can enhance the effectiveness of Islamic-based educational management, especially for programs aimed at changing community behavior. Therefore, POAC serves as an essential foundation to ensure that Islamic ecotheology education functions not merely as knowledge delivery but as a transformative ecological movement grounded in spiritual values.

Implementation of Educational Management in Islamic Ecotheology Education for Coastal Communities in Pekalongan

The implementation of the POAC framework (Planning, Organizing, Actuating, Controlling) in Islamic ecotheology education for coastal communities is essential to ensure that programs run systematically, purposefully, and sustainably. In the planning stage, the process begins with identifying the ecological needs of coastal communities, such as the impacts of tidal flooding, pollution, and ecosystem degradation. These findings then serve as the foundation for developing a curriculum based on Islamic ecotheological values such as *khalīfah*, *amanah*, and *mīzān*.

This planning includes designing educational activities such as regular environmental studies, coastal nature schools, community clean-ups, and mosque-based waste management programs. A community-based education approach is crucial to ensure active participation from residents in the planning process. Raharjo and Suhono (2022) emphasize that community-based education is effective in

increasing ecological awareness because it involves citizens from the planning stage through evaluation, making programs more contextual and widely accepted.

The organizing stage involves forming an ecotheology education implementation team consisting of teachers, religious instructors, community leaders, environmental groups, and village officials. Cross-institutional collaboration is important to ensure that the program is not limited to schools or mosques but becomes a collective ecological movement. Research by Hermawansyah (2025) on the management of eco-Islamic institutions shows that collaboration among stakeholders is a key success factor in Islamic environmental education programs because it helps integrate resources, expand networks, and strengthen program legitimacy. In the coastal context, organizing also includes managing facilities, local funding, and partnerships with environmental organizations to support program sustainability.

In the actuating stage, Islamic ecotheology programs are implemented through various activities that encourage the internalization of Islamic values and ecological actions. Conducting studies on *ayat-ayat kauniyah* (signs of God in nature) becomes an important strategy to cultivate the understanding that caring for the environment is an act of worship and a human responsibility as *khalīfah*. The program continues with disaster mitigation training, waste management workshops, mangrove cultivation, and environmental initiatives such as beach clean-ups, mangrove area revitalization, and the development of eco-mosques or eco-Islamic institutions that emphasize environmentally friendly practices. Research by Loviana (2024) shows that action-based ecological programs significantly improve environmental literacy and moral awareness because they involve participants directly in activities relevant to their daily lives in coastal regions. Continuous community mentoring is also part of the actuating stage to build long-term ecological behavior change.

The controlling stage is central to ensuring the sustainability of Islamic ecotheology education programs. Supervision is carried out through regular monitoring of educational processes and ecological action activities to assess program effectiveness. Evaluation includes behavioral changes, levels of community participation, and observable ecological impacts. The evaluation results then form the basis for developing program reports and recommendations for improvement, which may include strategic adjustments, additional learning activities, or strengthening cross-institutional collaboration. Sadiyah (2023) emphasizes that systematic monitoring and evaluation in educational management are crucial for maintaining quality and sustainability, especially in value-based Islamic education aimed at shaping character and community behavior. Through effective controlling, Islamic ecotheology education programs can continually be

refined to respond to ecological challenges faced by coastal communities in a sustainable manner.

Model for Developing Islamic Ecotheology Education for Coastal Communities in Pekalongan

A model for developing Islamic ecotheology education in coastal communities is most effective when it incorporates community-based strategies, local wisdom, the integration of Islamic values into ecological action, and synergy among formal education institutions, nonformal institutions, and families.

First, community based strategies and local wisdom play a central role. Local traditions such as fishermen's *gotong royong*, *sedekah laut*, and other coastal cultural practices can be revitalized as educational values that internalize ecological awareness within a socio religious framework. This approach aligns with the implementation of eco-Islamic institutions, where Islamic boarding schools serve as centers of community empowerment through environmental management training. As a result, fishermen, housewives, and coastal youth become actively involved in protecting their ecosystems. Research on eco-Islamic institutions shows that community empowerment programs through Islamic environmental education enhance community capacity for collective action in waste management and land conservation (Khoirurrijal et al., 2023).

Second, integrating Islamic values into ecological action is essential to ensure that ecotheology education does not only touch the intellectual dimension but also the spiritual and social dimensions. Values such as *amanah*, human responsibility as *khalīfah fi al-ard*, and the prohibition of environmental destruction (*fasād fi al-ard*) form the moral foundation for community ecological movements. In the context of Islamic institutions, mosques can be strengthened as centers of environmental education (eco-mosques), functioning not only as places of worship but also as spaces for ecological awareness and collective action. Research by Lukis Alam et al. (2024) on Islamic boarding schools demonstrates that religious teachings enriched with sustainability values encourage students to engage in daily conservation practices, while religious leaders serve as role models in environmental stewardship (Alam et al., 2024).

Third, the roles of formal, nonformal, and family-based educational institutions are crucial for disseminating and reinforcing Islamic ecotheology education. In schools, the Islamic Religious Education curriculum, science subjects, and local content can be integrated with ecotheology themes for example, through modules on the balance of creation and ecological responsibility. Research by Syukron Jamal (2025) shows that ecotheology concepts can be systematically implemented in formal Islamic education to build environmental awareness among young people. Meanwhile, in Islamic boarding schools and *madrasah diniyah*,

environmental Qur'anic exegesis, Islamic environmental jurisprudence, and conservation practices such as tree planting and waste management can strengthen ecotheological understanding. Transformations seen in eco-Islamic boarding schools, as reported in Mohamed's study (2024), illustrate how Islamic values can be integrated with the STEAM approach (Science, Technology, Engineering, Arts, Mathematics) in environmental education, enabling students to learn not only theology but also practical ecological skills. At the family level, environmentally friendly habits such as household waste management can be cultivated through Islamic value education at home, where parents teach *amanah*, balance, and care for creation as part of religious teachings. Local social institutions such as study circles, women's groups, and fishermen's communities can also strengthen environmental literacy and collective ecological movements through shared activities, educational programs, and community-based conservation initiatives.

Conclusion

Based on the findings regarding the ecological and social conditions of the coastal communities in Pekalongan, it is evident that this region faces serious environmental pressures, including tidal floods, coastal abrasion, and land subsidence, which significantly affect the socio-economic life of the community. These ecological damages impact not only infrastructure and livelihoods but also the continuity of education and the quality of life of coastal residents. The level of ecological awareness among the community remains basic and has not yet been fully internalized into sustainable behavior, making it necessary to implement educational approaches that can transform ecological mindsets and behaviors more deeply and continuously. Therefore, Islamic values-based educational interventions relevant to the coastal ecological context are an urgent need to build collective awareness and a culture of environmental stewardship.

In this context, educational management plays a strategic role in developing Islamic ecotheology education through the systematic application of the POAC framework. Directed planning, organizing, implementing, and controlling enable the integration of Islamic values such as *amanah*, *khalifah*, and *mīzān* into the community's ecological practices. Implementation supported by cross-institutional collaboration including schools, mosques, fishing communities, and local organizations can strengthen ecological movements rooted in spiritual and social values. Developing an ecotheology education model based on community engagement, local wisdom, and the synergy of formal and non-formal institutions proves to be a relevant approach to promote sustainable changes in the ecological behavior of the Pekalongan coastal community. Thus, well-managed Islamic ecotheology education has the potential to serve as a crucial foundation in building the resilience of coastal communities against future ecological challenges.

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