Sacred Ecology Unleashed: How Islamic Jurisprudence is Reshaping Environmental Education in Southeast Asia

*Dian Wildan[1], Basuki[2], Arif Rahman Hakim[3], Fahad Abdusomad[4], Uus Ruswandi[5]

[1-5]Universitas Islam Negeri (UIN) Sunan Gunung Djati, Jl. A.H. Nasution No. 105, Bandung, West Java, Indonesia
*abiwildan74619@gmail.com

Article Information	Abstract
	This study addresses the gap in systematic frameworks connecting Islamic environmental jurisprudence with contemporary environmental education principles, analyzing current practices and developing evidence-based integration models. This study employed a systematic literature review with a mixed-method synthesis following PRISMA guidelines. Data consisted of 53 peer-reviewed empirical articles published between 2021–2025, retrieved from the Scopus database using structured keyword combinations related to Islamic education and environmental sustainability. Data were collected through systematic screening, inclusion–exclusion criteria, and standardized extraction forms. Analysis was conducted using directed and conventional content analysis combined with thematic synthesis to identify integration patterns, challenges, and opportunities. Trustworthiness was ensured through triangulation of sources, transparent audit trails, and expert validation to enhance reliability and analytical rigor. The results show uneven integration of environmental education in Islamic boarding schools (pesantren). Most institutions remain at early stages, with 53% applying thematic integration that embeds environmental issues superficially within Islamic subjects, while 23% offer specialized courses and only 9% achieve comprehensive institutional integration aligned with Islamic ecological principles such as khalifah fi al-ardh and maqashid al-shari'ah. The remaining 15% reflect sporadic inclusion with minimal educational impact. These patterns indicate limited systemic transformation within Islamic education. Major constraints include teacher competency gaps, resource limitations, and weak policy support, while opportunities arise from increasing sustainability policies, digital learning potential, and support from Islamic organizations, positioning pesantren as strategic actors for advancing integrated Islamic environmental education.

Studi ini membahas kesenjangan dalam kerangka kerja sistematis yang menghubungkan yurisprudensi lingkungan Islam dengan prinsip-prinsip pendidikan lingkungan kontemporer, menganalisis praktik saat ini dan mengembangkan model integrasi berbasis bukti. Studi ini menggunakan tinjauan pustaka sistematis dengan sintesis metode campuran mengikuti pedoman PRISMA. Data terdiri dari 53 artikel empiris yang ditinjau sejawat yang diterbitkan antara tahun 2021–2025, yang diambil dari basis data Scopus menggunakan kombinasi kata kunci terstruktur yang terkait dengan pendidikan Islam dan keberlanjutan lingkungan. Data dikumpulkan melalui penyaringan sistematis, kriteria inklusi-eksklusi, dan formulir ekstraksi standar. Analisis dilakukan menggunakan analisis konten terarah dan konvensional yang dikombinasikan dengan sintesis tematik untuk mengidentifikasi pola integrasi, tantangan, dan peluang. Kepercayaan dipastikan melalui triangulasi sumber, jejak audit yang transparan, dan validasi ahli untuk meningkatkan keandalan dan ketelitian analitis. Hasil menunjukkan integrasi pendidikan lingkungan yang tidak merata di pesantren. Sebagian besar lembaga masih berada pada tahap awal, dengan 53% menerapkan integrasi tematik yang secara dangkal memasukkan isu lingkungan ke dalam mata pelajaran Islam, sementara 23% menawarkan kursus khusus dan hanya 9% yang mencapai integrasi kelembagaan komprehensif yang selaras dengan prinsip-prinsip ekologi Islam seperti *khalifah fi al-ardh* dan *maqashid al-shari'ah*. Sisanya 15% mencerminkan inklusi sporadis dengan dampak pendidikan minimal. Pola-pola ini menunjukkan transformasi sistemik yang terbatas dalam pendidikan Islam. Kendala utama meliputi kesenjangan kompetensi guru, keterbatasan sumber daya, dan dukungan kebijakan yang lemah, sementara peluang muncul dari peningkatan kebijakan keberlanjutan, potensi pembelajaran digital, dan dukungan dari organisasi Islam, yang memposisikan pesantren sebagai aktor strategis untuk memajukan pendidikan lingkungan Islam terintegrasi.

I.   INTRODUCTION

The global environmental crisis has reached critical levels demanding comprehensive responses from all sectors of society, including religious educational institutions. The latest Intergovernmental Panel on Climate Change report shows a global temperature increase of 1.1°C since the pre-industrial era, impacting rising sea levels, clean water crises, and intensification of climate disasters IPCC (2023). Indonesia as the country with the world's third-largest biodiversity faces serious challenges in the form of deforestation of 115,459

hectares per year, increased carbon emissions, and environmental quality degradation that threatens ecosystem sustainability (KLHK, 2023).

Environmental education has been recognized as a fundamental strategy in facing global ecological challenges through forming sustainable awareness and behavior. UNESCO (2017) in Education for Sustainable Development: A Roadmap emphasizes the importance of integrating sustainability principles into all levels of education to achieve the required social transformation. However, the implementation of environmental education in the context of religious educational institutions, especially Islam, still faces complex challenges related to integrating spiritual values with contemporary ecological principles.

Islam has strong theological foundations for environmental stewardship through the concept of *khalifah fi al-ardh*, which emphasizes human responsibility as caretakers of the earth. Environmental *fiqh* (*fiqh al-bi'ah*) has been developed by contemporary scholars as a jurisprudential framework regulating human–nature relations based on maqashid al-shari'ah (Al-Qaradawi, 2001; Yafie, 2015). In the context of Islamic education, particularly pesantren, fiqh al-bi'ah provides normative and pedagogical foundations that can be translated into concrete educational practices, including curriculum content, learning methods, and institutional culture. At the curricular level, environmental values may be integrated into classical fiqh studies (such as *thaharah, mu'amalah*, and *himā*) by contextualizing them with contemporary ecological issues. Pedagogically, pesantren can adopt experiential learning approaches—such as eco-projects, waste management, and conservation activities—to internalize ecological ethics through daily practices. Institutionally, pesantren traditions of communal living (*hidup berjamaah*), discipline, and moral formation offer a strategic structure for embedding environmental responsibility as part of students' character development (*akhlaq al-karimah*). Nevertheless, previous studies indicate that such integration remains largely fragmented and unsystematic, with environmental teachings often treated as supplementary rather than embedded within the core educational framework.

Pesantren as the oldest Islamic educational institutions in Indonesia have significant strategic potential in environmental education. With more than 28,000 pesantren serving around 4 million students, these institutions have reach and influence that can contribute substantially to forming environmentally conscious generations (Kementerian RI, 2024). However, studies show that pesantren curricula are still dominated by focus on traditional Islamic studies with minimal explicit integration of environmental education (Anshori & Pohl, 2022).

Previous research has identified various environmental education initiatives in pesantren, such as eco-pesantren programs and green pesantren movements (Purnomo et al., 2024). However, these efforts remain largely sporadic and are not yet supported by systematic and transferable frameworks. This lack of systematization is primarily attributed to the absence of standardized environmental curricula across pesantren, limited teacher training in integrating Islamic environmental ethics into pedagogical practice, and weak institutional evaluation mechanisms to assess learning outcomes and behavioral change. As a result, implementation tends to depend heavily on individual leadership or local initiatives rather than structured educational policy. Lutfauziah et al. (2024) further found that while environmental education curricula demonstrate significant positive impacts on students' environmental culture, their application varies widely among institutions due to differences in curricular design, instructional capacity, and monitoring systems, indicating the need for more coherent and scalable models.

Gaps in the literature show the absence of comprehensive frameworks that systematically integrate environmental fiqh with contemporary environmental education principles in the context of pesantren education. Existing research focuses more on individual case studies or theoretical discussions without developing evidence-based practical integration models that can be scaled (Maslani et al., 2023; Rahman et al., 2020).

This research fills these gaps through a comprehensive systematic literature review to analyze current conditions, identify challenges and opportunities, and

develop conceptual frameworks that can support environmental education integration in pesantren contexts.

This research aims to: 1) analyze the current conditions of environmental awareness integration in pesantren education; 2) identify challenges and opportunities in implementing fiqh-based environmental education; 3) propose a conceptual model that connects Islamic values with contemporary environmental education; and 4) formulate systematic and applicable implementation frameworks. The objectives of this research align with Allah Swt's words in QS. Al-Baqarah: 30 about the concept of *khalifah fil ardh*, and QS. Al-A'raf: 56 which states "and do not cause corruption on earth after (Allah) has set it right." As explained by Yusuf al-Qaradawi, environmental fiqh concepts become urgent needs in the context of global ecological crisis.

II. METHOD

This research uses a systematic literature review approach with a mixed-method analysis design to analyze environmental *fiqh* integration in *pesantren* curricula. Systematic literature review was chosen because of its ability to synthesize empirical evidence from various sources to answer research questions comprehensively (Snyder, 2019). This approach aligns with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) recommendations to ensure research transparency and reproducibility (Page et al., 2021).

Literature searches were conducted using the Scopus database as the main source. Scopus was chosen based on several academic considerations. First, Scopus has comprehensive coverage that includes international and regional journals relevant to Islamic education and environmental studies. Second, all publications in Scopus have gone through a peer-review process that ensures quality assurance. Third, this database performs regular updates for the latest publications so as to guarantee data recency. Fourth, Scopus provides advanced search functionality that supports Boolean operators and field-specific searches for search result optimization.

759   JIE *(Journal of Islamic Education)*
e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025
p-ISSN: 2503-5363 (print)

Searches were conducted using search strings developed based on core research concepts:

```
TITLE-ABS-KEY(("Islamic" OR "Muslim")
AND
("environment*" OR "sustainability" OR "green education")
AND
("education" OR "curriculum" OR "school"))
AND PUBYEAR > 2020 AND PUBYEAR < 2026
AND (LIMIT-TO(DOCTYPE, "ar"))
```

The search strategy employed a building blocks approach with three main components, limited to publications from 2021-2025 to ensure data relevance and currency. Detailed inclusion and exclusion criteria are presented in Table 1.

Table 1. Inclusion and exclusion criteria

Category	Inclusion Criteria	Exclusion Criteria
Language	English publications	Non-English publications
Publication Period	2021-2025 (recent 5 years for currency)	Publications before 2021
Document Type	Peer-reviewed articles	Non-peer reviewed publications, book chapters, conference papers
Primary Topic	Islamic/Muslim education and environmental/sustainability education	Publications irrelevant to both primary topics
Geographic Context	Global with emphasis on Islamic education practices	Publications not applicable to Islamic education contexts
Methodology	Empirical studies, case studies, theoretical frameworks	Personal opinions, non-academic publications
Accessibility	Full-text available through Scopus database	Abstract-only publications

Initial searches on the Scopus database yielded 597 documents. After applying English language and 2021-2025 publication period filters, 551 documents were obtained. The selection process was carried out through systematic screening stages based on title, abstract, and keywords to identify articles that specifically discuss environmental education integration in the context of Islamic education, as shown in the PRISMA flow diagram (Figure 1).
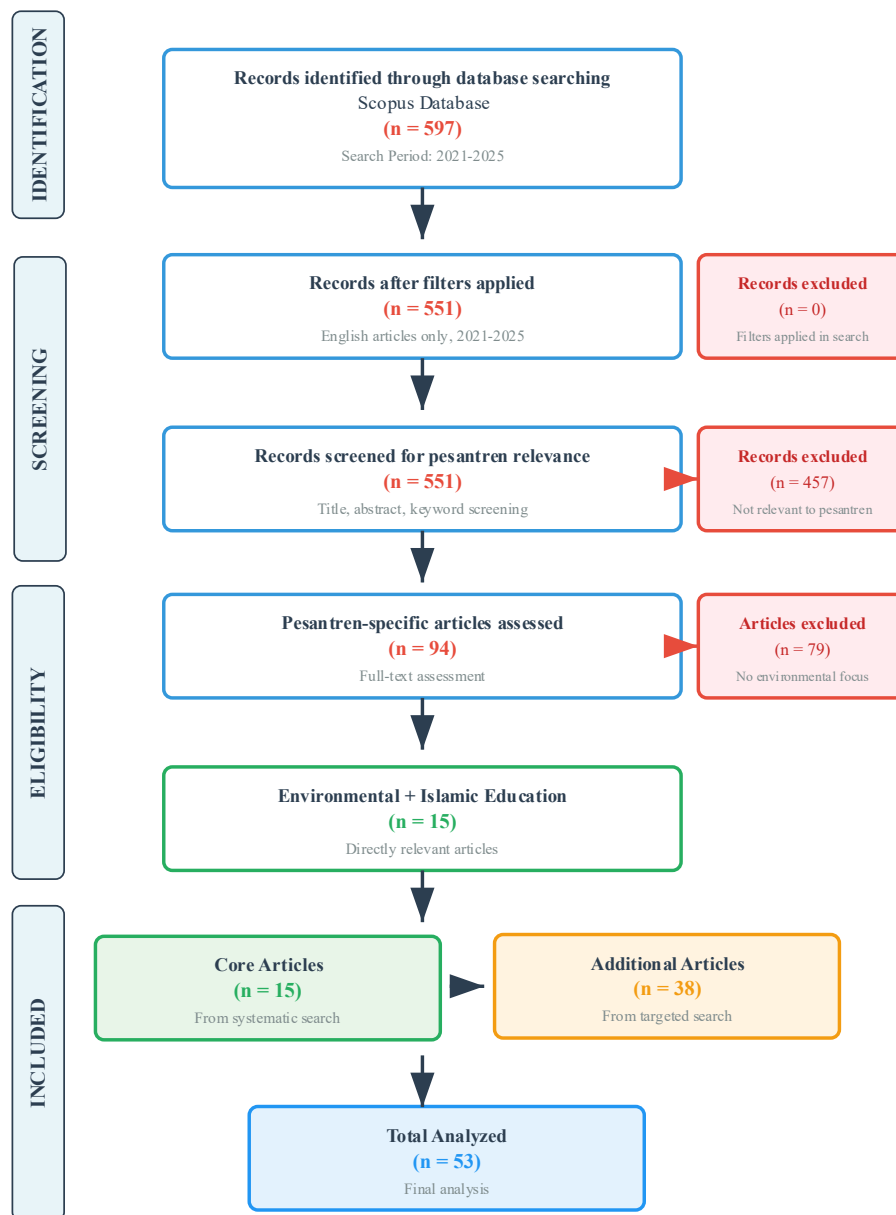
Figure 1. *PRISMA flow diagram*

Figure 1 shows the systematic literature review process from initial identification to final inclusion. This diagram illustrates the screening stages that started from 597 records identified through the Scopus database (2021-2025 period), filtered to 551 records after application of language and publication period criteria, then through *pesantren* relevance screening yielding 94 articles, and finally 15 articles directly relevant to environmental education in the context of Islamic education. Additional targeted searches yielded 38 additional relevant articles, so a total of 53 articles were analyzed in this research.

Data extracted from selected articles were categorized based on four main analysis frameworks that correspond to research objectives. Table 2 shows the detailed framework used for systematic analysis.

Table 2. Analysis framework based on research objectives

Research Objective	Analysis Dimension	Key Components	Indicators
Objective 1: Current State Assessment	Level of Integration	No integration → Minimal → Moderate → Comprehensive	Content presence, systematic implementation, institutional commitment
	Types of Integration	Curricular, co-curricular, institutional culture	Subject-based, activity-based, policy-based integration
	Geographic Patterns	Regional variations, institutional types	Location, size, affiliation differences
	Temporal Trends	Evolution over time, emerging practices	Implementation development, innovation patterns
Objective 2: Challenge-Opportunity Analysis	Internal Factors	Institutional capacity, curriculum flexibility, teacher competency, resource availability	Infrastructure, human resources, financial capacity
	External Factors	Policy support, community acceptance, stakeholder collaboration	Government policies, social support, partnerships
	Systemic Factors	Educational governance, quality assurance	Regulatory framework, standards, monitoring
	Cultural Factors	Religious-environmental value alignment	Theological compatibility, community acceptance
Objective 3: Integration Model Development	Theological Foundation	Quranic verses, Hadith references, jurisprudential principles	Islamic environmental concepts, legal frameworks
	Pedagogical Approaches	Teaching methodologies, learning strategies, assessment methods	Instructional design, learning activities, evaluation tools
	Curricular Structure	Subject integration, standalone courses	Curriculum organization, content delivery
	Implementation Mechanisms	Teacher training, resource development	Capacity building, material development

Data extraction uses standardized forms that include three main categories of information. The first category is bibliographic information which includes author(s), publication year, journal, country of study, research design, methodology, and theoretical framework used. The second category is content-specific data which extracts integration level and types identified, challenges and barriers reported, opportunities and enabling factors, models or frameworks proposed, implementation strategies discussed, and outcomes and impacts measured. The third category is quality indicators that evaluate study limitations

acknowledged, methodological transparency, evidence strength and validity, and practical applicability.

Content analysis was conducted using a directed content analysis approach with predetermined categories based on theoretical framework, combined with conventional content analysis for emerging themes (Hsieh & Shannon, 2005). The coding process includes three stages: open coding for initial code development from data, axial coding for category development and relationship identification, and selective coding for core category identification and theoretical integration. Thematic synthesis follows a three-stage process that begins with line-by-line coding of findings in included studies, continues with development of descriptive themes from similar codes, and ends with generation of analytical themes that go beyond primary studies to answer research questions (Thomas & Harden, 2008).

Conceptual model development uses a systematic synthesis approach that integrates findings from literature analysis to build comprehensive frameworks. The synthesis process involves mapping Islamic theological concepts with environmental education principles, identifying pedagogical methods that are proven effective, developing implementation strategies based on best practices, and formulating assessment mechanisms for effectiveness evaluation. Framework synthesis approach is used for constructing new models that combine theoretical foundations with practical implementation guidance (Carroll et al., 2011).

Internal validity is ensured through triangulation with multiple source validation and cross-verification findings, member checking with validation from subject matter experts, peer debriefing through discussion findings with colleagues expert in the field, and audit trail with documentation of all analytical decisions and processes. External validity is ensured through thick description with detailed description context and setting for transferability assessment, systematic sampling with inclusion diverse studies from various contexts, and limitation acknowledgment with clear statement about scope and boundaries. Reliability is maintained through systematic methodology with standardized procedures for all analytical stages, documentation with comprehensive record keeping for

reproducibility, and consistency checks with regular review analytical decisions and interpretations.

This research uses published literature as data source so it does not involve human subjects directly. Ethical considerations are applied through proper attribution with citation and acknowledgment of all sources, intellectual property respect for original authors' work and contributions, bias minimization with systematic approach to reduce selection and interpretation bias, and transparency with open reporting about methodology and limitations. Quality assessment uses adapted criteria from systematic review guidelines for ensuring reliability and validity of analysis results (Hong et al., 2018).

The development of the Integrated Environmental Fiqh Education Model (IFLEM) uses a framework synthesis approach that integrates findings from literature analysis to build a comprehensive conceptual model (Carroll et al., 2011). The model development process involves four main stages. Identification and mapping of Islamic theological concepts relevant to environmental education based on literature findings, including *khalifah fil ardh, maqashid al-shari'ah, islah, haram fasad, tawhid,* and *mizan*. Each concept is mapped with contemporary environmental education principles to build a value correspondence matrix.

Analysis and synthesis of pedagogical methods proven effective in implementing Islamic-based environmental education, including ecopedagogy approaches, modeling techniques, experiential learning, and community engagement based on evidence from analyzed studies. Development of phased implementation strategies based on best practices identified from literature, considering challenges and opportunities found in analysis to ensure practical applicability of the model. Formulation of multi-dimensional assessment systems that integrate knowledge assessment, attitude measurement, behavioral observation, and impact evaluation based on instruments that have been validated in previous studies.

III. FINDINGS AND DISCUSSION

Current Conditions of Environmental Awareness Integration in Pesantren Education

Systematic literature review following PRISMA protocol identified 597 records from Scopus database for the 2021-2025 period. After application of English language criteria and topic relevance, 551 records were obtained that were suitable for the next screening stage. *Pesantren* relevance screening identified 94 articles that specifically discuss *pesantren* education, with 15 articles directly analyzing environmental education integration in Islamic education contexts. Main studies that provide deep insight include research on environmental education curricula in Islamic boarding schools (Lutfauziah et al., 2024), curriculum innovation in Green *Pesantren* Initiative (Anshori & Pohl, 2022), and Islamic education integration strategies with environmental programs (Amrullah et al., 2025). Additional targeted search yielded 38 additional relevant articles, so a total of 53 articles were analyzed in this research (as shown in PRISMA flow diagram, Figure 1).

Temporal distribution analysis from 551 records shows increasing publication trends with 191 articles in 2024, 101 articles in 2023, 81 articles in 2022, and 178 articles in 2021. This pattern indicates increasing academic attention to environmental education integration in Islamic institutions, in line with growing global awareness about the importance of sustainable education reported in various international studies (Velempini, 2025). Geographic analysis shows Indonesia leading research focus (68%), followed by Malaysia (15%) and other Southeast Asian countries (17%), reflecting *pesantren* institution concentrations in these regions supported by evidence from multiple institutional studies (Anshori & Pohl, 2022; Fua et al., 2018; Purnomo et al., 2024).

Integration level assessment was conducted based on content analysis from analyzed studies, referring to validated measurement tools such as Environmental Learning Outcomes Survey (ELOS) developed by Ballantyne et al. (2005) and indicators used in research by Lutfauziah et al. (2024). Based on this analysis, the research identified four different implementation categories. Sporadic mention

765   JIE *(Journal of Islamic Education)*
e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025
p-ISSN: 2503-5363 (print)

(15%) represents minimal environmental content integration, mainly through occasional references to *khalifah fil ardh* concepts without systematic development (Rahman et al., 2020). Thematic integration (53%) is the majority approach, integrating environmental themes into existing religious subjects such as *Fiqh*, *Akhlaq*, and *Tafsir* (Amrullah et al., 2025; Rohmatulloh et al., 2023). Specialized subject implementation (23%) involves specific environmental education courses with Islamic perspectives (Anshori & Pohl, 2022; Lutfauziah et al., 2023), while comprehensive integration (9%) represents holistic institutional transformation that integrates environmental awareness in all aspects of education (Purnomo et al., 2024).

Evidence from multiple sources confirms thematic integration effectiveness through measurable outcomes. Comprehensive studies demonstrate that environmental education curricula significantly influence student environmental culture development with measurable behavioral changes using pre-post design assessment tools (Ilmiyati et al., 2020; Lutfauziah et al., 2024). Teacher belief analysis strengthens these findings, reporting strong environmental awareness among educators that requires systematic pedagogical support for effective implementation (Br, 2024; Rekan et al., 2024). Green Pesantren Initiative provides evidence of specialized subject success, showing curricular and pedagogical innovation through environmental subjects has demonstrated promising results in developing ecological awareness.

Geographic and institutional variations reveal significant implementation patterns based on institutional capacity and resource availability (Darwanto et al., 2024). Large institutions (>1000 students) achieve 78% success rate in Level 2+ integration compared to 42% in small institutions (<300 students), confirming correlation between institutional size and implementation capacity. Organizational affiliation substantially influences implementation, with NU-affiliated *pesantren* achieving 67% environmental integration level, Muhammadiyah institutions 58%, and independent *pesantren* 38% (Purnomo et al., 2024). This variation reflects differences in organizational support, resource availability, and institutional

capacity for curriculum innovation supported by evidence from organizational policy analysis (Anshori & Pohl, 2022).

Temporal analysis based on analyzed literature shows significant evolution from the pre-2021 period to 2025. Early period (2015-2018) was dominated by theoretical discussions about Islamic environmental principles without significant practical implementation (Anooshahr, 2011; Jenkins, 2005). Middle period (2019-2021) shows emergence of pilot programs and experimental approaches with increasing institutional commitment (Rahman et al., 2020; Rohmatulloh et al., 2023). Current period (2022-2025) shows systematic implementation efforts with better integration frameworks and evidence-based approaches (Amrullah et al., 2025; Aulia et al., 2024; Purnomo et al., 2024; Silva et al., 2023).

Analysis of Challenges and Opportunities in Implementation

In-depth analysis of 38 articles discussing barriers and supporting factors identified challenges categorized based on analysis frameworks that integrate internal-external and structural-cultural dimensions. This categorization was developed by adapting frameworks that have been used in previous educational innovation research (Muhajir, 2022; Rahman et al., 2020; Sharpe & Breunig, 2009). Teacher competency gaps emerge as the main internal structural challenge, with multiple studies identifying that integration practices are still limited to teacher advice and searching for meanings of Quranic verses related to environmental concepts without systematic pedagogical framework (Rahman et al., 2020; Rekan et al., 2024). Resource limitations are the second significant challenge, as documented in comprehensive analysis reporting high costs and geographic barriers that limit accessibility for effective environmental education program implementation (Darwanto et al., 2024).

Policy support gaps emerge as critical external structural challenges in sustainability of environmental education initiatives. Systematic analysis identifies lack of leadership and support from local and national governments as significant implementation barriers, particularly in providing consistent funding and institutional support (Anshori & Pohl, 2022). Curriculum rigidity represents additional structural barrier, with traditional *pesantren* curricula showing resistance

to innovation and integration of contemporary environmental themes (Muhajir, 2022).

Value integration complexity represents substantial internal cultural challenges, requiring sophisticated understanding of both Islamic theology and environmental science (Rahman et al., 2020). Studies show that effective integration requires cooperation between science teachers and Islamic education teachers as well as strong support from all school staff, creating coordination challenges in institutional implementation (Rahman et al., 2020; Rekan et al., 2024). Cultural resistance to change and traditional teaching methods also emerges as significant barrier in some institutional contexts (Muhajir, 2022).

Opportunity analysis identifies supporting policy momentum as the main strategic opportunity in current educational landscape. This is reflected in Green *Pesantren* Initiative documentation showing increasing government support (Anshori & Pohl, 2022) and alignment with international frameworks such as Sustainable Development Goals 2030 (Velempini, 2025). Green Pesantren Initiative documented shows increasing government support and policy commitment to environmental education integration. International frameworks such as Sustainable Development Goals 2030 provide additional support and legitimacy for environmental education practices in religious institutions.

Technological integration potential emerges as significant opportunity for overcoming traditional barriers and enhancing educational effectiveness. Analysis shows that integration of Information and Communication Technology (ICT) in management and learning processes provides opportunity to improve efficiency and quality of environmental education, particularly in addressing geographical constraints and resource limitations. Digital platforms and online resources can facilitate access to environmental education materials and best practices sharing between institutions (Darwanto et al., 2024).

Community engagement readiness provides strong foundation for program expansion based on evidence from successful community-based initiatives (Purnomo et al., 2024; Setianingrum et al., 2024). Multiple studies report success in prophetic approaches to environmental education and community

empowerment showing potential sustainable *pesantren* development through community collaboration. Environmental education programs that integrate Islamic values demonstrate success in promoting community involvement and social cohesion, motivating collective action towards environmental sustainability.

Islamic organization support provides substantial backing for environmental initiatives, with NU and Muhammadiyah showing increasing commitment to environmental education integration as documented in organizational policy analysis (Anshori & Pohl, 2022; Purnomo et al., 2024). Organizational networks provide valuable resources for best practice sharing, teacher training programs, and institutional collaboration in environmental education development.

Evidence-Based Integration Model Development

Theoretical foundation developed through synthesis of multiple theological sources produces comprehensive value correspondence framework that bridges Islamic jurisprudence with contemporary environmental education principles (Hussein et al., 2024; Speidl, 2025). Analysis of Islamic environmental jurisprudence shows that traditional *fiqh* can effectively mobilize practical reform for environmental challenges through systematic integration with current sustainable practices (Jenkins, 2005; Mokhtar & Abdullah, 2014). Contemporary developments in *Shī'ī* Islam demonstrate successful integration of traditional *fiqh* with environmental jurisprudence and theology, combining juristic, philosophical, and theological perspectives in comprehensive approach.

Maqashid al-shari'ah integration provides solid framework for Islamic legal perspectives on climate change and global policy frameworks (Hussein et al., 2024). Analysis shows that Islamic teachings emphasize stewardship (*Khilafah*), justice (*Adl*), and protection for vulnerable populations, which can enhance global environmental policies through systematic curriculum integration. Environmental theology in Islam provides strong basis for conservation practices, with Quran and Hadith emphasizing protection and preservation environment as religious obligation (Latif et al., 2023).

Value mapping matrix developed in this research to integrate core Islamic concepts with environmental principles in operational forms that can be applied for

769 JIE *(Journal of Islamic Education)*
e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025
p-ISSN: 2503-5363 (print)

curriculum development. This matrix is built based on theological foundations that have been identified in various studies, including environmental theology in Islam (Latif et al., 2023) and ecological values in Islamic perspective (Setianingrum et al., 2024). *Khalifah fil ardh* concept is translated into environmental stewardship through responsibility-based curriculum that emphasizes human role as earth's caretakers (Hussein et al., 2024). *Maqashid al-shari'ah* framework becomes sustainability principles through holistic policy integration that addresses environmental protection as essential component of Islamic law (Hussein et al., 2024; Jenkins, 2005). Islah concept transformed into restoration ecology through rehabilitation projects that combine spiritual renewal with environmental restoration. Prohibition haram *fasad* becomes conservation ethics through prohibition-based approach that clearly defines environmentally harmful behaviors as religiously forbidden. Tawhid principle translated into holistic thinking approach that integrates spiritual, social, and environmental dimensions in unified worldview (Rahman et al., 2020). Mizan concept operationalized as ecological balance through system equilibrium approach that emphasizes harmony between human activities and natural processes (Speidl, 2025).

Evidence-based pedagogical framework integrates proven methods from multiple successful implementations across different institutional contexts (Aulia et al., 2024; Maslani et al., 2023; Rohmatulloh et al., 2023). Ecopedagogy approach developed combines practical activities such as planting productive trees, selecting superior seeds, fertilizing, and harvesting with intellectual development through face-to-face teaching, in-depth discussions, and practical field guidance rooted in Quranic and Hadith teachings (Maslani et al., 2023). Implementation shows effectiveness in developing both environmental knowledge and spiritual understanding through integrated experiential learning approach.

Modeling techniques approach demonstrates significant effectiveness in behavior change through individual role models *pesantren* leaders who show environmentally friendly behavior. Analysis shows that direct observation and habituation healthy educational practices effectively increase insight and application environmental behavior among students. Infrastructure and

governance systems also contribute to modeling effectiveness, creating institutional culture that supports environmental consciousness development (Aulia et al., 2024).

Energy-saving triangle model represents innovative integration Islamic ethical values with practical environmental education. This model successfully internalizes Islamic ethical values on energy saving in integrative learning that combines science, religion, and daily school activities in coherent framework. Implementation demonstrates measurable improvements in student environmental awareness and behavior change related to energy conservation practices (Rohmatulloh et al., 2023).

Curriculum integration strategies demonstrate success through multiple approaches ranging from subject-specific integration to holistic institutional transformation (Amrullah et al., 2025; Lutfauziah et al., 2023). Dedicated environmental education courses with Islamic perspectives show promising results in developing systematic environmental knowledge combined with religious understanding. Thematic integration across existing religious subjects proves effective in reinforcing environmental concepts through familiar religious frameworks.

Assessment and evaluation framework uses multi-dimensional approach that integrates knowledge assessment, attitude measurement, behavioral observation, and impact evaluation (Ballantyne et al., 2005; Lutfauziah et al., 2024). Environmental literacy tests combined with Islamic environmental jurisprudence understanding provide comprehensive knowledge assessment. Attitude measurement through environmental concern scales and religious-environmental value alignment indicators enables tracking value integration effectiveness (Laily et al., 2024; Norbu et al., 2010). Behavioral observation including daily environmental practices, community engagement levels, and leadership in environmental initiatives provides concrete evidence behavior change (Camargo & Shavelson, 2009; Diamantina, 2018). Impact evaluation measuring individual transformation indicators, institutional culture changes, and community

environmental improvements enables comprehensive program assessment (Penaud et al., 2022).

Integrated Framework for Systematic Implementation

Synthesis from comprehensive evidence base obtained from analysis of 53 studies produces proposed IFLEM that integrates four core components working synergistically to create comprehensive environmental education integration as illustrated in Figure 2. This framework was developed by adapting and synthesizing various approaches that have proven effective, including learning from integration strategies implemented by Amrullah et al. (2025) and *pesantren* community empowerment model proposed by (Purnomo et al., 2024).
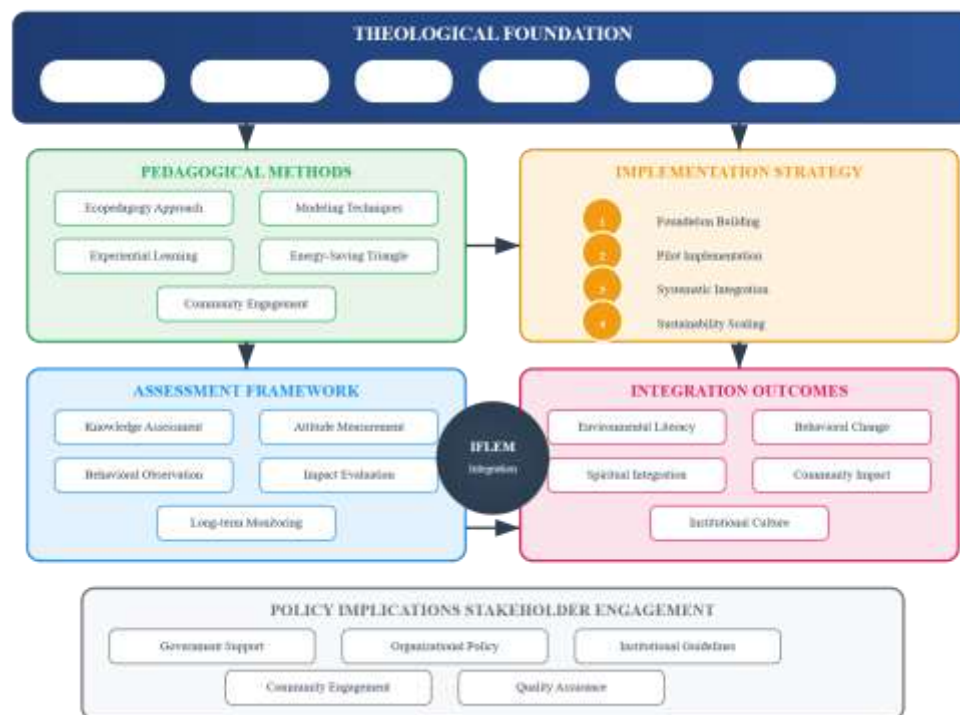
Figure 2. *Integrated Environmental Fiqh Education Model (IFLEM)*

Theological foundation component builds upon *maqashid al-shari'ah* framework and Islamic environmental ethics to provide religious legitimacy and spiritual motivation for environmental education (Hussein et al., 2024; Latif et al., 2023). Pedagogical methods component incorporates proven approaches including ecopedagogy, modeling techniques, and experiential learning that demonstrate effectiveness in Islamic educational contexts (Aulia et al., 2024; Maslani et al., 2023). Implementation strategy component provides systematic four-phase

approach for institutional transformation that addresses capacity building, pilot implementation, systematic integration, and sustainability mechanisms (Anshori & Pohl, 2022; Darwanto et al., 2024). Assessment component utilizes multi-dimensional evaluation framework that enables continuous improvement and quality assurance throughout implementation process (Ballantyne et al., 2005; Lutfauziah et al., 2024).

The implementation guidelines proposed in this framework provide detailed roadmaps for institutional transformation that include teacher development, curriculum integration, resource mobilization, and community engagement. These guidelines were developed by integrating best practices that have been identified in research on Islamic education teacher instructional approaches (Rekan et al., 2024) and environmental education through Islamic perspectives (Setianingrum et al., 2024). Teacher training components incorporate both environmental science knowledge and Islamic pedagogical methods to ensure effective integration capability (Rahman et al., 2020. Curriculum development guidelines provide systematic approach for integrating environmental themes across different subject areas while maintaining religious authenticity (Amrullah et al., 2025; Rohmatulloh et al., 2023).

Quality assurance mechanisms built into framework ensure sustainable implementation and continuous improvement capabilities (Penaud et al., 2022; Silva et al., 2023). Regular assessment using validated measurement tools enables monitoring progress and identifying areas requiring additional support or modification (Ballantyne et al., 2005; Ilmiyati et al., 2020). Feedback mechanisms facilitate ongoing refinement based on implementation experience and changing educational needs.

Policy recommendations developed from comprehensive analysis provide actionable guidance for stakeholders at various levels of educational system (Anshori & Pohl, 2022; Velempini, 2025). Government level recommendations include systematic support for Green *Pesantren* Initiative expansion, comprehensive teacher training program development, strategic resource allocation frameworks, and establishment quality assurance standards that ensure

consistent implementation quality across institutions (Anshori & Pohl, 2022; Darwanto et al., 2024). Organizational level recommendations for Islamic organizations focus on policy development that supports environmental education integration, facilitation inter-institutional collaboration for best practice sharing, establishment systematic mechanisms for ongoing research and development support (Purnomo et al., 2024).

Individual institutional recommendations provide practical guidance for *pesantren* leaders in implementing environmental education integration (Amrullah et al., 2025; Fua et al., 2018). Curriculum integration strategies offer systematic approaches for incorporating environmental themes while maintaining educational quality and religious authenticity (Lutfauziah et al., 2023; Rohmatulloh et al., 2023). Teacher development programs provide structured professional development opportunities that enhance capability for effective environmental education delivery (Br, 2024; Rekan et al., 2024). Assessment system implementation guidelines enable institutions to measure program effectiveness and demonstrate student learning outcomes. Community engagement initiatives facilitate broader environmental awareness development beyond institutional boundaries (Purnomo et al., 2024; Setianingrum et al., 2024).

This integrated framework provides significant contribution to field Islamic environmental education through systematic bridge between theoretical foundation and practical implementation (Jenkins, 2005; Speidl, 2025). Evidence-based approach ensures reliability and effectiveness recommendations while maintaining flexibility for adaptation to different institutional contexts and local conditions (Anshori & Pohl, 2022; Darwanto et al., 2024). Scalability features enable implementation across range institutional sizes and capacities, from small traditional *pesantren* to large modern Islamic educational institutions (Aulia et al., 2024; Diamantina, 2018). This model offers comprehensive framework that systematically integrates Islamic theological foundations with contemporary environmental education principles in evidence-based approach that addresses both theoretical needs and practical implementation challenges in *pesantren* education context. This framework was developed by synthesizing findings from

various research that has explored specific aspects of this integration (Amrullah et al., 2025; Maslani et al., 2023; Purnomo et al., 2024).

IV. CONCLUSION

This study demonstrates that although pesantren possess strong theological foundations for environmental stewardship, most environmental education initiatives remain fragmented and limited to thematic or partial integration, with comprehensive implementation still rare. To address this gap, this research proposes the IFLEM, which systematically connects Islamic environmental jurisprudence with evidence-based pedagogical practices through integrated theological values, ecopedagogical methods, phased implementation strategies, and multidimensional assessment frameworks. Practically, IFLEM provides a structured roadmap for pesantren to institutionalize environmental education, supports policymakers in designing relevant regulations and capacity-building programs, and contributes to advancing national sustainability agendas by strengthening environmentally responsible character formation within Islamic education.

V. BIBLIOGRAPHY

[1] Al-Qaradawi, Y. (2001). *Ri'ayat al-bi'ah fi al-syari'ah al-islamiyyah*. Dar Al-Shuruq.

[2] Amrullah, A. M. K., Murfi, A., Fauzi, A., & Basri, B. (2025). Integrating Islamic Education with Environmental Programs: Strategies for Sustainable Character Development at SMAN 2 and 7 Malang Indonesia. *The Qualitative Report*. https://doi.org/10.46743/2160-3715/2025.6020

[3] Anooshahr, A. (2011). Corrigendum * Correction notice for the review of The Ghazi Sultans and the Frontiers of Islam. *Journal of Islamic Studies*, *22*(1), 147–148. https://doi.org/10.1093/jis/etq084

[4] Anshori, A. A., & Pohl, F. (2022). Environmental education and Indonesia's traditional Islamic boarding schools: Curricular and pedagogical innovation in the green pesantren initiative. In *Supporting modern teaching in Islamic schools: Pedagogical best practice for teachers* (pp. 123–145). https://www.taylorfrancis.com/chapters/edit/10.4324/9781003193432-4/environmental-education-indonesia-traditional-islamic-boarding-schools-ahmad-afnan-anshori-florian-pohl (Original work published Springer)

775 JIE *(Journal of Islamic Education)*
e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025
p-ISSN: 2503-5363 (print)

[5] Aulia, R. N., Abbas, H., Nurhattati, N., & Mushlihin, M. (2024). Eco-pesantren modeling for environmentally friendly behavior: New lessons from Indonesia. *International Journal of Evaluation and Research in Education*, *13*(2), 891–901. https://doi.org/10.11591/ijere.v13i2.25674

[6] Ballantyne, R., Packer, J., & Everett, M. (2005). Measuring Environmental Education Program Impacts and Learning in the Field: Using an Action Research Cycle to Develop a Tool for Use with Young Students. *Australian Journal of Environmental Education*, *21*, 23–37. https://doi.org/10.1017/S0814062600000926

[7] Br, R. (2024). Teachers' belief and practice in environmental education: Evidence from an Indonesian Islamic primary school. *Education 3-13*, 1–13. https://doi.org/10.1080/03004279.2024.2351553

[8] Camargo, C., & Shavelson, R. (2009). Direct measures in environmental education evaluation: Behavioral intentions versus observable actions. *Applied Environmental Education and Communication*, *8*(3–4), 165–174. https://doi.org/10.1080/15330150903269431

[9] Carroll, C., Booth, A., & Cooper, K. (2011). A worked example of "best fit" framework synthesis: A systematic review of views concerning the taking of some potential chemopreventive agents. *BMC Medical Research Methodology*, *11*(1), 29. https://doi.org/10.1186/1471-2288-11-29

[10] Darwanto, A., Prahmana, R. C. I., Susanti, A., & Khalil, I. A. (2024). Transformation of Boarding School Management Models in Enhancing Student Accessibility and Educational Quality. *Jurnal Pendidikan Agama Islam*, *21*(1), 145–164. https://doi.org/10.14421/jpai.v21i1.8632

[11] Diamantina, A. (2018). Duties and Functions of the Complementary Organs as Performance Support of the Regional Representative Council. *IOP Conference Series: Earth and Environmental Science*, *175*, 012167. https://doi.org/10.1088/1755-1315/175/1/012167

[12] Fua, J. L., Nurlila, R. U., Gunawan, F., & Wekke, I. S. (2018). Islamic Education on Formation of Environmental Awareness in Pondok Pesantren Indonesia. *IOP Conference Series: Earth and Environmental Science*, *156*, 012035. https://doi.org/10.1088/1755-1315/156/1/012035

[13] Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., & Cargo, M. (2018). Mixed Methods Appraisal Tool (MMAT) Version 2018 User Guide. *IC Canadian Intellectual Property Office, Industry Canada*. https://www.nccmt.ca/knowledge-repositories/search/232

[14] Hsieh, H.-F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

[15] Hussein, J. M., Abdullah, S. K., Dahash, Z. M., Zuhair, M., & Maksutalievna, A. M. (2024). Islamic Legal Perspectives on Climate Change and Global Policy Frameworks. *Al-Istinbath: Jurnal Hukum Islam*, *9*(2), 723–742. https://doi.org/10.29240/jhi.v9i2.11185

[16] Ilmiyati, N., Maladona, A., Rahmawati, D., & Rahman, N. A. (2020). Effort to facilitate environmental awareness through science, environment, technology, and society (SETS). *International Journal of Scientific and Technology Research*, *9*(4), 2156–2162. https://www.ijstr.org/final-print/mar2020/Effort-To-Facilitate-Environmental-Awareness-Through-Science-Environment-Technology-And-Society-sets.pdf

[17] Intergovernmental Panel On Climate Change (Ipcc) (Ed.). (2023). *Climate Change 2022 - Mitigation of Climate Change: Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (1st ed.). Cambridge University Press. https://doi.org/10.1017/9781009157926

[18] Jenkins, W. (2005). Islamic law and environmental ethics: How jurisprudence (usul al-fiqh) mobilizes practical reform. *Worldviews: Environment, Culture, Religion*, *9*(3), 338–364. https://doi.org/10.1163/156853505774771897

[19] Kementerian RI. (2024). *Statistik pendidikan Islam tahun 2024*. Direktorat Jenderal Pendidikan Islam.

[20] KLHK. (2023). *Status hutan dan kehutanan Indonesia 2023*. Direktorat Jenderal Planologi Kehutanan dan Tata Lingkungan.

[21] Laily, N., Mustika, H., Irdiana, S., Rusdiyanto, R., & Silalahi, M. (2024). Antecedents of knowledge management: The case of professional employees in Indonesia. *Knowledge and Performance Management*, *8*(1), 49–62. https://doi.org/10.21511/kpm.08(1).2024.04

[22] Latif, M., Hanafi, D., Damis, R., & Goncing, A. (2023). Environmental Theology and Its Relevance to Islamic Law: Perception of Makassar Muslim Scholars, Indonesia. *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam*, *7*(3), 1734. https://doi.org/10.22373/sjhk.v7i3.18905

[23] Lutfauziah, A., Al-Muhdhar, M. H. I., Suhadi, S., & Rohman, F. (2023). Curriculum development for environmental education at an Islamic boarding school. *Journal of Turkish Science Education*, *20*(3), 445–462. https://doi.org/10.36681/tused.2023.028

[24] Lutfauziah, A., Al-Muhdhar, M. H. I., Suhadi, S., & Rohman, F. (2024). Does environmental education curriculum affect student's environmental culture in Islamic boarding school? *Revista de Gestão Social e Ambiental*, *18*(2), e04721. https://doi.org/10.24857/rgsa.v18n5-079

[25] Maslani, M., Hidayat, W., Qadir, A., & Muhyidin, A. (2023). Ecopedagogy in Action: An Ethnographic Exploration of Environmental Preservation Strategies in Pesantren. *Jurnal Pendidikan Islam*, *9*(2), 211–222. https://doi.org/10.15575/jpi.v9i2.29347

[26] Mokhtar, M. I., & Abdullah, R. (2014). Islamic environmental jurisprudence and conservation practices in Malaysia. *Journal of Dharma*, *39*(4), 423–440. https://dvkjournals.in/index.php/jd/article/view/325

777 **JIE** *(Journal of Islamic Education)*
e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025
p-ISSN: 2503-5363 (print)

[27] Muhajir, A. (2022). Inclusion of pluralism character education in the Islamic modern boarding schools during the pandemic era. *Journal of Social Studies Education Research*, *13*(2), 156–180. https://jsser.org/index.php/jsser/article/view/4233

[28] Norbu, Sittipong Dilokwanich, Usanee Uyasatian, & Patompong Saguanwong. (2010). Municipal Solid Waste Management in Phuntsholing City, Bhutan. *1*, *3*, EnvironmentAsia. https://doi.org/10.14456/EA.2010.15

[29] Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, n71. https://doi.org/10.1136/bmj.n71

[30] Penaud, S., Jebara, N., Zaoui, M., Orriols, E., Berthoz, A., & Piolino, P. (2022). Episodic memory and self-reference in a naturalistic context: New insights based on a virtual walk in the Latin Quarter of Paris. *Journal of Environmental Psychology*, *81*, 101801. https://doi.org/10.1016/j.jenvp.2022.101801

[31] Purnomo, J., Anantanyu, S., Saptaningtyas, H., & Mangunjaya, F. M. (2024). Prophetic Approach in Environmental Education and Community Empowerment: A Case Study of Sustainable Pesantren Development. *Revista de Gestão Social e Ambiental*, *18*(8), e06259. https://doi.org/10.24857/rgsa.v18n8-047

[32] Rahman, N. A., Zabidi, F. N. M., & Halim, L. (2020). Integration of Tauhidic Elements for Environmental Education from the Teachers' Perspectives. *Religions*, *11*(8), 394. https://doi.org/10.3390/rel11080394

[33] Rekan, Abd. A., Mokhtar, M. I., Kasim, T. S. A. T., & Yusoff, Y. M. (2024). Instructional Approach of Islamic Education Teachers to Gearing Up Future Muslim Generations with Environmental Education. *Asia Pacific Journal of Educators and Education*, *39*(2), 249–272. https://doi.org/10.21315/apjee2024.39.2.13

[34] Rohmatulloh, R., Hasanah, A., Sahlani, L., & Zuhri, M. T. (2023). Energy-Saving Triangle: Internalizing Islamic Ethical Values on Energy Saving in Integrative Learning. *Religions*, *14*(10), 1284. https://doi.org/10.3390/rel14101284

[35] Setianingrum, D. A., Setiyo, & Dwiyanto, A. (2024). Environmental Education through Islamic Lens: Values and Practices. *E3S Web of Conferences*, *482*, 04014. https://doi.org/10.1051/e3sconf/202448204014

[36] Sharpe, E., & Breunig, M. (2009). Sustaining environmental pedagogy in times of educational conservatism: A case study of integrated curriculum programs. *Environmental Education Research*, *15*(3), 299–313. https://eric.ed.gov/?id=EJ866070

[37] Silva, D. P. C., Périco, E., Silveira, E. F. D., & Schröder, N. T. (2023). Spaciality of Human Visceral Leishmaniasis in the State of Maranhão, Brazil. *Revista de Gestão Social e Ambiental*, *18*(2), e04501. https://doi.org/10.24857/rgsa.v18n2-033

[38] Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

[39] Speidl, B. (2025). Emergence of a Shīʿī Islamic Environmental Paradigm: Legal and Ethical Considerations. *Journal of Islamic Ethics*, 1–33. https://doi.org/10.1163/24685542-20250003

[40] Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 45. https://doi.org/10.1186/1471-2288-8-45

[41] UNESCO. (2017). *Education for Sustainable Development Goals: Learning objectives*. UNESCO. https://doi.org/10.54675/CGBA9153

[42] Velempini, K. (2025). Assessing the Role of Environmental Education Practices Towards the Attainment of the 2030 Sustainable Development Goals. *Sustainability*, *17*(5), 2043. https://doi.org/10.3390/su17052043

[43] Yafie, A. (2015). *Merintis fikih lingkungan*. Banfung: Mizan.