



From Kitab Kuning to KPI: Auditing the Datafication of Eco-Piety in Indonesia's Ekopesantren Movement and Its Uneven Alignment with the Sustainable Development Goals

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ARTICLE INFO

Keywords: Sustainable Development Goals; Pesantren; Islamic Education; Environment; Audit Culture; Datafication

Received : 15 July

Revised : 20 August

Accepted: 30 September

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ABSTRACT

Purpose: Indonesia's "eco-pesantren" (ekopesantren) movement has, since 2021, been promoted by a university-led consortium as a faith-based vehicle for environmental sustainability, culminating in a 2024 award cycle covering 50 pesantren and approximately 76,000 students, and a 2025 reference within the United Nations Environment Programme's (UNEP) Al-Mizan Covenant for the Earth. Existing scholarship has described the pedagogical content of individual eco-pesantren but has not examined the movement's own operating logic: the translation of Islamic environmental ethics into a scored, "web-tracked" system of ten program categories. This study addresses that gap. **Design/methodology/approach:** Using qualitative document analysis and netnography of publicly available institutional, legal-religious, and media texts (11 primary documents, 2011-2026), triangulated with Indonesia's national pesantren statistics and the existing academic literature, the study applies directed content analysis informed by audit-culture theory and datafication theory to map the movement's ten operational categories onto specific Sustainable Development Goal (SDG) targets

INTRODUCTION

Climate and biodiversity crises have pushed international institutions to look beyond states and markets toward religious communities as behavior-shaping actors. This turn was given its most formal expression to date in 2024, when the United Nations Environment Programme (UNEP) launched *Al-Mizan: A Covenant for the Earth* at the sixth session of the UN Environment Assembly (UNEA-6), an initiative explicitly designed to engage the world's estimated 1.8 billion Muslims through Islamic scholars and institutions (UNEP, n.d.). Indonesia, home to the world's largest Muslim population and to the *pesantren* (Islamic boarding school) as one of its oldest indigenous educational institutions, sits at the center of this turn. As of 2024/2025 the country counted 42,433 registered *pesantren* under the Ministry of Religious Affairs (Kementerian Agama, or Kemenag), 64% of them concentrated on the island of Java (Databoks/Katadata, 2025).

Over roughly two decades, three loosely connected modes of "green" *pesantren* practice have emerged in Indonesia. The first is grassroots and independent, pre-dating any formal certification scheme: Pondok Pesantren Pabelan in Magelang, Central Java, brands its own long-running organic-farming and waste-management programs "*Ekopesantren*," tracing them to the institution's founder-era ethos rather than to any external award cycle (Balai Pendidikan Pondok Pesantren Pabelan, 2023), while Pondok Pesantren Annuqayah in Sumenep, Madura, carries a separately documented tradition of agrarian-ecological conservation. The second is governmental and provincial: East Java's own environmental agency administers a distinct "*Eco Pesantren*" award, which separately recognized Pondok Pesantren Rahmatan Lil Alamin in Nganjuk (jatim.viva.co.id, n.d.). The third, and the empirical focus of this study, is national and university-led: since 2021 the Islamic Study Center (Pusat Pengajian Islam, PPI) of Universitas Nasional (UNAS), Jakarta, has convened a program named *Ekopesantren*, under the leadership of Fachruddin M. Mangunjaya — a figure whose engagement with *pesantren*-based environmental jurisprudence dates to the mid-2000s, when he facilitated environmental-jurisprudence (*fiqh lingkungan*) training among 33 *pesantren* leaders.

The PPI UNAS *Ekopesantren* program is the most institutionally visible of the three modes, and the richest in disclosed empirical detail. It closed its inaugural three-year cycle on 14 June 2024 with an award ceremony at the UNAS Auditorium in Jakarta, at which 13 of a disclosed 50 participating *pesantren* across Java and Sumatra — together said to enrol approximately 76,000 *santri* — were recognized across ten formally named program categories (rm.id, 2024; Universitas Nasional, 2024). The program's disclosed partners and financiers include Indonesia's Directorate of Diniyah Education and Pesantren, the John Templeton Foundation, ICRS Universitas Gadjah Mada, the Rufford Foundation, Yayasan KEHATI, the Hajj Fund Management Agency (BPKH), Adira Finance Syariah, FOLU Net Sink 2030, and UNEP itself. In June 2025, UNEP's own *Al-Mizan* documentation referenced *Ekopesantren* as a model "sustainable lifestyle roadmap based on culture and religion" (UNEP, n.d.) — a

rare instance of an Indonesian faith-based education program receiving explicit multilateral recognition.

The small but growing scholarly literature on eco-pesantren has, so far, been descriptive and largely single-case. Conceptual and library-research syntheses propose normative “pillars” that an eco-pesantren curriculum ought to contain (Widodo, 2026), while empirical studies document, through interviews conducted at one institution, how a particular pesantren’s practices can be read as supporting several SDGs at once (Bintang Kejora et al., 2025). Foundational work on Islamic environmentalism in Indonesia has documented the grassroots emergence of religiously framed conservation collaboration among ulama, pesantren, and conservation NGOs (Mangunjaya & McKay, 2012), and normative theological work has laid out the broader case for an Islamic ecological ethic (Khalid, 2019). None of this literature, however, turns a critical eye on the operating logic of a certification and award movement itself – on how such a movement translates diffuse religious-ethical commitments into a finite set of trackable, comparable, awardable categories; on whether that translation maps cleanly, or only partially, onto the specific target-level architecture of the SDGs; or on what the movement’s own disclosed numbers reveal about its representativeness within Indonesia’s vast and Java-concentrated pesantren sector.

This study fills that gap by treating the Ekopesantren movement not primarily as pedagogical content to be described, but as an instance of what the anthropology of accountability calls audit culture (Strathern, 2000) intersecting with what media theory calls datafication (van Dijck, 2014): the transformation of a domain of professional or moral practice – here, Islamic environmental ethics – into a system of quantified, comparable, certifiable performance metrics. Reading the movement’s own vocabulary of “web-tracking,” ten scored “categories,” and an annual “award” through this lens allows the ten categories to be treated as data: they can be mapped, target by target, onto the SDG framework (United Nations General Assembly, 2015), and the movement’s disclosed scale can be benchmarked against Indonesia’s national pesantren statistics.

Three research questions guide the study. RQ1: How does the Ekopesantren movement operationalize Islamic environmental ethical constructs – khalifah, mīzān, amānah – into a trackable system of program categories? RQ2: How do these operational categories align, and where do they fail to align, with specific SDG targets? RQ3: What does the movement’s own disclosed scale, composition, and case history reveal about the reach, representativeness, and risks of a religiously framed environmental audit regime in Indonesia? The paper’s contribution is threefold. Theoretically, it proposes “religious audit ecology” as a concept synthesizing Islamic environmental ethics with audit-culture and datafication theory. Empirically, it provides the first indicator-level SDG mapping and corpus-based reconstruction of a UN-referenced Indonesian eco-pesantren initiative. Practically, it offers concrete, evidence-based recommendations to the movement’s own organizers and to policymakers at the Ministry of Religious

Affairs. Section 2 develops the theoretical framework; Section 3 details the qualitative document-analysis and netnography design; Section 4 presents findings; Section 5 discusses their theoretical and practical implications; Section 6 concludes.

LITERATURE REVIEW

Islamic Environmental Ethics and Their Legal Instruments

Islamic environmental thought is conventionally organized around three ethical constructs. Khalifah designates humanity's vice-regency or stewardship over creation; *mizān* names the Qur'anic principle of created balance, which human action can uphold or disturb; and *amānah* frames the natural world as a trust for which humanity is accountable (Khalid, 2019; Mangunjaya & McKay, 2012). These constructs are the shared vocabulary of the eco-pesantren literature reviewed below, and, as Section 2.5 argues, they are also the raw ethical material that the Ekopesantren movement operationally translates into its ten program categories.

In Indonesia, these constructs have been progressively codified into positive religious-legal instruments through the fatwa (religious ruling) mechanism of the Indonesian Council of Ulama (Majelis Ulama Indonesia, MUI): Fatwa No. 22/2011 on environmentally friendly mining, Fatwa No. 4/2014 on the preservation of endangered species for ecosystem balance, and Fatwa No. 41/2014 on waste management to prevent environmental damage (MUI, 2011, 2014a, 2014b). Each fatwa addresses one discrete environmental domain – extraction, biodiversity, waste – rather than environmental ethics in the abstract. This domain-by-domain structure within Islamic legal reasoning itself already prefigures the kind of categorization that later becomes explicit, and considerably more granular, in the Ekopesantren program's ten tracked categories (Section 4.2).

This domestic codification runs parallel to regional and global Islamic policy instruments. The 2019 Rabat Declaration on the Promotion of Cultural and Religious Roles in the Protection of the Environment and Achieving Sustainable Development was adopted at the Eighth International Conference of Environment Ministers of the Islamic World, convened under the Islamic World Educational, Scientific and Cultural Organization (ICESCO, 2019). Five years later, UNEP's Al-Mizan Covenant for the Earth (UNEP, n.d.) extended this trajectory to the global multilateral stage – and, as noted above, explicitly named Indonesia's Ekopesantren initiative as a partner program within it.

Eco-Pesantren as a Plural Field of Practice

"Eco-pesantren" is not a single program but a plural field comprising at least three modes of environmental legitimation, introduced in Section 1 and formalized in Figure 2 (Section 4.4): independent and organic traditions that pre-date formal certification (Pabelan; Annuqayah), provincial government schemes (East Java's Eco Pesantren award), and the national, university-led Ekopesantren program of PPI UNAS. The existing academic literature has so far engaged only the first mode and, within it, only single institutions.

Widodo (2026), writing in *Studia Ecologiae et Bioethicae*, offers a qualitative library-research synthesis that proposes a four-pillar conceptual model for eco-pesantren – Green Curriculum, Green Learning, Green Activity, and Green Management – grounded explicitly in *khalifah*, *mizān*, and *amānah*. The model is deliberately conceptual: it synthesizes literature across sustainability education, Islamic environmental ethics, and pesantren studies, but does not analyze any specific institution's disclosed practice.

Bintang Kejora et al. (2025), writing in *Al-Ishlah: Jurnal Pendidikan*, provide the field's most detailed empirical case study to date: an interview-based examination of Al-Ashriyyah Nurul Iman in Bogor, a 38-hectare pesantren campus. The authors document a five-component model – an environment-based curriculum incorporating Islamic environmental fiqh, eco-campus land management using renewable energy and organic agriculture, inclusive community engagement, an institutional culture rooted in local Sundanese values, and circular-economy entrepreneurship converting waste into biogas, compost, and paving blocks – and assert that the institution's practice aligns with nine of the seventeen SDGs.

Mangunjaya and McKay (2012), writing in *Worldviews: Global Religions, Culture, and Ecology*, supply the field's foundational account: from the mid-2000s, Indonesian ulama, pesantren, conservation NGOs, and government agencies began to collaborate on religiously framed conservation initiatives, a grassroots movement in which Fachruddin Mangunjaya – later the founder of the Ekopesantren program examined in this study – was a central actor. Read together with the Ekopesantren program's own disclosed leadership, this article is less a piece of comparative literature than a direct institutional and biographical precursor.

The present study is positioned differently from all three. Where prior work is single-case, descriptive, and content-focused – asking what an eco-pesantren curriculum or campus contains – this study is corpus-based, multi-case (13 award-recognized pesantren and additional participating institutions across a national program), and structure-focused, asking how the movement itself scores, ranks, and legitimizes practice. This is a difference in analytical object, not merely of method.

The Sustainable Development Goals and the Turn to Faith-Based Delivery

The 2030 Agenda for Sustainable Development comprises 17 goals operationalized through 169 numbered targets (United Nations General Assembly, 2015). The targets most relevant to institutional environmental education and greening include SDG 4.7 (education for sustainable development and global citizenship), SDG 6.4 and 6.b (water-use efficiency and local water-management participation), SDG 7.2 and 7.3 (renewable energy share and energy-efficiency improvement), SDG 11.2 and 11.6 (sustainable transport and reduced environmental impact of cities), SDG 12.5 (waste reduction through prevention, reduction, recycling, and reuse), SDG 13.2 (integrating climate measures into institutional planning), and SDG 15.1, 15.3,

15.5, and 15.7 (terrestrial ecosystem conservation, land degradation, biodiversity loss, and poaching/trafficking of protected species).

Religious actors are increasingly framed within this architecture as SDG “delivery partners” under SDG 17 (partnerships for the goals) – a framing evidenced institutionally by UNEP’s own Al-Mizan initiative. This framing carries a methodological risk that this study addresses directly. A broad claim of “alignment” with a given SDG can be asserted at the level of that goal’s title (“clean water,” “climate action”) without being checked against the specific wording of its numbered targets; Bintang Kejora et al.’s (2025) claim that a single pesantren’s practice “supports” nine SDGs, for instance, is asserted at goal-title level. Section 4.2 (Table 3) instead maps the Ekopesantren movement’s ten categories onto specific numbered targets, and Section 5.2 argues that this target-level standard should be adopted more widely across the eco-pesantren literature.

Audit Culture and Datafication as Analytical Lenses

Strathern’s (2000) concept of audit culture, developed from an anthropological study of higher-education accountability regimes, describes the spread of formal, comparable, externally verifiable performance measures across professional and moral domains once governed primarily by trust and situated judgment. Its central risk is that the properties made visible for audit – publication counts, certification badges, award titles – can come to substitute for the substantive virtue or competence they were originally meant to represent, simply because what is measured is what becomes actionable, fundable, and comparable.

Van Dijck’s (2014) concept of datafication, developed from media and platform studies, describes the parallel transformation of previously unquantified dimensions of social life – behavior, sentiment, belief, practice – into a stream of trackable, comparable data points, and the ideological work that “dataism” performs in treating such data as a neutral, objective proxy for a more complex underlying reality.

This study argues that the Ekopesantren movement’s self-described “web-tracking” mechanism, its ten named categories, and its annual award constitute a paradigm case of audit culture and datafication applied to religious environmental practice – a combination not yet examined in either literature, since Strathern’s and van Dijck’s frameworks originate, respectively, in the anthropology of university accountability and the sociology of digital platforms, not in the study of faith-based environmental education in the Global South.

As a structurally analogous secular comparator, the internationally franchised Eco-Schools programme, coordinated by the Foundation for Environmental Education and better known by its Green Flag award, offers a criterion-based school environmental audit and certification system operating in dozens of countries (Foundation for Environmental Education, n.d.). The comparison sharpens what is distinctive in the Ekopesantren case: the substitution of a religious ethical vocabulary – *khalīfah*, *mīzān*, *amānah* – for

Eco-Schools' secular sustainability-literacy vocabulary, layered onto a structurally similar scoring-and-award architecture.

Conceptual Framework

Figure 1 formalizes the argument of Sections 2.1–2.4 as a five-tier pipeline. Islamic ethical-textual sources and their fatwa instruments are operationally translated — through education and training, web-tracking, seminars, and a massive open online course (MOOC) — into ten trackable program categories. These categories generate outcomes that can be mapped onto SDG targets. Performance on them feeds an audit-and-certification loop, the annual award. Award outcomes, in turn, generate external legitimacy — UNEP recognition, government endorsement, philanthropic donor renewal — that feeds back into, and helps finance, the next cycle of operational translation. The figure also marks, as this study's specific critical contribution, the tension between that legitimacy loop and the movement's still-narrow representativeness and incomplete SDG coverage, developed empirically in Section 4 and interpreted theoretically in Section 5.

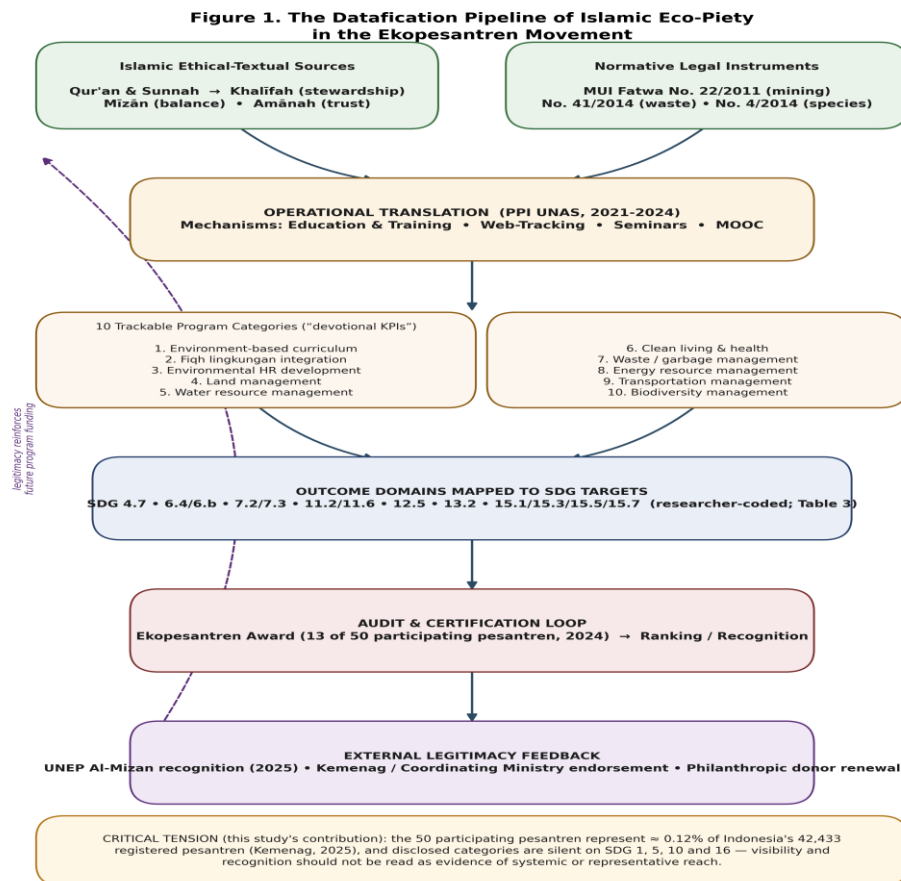


Figure 1. The Datafication Pipeline of Islamic Eco-Piety in the Ekopesantren Movement.

Conceptual diagram showing the five-tier pipeline from Islamic ethical-textual sources and MUI fatwa instruments, through PPI UNAS's operational translation mechanisms (education/training, web-tracking, seminars, MOOC), into ten trackable program categories, mapped to SDG targets, feeding an

audit-and-certification loop whose external legitimacy (UNEP recognition, government endorsement, donor renewal) reinforces future program funding. Source: developed by the authors from the study's document and netnography corpus (Table 1).

METHODOLOGY

Research Design

This study uses a qualitative design combining document analysis and netnography — the systematic qualitative analysis of naturally occurring, publicly accessible digital organizational and community content (Kozinets, 2010). This design is appropriate because the object of inquiry — an institutionalized public movement that enacts and self-documents its practice through websites, press materials, award ceremonies, and legal-religious texts — is constituted in and through public discourse, rather than through private, interior experience that would require interview or survey access.

No human-subject interviews, surveys, or experimental procedures were conducted for this study; all data are drawn from documents and content already in the public domain. This is a deliberate design choice appropriate to the research questions, which concern the movement's public operating logic and disclosed self-representation rather than individual santri or kyai experience. It is also an acknowledged boundary of what the design can speak to, discussed further in Sections 3.5 and 5.5.

Data Corpus and Sources

The corpus was constructed through purposive, criterion-based sampling of publicly accessible primary sources directly documenting: (a) the PPI UNAS Ekopesantren program and its 2024 award; (b) the movement's own web-based self-description, including its mission statements and named mechanisms; (c) the movement's referenced international recognition; (d) the three MUI environmental fatwas that function as normative-legal scaffolding for Indonesian Islamic environmental ethics; and (e) independent national pesantren statistics used for benchmarking. The retrieval window spans sources published between 2011 and 2026; all sources were accessed and archived by the research team in September 2026. Table 1 summarizes the corpus. Academic literature reviewed in Section 2 (Widodo, 2026; Bintang Kejora et al., 2025; Mangunjaya & McKay, 2012; Khotijah & Mushawir, 2024) functioned as comparative and triangulating literature rather than as primary corpus documents, and is listed separately in the References.

Table 1. Data Corpus Composition (Document Analysis and Netnography)

Document category	Representative source(s)	n	Date range
Institutional/media documents on the Ekopesantren program and its 2024 award	rm.id (2024); Universitas Nasional (2024); Ekopesantren organizational website (n.d.); goodnewsfromindonesia.id (2025); jatim.viva.co.id (n.d.); Balai Pendidikan Pondok Pesantren Pabelan (2023)	6	2023–2026 (events reported: 2021–2025)

Document category	Representative source(s)	n	Date range
Legal-religious normative texts (MUI environmental fatwas)	MUI (2011, 2014a, 2014b)	3	2011–2014
International policy / recognition document	UNEP (n.d.)	1	2024–2025
Independent government-sourced statistics	Databoks/Katadata (2025)	1	2025
Total primary corpus		11	2011–2026

Note. Academic literature discussed in Section 2 (Widodo, 2026; Bintang Kejora et al., 2025; Mangunjaya & McKay, 2012; Khotijah & Mushawir, 2024) was used as comparative and triangulating literature, not as primary corpus documents, and is not counted above. All sources retrieved and archived by the research team in September 2026; full URLs are given in the References.

Source: compiled by the authors from the sources listed in the References.

Analytical Procedure

The corpus was analyzed using directed qualitative content analysis (Hsieh & Shannon, 2005), in which a pre-existing theoretical structure – the khalifah/mizān/amānah triad, the audit-culture and datafication lens, and the numbered SDG target list – guided coding, while remaining open to categories or tensions emergent from the data, such as the program’s Java-and-Sumatra-only disclosed footprint and the pre-existing-versus-incentivized distinction visible in the Pabelan and Sunan Pandanaran cases.

Coding proceeded in three passes. The first was open descriptive coding of what each corpus document factually discloses: dates, named actors, numbers, and program categories. The second was directed coding of the ten disclosed program categories against SDG target language and against the khalifah/mizān/amānah triad, producing Table 3. The third was cross-case comparison of the three general-category award winners and of the “dual-certified” and “pre-existing tradition” cases, surfacing the scale, representativeness, and performativity themes reported in Sections 4.3 through 4.5.

Trustworthiness

Three procedures support the trustworthiness of the analysis. First, triangulation: the 2024 award ceremony and its associated statistics were cross-checked across independently published outlets reporting the same event (rm.id, 2024; Universitas Nasional, 2024; and the organizational Ekopesantren website), and national pesantren figures were cross-checked against an independent government-sourced statistical report (Databoks/Katadata, 2025) rather than relying solely on the movement’s own framing of its national significance. Second, an audit trail: Table 1 records the source, URL, publication date, and retrieval date for every primary document category, allowing replication of the corpus. Third, analytic transparency: throughout Section 4,

claims are explicitly labeled as either organizer self-disclosure, independently corroborated fact, or the researchers' own analytic coding — the SDG-target mapping in Table 3, for instance, is presented as a researcher-constructed interpretive mapping, since PPI UNAS has not published its own indicator-level SDG crosswalk.

Ethical Considerations and Design Limitations

Because the study involves no human participants and uses only material already disclosed in the public domain, formal ethics committee review was not required. All named individuals appear solely in their public, official capacities as already reported in publicly available sources, and no private or personal information is disclosed. The central limitation of the design, revisited in Section 5.5, is that it can verify what the movement discloses and how that disclosure is structured, but cannot independently verify the movement's internal monitoring data — for example, whether the disclosed figure of 76,000 santri reflects an audited count. This limitation is itself consistent with, and further motivates, the study's audit-culture critique.

RESEARCH RESULT

The Institutionalization of Eco-Pesantren Practice, 2004–2026

Table 2 reconstructs the timeline of Indonesia's institutionalized eco-pesantren field from the corpus and triangulating literature. Two features stand out. First, the movement's religious-legal scaffolding (the 2011 and 2014 MUI fatwas) predates its organizational vehicle (the 2021 PPI UNAS program) by seven to ten years, meaning the program could draw on an already-settled normative vocabulary rather than having to construct one. Second, the movement's international recognition (the 2025 UNEP reference) arrived barely a year after its first award cycle concluded, compressing what might otherwise be a much longer legitimization process — a compression this study returns to in Section 5.3 as part of a broader "recognition-scale gap."

Table 2. Timeline: The Institutionalization of Eco-Pesantren Practice in Indonesia, 2004–2026

Period	Event	Source
2004–2006	Facilitation of environmental jurisprudence (fiqh lingkungan) training among 33 pesantren leaders, laying institutional groundwork for later programs	Mangunjaya & McKay (2012) lineage
2011	MUI issues Fatwa No. 22/2011 on environmentally friendly mining	MUI (2011)
2014	MUI issues Fatwa No. 4/2014 (endangered species) and No. 41/2014 (waste management)	MUI (2014a, 2014b)
2018 (documented)	Pondok Pesantren Pabelan's own organic-farming and waste programs documented under its self-branded "Ekopesantren" practice, independent of	Balai Pendidikan Pondok Pesantren Pabelan (2023)

Period	Event	Source
	any national award scheme	
2019	Rabat Declaration adopted by OIC/ICESCO environment ministers, elevating cultural and religious roles in environmental protection to a multilateral Islamic policy instrument	ICESCO (2019)
2021	PPI UNAS (Universitas Nasional) launches the national Ekopesantren program	Ekopesantren organizational website; rm.id (2024)
14 June 2024	13 of 50 participating pesantren ($\approx$ 76,000 santri; Java and Sumatra) recognized across 10 categories at the Ekopesantren Award ceremony, Jakarta	rm.id (2024); Universitas Nasional (2024)
2025	Al-Ishlah: Jurnal Pendidikan publishes single-case SDG-alignment study of Al-Ashriyyah Nurul Iman	Bintang Kejora et al. (2025)
23 June 2025	UNEP Al-Mizan documentation references Ekopesantren as a sustainable-lifestyle model	UNEP (n.d.)
2025	Kemenag-sourced statistics put national pesantren count at 42,433 (64% Java-concentrated)	Databoks/Katadata (2025)
2026	Studia Ecologiae et Bioethicae publishes a four-pillar conceptual model of eco-pesantren	Widodo (2026)

Note. Rows compiled from the primary corpus (Table 1) and triangulating academic literature (Section 2). All dates as disclosed in the cited sources.

Source: compiled by the authors.

The Ten Categories as “Devotional KPIs”

The Ekopesantren program discloses ten named categories against which participating pesantren are tracked and, in the award cycle, recognized: environment-based curriculum; Islamic environmental jurisprudence (fiqh lingkungan) integration; environmental human-resource development; pesantren land management; water resource management; clean living and health management; waste and garbage management; energy resource management; transportation management; and biodiversity management. Table 3 reports the researchers’ own directed-content-analysis mapping of each category onto its nearest SDG target(s) and its dominant Islamic ethical construct.

Table 3. Mapping the Ten Ekopesantren Categories onto SDG Targets and Islamic Ethical Constructs (Researcher-Coded)

#	Program category	Nearest SDG target(s)	Dominant construct
1	Environment-based curriculum	SDG 4.7 – education for sustainable development	Amānah (trust in transmission)

#	Program category	Nearest SDG target(s)	Dominant construct
2	Fiqh lingkungan (environmental jurisprudence) integration	SDG 4.7; SDG 16.b – non-discriminatory institutions	Mizān (jurisprudential balance)
3	Environmental human-resource development	SDG 4.4; SDG 8.6 – skills and youth employment	Amānah
4	Pesantren land management	SDG 15.1; SDG 15.3 – terrestrial ecosystems, land degradation	Khalīfah (stewardship)
5	Water resource management	SDG 6.4; SDG 6.b – water-use efficiency, local participation	Mizān
6	Clean living and health management	SDG 3.9; SDG 6.2 – health, sanitation/hygiene	Khalīfah
7	Waste / garbage management	SDG 11.6; SDG 12.5 – waste reduction, recycling/reuse	Khalīfah / Mizān
8	Energy resource management	SDG 7.2; SDG 7.3 – renewable share, efficiency	Khalīfah
9	Transportation management	SDG 11.2; SDG 13.2 – sustainable transport, climate planning	Mizān
10	Biodiversity management	SDG 15.5; SDG 15.7 – biodiversity loss, poaching/trafficking	Khalīfah (cf. MUI Fatwa No. 4/2014)

Note. Researchers' own analytic coding based on directed content analysis of the category names and descriptions disclosed in the study's corpus (Table 1); PPI UNAS has not published an official indicator-level SDG crosswalk. No disclosed category maps onto SDG 1, 5, 10, or 16 (see Section 4.2).

Source: compiled by the authors.

Two patterns emerge from Table 3. First, the ten categories cluster tightly around SDG 4, 6, 7, 11, 12, 13, and 15 – precisely the targets most associated internationally with institutional environmental education and campus greening (Section 2.3) – indicating a coherent, well-matched, if narrow, translation of ethics into trackable practice. Second, none of the ten named categories maps onto SDG 1 (no poverty), SDG 5 (gender equality), SDG 10 (reduced inequalities), or SDG 16 (peace, justice, and strong institutions), despite two features of the movement's own disclosed context that make this absence noteworthy: pesantren are structurally gender-segregated institutions, organized around separate santri and santriwati wings, that could readily host a gender-disaggregated environmental-leadership category; and several award-winning pesantren already run cooperative or economic-empowerment activities – Sunan Pandanaran's women's cooperative enterprise, for instance (Khotijah & Mushawir, 2024) – that exist in practice but are not captured, tracked, or rewarded by any of the ten named categories.

Scale and Representativeness

Table 4 benchmarks the Ekopesantren program's disclosed scale against independent national statistics. The 50 participating pesantren represent approximately 0.12% of Indonesia's 42,433 registered pesantren (Databoks/Katadata, 2025). The program's disclosed geographic footprint is limited to Java and Sumatra, even though pesantren operate in every Indonesian province; because Java alone already hosts approximately 64% of the national total, the program's footprint mirrors, rather than corrects, Indonesia's existing Java-centric concentration of pesantren. Of the 50 participants, 13 (26%) were named as general or category-specific winners in 2024. And the disclosed reach of approximately 76,000 santri, while substantial in absolute terms, is a small fraction even of a single province's resident student population: East Java alone is reported to host more than 320,000 resident santri (Databoks/Katadata, 2025).

Table 4. Scale and Representativeness of the Ekopesantren Program

Metric	Ekopesantren program (disclosed)	National / independent benchmark	Observation
Participating pesantren	50	42,433 registered pesantren (Kemenag, via Databoks/Katadata, 2025)	≈ 0.12% of national total
Geographic footprint	Java and Sumatra only (as disclosed)	Pesantren present in every province; Java alone ≈ 64% of national total	Program footprint mirrors, rather than corrects, national Java-centric concentration
Awarded ("top-performing") pesantren	13	50 participants	26% of participants named as general or category winners
Santri reached (disclosed)	≈ 76,000	East Java alone hosts > 320,000 resident santri (Databoks/Katadata, 2025)	Disclosed reach is a small fraction even of one province's resident santri population

Note. "Disclosed" figures are as reported by the program organizer (PPI UNAS) via the sources in Table 1 and have not been independently audited (see Section 3.5).

Source: compiled by the authors from Databoks/Katadata (2025) and the primary corpus (Table 1).

Case Vignettes: Heterogeneity Behind a Uniform Award

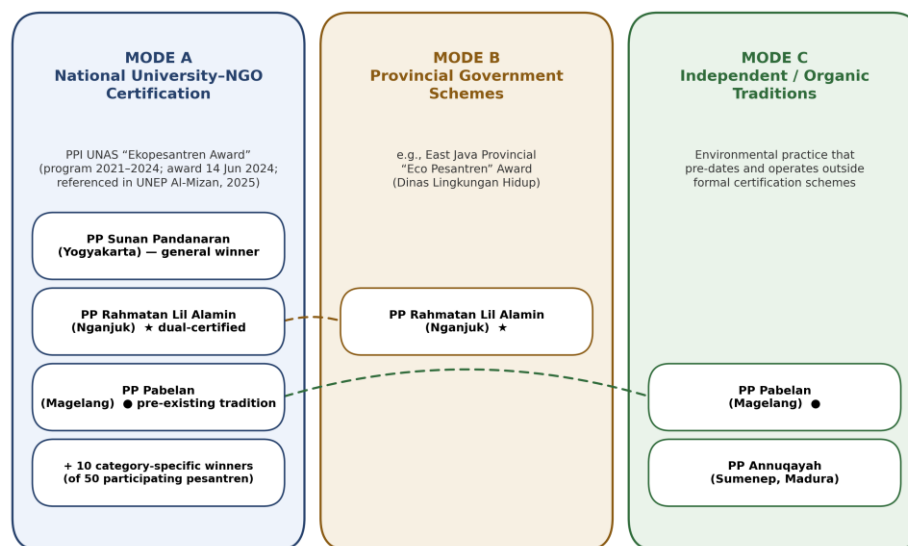
The three general-category winners named at the June 2024 ceremony illustrate a heterogeneity that the award's single-tier "winner" label does not communicate. Pondok Pesantren Sunan Pandanaran (Yogyakarta) is documented, in an independent academic case study, as running aquaponics cultivation, a mini zoo, a women's cooperative enterprise, and a broader drive toward financial self-sufficiency, framed by its authors as fulfilling four Education-for-Sustainable-Development principles; the institution now operates 15 branches (Khotijah & Mushawir, 2024; goodnewsfromindonesia.id,

2025). Pondok Pesantren Pabelan (Magelang) brands its own organic-farming and waste-management programs “Ekopesantren” independently of the 2021–2024 PPI UNAS cycle, tracing the practice to the pesantren’s founder-era ethos (Balai Pendidikan Pondok Pesantren Pabelan, 2023) – illustrating that the national award can recognize rather than originate decades-old institutional practice. Pondok Pesantren Rahmatan Lil Alamin (Nganjuk) was separately recognized under East Java’s own provincial “Eco Pesantren” award (jatim.viva.co.id, n.d.), making it “dual-certified” across the national and provincial modes identified in Figure 2 – evidence that a single pesantren’s practice can be independently re-certified by two unconnected audit regimes without those regimes being harmonized with one another.

Read together, the three general-category winners show that a formally uniform award – one ceremony, one set of ten categories – sits atop a substantively heterogeneous set of institutional histories: some newly incentivized by the 2021–2024 program, some independently decades-old, and at least one multiply audited by separate national and provincial regimes.

Figure 2. The Plural Field of Eco-Pesantren Practice in Indonesia

(three co-existing, only partly overlapping modes of environmental legitimization)



★ same institution recognised in both Mode A and Mode B (multi-tier legitimization) ● practice traced to the pesantren’s own founder-era tradition, independent of Mode A’s 2021–2024 award cycle

Note. Diagram synthesises the study’s netnographic and document corpus (Table 1). Mode A boundaries and awardee list follow the PPI UNAS Ekopesantren Award 2024 disclosure; Mode B follows East Java provincial reporting; Mode C follows institutional/academic sources on Pabelan and Annuqayah. The three modes are not mutually exclusive, as the ★ and ● linkages show.

Figure 2. The Plural Field of Eco-Pesantren Practice in Indonesia.

Conceptual diagram of three co-existing, only partly overlapping modes of eco-pesantren legitimization in Indonesia – national university–NGO certification (PPI UNAS Ekopesantren Award), provincial government schemes (e.g., East Java’s Eco Pesantren award), and independent/organic traditions that pre-date formal certification (Pabelan; Annuqayah) – with dashed linkages marking institutions recognized under more than one mode.

Source: developed by the authors from the study’s document and netnography corpus (Table 1).

The Web-Tracking Mechanism and Its International Uptake

The Ekopesantren program discloses four operating mechanisms: Education and Training; Web-Tracking; Seminars; and a MOOC. “Web-Tracking” is the organizer’s own term for ongoing monitoring and scoring of pesantren environmental performance, and is the direct empirical referent of this study’s datafication argument (Section 2.4): it is the mechanism through which qualitative religious-environmental practice is rendered as trackable data.

The program’s disclosed donor and partner composition – the Directorate of Diniyah Education and Pesantren, the John Templeton Foundation, ICRS Universitas Gadjah Mada, the Rufford Foundation, Alliance Ummah for Earth, Asia Cyber University, Yayasan KEHATI, BPKH, UNEP, Adira Finance Syariah, and FOLU Net Sink 2030 – is predominantly international philanthropic and multilateral, alongside two domestic institutions: Adira Finance Syariah, an Islamic-finance company, and BPKH, Indonesia’s sovereign hajj-fund management body. Sustained domestic public budget financing is not prominent among the disclosed partners. The June 2025 UNEP reference frames Ekopesantren within a broader “sustainable lifestyle roadmap based on culture and religion” – a framing that elevates the program’s international visibility considerably beyond what its disclosed 0.12% national coverage (Table 4) would, on its own, suggest.

DISCUSSION

Answering RQ1: Operationalization as “Devotional KPI-ification”

The Ekopesantren movement succeeds, empirically, in translating three abstract ethical constructs into ten concrete, trackable, comparable categories spanning curriculum, jurisprudence, human resources, land, water, health, waste, energy, transport, and biodiversity – an achievement worth crediting, since abstract religious-ethical commitments notoriously resist operational translation. Theoretically, this translation is best read as a religious instance of what Strathern (2000) calls audit culture and what van Dijck (2014) calls datafication: *khalifah*, *mizān*, and *amānah* do not disappear, but are re-articulated as scoreable performance domains – what this study terms devotional KPIs – whose achievement becomes legible to funders, government partners, and international bodies precisely because it has been rendered as data. This extends both frameworks into a domain – faith-based environmental education in the world’s largest Muslim-majority country – that neither literature has previously examined, and it extends the eco-pesantren literature (Widodo, 2026; Bintang Kejora et al., 2025) beyond content description into a structural and critical register.

Answering RQ2: Real but Partial and Unindexed SDG Alignment

The target-level mapping in Table 3 shows the movement’s ten categories genuinely cluster around specific, well-matched SDG targets – 4.7; 6.4/6.b; 7.2/7.3; 11.2/11.6; 12.5; 13.2; and 15.1/15.3/15.5/15.7 – a stronger and more specific form of evidence than a goal-title-level claim such as “aligned with nine SDGs” (cf. Bintang Kejora et al., 2025). This study argues that target-

level mapping should be treated as a methodological standard for the wider eco-pesantren literature, since goal-title alignment can be asserted almost regardless of a program's actual content.

At the same time, the complete absence of SDG 1, 5, 10, and 16 from the ten named categories is a substantive, not merely a labeling, gap. Pesantren's gender-segregated structure, and cases like Sunan Pandanaran's already-existing women's economic cooperative, show that SDG 5-relevant practice exists on the ground without being named, tracked, or rewarded by the movement's own audit categories — precisely the kind of invisibility that audit-culture theory predicts, since what is not counted is what an audit regime cannot see, reward, or diffuse as replicable best practice across its network.

Answering RQ3: A Recognition-Scale Gap, and the Discovery Versus Creation of Virtue

The 0.12% national-coverage figure (Table 4), set against the movement's high-profile UNEP reference, exposes what this study terms a recognition-scale gap: international and ministerial recognition has outpaced the movement's still-small and still Java/Sumatra-concentrated institutional footprint, which — far from correcting Indonesia's already Java-centric pesantren distribution — currently mirrors it.

The Pabelan case shows that an audit regime cannot always distinguish between discovering pre-existing virtue and creating new compliance incentives; the Rahmatan Lil Alamin case shows that, absent harmonization, multiple audit regimes — national and provincial — can independently re-certify the same institution without either regime's score meaning something different from the other's. Both observations extend Strathern's (2000) original caution — that audit regimes can substitute visibility for substance — from the university-accountability context in which it was developed into the religious-environmental-education context examined here.

Compared with the secular, globally franchised Eco-Schools/Green Flag model (Foundation for Environmental Education, n.d.), the Ekopesantren movement adds a distinctive source of motivational legitimacy — religious authority and textual sanction, via the fatwa mechanism and the khalifah/mīzān/amānah vocabulary, documented elsewhere as a powerful driver of pro-environmental behavior change in Muslim communities (Khalid, 2019; Mangunjaya & McKay, 2012) — while importing the same structural risks long documented in secular school-certification audit culture: metric-driven performativity, uneven representativeness, and donor dependency.

Practical and Policy Implications

Four recommendations follow directly from the findings. First, PPI UNAS and its Kemenag partners should publish an indicator-level, rather than only a category-label, SDG crosswalk, together with disaggregated per-pesantren tracking data, enabling independent verification consistent with the movement's own "web-tracking" rhetoric. Second, the program should pursue deliberate geographic expansion beyond Java and Sumatra — potentially by linking with Kemenag's existing national pesantren database of 42,433

institutions — to close the recognition-scale gap identified in Section 5.3. Third, the program should explicitly incorporate SDG 5/1/10/16-relevant categories: a santriwati-led environmental-leadership category, a category recognizing pesantren-based economic inclusion of surrounding lower-income communities, and a transparent grievance or appeals mechanism for the award process itself, closing the alignment gap identified in Section 5.2. Fourth, the program should pursue diversified and sustained domestic financing, beyond its currently disclosed international philanthropic donor base, to reduce dependency risk now that its inaugural three-year cycle (2021–2024) has concluded.

Limitations

This study's findings describe what the Ekopesantren movement discloses in the public domain and how that disclosure is structured; they cannot verify the movement's internal, non-public monitoring and evaluation records, nor speak to individual santri or kyai lived experience, which would require interview-based fieldwork. The corpus is necessarily shaped by what the organizing institutions and media outlets have chosen to publish; this is an acknowledged boundary of a document-analysis and netnography design, and is, at the same time, itself a finding consistent with this study's audit-culture argument — movements make visible precisely what is publishable, fundable, and awardable. Finally, the SDG mapping in Table 3 reflects the researchers' own interpretive judgment rather than an official crosswalk; alternative reasonable target assignments are possible, and the coding logic is reported transparently (Section 3.3) to allow scrutiny and replication.

CONCLUSION AND RECOMMENDATION

This study set out to move beyond description of eco-pesantren curricular content and examine, instead, the operating logic of Indonesia's most institutionally prominent and internationally recognized eco-pesantren initiative, the PPI UNAS Ekopesantren program. Using qualitative document analysis and netnography of eleven primary sources, triangulated against national pesantren statistics and the existing academic literature, the study found that the movement operationalizes *khalifah*, *mizān*, and *amānah* into ten trackable “devotional KPIs” that align substantively, at target level, with seven SDGs, while remaining silent on four others whose relevance to pesantren life — gender, poverty, inequality, institutional justice — is not in doubt. The study further found that the movement's disclosed footprint of 50 pesantren, roughly 0.12% of Indonesia's 42,433 registered institutions, sits in tension with the international recognition it received within little more than a year of its first award cycle concluding, and that its award, however uniformly presented, recognizes an institutionally heterogeneous set of pesantren, from decades-old independent practice to newly incentivized adopters.

The study's contribution is threefold. Theoretically, it proposes religious audit ecology as a concept synthesizing Islamic environmental ethics with audit-culture and datafication theory, extending both literatures into a domain neither has previously examined. Empirically, it provides the first indicator-

level SDG crosswalk and corpus-based reconstruction of a UN-referenced Indonesian eco-pesantren initiative, going beyond the single-case, goal-title-level claims that have characterized the field to date. Practically, it offers PPI UNAS, Kemenag, and comparable initiatives elsewhere four concrete, evidence-based recommendations for closing the alignment and representativeness gaps identified. As religious institutions are increasingly courted as SDG delivery partners worldwide, the Ekopesantren case is an early and instructive instance of what such partnerships look like once faith is rendered auditable – and of how much remains to be made visible before that audit can be called complete.

ADVANCED RESEARCH

Three directions follow. First, interview- and observation-based ethnographic follow-up at specific award-winning and non-winning pesantren would test whether award status corresponds to independently observable practice. Second, comparative analysis across the national, provincial, and independent modes identified in Figure 2 – including pesantren such as Rahmatan Lil Alamin, recognized under more than one mode – would clarify how these unharmonized regimes interact. Third, longitudinal tracking of the Ekopesantren program, now that its disclosed inaugural three-year cycle has concluded, would examine post-award sustainability and whether donor-funded momentum persists absent a new grant cycle.

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