

Edo Ferdian¹, Khairil Anwar², Mowafg Abraham Masuwd³

GREEN HALAL PARADIGM IN INDONESIA'S SUSTAINABLE HALAL INDUSTRY: Integrating Maqāṣid And Halal Regulation

^{1,2}UIN Palangka Raya, Indonesia

³University of Zawia, Libya

Email: edo.2510310062@uin-palangkaraya.ac.id¹, khairil.anwar@uin-palangkaraya.ac.id², masuwd@zu.edu.ly³

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Abstract: Indonesia's halal product assurance system provides strong legal certainty for halal integrity and Muslim consumer protection; however, ecological performance indicators remain insufficiently integrated into the substantive architecture of halal governance. This study aims to formulate a green halal paradigm integrating maqāṣid al-syarī'ah, Islamic environmental ethics, and Indonesia's Halal Product Assurance (JPH) regulation within a unified normative-regulatory framework. Using normative-doctrinal legal research, the study applies statutory, conceptual, and philosophical-normative approaches supported by a structured review of 27 documentary sources. Data were analyzed through content analysis, conceptual analysis, and normative legal reasoning. The findings show that green halal should not redefine the legal criteria of halal and haram, but should develop halal governance through a two-layer model: mandatory core halal assurance and complementary green halal sustainability assurance. Its originality lies in translating maqāṣid-based objectives and Islamic environmental ethics into measurable governance domains, including resource efficiency, waste management, sustainable packaging, supply-chain traceability, responsible sourcing, social accountability, and verifiable environmental claims. Practically, the framework proposes phased implementation through voluntary guidelines and sectoral pilots, verified supplementary assessment, and selective regulatory integration after empirical validation. BPJPH should coordinate implementation with LPHs, environmental and standardization institutions, industry actors, scholars, and consumer representatives. Future research should validate indicator relevance, weights, thresholds, auditability, costs, and SME readiness through Delphi studies, multi-criteria decision-making methods, and sector-specific pilot audits. Green halal therefore offers a measurable pathway from halal assurance toward halal sustainability assurance while preserving legal certainty and regulatory proportionality.

Keywords: Green Halal; Halal Product Assurance; Sustainable Halal Governance; Maqāṣid Al-Syarī'Ah; Environmental Sustainability

INTRODUCTION

Over the last two decades, the halal industry has undergone a significant transformation from being primarily associated with religious compliance into a multidimensional global economic ecosystem. Halal is no longer understood solely as a legal status determining whether a product is permissible for Muslim consumption; it has increasingly been associated with quality, safety, business ethics, consumer protection, lifestyle, and industrial competitiveness. This transformation is reflected in the expanding scope of the halal economy, which now encompasses food and beverages, pharmaceuticals, cosmetics, modest fashion, tourism, media and recreation, logistics, and Islamic finance. The *State of the Global Islamic Economy Report 2024/25* indicates continued growth in Muslim consumer expenditure across major sectors of the Islamic economy alongside an increasing orientation toward ethical and values-based consumption (DinarStandard, 2025). These developments suggest that the contemporary halal industry is entering a phase in which formal halal compliance increasingly intersects with broader demands for ethical responsibility and sustainability.

Despite this expansion, the growth of the halal industry has not always been accompanied by an equally systematic consideration of ecological responsibility. Existing halal assurance practices primarily safeguard the permissibility of ingredients, production processes, segregation, certification, labeling, and product integrity. These functions remain indispensable for protecting Muslim consumers. Nevertheless, a product may satisfy formal halal requirements while its broader production and distribution processes generate environmental problems, including excessive energy consumption, waste pollution, unsustainable packaging, resource depletion, or high-emission supply chains. This creates an important normative tension. Islamic teachings emphasize benefit (*maṣlaḥah*), balance (*mīzān*), trust (*amānah*), justice (*‘adl*), and the prevention of harm (*mafsadah*), whereas halal governance has traditionally concentrated more directly on determining and safeguarding the halal status of products. The issue, therefore, is not the inadequacy of halal certification in performing its primary legal function, but whether halal governance should develop a broader sustainability dimension capable of responding to the ecological consequences of contemporary industrial activities.

Recent scholarship addressing halal and sustainability can be critically grouped into three major research streams. The first focuses on sustainable halal supply chains and operational sustainability. Rejeb et al. (2021) map the economic, social, and environmental dimensions of halal food supply chains, while Kurniawati and Cakravastia (2023) demonstrate that sustainability remains insufficiently incorporated into halal supply-chain optimization and operations research. The second stream emphasizes technological innovation, traceability, and certification transparency. Bux et al. (2022), for example, demonstrate the potential contribution of blockchain and certification mechanisms to traceability, reliability, and sustainability in halal food systems. The third stream examines green practices and organizational or environmental sustainability, including factors affecting sustainable halal product performance and the relationship between green sustainability and corporate performance (Mabkhot, 2023; Rahman et al., 2024). Earlier

structured reviews similarly identified sustainability, innovation, technology, certification, and supply-chain management as increasingly important directions within halal scholarship (Secinaro & Calandra, 2021).

These studies make significant contributions within their respective domains; however, their limitations become apparent when examined against the normative-regulatory question addressed in this article. Sustainable halal supply-chain research is largely oriented toward operational, logistical, and managerial performance; technology-oriented studies primarily address traceability, information integrity, and certification efficiency; and green-practice studies tend to assess environmental or organizational performance. Such approaches demonstrate *how* halal industries may become more sustainable, but they do not fully establish *why* ecological responsibility should become part of the normative architecture of halal governance from the perspective of Islamic law. Conversely, scholarship on Islamic environmental values provides a normative basis for ecological responsibility but rarely translates those values into the institutional structure of halal product assurance. Accordingly, the reviewed literature has not yet adequately brought together *maqāṣid al-syarī'ah*, Islamic environmental ethics, and positive halal product assurance regulation within a single normative-regulatory framework. The gap is therefore not simply a lack of studies on halal sustainability; rather, it concerns the fragmentation between operational sustainability, Islamic normative reasoning, environmental ethics, and regulatory governance.

From the perspective of Islamic law, *maqāṣid al-syarī'ah* provides an important basis for bridging this fragmentation. *Maqāṣid* does not merely identify the objectives underlying individual legal rules, but also provides a purposive framework for evaluating whether social, economic, and institutional practices realize benefit and prevent harm. The classical protection of religion (*ḥifẓ al-dīn*), life (*ḥifẓ al-nafs*), intellect (*ḥifẓ al-'aql*), progeny (*ḥifẓ al-nasl*), and property (*ḥifẓ al-māl*) cannot be entirely detached from the ecological conditions necessary for human well-being. Environmental degradation may threaten health and life, food security, economic resources, intergenerational welfare, and the conditions necessary for sustainable human flourishing. Auda's (2008) systems approach to *maqāṣid al-syarī'ah*, with its emphasis on wholeness, multidimensionality, openness, and purposefulness, provides a conceptual basis for applying *maqāṣid* reasoning to contemporary and interconnected problems. Similarly, Nasir et al. (2022) demonstrate that environmental responsibility is compatible with the objectives of Shariah and that ecological protection may be understood within the wider pursuit of human and societal well-being. In this context, *ḥifẓ al-bī'ah* (environmental protection) can be understood not as an isolated addition that displaces the classical *maqāṣid*, but as an ecological dimension that supports their effective realization.

Islamic environmental ethics further strengthens this normative foundation. Principles such as *tawḥīd* emphasize the unity of creation; *khilāfah* places human beings in a position of responsible stewardship; *amānah* requires accountability in the use of natural resources; *mīzān* demands balance; and *'adl* rejects exploitation and unjust distribution of environmental harm (Nasir et al., 2022; Nasr, 1996). These principles deepen the meaning

of *ḥalālān ṭayyiban*. A product should not only satisfy the legal requirements of halal but should also embody, to the extent relevant to industrial governance, values of safety, cleanliness, quality, responsibility, and the avoidance of unnecessary harm. Nevertheless, Islamic environmental ethics alone does not provide an operational halal assurance mechanism. Its contribution is principally normative and moral. The challenge, therefore, is to connect this ethical framework with an enforceable or institutionally applicable halal governance system without conflating ecological performance with the classical legal determination of halal and haram.

This challenge is particularly relevant in Indonesia. Law Number 33 of 2014 concerning Halal Product Assurance, as subsequently amended, and Government Regulation Number 42 of 2024 concerning the Implementation of Halal Product Assurance provide the principal juridical and institutional architecture for halal assurance. These regulations govern essential aspects of the Halal Product Process, including materials, processing, storage, packaging, distribution, sales, presentation, certification, labeling, and supervision (Indonesia, 2014, 2024). The regulatory framework has significantly strengthened legal certainty and Muslim consumer protection. Furthermore, the *Indonesian Halal Industry Masterplan 2023–2029* positions the halal industry within a broader agenda of economic development and sustainability (KNEKS, 2023). However, a normative reading of the existing halal assurance framework indicates that ecological performance indicators—such as energy efficiency, waste reduction, environmentally responsible packaging, emissions, sustainable resource use, and broader life-cycle impacts have not yet been expressly constructed as substantive components of halal assurance. Thus, while the existing framework is strong in safeguarding halal integrity, it has greater room for development in safeguarding halal sustainability.

The inadequacy identified here should therefore be understood carefully. This article does not argue that conventional halal certification is legally defective, nor does it propose that environmentally suboptimal practices automatically render an otherwise halal product *haram*. Rather, the limitation lies in the scope of the existing conceptual and governance framework when confronted with contemporary sustainability challenges. Halal assurance primarily answers the question of whether a product complies with established halal requirements; sustainability governance asks additional questions about how the product is sourced, produced, distributed, consumed, and eventually managed as waste. Treating these two domains as entirely separate risks reducing Islamic environmental ethics to an aspirational discourse with little relevance to halal industrial governance. Conversely, simply attaching generic environmental standards to halal certification without an Islamic normative foundation risks producing a technical “green” addition that is conceptually disconnected from the purposes and ethics of Shariah.

To bridge this gap, this article proposes green halal as an integrative paradigm connecting three mutually reinforcing pillars: *maqāṣid al-syarī‘ah* as the philosophical-normative foundation, Islamic environmental ethics as the moral-ecological foundation, and halal product assurance regulation as the juridical-institutional foundation. This framework differs from previous approaches because sustainability is not treated merely

as an external managerial objective or technological improvement. Instead, ecological responsibility is normatively connected to the objectives and ethical values of Islamic law and then translated into the domain of halal governance. In this construction, *maqāṣid al-syarī'ah* explains the objectives to be protected, Islamic environmental ethics specifies the moral responsibilities governing human interaction with nature, and halal product assurance regulation provides the institutional structure through which sustainability-oriented principles may progressively be incorporated. Conceptual validity is therefore established through coherence among these three domains rather than through the assertion that environmental criteria constitute an independent new rule for determining halal and haram.

Accordingly, the principal originality of this article lies not in introducing sustainability into halal scholarship for the first time, since sustainability, green practices, supply chains, and technological innovation have already been extensively discussed. Its originality lies in reconstructing these fragmented discussions into a unified normative-regulatory model of green halal. Theoretically, this model expands contemporary Islamic legal discourse by demonstrating how *maqāṣid al-syarī'ah* and environmental ethics can inform the governance of a modern halal industry without displacing the established legal criteria of halal. Conceptually, it shifts the discussion from *halal compliance* alone toward a layered understanding that connects halal integrity, *ṭayyib*, ethical responsibility, and ecological sustainability. From a policy perspective, the framework provides a basis for developing halal sustainability assurance through measurable and progressively applicable indicators including resource efficiency, waste management, environmentally responsible packaging, supply-chain transparency, and sustainability governance whether initially introduced through supplementary guidelines, voluntary standards, audit instruments, or other appropriate regulatory mechanisms. Such an approach could strengthen rather than replace Indonesia's existing halal assurance system.

Against this background, this article aims to formulate the conceptual construction of green halal through the integration of *maqāṣid al-syarī'ah*, Islamic environmental ethics, and Indonesian halal product assurance regulation; to critically examine the normative relationship between halal integrity and ecological sustainability; and to evaluate the direction in which halal governance may develop from halal assurance toward halal sustainability assurance. Using normative legal research supported by statutory, conceptual, and philosophical-normative approaches, the study seeks to contribute theoretically to contemporary Islamic legal scholarship and practically to the development of a halal industry that is legally compliant, ethically responsible, institutionally accountable, and ecologically sustainable.

RESEARCH METHOD

This study employed normative or doctrinal legal research supported by a structured library-based review. The research was not designed to measure the empirical behavior of halal industry actors, but to identify, interpret, systematize, and evaluate legal norms,

Islamic normative principles, scholarly doctrines, concepts, regulations, and policy documents relevant to the construction of green halal. Doctrinal legal research is appropriate for this purpose because it enables the systematic examination of authoritative legal materials, the clarification of legal concepts, and the development of normative arguments for legal and regulatory reform (Hutchinson & Duncan, 2012; Hutchinson, 2015; Negara, 2023). Accordingly, the principal object of analysis was green halal as a normative-regulatory construct connecting three interrelated domains: *maqāṣid al-syarī'ah* as a philosophical-normative foundation, Islamic environmental ethics as a moral-ecological foundation, and Indonesian halal product assurance regulation as a juridical-institutional foundation.

Three complementary approaches were employed. First, the statutory approach was used to examine the positive legal framework governing halal product assurance in Indonesia, particularly Law Number 33 of 2014 concerning Halal Product Assurance, as subsequently amended, and Government Regulation Number 42 of 2024 concerning the Implementation of Halal Product Assurance. Binding and currently applicable regulations were prioritized over superseded legal instruments, while earlier regulations were considered only where necessary to explain regulatory development. Second, the conceptual approach was used to examine and compare the meanings and relationships among *halal*, *ṭayyib*, green halal, halal sustainability, sustainable halal supply chains, and green governance. Third, the philosophical-normative approach was used to evaluate these concepts through *maqāṣid al-syarī'ah*, including *ḥifẓ al-dīn*, *ḥifẓ al-naḥs*, *ḥifẓ al-'aql*, *ḥifẓ al-nasl*, and *ḥifẓ al-māl*, as well as the contemporary ecological articulation of *ḥifẓ al-bi'ah*. This approach was not used to establish environmental performance as an independent criterion for determining halal and haram, but to assess how ecological responsibility may support the substantive objectives and ethical governance of the halal industry (Auda, 2008; Kamali, 2021).

The research materials were classified into primary, secondary, and supporting materials. Primary normative and legal materials comprised the Qur'an, hadith, relevant fiqh principles, Law Number 33 of 2014, Government Regulation Number 42 of 2024, and other authoritative governmental documents directly related to halal product assurance. Secondary materials consisted of scholarly books and peer-reviewed journal articles addressing *maqāṣid al-syarī'ah*, Islamic environmental ethics, halal governance, sustainable halal supply chains, green practices, technological traceability, halal certification, and environmental sustainability. Supporting materials included official policy documents, institutional reports, legal dictionaries, encyclopedias, and other sources used to clarify terminology or regulatory and industrial context.

The academic literature was identified through targeted searches of Google Scholar, ScienceDirect, SpringerLink, Emerald, Taylor & Francis, MDPI, Garuda, and SINTA, complemented by official websites of Indonesian state institutions. Search terms included "green halal," "halal sustainability," "halal supply chain," "sustainable halal industry," "maqasid al-shariah and environment," "Islamic environmental ethics," "halalan tayyiban," "halal certification," "halal product assurance," "green governance," and combinations of

these terms. For literature addressing contemporary developments in halal sustainability, priority was given to publications issued between 2019 and 2026. Earlier publications were retained when they constituted foundational works in *maqāṣid al-syarī'ah*, Islamic environmental ethics, doctrinal legal methodology, or document analysis and therefore remained necessary for the conceptual or methodological framework.

The inclusion and exclusion process was conducted using predefined criteria. Materials were included when they: (1) directly addressed at least one of the three analytical pillars of the proposed framework *maqāṣid al-syarī'ah*, Islamic environmental ethics, or halal product assurance regulation or contributed directly to the discourse on halal sustainability; (2) were peer-reviewed scholarly publications or authoritative legal, governmental, or institutional documents; (3) contained sufficient full-text information for substantive evaluation; (4) had identifiable and verifiable bibliographic provenance; and (5) were published in English or Indonesian. Materials were excluded when they were duplicates, non-academic opinion pieces, promotional materials, sources that merely mentioned halal or sustainability without substantive relevance to the research questions, documents whose provenance could not be verified, or superseded legal instruments that were not required for historical or comparative analysis. The availability of a DOI was used as a means of bibliographic verification for journal articles where applicable, but was not treated as a mandatory quality criterion because authoritative statutes, policy documents, classical works, and scholarly books do not necessarily possess a DOI.

After retrieval, the materials were processed through four functional stages of search, appraisal, synthesis, and analysis, adapted to the requirements of normative legal research (Grant & Booth, 2009; Chigbu et al., 2023; Snyder, 2019). First, duplicate and clearly irrelevant records were removed. Second, titles, abstracts, executive summaries, or document descriptions were screened for direct relevance to the research questions. Third, potentially relevant materials were assessed in full text according to the inclusion and exclusion criteria, legal authority, scholarly credibility, conceptual contribution, and relevance to the construction of the green halal framework. Fourth, eligible sources were entered into an analytical matrix and grouped according to their principal contribution to halal norms, *maqāṣid al-syarī'ah*, environmental ethics, sustainability, technology and supply-chain governance, or halal regulation.

The final analytical corpus consisted of 27 formally cited documentary sources: 17 peer-reviewed journal articles, six scholarly books, two principal Indonesian legal instruments, one national halal-industry policy document, and one institutional industry report. Qur'anic verses, hadith, and fiqh principles were treated separately as primary Islamic normative materials and were therefore not counted as individual bibliographic records. The selection of this corpus was purposive rather than statistical: sources were retained according to their authority and their capacity to explain, challenge, or connect the three components of the proposed normative-regulatory framework. Accordingly, the literature component of this study should be understood as a structured and transparent doctrinal-conceptual review rather than a systematic review or meta-analysis intended to exhaust every publication on halal sustainability.

Data were analyzed qualitatively through content analysis, conceptual analysis, and normative legal reasoning. Document and content analysis was first used to identify relevant legal rules, normative propositions, recurring concepts, regulatory orientations, sustainability concerns, and points of convergence or tension among the selected materials (Bowen, 2009). Each source was examined using a common analytical matrix recording its type and authority, central proposition, relevant concept, relationship to the three analytical pillars, ecological or sustainability dimension, and possible regulatory implication. This procedure enabled descriptive information derived from the sources to be distinguished from the researchers' subsequent normative interpretation.

Conceptual analysis was then undertaken through a combined deductive and inductive procedure. The deductive categories were derived from the theoretical framework established in the research questions namely halal integrity and *ṭayyib*, *maqāṣid al-syarī'ah*, Islamic environmental ethics, ecological sustainability, and halal product assurance regulation. Within these categories, additional themes were inductively identified from the reviewed literature, including resource efficiency, waste management, sustainable packaging, supply-chain transparency, technological traceability, social responsibility, and sustainability governance. Conceptual findings were therefore not inferred from a single publication but from recurrent relationships, complementarities, and tensions identified through cross-source comparison. The resulting categories were subsequently synthesized to determine which elements could coherently form part of the proposed green halal framework.

Normative legal reasoning was applied in the third analytical stage to examine how these conceptual findings relate to the existing halal product assurance system. Grammatical interpretation was used to identify the textual meaning of relevant regulatory provisions; systematic interpretation examined their relationship within the broader halal assurance framework; teleological interpretation considered the objectives of consumer protection, legal certainty, public benefit, and sustainability; and constructive interpretation was used to formulate the prospective relationship between halal assurance and halal sustainability assurance. Where differences arose among legal doctrines or scholarly interpretations, they were not automatically merged. Instead, they were assessed according to the authority of the source, normative hierarchy, temporal validity, contextual relevance, conceptual consistency, and compatibility with the objectives of *maqāṣid al-syarī'ah*. Binding legal norms were distinguished from policy aspirations, while primary Islamic normative sources were distinguished from contemporary scholarly extensions such as *ḥijāz al-bī'ah*. Where scholarly disagreement could not be fully reconciled, the competing position was retained and the preferred interpretation was justified through explicit normative reasoning.

The overall analytical process proceeded in three substantive stages. The first identified the normative foundations of halal and *ṭayyib* and the existing orientation of Indonesian halal product assurance regulation. The second examined the extent to which *maqāṣid al-syarī'ah* and Islamic environmental ethics provide a normative justification for incorporating ecological responsibility into halal industrial governance. The third synthesized these findings into the green halal model by connecting halal integrity, *ṭayyib*,

ecological sustainability, supply-chain transparency, social responsibility, and accountable governance. This synthesis was designed to determine not whether environmental shortcomings automatically change the legal halal status of a product, but whether sustainability-oriented indicators can appropriately strengthen the broader governance of halal products.

Several procedures were employed to reduce interpretative bias and maintain analytical consistency. First, source triangulation was conducted by comparing Islamic normative materials, positive law, peer-reviewed scholarship, policy documents, and industrial reports rather than relying on a single category of source. Second, descriptive findings extracted from documents were explicitly separated from prescriptive conclusions developed by the authors. Third, interpretations were checked against contrary or limiting positions in the literature, particularly where environmental ethics, *hifz al-bi'ah*, or the expansion of halal governance remained conceptually contested. Fourth, the same analytical categories and source-evaluation criteria were applied consistently across the corpus, and conceptual propositions were repeatedly cross-checked against the original sources. Fifth, an analytical trail was maintained through the source-selection criteria, thematic matrix, cross-literature comparison, and distinction between *das sollen* (normative ideals) and the existing conceptual-regulatory framework (*das sein*). These procedures were intended to enhance transparency, credibility, and interpretative consistency rather than to claim statistical generalizability. The resulting arguments are therefore prescriptive and conceptual within the boundaries of normative legal research and do not constitute empirical claims regarding the actual environmental performance of halal industry actors.

RESULT AND DISCUSSION

Halal Industry Paradigm Shift: From Halal Compliance to Halal Sustainability

The findings of this study indicate that the contemporary halal industry is undergoing a gradual paradigm shift from halal compliance toward halal sustainability. Traditionally, halal assurance has primarily focused on compliance with religious requirements relating to ingredients, production processes, segregation, certification, labeling, and the prevention of contamination by prohibited or impure substances. This orientation remains fundamental because it provides legal certainty, maintains halal integrity, and protects Muslim consumers. However, contemporary halal products are embedded in broader systems of sourcing, production, distribution, consumption, and waste management that generate social, economic, and ecological consequences. Consequently, the development of halal governance increasingly requires consideration not only of whether a product satisfies established halal requirements, but also of whether its wider production system is managed responsibly and sustainably.

This development is consistent with the growing literature on sustainable halal supply chains. Rejeb et al. (2021) demonstrate that halal supply-chain research has increasingly incorporated economic, social, and environmental dimensions, although sustainability indicators remain insufficiently developed and integrated. Kurniawati and Cakravastia

(2023) similarly show that halal supply-chain scholarship needs greater integration between sustainability considerations and operational approaches. Bux et al. (2022) further demonstrate that certification, traceability, and technological mechanisms such as blockchain may contribute to more transparent and sustainable halal food systems. More recent research has moved toward operationalizing this relationship. Primadasa et al. (2025), for example, identify interconnected halal-sustainable supply-chain indicators for food-sector SMEs across halal-specific, environmental, social, and economic dimensions. These studies indicate that halal sustainability should not be understood as an abstract environmental aspiration, but as a multidimensional governance issue that can be translated into measurable organizational and supply-chain practices.

This transition reflects a tension between *das sollen* and *das sein*. Normatively, the concept of *halalan tayyiban* requires that Muslim consumption should not be separated from values of goodness, safety, cleanliness, benefit, and the prevention of harm. At the same time, the legal determination of halal primarily concerns compliance with established requirements concerning materials and processes. Accordingly, environmentally unsustainable practices should not automatically be interpreted as rendering an otherwise halal product *haram*. Rather, the normative problem arises when halal governance is confined exclusively to formal compliance and remains disconnected from the wider social and ecological consequences of industrial activity. The green halal paradigm addresses this gap by positioning ecological responsibility as a complementary dimension of halal governance rather than as an independent criterion for redefining halal and haram.

This distinction is particularly important in the Indonesian regulatory context. Law Number 33 of 2014 concerning Halal Product Assurance, as subsequently amended by Law Number 6 of 2023, regulates the Halal Product Process across the stages of materials, processing, storage, packaging, distribution, sales, and presentation. Government Regulation Number 42 of 2024 further provides the current implementing framework for halal product assurance (Indonesia, 2014, 2023, 2024). Because the existing regulatory architecture already covers multiple stages of the product value chain, it provides institutional entry points through which sustainability-oriented indicators could progressively be incorporated without altering the primary legal criteria for determining halal status. Thus, the proposed shift from halal assurance toward halal sustainability assurance should be understood as an expansion of governance and performance assessment rather than a substitution of the established halal certification system.

Operationally, this study proposes a two-layer model of halal governance. The first layer consists of mandatory core halal assurance, which retains the existing requirements concerning halal materials, processes, segregation, traceability, certification, labeling, and supervision. The second layer consists of green halal sustainability assessment, which evaluates the environmental and social performance associated with the production and supply-chain system. Initially, this second layer could be introduced through supplementary or voluntary guidelines so that environmental performance does not become an immediate barrier to obtaining the legally required halal certificate. After methodological validation and stakeholder evaluation, selected sustainability indicators

could progressively be incorporated into halal assurance guidelines, audit instruments, or other appropriate regulatory and standardization mechanisms.

Within this second layer, measurable green halal indicators may be organized into at least five operational dimensions. First, resource efficiency may be assessed through energy use, water consumption, and responsible sourcing of raw materials. Second, waste and pollution management may include waste reduction, segregation and treatment, reduction of hazardous discharges, and the prevention of environmental contamination. Third, sustainable packaging and distribution may consider reduction of unnecessary packaging, recyclable or environmentally preferable packaging materials, logistics efficiency, and measures to reduce environmental impacts during distribution. Fourth, supply-chain transparency and traceability may evaluate the availability and reliability of information concerning material origin, suppliers, production processes, and distribution networks. Fifth, social and governance responsibility may address worker protection, responsible supplier relationships, environmental commitments, documented monitoring, and transparency of sustainability claims. These dimensions are consistent with the multidimensional character of sustainable halal supply-chain research, which increasingly connects halal integrity with environmental, social, operational, and economic performance (Rejeb et al., 2021; Kurniawati & Cakravastia, 2023; Primadasa et al., 2025).

Such indicators should be measurable and auditable rather than merely declarative. For example, energy and water efficiency could be documented through periodic consumption records; waste management through the quantity, type, treatment, or reduction of waste; packaging performance through the proportion of reusable, recyclable, or reduced packaging; and supply-chain transparency through documented supplier information and traceability records. Environmental claims should also be supported by verifiable evidence to minimize the risk of *greenwashing*. The relevance of traceability is particularly significant because technological systems, including digital traceability and blockchain, have been identified as potential mechanisms for increasing information integrity and transparency in halal food systems (Bux et al., 2022). The purpose of such indicators would not be to create a second religious determination of halalness, but to provide an objective basis for evaluating whether a halal-certified production system is moving toward higher levels of ecological and social responsibility.

From an institutional perspective, implementation could be distributed among existing halal governance actors. BPJPH, as the principal public authority for halal product assurance, could develop a green halal guideline or sustainability assessment framework in coordination with relevant standardization, environmental, industrial, and academic institutions. Halal Inspection Bodies (LPH) could progressively incorporate approved sustainability indicators into supplementary audit instruments and develop auditor competence in evaluating documented environmental performance. Business actors could integrate the indicators into their internal halal assurance and sustainability management processes by maintaining records on energy, water, waste, packaging, sourcing, and traceability. For micro and small enterprises, a simplified and proportionate set of indicators would be necessary to prevent green halal requirements from creating excessive

administrative or financial burdens. This proportionality is particularly important because sustainability instruments must strengthen halal governance without undermining accessibility to halal certification.

A phased implementation strategy would therefore be more appropriate than immediate mandatory integration. In the initial stage, policymakers and halal authorities could formulate voluntary green halal guidelines and pilot indicators in selected sectors, particularly food and beverages, where supply-chain and waste issues are highly visible. In the validation stage, the proposed indicators could be tested with halal auditors, business actors, academics, environmental experts, and consumer representatives to assess measurability, cost, sectoral relevance, and potential regulatory overlap. In the integration stage, indicators demonstrated to be reliable and feasible could be incorporated into supplementary halal assurance guidelines, sustainability audit modules, or recognized voluntary standards. Finally, in the evaluation stage, their effectiveness could be periodically reviewed against environmental performance, industry compliance costs, consumer protection objectives, and the broader purposes of halal governance. This staged model enables policy development to be evidence-based rather than imposing environmental requirements that have not yet been empirically validated.

The practical implication of this framework is that the transition from halal compliance to halal sustainability does not require dismantling or fundamentally redefining Indonesia's halal assurance system. Instead, it requires extending the existing governance architecture so that halal integrity can coexist with measurable ecological and social responsibility. For policymakers, green halal provides a normative basis for developing sustainability-oriented guidelines and standards. For BPJPH and LPH, it provides a framework for strengthening assessment, traceability, and audit mechanisms. For industry stakeholders, it translates Islamic ethical responsibility into operational targets that can be documented and progressively improved. Thus, green halal represents not merely an ethical ideal but a potential governance framework linking *halalan tayyiban*, sustainability performance, and institutional accountability.

Accordingly, this study argues that halal sustainability is best understood as a substantive development of halal governance rather than an external environmental concept imposed upon Islamic law. Green halal expands the governance horizon from asking only whether a product satisfies halal requirements toward also evaluating whether the system through which that product is produced and distributed demonstrates responsible resource use, environmental protection, transparency, and social accountability. Such a model preserves the legal integrity of halal certification while providing a practical pathway from halal assurance toward halal sustainability assurance.

Green Halal Conceptual Construction in a Sustainable Halal Industry

Based on the synthesis of the reviewed literature, this study conceptualizes green halal as an integrative normative-regulatory framework that connects halal integrity with *tayyib* values, ecological responsibility, social ethics, and accountable industrial governance. The concept is not intended to replace existing halal certification or to create an independent category for determining halal and haram. Rather, it extends the governance orientation of

halal products by asking how established halal requirements can coexist with measurable responsibilities concerning environmental impact, resource use, supply-chain transparency, and social accountability. In this sense, green halal functions as a bridge between Islamic normative principles and contemporary sustainability governance.

Conceptually, the proposed framework consists of four interrelated elements. The first is the legal-formal element, which requires compliance with Islamic legal requirements and the applicable halal product assurance framework. This element preserves halal integrity as the indispensable foundation of the model. The second is the *ṭayyib* element, referring to product characteristics and processes associated with safety, cleanliness, hygiene, quality, and the avoidance of harm. The third is the ecological element, which extends assessment to resource efficiency, waste and pollution reduction, environmentally responsible materials and packaging, emission management, and the responsible use of natural resources. The fourth is the ethical-social and governance element, encompassing truthful product information, responsible sourcing, fairness in supply-chain relations, worker protection, producer accountability, traceability, and governance transparency. These elements should not be interpreted as four equivalent legal conditions for determining halal status; rather, halal compliance constitutes the legal foundation, while the other dimensions provide substantive criteria for evaluating the broader quality and sustainability of halal governance.

The conceptual contribution of green halal becomes clearer when it is distinguished from three related bodies of scholarship: *ḥalālān ṭayyibān*, halal sustainability, and halal governance. The concept of *ḥalālān ṭayyibān* provides the most fundamental Islamic ethical basis. It broadens consumption beyond legal permissibility toward wholesomeness, safety, welfare, ethical conduct, and avoidance of harm. Idris et al. (2022), for example, demonstrate that the *halal-tayyiban* perspective can encompass food safety, environmental protection, animal welfare, social justice, fair business practices, and sustainable development. However, *ḥalālān ṭayyibān* primarily operates as a normative-ethical principle; by itself, it does not specify an institutional architecture, regulatory mechanism, or measurable system for assessing the ecological performance of a halal-certified industry. Green halal therefore does not replace *ḥalālān ṭayyibān*, but seeks to translate part of its ethical substance into a more explicit governance framework.

The concept also overlaps with, but is not identical to, halal sustainability. Existing halal sustainability scholarship has substantially advanced understanding of the environmental, social, and economic dimensions of halal supply chains. Rejeb et al. (2021) demonstrate the multidimensional relationship between halal food supply chains and economic, social, and environmental sustainability, while Kurniawati and Cakravastia (2023) highlight the need to integrate sustainability considerations more systematically into halal supply-chain and operations research. Tseng et al. (2022) further identify data-driven sustainability indicators for halal food supply chains, including halal certification, supply-chain trust, Islamic values, and food safety. These approaches are particularly strong in explaining sustainability performance, operational efficiency, and supply-chain indicators. Nevertheless, they generally approach sustainability as an organizational, supply-chain, or

performance objective rather than explicitly constructing its normative relationship with *maqāṣid al-syarī'ah*, Islamic environmental ethics, and the positive-law architecture of halal product assurance.

A similar distinction applies to halal governance. Halal governance scholarship emphasizes institutional arrangements, regulatory authority, certification integrity, accountability, coordination, and mechanisms for maintaining halal compliance. In the Indonesian context, Hudaefi and Jaswir (2019) demonstrate the importance of governance structures and institutional “lines of defense” in maintaining the integrity of the halal system. More recent scholarship has also begun integrating *maqāṣid al-syarī'ah*, digital technology, and sustainability-oriented regulation into halal governance frameworks (Wahab & Mahdiya, 2026). Such developments considerably narrow the conceptual distance between halal governance and green halal. Nevertheless, the particular concern of the green halal framework proposed in this study is the systematic incorporation of ecological responsibility into the normative and regulatory architecture of halal governance, rather than governance efficiency or digitalization alone.

Accordingly, the theoretical novelty claimed in this article should be understood as integrative rather than absolute. This study does not claim that environmental sustainability, *ṭayyib*, sustainable supply chains, or Islamic ethical governance have never been discussed in previous halal scholarship. Indeed, each has an established body of literature. The distinctive contribution lies in bringing these previously dispersed dimensions into a single analytical construction in which *maqāṣid al-syarī'ah* provides the purposive foundation, Islamic environmental ethics provides the moral-ecological orientation, and halal product assurance regulation provides the juridical-institutional structure. The four elements of green halal legal-formal compliance, *ṭayyib*, ecological responsibility, and ethical-social governance represent the operational manifestation of this three-pillar normative architecture. Thus, green halal is best understood not as a competing synonym for halal sustainability, but as a proposed normative-regulatory pathway through which sustainability can be incorporated into halal governance.

This distinction is also important because sustainability-oriented models are not without conceptual limitations. First, expanding the substantive meaning of halal too broadly may create conceptual overreach, particularly if ecological or social deficiencies are interpreted as automatically altering the legal halal status of a product. The present framework therefore maintains a clear distinction between halal determination and sustainability performance. Second, the relationship between *ṭayyib* and sustainability is not necessarily one-to-one: a product may satisfy food-safety and quality requirements while still generating significant environmental externalities. Conversely, an environmentally efficient product cannot compensate for non-compliance with fundamental halal requirements. Third, sustainability itself is multidimensional, and potential trade-offs may arise among environmental, economic, technological, and social objectives. For example, sophisticated traceability systems may improve transparency but simultaneously increase financial and technological burdens for micro and small enterprises.

Technological innovation illustrates both the potential and the limitations of green halal governance. Mabkhot (2023) shows that supply-chain integration and process-quality improvement contribute to sustainable halal product performance, although not all commonly assumed factors have statistically significant effects. Tseng et al. (2022) similarly demonstrate that the priorities of halal sustainable food supply chains are not identical to those of non-halal systems. Meanwhile, Khan et al. (2026) show that artificial intelligence and blockchain can strengthen traceability, integrity, and religious compliance in halal food supply chains. These developments support the need for more transparent and measurable governance, but technology should be regarded as an implementation instrument rather than a normative foundation of green halal. Digital traceability can verify information, but it cannot by itself determine which environmental values ought to be prioritized or resolve normative conflicts among halal integrity, economic feasibility, ecological performance, and social justice.

Implementation also presents important institutional challenges. Adding sustainability indicators to halal governance may generate regulatory overlap with existing environmental, food-safety, quality-management, ESG, or sustainability certification regimes. It may also increase certification costs, auditing complexity, and administrative burdens, particularly for micro and small enterprises. Furthermore, indicators such as “environmentally friendly,” “responsible sourcing,” or “low emissions” require agreed measurement boundaries and verification procedures; otherwise, green halal could itself become vulnerable to *greenwashing*. Institutional coordination would also be required among halal authorities, inspection bodies, environmental and standardization agencies, industry stakeholders, scholars, and consumer representatives. Consequently, green halal should not be implemented through an immediate expansion of mandatory halal requirements before its indicators have been empirically validated and institutionally tested.

These limitations have direct implications for regulatory development. Rather than incorporating all environmental indicators immediately into mandatory halal certification, a more proportionate approach would be to develop green halal initially as a supplementary or voluntary sustainability framework linked to the existing halal assurance system. Such a framework could establish measurable indicators for energy and water efficiency, waste management, sustainable packaging, supply-chain traceability, responsible sourcing, social responsibility, and verified environmental claims. Following sectoral pilot testing and stakeholder evaluation, indicators shown to be legally appropriate, measurable, affordable, and institutionally feasible could gradually inform audit guidance, sustainability assessment instruments, or future regulatory reform. This gradual approach preserves the legal clarity of halal certification while enabling the halal governance system to respond to contemporary sustainability challenges.

The conceptual limitations of the present study also define an important future research agenda. Because the green halal framework developed here is derived from normative legal and conceptual analysis, its proposed elements and indicators have not yet been empirically validated across industrial sectors. Future studies should therefore test the framework using expert consensus methods, stakeholder interviews, Delphi analysis, multi-criteria

decision-making techniques, or sector-specific case studies involving halal authorities, Halal Inspection Bodies, business actors, Islamic legal scholars, environmental experts, and consumers. Empirical studies are also needed to determine the relative weight of individual indicators, appropriate performance thresholds, certification costs, SME readiness, consumer acceptance, and the possibility of integrating green halal indicators with existing environmental and sustainability standards. Comparative research across jurisdictions would further reveal whether the proposed framework is specific to Indonesia's regulatory environment or can be adapted to other halal governance systems.

Therefore, green halal should be positioned as an integrative and prescriptive governance framework rather than merely another label for sustainable halal products. *Ḥalālān ṭayyibān* supplies its foundational ethical orientation; halal sustainability provides the multidimensional sustainability agenda and performance considerations; halal governance provides institutional and regulatory mechanisms; while the proposed green halal framework seeks to connect these domains through *maqāṣid al-syarī'ah*, Islamic environmental ethics, and halal product assurance regulation. Its principal theoretical contribution lies in this integration and translation from normative principles to a potential regulatory and governance framework. At the same time, its ultimate validity as an operational model remains dependent on empirical testing, measurable indicators, stakeholder acceptance, regulatory proportionality, and institutional feasibility.

Maqāṣid al-Syarī'ah as the Philosophical Basis of Green Halal

Maqāṣid al-syarī'ah provides the principal philosophical-normative foundation for the green halal framework proposed in this study. In the classical formulation, the higher objectives of Islamic law are commonly associated with the protection of religion (*ḥifẓ al-dīn*), life (*ḥifẓ al-naḥs*), intellect (*ḥifẓ al-'aql*), progeny (*ḥifẓ al-nasl*), and property (*ḥifẓ al-māl*). These objectives should not be understood as isolated categories but as interrelated dimensions of human well-being and the realization of *maṣlahah*. Auda's (2008) systems approach is particularly relevant because it emphasizes wholeness, multidimensionality, openness, interrelatedness, and purposefulness in the application of *maqāṣid* to contemporary problems. From this perspective, ecological sustainability can be examined not as an external concern imposed upon Islamic law, but as one of the contemporary conditions necessary for the effective protection of life, property, future generations, and wider human welfare.

This interpretation is supported by contemporary scholarship linking Islamic worldviews with sustainable development. Al-Jayyousi et al. (2022) demonstrate that Islamic approaches to sustainable development offer a value-based and human-centered perspective capable of complementing conventional sustainability models. Similarly, Nasir et al. (2022) argue that environmental degradation threatens the *ḍarūriyyāt* level of *maqāṣid al-syarī'ah* because ecological deterioration directly affects basic human necessities. Environmental pollution may endanger human health and life; unsustainable resource extraction may affect economic security; environmental degradation may impose burdens upon future generations; and ecological instability may undermine the broader conditions

required for human flourishing. These relationships provide the normative basis for considering environmental responsibility within the governance of the halal industry.

Nevertheless, the relationship between *maqāṣid al-syarī'ah* and environmental sustainability requires conceptual caution. The present study does not treat *ḥifẓ al-bi'ah* as an uncontested sixth classical *maqṣad* equivalent in status to the five established necessities. Rather, *ḥifẓ al-bi'ah* is employed as a contemporary ecological articulation and cross-cutting expression of *maṣlaḥah*, through which environmental conditions can be connected to the protection of life, progeny, property, intellect, and religious responsibility. This distinction is important because the normative value of environmental protection can be recognized without overstating its status within classical *maqāṣid* theory. Green halal therefore uses *maqāṣid* as an evaluative framework for governance rather than as a mechanism for automatically redefining the legal categories of halal and haram.

From this perspective, a halal product produced through environmentally harmful processes presents a problem primarily at the level of substantive governance and *maṣlaḥah*, rather than necessarily at the level of its basic legal halal status. A product may comply with established requirements concerning ingredients and production procedures, but its wider production system may still generate pollution, excessive waste, unsustainable resource consumption, or social harm. The role of *maqāṣid al-syarī'ah* is therefore to provide a second-order normative question: beyond formal compliance, to what extent does the governance of a halal product protect human welfare, prevent avoidable harm, and maintain the resources upon which present and future life depends? This distinction enables green halal to expand the evaluative horizon of halal governance without conflating ecological performance with the jurisprudential determination of halal and haram.

The practical relevance of this approach is strengthened by earlier attempts to operationalize *maqāṣid* within the halal industry. Rahman et al. (2017) argue that the growth of the halal industry requires performance measurement that reflects both business performance and the objectives of Shariah. Their study identifies the absence of sufficiently applicable *maqāṣid*-based measurements in non-financial halal industries as a major challenge and emphasizes the importance of regulatory standards and collective institutional decision-making. More recent research likewise demonstrates that sustainability performance in halal supply chains can be expressed through measurable economic, environmental, social, and halal-specific indicators. Primadasa et al. (2025), for instance, identify 16 interconnected indicators for halal-sustainable supply-chain management among food-sector SMEs, including food-waste reduction, energy use, green packaging, waste and packaging recycling, workplace safety, and halal-specific supply-chain considerations. These developments suggest that *maqāṣid* need not remain exclusively philosophical; its normative objectives can inform the selection, justification, and prioritization of operational sustainability indicators.

For the green halal framework, this study therefore proposes a *maqāṣid*-to-governance translation model. The purpose of the model is not to assign a new halal ruling to each environmental indicator, but to connect each *maqṣad* with a governance objective and a set

of potentially measurable proxies. The proposed relationships may be summarized as follows:

Maqāṣid dimension	Green halal governance objective	Illustrative assessment indicators
<i>Ḥifẓ al-dīn</i>	Maintaining halal integrity and ethical responsibility	compliance with halal requirements; integrity of halal claims; documented traceability; prevention of fraudulent or misleading halal representations
<i>Ḥifẓ al-naḥs</i>	Protecting health, safety, and life from avoidable harm	product safety; contamination control; hazardous-waste management; safe production conditions; prevention of harmful environmental exposure
<i>Ḥifẓ al-'aql</i>	Protecting informed and responsible consumer decision-making	transparency of product information; accessible traceability data; substantiation of environmental claims; prevention of misleading halal or green claims
<i>Ḥifẓ al-nasl</i>	Protecting the welfare of future generations	waste reduction; resource conservation; emission reduction; sustainable sourcing; mitigation of long-term ecological impacts
<i>Ḥifẓ al-māl</i>	Protecting resources and preventing waste and economic harm	energy and water efficiency; resource productivity; waste minimization; responsible supply-chain management; proportionate compliance costs
<i>Ḥifẓ al-bī'ah</i> as a cross-cutting ecological articulation	Maintaining ecological balance that supports the realization of the other <i>maqāṣid</i>	integrated performance relating to energy, water, waste, packaging, emissions, resource sourcing, and environmental management

This translation model clarifies that the operational role of *maqāṣid* is not merely to generate abstract ethical statements. Rather, *maqāṣid* provides the normative rationale explaining why particular sustainability indicators should matter within halal governance. For example, energy efficiency is not important merely because it reduces production costs; it may also contribute to preventing waste and protecting resources. Waste treatment is not only an environmental-management issue; it relates to preventing harm to life and surrounding communities. Traceability is relevant not only to supply-chain efficiency but also to the protection of informed consumer choice and the integrity of halal claims.

Likewise, the prevention of greenwashing becomes relevant because unverified environmental representations undermine transparency and may mislead consumers. In this way, *maqāṣid* supplies the ethical purpose, while measurable indicators supply the operational evidence.

However, the relationship between *maqāṣid* and measurable indicators should not be treated as mechanically one-to-one. A single indicator may simultaneously contribute to several objectives, while one *maqṣad* may require multiple indicators. Energy efficiency, for example, may relate simultaneously to *ḥifẓ al-māl*, *ḥifẓ al-nasl*, and the ecological dimension of *maṣlahah*. Product traceability may support *ḥifẓ al-dīn*, *ḥifẓ al-ʿaql*, and consumer protection. The multidimensional nature of these relationships is consistent with Auda's (2008) systems approach and prevents the green halal model from reducing *maqāṣid* to a rigid checklist. Accordingly, any future green halal assessment instrument should recognize interdependence among indicators rather than simply assigning isolated variables to individual *maqāṣid* categories.

Within Indonesia's halal governance system, this model could be implemented through a layered assessment mechanism. The first layer would remain the existing mandatory legal assessment of halal status under the Halal Product Assurance system. The second layer would consist of a supplementary *maqāṣid*-based sustainability assessment evaluating the ecological, social, transparency, and resource-management performance of halal production systems. Initially, this second layer would be more appropriately developed as a voluntary guideline, pilot audit module, or supplementary sustainability assessment rather than as an immediate legal prerequisite for obtaining halal certification. This distinction preserves legal certainty concerning halal certification while allowing regulators and industry stakeholders to test whether *maqāṣid*-based sustainability indicators are measurable, proportionate, and practically applicable.

For regulatory purposes, the proposed assessment could be developed through three stages. First, a competent multi-stakeholder forum could translate the *maqāṣid* dimensions into sector-specific indicators involving halal authorities, Halal Inspection Bodies, Islamic legal scholars, environmental experts, standardization institutions, industry representatives, consumer organizations, and academics. Second, these indicators could be empirically validated according to measurability, relevance, auditability, cost, and compatibility with existing halal and environmental standards. Third, validated indicators could progressively inform supplementary guidelines, audit instruments, industry sustainability ratings, or future regulatory development. Rahman et al. (2017) similarly emphasize that regulators have an important role in developing standards for *maqāṣid*-based performance measurement, while contemporary studies of Indonesian halal governance underline the need for regulatory harmonization, institutional capacity, and attention to implementation costs (Lahuri et al., 2025).

The assessment mechanism should also be proportionate to business scale. Applying identical environmental documentation requirements to multinational manufacturers and microenterprises would risk conflicting with the broader objective of *maṣlahah* by creating

excessive compliance burdens. A green halal framework could therefore employ graduated indicators: basic indicators for micro and small enterprises, intermediate indicators for medium-sized businesses, and more comprehensive life-cycle, emissions, governance, and reporting requirements for larger enterprises. The findings of Primadasa et al. (2025), which specifically develop halal-sustainability indicators for SMEs, demonstrate the importance of contextualizing sustainability measurement according to organizational characteristics rather than imposing a uniform model.

At the certification and audit level, *maqāṣid*-based sustainability assessment would require documentary and verifiable evidence. Indicators concerning energy or water use could be demonstrated through periodic records; waste management through waste quantity, segregation, treatment, and reduction records; packaging through information regarding material use and recyclability; and traceability through supplier and production-chain documentation. Environmental claims should be supported by evidence rather than marketing declarations. Halal auditors or designated sustainability assessors would therefore require clear assessment protocols and additional competence before such indicators could be incorporated into formal audit practice. The existing halal certification process should not be burdened with environmental assessment responsibilities without corresponding standards, training, institutional authority, and verification methodology.

This proposal also has an important regulatory implication. The transition from halal assurance toward halal sustainability assurance should be understood as institutional development rather than juridical substitution. Indonesia's current Halal Product Assurance framework, including Government Regulation Number 42 of 2024, establishes legal certainty regarding the halal status of products and regulates the institutional structure of halal assurance. The green halal paradigm does not seek to replace this architecture. Instead, a *maqāṣid*-based sustainability layer could complement it by providing a normative basis for future guidelines concerning resource efficiency, waste, sustainable packaging, traceability, responsible sourcing, and environmental accountability. Such regulatory development would be more defensible if introduced progressively and supported by empirical validation rather than immediately incorporated as additional mandatory conditions for halal status.

Several limitations must nevertheless be acknowledged. First, the mapping between individual *maqāṣid* and particular sustainability indicators remains a conceptual proposition and requires empirical validation. Second, environmental performance varies substantially across food, cosmetics, pharmaceuticals, logistics, fashion, and other halal sectors; therefore, a single indicator set may not be suitable for all industries. Third, conflicts may arise among different objectives, for example between environmental technology investment and affordability for SMEs. Fourth, an excessively expansive use of *maqāṣid* may produce interpretative subjectivity unless indicator selection and weighting are supported by transparent scholarly and stakeholder consensus. These limitations demonstrate why the proposed framework should initially function as a normative and evaluative model rather than as a finalized certification standard.

Future research should therefore develop and validate a Maqāṣid-Based Green Halal Sustainability Index or comparable assessment instrument. Such research could employ Delphi methods, expert consensus, Analytic Hierarchy Process, DEMATEL, multi-criteria decision analysis, or mixed-method validation to determine the relevance, relative weights, thresholds, and interrelationships of proposed indicators. Sector-specific pilot studies would also be necessary to determine whether the model improves environmental and social performance without compromising halal integrity, regulatory clarity, or SME participation. This would move the discussion from philosophical justification toward evidence-based regulatory design.

Thus, *maqāṣid al-syarī'ah* functions in the green halal paradigm at three interconnected levels: as a philosophical foundation defining the purposes of responsible halal governance; as an evaluative framework connecting halal integrity with health, transparency, intergenerational welfare, resource stewardship, and environmental responsibility; and as a policy-design framework capable of guiding the development of measurable sustainability indicators. Green halal can therefore be understood as a contemporary institutional actualization of *maqāṣid* within the halal industry—not by replacing existing halal law, but by providing a purposive framework through which halal governance may progressively develop from formal assurance toward substantive, measurable, and sustainable responsibility.

Islamic Environmental Ethics as a Moral-Ecological Basis for Green Halal

In addition to *maqāṣid al-syarī'ah*, Islamic environmental ethics provides the moral-ecological foundation of the green halal framework. Whereas *maqāṣid al-syarī'ah* identifies the purposes and interests that Islamic law seeks to protect, Islamic environmental ethics provides principles of conduct governing how human beings should interact with natural resources, other human beings, and future generations. Islam does not regard nature merely as an economic input available for unrestricted exploitation; rather, human utilization of nature is accompanied by moral responsibility and accountability. Contemporary scholarship on Islamic environmental thought similarly emphasizes that environmental protection has both individual and collective dimensions and is compatible with the broader objectives of Shariah and sustainable human development (Al-Jayyousi et al., 2022; Nasir et al., 2022).

Within this framework, five principles are particularly relevant to green halal: *tanḥīd*, *khalīfah*, *amānah*, *mīzān*, and *'adl*. *Tanḥīd* provides an integrated worldview in which human economic activity cannot be separated from moral responsibility toward creation. *Khalīfah* places human beings in the position of responsible stewards rather than absolute owners of natural resources. *Amānah* requires accountability for the use, transformation, and disposal of resources entrusted to human beings. *Mīzān* emphasizes balance and proportionality and therefore challenges patterns of production and consumption characterized by unnecessary waste or excessive resource use. Finally, *'adl* requires fairness in the distribution of economic benefits and environmental burdens, including justice toward workers, consumers, surrounding communities, and future generations. These

principles transform environmental responsibility from a merely technical concern into an ethical obligation within Muslim production and consumption.

However, an ethical framework contributes little to industrial governance if its principles remain at the level of abstract moral exhortation. For green halal to have practical relevance, Islamic environmental ethics must be translated into observable governance practices and verifiable performance indicators. This study therefore proposes an Islamic Environmental Ethics–Green Halal Translation Framework, in which each ethical principle functions as a normative justification for particular governance objectives and measurable evidence. The proposed relationships are illustrative rather than exhaustive:

Islamic ethical principle	Governance orientation	Illustrative green halal indicators/evidence
Tawḥīd	Integrating halal integrity, human welfare, and environmental responsibility	documented integration of halal and environmental policies; sustainability objectives within internal governance; consideration of environmental impacts across the product chain
Khalīfah	Responsible stewardship of resources	responsible sourcing; efficient use of water, energy, and raw materials; protection against unnecessary resource depletion; supplier environmental requirements
Amānah	Accountability and verifiability	records of energy and water consumption; waste-management documentation; supplier records; traceability; substantiation of environmental claims; corrective-action records
Mīzān	Maintaining balance and preventing excess	waste reduction; energy and water efficiency; reduction of unnecessary packaging; recycling and reuse; pollution and emission-control measures
‘Adl	Fair distribution of benefits and burdens	worker health and safety; responsible supplier relationships; consideration of community impacts; proportionate compliance requirements for SMEs; prevention

of environmental burdens being
transferred to vulnerable groups

The significance of this framework lies in distinguishing ethical principles from performance indicators. *Tawhīd* or *amānab*, for example, cannot be measured directly in the same manner as energy consumption or waste generation. They function instead as normative principles explaining why such indicators deserve attention. Measurable variables—such as energy use, waste reduction, green packaging, recycling, workplace safety, supplier practices, and traceability—provide observable evidence through which the implementation of those ethical commitments can be evaluated. This distinction prevents Islamic environmental ethics from being reduced to a numerical checklist while simultaneously preventing green halal from remaining an unverifiable moral discourse. Research on halal-sustainable supply-chain management supports the feasibility of such translation; Primadasa et al. (2025), for example, identify 16 interconnected indicators across economic, environmental, social, and halal-specific dimensions, including food-waste reduction, energy use, green packaging, recycling, and workplace safety.

The ethical framework should also be applied across the entire product life cycle, rather than only at the point of halal certification. At the raw-material stage, green halal would require attention to halal integrity, responsible sourcing, resource extraction, supplier accountability, and the environmental risks associated with inputs. During production, relevant criteria would include energy and water efficiency, sanitation, occupational safety, waste prevention, pollution control, and responsible use of materials. At the packaging and storage stages, assessment could consider material efficiency, recyclability, unnecessary packaging, product safety, and energy use. Distribution would involve traceability, logistics efficiency, preservation of halal integrity, and efforts to reduce avoidable environmental impacts. At the consumption and post-consumption stages, the framework would encourage accurate consumer information, prevention of misleading environmental claims, responsible consumption, waste reduction, recycling, and appropriate end-of-life management.

Such a life-cycle orientation advances the green halal concept beyond the conventional distinction between halal and non-halal inputs. Sustainability research on halal food systems already demonstrates that halal products operate within complex supply chains involving environmental, economic, and social dimensions rather than isolated production stages (Rejeb et al., 2021). Similarly, Bux et al. (2022) show that certification, traceability, technological innovation, and institutional cooperation can contribute to both halal integrity and sustainability. The life-cycle approach proposed here therefore does not imply that all environmental impacts should become religious criteria for halal determination. Instead, it creates an ethical governance layer through which the consequences of halal production can be monitored from upstream sourcing to downstream waste management.

To operationalize this framework institutionally, this study proposes a supplementary Green Halal Ethical Audit as a possible governance mechanism. Such an audit would operate separately from, but in coordination with, the mandatory assessment determining halal compliance. Its initial function would be developmental rather than punitive. The

audit could examine documented environmental policies, resource-consumption records, waste management, packaging practices, supplier responsibility, traceability, worker protection, and the substantiation of environmental claims. Assessment should be based on documentary evidence and, where relevant, on-site verification rather than declarations of ethical commitment alone. Identified deficiencies could be followed by corrective-action plans and periodic reassessment. In this way, *amānah* becomes institutional accountability, *mizān* becomes measurable resource and waste management, *khalifah* becomes responsible stewardship across the supply chain, and *‘adl* becomes attention to social and distributional impacts.

The Green Halal Ethical Audit should not initially be treated as an additional mandatory legal test for determining whether a product is halal. An immediate merger of halal certification and environmental certification could create conceptual and regulatory uncertainty because the two assessments address different questions. Core halal assurance determines compliance with established halal requirements, whereas green halal assessment evaluates the broader ethical and sustainability performance of the system surrounding a halal product. A more proportionate approach would therefore introduce environmental ethics through supplementary guidelines, voluntary assessment modules, sectoral pilots, or sustainability ratings that remain clearly distinguishable from the legal determination of halal status. If subsequent empirical evaluation demonstrates that particular indicators are reliable, auditable, affordable, and institutionally appropriate, they may progressively inform future halal governance and regulatory development.

Institutional integration would also require coordination rather than simply expanding the responsibilities of halal certification actors. Halal authorities and Halal Inspection Bodies possess expertise in halal requirements, but environmental evaluation may require additional competence in waste management, resource efficiency, environmental measurement, or sustainability reporting. Consequently, the development of green halal standards would require collaboration among halal authorities, Islamic legal scholars, environmental and standardization institutions, academics, industry representatives, and other relevant stakeholders. Bux et al. (2022) similarly note that strengthening sustainable halal systems requires innovation and cooperation among regulatory authorities, industry associations, and market actors. In the Indonesian context, recent studies also identify coordination, regulatory implementation, institutional capacity, and governance effectiveness as continuing issues in halal certification (Lahuri et al., 2025).

Business actors would likewise face substantial operational challenges. The availability and quality of environmental data vary widely among large corporations, medium-sized firms, and micro and small enterprises. Larger companies may already maintain information on energy, waste, emissions, suppliers, or sustainability performance, whereas small enterprises may have limited administrative capacity and environmental monitoring systems. Research on green halal development identifies supplier awareness, supply-chain collaboration, government support, and community participation as relevant implementation challenges (Anisah, 2024). Accordingly, a uniform environmental audit imposed on all halal businesses could create disproportionate costs and contradict the

ethical objective of *‘adl*. Green halal governance should therefore apply the principle of proportionality, with simplified indicators and documentation for micro and small enterprises and progressively more detailed requirements for industries with greater scale, environmental impact, and technical capacity.

Another operational challenge concerns measurement and verification. Terms such as “environmentally friendly,” “responsibly sourced,” or “sustainable” can become ambiguous unless accompanied by clear assessment boundaries and supporting evidence. This creates a risk of greenwashing, particularly where businesses combine halal and environmental terminology primarily for marketing purposes. The principle of *amānah* requires that environmental claims be verifiable, while *‘adl* requires that consumers are not misled. Green halal governance should therefore distinguish between aspirational commitments and demonstrated performance. Claims relating to waste reduction, recyclable packaging, energy efficiency, responsible sourcing, or emissions should be supported by records or other appropriate verification mechanisms. Digital traceability may assist this process, although technology remains a verification instrument rather than the ethical foundation of the framework (Bux et al., 2022).

Sectoral differences must also be considered. Environmental priorities in halal food production may include food waste, water use, packaging, cold-chain energy, and organic waste, whereas cosmetics may involve chemical inputs and packaging; pharmaceuticals may raise different production and disposal concerns; fashion may emphasize raw-material sourcing, water consumption, chemicals, textile waste, and labor conditions. Consequently, Islamic environmental ethics should provide a common normative architecture, while operational indicators should be sector-specific. A single universal checklist would risk oversimplifying the diversity of environmental impacts across the halal economy.

The proposed framework therefore suggests a phased pathway for policy development. At the first stage, ethical principles can be translated into a general green halal indicator taxonomy. At the second stage, sector-specific indicators should be empirically tested with business actors, auditors, Islamic legal scholars, environmental specialists, and consumers. At the third stage, validated indicators may be incorporated into voluntary guidance, supplementary audit modules, sustainability ratings, or recognized industry standards. Only after evidence regarding measurability, costs, institutional competence, and stakeholder acceptance becomes available should policymakers consider whether selected indicators warrant stronger regulatory recognition. Such gradual institutionalization would reduce the risk of imposing abstract ethical aspirations as technically unworkable legal requirements.

Future research should consequently move beyond conceptual affirmation of Islamic environmental ethics toward the empirical validation of ethical performance measures. Research could test the proposed relationships between *tawhīd*, *khalīfah*, *amānah*, *mīzān*, and *‘adl* and observable sustainability indicators through Delphi studies, expert panels, multi-criteria decision analysis, industry case studies, or mixed-method designs. Further research is also required to establish indicator weights, performance thresholds, audit protocols, sector-specific criteria, SME readiness, and the relationship between green halal assessment and existing environmental standards. The growing literature on halal-sustainable supply-

chain indicators demonstrates that such measurement is feasible, but the specifically Islamic ethical justification and institutional design of these measures still require systematic validation (Primadasa et al., 2025).

Accordingly, Islamic environmental ethics gives green halal three interconnected functions. First, it provides a moral vocabulary explaining why production and consumption must respect creation, resources, human welfare, and future generations. Second, it provides an evaluative framework through which resource use, waste, transparency, fairness, and accountability can be critically assessed. Third, it provides a governance orientation capable of informing life-cycle criteria, supplementary environmental auditing, corporate responsibility, and future policy development. Green halal therefore transforms Islamic environmental ethics from an abstract moral discourse into a potential institutional framework while preserving a clear distinction between legal halal determination and the wider ethical-sustainability performance of halal industry governance.

Review of Halal Product Guarantee Regulations in Indonesia: Strengths and Limitations

Indonesia has established a relatively comprehensive legal and institutional framework for halal product assurance. Law Number 33 of 2014 concerning Halal Product Assurance, as subsequently amended by Law Number 6 of 2023, provides the principal statutory basis for guaranteeing the halal status of products circulating in Indonesia. Government Regulation Number 42 of 2024 further regulates the implementation of halal product assurance and replaces Government Regulation Number 39 of 2021. The regulatory framework covers the Halal Product Process, including the provision of materials, processing, storage, packaging, distribution, sales, and presentation, while also regulating certification, labeling, institutional responsibilities, supervision, and administrative compliance (Indonesia, 2014, 2023, 2024a).

The institutional framework has also been strengthened through Presidential Regulation Number 153 of 2024, which positions the Halal Product Assurance Organizing Agency (BPJPH) as a non-ministerial government institution responsible for administering halal product assurance. BPJPH performs functions relating to technical policy formulation and implementation, coordination, institutional development, and administration of the national halal assurance system (Indonesia, 2024b). This institutional strengthening is important because halal assurance is no longer treated solely as a private religious concern but as part of public governance involving consumer protection, legal certainty, industrial competitiveness, and regulatory accountability. Earlier research on Indonesian halal governance similarly demonstrates that institutional arrangements, regulatory coordination, and clear lines of responsibility are fundamental to maintaining the integrity of the halal assurance system (Hudaefi & Jaswir, 2019).

The principal strength of the Indonesian JPH framework therefore lies in its ability to provide a legally enforceable architecture for halal integrity. It establishes institutional authority, certification procedures, inspection mechanisms, supervision, labeling requirements, and administrative enforcement. The state can consequently ensure that

halal claims are not based exclusively on voluntary market representations. This legal institutionalization is particularly significant as Indonesia continues to expand mandatory halal certification across product categories and business scales. Nevertheless, the existence of a comprehensive halal assurance architecture does not necessarily mean that the framework already functions as a sustainability assurance system.

The normative review conducted in this study indicates that the existing regulatory structure remains primarily oriented toward establishing and maintaining the halal status of products. Ingredients, production processes, separation from prohibited materials, documentation, certification, labeling, traceability, and supervision constitute the core regulatory concerns. These functions are indispensable and should not be weakened. However, ecological indicators such as resource efficiency, waste generation and treatment, greenhouse-gas emissions, environmentally responsible packaging, circular use of materials, sustainable sourcing, and broader life-cycle impacts are not yet expressly constructed as substantive components of halal certification. The regulatory gap identified by this study is therefore not a deficiency in the legal determination of halal itself, but the absence of a systematic sustainability layer within halal governance.

This distinction is necessary because the transition from halal assurance to halal sustainability assurance should not be interpreted as simply adding environmental requirements to the existing list of legal conditions for determining whether a product is halal. Such an approach could blur the distinction between Islamic legal status and environmental performance. Instead, this study proposes a layered regulatory model in which mandatory halal assurance remains the legal core, while green halal develops as a complementary sustainability-governance mechanism. This approach allows ecological responsibility to be institutionally connected to halal governance without automatically turning every environmental deficiency into a violation of halal status.

The need for such differentiation is also supported by studies of halal governance in Indonesia. Hudaefi and Jaswir (2019) emphasize the importance of institutional lines of defense and coherent governance arrangements, whereas Lahuri et al. (2025) identify regulatory disharmony, institutional capacity, budgetary constraints, and barriers affecting MSME participation as continuing challenges in the implementation of halal certification. These findings suggest that introducing additional sustainability requirements without institutional preparation could increase regulatory complexity and compliance burdens. Therefore, green halal regulation should be designed as an evolutionary rather than disruptive development of the existing JPH system.

To translate this proposal into regulatory practice, this study formulates a four-stage Green Halal Regulatory Framework:

Regulatory stage	Main function	Principal actors	Proposed instrument	Compliance consequence
Stage 1: Core Halal Assurance	Maintain legal halal integrity	BPJPH, LPH, halal auditors, halal	Existing mandatory halal	Existing JPH enforcement mechanisms apply

		supervisors, and other institutions under the JPH framework	certification and supervision	
Stage 2: Voluntary Green Halal Guidance	Introduce environmental and sustainability performance indicators	BPJPH in coordination with environmental, industrial, standardization, academic, and industry stakeholders	Voluntary guideline, self-assessment tool, sectoral pilot, or green halal rating	Guidance, improvement recommendations, and corrective-action plans; no effect on halal status
Stage 3: Verified Green Halal Assessment	Provide auditable and comparable sustainability evaluation	Authorized or specially trained assessors, with institutional coordination under BPJPH and relevant technical authorities	Supplementary audit module or independently verified sustainability assessment	Corrective action, reassessment, or suspension of the green halal designation rather than the halal certificate itself
Stage 4: Selective Regulatory Integration	Incorporate empirically validated indicators into formal halal-industry governance	BPJPH and other competent government institutions	Technical regulations, standards, audit guidelines, or amendments to relevant regulatory instruments	Administrative enforcement only for requirements that have obtained an explicit legal basis

The staged structure is important from the perspective of legal certainty. Indonesia already possesses an administrative enforcement framework for violations of JPH obligations. Peraturan BPJPH Number 2 of 2026 concerning the Imposition of Administrative Sanctions for Violations in the Implementation of Halal Product Assurance regulates enforcement against violations committed by business actors, LPHs, halal auditors, and other JPH actors (BPJPH, 2026). However, existing JPH sanctions should not automatically be extended to proposed green halal indicators unless those indicators have first been incorporated into binding legal obligations. Otherwise, regulatory authorities could sanction businesses for standards that have not been legally established. Consequently, during the voluntary and pilot stages, non-compliance with green halal

criteria should result only in improvement recommendations, corrective actions, or the loss of a voluntary green designation rather than withdrawal of the underlying halal certificate.

The sustainability assessment itself should employ measurable criteria rather than broad environmental terminology. Drawing on sustainable halal supply-chain literature, particularly Primadasa et al. (2025), the proposed indicators can be grouped into several domains. The first is resource efficiency, including energy intensity, water use, material efficiency, and responsible sourcing. The second is waste and pollution management, including waste generation, reduction, segregation, treatment, recycling, and pollution prevention. The third is packaging and circularity, including reduction of unnecessary packaging and the use of reusable, recyclable, or environmentally preferable materials. The fourth is supply-chain transparency, including supplier information, traceability, responsible sourcing, and verified sustainability claims. The fifth is social and governance responsibility, including worker protection, documented environmental policies, corrective-action systems, and accountability for environmental performance. Research on halal-sustainable supply chains demonstrates that halal-specific, environmental, social, and economic indicators are interdependent and therefore should be assessed as part of an integrated management system rather than as isolated variables (Primadasa et al., 2025).

These indicators should also be differentiated according to industrial sector and environmental risk. A food-processing facility may require indicators concerning water consumption, food waste, packaging, wastewater, cold-chain energy, and organic waste, whereas cosmetics, pharmaceuticals, fashion, logistics, or other halal industries may generate substantially different environmental impacts. Accordingly, the role of national regulation should be to establish the general principles and minimum architecture of green halal sustainability assurance, while sector-specific technical standards define the appropriate metrics, thresholds, and evidence. A single uniform environmental checklist for all halal products would risk regulatory inefficiency and weak substantive validity.

Institutional responsibilities should therefore be distributed according to competence. BPJPH should retain responsibility for policy coordination and the integrity of the halal governance architecture rather than becoming the sole technical environmental regulator. Relevant environmental authorities can provide technical expertise concerning waste, pollution, emissions, and environmental performance; industrial and standardization institutions can contribute sectoral standards and measurement methodologies; while LPHs and halal auditors should undertake sustainability-related assessment only after appropriate legal mandates, standards, and competence requirements have been established. Business actors would remain responsible for maintaining reliable records and demonstrating compliance with applicable indicators. This multi-stakeholder architecture is consistent with scholarship emphasizing that an effective halal ecosystem requires coordination among government agencies, certification institutions, businesses, and other supporting actors (Almunawar et al., 2025).

The proposed regulatory model must also recognize important trade-offs. First, adding sustainability requirements may improve environmental accountability but also increase

certification costs and administrative complexity. Second, integrating environmental audits into halal inspection may reduce duplication in the long term but initially require additional auditor training, information systems, and institutional resources. Third, detailed sustainability requirements may be feasible for large corporations yet disproportionately burdensome for micro and small enterprises. Lahuri et al. (2025) already demonstrate that cost, institutional capacity, and governance constraints can limit participation in halal certification. A green halal regime that ignores these constraints could paradoxically weaken rather than strengthen the inclusiveness of Indonesia's halal ecosystem.

For this reason, the principle of regulatory proportionality should guide implementation. Micro and small enterprises could initially be assessed using a simplified set of high-priority indicators, such as waste management, resource efficiency, responsible packaging, and basic supply-chain documentation. Larger or environmentally intensive businesses could be subject to more comprehensive indicators, including emissions measurement, life-cycle assessment, sustainability reporting, supplier environmental performance, and quantitative resource-efficiency targets. The purpose is not to lower ethical standards for smaller firms, but to ensure that compliance requirements remain proportionate to environmental impact, business capacity, and regulatory risk.

The existing phased implementation of mandatory halal certification in Indonesia provides a useful regulatory precedent for this approach. Government Regulation Number 42 of 2024 applies halal certification obligations progressively across product categories and business groups rather than requiring every sector to comply simultaneously. A comparable approach could be adopted for green halal: voluntary piloting followed by sectoral validation, limited regulatory integration, periodic evaluation, and only thereafter broader implementation. Such sequencing would allow policymakers to identify unintended consequences before sustainability criteria become legally enforceable.

A further issue concerns monitoring and enforcement. Green halal assessment would require evidence capable of independent verification. Energy or water indicators should be supported by consumption records; waste indicators by waste-generation and treatment documentation; packaging indicators by material specifications; supplier sustainability by procurement and traceability records; and environmental claims by verifiable supporting evidence. Digital traceability systems may strengthen the reliability of such information and reduce opportunities for fraudulent or misleading sustainability claims (Bux et al., 2022). Nevertheless, technological systems should remain verification instruments rather than substitutes for regulatory standards and institutional accountability.

Enforcement should similarly follow a graduated model. During voluntary implementation, authorities should prioritize education, technical assistance, and corrective action. At a verified assessment stage, failure to satisfy green criteria should affect only the green halal rating or sustainability designation. If selected indicators are subsequently incorporated into binding regulation, administrative sanctions may then be introduced on the basis of explicit statutory or regulatory authority. Such sanctions should remain proportionate to the severity, recurrence, environmental impact, and corrective

behavior associated with the violation. This differentiation protects the principle of legal certainty while allowing green halal governance to develop progressively.

Regulatory overlap must also be avoided. Environmental performance is already governed by broader environmental, industrial, food-safety, consumer-protection, and standardization regimes. Green halal should therefore not create parallel environmental law inside halal certification. Its regulatory function should be integrative: identifying environmental responsibilities that are ethically relevant to halal governance, linking them to existing technical standards where possible, and creating a coherent sustainability-assurance layer rather than duplicating established regulatory systems. Interoperability among halal, environmental, quality, and sustainability standards would reduce compliance costs and institutional duplication.

Accordingly, the transition from an administrative model toward a substantive model of halal governance should not mean abandoning administrative compliance. Documentation, certification, labeling, traceability, inspection, and supervision remain necessary foundations of halal assurance. A substantive model adds a second evaluative question: beyond satisfying legal halal requirements, does the governance of the product demonstrate measurable responsibility toward health, resources, environmental protection, transparency, and social welfare? The proposed green halal framework answers this question by connecting normative Islamic values with measurable sustainability criteria and institutional mechanisms.

Thus, the policy contribution of green halal lies not in replacing Indonesia's JPH system but in providing a regulatory roadmap for its progressive development from halal assurance toward halal sustainability assurance. The roadmap consists of maintaining the existing mandatory halal core, developing voluntary sustainability criteria, validating indicators through sectoral pilots, strengthening institutional and auditor competence, introducing independently verifiable assessment mechanisms, protecting MSMEs through proportional requirements, and incorporating selected indicators into binding regulation only after adequate empirical and legal validation. In this way, ecological sustainability can become institutionally relevant to halal governance without undermining legal certainty regarding halal status or imposing premature regulatory burdens on industry.

Green Halal Integrative Model: Maqāṣid, Environmental Ethics, and JPH Regulations

Based on the normative synthesis, conceptual analysis, and regulatory review undertaken in this study, green halal is formulated as an integrative normative-regulatory governance model connecting three mutually reinforcing pillars. The first pillar is *maqāṣid al-syari'ah*, which provides the philosophical and purposive foundation by identifying the interests to be protected and the harms to be prevented. The second pillar is Islamic environmental ethics, which provides the moral-ecological principles governing responsible behavior toward natural resources, consumers, workers, communities, and future generations. The third pillar is Indonesia's Halal Product Assurance (JPH) regulatory framework, which provides the juridical and institutional architecture through which halal integrity is certified, inspected, supervised, and enforced. The model therefore links

purpose, ethical conduct, and institutional governance rather than treating sustainability as an external addition to halal certification.

The proposed model is deliberately structured as a two-layer governance system. The first layer is Core Halal Assurance, consisting of mandatory compliance with established halal requirements concerning materials, processing, segregation, traceability, certification, labeling, and supervision. Compliance with this layer constitutes a non-compensatory legal prerequisite: superior environmental performance cannot compensate for failure to satisfy halal requirements. The second layer is Green Halal Sustainability Assurance, which assesses the wider ecological, social, transparency, and governance performance of a halal production system. This second layer is proposed as a supplementary assessment framework that may initially operate voluntarily and be progressively integrated into halal governance only after empirical validation and appropriate regulatory authorization.

The relationship among the normative pillars and their operational manifestations can be formulated as follows:

Pillar	Normative orientation	Governance manifestation	Illustrative measurable evidence
Maqāṣid al-syarī'ah	Realizing maṣlaḥah and preventing mafsadah	Protection of halal integrity, health, consumers, resources, future generations, and ecological conditions	halal non-conformities; safety incidents; substantiated consumer information; resource-efficiency indicators; documented prevention of environmental harm
Islamic environmental ethics	Tawḥīd, khalīfah, amānah, mīzān, and 'adl	stewardship, accountability, proportionality, transparency, and fairness	environmental policy; resource records; responsible sourcing evidence; corrective-action records; worker protection; substantiated environmental claims
JPH regulation	Legal certainty and consumer protection	halal certification, inspection, traceability, supervision, and institutional accountability	valid halal documentation; auditable product and material records; traceability records; audit findings; corrective actions
Sustainable halal supply chain	Integrity and responsibility from upstream to downstream	responsible sourcing, traceability, efficient logistics, product	percentage of traceable suppliers; supplier-compliance records; logistics efficiency; documented material

		safety, and supplier accountability	origin; supply-chain non-conformities
Green governance	Integrating halal integrity and sustainability performance	environmental management, sustainability monitoring, transparent reporting, and anti-greenwashing controls	energy, water, waste, packaging, emissions, verified claims, sustainability records, audit closure rates

This construction develops earlier halal sustainability research by moving beyond broad sustainability dimensions toward an operational governance architecture. Sustainable halal supply-chain studies have demonstrated that halal-specific, economic, environmental, and social factors interact and therefore cannot be managed in isolation (Primadasa et al., 2025). Tseng et al. (2022) similarly demonstrate that sustainable halal food systems require indicators specifically attentive to halal certification, supply-chain trust, Islamic values, and food safety. The contribution of the present framework is to connect such measurable dimensions to a normative Islamic foundation and to the institutional architecture of Indonesian halal assurance.

To make this model operational, the study proposes six measurable Green Halal Governance Domains. These domains are not intended as final regulatory standards, but as a structured indicator architecture requiring empirical and sector-specific validation.

Governance domain	Proposed indicator	Suggested measurement	Documentary/ verification evidence
1. Halal integrity and traceability	traceability coverage	percentage of relevant raw materials, batches, or suppliers with complete traceability records	supplier documentation, material records, batch records, digital traceability systems
	halal non-conformity	number and severity of halal-related non-conformities during the assessment period	audit reports and corrective-action records

2. Resource efficiency	energy intensity	energy consumed per relevant unit of output	electricity/fuel bills, production records, meter data
	water intensity	water consumed per relevant unit of output	utility records, production records, meter data
3. Waste and pollution management	waste intensity	quantity of waste generated per unit of production	waste logs and production data
	waste recovery	proportion of waste reused, recycled, recovered, or appropriately treated	waste-transfer, recycling, or treatment records
4. Packaging and material responsibility	packaging intensity	packaging material used per unit of product	procurement and production records
	environmentally preferable packaging	proportion of recyclable, reusable, recycled-content, or otherwise verifiably preferable packaging	material specifications and supplier evidence
5. Ethical-social responsibility	occupational protection	recorded safety incidents, corrective measures, and relevant worker-protection practices	safety records, incident reports, internal policies
	responsible supplier management	proportion of material suppliers subject to documented halal, ethical, or	supplier contracts, questionnaires, assessments

		environmental requirements	
6. Transparency and green governance	environmental claim verification	proportion of public green claims supported by auditable evidence	product claims, technical evidence, certification or supporting records
	corrective-action performance	proportion of identified sustainability non-conformities closed within the specified period	audit findings and corrective-action trackin

The measurement units proposed above deliberately emphasize intensity, proportion, documented occurrence, and verified evidence rather than vague descriptors such as “environmentally friendly.” For example, stating that a company uses “less energy” provides little audit value unless energy consumption is compared with production output or an established baseline. Likewise, claiming that packaging is “green” should require documentation concerning material composition, recyclability, reuse, or another verifiable characteristic. This evidence-based approach is particularly important for reducing the risk of greenwashing, because environmental claims without credible verification may mislead consumers and undermine confidence in sustainability initiatives (Delmas & Burbano, 2011).

The proposed indicators should not, however, be interpreted as universal numerical thresholds. This normative study does not determine, for example, the maximum permissible kilowatt-hours per product unit or the minimum acceptable percentage of recyclable packaging. Such thresholds require empirical validation, technical expertise, sector-specific benchmarking, and stakeholder agreement. The appropriate environmental profile of a food-processing business differs substantially from that of pharmaceuticals, cosmetics, logistics, or fashion. Accordingly, the contribution of this study lies in identifying the indicator architecture and validation principles, while quantitative thresholds remain a subject for future empirical and regulatory development.

Before an indicator can be formally incorporated into green halal assessment, this study proposes that it satisfy seven validation criteria: (1) normative relevance, meaning a defensible relationship with *maqāṣid al-syarī‘ah* or Islamic environmental ethics; (2) legal compatibility, meaning that the indicator does not contradict or obscure existing halal requirements; (3) measurability, meaning that performance can be expressed through observable data; (4) auditability, meaning that the data can be independently verified; (5) materiality, meaning that the indicator reflects a significant environmental, social, or governance impact; (6) proportionality, meaning that compliance costs are reasonable relative to business size and environmental risk; and (7) comparability, meaning that

measurement is sufficiently standardized to permit monitoring over time or comparison within the relevant sector.

These criteria are necessary because an indicator may be normatively attractive but practically unsuitable for certification. For example, broad obligations to “protect nature” have strong ethical meaning but limited auditability unless translated into particular performance variables. Conversely, technically measurable environmental indicators should not be incorporated simply because data are available if they lack meaningful relevance to the objectives of green halal. The model therefore combines normative validation with technical validation rather than allowing either to operate independently.

To support performance assessment, the model may be accompanied by a four-level maturity scale during pilot implementation:

Level	Performance interpretation	General criterion
0 – No evidence	requirement not addressed	no policy, data, or verifiable implementation
1 – Commitment	policy or procedural commitment exists	documented policy but limited performance evidence
2 – Implemented	indicator is operational and monitored	implementation supported by records and internal monitoring
3 – Verified improvement	implementation is independently verifiable and demonstrates improvement	reliable evidence, corrective-action closure, and measurable improvement against baseline or sectoral target

This maturity scale is proposed as a governance tool rather than a final certification score. Importantly, green performance should not offset halal non-compliance. A business that achieves high scores in energy efficiency or waste management but fails to comply with fundamental halal requirements cannot be categorized as compliant merely because its aggregate sustainability score is high. Core halal assurance therefore operates as a gate, while the sustainability assessment operates only after halal integrity has been established.

The model also requires a clearly defined monitoring cycle. Business actors would first conduct periodic internal measurement using agreed indicators and maintain supporting documentation. Sustainability data would then be subject to risk-based or periodic external verification. Non-conformities would be categorized according to their materiality and followed by corrective-action plans. Subsequent verification would assess whether corrective measures had been effectively implemented. Aggregate results could be used to evaluate performance trends over time rather than relying solely on one-time certification.

This continuous-improvement structure transforms green halal from a static label into a governance process.

Institutional responsibilities should be distributed according to existing competence. Under Indonesia's current JPH framework, BPJPH has a central role in halal product assurance, while Government Regulation Number 42 of 2024 provides the current implementing framework for JPH. BPJPH has also been institutionally strengthened as a non-ministerial government institution under Presidential Regulation Number 153 of 2024 (Indonesia, 2024a, 2024b). The green halal model does not require BPJPH to assume all technical environmental-regulatory functions. Instead, the proposed institutional architecture is based on coordination.

BPJPH could act as the policy coordinator and custodian of the green halal governance framework by establishing general criteria, maintaining consistency with JPH, and coordinating pilot implementation. Halal Inspection Bodies (LPH) could participate in verification only for indicators falling within their legal mandate and auditor competence, while environmental or highly technical indicators should involve relevant competent authorities or appropriately qualified assessors. Business actors would be responsible for collecting reliable performance data, maintaining evidence, implementing corrective actions, and ensuring that public green claims are verifiable. Environmental, industrial, and standardization authorities could contribute technical methodologies and sector-specific benchmarks. Academic institutions and other experts could support indicator validation and periodic review.

This institutional separation is necessary to prevent the green halal model from turning halal auditors into general environmental inspectors without appropriate authority or competence. Bux et al. (2022) demonstrate that certification and technological traceability can contribute significantly to sustainable halal systems, but their effectiveness depends on standardization and cooperation among authorities, industry, and market actors. Indonesian halal governance research likewise emphasizes the importance of clear institutional responsibilities and coordination in maintaining system integrity (Hudaefi & Jaswir, 2019).

Integration with the existing halal certification system should therefore occur through a phased mechanism. In Phase 1, the Green Halal Governance Indicators would operate as voluntary self-assessment and educational guidance. In Phase 2, selected industries could participate in pilot assessments using independently verified indicators. In Phase 3, technically and normatively validated indicators could form a supplementary Green Halal assessment or rating that remains legally distinct from the underlying halal certificate. In Phase 4, indicators demonstrated to be reliable, proportional, and beneficial could inform formal guidelines, standards, or future regulatory reform.

This staged approach is particularly important because Indonesia now possesses explicit administrative enforcement mechanisms for violations of the existing JPH regime. Government Regulation Number 42 of 2024 constitutes the current implementing regulation for halal product assurance, while BPJPH Regulation Number 2 of 2026 provides a framework for administrative sanctions for violations in the implementation of

JPH (Indonesia, 2024a; BPJPH, 2026). These existing sanctions should not automatically be applied to proposed green halal indicators unless and until those indicators are incorporated into binding law. During voluntary stages, non-compliance should therefore result in recommendations, corrective actions, reassessment, or loss of a green halal designation rather than loss of the halal certificate.

Such differentiation also protects the model from creating legal uncertainty. Halal certification and green halal verification address related but legally distinct questions. Halal certification establishes conformity with mandatory halal requirements; green halal assessment evaluates whether an already halal-compliant production system demonstrates additional ecological, social, and governance responsibility. Combining the two prematurely could create uncertainty about whether environmental deficiency affects the religious-legal status of a product. The layered model prevents such conflation.

A further function of measurable indicators is the prevention of greenwashing. Green claims are particularly vulnerable when companies can use terms such as “eco-friendly,” “sustainable,” or “responsibly produced” without substantiating evidence. Delmas and Burbano (2011) demonstrate that greenwashing is facilitated by organizational and regulatory conditions in which environmental claims and actual performance diverge. Within green halal governance, *amānah* and transparency therefore require environmental claims to be supported by verifiable records. A business claiming reduced packaging, for example, should be able to demonstrate comparative material-use data; a claim of improved energy efficiency should rely on documented consumption and production records.

The model should also accommodate proportionality for micro and small enterprises. Requiring the same data systems, life-cycle analyses, or emissions inventories from microenterprises and large industrial manufacturers would create disproportionate compliance burdens. Primadasa et al. (2025) specifically demonstrate that halal-sustainable supply-chain indicators for SMEs must consider economic, environmental, social, and halal-specific interdependencies. Accordingly, green halal assessment may employ a tiered system: simplified core sustainability indicators for micro and small enterprises, more detailed monitoring for medium enterprises, and comprehensive environmental and governance reporting for large or environmentally intensive industries.

The Green Halal Integrative Model can therefore be summarized through three sequential evaluative questions. First, is the product and its production process legally halal? If the answer is no, sustainability performance is irrelevant to halal certification. Second, does the product and process embody *ṭayyib* qualities concerning safety, cleanliness, quality, and avoidance of harm? Third, does the wider production and governance system demonstrate measurable ecological, social, and institutional responsibility? A positive answer across these layers positions the product within the green halal paradigm, while maintaining the doctrinal distinction between halal status and sustainability performance.

From a theoretical perspective, the model advances existing halal governance literature by connecting normative purpose, ethical responsibility, regulatory architecture,

measurable performance, and verification procedures. Earlier *maqāṣid*-based performance research has already argued that the halal industry requires applicable performance measures and regulatory involvement in standard setting (Rahman et al., 2017). Sustainable halal supply-chain studies have likewise demonstrated the feasibility of identifying and prioritizing measurable sustainability variables (Tseng et al., 2022; Primadasa et al., 2025). The present model brings these strands together within a specific normative-regulatory architecture for green halal.

Nevertheless, this model remains a conceptual and prescriptive construction derived from normative legal research and literature synthesis. The proposed indicators, maturity levels, and validation criteria have not yet been empirically tested as a certification instrument. Future research should therefore validate them through expert Delphi studies, stakeholder consultation, sectoral pilot projects, multi-criteria decision-making methods, or comparative regulatory studies. Such research should determine appropriate indicator weights, sector-specific thresholds, audit costs, SME feasibility, inter-auditor reliability, and the relationship between green halal assessment and existing environmental or sustainability standards.

Thus, green halal should not be understood merely as a normative slogan or an additional environmental label. The model proposed in this study provides a pathway from Islamic normative values to measurable governance performance: *maqāṣid al-syarī'ah* defines the objectives to be protected; Islamic environmental ethics establishes responsible modes of conduct; JPH regulation provides the institutional foundation; operational indicators translate the framework into measurable evidence; verification and monitoring provide accountability; and phased regulatory integration offers a pathway toward implementation. In this sense, green halal constitutes a proposed development from halal assurance toward halal sustainability assurance while preserving the legal integrity of Indonesia's existing halal certification system.

Theoretical and Practical Implications for the Development of Contemporary Islamic Law

Theoretically, the findings of this study reinforce the adaptive capacity of contemporary Islamic law to respond to environmental degradation, industrial sustainability, technological transformation, and changing forms of economic governance. Through *maqāṣid al-syarī'ah*, Islamic legal reasoning can move beyond an exclusively rule-centered understanding of halal toward a purposive analysis concerned with *maṣlaḥah*, prevention of harm, human welfare, intergenerational responsibility, and responsible use of resources. This does not imply abandoning the established legal distinction between halal and haram. Rather, it demonstrates that contemporary Islamic law can operate at two interconnected levels: the first determines the legal permissibility and integrity of products, while the second evaluates whether the broader governance of production, distribution, and consumption is consistent with the objectives and ethical orientation of Shariah.

The principal theoretical contribution of this study therefore lies in conceptualizing green halal as an integrative normative-regulatory framework rather than merely an

environmental extension of halal certification. Previous studies have developed important but relatively dispersed strands of scholarship concerning sustainable halal supply chains, *halal-tayyiban*, technological traceability, halal governance, environmental sustainability, and *maqāṣid*-based performance measurement. The framework developed here connects these strands by assigning different but complementary functions to three foundations: *maqāṣid al-syarī'ah* determines the normative objectives to be protected; Islamic environmental ethics provides principles of stewardship, accountability, balance, and justice; and the JPH regulatory system supplies the juridical and institutional architecture through which those values may progressively inform governance.

This integration also contributes to contemporary Islamic legal theory by distinguishing between legal status and governance quality. Environmental inefficiency does not automatically convert an otherwise halal product into a prohibited product, just as strong environmental performance cannot compensate for non-compliance with fundamental halal requirements. Green halal instead creates a second evaluative layer concerning the substantive quality of halal governance. This distinction allows Islamic legal values to influence contemporary industrial governance without creating conceptual ambiguity regarding the established jurisprudential criteria of halal and haram. In this respect, green halal develops Islamic law not by expanding prohibition indiscriminately, but by translating purposive and ethical reasoning into institutional standards for responsible governance.

A second theoretical implication concerns the movement from normative principles toward measurable Islamic legal performance. Rahman et al. (2017) identify the absence of applicable *maqāṣid*-based performance measures as an important challenge for the non-financial halal industry and emphasize the role of regulators in developing appropriate standards. More recent halal-sustainability research demonstrates that economic, environmental, social, and halal-specific indicators can be identified and prioritized operationally (Primadasa et al., 2025). Accordingly, the green halal framework advances the discussion from asking whether sustainability is compatible with Islamic law toward asking how that compatibility can be institutionally measured, monitored, and improved. This represents an important development from abstract normative reasoning toward an applied theory of Islamic legal governance.

The practical implications, however, must be considered against the actual institutional conditions of Indonesia's halal assurance system. Indonesia already possesses an extensive legal framework through Law Number 33 of 2014 concerning Halal Product Assurance, as subsequently amended, Government Regulation Number 42 of 2024, and the institutional strengthening of BPJPH under Presidential Regulation Number 153 of 2024 (Indonesia, 2014, 2024a, 2024b). The existence of this framework provides an institutional entry point for green halal, but it does not guarantee immediate implementation. Existing research demonstrates that halal certification governance continues to face regulatory disharmony, budget limitations, institutional-capacity constraints, administrative costs, and barriers affecting MSME participation (Lahuri et al., 2025). Empirical evidence from halal-certified businesses also shows that substantive post-certification dimensions, particularly

human-resource capacity and sustainability practices, may remain weaker than basic operational halal compliance (Zahra et al., 2026).

These findings indicate that green halal implementation would encounter at least four categories of challenge. The first is institutional capacity. BPJPH and LPHs are primarily established to administer and assess halal assurance, whereas comprehensive environmental assessment may require expertise in resource efficiency, waste management, emissions, packaging, environmental data, or life-cycle performance. Expanding their functions without appropriate competencies, technical standards, and inter-agency coordination could reduce rather than improve regulatory effectiveness. Green halal therefore requires capacity building and institutional cooperation rather than merely adding environmental items to existing halal-audit checklists.

The second challenge is regulatory compatibility. Indonesia already regulates environmental protection, food safety, industrial standards, consumer protection, and other sustainability-related matters through legal regimes outside JPH. Green halal should therefore not create a parallel environmental regulatory system within halal certification. Regulatory reform should instead emphasize interoperability: Islamic normative principles provide the ethical justification, JPH provides the halal-governance interface, while technically competent environmental or standardization regimes provide relevant measurement methodologies. This approach minimizes duplication and prevents conflicts among regulatory authorities.

The third challenge concerns economic feasibility and proportionality. Additional auditing, monitoring, traceability, reporting, or environmental technology may generate compliance costs. These burdens are unlikely to affect all businesses equally. Large manufacturers may already possess environmental-management systems and sustainability data, whereas micro and small enterprises may lack personnel, digital infrastructure, technical expertise, and financial resources. Lahuri et al. (2025) identify cost and institutional barriers as relevant constraints on existing halal certification, while empirical research on Indonesian SMEs demonstrates that government support and halal supply-chain implementation interact with business performance rather than producing benefits automatically (Maflahah et al., 2025). Therefore, green halal should adopt differentiated requirements according to business scale, sectoral environmental impact, and organizational capacity.

The fourth challenge is stakeholder readiness and behavioral implementation. Regulatory standards alone do not guarantee substantive compliance. Business actors must understand the indicators, auditors must be capable of evaluating them, suppliers must provide traceable information, and consumers must understand the distinction between halal certification and sustainability claims. Zahra et al. (2026) demonstrate the importance of post-certification human-resource development and monitoring, while Maflahah et al. (2025) show that government programs, halal commitment, consumer demand, and supply-chain relationships influence the implementation of halal supply-chain management. Green halal therefore requires education, training, technical assistance, and stakeholder engagement alongside legal reform.

Considering these constraints, this study proposes a four-phase implementation strategy rather than immediate incorporation of ecological criteria into mandatory halal certification:

Phase	Main objective	Principal instruments	Key institutional actions	Indicative evaluation criteria
Phase 1: Framework Development and Baseline Mapping	Establish conceptual, legal, and technical feasibility	Green halal guidelines, indicator taxonomy, baseline studies, stakeholder consultation	BPJPH coordinates with relevant government agencies, scholars, standardization experts, industry, LPHs, and consumer representatives	agreed indicator framework; number of sectors mapped; stakeholder participation; legal-compatibility assessment completed
Phase 2: Capacity Building and Sectoral Piloting	Test indicators and institutional readiness	voluntary pilot audits, training modules, SME assistance, digital data templates	train assessors; pilot indicators in selected sectors; provide technical and financial assistance	number of trained assessors; participating firms; data completeness; auditability rate; compliance cost per business; SME participation
Phase 3: Verified Green Halal Assessment	Establish credible sustainability verification	supplementary assessment, green halal rating/designation, corrective-action procedures	independent verification and periodic monitoring without altering basic halal status	verified indicator coverage; corrective-action closure rate; reduction in waste/resource intensity; verified claims;

				stakeholder satisfaction
Phase 4: Selective Regulatory Integration	Incorporate validated indicators into formal governance where appropriate	technical standards, supplementary JPH guidelines, regulatory amendments, recognized sustainability instruments	integrate only indicators that are legally compatible, measurable, auditable, proportionate, and empirically validated	regulatory compliance; environmental- performance trends; enforcement consistency; compliance costs; SME retention; reduction of misleading sustainability claims

During the first phase, BPJPH should not immediately impose new sustainability obligations. The priority should be regulatory mapping and the development of a standardized indicator taxonomy identifying which environmental and social concerns have genuine relevance to halal governance. Consultation should involve not only halal institutions but also environmental authorities, standardization agencies, business associations, Islamic legal scholars, academics, and representatives of micro and small enterprises. The principal output of this stage would be a legally coherent and technically measurable green halal framework rather than a new certification obligation.

The second phase should test feasibility through sector-specific pilot projects. Food and beverage manufacturing could provide an appropriate starting point because halal supply-chain and sustainability indicators in this sector have been comparatively well studied. Primadasa et al. (2025), for instance, identify 16 interconnected halal-sustainable supply-chain indicators covering halal-specific, economic, environmental, and social dimensions. Pilot assessment could test indicators relating to energy, water, food waste, packaging, recycling, traceability, occupational protection, and supplier responsibility. However, the purpose of piloting should be to determine measurability, auditability, cost, and stakeholder readiness rather than to establish premature mandatory thresholds.

Capacity building should form an integral part of this phase. Auditors or designated sustainability assessors would require training in data verification, environmental claims, resource-use documentation, and corrective-action assessment. Business actors would need standardized record templates and practical guidance. MSMEs should receive simplified assessment requirements, technical assistance, and, where appropriate, financial or fiscal support. A policy that requires additional sustainability compliance without improving business capacity would risk reproducing existing barriers in halal certification rather than solving them.

The third phase could introduce a verified but still supplementary green halal assessment. Its results could be expressed through a maturity level, sustainability rating, or separate green halal designation. This assessment should remain distinct from the legal halal certificate. Businesses failing green criteria would initially receive corrective-action requirements or lose their green designation rather than automatically losing halal certification. Such separation protects legal certainty while creating market incentives for superior sustainability performance.

Monitoring at this stage should rely on measurable evidence. Policy instruments may include energy and water intensity, waste generation per unit of production, waste recovery rates, proportion of traceable suppliers, recyclable or reduced packaging, closure rates for audit non-conformities, substantiation rates for environmental claims, and participation in worker- and supplier-responsibility programs. Evaluation should focus on performance trends rather than symbolic adoption. A company should not be considered environmentally responsible merely because it has adopted a written sustainability policy if no verifiable improvement occurs.

The fourth phase should involve selective regulatory integration only after adequate empirical validation. Indicators demonstrating strong normative relevance, legal compatibility, technical measurability, auditability, economic proportionality, and stakeholder acceptance could then be incorporated into supplementary halal governance standards or other appropriate regulatory instruments. Others may remain voluntary. Such regulatory differentiation is important because not every sustainability indicator requires mandatory legal enforcement.

Enforcement mechanisms should follow the same principle of gradual legal development. Indonesia already possesses an administrative-sanction framework for violations of JPH obligations, including BPJPH Regulation Number 2 of 2026 concerning the Imposition of Administrative Sanctions for Violations in the Implementation of Halal Product Assurance (BPJPH, 2026). However, these sanctions apply to legally established JPH obligations and should not automatically be extended to proposed green halal indicators. During voluntary phases, enforcement should rely on disclosure, technical assistance, corrective actions, reassessment, and the withdrawal of voluntary green designations. Formal administrative sanctions would only be appropriate if specific sustainability requirements were subsequently incorporated into binding regulation.

Economic policy instruments would also be necessary to improve implementation feasibility. These could include subsidized sustainability assessments for micro and small enterprises, technical-assistance programs, standardized digital reporting templates, auditor training support, incentives for environmentally preferable equipment or packaging, and recognition schemes for businesses demonstrating verified improvement. Such measures are justified not as subsidies for environmental branding, but as mechanisms to prevent sustainability requirements from creating disproportionate market-entry barriers.

The practical effectiveness of green halal should consequently be evaluated using a balanced policy scorecard rather than merely counting the number of green certifications. Relevant indicators could include: the proportion of audited businesses with verifiable

sustainability data; the percentage of non-conformities resolved; changes in energy, water, waste, and packaging intensity; percentage of traceable suppliers; auditor and institutional capacity; average compliance cost differentiated by business scale; MSME participation and retention; number of substantiated versus misleading environmental claims; and stakeholder confidence in the assessment system. Such metrics would allow policymakers to evaluate environmental benefits alongside regulatory costs and inclusiveness.

Consumer policy also remains relevant, but consumer education should avoid implying that products without a future green halal designation are religiously doubtful. Communication should clearly distinguish halal status from sustainability performance. Consumers can be encouraged to prefer products that are both halal and environmentally responsible, while certification bodies must ensure that green claims do not create confusion about the legal meaning of halal.

These recommendations have broader implications for Indonesia's international halal competitiveness. The strategic advantage of green halal would not arise simply from increasing the number of certifications. Rather, competitiveness would depend on the credibility of governance, verifiable sustainability performance, transparent supply chains, and the ability to prevent unsubstantiated environmental claims. Developing such an ecosystem may position Indonesia to contribute a model of halal governance that combines legal certainty with Islamic ethics and sustainability without sacrificing accessibility for smaller businesses.

Accordingly, the practical contribution of this study lies not in proposing the immediate transformation of halal certification into environmental certification, but in providing a phased pathway for institutional development. Green halal should begin with conceptual standardization and baseline mapping, proceed through capacity building and voluntary sectoral pilots, develop into verifiable supplementary assessment, and only thereafter permit selective regulatory incorporation of empirically validated indicators. This sequence balances normative aspiration with legal certainty, institutional capacity, economic feasibility, and stakeholder readiness.

Ultimately, the theoretical and practical implications converge in one central proposition: contemporary Islamic law can contribute to sustainability most effectively when its ethical principles are translated into proportionate, measurable, verifiable, and institutionally feasible governance mechanisms. Green halal therefore represents not merely an expansion of the discourse on halal products, but a proposed pathway for developing Islamic legal governance from formal compliance toward substantive responsibility while retaining a clear distinction between mandatory halal assurance and progressive halal sustainability assurance.

Green Halal as a Prescriptive Paradigm for the Future Halal Industry

Based on the preceding normative, conceptual, and regulatory analyses, this study positions green halal as a prescriptive paradigm for the future governance of the halal industry. A prescriptive paradigm does not merely describe existing developments but identifies the direction, conditions, and institutional mechanisms through which change

should occur. In this framework, green halal does not redefine the jurisprudential criteria of halal and haram. Rather, it expands the governance horizon of halal products by connecting established halal integrity with *ṭayyib*, *maqāṣid al-syarī'ah*, Islamic environmental ethics, measurable sustainability performance, and institutional accountability.

Normatively, the paradigm requires halal industrial governance to consider not only compliance with established halal requirements but also the wider consequences of sourcing, production, distribution, consumption, and waste. Conceptually, it integrates legal halal status with *ṭayyib* qualities, ecological responsibility, transparency, and social accountability while maintaining the distinction among these dimensions. Institutionally, it requires the existing Halal Product Assurance (JPH) architecture to remain the legal foundation for halal certification, while sustainability-oriented governance is developed as a complementary layer. Practically, it encourages business actors to move from one-time certification compliance toward continuous improvement in traceability, resource efficiency, waste management, responsible sourcing, transparency, and ethical supply-chain governance.

This prescriptive orientation is consistent with developments in halal scholarship that increasingly move beyond binary certification toward multidimensional performance and governance. Rahman et al. (2017) argue that the halal industry requires applicable *maqāṣid al-syarī'ah*-based performance measures and emphasize the importance of regulatory standards in operationalizing those objectives. More recently, Zahra et al. (2026) demonstrate that halal-certified businesses may perform relatively well in operational halal compliance while remaining weaker in human-resource, cultural, and sustainability dimensions. Their findings reinforce the importance of moving from certification alone toward substantive post-certification governance. Sustainable halal research similarly demonstrates the feasibility of developing measurable environmental, social, economic, and halal-specific indicators (Primadasa et al., 2025).

Nevertheless, the adoption of green halal depends on several preconditions for implementation. The first is institutional readiness. Halal authorities, inspection bodies, auditors, and business actors currently possess varying levels of expertise in halal assurance, while environmental sustainability requires additional competencies in areas such as resource efficiency, waste management, environmental data, packaging, emissions, supply-chain sustainability, and verification of environmental claims. Green halal therefore cannot be implemented effectively merely by adding environmental questions to existing halal audit forms. Institutional competence, assessment protocols, data standards, and coordination mechanisms must be developed first.

The second condition is regulatory feasibility. Indonesia already possesses an established halal assurance architecture under Law Number 33 of 2014, as amended, and Government Regulation Number 42 of 2024. BPJPH has also been institutionally strengthened through Presidential Regulation Number 153 of 2024. The existing framework provides an important institutional foundation, but environmental sustainability is also governed through regulatory regimes outside JPH. Green halal should therefore avoid creating an independent environmental-law system within halal

certification. Its regulatory contribution should instead be integrative: linking Islamic ethical justification and halal governance with technical environmental standards and competent regulatory institutions where appropriate.

The third condition is economic proportionality. Sustainability monitoring, verification, technological traceability, environmental improvement, and reporting may impose additional costs on business actors. These burdens are particularly significant for micro and small enterprises. Existing research on halal certification governance in Indonesia identifies administrative costs, institutional limitations, and barriers to MSME participation as continuing challenges (Lahuri et al., 2025). A future green halal regime must therefore differentiate between large industrial actors and smaller businesses according to scale, environmental risk, and organizational capacity. Otherwise, a sustainability initiative intended to realize *maṣlahah* could create new barriers to participation in the halal economy.

The fourth condition is stakeholder coordination and acceptance. Green halal requires cooperation among BPJPH, LPHs, Islamic legal scholars, environmental authorities, standardization institutions, industry associations, academics, business actors, consumers, and other relevant stakeholders. Research on green halal has already identified supplier awareness, supply-chain collaboration, regulation, and community support as important implementation challenges (Anisah, 2024). Consequently, successful adoption depends not only on legal mandates but also on shared definitions, compatible data requirements, technical assistance, credible incentives, and stakeholder confidence in the assessment system.

A fifth condition is measurement credibility. Terms such as “green,” “sustainable,” and “environmentally friendly” have limited governance value unless they can be translated into verifiable performance. Green halal therefore requires indicators that satisfy at least five practical characteristics: they should be measurable, auditable, materially relevant, proportionate to business capacity, and comparable over time. Sustainability claims should be supported by documentary or independently verifiable evidence in order to reduce greenwashing. The purpose of measurement is not to reduce Islamic ethics to numerical scores, but to provide observable evidence that normative commitments have influenced business practice.

Against these conditions, this study proposes the following Green Halal Adoption Roadmap:

Phase	Strategic objective	Principal responsibilities	Main policy instruments	Illustrative performance indicators
Phase 1: Conceptual and Regulatory Alignment	Establish legal, normative, and technical foundations	BPJPH, relevant ministries/agencies, Islamic scholars, environmental and	regulatory mapping, indicator taxonomy, stakeholder consultation,	completed legal mapping; agreed indicator architecture; number/diversity of stakeholders

		standardization experts, academics	sectoral baseline studies	involved; sectors with baseline data
Phase 2: Institutional Capacity and Pilot Implementation	Test feasibility and build implementation capacity	BPJPH, LPHs, pilot businesses, technical experts, industry associations	auditor training, voluntary self-assessment, pilot audits, SME assistance, digital reporting templates	trained assessors; number of pilot firms; data completeness; auditability rate; average compliance cost; SME participation
Phase 3: Verified Green Halal Governance	Establish credible supplementary sustainability verification	BPJPH as coordinator, competent assessors, businesses, relevant technical institutions	supplementary green halal assessment, rating/designation, corrective-action system, periodic monitoring	traceability coverage; corrective-action closure; changes in energy/water/waste intensity; verified environmental claims; stakeholder confidence
Phase 4: Selective Regulatory Integration and Continuous Evaluation	Integrate validated requirements where legally and economically justified	BPJPH and competent government institutions	technical standards, supplementary JPH guidelines, regulatory reform, interoperable environmental standards	compliance trends; environmental performance improvement; SME retention; audit consistency; enforcement effectiveness; regulatory costs

In Phase 1, the principal task is not certification but normative and regulatory alignment. Green halal indicators should first be examined to determine whether they are consistent with Islamic normative principles, existing JPH legislation, and other environmental or industrial regulations. Baseline studies should identify which environmental issues are material in different halal sectors. Food production, cosmetics, pharmaceuticals, fashion, tourism, and logistics should not automatically be subjected to identical sustainability criteria because their environmental impacts differ significantly.

Phase 2 should emphasize capacity building and experimentation. Selected sectors can be used to pilot measurable indicators such as energy and water intensity, waste generation and recovery, packaging use, supplier traceability, worker protection, and verified environmental claims. This stage should also measure implementation costs and administrative burdens. Particular attention should be given to micro and small enterprises through simplified indicators, standardized forms, digital tools, technical assistance, and, where appropriate, financial support. The success of a green halal pilot should therefore not be evaluated solely according to environmental outcomes but also according to affordability and accessibility.

In Phase 3, validated indicators could be used for a supplementary and independently verifiable green halal assessment. The assessment should remain legally distinct from the halal certificate during this stage. A business that fails sustainability requirements should not automatically lose its halal status if it continues to satisfy mandatory halal requirements. Instead, failure may lead to corrective action, reassessment, or loss of a voluntary green halal designation. This separation preserves legal certainty and prevents ecological performance from being mistakenly treated as an independent determinant of halal and haram.

Monitoring should operate as a continuous cycle rather than a one-time assessment. Businesses should measure and document performance periodically; assessors should verify selected indicators; deficiencies should generate corrective actions; and subsequent monitoring should determine whether improvements have occurred. Possible evaluation variables include resource intensity, percentage of traceable suppliers, waste-recovery rates, packaging reduction, closure of audit findings, substantiation of environmental claims, and employee or supplier compliance. Such measures can transform green halal from a marketing label into a process of continuous governance improvement.

Phase 4 represents selective regulatory integration. Only indicators that have demonstrated normative relevance, legal compatibility, technical measurability, auditability, proportionality, and sectoral feasibility should be considered for incorporation into formal guidance or regulation. This principle is important because not every desirable sustainability practice must become a mandatory legal obligation. Some indicators may appropriately remain voluntary, whereas others—particularly those closely related to transparency, consumer protection, or significant environmental risk—may eventually warrant stronger regulatory recognition.

The enforcement structure should follow this gradual development. Indonesia has strengthened administrative enforcement of the existing JPH system through BPJPH Regulation Number 2 of 2026 concerning administrative sanctions for violations in the implementation of halal product assurance. That regulation applies to established JPH obligations and includes mechanisms intended to strengthen compliance and accountability. However, its sanctions should not be extended automatically to green halal indicators that have not yet been incorporated into binding law. During the voluntary stages, enforcement should consist primarily of disclosure, improvement recommendations, corrective-action plans, reassessment, and withdrawal of a

supplementary green designation. Formal administrative sanctions would require an explicit legal basis. This distinction is essential for maintaining the principles of legality and regulatory certainty.

The future paradigm also requires technological readiness, although technology should remain an implementation tool rather than the normative foundation of green halal. Digital traceability, blockchain, data platforms, and related technologies may improve the reliability and transparency of information across halal supply chains (Bux et al., 2022). However, technological systems may simultaneously create costs, interoperability problems, data-governance issues, and capacity gaps for smaller businesses. Green halal governance should therefore prioritize appropriate technology rather than technological sophistication for its own sake.

From an industry perspective, adoption will depend on whether green halal generates credible benefits that justify the additional governance effort. Potential advantages include stronger consumer trust, improved resource efficiency, greater supply-chain transparency, reduced reputational risks, improved preparedness for sustainability-oriented markets, and differentiation from unsupported environmental claims. Nevertheless, these benefits should not simply be assumed. Future empirical research should evaluate whether green halal improves business performance, consumer confidence, export competitiveness, environmental outcomes, and regulatory efficiency.

For policymakers, the success of the paradigm should therefore be assessed through a balanced performance framework rather than by counting the number of businesses carrying a future green halal label. Relevant policy indicators could include: the percentage of participating businesses able to provide auditable sustainability data; improvement in resource and waste intensity; percentage of verified supply chains; corrective-action closure rates; number of trained assessors; compliance costs by business size; MSME participation and retention; frequency of misleading environmental claims; and stakeholder confidence in the assessment mechanism. These indicators allow environmental benefits to be evaluated alongside economic and institutional consequences.

Green halal also requires careful consumer communication. A sustainability designation should never imply that a conventionally halal-certified product without the additional designation is religiously doubtful. The distinction between halal certification and green halal sustainability performance must remain clear. Consumer education should instead emphasize that choosing environmentally responsible halal products represents an additional ethical preference rooted in stewardship and responsible consumption, rather than an alternative jurisprudential definition of halal.

The principal obstacles to implementation can therefore be summarized as institutional capacity gaps, overlapping regulatory jurisdictions, additional compliance costs, uneven SME readiness, limited environmental data, differing sectoral impacts, auditor competence, supply-chain coordination, technological disparities, and the risk of greenwashing. These barriers do not invalidate the green halal paradigm; rather, they define the conditions under which its implementation must proceed. A prescriptive model that

ignores these constraints would remain aspirational, whereas a model that incorporates them can guide realistic institutional reform.

Accordingly, green halal should be understood as a directional and developmental paradigm. It does not require an immediate legal transformation of halal certification into environmental certification. Its implementation should proceed through regulatory alignment, institutional capacity building, sectoral pilots, measurable verification, corrective-action mechanisms, and selective regulatory integration. This pathway enables sustainability to become progressively embedded within halal governance while preserving legal certainty, proportionality, and accessibility.

Ultimately, the future of the halal industry depends on the capacity to connect religious integrity, ethical responsibility, regulatory credibility, technological capability, economic feasibility, and measurable sustainability performance. *Maqāṣid al-syarī'ah* provides the purposive orientation; Islamic environmental ethics provides principles of stewardship and accountability; JPH regulations provide legal and institutional certainty; technology supports traceability and verification; business actors translate principles into operational performance; and consumers provide market and ethical incentives. Green halal therefore constitutes a prescriptive paradigm not because it imposes a new definition of halal, but because it provides a structured pathway through which the halal industry can evolve from formal compliance toward substantive and sustainable governance.

CONCLUSION

This study concludes that green halal can be formulated as an integrative normative-regulatory paradigm for developing a more sustainable halal industry in Indonesia. Its principal contribution lies not in redefining the jurisprudential criteria of halal and haram, but in expanding the governance horizon of halal assurance by connecting halal integrity with *ṭayyib*, ecological responsibility, social accountability, and sustainable industrial governance. The framework integrates three mutually reinforcing foundations: *maqāṣid al-syarī'ah* as the philosophical-normative basis, Islamic environmental ethics as the moral-ecological basis, and Indonesia's Halal Product Assurance (JPH) regulation as the juridical-institutional basis. In this construction, *maqāṣid al-syarī'ah* identifies the interests and objectives to be protected, Islamic environmental ethics through *tawḥīd*, *kebalifāh*, *amānah*, *mizān*, and *'adl* provides principles of stewardship and accountability, while the JPH system provides the institutional structure through which sustainability-oriented governance may progressively be developed.

The findings further demonstrate that Indonesia's existing halal regulatory framework is already strong in safeguarding halal integrity, legal certainty, and Muslim consumer protection, but ecological sustainability has not yet been systematically constructed as a substantive layer of halal governance. Accordingly, this study proposes a distinction between core halal assurance and green halal sustainability assurance. Core halal assurance must remain the mandatory and non-compensatory legal foundation: environmental performance cannot substitute for compliance with established halal requirements. Green

halal sustainability assurance should instead operate as a complementary governance layer that evaluates measurable ecological, social, transparency, and accountability performance. This distinction is essential to prevent environmental deficiencies from being incorrectly treated as automatically changing the legal halal status of a product while still allowing Islamic ethical principles to influence modern industrial governance.

The priority policy implication is therefore not the immediate incorporation of environmental criteria into mandatory halal certification, but the gradual institutionalization of a measurable and verifiable green halal framework. Implementation should proceed in four stages. First, BPJPH, in coordination with relevant environmental, industrial, standardization, academic, religious, and business institutions, should develop a common green halal indicator framework and conduct regulatory and sectoral baseline mapping. Second, selected indicators should be tested through voluntary pilot programs, initially in sectors such as food and beverages where halal supply-chain and environmental impacts are relatively visible, accompanied by assessor training and technical assistance for business actors. Third, validated indicators may form a supplementary and independently verifiable green halal assessment, rating, or audit module that remains legally distinct from the underlying halal certificate. Fourth, only indicators demonstrated to be normatively relevant, legally compatible, measurable, auditable, economically proportionate, and institutionally feasible should be considered for incorporation into technical guidelines, standards, or future regulatory reform.

Institutional responsibilities should be differentiated according to competence. BPJPH should function primarily as the policy coordinator and guardian of compatibility with the JPH system; LPHs and appropriately trained assessors may undertake verification within their legal and professional competence; environmental and standardization institutions should contribute technical measurement methodologies; business actors should maintain reliable sustainability and traceability records and implement corrective actions; while Islamic legal scholars, academics, industry associations, and consumer representatives should contribute to indicator validation and periodic evaluation. For micro and small enterprises, implementation must follow the principle of proportionality through simplified indicators, standardized documentation, technical assistance, and appropriate policy support to prevent sustainability requirements from becoming new barriers to participation in the halal economy.

The operational effectiveness of green halal should be evaluated through measurable performance rather than the number of labels or certificates issued. Priority indicators may include energy and water intensity, waste generation and recovery, environmentally responsible packaging, supply-chain traceability, responsible sourcing, occupational and social responsibility, verification of environmental claims, and corrective-action closure rates. At the policy level, evaluation should additionally monitor assessor capacity, compliance costs by business scale, MSME participation and retention, data auditability, stakeholder confidence, and the incidence of misleading environmental claims. Such indicators would allow policymakers to determine whether green halal generates substantive ecological and governance improvements rather than becoming a symbolic or

marketing-oriented sustainability claim. Formal administrative sanctions should only apply where particular green halal requirements have subsequently acquired an explicit binding legal basis; during voluntary and pilot stages, improvement plans, reassessment, and withdrawal of supplementary green designations are more appropriate enforcement mechanisms.

The study nevertheless has methodological limitations. As normative-doctrinal legal research based on a structured literature and regulatory review, the proposed green halal framework, indicators, assessment architecture, and implementation stages remain conceptual and prescriptive rather than empirically validated certification standards. Future research should therefore prioritize empirical validation of a Maqāṣid-Based Green Halal Sustainability Index or comparable assessment instrument. A first stage could employ Delphi studies involving BPJPH, LPHs, Islamic legal scholars, environmental experts, standardization specialists, business actors, and consumer representatives to validate the relevance of proposed indicators. Subsequent research may apply the Analytic Hierarchy Process (AHP), DEMATEL, or other multi-criteria decision-making methods to establish indicator weights and interrelationships. Sector-specific pilot audits and mixed-method studies should then test performance thresholds, inter-assessor reliability, compliance costs, SME readiness, consumer acceptance, environmental outcomes, and compatibility with existing environmental and sustainability standards. Comparative studies across different halal jurisdictions would also be valuable for determining the transferability of the framework beyond Indonesia.

Ultimately, green halal should be understood as a pathway from halal assurance toward halal sustainability assurance, not as a replacement for existing halal certification. Its theoretical significance lies in translating *maqāṣid al-syarī'ah* and Islamic environmental ethics into an applied model of contemporary Islamic legal governance; its policy significance lies in providing a gradual, measurable, and institutionally feasible pathway for incorporating sustainability into Indonesia's halal ecosystem. If developed through empirical validation, regulatory proportionality, stakeholder collaboration, and credible verification, green halal has the potential to strengthen Indonesia's halal industry as a system that is not only legally halal, but also *ṭayyib*, ethically responsible, transparent, socially accountable, and ecologically sustainable.

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