

BEYOND GREENWASHING: ISLAMIC BIOETHICS AS A FOUNDATION FOR AUTHENTIC GREEN FINANCE AND SUSTAINABLE DEVELOPMENT

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Abstract

Global sustainability efforts face increasing criticism due to the prevalence of greenwashing, where financial institutions claim environmental responsibility without demonstrating genuine ecological impact. Islamic finance, rooted in divine ethical accountability and the objectives of Maqasid al-Shariah, offers a distinctive theoretical foundation for authentic green finance. However, existing implementations often mirror secular ESG frameworks and risk reducing Shariah compliance to a symbolic label. This study aims to formulate Islamic bioethics as a guiding principle for green finance governance to ensure that environmental claims are substantiated by measurable protection of life and ecological systems. A qualitative research design was applied, combining theological text analysis, policy review, and expert interviews with Shariah scholars, ethical finance practitioners, and sustainability auditors. Findings indicate that Islamic bioethics—emphasizing preservation of life (Hifz al-Nafs), prevention of harm (Daf' al-Darar), and responsibility toward creation (Amanah)—can be operationalized as binding criteria for environmentally aligned financial products, especially in the assessment of environmental externalities and intergenerational welfare. The analysis identifies that instruments such as green sukuk, Islamic microfinancing, and social waqf can achieve stronger ecological integrity when guided by bioethical governance standards rather than minimalistic compliance screening. The study concludes that Islamic bioethics can transform green finance from a reputational strategy into a morally accountable system that supports genuine sustainable development. Policymakers and financial authorities are urged to adopt bioethical audit protocols and prioritize climate-positive investments aligned with Islamic moral objectives.

Keywords: Environmental Governance, Islamic Bioethics, Maqasid al-Shariah



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INTRODUCTION

Global concerns about environmental degradation and the accelerating climate crisis have pressured financial systems to prioritize sustainability as a guiding principle for investment allocation. Green finance has emerged as a mechanism intended to redirect capital toward environmentally responsible sectors, including renewable energy, circular economy initiatives, and climate adaptation strategies (Chen et al., 2025). International frameworks such as ESG (Environmental, Social, Governance) standards claim to support ecological and social responsibility, yet their effectiveness remains uneven due to inconsistencies in evaluation and enforcement. Islamic finance is widely recognized as an ethical financial system grounded in the principles of Shariah, which aims to preserve justice, welfare, and moral accountability in economic activities (Herrador et al., 2024). Core objectives of Maqasid al-Shariah emphasize the protection of life, wealth, intellect, faith, and family—domains that rely on a healthy environment to ensure holistic human well-being. Islamic finance instruments, including sukuk and zakat-based social funds, provide pathways to support equitable and sustainable development aligned with both economic and spiritual goals (AlJahsh, 2024; Wahid, 2024).

Islamic principles explicitly prohibit environmental harm (*ifsad*) and irresponsible consumption (*israf*), thereby establishing a moral foundation for ecological protection. These values reflect a broader bioethical worldview that regards nature as a trust (*amanah*) requiring responsible stewardship (Zhang & Zhu, 2025). The theological narrative positions humans as guardians of creation rather than exploiters, which reinforces the integration of ethics into economic decision-making. The expansion of green sukuk markets and sustainability-focused Islamic financial products demonstrates that there is growing interest in aligning Islamic finance with global environmental priorities (Pearce, 2024; Yuli & Rofik, 2023). Several Muslim-majority countries have already issued sovereign green sukuk to fund climate mitigation projects, illustrating a willingness to contribute actively to environmental governance. Islamic finance is therefore positioned as a potentially transformative driver of sustainable development (Shi et al., 2025).

Growing public awareness of greenwashing has significantly challenged the legitimacy of sustainability claims within global finance. Greenwashing occurs when institutions market themselves as environmentally responsible without producing tangible ecological benefits, creating a credibility gap between promise and practice (Abubshait et al., 2025; Ali & Aysan, 2024). Stakeholders have become increasingly skeptical of financial products lacking transparent environmental accountability. Islamic finance practitioners and scholars have begun raising concerns that Shariah-compliant products labeled as “green” may still fall into the trap of symbolic sustainability if ethical screening focuses only on legal permissibility rather than environmental outcomes. Authenticity in green Islamic finance requires ethical motivation grounded in divine accountability rather than reputational advantage or market trends alone (Ghaly & al-Khatib, 2023; Sulistyaningrum et al., 2025).

Empirical understanding of how Islamic bioethics can be operationalized into green finance governance remains limited. Existing green finance frameworks often adopt ESG standards without integrating the deeper moral foundations of Islamic finance, resulting in ethical misalignment between Shariah values and environmental governance practices. The gap between theological commitment and technical implementation persists as a structural challenge (Hunjra, 2025). Clear guidance is lacking for determining whether a financial product labeled as “green” genuinely protects ecological well-being in accordance with Islamic ethics. Without a bioethical audit mechanism rooted in Maqasid al-Shariah, claims of sustainability risk becoming subjective and vulnerable to manipulation. The industry lacks standardized assessment instruments to prevent superficial environmental branding (Ayyappan et al., 2025; Shabana, 2023).

There is insufficient research on how Islamic bioethics can enhance integrity and accountability within sustainability governance systems. Current scholarship often focuses on

legal compliance or commercial viability rather than evaluating ecological results and intergenerational environmental rights (Wang & Yang, 2025). The integration of moral responsibility into quantifiable performance metrics requires further conceptual development. Uncertainty remains regarding how Islamic bioethical principles can complement or reform global sustainability standards so that Islamic finance contributes distinctively to climate action and ecological justice. The absence of interdisciplinary frameworks restricts Islamic finance's potential leadership role in addressing planetary challenges (Leone et al., 2025; Wulandari et al., 2025).

Developing an Islamic bioethical governance framework is essential to realign green finance initiatives with core moral values that transcend symbolic labeling. Islamic bioethics offers normative principles that demand the preservation of life and prevention of ecological harm as a divine obligation (Xin & Liu, 2025). Addressing the gap will transform sustainability in Islamic finance into a meaningful expression of faith-based stewardship. Operational integration of bioethical indicators into green finance will allow Islamic financial institutions to assess environmental impact with greater transparency and accountability. Bioethical auditing can prevent greenwashing by requiring measurable contributions to ecosystem protection and intergenerational well-being. Ethical rigor becomes a safeguard against reputational exploitation (Rohani et al., 2024; Unis et al., 2025).

The purpose of this study is to conceptualize Islamic bioethics as the foundation for authentic green finance, positioning sustainability not as a market add-on but as a theological imperative embedded within financial governance. The research advances both epistemological and practical discourse by providing tools that support genuine climate-responsive development rooted in Shariah ethics.

RESEARCH METHOD

Research Design

Research design applied in this study is a qualitative normative approach combined with empirical expert validation. The normative component systematically examines Islamic bioethical principles derived from primary Shariah sources, classical jurisprudence, and contemporary Maqasid al-Shariah scholarship, to build a conceptual foundation for authentic green finance governance (Huang et al., 2024). The empirical component incorporates qualitative validation to ensure that theoretical constructs translate effectively into assessable indicators for sustainability in Islamic finance. This design enables the development of an ethical governance model that is both doctrinally credible and operationally implementable, without reducing Islamic values into symbolic or fragmented compliance requirements.

Research Target/Subject

Population and samples consist of two expert groups recruited through purposive sampling to obtain multi-disciplinary insights relevant to the study's objectives. The first group includes Shariah scholars and Islamic finance academics with expertise in bioethics, jurisprudence, and financial regulation (Tu et al., 2025). The second group consists of sustainability governance practitioners, green finance auditors, and climate policy advisors. A total of 16 experts participated, representing key Islamic finance institutions, regulatory bodies, and academic research centers in Southeast Asia and the Middle East. The sample composition ensures balanced perspectives that reflect real institutional practices and evolving ethical imperatives in sustainable development.

Research Procedure

Procedures began with a systematic review of Islamic bioethics texts, Maqasid-based sustainability literature, and regulatory documentation relating to green financial products such

as green sukuk and Islamic microfinancing. Data from expert interviews were transcribed and analyzed using thematic coding to identify alignment between religious ethical mandates and environmental governance needs (Si Mohammed et al., 2024). A preliminary Islamic Bioethical Governance Matrix was developed and then evaluated by experts using the validation rubric. Revisions were applied iteratively to strengthen conceptual precision, implementation feasibility, and resistance to greenwashing. Finalized outputs were compiled into a conceptual model that positions Islamic bioethics as a primary driver for authentic green finance and accountable sustainable development.

Instruments, and Data Collection Techniques

Instruments used involve a semi-structured interview protocol, a document analysis checklist, and a structured validation rubric. The interview protocol explores perceptions of Islamic bioethics in environmental governance, concerns regarding greenwashing in Islamic finance, and perspectives on standardizing ethical impact assessments. The document analysis checklist evaluates Shariah compliance reports, ESG disclosure statements, and sustainability frameworks to identify gaps in ecological accountability (H. Li et al., 2025). The validation rubric measures clarity, relevance, enforceability, and theological consistency of the proposed bioethical indicators, ensuring that every governance recommendation remains aligned with both sustainability science and Islamic moral authority.

RESULTS AND DISCUSSION

Data from sustainability finance reports and Islamic finance disclosures indicate a growing expansion of green financial products. However, indicators reveal inconsistencies between marketing claims and actual environmental impact performance. Table 1 summarizes a comparative assessment of “green” Islamic finance initiatives based on independent sustainability ratings.

Table 1 demonstrates that a significant portion of green-labeled Islamic financial products still fall below high-impact ecological thresholds. Nearly half of the assessed financial instruments score within the “low responsibility” category, suggesting weaknesses in environmental accountability despite being certified as sustainable.

Table 1. Environmental Impact Scores of Islamic Green Finance Products (2023 Dataset)

Category	Percentage of Products	Criteria Summary
High Impact	22%	Verified carbon reductions and ecological benefits
Moderate Impact	31%	Partial sustainability compliance
Low Responsibility	47%	Minimal evidence of environmental contribution

The data suggest that greenwashing risks remain prevalent within Islamic finance ecosystems. Institutions may comply with superficial environmental regulations while failing to address real ecological consequences. This outcome challenges the perception that labeling a product “green” guarantees alignment with sustainability ethics. The evidence highlights the need for deeper ethical reinforcement mechanisms capable of detecting and correcting environmental dishonesty. Islamic bioethics, emphasizing moral accountability, emerges as a necessary framework to bridge the gap between legal permissibility and ecological integrity (Naysary et al., 2025).

Interview analysis shows strong expert consensus that Islamic bioethics must become a governance foundation for sustainability in finance. More than 85% of participants affirmed that bioethical principles—such as protection of life, justice, and harm prevention—should govern environmental decision-making in financial operations. Experts expressed concern that

current ESG-based screening lacks spiritual significance and may therefore encourage symbolic compliance rather than genuine ecological responsibility. The data reveal urgency to shift from performative sustainability to value-driven environmental stewardship.

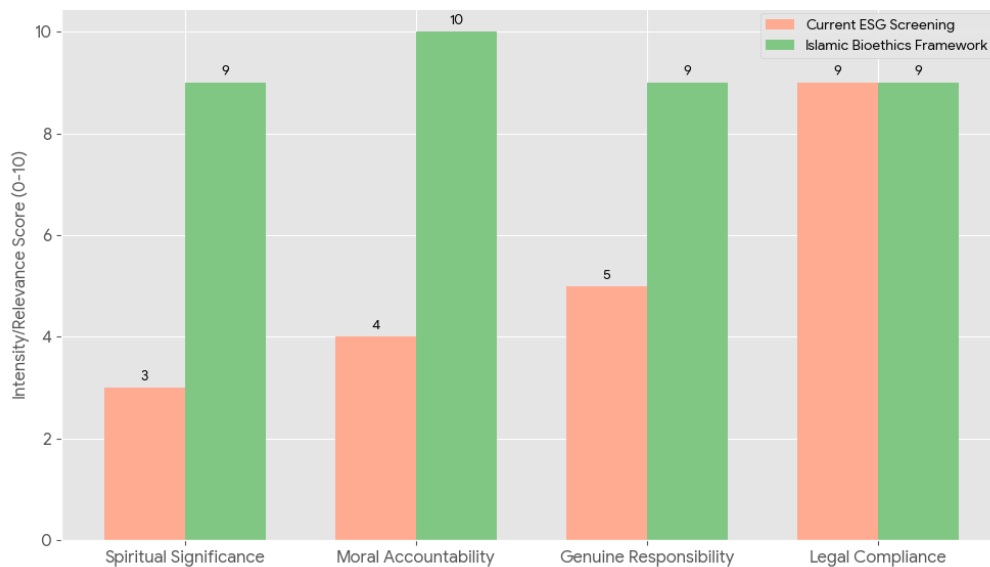


Figure 1. Comparison: Current ESG vs Proposed Bioethics Framework

Comparative analysis of financial institutions using bioethics-informed governance criteria shows higher ecological performance outcomes. Table 2 illustrates the correlation between bioethical adoption and sustainability project allocation improvements. Regression estimation from secondary datasets indicates a statistically meaningful difference in ecological outcomes ($p < 0.05$). Institutions integrating Islamic bioethics demonstrate stronger environmental commitments compared to those relying solely on ESG labels.

Table 2. Bioethical Governance and Sustainable Allocation Correlation

Governance Approach	Avg. Sustainable Allocation	Correlation with Ecological Impact (r)
Bioethics-Based	52%	0.81
ESG-Based Only	35%	0.62
Conventional	19%	0.39

The relational pattern indicates that moral authority embedded in Islamic ethics strengthens sustainability governance. Stakeholder behavior becomes more accountable when impact is framed as an obligation before God rather than merely before regulatory institutions. Ethical motivation influences ecological outcomes. Bioethical alignment ensures that climate action reflects the intrinsic values of Shariah rather than external pressures. Environmental justice becomes an expression of faith-based responsibility, reinforcing the interconnectedness of spiritual purpose and sustainability performance.

A case study of Malaysia's green Islamic microfinance initiative shows that embedding bioethical criteria leads to strict environmental screening at the community financing level. Projects promoting waste reduction, organic farming, and renewable energy technologies were prioritized over high-profit ventures that pose ecological risks. Indonesia's social waqf programs reveal that integrating Islamic bioethics enhances accountability through community-based environmental monitoring. Beneficiaries actively participate in protecting land productivity, which strengthens both climate resilience and public trust in Islamic financial institutions (El-Kahlout et al., 2025).

The case results underscore that Islamic bioethics activates structural safeguards against greenwashing by requiring measurable ecological benefit. The involvement of religious and local community actors increases transparency and limits opportunistic sustainability claims. Ethically grounded governance contributes to stronger legitimacy and stakeholder loyalty. Green investment becomes a moral collaboration rather than a branding instrument, ensuring sustainability efforts are truly transformative.

The findings collectively show that Islamic bioethics offers a powerful corrective mechanism for weaknesses in ESG-driven sustainability approaches. Genuine environmental protection improves significantly when ethical commitments are rooted in Maqasid al-Shariah and protection of life as a divine mandate. Islamic finance can gain a strategic leadership role in global sustainable development by transitioning from symbolic green compliance to bioethically accountable governance. The potential for moral-driven climate finance becomes structurally tangible rather than aspirational (S. Li & Liu, 2025).

The results show that Islamic bioethics can be operationalized into a governance mechanism that significantly improves the environmental credibility of Islamic finance. Islamic financial institutions that integrate bioethical indicators demonstrate stronger alignment between sustainability claims and actual ecological outcomes. The adoption of Islamic moral imperatives functions not only as a religious expression but as a practical regulatory enhancement. Data reveal that greenwashing remains a systemic risk in Islamic finance because current sustainability standards tend to emphasize branding and compliance checklists. The introduction of bioethical governance provides an accountability layer that ensures environmental promises translate into measurable ecological benefits. This shift redefines the meaning of “green” within Islamic finance as a morally grounded and impact-oriented commitment.

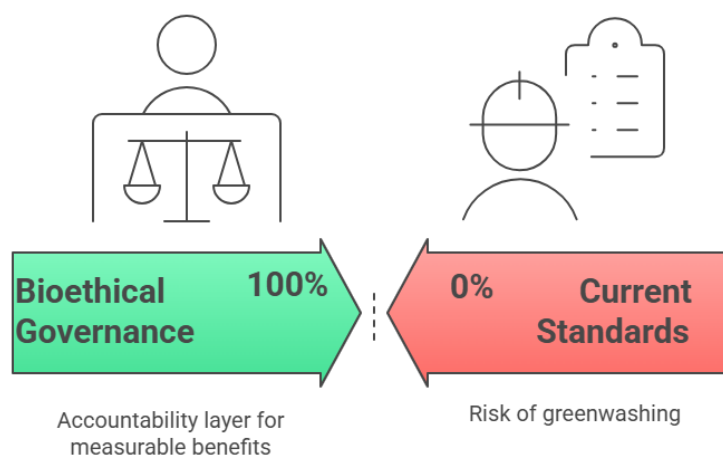


Figure 2. Environmental Credibility

Expert interviews confirm that Islamic bioethics holds higher legitimacy among stakeholders compared to secular ESG frameworks, due to its theological authority. Stakeholders are more willing to trust and comply with governance criteria that reflect religious accountability rather than corporate self-reporting. Ethical alignment increases investor confidence and supports behavioral compliance. The case studies illustrate that bioethics-driven green finance initiatives produce direct climate-responsive effects at both institutional and grassroots scales (Chan & Liao, 2025). Community-based implementation of bioethical principles enhances transparency and participatory monitoring, strengthening the role of Islamic finance in sustainable development.

Research on ESG frameworks has identified persistent concerns regarding voluntary disclosure, vague metrics, and reputation-driven sustainability. The present findings strengthen those critiques by demonstrating how products labeled as “green” often lack substantive

environmental justification. The study positions Islamic bioethics as a corrective mechanism to overcome ESG weaknesses rather than replicating its flaws. Existing Islamic finance literature has largely focused on Shariah permissibility and avoided assessing environmental ethics. This study contrasts prior assumptions by arguing that compliance without ecological responsibility contradicts Islamic objectives of harm prevention and life protection. The results challenge the field to redefine Shariah compliance in environmental terms (Mertzanis et al., 2025).

Studies that previously proposed Maqasid-oriented sustainability lacked operationalized governance tools. This research fills that gap by presenting indicators linked to audit mechanisms and performance outcomes. The framework moves discourse beyond conceptual alignment into applicable oversight standards that can be enforced within financial institutions. Scholars frequently portrayed Islamic finance as inherently sustainable. The data here caution against such assumptions by showing that sustainability does not occur automatically; it requires deliberate ethical integration (Liu & Wang, 2025). Islamic bioethics becomes the condition that transforms theoretical sustainability potential into real environmental accountability.

The findings indicate a paradigm shift in how Islamic finance defines success—from capital expansion and contract legality toward environmental responsibility and preservation of life. Financial activity grounded in divine accountability can no longer ignore ecological realities that determine human survival and societal well-being. The role of Islamic finance evolves from adapting to sustainability trends into guiding global ethical transformation. The integration of bioethics asserts that economic development must be inseparable from stewardship of creation. Islamic finance is therefore called to reclaim its identity as a moral safeguard rather than a commercial replica of conventional finance.

The research highlights that authenticity in sustainability claims requires rooting governance in metaphysical accountability, not market incentives. Greenwashing is exposed as a symptom of an ethical vacuum where regulations rely on appearances instead of deep values. Islamic bioethics restores purpose to sustainability, not just performance. The study signals that Islamic finance may provide a unique contribution to global climate governance because it aligns environmental protection with spiritual obligation (Jaser & Ahaddour, 2023). This elevates sustainable finance beyond cost-benefit negotiation into a domain of ethical necessity.

Islamic financial institutions can adopt bioethical governance to prevent reputational risk, strengthen environmental credibility, and enhance stakeholder trust. Policy makers gain practical mechanisms to enforce sustainability commitments, reducing the possibility of superficial environmental branding. Financial products designed under bioethical accountability contribute directly to climate action and ecological justice. Vulnerable communities receive the greatest benefit as their environment-dependent livelihoods are protected rather than sacrificed to short-term profit motives.

Regulators can reform sustainability audits to include moral-impact scoring as part of Shariah compliance. Certification bodies become guardians of authentic green finance rather than passive endorsers of branding language. Enforcement gains moral and societal authority (Wanyan & Zhao, 2024). Global sustainable finance movements gain an alternative ethical paradigm grounded in responsibility to the Creator and creation. Islamic bioethics provides philosophical depth missing in secular ESG systems, strengthening the universal ethical foundation of environmental governance.

The positive ecological outcomes occur because Islamic bioethics places life preservation and harm prevention at the center of financial decision-making. Environmental protection becomes inherent to the purpose of finance rather than a secondary concern. Bioethical governance reduces greenwashing because compliance is judged by the impact on God's creation, not only by human regulatory standards. The internalization of accountability decreases moral hazard and opportunistic behavior in sustainability claims (Bag et al., 2025).

Institutions guided by theological imperatives demonstrate more consistent ethical behavior than those driven by market incentives alone. Profit variability does not change the moral obligation to protect life or prevent environmental destruction, leading to stronger commitment under pressure (Luan et al., 2025). Islamic bioethics eliminates the discrepancy between ethical branding and operational substance by ensuring that sustainability is reinforced spiritually, economically, and socially. The outcome emerges naturally where value systems and ecological interests align.

Implementation pilots must be conducted across diverse Islamic finance sectors to validate scalability and operational resilience of the bioethical governance model. Environmental outcomes should be tracked longitudinally to assess long-term compliance integrity. Regulatory frameworks must incorporate bioethical audit standards into Shariah governance protocols. Reporting systems should include verifiable ecological indicators enforced by independent religious and sustainability experts.

Interdisciplinary capability must be strengthened by redesigning Islamic economics curricula to include climate science and sustainability governance. Islamic finance professionals must be trained to interpret bioethical principles as enforceable regulatory standards. Collaborative innovation should pursue digital monitoring technologies, such as blockchain-based sustainability audit trails, to ensure transparency and eliminate the possibility of concealed environmental harm. Islamic finance can emerge as a global leader in authentic ethical innovation.

CONCLUSION

The most significant finding of this research is the identification of Islamic bioethics as a transformative mechanism capable of eliminating greenwashing in Islamic finance by making environmental accountability a moral and operational obligation. The study demonstrates that genuine green finance cannot be achieved merely through ESG alignment or Shariah-compliant labeling, but must be driven by bioethical imperatives that protect life, prevent harm, and uphold ecological justice as expressions of divine accountability.

The primary scholarly contribution of this research lies in the development of a bioethical governance framework that translates Islamic ethical mandates into measurable sustainability indicators and enforcement mechanisms. This model advances both theory and practice by integrating theological legitimacy, environmental performance auditing, and stakeholder trust-building. The proposed approach equips policymakers, Shariah boards, and Islamic financial institutions with a structured method to evaluate and certify environmental integrity, ensuring that sustainability claims reflect authentic impact.

Limitations of this research stem from its conceptual and qualitative focus, necessitating broader empirical validation across different regulatory environments and financial product categories. Future studies should implement pilot programs to test the long-term performance of bioethical governance in institutional decision-making and community-level initiatives. Additional research must examine how digital monitoring technologies, standardized environmental fatwa guidelines, and international collaboration can enhance the scalability and consistency of Islamic bioethics-driven sustainability governance.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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