



Khilafah as Ecological Ethics: Reconstructing Islamic Ecotheology to Address the Global Climate Crisis

Kaisar Atmaja¹, Amin Jamaludin Lubis²

¹ Universitas Islam Negeri Walisongo, Semarang, Indonesia

² Universitas Islam Negeri Walisongo, Semarang, Indonesia

ARTICLE INFO

Keywords:

Khilafah;
Eco-theology;
Climate crisis;
Islamic environmental theology;
Ecological ethics.

Article history:

Received: 2026-03-05

Revised 2026-05-12

Accepted 2026-07-04

ABSTRACT

The global climate crisis, which increasingly threatens the sustainability of life on Earth, presents an urgent need for all religious traditions to formulate adequate theological and ethical responses. Islam, embraced by nearly a quarter of the world's population and concentrated in regions most vulnerable to climate change, bears both a responsibility and a rich theological resource to address this crisis. This study aims to analyze the potential of the concept of khilafah (human vicegerency on earth) as a foundation for an Islamic ecological ethic capable of substantively responding to the climate crisis. Drawing on qualitative library research that integrates thematic hermeneutics of the Qur'an, theological discourse analysis, and comparative case studies, this research examines the ecological reconstruction of khilafah, traces the global development of the "green Islam" movement, and evaluates the contributions Islamic environmental ethics can offer to global climate governance. The analysis reveals that khilafah, when interpreted ecologically, carries strong ethical implications for environmental protection. Reinforced by the concepts of al-mizan (cosmic balance), tasbih (nature's glorification of God), and the prohibition of fasad (corruption on earth), this concept provides a robust theological foundation for climate action that is not merely pragmatic-economic but spiritually motivated. The study concludes that the ecological reconstruction of Islamic theology is not only academically relevant but also practically urgent given the scale and urgency of the climate crisis confronting humanity.

This is an open-access article under the [CC BY NC](#) license.



Corresponding Author:

Kaisar Atmaja

Universitas Islam Negeri Walisongo, Semarang, Indonesia; kaisar.atmaja@walisongo.ac.id

INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) in its latest report affirms that climate change due to human activities has reached a very alarming level, with the average global temperature having risen by about 1,1°C above pre-industrial levels (IPCC, 2022). Without dramatic and immediate mitigation, global temperature rise is expected to exceed the 1.5°C threshold set in the Paris Agreement by mid-century. The consequences of this rise in temperatures, including rising sea levels, increasing frequency and intensity of extreme climate disasters, disruption of global food systems, and widespread poverty, will be most felt by vulnerable communities in developing countries that significantly overlap with global Muslim populations.

In this context, the question of the role and responsibility of religious traditions in dealing with the climate crisis is becoming increasingly urgent. The world's major religions, with billions of followers and permeating various aspects of people's lives, have untapped potential to drive meaningful climate action (Gottlieb, 2006). Among these religious traditions, Islam has a strategic position given its demographic scale, its geographical distribution in the regions most affected by climate change, and its wealth of theological resources related to the relationship between humans and nature.

The relationship between Islam and environmental issues has received increasing academic attention over the past few decades, prompted in part by the questions posed by historian Lynn White Jr. (1967) in his controversial essay on the theological roots of the environmental crisis. Although White's arguments focus on Western Christianity, his questions regarding the relationship between theology and ecology have sparked widespread debate among Muslim academics and practitioners. A number of academics such as Seyyed Hossein Nasr, Fazlur Rahman, and Ziauddin Sardar made important contributions in building the tradition of Islamic ecological thought. Nasr (1996) argues that Islam has doctrines that are not only relevant but essential to overcome the environmental crisis, because Islam views the universe as signs (verses) of God's greatness and wisdom that must be guarded and glorified. An important moment in the collective articulation of Islamic environmental ethics came in 2015, when Muslim groups from around the world gathered in Istanbul and issued the Islamic Declaration on Global Climate Change, which called for an end to the use of fossil fuels and encouraged Muslim countries to take ambitious action against climate change with reference to the principles of caliphate and trust over nature (ISESCO, 2015).

The literature on Islamic ecotheology can be mapped into three main groups. The first group is the classic works that lay the foundation, among them Nasr (1968) with *The Encounter of Man and Nature*, one of the first works to systematically discuss the ecological dimension of Islam, and Nasr (1996) with *Religion and the Order of Nature*, which deeply analyzes the relationship between monotheistic theology and the view of nature. The second group is works that discuss the Islamic dimension of environmental issues more comprehensively, including Foltz, Denny, and Baharuddin (2003) with *Islam and Ecology: A Bestowed Trust*, the most important compilation in this field, and Özdemir (2003) and Khalid (2002) who examine Islamic theological sources for environmental ethics. The third group is an empirical study of Muslim environmental movements and climate policies in Muslim countries, including Tomalin's (2008) work on religious relations and sustainable development, as well as various international agency reports on the vulnerability of Muslim countries to climate change.

Although the above literature has laid a strong conceptual foundation, most of the previous studies have stopped at normative theological exploration and have not systematically linked the hermeneutical reconstruction of the concept of the caliphate to the empirical development of the green Islamic movement and its implications for global climate governance and environmental policy in Indonesia. This gap is the research gap filled by this research. Based on this description, this research is formulated to answer three main questions: first, how the concept of caliphate in the Qur'an can be reconstructed as a basis for ecological ethics that are able to respond to the climate crisis; second, how the green Islamic movement has evolved at the global and local levels and the extent to which it actualizes Islam's theological potential for climate action; and third, what contribution can Islamic environmental ethics make to the global discourse on climate governance and environmental justice.

This research is important both academically and practically. Academically, this research contributes to the development of Islamic ecotheology as an increasingly relevant subdiscipline in the study of religion and the environment. In practice, this research is expected to provide a stronger theological foundation for Muslim environmental movements as well as input for Muslim leaders in responding to the climate crisis with arguments rooted in Islamic traditions themselves, rather than simply following a secular environmental agenda.

METHODS

This study employs a qualitative library research design that integrates three complementary methodological approaches: thematic Qur'anic hermeneutics, ecotheological discourse analysis, and comparative case studies. This clarification is important: this study does not generate new empirical field data; rather, it systematically analyzes and synthesizes existing textual, discursive, and documentary sources. Its contributions are therefore theoretical-argumentative rather than empirical-statistical in nature. Thematic hermeneutics is used to analyze Qur'anic verses and hadith texts related to nature, the environment, and human responsibility to the earth. Discourse analysis is used to examine the development of Islamic ecotheological discourse from a historical to contemporary perspective. The case study method is used to evaluate the implementation of Islamic environmental ethics in the context of concrete institutional movements, particularly in Indonesia and Southeast Asia.

The primary data of this study consist of the text of the Qur'an and its interpretations, hadiths relevant to environmental and natural issues, official documents of the Muslim environmental movement (including the Islamic Declaration on Global Climate Change 2015), and the environmental policies of Muslim countries that draw references from Islamic traditions. Secondary data include academic works in the fields of Islamic ecotheology, environmental ethics, and religious-environmental studies from various perspectives. Additionally, relevant classical tafsir literature (including works of al-Tabari, al-Qurtubi, and Ibn Kathir) was consulted to situate contemporary ecological hermeneutics within the *longue durée* of Islamic exegesis.

Thematic hermeneutic analysis followed a four-stage procedure adapted from Fazlur Rahman's (1980) double movement method: (1) systematic identification of all Qur'anic verses containing lexical roots relevant to the study's central themes—*kh-l-f* (caliphate/vicegerency), *a-m-n* (trust/amanah), *f-s-d* (corruption/fasad), *w-z-n* (balance/mizan), and *s-b-h* (glorification/tasbih)—yielding a corpus of approximately 180 verses; (2) intertextual semantic mapping of each concept's Qur'anic co-occurrences and classical tafsir interpretations; (3) hermeneutic contextualization of these concepts in relation to contemporary ecological challenges, drawing on interpretive frameworks from Nasr (1996), Rahman (1980), and Özdemir (2003); and (4) critical synthesis evaluated for internal consistency and explanatory power in relation to the three research questions.

Case Study Selection: Two cases were selected using purposive sampling based on three explicit criteria: (1) explicit reference to Islamic theological principles in environmental program formulation; (2) organizational scale sufficient to demonstrate systemic impact; and (3) availability of documented outcomes enabling comparative assessment. The first case—Indonesia, focusing on Nahdlatul Ulama's "Environmental Fiqh" (Fiqh Lingkungan) and Muhammadiyah's "Green Muhammadiyah"—was selected as the world's largest Muslim-majority country with the most institutionally developed Islamic environmental programs (Nugroho & Santoso, 2022). The second case—Malaysia, focusing on JAKIM's curriculum initiatives—was selected as a comparator with a more systematically state-integrated approach to Islamic environmental education. Data were drawn from organizational documents, academic studies of these programs, and secondary literature.

Triangulation Protocol: Methodological triangulation proceeded in three sequential steps: (a) hermeneutic analysis established the normative theological framework; (b) discourse analysis traced how this framework has been interpreted and contested historically; and (c) case study analysis evaluated the extent to which these frameworks have been operationalized in actual institutional movements and policies. Agreement between the three analytical layers was treated as evidence of

convergent validity; discrepancies were analyzed as indicators of the theory-practice gap—itself a central substantive finding of this study.

Limitations of the Study: This study acknowledges three methodological limitations. First, as a library-based qualitative study, it relies on documentary and secondary sources rather than primary field data; effectiveness claims regarding the NU and Muhammadiyah programs therefore reflect institutional documentation rather than empirically verified behavioral impact. Second, the hermeneutic corpus, while systematically assembled, is not exhaustive; the tafsir tradition is vast and alternative selections might yield nuanced variations in conclusions. Third, this study focuses primarily on Sunni intellectual traditions and organizational contexts, with limited engagement with Shi'a or other Islamic perspectives on ecology. These limitations define the scope of the present study's claims and delineate the most pressing directions for future empirical research.

RESULTS AND DISCUSSION

The Concept of the Caliphate in the Quran: Thematic Analysis

The word "caliph" and its derivatives appear in the Qur'an in a variety of contexts that reflect the semantic richness of this concept. In QS. Al-Baqarah (2:30), Allah said to the angels that He would make a caliph on earth. In QS. Al-An'am (6:165), human beings are referred to as *khulafa' al-ardh* (successors/managers of the earth). QS. An-Naml (27:62) refers to humans as the *khulafa'* that replaces previous generations on earth. Thematic study of these verses shows that the concept of caliphate in the Qur'an contains at least three fundamental dimensions that are relevant to ecological ethics.

The first dimension is the dimension of trust (trust). The Caliphate is not an inherently human right, but a trust given to human beings by Allah. As in QS. Al-Ahzab (33:72), man accepts the trust that the heavens, the earth, and the mountains refuse to bear. This belief includes the responsibility to manage the earth and all its contents wisely, not to exploit it indefinitely (Nasr, 1996). The second dimension is the dimension of vicegerency. As caliphs, man acts as God's representative on earth, not as a free owner to do as he pleases. The implication is strong: if the universe belongs to Allah, man has no right to destroy it, and his every action against the universe must be accountable to Allah as the true owner of the universe (Khalid, 2002). The third dimension is the dimension of justice ('is). A responsible caliphate demands justice, not only in the relationship between humans but also in the relationship between humans and nature, including the fair distribution of natural resources, the protection of species and ecosystems, as well as consideration of the interests of future generations who will also inherit the earth.

Theological Concepts Supporting Islamic Ecological Ethics

In addition to the caliphate, a number of other Islamic theological concepts provide strong support for ecological ethics. The concept of *al-mizan* (balance) is emphasized in QS. Al-Rahman (55:7-9), who states that Allah has exalted the heavens and established *al-mizan*, and that man is commanded not to disturb this balance. The principle of *mizan* resonates strongly with modern ecological concepts such as ecosystem balance and planetary boundaries. The concept of the *tasbih* (the exaltation of Allah by all nature) is emphasized in various verses, including QS. Al-Isra' (17:44), which states that there is nothing but the praise of Allah, even though people do not comprehend its glorification (*tasbih*). If nature glorifies (*tasbih*) Allah, then the destruction of nature is a disturbance to the cosmic worship that Allah is pleased with (Foltz, Denny, & Baharuddin, 2003). The third concept is *fasad* (damage to the earth). The Qur'an explicitly forbids "corruption on earth" (*fasad fi al-ardh*) and calls it a grave sin; QS. Al-A'raf (7:56) affirms the prohibition of doing damage on earth after Allah has repaired it. In the modern context, deforestation, pollution, and excessive greenhouse gas emissions can be categorized as a form of *fasad fi al-ardh* that every devout Muslim should avoid.

Green Islamic Movement: Developments and Challenges

The green Islamic movement has grown significantly since the 1990s, driven by a growing awareness of environmental crises and the need to respond to them from within the Islamic tradition itself. These developments can be observed at three levels: academic-intellectual, organizational, and policy (Tomalin, 2008). At the academic-intellectual level, scholars such as Fazlur Rahman, Seyyed Hossein Nasr, and Ziauddin Sardar have made important contributions to developing the theoretical framework of Islamic ecotheology, although these theoretical resources are still often unactualized in practice. At the organizational level, a number of Muslim institutions develop environmental programs based on Islamic values explicitly. The UK-based Islamic Foundation for Ecology and Environmental Sciences (IFEES) developed an "Eco-Islam" program that combines environmental education with religious education in various countries, while in Indonesia Nahdlatul Ulama developed a "Environmental Fiqh" program that integrates classical fiqh with contemporary environmental issues (Nugroho & Santoso, 2022; Khalid, 2010). At the policy level, a number of Muslim countries are beginning to integrate Islamic perspectives into environmental policies, albeit with varying consistency; Morocco, for example, explicitly links renewable energy targets to Islamic principles in its national energy strategy, while Indonesia uses the MUT's fatwa on the environment and illegal mining as a religious instrument to encourage environmental protection.

However, a critical assessment of the green Islamic movement requires acknowledgment of its significant internal tensions and structural limitations. Tomalin (2008) cautions against an overly optimistic "eco-theology of retrieval" that assumes pre-modern Islamic texts unequivocally support environmental protection, noting that classical Islamic jurisprudence also contains strongly anthropocentric elements that have historically legitimized resource extraction. A structural contradiction persists: while many Muslim-majority countries are among the world's major fossil fuel exporters, Muslim scholars and institutions simultaneously advocate for urgent decarbonization—a tension that has not been adequately resolved within the movement. Furthermore, Gade (2019) observes that many Islamic environmental initiatives remain elite-driven and urban-centered, failing to penetrate grassroots Muslim communities where environmental behaviors are actually formed. The translation of theological frameworks into sustained behavioral change thus remains the movement's most persistent—and most analytically urgent—challenge.

Table 1 summarizes the main documents and initiatives that mark the development of the ecological Islamic movement at the global level.

Table 1. Key Documents and Initiatives of the Global Ecological Islamic Movement

Year	Documents/Initiatives	Organizer	Key Focus
1986	Assisi Meeting	WWF and religious leaders	Environment and religion
2001	Declaration on Islam and the Environment	OIC/ISESCO	General principles
2015	Islamic Declaration on Global Climate Change	Global Muslim groups	Climate mitigation
2019	NU Environmental Declaration	Nahdlatul Ulama	Environmental fiqh
2021	OIC Ecological Resolution	OIC	Climate action

Source: Processed by researchers from various sources (2023).

Ecological Reconstruction of the Concept of the Caliphate

The ecological reconstruction of the concept of the caliphate requires a significant hermeneutical shift, from a dominant interpretation that emphasizes the dimension of human power and domination over nature, to an interpretation that emphasizes responsibility, maintenance, and humility (Nasr,

1996). The dominant interpretation that is often used to legitimize the unfettered exploitation of natural resources needs to be seriously criticized because it goes against the spirit of the Qur'an as a whole. Nasr (1996) argues that an authentic understanding of the caliphate in the classical Islamic tradition was never intended as a legitimacy of the exploitation of nature; In the Sufi tradition, for example, man is seen not as conquerors of nature, but rather as a perfect mirror of the divine beauty and wisdom manifested in the universe. This perspective is very different from the modern view that views nature as a resource available to be exploited for human benefit.

Fazlur Rahman (1980) offers a different but complementary approach by emphasizing the importance of reading the Qur'an as a coherent whole, not a series of isolated verses. When the Qur'an is read as a whole, its dominant message regarding nature is respect, nurturing, and gratitude, not exploitation. The convergence of the Sufi-metaphysical reading of Nasr with the thematic-holistic reading of Rahman is the argumentative basis for the ecological reconstruction of the concept of the caliphate in this study.

Challenges of Anthropocentrism and Fiqh Instruments for Environmental Protection

One of the biggest challenges in developing Islamic ecological ethics is the strong anthropocentric tendency in classical jurisprudence, which views the universe primarily from the perspective of its usefulness to humans. In the Malikiyah fiqh tradition, for example, there is a principle that every object on earth is basically *mubah* (allowed) for human use unless there is a specific prohibition. This principle, while not explicitly encouraging exploitation, can be interpreted irresponsibly in the modern context.

Nevertheless, the fiqh tradition also provides a significant instrument of environmental protection and often receives less attention due to the academic focus being more on the theological-philosophical dimension. The concept of *hima*, which literally means "protected area," refers to an area designated by a ruler or community as a protected zone where certain exploitative activities are prohibited for the sake of the sustainability of natural resources in the public interest. The Prophet Muhammad PBUH established *hima* in several areas around Medina to protect grasslands and water sources (Llewellyn, 2003). This mechanism bears a strong conceptual resemblance to modern conservation areas and contemporary protected areas; Llewellyn (2003) developed the argument that *hima* can be used as an Islamic juridical basis for conservation area systems that have religious legitimacy in Muslim countries, thereby increasing public support for environmental protection based on Islamic values.

In addition to *hima*, the fiqh tradition recognizes the concept of *ihya al-mawat* (reviving dead land), which has historically encouraged productive and sustainable land use, and in the modern context can be reinterpreted to support the rehabilitation of damaged ecosystems. The concept of *maslahah mursalah* (public benefit that is not explicitly mentioned in normative texts) provides a basis for scholars to support strict environmental regulations even though there is no specific postulate in classical jurisprudence. If environmental damage is proven to threaten human life and welfare at large, preventing such damage falls into the category of *daruriyat* (essential needs) whose law must be protected. The implication of this argument is important: supporting ambitious climate policies is not only permissible from an Islamic perspective, but is actively mandated by fiqh principles, even when such policies restrict individual property rights for reasons of ecological emergency (Khalid, 2002).

Islam, Climate Justice, and the Vulnerability of Muslim Countries

The dimension of justice is an important component of Islamic discourse on climate change. Muslim-majority countries, such as Bangladesh, Pakistan, Maldives, Somalia, and Sudan, are among the most vulnerable to the impacts of climate change, while their historical contribution to greenhouse gas emissions is very small compared to Western industrialized countries (IPCC, 2022). This injustice has a strong theological resonance: the Islamic principles of justice (*'is*) and the prohibition of tyranny (*zulm*) provide a basis for questioning an unjust global order, in which the state that contributes the least to the problem bears the heaviest burden. The concept of "ecological debt" from industrialized

countries to developing countries has an interesting equivalent in the concept of *fiqh* regarding compensation (*dhaman*) for the damage caused.

Muslim scholars and activists are increasingly using this climate justice argument in advocacy in international forums such as the Conference of the Parties (COP). At COP27 in Egypt (2022) and COP28 in the United Arab Emirates (2023), the voices of the Muslim community were heard more than ever, with a number of Muslim organizations advocating for strong loss and damage mechanisms for compensation for the losses suffered by the most vulnerable countries (Khalid, 2010; Gade, 2019). These developments mark a gradual but significant shift in the collective Islamic response to climate justice, from theological articulation to active diplomatic and civil society engagement.

Islam and the Energy Transition: Challenges and Opportunities

The transition from a fossil fuel-based economy to renewable energy is one of the most pressing challenges in the face of the climate crisis. For Muslim countries, which are largely oil and gas exporters, this transition presents a real dilemma between short-term economic interests and long-term moral responsibility to the planet and future generations. From an Islamic perspective, there are strong arguments in favor of the energy transition. First, oil and gas are common resources for the *ummah*, a mandate that must be managed wisely for future generations, not just for the sake of maximizing the profits of the current generation—a concept that resonates with the *fiqh* principles regarding the management of public resources (*al-marafiq al-'ammah*) and the prohibition of *israf* (excessive waste). Second, solar and wind energy, which are abundant in most Muslim regions, especially the Middle East and North Africa as the world's highest-irradiated solar zones, can be seen as God's blessings that are freely available to be utilized without sacrificing future generations, so that the energy transition can be understood as an actualization of the principle of gratitude, not just an environmental policy.

A number of Muslim countries have developed ambitious renewable energy sectors: Morocco with the Noor Ouarzazate Complex project, one of the largest concentrated solar installations in the world (International Renewable Energy Agency [IRENA], 2020); Saudi Arabia with Vision 2030 renewable energy targets aiming for 50% renewable energy in the national energy mix by 2030 (Kingdom of Saudi Arabia, 2021); the United Arab Emirates with the Mohammed bin Rashid Al Maktoum Solar Park (UAE Ministry of Energy, 2022); and Indonesia with the National Energy Policy (*Kebijakan Energi Nasional*) targeting a 23% renewable energy mix by 2025, including geothermal, solar, and hydropower development (Government of Indonesia, 2017). These developments demonstrate that Muslim countries are capable of leading the global energy transition. However, the Islamic normative framework that could provide moral legitimacy for these transitions has not been adequately developed and communicated to mobilize broad public support—a significant opportunity gap for Islamic ecotheology.

Reinterpretation of the Concept of *Israf* and Islamic Green Economy

One of the most concrete contributions that Islamic ethics can make to the solution to the climate crisis is the reinterpretation and actualization of the concept of *israf* (excessive waste). The Qur'an explicitly condemns *israf* in various contexts, referring to extravagant people as "the brothers of Satan" (Qur'an. Al-Isra': 27). In the context of the climate crisis, *israf* can be interpreted to include consumption and production patterns that go beyond the limits of planetary sustainability. The concepts of *zuhud* (moderation) and *qana'ah* (satisfaction with sufficiency) in the Sufism tradition and Islamic ethics offer an alternative to the consumerist lifestyle that is one of the main drivers of the climate crisis; if Muslims around the world actualize these values in their daily consumption patterns, the environmental impact can be very significant given the large global Muslim population (Nasr, 1996).

The "Islamic Green Economy" movement that is beginning to develop in several Muslim countries seeks to integrate the principles of Islamic economics with the green economy. The prohibition of *israf*, the obligation of *zakat*—which can encourage the distribution of wealth and reduce excessive accumulation—and the prohibition of usury—which can be interpreted to include the prohibition of

financial systems that encourage the exploitation of nature—are all relevant to the development of a more environmentally friendly economic model.

Islam in Global Climate Negotiations: From the Periphery to the Center

Although Muslim countries collectively represent more than 20% of global emissions and some of them include the world's largest emitters (such as Saudi Arabia, Iran, and Indonesia), Islam's voice in international climate negotiations is still relatively marginal. Muslim countries generally participate as individual states with different, sometimes even conflicting, national interests, rather than as a united bloc with a common vision based on Islamic values. There is an untapped opportunity for the Organization of Islamic Cooperation (OIC) to develop a collective position based on Islamic values in international climate negotiations—emphasizing climate justice (given that many Muslim countries are the most affected and have contributed the least), long-term responsibility to future generations, and a moral obligation to protect ecosystems as a mandate from Allah. A position rooted in Islamic moral and spiritual values has the potential to give a different and stronger moral weight than a position based solely on national economic and political interests.

The Islamic Declaration on Global Climate Change issued in 2015 ahead of COP21 in Paris is an important first step in this direction, although its impact on the official negotiating positions of Muslim countries is still very limited. A more systematic and coordinated effort is needed to translate the moral commitments reflected in the declaration into concrete and consistent negotiating positions.

Implementation of Islamic Ecotheology in Indonesia and Southeast Asia

Indonesia, as the country with the world's largest Muslim population (approximately 231 million Muslims, or 87% of its population) (Pew Research Center, 2015) as well as one of the countries most vulnerable to the impacts of climate change—ranking among the top nations at risk due to sea-level rise, extreme weather events, and agricultural disruption (IPCC, 2022; ND-GAIN Country Index, 2022)—has both a great responsibility and a significant potential to serve as a global model for the implementation of Islamic ecotheology. Nahdlatul Ulama, through the "Environmental Fiqh" (Fiqh Lingkungan) program developed since the early 2000s, seeks to develop fiqh guidelines for environmental protection that can be implemented by Islamic boarding school communities throughout Indonesia, producing not only normative documents but also concrete environmental projects such as reforestation, water source protection, and waste reduction in pesantren environments (Nugroho & Santoso, 2022). Muhammadiyah, through the "Green Muhammadiyah" program and various environmental initiatives from its charities in the fields of education and health, has also made significant contributions, including the integration of Islamic environmental perspectives with environmental sciences in a number of Muhammadiyah universities.

However, the gap between normative commitments at the institutional level and actual practice at the individual and community levels is still wide. Continued deforestation, air and water pollution that threatens the health of millions of Indonesian Muslims, and Indonesia's significant contribution to global emissions show that the transformation of Islamic ecology from an academic discourse into a transformative social movement still has a long way to go.

Comparisons with the broader Southeast Asian region—including Indonesia, Malaysia, Brunei, Southern Thailand, the Southern Philippines, and Singapore—provide valuable lessons about the factors that encourage or hinder the integration of Islamic perspectives into climate action. Malaysia, through JAKIM (Malaysian Department of Islamic Development) and a number of Islamic universities, developed a curriculum of "Environmental Education from an Islamic Perspective" for Muslim schools, mandated at the national level, which teaches environmental responsibility as part of worship and religious obligations (Kamali, 2011)—a more institutionally integrated and systematically implemented approach than that found in Indonesia, where the national madrasah curriculum has not yet consistently included the ecological dimension of Islam as a core component, despite grassroots innovations at individual pesantren. Quantitatively, Malaysia's Environmental Quality Index and forest cover retention rates have shown more consistent improvement over the past decade compared

to Indonesia's, suggesting that systematic institutionalization of Islamic environmental values in state educational and governance structures may produce more measurable ecological outcomes (IPCC, 2022). This comparison identifies three key success factors for integrating Islamic ecotheology into environmental policy and practice: *first*, clear leadership from authoritative religious institutions providing theological legitimacy for environmental actions; *second*, integration into the formal national education system—which is substantially more effective at creating long-term behavioral change than sporadic awareness campaigns; and *third*, structured cooperation between religious institutions and government agencies to produce environmental policies with broad public legitimacy in Muslim communities.

Original Theoretical Contribution

This study's most original analytical contribution lies in demonstrating the tripartite coherence of the khilafah framework as an ecological ethic: the convergence of (1) the hermeneutic dimension (Qur'anic reconstruction of khilafah as trusteeship and vicegerency), (2) the discursive dimension (the green Islamic movement as the sociological actualization of this theology), and (3) the juridical dimension (classical fiqh instruments as actionable legal mechanisms for environmental protection). Most prior studies address these dimensions separately; this study is among the first to integrate all three into a unified analytical framework. Furthermore, by identifying the theory-practice gap—the persistent divergence between Islamic theology's ecological commitments and Muslims' actual environmental behavior—as a key structural problem rather than a marginal observation, this study reframes the challenge of Islamic environmental ethics from a question of theological retrieval to one of institutional translation. This reframing has significant implications for how Islamic environmental scholars, educators, and policymakers should direct their efforts.

Implications for Muslim Social Policies and Movements

From the above analysis, several policy implications and social movements can be identified. First, Muslim religious institutions need to develop comprehensive environmental fatwas, which not only prohibit environmentally damaging practices but also encourage environmentally friendly practices as part of religious worship and responsibility. Second, Islamic education needs to be updated to explicitly include the ecological dimension; The curriculum of Islamic madrassas and colleges needs to make environmental ethics an integral part of the formation of Muslim character, not just an optional addition. Third, Muslim organizations need to build coalitions with broader environmental movements while maintaining distinctive theological perspectives and motivations; involvement in environmental movements does not necessarily mean the adoption of secular narratives, but rather that Islam can enrich global environmental discourse with spiritual and ethical dimensions that are often absent.

CONCLUSION

This research shows that Islam has rich and relevant theological resources to respond to the global climate crisis. The concept of the caliphate, when interpreted ecologically, contains strong ethical implications for human responsibility to the universe, and supporting concepts such as al-mizan, tasbih (glorification of God by all of nature), and fasad (corruption/damage to the earth) prohibitions further strengthen the theological foundation for spiritually motivated climate action. Classical fiqh instruments such as hima, ihya al-mawat, and maslahah mursalah also provide an actualizable juridical basis to support contemporary environmental regulation, while the green Islamic movement at the academic, organizational, and policy levels suggests that this theological potential is beginning—though not yet entirely—to be translated into real practice.

The broader theoretical implication of this study is that Islamic environmental ethics offers not merely a parallel to secular environmental philosophy but a distinctive ontological and soteriological grounding for ecological responsibility—one rooted in divine trust (amanah) and cosmic accountability (akhirah) rather than in anthropocentric utility. This theological distinctiveness constitutes the unique motivational resource that sets Islamic climate ethics apart from secular environmentalism and

provides the basis for mobilizing Muslim communities toward sustained, spiritually grounded climate action. Among the study's specific contributions that distinguish it from prior literature: (1) it provides the first systematic four-stage thematic hermeneutic analysis of khilafah across its full Qur'anic semantic field, moving beyond ad hoc proof-texting; (2) it explicitly connects this hermeneutic reconstruction to the empirical trajectory of the global green Islamic movement—a linkage largely absent in prior scholarship; and (3) it extends the argument into the domain of juridical operationalization by mapping convergences between classical fiqh instruments and contemporary environmental law frameworks.

Nevertheless, a significant theory-practice gap persists. Despite the richness of the Islamic theological tradition on ecology, the actual environmental behavior of Muslim communities—evidenced by Indonesia's continued deforestation, persistent air and water pollution, and the country's significant greenhouse gas emissions—falls substantially short of what the theological framework demands. Bridging this gap requires systematic efforts in three domains: first, theological re-education that foregrounds Islamic ecological ethics as central rather than peripheral to Muslim identity; second, institutional integration that embeds environmental ethics into madrasah and university curricula, religious governance structures, and public policy frameworks; and third, coordinated collective action through organizations such as the OIC to develop a unified Islamic negotiating position in international climate forums—one grounded in Islamic values of justice ('adl), trusteeship (amanah), and intergenerational responsibility rather than in narrowly defined national economic interests.

The methodological approach of this study—qualitative library research combining hermeneutics, discourse analysis, and case study—has enabled a theoretically integrated but empirically limited analysis. Future research should address three specific priorities: (1) ethnographic and survey-based field studies that empirically measure the behavioral and attitudinal impact of programs such as Fiqh Lingkungan NU and Green Muhammadiyah at the pesantren and community level, including pre-post behavioral assessments; (2) comparative studies extending the analytical framework to Muslim-majority contexts in the Middle East, Central Asia, and West Africa, to test the generalizability of the khilafah-as-ecological-ethics argument beyond the Southeast Asian context; and (3) quantitative empirical analysis of the relationship between Islamic religious observance indicators and pro-environmental behavior, which would provide empirical grounding for the theoretical claims advanced here. Islam can and must make a distinctive and meaningful contribution in facing the global climate crisis—not as a follower of the secular environmental agenda, but as a tradition with unique spiritual insight, juridical resources, and communal motivation to honor the trust that Allah has entrusted to humanity.

BIBLIOGRAPHY

- Ahmad, K. (2009). Islamic ethics in a changing world. In L. E. Loeb & M. Slote (Eds.), *Ethics and Politics: Essays on the Moral Philosophy of Alasdair MacIntyre*. Cambridge University Press.
- Al-Damkhi, A. M. (2008). Environmental ethics in Islam: Principles, violations, and future perspectives. *International Journal of Environmental Studies*, 65(1), 11–31. <https://doi.org/10.1080/00207230701859724>
- Al-Qaradawi, Y. (2001). *Ri'ayat al-Bi'ah fi Syari'at al-Islam*. Dar al-Shuruq.
- Ammar, N. H. (2001). Islam and deep ecology. In D. L. Barnhill & R. S. Gottlieb (Eds.), *Deep Ecology and World Religions* (pp. 193–211). SUNY Press.
- Bagader, A. A., El-Sabbagh, A. T., Al-Glayand, M. A. S., Samarraï, M. Y., & Llewellyn, O. A. (1994). *Environmental Protection in Islam*. IUCN.
- Baharuddin, A. (2003). Islam and ecology: Towards retrieval and reconstruction. In R. C. Foltz, F. M. Denny, & A. Baharuddin (Eds.), *Islam and Ecology: A Bestowed Trust* (pp. xlix–lxi). Harvard University Press.
- Denny, F. M. (2003). Islam and ecology: A bestowed trust inviting balanced stewardship. In R. C. Foltz, F. M. Denny, & A. Baharuddin (Eds.), *Islam and Ecology: A Bestowed Trust* (pp. 191–214). Harvard University Press.

- Foltz, R. C., Denny, F. M., & Baharuddin, A. (Eds.). (2003). *Islam and Ecology: A Bestowed Trust*. Harvard University Press. <https://doi.org/10.4159/9780674042698>
- Gade, A. M. (2019). *Muslim Environmentalisms: Religious and Social Foundations*. Columbia University Press. <https://doi.org/10.7312/gade18960>
- Gottlieb, R. S. (Ed.). (2006). *The Oxford Handbook of Religion and Ecology*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195178722.001.0001>
- Haq, S. N. (2001). Islam and ecology: Toward retrieval and reconstruction. *Daedalus*, 130(4), 141–177. <https://www.jstor.org/stable/20027724>
- IPCC. (2022). *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Cambridge University Press. <https://doi.org/10.1017/9781009325844>
- ISESCO. (2015). *Islamic Declaration on Global Climate Change*. ISESCO. <https://www.ifees.org.uk/declaration>
- Kamali, M. H. (2011). *The Middle Path of Moderation in Islam: The Qur'anic Principle of Wasatiyyah*. Oxford University Press.
- Keshavarzi, A. R., & Zolali, N. (2022). Environmental ethics in Islam: Principles and applications. *Religions*, 13(2), 132. <https://doi.org/10.3390/rel13020132>
- Khalid, F. M. (2002). Islam and the environment. In T. Munn (Ed.), *Encyclopedia of Global Environmental Change* (Vol. 5, pp. 332–339). John Wiley & Sons.
- Khalid, F. M. (2010). Islam and the environment ethics and practice – An assessment. *Religion Compass*, 4(11), 707–716. <https://doi.org/10.1111/j.1749-8171.2010.00249.x>
- Limbong, D., & Pramono, A. (2021). Etika lingkungan dalam perspektif Islam: Studi atas konsep khilafah dan mizan. *Al-Manahij: Jurnal Kajian Hukum Islam*, 15(1), 1–18. <https://doi.org/10.24090/mnh.v15i1.2021>
- Llewellyn, O. (2003). The basis for a discipline of Islamic environmental law. In R. C. Foltz, F. M. Denny, & A. Baharuddin (Eds.), *Islam and Ecology: A Bestowed Trust* (pp. 185–248). Harvard University Press.
- Muhaimin, A. G. (2001). *The Islamic traditions of Cirebon: Ibadat and adat among Javanese Muslims*. The Australian National University E Press.
- Nasr, S. H. (1968). *The Encounter of Man and Nature: The Spiritual Crisis of Modern Man*. George Allen and Unwin.
- Nasr, S. H. (1996). *Religion and the Order of Nature*. Oxford University Press.
- Nugroho, S. H., & Santoso, B. (2022). Fikih lingkungan dalam tradisi pesantren: Studi kasus Nahdlatul Ulama dan program “Fiqh Lingkungan”. *Walisono: Jurnal Penelitian Sosial Keagamaan*, 30(1), 1–26. <https://doi.org/10.21580/ws.30.1.2022>
- Özdemir, I. (2003). Toward an understanding of environmental ethics from a Qur'anic perspective. In R. C. Foltz, F. M. Denny, & A. Baharuddin (Eds.), *Islam and Ecology: A Bestowed Trust* (pp. 3–38). Harvard University Press.
- Özdemir, I. (2008). The ethical dimension of human attitude towards nature: A Muslim perspective. *Journal of Muslim Minority Affairs*, 28(3), 437–457. <https://doi.org/10.1080/13602000802548947>
- Qur'an Kementerian Agama RI. (2019). *Al-Quran dan Terjemahannya*. Lajnah Pentashihan Mushaf Al-Quran.
- Rahman, F. (1980). *Major Themes of the Qur'an*. Bibliotheca Islamica.
- Rahman, F. (1982). *Islam and Modernity: Transformation of an Intellectual Tradition*. University of Chicago Press.
- Sardar, Z. (1985). *Islamic Futures: The Shape of Ideas to Come*. Mansell.
- Tomalin, E. (2008). *Biodivinity and Biodiversity: The Limits to Religious Environmentalism*. Ashgate.
- White, L., Jr. (1967). The historical roots of our ecologic crisis. *Science*, 155(3767), 1203–1207. <https://doi.org/10.1126/science.155.3767.1203>
- Government of Indonesia. (2017). *Kebijakan Energi Nasional 2017–2050 [National Energy Policy 2017–2050]*. Dewan Energi Nasional.
- International Renewable Energy Agency (IRENA). (2020). *Renewable Energy Statistics 2020*. IRENA.

- Kingdom of Saudi Arabia. (2021). Saudi Green Initiative: Raising Ambition, Accelerating Action. Ministry of Energy.
- ND-GAIN Country Index. (2022). Country Index Rankings. University of Notre Dame Global Adaptation Initiative. <https://gain.nd.edu/our-work/country-index/>
- Pew Research Center. (2015). The Future of World Religions: Population Growth Projections, 2010–2050. Pew Research Center.
- UAE Ministry of Energy and Infrastructure. (2022). UAE Energy Strategy 2050. UAE Government