

ETHICAL RESPONSIBILITY AND ISLAMIC APPROACHES TO ADDRESSING CLIMATE AND ENVIRONMENTAL CHALLENGE

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Abstract

Environmental degradation and climate change have escalated into a global crisis that is not only ecological but also ethical, raising urgent questions about human responsibility, stewardship, and moral obligation toward the natural world. This study systematically maps environmental and climate responsibilities identified in the academic literature onto Islamic ethical principles, positioning Islamic environmental ethics as a religiously grounded framework that complements rather than replaces scientific, legal, and institutional approaches to sustainability. A PRISMA-ScR scoping review of 190 academic studies was combined with an independent thematic analysis of Qur'anic, Hadith, and Fiqh sources. Climate challenges appeared in 94.2% of papers and ethical responsibility in 88.9%, with six core responsibilities identified, stewardship, moral responsibility, accountability, climate justice, sustainable consumption, and precaution. Nineteen Islamic principles including Khilafah, Amanah, Mizan, Adl, and La Darar closely mirrored these responsibilities. Three conceptual indices ranked environmental challenges by urgency and Islamic mitigation potential, identifying climate change, water scarcity, biodiversity loss, and pollution as priority areas where Islamic ethics can reinforce technical and institutional action, offering practical relevance for governance, education, and community practice in Muslim-majority contexts. Research concluded that strengthening environmental responsibility and promoting more sustainable and morally sound solutions to current climate and environmental issues can be achieved by fusing Islamic ethical concepts with scientific, legal, and institutional approaches.

1. INTRODUCTION

Environmental and climate problems have become major global concerns, driven largely by human activities that place increasing pressure on

ecosystems, climate systems, biodiversity, and natural resources. These pressures include climate change, pollution, biodiversity loss, resource depletion, land degradation, and water

scarcity, with consequences for environmental quality as well as social and economic well-being (Saladi, n.d.). Climate change is especially important because greenhouse gas emissions originating from human activities are driving increases in global temperatures, more frequent extreme events, and rising sea levels (Maycock et al. 2021). Species are increasingly in risk of extinction, biodiversity is decreasing at an unprecedented rate. As a result, these environmental changes create important issues regarding human duty to the environment and future generations in addition to their physical and ecological effects (Shivanna 2022).

Environmental responsibility is therefore not only a matter of technical management but also a matter of values, duties, and decision-making. Environmental ethics examines the moral relationship between humans and the natural world and addresses questions concerning stewardship, harm, justice, conservation, responsibility, and obligations to future generations (Å 2004). Climate ethics extends this discussion to questions of responsibility for emissions, the distribution of climate burdens, vulnerability, adaptation, mitigation, and intergenerational justice (Barnard 2023) (Grasso 2007). The distinction is important because scientific knowledge can describe environmental change, whereas ethical analysis helps determine what ought to be done and who should bear responsibility. Human behavior is central to these concerns. Patterns of consumption, resource extraction, energy use, pollution, land conversion, and waste generation are influenced by individual choices but are also shaped by institutions, economic systems, laws, and social norms (Gibran, n.d.). (Nihle 2009) Argues that environmental responsibility should not be assigned to individuals alone because governments and corporations possess substantial capacity to create or constrain opportunities for sustainable behavior. Thus, an adequate ethical framework must address responsibility at individual, societal, and institutional levels.

Religious traditions can provide an additional moral basis for environmental responsibility

because environmental behavior is influenced by values, beliefs, social identity, and ideas about human obligations. Within Islam, the natural world is understood as part of Allah's creation, and environmental care is connected with stewardship, trust, balance, justice, moderation, prevention of harm, and public welfare (Duc 2023). Contemporary scholarship identifies environmental protection and sustainability as concerns that can be interpreted through Qur'anic teachings, Prophetic traditions, jurisprudence, and Islamic ethical thought (Mohamed and Damkhi 2008) (Analysis 2022). The Islamic perspective is not limited to a general instruction to protect nature. It includes concepts that define the human role and provide practical moral constraints. Khilafah presents human beings as stewards Amanah frames natural resources as a trust Mizan emphasizes balance Adl requires fairness Rahmah extends compassion to living beings Maslahah directs decisions toward public welfare, La Darar prohibits harmful conduct, and the avoidance of Israf and Fasad discourages waste and destructive behaviour (Zuhdi, Bilhaq, and Putri 2024). (Dayyan and Afroz 2012) similarly describes environmental protection in Islam through stewardship, trust, Tawhid, balance, avoidance of corruption, tree planting, responsible consumption, and protection of natural resources. The present study therefore follows a sequence from the broader environmental and climate responsibility literature to the Islamic ethical framework. First, it examines how environmental and climate challenges are represented in the literature and what ethical responsibilities are associated with them. Second, it identifies Islamic principles and practical mechanisms that can be related to those responsibilities and challenges. This structure allows the Islamic framework to be interpreted not as a replacement for scientific or institutional approaches, but as a complementary ethical foundation for sustainability.

1.1 Literature Review

Environmental ethics provides a normative framework for understanding how human

actions affect the natural world and why environmental protection should be regarded as a moral obligation (Duc 2023) . (Kronlid and Öhman, n.d.) show that environmental ethics contains diverse value-oriented and relation-oriented approaches, demonstrating the need for systematic ethical analysis rather than a single human-centred interpretation. This literature establishes a conceptual basis for examining environmental responsibility in relation to values, relationships, and sustainable behavior.

Responsibility also involves the question of who has the capacity to act. (Nihle 2009) distinguishes between backward-looking responsibility and forward-looking responsibility and argues that governments and corporations should carry a significant share of forward-looking responsibility because institutional actors can create conditions that enable sustainable behavior. This perspective is relevant to environmental governance because individual responsibility alone cannot address structural drivers of pollution, resource depletion, and climate change.

Climate ethics adds justice and burden-sharing to environmental responsibility. (Barnard 2023) treats climate change as an ethical problem involving responsibility, justice, moral obligation, future generations, and non-human life. (Grasso 2007) develop a normative framework in which justice and equity are important for climate mitigation and adaptation, (Vanderheiden 2011) examine how responsibility for mitigation and adaptation costs should be distributed. These studies show that climate action is not simply about reducing physical impacts it also involves deciding who should act, who should bear costs, and how vulnerable groups and future generations should be protected.

Islamic environmental scholarship provides a complementary theological and moral perspective. (Fadil and Java 2024) identifies stewardship, responsibility, and balance as important elements of Islamic environmental ethics and calls for their integration into environmental thinking. (Fitroh, Usodo, and Robles 2025) show that environmental sustainability is embedded in Islamic teachings

and discuss the roles of individual behavior, community action, education, and religious institutions. (Rahardjanto, Indria, and Lestari 2025) similarly connect Islamic environmental ethics with sustainable development, responsible resource use, and avoidance of waste. These studies establish that Islamic environmental ethics can contribute to sustainability but also indicate the need for systematic organization of the principles and their practical relevance. Recent studies further connect Quranic teachings, Hadith, jurisprudence, and Islamic concepts with contemporary climate and ecosystem challenges. (Hayat et al. 2023) discussed principles including Tawhid, Haram and Hima in relation to climate change, deforestation, water scarcity, and ecosystem preservation. (Fadil and Java 2024) reports that Quranic teachings provide an ethical foundation for contemporary sustainability practices while emphasizing the challenge of translating these values into different cultural contexts. (Islamia 2025) focuses specifically on Khilafah and its relevance to climate governance and sustainable environmental action. (Murtadho and Luthfia 2025) examine Khilafah, equity, moderation, and responsible resource use in relation to climate responsibility. The literature shows three important strands environmental ethics identifies responsibilities toward nature and future generations climate ethics adds justice, accountability, and differentiated responsibility and Islamic scholarship provides a religiously grounded vocabulary of stewardship, trust, balance, moderation, justice, compassion, public welfare, and prevention of harm. However these strands are not always integrated into a single analytical framework that systematically maps general ethical responsibilities to Islamic principles and then relates both to specific environmental and climate challenges.

2. Materials and Methods

2.1 Research Design

Research used a comprehensive scoping literature review combined with qualitative thematic analysis to find, categorize, and analyze

the collection of research on environmental ethics, climate responsibility, Islamic environmental ethics, and related sustainability issues. The research includes a broad and interdisciplinary literature and aims to map shared environmental concerns, ethical obligations, and Islamic principles rather than identify a single quantifiable empirical effect, which is why the scoping review technique was selected. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) framework were used to systematically organize and describe the process of finding and choosing pertinent studies. Two complimentary analytical components comprised the review. The first concentrated on the methodical identification and thematic analysis of scholarly literature in order to pinpoint important environmental and climate-related issues as well as the moral obligations associated with them. In the second,

Islamic environmental evidence from the Quran, Hadith, Islamic jurisprudence (Fiqh), and pertinent ancient and modern Islamic literature were examined. Both streams of evidence were not seen as equivalent forms of evidence; instead, they were examined according to their individual roles.

Thematic analysis was used to find recurrent themes, code pertinent data, group similar codes into more general themes, and investigate the connections between Islamic values, ethical obligations, and environmental issues. The extent to which the highlighted themes were reflected in the scholarly literature was then described using frequency and percentage estimates. These frequencies should not be interpreted as indicators of environmental performance or causal efficacy rather, they show the presence of coded themes throughout the evaluated literature.

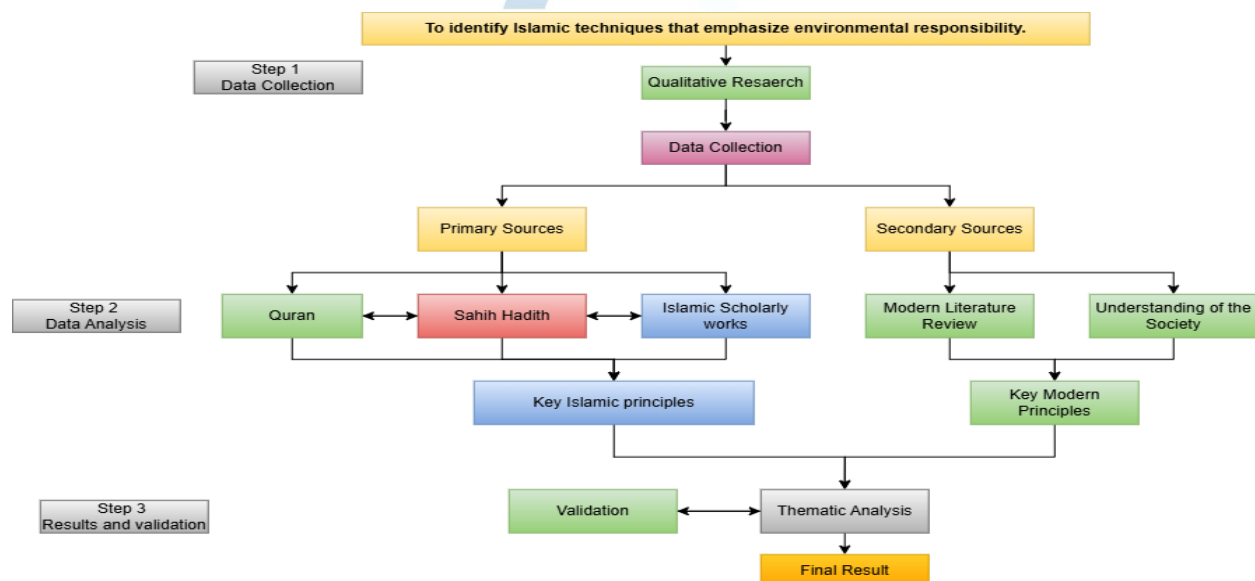


Figure 1. Analytical workflow for identifying Islamic techniques that emphasize environmental responsibility.

2.2 Data Sources and Materials

Publications from Google Scholar, Research Gate, Science Direct, Springer, and pertinent academic books were used to create the academic literature corpus. The review covered publications released between 2000 and 2026.

Studies on environmental ethics, Islamic environmental ethics, environmental sustainability, climate responsibility, and the connection between Islam and environmental conservation were the main focus of the search. The search terms were Ethics, Islamic

Environmental Ethics, Responsibility, Environment, Islam and Environment, Environmental Sustainability, Climate Responsibility. To find literature that addressed the conceptual and thematic scope of the study, these terms were employed both separately and in appropriate combinations. The primary dataset for the thematic and frequency-based analysis was the final academic literature corpus, which included 190 studies. A complementary stream of Islamic evidence, such as Quranic references, Hadith evidence, Islamic jurisprudence (Fiqh), and pertinent works of Islamic scholarship, was studied in addition to this academic corpus. This extra data was analysed independently from the 190 scholarly papers in order to discover and explain Islamic ideas and environmental practices. Nineteen principles were identified in the Islamic analysis. Khilafah, Amanah, Mizan, Wasatiyah, Israf, Avoid Israf, Avoid Fasad, Adl, Ahsan, Rahmah, Maslahah, La Darar, Shura, Hisab, Tazkiyah, Hima, Harim, Waqf, and Maqasid al-Shariah.

2.3 Search Strategy and Literature Identification

Publications published between 2000 and 2026 were the focus of a thorough literature search. Using predetermined search terms pertaining to

ethics, Islamic environmental ethics, responsibility, environment, Islam and environment, environmental sustainability, and climate responsibility, the searches were conducted using Google Scholar, ResearchGate, ScienceDirect, Springer, and pertinent academic books.

A search method was created to find material from environmental studies, Islamic studies, sustainability, environmental ethics, climate ethics, and other pertinent interdisciplinary topics. After being gathered into the review dataset, the retrieved records were evaluated for their applicability to the study's goals.

Initially, 1,340 records were found. 1,020 records were left for title and abstract screening after 320 duplicate records were eliminated. At this point, 730 records were eliminated because they didn't meet the review's relevancy requirements. After the eligibility of the remaining 290 full-text articles was assessed, 100 articles were eliminated. Consequently, the final corpus of academic literature contained 190 studies.

A PRISMA-ScR flow diagram Figure 2 was used to document the study-selection process, offering a clear summary of the stages of identification, screening, eligibility evaluation, and final inclusion.

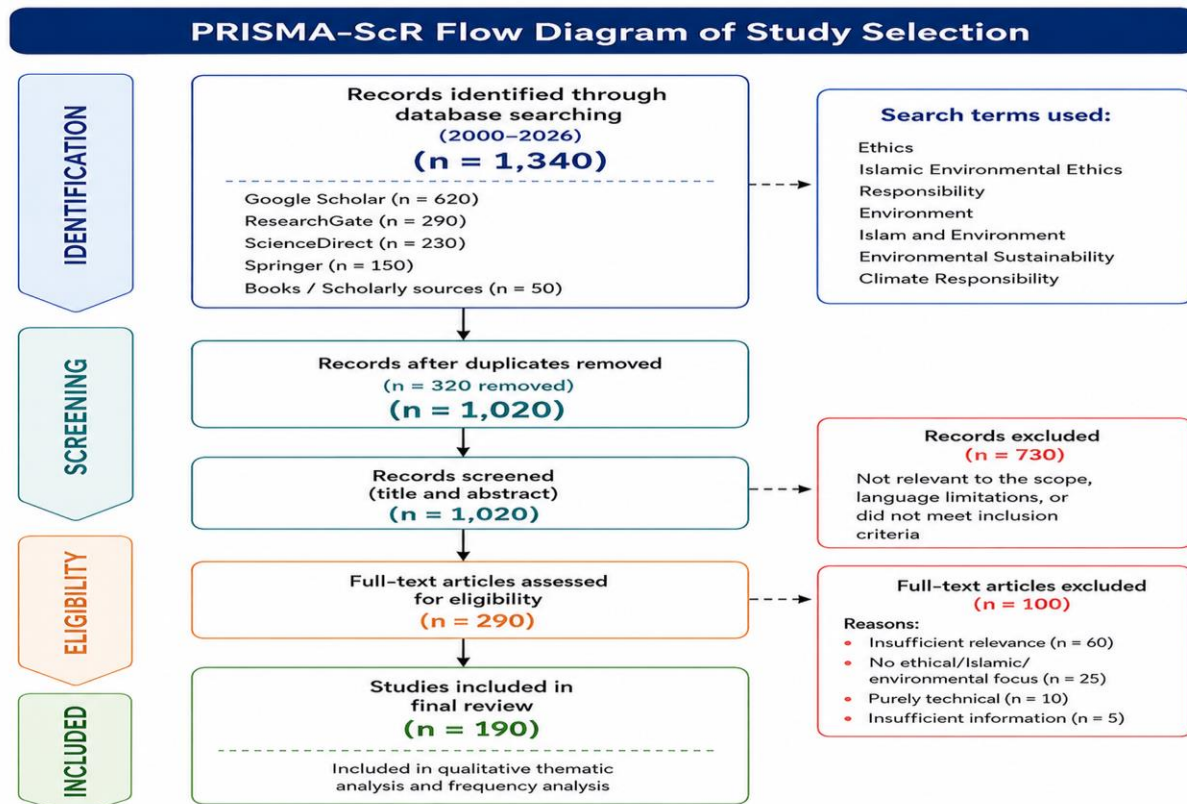


Figure 2. PRISMA-ScR flow diagram

2.4 Eligibility and Study Selection

Throughout the screening procedure, predetermined inclusion and exclusion criteria were used. Studies that were available in English and published between 2000 and 2026 were deemed qualified for inclusion. Peer-reviewed research articles, review papers, conceptual and theoretical studies, and pertinent scholarly publications that addressed environmental ethics, Islamic environmental ethics, Islam and the environment, climate responsibility, environmental sustainability, environmental stewardship, or related ethical aspects of environmental challenges were all taken into consideration. Studies that offered significant information about issues related to the environment or climate, ethical responsibility, sustainability, justice, accountability, responsible resource use, or Islamic environmental values were included. Studies that were published before 2000, were not available in English, were

duplicates, went beyond the review's topic scope, or lacked adequate pertinent material were all eliminated. Additionally, non-academic publications and strictly technical environmental studies that ignored Islamic, ethical, sustainable, or responsible aspects were not included. After 320 duplicate records were eliminated from the 1,340 records found during the screening procedure, 1,020 records remained for screening. 290 full-text publications were evaluated for eligibility after 730 records were eliminated during the title and abstract screening phase. A final corpus of 190 papers was available for topic and frequency-based analysis after an additional 100 publications were eliminated after full-text evaluation.

2.5 PRISMA- ScR Screening Process

The four steps of the literature selection procedure were identification, screening, eligibility evaluation, and inclusion. From the

chosen sources, 1,340 records in total were found. 1,020 distinct records were screened using their titles and abstracts after 320 duplicate records were eliminated. Out of these, 290 full-text articles were evaluated for eligibility, and 730 records were eliminated. The final review contained 190 papers after another 100 full-text articles were eliminated. The entire selection process was as follows, 1,340 records were found 320 duplicates were eliminated 1,020 records were screened, 730 records were eliminated 290 full-text articles were evaluated, 100 articles were eliminated and 190 studies were included. The corpus used for theme and frequency-based analysis consisted of the final 190 investigations.

2.6 Data Extraction and Qualitative Thematic Analysis

Information about environmental and climate challenges, ethical obligations, sustainability, and pertinent Islamic environmental principles were extracted from the 190 included studies. Finding recurrent ideas, coding pertinent data, grouping similar codes into more general themes, comparing developing patterns, and interpreting the resulting themes were all part of the thematic analysis process.

Environmental stewardship, moral duty, accountability, climate justice, sustainable consumerism, and prudence were found to be the six main ethical responsibility topics.

The number of studies in which each theme occurred within the corpus of 190 research was used to calculate theme frequencies:

$$\text{Percentage} = (\text{Theme Frequency} / 190) \times 100$$

2.7 Analysis of Islamic Sources

A theme method was used to analyze a distinct stream of Islamic evidence that included Hadith, Fiqh, Quranic evidence, and both classical and modern Islamic research. In order to discover and interpret Islamic principles related to resource management, sustainability, conservation, justice, accountability, and the avoidance of harm, these sources were analyzed.

19 Islamic principles were identified in the analysis, Khilafah, Amanah, Mizan, Wasatiyyah, Islah, Avoid Israf, Avoid Fasad, Adl, Ihsan, Rahmah, Maslahah, La Darar, Shura, Hisab, Tazkiyah, Hima, Harim, Waqf, and Maqasid al-Shariah. The academic literature corpus did not contain the Islamic sources, which were examined independently of the 190 academic research.

2.8 Frequency and Conceptual Analysis

Islamic beliefs, ethical obligations, and environmental challenges were all described using frequency analysis in their respective coded datasets. Frequencies show the number of studies that identified a particular subject among the 190 academic studies. Frequencies for the Islamic sources are coded associations rather than an equivalent number of scholarly research or religious texts.

To determine conceptual connections between environmental ethics and Islamic environmental ethics, the general ethical obligations were then mapped to the 19 Islamic principles.

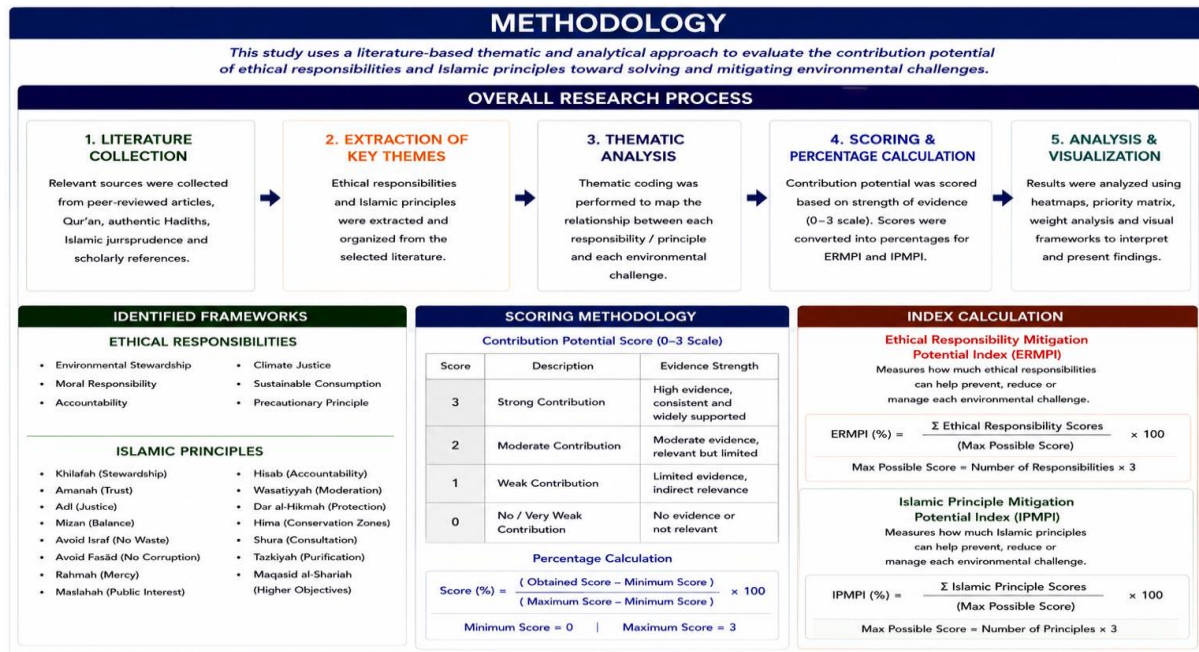


Figure 2. Integrated methodological framework for the literature-based thematic analysis and conceptual scoring.

The figure summarizes the sequence from literature collection and extraction to thematic analysis, scoring, index calculation, and visualization. Its placement after the analytical procedure makes the relationship between the qualitative coding and the index-based assessments explicit.

2.5 Environmental Urgency and Mitigation Indices

Three conceptual indices the Environmental Urgency Index (EUI), the Ethical Responsibility Mitigation Potential Index (ERMPI), and the Islamic Mitigation Potential Index (IPMPI) were used to further classify the thematic findings. The ERMPI and IPMPI show the suggested potential contribution of general ethical obligations and Islamic principles, respectively, the EUI represents the relative urgency of environmental concerns.

Each Islamic concept and ethical obligation was rated on a scale of 0 to 3, with 0 denoting no contribution, 1 denoting a weak contribution, 2 denoting a moderate contribution, and 3 denoting a significant contribution. The

following formula was then used to convert the allotted scores into percentages.

$$\text{Score (\%)} = (\text{Obtained Score} / 3) \times 100$$

Eq 1.

The scores for the six recognized ethical obligations were added together to determine the ERMPI.

$$\text{ERMPI (\%)} = \frac{(\sum \text{Ethical Responsibility Scores} / (6 \times 3)) \times 100}{\text{Eq 2.}}$$

In the same way the IPMPI was calculated by adding the scores of the nineteen recognized Islamic principles.

$$\text{IPMPI (\%)} = \frac{(\sum \text{Islamic Principle Scores} / (19 \times 3)) \times 100}{\text{Eq 3.}}$$

The indices were used to support prioritization rather than to claim causal effectiveness. A high EUI indicates that a challenge is considered highly urgent within the conceptual framework, whereas a high ERMPI or IPMPI indicates stronger

proposed potential for ethical or Islamic principles to contribute to addressing that challenge. This distinction is important because Islamic ethics is treated as complementary to, rather than a substitute for, science, engineering, law, finance, and environmental governance. Instead of evaluating actual environmental impacts, behavioral changes, or the efficacy of causal mitigation, these indices are conceptual and interpretive measurements used for comparison and prioritization.

3. Results and Discussion

3.1 Literature-Based Environmental and Climate Patterns

The review of 190 academic papers showed that climate, environmental, and ethical dimensions are strongly interconnected. Climate challenges were identified in 179 papers (94.2%), ethical responsibility in 169 papers (88.9%), and both ethical challenges and environmental challenges in 113 papers each (59.5%). The distribution indicates that environmental research frequently intersects with questions of responsibility, justice, and human behavior rather than treating environmental degradation as a purely physical phenomenon.

Table 1. Distribution of major themes in the 190-paper literature corpus.

Theme in 190-paper corpus	Papers	Percentage
Climate challenges	179	94.2%
Ethical responsibility	169	88.9%
Ethical challenges	113	59.5%
Environmental challenges	113	59.5%

Environmental challenges were dominated by pollution, followed by deforestation, air pollution, biodiversity loss, and water scarcity. Pollution accounted for 100 mentions (52.6%), followed by deforestation (31: 16.3%), air pollution (30: 15.8%), biodiversity loss (28: 14.7%), and water scarcity (17: 8.9%).

Desertification, toxic waste, endangered species, plastic pollution, soil degradation, and ocean acidification occurred less frequently, while overfishing, forest loss, and ecosystem degradation were among the least frequently mentioned challenges.

Table 2. Environmental challenges identified in the 190-paper corpus.

Environmental challenge	Frequency	Percentage
Pollution	100	52.6%
Deforestation	31	16.3%
Air pollution	30	15.8%
Biodiversity loss	28	14.7%
Water scarcity	17	8.9%
Desertification	13	6.8%
Toxic waste	9	4.7%
Endangered species	8	4.2%
Plastic pollution	6	3.2%
Soil degradation	5	2.6%
Ocean acidification	5	2.6%
Habitat destruction	2	1.1%
Marine pollution	2	1.1%

E-waste	2	1.1%
Overfishing	1	0.5%
Forest loss	1	0.5%
Ecosystem degradation	1	0.5%

Climate-related keyword analysis identified global warming (102 mentions) and greenhouse gases (92) as the dominant topics, followed by carbon emissions (56), extreme weather (54), carbon dioxide (51), climate crisis (48), droughts (40), and floods (26). The ethical-challenge analysis identified inequality as the most discussed issue, followed by moral obligation, common but differentiated responsibilities, loss and damage, and climate injustice. These patterns show that climate change is represented in the literature not only as a physical process but also as a question of fairness and responsibility.

3.2 Ethical Responsibilities for Climate and Environmental Challenges

Six major ethical responsibilities were identified: environmental stewardship, moral responsibility,

accountability, climate justice, sustainable consumption, and precaution. Environmental stewardship received the highest emphasis in the thematic analysis, followed by moral responsibility, accountability, climate justice, sustainable consumption, and precaution. These responsibilities operate across three connected levels. The individual level concerns behavior, awareness, consumption, and personal accountability, the societal level concerns collective action, community conservation, and shared protection, and the institutional level concerns governance, regulation, accountability, and systems that enable sustainable behavior.

Table 3. Ethical responsibilities across individual, societal, and institutional levels.

Responsibility level	Main responsibilities	Examples of application
Individual	Stewardship; sustainable consumption; awareness; personal accountability	Responsible use of water, food, energy and other resources
Societal	Climate justice; collective responsibility; shared protection	Community conservation, environmental education, collective resource management
Institutional/Governmental	Accountability; policy responsibility; regulation; precaution	Environmental law, enforcement, fair burden-sharing, governance systems

3.3 Environmental Urgency and General Ethical Mitigation Potential

The EUI provides a common baseline for comparing environmental challenges. Climate change received the highest proposed urgency score (100%), followed by water scarcity (95%). Biodiversity loss, air pollution, and water pollution each received 90%, while ocean

acidification received 85% and plastic pollution 83%. Deforestation and soil degradation received 80% each. Lower scores were assigned to challenges such as desertification, resource depletion, waste generation, toxic waste, habitat destruction, marine pollution, overfishing, forest loss, e-waste, and ecosystem degradation.

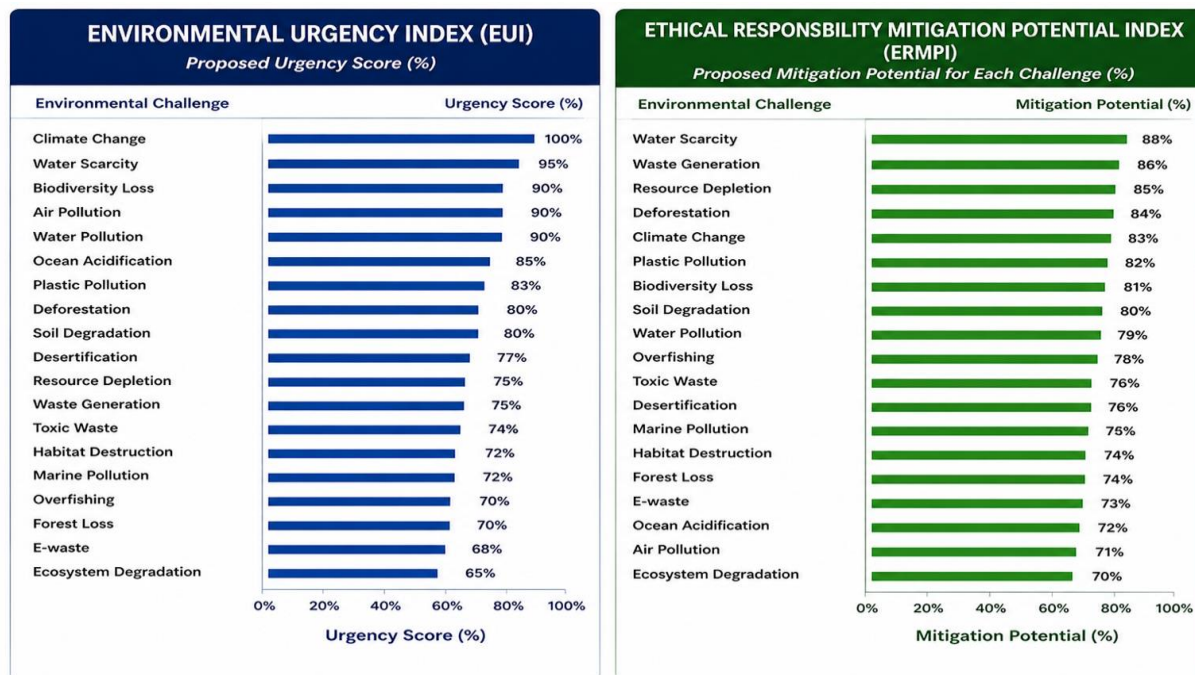


Figure 3. Environmental Urgency Index (EUI) and Ethical Responsibility Mitigation Potential Index (ERMPI).

The analysis demonstrates how ethical obligations, such as stewardship, moral duty, accountability, climate justice, sustainable consumerism, and prudence, are closely linked to environmental and climate concerns. According to the ERMPI results, these moral obligations have a great deal of potential to assist in resolving environmental issues. Based on these results, the research highlights the Islamic concepts that can promote sustainability and environmental protection and takes into account how they are represented in Islamic teachings.

3.4 Islamic Principles Identified from Primary and Scholarly Evidence

The second analytical focus identified nineteen Islamic principles relevant to environmental responsibility. These principles form the master conceptual framework of the study. They include stewardship and trust; balance and moderation, prevention of harm and corruption, justice and public interest, reform and accountability, conservation concepts, and Islamic legal or institutional mechanisms. The framework therefore extends beyond a single theological concept and incorporates principles that can influence personal conduct, community action, environmental governance, and resource management.

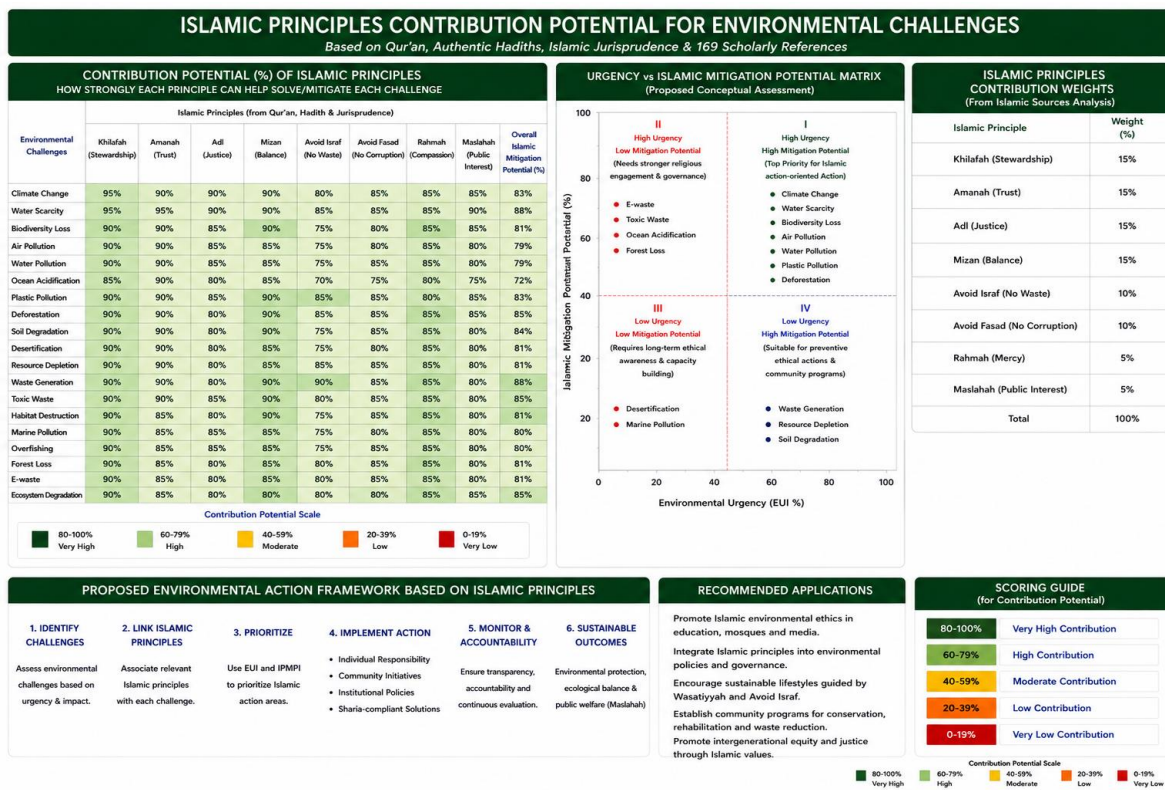


Figure 4. Islamic principles contribution potential and proposed environmental action framework.

3.5 Quranic Evidence and Thematic Frequencies

The Quranic analysis identified sixteen major themes based on thirty-eight Quranic references in the broader coded dataset. The selected evidence emphasizes stewardship, trust, balance, and prevention of corruption, moderation, and water, cultivation of land, biodiversity, justice, purification, and accountability. Al Baqarah 2:30 introduces the human role as a vicegerent or steward, Al-Ahzab 33:72 frames human responsibility through Amanah, Ar-Rahman 55:7-9 establishes Mizan and warns against transgressing the balance, and Al-Araf 7:56

prohibits corruption after the earth has been set right. Verses concerning water, agriculture, animals, and the earth further support the environmental relevance of the framework. Khilafah was the most prominent Qur'anic-associated principle in the coded analysis, with 68 associations (14.96%), followed by Avoid Fasad (61: 13.43%) and Mizan (57: 12.53%). This pattern indicates that environmental responsibility is connected to a broad Quranic vision of human trusteeship, balance, conservation, justice, and avoidance of destructive behavior.

IDENTIFIED ISLAMIC PRINCIPLES ASSOCIATION WITH QURANIC AYAT

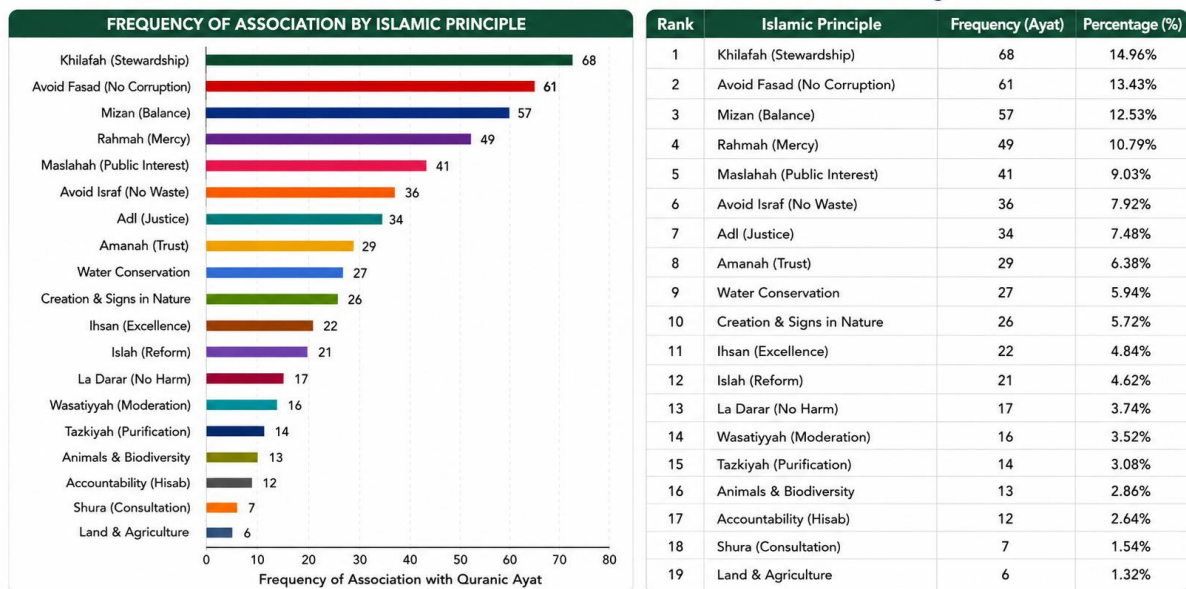


Figure 5. Frequency of association of Islamic environmental principles with Quranic evidence.

3.6 Hadith Evidence and Frequencies

The Hadith analysis showed particularly strong representation of Khilafah, La Darar, Amanah, Maslahah, Rahmah, Islah, and Hisab. The selected examples include guidance against contaminating stagnant water (Sahih Muslim 281), encouragement to plant or cultivate land from which humans or animals benefit (Sahih al-

Bukhari 2320: Sahih Muslim 1553), protection of animals and living beings, moderation in water use, and recognition of shared rights in basic resources. These examples demonstrate that Islamic environmental responsibility includes both positive stewardship and negative duties to avoid harm.

IDENTIFIED ISLAMIC PRINCIPLES ASSOCIATION WITH HADITHS

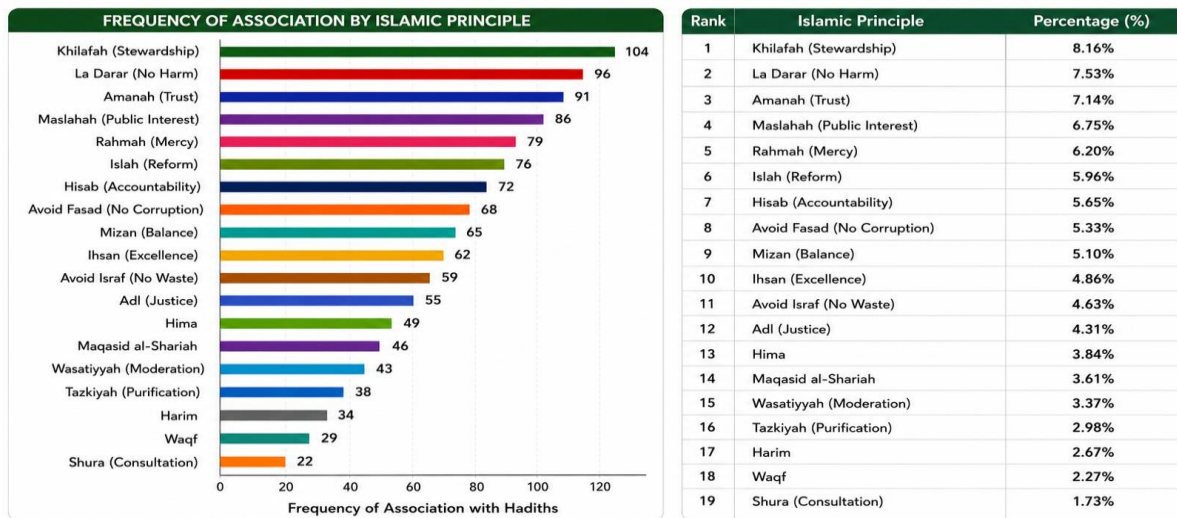


Figure 6. Frequency of association of Islamic environmental principles with Hadith evidence.

3.7 Fiqh Evidence

Fiqh provides the legal and practical dimension of the framework. The analysis includes legal discussions concerning prevention of harm to neighbours, shared water rights, public resources, land use, protected areas, and communal ownership of essential resources. La Darar was the strongest Fiqh-associated principle, indicating

the importance of preventing activities that cause significant harm or nuisance. Maslahah, Mizan, Amanah, and Adl also received strong representation. The Fiqh evidence therefore connects environmental ethics to legal responsibility, resource governance, public welfare, and protection from harm.

IDENTIFIED ISLAMIC PRINCIPLES ASSOCIATION WITH FIQH

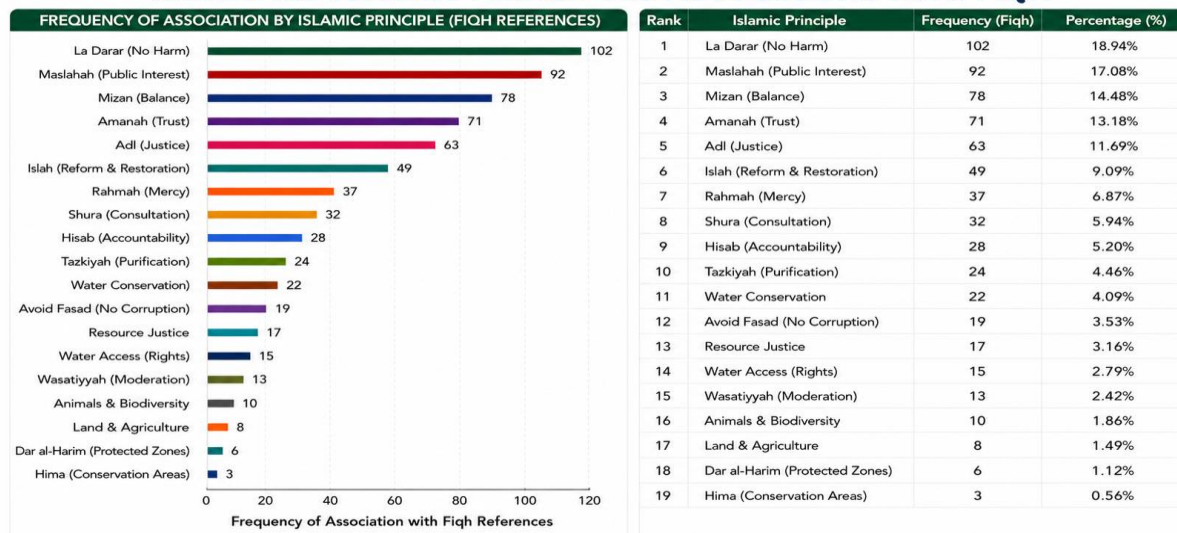


Figure 7. Frequency of association of Islamic environmental principles with Fiqh references.

3.8 Secondary Weighting of Islamic Principles

The weighting analysis provides a secondary analytical representation of ten categories and does not replace the nineteen-principle master framework. In this secondary weighting, *Khilafah* received the highest weight (24.9%), followed by *Amanah* (16.6%), *Adl* (14.2%), and *Mizan*

(11.8%). *Avoid Fasad* received 9.5%, *Dar al-Harim* 5.9%, *Hisbah* 5.3%, *Resource Justice* 4.7%, *Other Principles* 4.1%, and *Tawhid* 3.0%. The evidence-base distribution reported in the analysis was 58% Quran, 32% authentic Hadith, 8% Islamic Fiqh and classical scholarly sources, and 2% other Islamic sources.

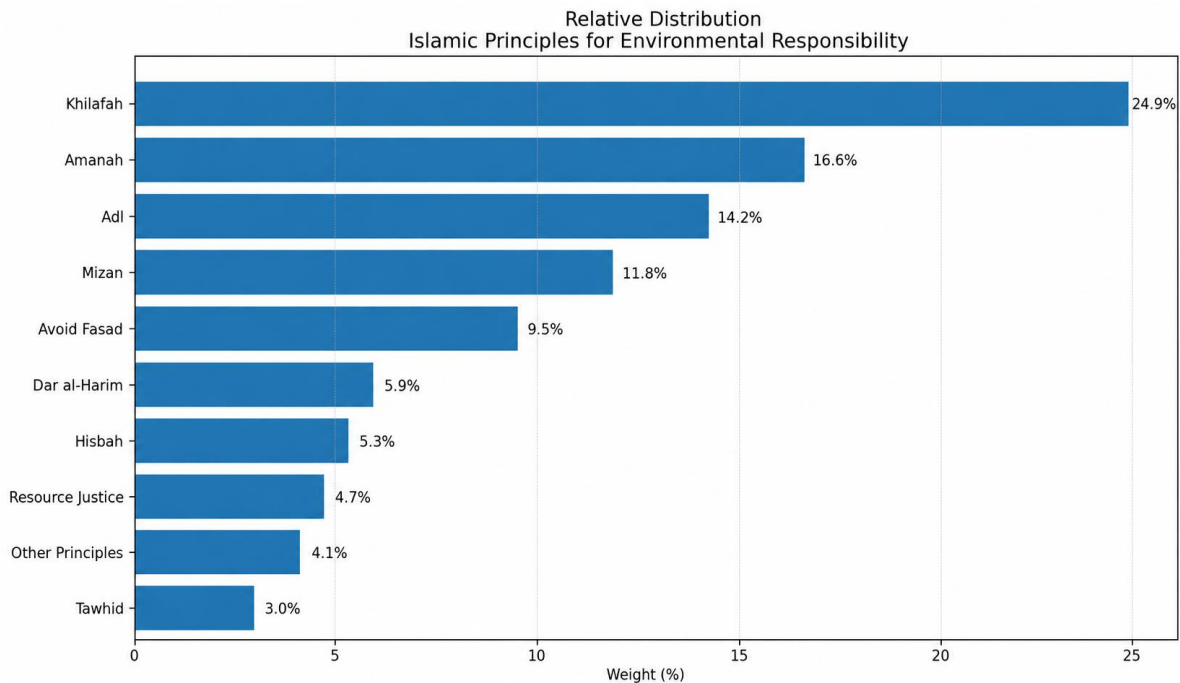


Figure 8. Secondary relative weighting of selected Islamic principles for environmental responsibility.

3.9 Mapping Islamic Principles to Environmental Challenges

The thematic mapping demonstrates that Islamic principles can be linked to specific environmental problems rather than remaining at the level of general moral statements. Air pollution is associated with *Khilafah*, *Amanah*, *Wasatiyyah*, *Avoid Fasad*, *La Darar*, *Adl*, and *Hisab*. Water pollution is linked to *Amanah*, *Khilafah*, *Avoid*

Fasad, *La Darar*, *Islah*, *Harim*, and *Hisab*. Water scarcity is connected with *Avoid Israf*, *Wasatiyyah*, *Amanah*, *Mizan*, *Harim*, *Maslahah*, and *Hisab*. Deforestation is associated with *Khilafah*, *Hima*, *Mizan*, *Islah*, *Amanah*, *Rahmah*, *Avoid Fasad*, and *Waqf*. Climate change is linked with *Khilafah*, *Amanah*, *Wasatiyyah*, *Avoid Israf*, *Avoid Fasad*, *Maslahah*, *Adl*, and *Hisab*.

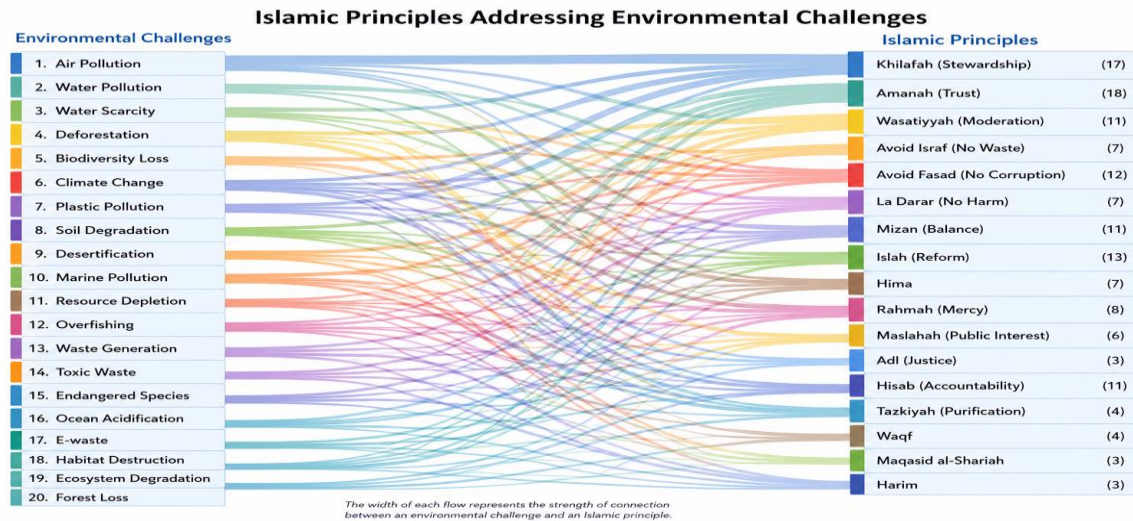


Figure 9. Mapping of Islamic principles to environmental challenges.

3.10 Islamic Mitigation Potential Index

The IMPI extends the ethical mitigation analysis from general environmental ethics to the Islamic principles identified in the analysis. The detailed contribution framework shown in Figure 4 indicates that waste generation has the highest proposed IMPI score (89%), followed by water scarcity (88%), plastic pollution (87%), deforestation (85%), resource depletion (85%), toxic waste (85%), desertification (81%),

biodiversity loss (81%), overfishing (80%), marine pollution (80%), e-waste (80%), soil degradation (85%), water pollution (79%), climate change (83%), air pollution (78%), ocean acidification (72%), forest loss (86%), habitat destruction (85%), and ecosystem degradation (90%). These values are conceptual assessments derived from the study's Islamic-source framework and should not be interpreted as measured environmental effectiveness.

Table 8. Comparative EUI and IMPI values derived from the contribution framework.

Environmental challenge	EUI (%)	IPMPI (%)
Climate change	100	83
Water scarcity	95	88
Biodiversity loss	90	81
Air pollution	90	78
Water pollution	90	79
Ocean acidification	85	72
Plastic pollution	83	87
Deforestation	80	85
Soil degradation	80	85
Desertification	77	81
Resource depletion	75	85
Waste generation	75	89
Toxic waste	74	85
Habitat destruction	72	85
Marine pollution	72	80
Overfishing	70	80

Forest loss	70	86
E-waste	68	80
Ecosystem degradation	65	90

3.11 Urgency Islamic Mitigation Potential Framework

Combining EUI with IMPI produces a proposed urgency-Islamic mitigation framework. The high-urgency/high-mitigation group includes climate change, water scarcity, biodiversity loss, air pollution, water pollution, plastic pollution, and deforestation. These challenges represent priority areas where Islamic principles may provide strong ethical guidance alongside scientific, institutional, and policy interventions. E-waste, toxic waste, and ocean acidification appear in the high-urgency comparatively lower-mitigation category and may require stronger institutional capacity, public awareness, governance, and further development of practical applications. Waste generation, resource depletion, and soil degradation represent opportunities for preventive action, behavior change, community programmes, and sustainable resource management. The matrix therefore produces an important distinction between urgency and ethical contribution potential. A challenge may be extremely urgent while the practical contribution of an ethical framework is more indirect. Conversely a challenge such as waste generation may have strong opportunities for behavioral and institutional intervention even when its EUI is lower than that of climate change. This distinction is important for interpreting Islamic environmental ethics as a prioritization and motivational framework rather than as a substitute for technical environmental interventions.

3.12 Integrated Interpretation of the Findings

3.12.1 from General Environmental Responsibility to Islamic Ethical Responsibility

The findings demonstrate continuity between general environmental ethics and Islamic environmental ethics. The first objective identified six broad responsibilities environmental stewardship, moral responsibility,

accountability, climate justice, sustainable consumption, and precaution. The second objective showed that these responsibilities have close counterparts within Islamic moral and legal concepts. Stewardship corresponds strongly with Khilafah trust with Amanah, balance with Mizan, justice with Adl prevention of harm with La Darar moderation with Wasatiyyah and sustainable consumption with Avoid Israf. This conceptual continuity indicates that Islamic environmental ethics can be interpreted as a structured religious framework for responsibilities that are also recognized in broader environmental ethics. The prominence of Khilafah across Quranic coding, Hadith coding, and the secondary weighting analysis is particularly important. Khilafah places humans in a position of stewardship rather than unlimited ownership. In environmental terms, access to natural resources is accompanied by duties to protect, maintain, and use them responsibly. Amanah reinforces this responsibility by framing resources as a trust, while Adl and Mizan extend it toward fairness and ecological balance. The findings therefore suggest that stewardship should not be interpreted in isolation; it operates within a wider network of ethical constraints.

3.13 Islamic Principles and Environmental Sustainability

Islamic environmental principles connect environmental action with moral accountability. A technical policy can specify what should be done, but an ethical framework addresses why people should do it and what responsibilities follow from failure. Khilafah frames humans as stewards, Amanah frames resources as a trust, Mizan emphasizes balance, Avoid Israf discourages waste, La Darar prohibits harmful conduct, Adl require fairness, and Maslahah directs decisions toward collective welfare. Together, these principles can support behavioural, social, and institutional dimensions

of sustainability. The Quranic evidence emphasizes both the positive responsibility to maintain creation and the negative responsibility to avoid corruption and harm. The prominence of Avoid Fasad alongside Khilafah and Mizan is important because it links environmental protection with the prevention of destructive human actions. This is consistent with the Islamic environmental perspective that environmental degradation is not merely an unfortunate physical outcome but can also represent a failure of moral responsibility. The Hadith findings move the discussion from abstract principles toward practical conduct. Guidance concerning planting, protection of animals, water use, shared resources, and avoidance of pollution demonstrates that environmental responsibility can be expressed through everyday practices. The supplementary discussion by (Dayyan and Afroz 2012) similarly emphasizes tree planting, responsible consumption, avoidance of waste, protection of forests and water, and care for living beings. Fiqh further provides a legal and institutional dimension. Concepts such as La Darar, Maslahah, Hima, Harim, Waqf, and resource-sharing rules can be interpreted as mechanisms for preventing environmental harm, protecting common resources, conserving designated areas, and supporting long-term public welfare. (Hayat et al. 2023) similarly emphasize the role of jurisprudential concepts such as Hima and Haram in environmental protection.

3.14 Practical Islamic Techniques for Environmental Responsibility

The second objective is particularly important because it moves the analysis from principles to techniques and practices. The findings indicate that Islamic environmental responsibility can be operationalized through several interconnected practices. First, stewardship requires responsible management of natural resources rather than unrestricted exploitation. Second, Amanah requires users and institutions to treat environmental resources as a trust and therefore maintain them for present and future

generations. Third, Mizan and Wasatiyyah encourage balance and moderation in resource consumption. Fourth, Avoid Israf provides a direct ethical basis for reducing unnecessary consumption and waste. Fifth, La Darar and Avoid Fasad provide preventive principles activities that cause substantial harm, pollution, destruction, or corruption should be avoided or controlled. Sixth, Rahmah and Ihsan extend ethical concern to animals, plants, and other living beings. Seventh, Hima and Harim provide concepts relevant to protected areas and restrictions on harmful use. Eighth, Waqf can support long-term community-oriented conservation and environmental projects. Ninth, Shura encourages participatory decision-making, Hisab strengthen accountability. These practices show that Islamic environmental ethics can operate at personal, community, and institutional levels. These techniques are consistent with the environmental practices described in the supplementary Islamonweb source, including tree planting, protection of plants and animals, responsible consumption, reduction of waste, water protection, and prevention of destructive activities such as illegal logging. They should however, be interpreted as ethical and institutional complements to scientific environmental management rather than replacements for technical standards, monitoring, engineering controls, or environmental legislation.

3.15 Implications for Policy, Education, and Community Practice

The findings suggest that environmental governance in Muslim-majority contexts could benefit from closer engagement with Islamic ethical concepts. Such engagement should not replace environmental law or scientific assessment. Instead, it can strengthen public legitimacy, environmental education, community participation, and behavioural motivation. Religious institutions, mosques, educational systems, civil society organizations, and environmental agencies could use concepts such as Khilafah, Amanah, and Avoid Israf to

communicate conservation messages in culturally meaningful ways. At the institutional level, the principles can be translated into governance functions. Adl can guide fair distribution of environmental costs and benefits. Hisab can support accountability mechanisms for pollution and environmental damage. Maslahah can prioritize collective environmental welfare over narrow short-term gains. La Darar can strengthen legal reasoning against activities that cause significant environmental harm. Waqf can support long-term conservation and environmental projects, while Maqasid al-Shariah can provide a broader framework for evaluating environmental policy. Environmental education is another important application. (Analysis 2022) emphasize the role of education and community participation in Islamic environmental sustainability. Integrating concepts such as stewardship, moderation, responsibility, and compassion into educational programmes can help connect environmental knowledge with moral motivation. Such approaches may be particularly relevant where religious values influence everyday behavior and community decision-making.

3.16 Interpretation of the Urgency-Mitigation Framework

The EUI-IMPI framework provides a prioritization device within the conceptual boundaries of the study. Climate change is ranked as the most urgent challenge, while waste generation has the highest proposed Islamic mitigation potential. This distinction is important because urgency and mitigation potential represent different analytical dimensions. Climate change requires large-scale scientific, technological, financial, and institutional interventions, while Islamic ethics can contribute by strengthening responsibility, moderation, justice, accountability, and long-term behavioral commitment. The high-urgency/high-mitigation category is especially important because it identifies areas where moral motivation and practical action can reinforce each other. Climate change, water scarcity,

biodiversity loss, air pollution, water pollution, plastic pollution, and deforestation all require technical interventions, but sustained behavioral and institutional commitment is also necessary. The matrix therefore supports a complementary rather than substitutive role for Islamic environmental ethics.

4. Conclusion

Study reviewed 190 scholarly studies and examined pertinent material from the Quran, Hadith, and Fiqh to investigate the relationship between Islamic ethical principles and environmental and climate obligations. Six major responsibilities were identified by the analysis: environmental stewardship, moral responsibility, accountability, climate justice, sustainable consumption, and precaution. It also showed how these responsibilities relate conceptually to Islamic principles like Khilafah, Amanah, Mizan, Adl, La Darar, Wasatiyyah, and Avoid Israf. The results also showed that pollution, deforestation, biodiversity loss, water scarcity, and climate change are significant environmental issues. Islamic ethical principles can offer moral guidance for promoting responsible behavior, minimizing environmental harm, encouraging moderation, and bolstering individual and communal responsibility, according to the proposed urgency and mitigation paradigm. Rather than quantifiable proof of direct environmental effects, these studies reflect conceptual links and suggested contribution potential. An additional ethical basis for environmental sustainability can be found in Islamic environmental ethics. Islamic principles can increase moral incentive and responsibility for environmental protection, even though scientific understanding, technology, environmental legislation, and institutional action are still crucial. Study emphasizes the potential benefits of incorporating Islamic ethical concepts into environmental education, governance, and community based sustainability efforts, further research should look at their actual application and results

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