



From Caliphates to Climate Crisis: Historical Records, Islamic Teachings, and Environmental Challenges in the Muslim World

 Muhammad Adil Iqbal^{1*},  Nurul Izzati Haji Jamil²

¹National University of Sciences and Technology (NUST)
Islamabad, Pakistan

²University of Brunei Darussalam
Brunei Darussalam

✉ m.adiliqbal@nbs.nust.edu.pk



Article Information:

Received November 08, 2025

Revised November 30, 2025

Accepted November 30, 2025

Keywords:

Climate change; environmental ethics in Islam; faith-based climate action; Islamic civilization; Islamic Golden Age.

Abstract

Background of Study: The rise, stability, and demise of many civilizations, including those in the Muslim world, have been profoundly influenced by climate fluctuations, according to historical and modern research. Early Islamic scholars recorded environmental abnormalities and meteorological trends that today offer crucial insights for comprehending contemporary climatic difficulties, especially in areas experiencing drought, water scarcity, and instability brought on by climate change.

Aims and scope of paper: This paper looks at how old Islamic writings about the environment, moral lessons from Islam, and recent scientific research can be combined to help Muslims better understand and deal with climate change.

Methods: The study uses modern scientific research on the effects of climate change in Muslim-majority nations, as well as qualitative analysis of historical documents and Islamic theological texts like the Qur'an, Hadith, and classical jurisprudence.

Result: The results show significant similarities between contemporary climate disruptions and historical environmental observations. Additionally, the analysis demonstrates that Islamic ecological ethics provide a cogent moral framework that can facilitate community-based environmental governance, adaptation, and mitigation.

Conclusion: The study comes to the conclusion that strengthening faith-based initiatives and improving societal resilience to climate-related hazards in the Muslim world can be achieved by fusing historical Islamic knowledge with modern environmental science.

A. Introduction

Climate and environmental factors have always been crucial in determining the course of civilizations, impacting trade networks, political stability, and agricultural output. Many historical analyses show how climate changes, whether sudden or gradual, influenced the rise or fall of powerful empires like the Byzantine and Roman powers (Marx et al., 2018). Similar trends may be seen throughout Islamic history, as variations in temperature, rainfall, and resource availability had an impact on population shifts, political power, and economic performance throughout the Dār al-Islām (Kushnir & Stein, 2019). Many Muslim-

majority regions, especially West Asia and North Africa, are currently experiencing increased warming, water scarcity, and instability, which are reminiscent of past historical stressors, according to recent climate studies (IPCC, 2022; Lelieveld et al., 2016).

Few studies have combined historical documents, Islamic religious precepts, and contemporary climate science into a unified analytical framework, despite the fact that earlier research has either looked at the historical effects of climate on ancient cultures or Islamic ethical teachings on environmental stewardship. This divide restricts our comprehension of the ways in which Islamic environmental experience and intellectual legacy might support modern climate governance. Furthermore, the material that is currently available seldom assesses how early Islamic meteorological records, which were created during the Golden Age and preserved in manuscripts like those from the House of Wisdom, may be compared with current scientific data to guide environmental policy (Meklach, 2020). There are unanswered issues about how religion, history, and environmental science may work together to improve climate resilience in Muslim countries in the absence of an integrated approach.

Furthermore, although Islamic teachings stress moderation (*wasatiyyah*), stewardship (*khalīfa*), and avoiding waste (*isrāf*), their potential practical relevance to contemporary climate risks—such as drought-related migration in Syria and Yemen has not received enough attention in research on climate governance (Sadali, 2023). This is a second gap, which is the scant examination of how Islamic ethical frameworks may direct initiatives for adaptation and mitigation in areas that are currently under severe climate pressures.

Thus, the lack of an integrated, historically grounded, and faith-informed framework for comprehending and addressing climate change in the Muslim world is the research topic this paper attempts to address. The study's objectives are to: (1) investigate how Islamic civilization has been impacted by climate in the past; (2) analyze Islamic environmental philosophy, both classical and contemporary; and (3) evaluate current climate issues in Muslim-majority states using historical data and religious ethics.

Accordingly, this study entitled “**From Caliphates to Climate Crisis: Historical Records, Islamic Teachings, and Environmental Challenges in the Muslim World**” can guide a through Muslim response to today’s environmental issues.

B. Research Methods

This study uses an interdisciplinary, qualitative research approach that combines textual interpretation, historical analysis, and a thorough literature survey. Between January and June of 2025, the study was carried out using data from significant academic repositories, including Islamic manuscript collections from Middle Eastern archives, international digital libraries, and databases related to climate science like the IPCC and regional climate observatories. In order to find patterns pertaining to climatic anomalies, environmental cycles, and societal reactions to ecological stress, the historical component involved using a documentary content-analysis tool to examine classical Islamic manuscripts, especially meteorological notes and environmental commentaries written during the Islamic Golden Age.

The Qur'anic texts, Hadith literature, and ancient legal writings on stewardship (*khalīfa*), balance (*mīzān*), and environmental ethics were all subjected to a thematic interpretative tool used in the theological study. As a result, normative norms pertinent to modern ecological governance might be extracted. The scientific component mapped current climate risks throughout Muslim-majority regions using a systematic review methodology that looked at peer-reviewed scientific research, IPCC climate assessments, and environmental reports released between 2015 and 2025. Global climate databases and national climate impact reports with an emphasis on the Middle East, North Africa, and South Asia were the sources of the data.

To improve analytical validity, the three data streams historical archives, Islamic ethical teachings, and contemporary climate science were triangulated. This methodology is in line with current multidisciplinary approaches in religion-environment studies, which place an emphasis on combining ecological facts, historical records, and biblical texts to create environmental frameworks that are appropriate for the situation (A. M. Sayem, 2019). The paper builds a thorough analytical model that shows how Islamic intellectual heritage might support climate governance in the modern Muslim world using this triangulated architecture.

C. Results and Discussion

1. Historical Context – Climate and Civilizational Change

a. Climate and Civilizational Trajectories

The interaction between environmental conditions and civilizational trajectories has long been a subject of historical inquiry. Climate change in the pre-industrial era was largely the result of natural variability—volcanic eruptions, solar cycles, and oceanic patterns—yet its societal impacts were profound. Climatic fluctuations could facilitate agricultural abundance and urban growth, or, conversely, induce famine, disease, and mass migrations. While political leadership, military capacity, and economic systems were critical determinants of a civilization’s success or collapse, climate often acted as an underlying catalyst, influencing the scope and pace of these transformations (Kallolickal, 2025).

The relationship between climate variability and civilizational trajectories is neither deterministic nor incidental; climate often operates as a powerful background force whose effects are mediated by institutions, technology, and culture (Sörlin & Lane, 2018). In Roman and post-Roman history, paleoclimatic proxies and documentary sources link multi-decadal anomalies to crop failures, epidemics, and political turmoil, even as strong states sometimes buffered shocks through infrastructure and redistribution (Zonneveld et al., 2024). Within the Islamic world, episodes of drought, Nile flood failure, and altered wind regimes affected taxation, provisioning, and military logistics, interacting with governance quality to produce divergent outcomes across regions and periods (Mayoral & Olsson, 2025). These cases underscore that resilience hinges on adaptive capacity—legal norms, social cohesion, and technological innovation—rather than on climate alone (Yulianto et al., 2025).

b. The Roman Empire: Prosperity and Decline

The Roman Empire offers a well-documented example of how climate stability can coincide with political and economic strength, while environmental stress can contribute to imperial fragility. Between approximately 200 BCE and 150 CE, the Mediterranean enjoyed what historians term the “Roman Climate Optimum,” a period of warm and wet conditions that supported agricultural surplus and facilitated the expansion of urban centers (Hu et al., 2022). This abundance underpinned Rome’s military campaigns, public works, and governance systems.

However, by the mid-3rd century CE, paleoclimatic evidence suggests a shift toward cooler and more volatile conditions. Tree-ring data, ice cores, and sediment analyses indicate repeated episodes of drought interspersed with flooding, placing severe strain on agricultural production (Hu et al., 2022). Plague outbreaks, which may have been caused by altered pathogen ecology brought on by climate change, severely reduced the empire’s population and economic foundation. Rome’s downfall was not only caused by climate change, but it did worsen pre-existing political division, economic inflation, and external threats.

c. The Muslim World: Climate and Political Stability

The early Islamic conquests of the 7th and 8th centuries unfolded in a period of relative climatic stability across the Middle East and North Africa. Adequate rainfall in key agricultural zones, such as the Fertile Crescent and parts of North Africa, allowed for the sustenance of large armies and the integration of new territories into a coherent economic system (Rose & Flierman, 2024). Trade routes across the Arabian Peninsula, the Indian Ocean, and the Mediterranean were supported by predictable wind and seasonal patterns, enabling economic prosperity and cultural exchange.

Yet, from the late 10th to early 14th centuries, parts of the Muslim world experienced episodes of environmental stress that tested imperial resilience. For example, the decline of the Abbasid Caliphate coincided with recurring droughts in Mesopotamia, which disrupted grain production and intensified political instability (Adamo & Al-ansari, 2020). The 13th century witnessed the onset of the “Little Ice Age” in parts of the Northern Hemisphere, marked by cooler temperatures and unpredictable rainfall

patterns. These shifts contributed to famine in Egypt during the 1200s and undermined the stability of several Islamic dynasties.

In North Africa, the Almoravid and Almohad empires grappled with prolonged dry periods that constrained agricultural output and limited their ability to sustain military campaigns. In Central Asia, fluctuating climate patterns may have facilitated the mobility of nomadic groups such as the Mongols, whose incursions disrupted trade and governance in parts of the Islamic world (Che & Lan, 2021). These examples illustrate that environmental pressures interacted with political, military, and economic factors to shape the fortunes of Muslim empires.

d. Medieval Islamic Meteorological Records

From the eighth to the fourteenth century, Muslim scholars combined empirical observation with theological reflection to study atmospheric phenomena, hydrology, and seasonal cycles across an interconnected Afro-Eurasian world (Borroni, 2024). Agricultural practice, navigation, and urban design required close attention to rainfall variability, prevailing winds, and flood regimes, while Qur'anic references to natural signs encouraged inquiry into the patterns of creation as manifestations of divine order (Brown, 2022). Chronicles and scientific treatises from al-Andalus to Egypt preserve accounts of drought sequences, Nile failures, and storm anomalies that align with independent proxy evidence and help reconstruct regional climate variability relevant to present-day adaptation planning. The interpretive habit of linking environmental events to moral reflection produced a holistic archive in which ecological knowledge, ethics, and governance intertwined, a legacy that can enrich contemporary climate communication and policy design in Muslim contexts (Zuhdi et al., 2024).

The Islamic Golden Age, which extended from the eighth to the fourteenth centuries, was a period marked by extraordinary intellectual vigor, scientific curiosity, and cultural exchange across the Muslim world. Within this era, Muslim scholars engaged not only with philosophy, medicine, mathematics, and astronomy, but also with the study of climate and meteorology. Although this field is less frequently highlighted in discussions of Islamic scientific achievements, it represents a vital part of the historical record, offering both empirical data and interpretive frameworks that remain relevant to contemporary climate studies. The meteorological observations of this period, recorded in Arabic, Persian, and other languages, provide important insights into past environmental conditions and the ways in which pre-modern societies understood and adapted to them.

The origins of meteorological inquiry in the Islamic world were deeply intertwined with both practical necessity and theological reflection. Agricultural productivity, navigation across land and sea, and the design of urban settlements all depended on careful observation of seasonal cycles, rainfall patterns, and prevailing winds. The Qur'an's repeated references to natural phenomena, including clouds, rain, wind, and the alternation of night and day, encouraged scholars to reflect upon and study these patterns as signs of divine wisdom and as part of an ordered system that could be observed and analyzed. In this way, empirical observation was harmonized with spiritual contemplation, producing a distinctive approach that combined faith and reason.

Several leading intellectuals of the Golden Age contributed to the understanding of climate and atmospheric patterns. Figures such as Al-Kindi explored the connections between geography, wind systems, and seasonal changes, while Al-Mas'udi documented weather anomalies and monsoon systems observed during his travels across the Indian Ocean and African coasts. Ibn Sina integrated climatic concepts into his medical writings, describing how humidity, temperature, and air quality influenced human health. Ibn Khaldun, in his monumental *Muqaddimah*, examined the relationship between climate, geography, and the development of cultural and political systems. Astronomers such as Ibn al-Shatir refined celestial observations that were used not only for timekeeping and navigation but also for predicting agricultural seasons and weather shifts. These works were grounded in empirical data, often collected through travel, trade expeditions, and diplomatic exchanges, and demonstrated a methodological rigor that resonates with modern scientific principles.

Manuscripts and chronicles from this period provide detailed accounts of abnormal weather events, prolonged droughts, flooding, and fluctuations in agricultural productivity. Records from medieval Andalusia note sequences of drought years that disrupted food supplies and contributed to political

unrest in the Cordoba Caliphate. Egyptian historical documents describe years in which the Nile's annual flood failed, triggering famine, social instability, and sharp rises in food prices. Modern climate scientists have found that these accounts correspond closely with evidence from tree rings, ice cores, and sediment analysis, confirming that these societies endured significant climate variability, sometimes over sustained periods.

What makes these records particularly valuable is their integration of environmental observation with social, political, and moral commentary. Chroniclers often interpreted extreme weather events as signs of divine displeasure, calling for moral reform and repentance, while others saw them as natural cycles that could be studied and anticipated. This duality reflects a worldview in which environmental knowledge was inseparable from ethical and spiritual considerations. By framing environmental change within both a scientific and moral context, Muslim scholars of the Golden Age offered a holistic understanding of human–nature relations that can still inform present-day discourse.

The relevance of these historical records to modern climate studies is considerable. In regions such as the Middle East and North Africa, where aridity and water scarcity remain pressing concerns, understanding past drought cycles and their societal impacts can guide the development of contemporary adaptation and resilience strategies. Furthermore, linking climate awareness to cultural heritage can strengthen community engagement, especially in societies where religion and history are central to collective identity. Recognizing medieval Islamic meteorology as both a scientific achievement and a cultural legacy offers a bridge between past and present, enabling a dialogue between tradition and innovation that is essential for addressing the challenges of climate change today.

2. Islamic Teachings On Environment & Ecology

a. Scriptural Foundations

Islamic sources present the world as a trust endowed with intrinsic value, binding humans to a stewardship ethic that privileges balance, moderation, and justice. The Qur'an condemns waste and corruption on earth and commends the maintenance of equilibrium, a theological vision elaborated in the Sunnah through water conservation, tree planting, and compassion toward living beings (Rahmat, 2025). Juristic institutions such as *ḥimā* and *ḥarīm* configured protected lands and water buffers to secure shared resources and biodiversity, translating ethics into governance mechanisms suited to local ecologies (Ibrahim et al., 2023). Contemporary Muslim thinkers frame climate degradation as a spiritual and moral crisis that requires renewal of values alongside technological solutions, aligning classical insights with modern sustainability imperatives (Mashadi, 2025).

b. Juristic and Ethical Instruments

Islamic thought offers a rich and multidimensional approach to the environment, rooted in the Qur'an, the Sunnah, and the scholarly tradition that emerged over more than fourteen centuries. The foundational premise is that the natural world is a creation of God and thus possesses intrinsic value, existing not solely for human use but as part of a divinely ordained balance. Humanity is entrusted with the role of *khalīfa*, or steward, on earth, as expressed in the Qur'an (2:30), where Adam is appointed as a representative of God on earth. This stewardship is not a privilege devoid of responsibility; rather, it implies a moral and legal duty to protect, sustain, and use the earth's resources wisely.

The Qur'an repeatedly draws attention to the signs of God in nature, pointing to the alternation of night and day, the cycles of rain, the diversity of life forms, and the regularity of celestial movements as manifestations of divine order. Verses such as Qur'an (6:141) command believers not to waste resources, declaring that God does not love those who engage in excess. This principle of avoiding waste, or *isrāf*, has profound implications for contemporary environmental ethics, urging restraint in consumption and production in an age marked by overexploitation and unsustainable industrial practices. The Qur'an also speaks of *mīzān*, or balance, in creation (Qur'an 55:7–9), underscoring that disrupting ecological equilibrium is a transgression against the natural order established by God.

Hadith literature complements the Qur'anic framework by providing practical examples from the life of the Prophet Muhammad, who demonstrated a deep respect for the environment in both his teachings

and his actions. For instance, the Prophet said: *“No Muslim plants a tree or sows seeds, and then a bird, a human, or an animal eats from it, except that it will be considered a charity for him.”* He advised moderation in the use of water even when abundant, prohibited the unnecessary cutting of trees, and encouraged the planting of new ones, declaring that any act of planting from which humans, animals, or birds benefit is an act of charity. Such guidance extends the idea of environmental stewardship into daily life, linking ecological care with spiritual reward and moral virtue.

c. Theological Interpretations and Moral Dimensions

Classical Islamic jurisprudence also addressed environmental matters through various legal instruments. The concept of *ḥimā*, for example, designated certain areas as protected lands where grazing, hunting, and resource extraction were restricted in order to preserve biodiversity and maintain ecological health. Similarly, the institution of *ḥarām* established buffer zones around water sources to ensure equitable access and prevent overuse. These legal frameworks illustrate that environmental governance in Islamic history was not merely a matter of moral exhortation but was codified in policies that reflected both ecological awareness and social justice (Ibrahim et al., 2023).

Modern Muslim environmentalists and scholars have drawn upon these theological and legal precedents to articulate a distinctly Islamic response to climate change. They argue that environmental degradation is not only a physical or economic problem but also a spiritual crisis, arising from a rupture in the relationship between humanity and the Creator. Addressing climate change from an Islamic perspective therefore involves reviving the ethical principles embedded in scripture and tradition, while also engaging with contemporary scientific knowledge and policy debates. This synthesis of faith and reason is in harmony with the intellectual spirit of the Islamic Golden Age and offers a culturally resonant framework for mobilizing communities in the face of environmental challenges.

3. Environmental Challenges In Muslim Countries

a. Regional Vulnerabilities

In the contemporary era, climate change has emerged as one of the most pressing threats to environmental stability, economic security, and social cohesion across the globe. For many Muslim-majority countries, the challenge is compounded by geographic vulnerability, socio-economic fragility, and, in some cases, ongoing political conflict. The Middle East, North Africa, and parts of South and Central Asia are already experiencing climate-related shifts that exceed the global average in severity. Rising temperatures, erratic precipitation patterns, and increased frequency of extreme weather events are disrupting livelihoods, undermining food and water security, and triggering population displacement. These effects highlight the degree to which climate change operates as a “threat multiplier,” exacerbating pre-existing stresses and accelerating the breakdown of already fragile systems.

Many Muslim-majority regions lie within arid and semi-arid belts where warming, evapotranspiration, and precipitation shifts intensify chronic water stress, degrade agricultural productivity, and heighten exposure to extreme heat (Lelieveld et al., 2016). Empirical studies link drought sequences and livelihood loss to heightened instability risks in fragile settings, including Syria and parts of Yemen, while emphasizing that climate operates as a threat multiplier within broader political economies of vulnerability (Hussein et al., 2025). Coastal and deltaic communities from the Gulf to Southeast Asia face sea-level rise and storm surge hazards, while rapidly urbanizing cities struggle with heat, air quality, and waste management challenges that compound health burdens (Nienhuis et al., 2023). Policy responses must therefore integrate water governance, food systems, health adaptation, and just transition strategies within credible national frameworks supported by regional cooperation (Kraak & Niewolny, 2024).

b. Water Scarcity and Fragile Hydro-Systems

One of the most significant challenges facing Muslim-majority states is water scarcity. The majority of these countries are located in arid or semi-arid regions where water resources are naturally limited and unevenly distributed. Climate change is intensifying evaporation rates and altering rainfall patterns, leading to the depletion of surface water and a decline in groundwater recharge. Nations such as Yemen, Jordan, and Iraq are already approaching critical thresholds where water demand far

outstrips supply. In Yemen, decades of unsustainable water extraction from aquifers, combined with reduced rainfall and prolonged droughts, have created a humanitarian crisis in which millions lack reliable access to safe drinking water. This scarcity has contributed to the spread of waterborne diseases, displacement, and the escalation of conflict over access to resources.

c. Case Study: Syria and Climate-Induced Socioeconomic Stress

Syria provides another stark example of how environmental pressures intersect with social and political instability. Between 2006 and 2010, the country endured one of the most severe droughts in its modern history, devastating agricultural output and forcing hundreds of thousands of rural residents to migrate to urban areas in search of work and support. This mass displacement placed additional strain on cities already grappling with unemployment and inadequate infrastructure. While the Syrian conflict cannot be reduced to environmental causes, scholarly research indicates that the drought and resulting socio-economic stresses played a role in heightening tensions and fueling unrest. The case illustrates how climate-induced disruptions can contribute to instability in politically volatile contexts.

d. North Africa: Drought, Agriculture, and Systemic Stress

In North Africa, the Almoravid and Almohad empires grappled with prolonged dry periods that constrained agricultural output and limited their ability to sustain military campaigns. In Central Asia, fluctuating climate patterns may have facilitated the mobility of nomadic groups such as the Mongols, whose incursions disrupted trade and governance in parts of the Islamic world (Farahat, 2024). These examples illustrate that environmental pressures interacted with political, military, and economic factors to shape the fortunes of Muslim empires.

e. Coastal and Deltaic Vulnerabilities

Meanwhile, rising sea levels and increased storm surges threaten coastal communities, including in Bangladesh, Indonesia, and parts of the Gulf region, where vital infrastructure is concentrated along low-lying shores.

f. Economic Implications of Climate Stress

The economic implications of these environmental changes are substantial. Declines in agricultural yields not only threaten food security but also undermine rural economies, increasing dependence on food imports and making states more vulnerable to global market fluctuations. Energy systems are also affected, particularly in countries reliant on hydropower, where reduced water flows limit electricity generation. In oil- and gas-producing nations, the effects of climate change on infrastructure—such as heat damage to pipelines and refineries—add another layer of risk to economies heavily dependent on fossil fuel revenues.

g. Public Health Risks and Urban Vulnerability

Health impacts present an additional dimension of vulnerability. Rising temperatures are increasing the prevalence of heat-related illnesses, altering the distribution of vector-borne diseases, and exacerbating air quality problems in urban centers. In South and Southeast Asia, where rapid urbanization is occurring in many Muslim-majority cities, poor air quality and inadequate waste management compound the health risks associated with a warming climate.

h. Governance & Adaptation Limits

For many of these nations, addressing climate change is complicated by limited institutional capacity, competing development priorities, and, in some cases, ongoing security crises. Adaptation and mitigation measures require not only technical and financial resources but also governance systems capable of implementing long-term strategies in the face of short-term political pressures. Yet, despite these challenges, there are opportunities for innovation and resilience. Some Muslim-majority countries are investing in renewable energy, developing water-saving agricultural techniques, and exploring community-based adaptation initiatives that draw upon both modern science and traditional knowledge.

i. Integrating Social Justice, Policy, and Ethical Frameworks

The magnitude of contemporary climate challenges underscores the importance of integrating environmental policy with broader frameworks of social justice, economic reform, and cultural values. In the Muslim context, this integration can be enriched by the ethical principles of stewardship, balance,

and equity found in Islamic teachings. Drawing upon these principles not only offers a moral foundation for climate action but also enhances the legitimacy of policies in societies where religious identity plays a central role in public life. This synthesis of ethical guidance and scientific strategy forms the foundation for the next stage of this discussion, which examines the contributions of both classical and modern Muslim scholarship on ecology.

4. Islamic Ecology Scholarship

a. Classical Ecological Scholarship

Classical scholarship connected environmental prudence to the sustenance of social order, anticipating modern concerns about ecological limits and resilience (Morrell & Dahlmann, 2023). Contemporary Islamic environmental thought extends this tradition, translating Qur'anic and juristic ethics into action agendas for conservation, climate mitigation, and adaptation across diverse Muslim societies (A. B. U. Sayem, 2021). Faith-based organizations and scholars have articulated platforms that align renewable energy, resource efficiency, and ecological restoration with Islamic values, demonstrating the mobilizing potential of religious narratives for sustainability transitions (Rahman et al., 2024).

The intellectual tradition of Islam has long engaged with questions of humanity's relationship to the natural world, not merely as a matter of agricultural or economic concern, but as an essential dimension of spiritual life and moral conduct. This engagement has produced a body of thought that can be described as Islamic ecology, encompassing theological reflection, legal principles, and practical guidelines for the sustainable use of resources. Classical scholars, influenced by both scriptural sources and empirical observation, articulated concepts of environmental stewardship that resonate strongly with the demands of contemporary sustainability discourse.

In the medieval period, Muslim thinkers often approached environmental questions through the integrated framework of the natural sciences, philosophy, and jurisprudence. Figures such as Al-Mawardi discussed the management of public resources and the need to prevent environmental harm as a matter of governance and justice. Ibn Khaldun's analysis of the rise and fall of civilizations, while grounded in socio-political dynamics, placed considerable emphasis on the role of the environment in shaping cultural character and economic stability. He observed that societies which maintained a harmonious relationship with their natural surroundings tended to sustain prosperity longer, while those that depleted or mismanaged resources faced decline. Similarly, scholars of Islamic law developed legal categories for protecting shared resources, regulating water use, and maintaining grazing lands in a way that balanced human needs with ecological preservation.

b. Contemporary Scholarly Revival

In the modern era, Islamic ecological thought has experienced a revival, driven by both the urgency of environmental crises and the global movement toward integrating indigenous and religious knowledge systems into sustainability policy. Contemporary Muslim scholars, activists, and organizations have expanded on classical principles to address issues such as climate change, biodiversity loss, and pollution. Writers like Seyyed Hossein Nasr have emphasized the spiritual roots of ecological degradation, arguing that the environmental crisis is fundamentally a crisis of values. Others, such as Ibrahim Özdemir and Fazlun Khalid, have sought to translate Islamic environmental ethics into practical action plans, working with governments, non-governmental organizations, and international agencies to promote conservation and climate resilience.

c. Institutional Initiatives

Institutional initiatives have also emerged, including the Islamic Declaration on Global Climate Change issued in 2015, which called upon Muslim-majority nations and communities worldwide to transition toward renewable energy, reduce greenhouse gas emissions, and protect vulnerable ecosystems. These initiatives often frame environmental responsibility as a religious obligation, drawing upon Qur'anic verses, Prophetic traditions, and historical precedents to motivate collective action. In many cases, this faith-based approach has proven effective in mobilizing grassroots support, particularly in rural or traditional communities where religious authority remains a trusted source of guidance.

The convergence of classical Islamic ecological principles with modern environmental science offers a particularly promising avenue for addressing climate change in the Muslim world. Historical

scholarship provides a foundation of ethical reasoning and institutional practice, while contemporary science offers the data, models, and technologies needed to confront the unprecedented challenges of the Anthropocene. Together, these resources can inform policies that are not only technically sound but also culturally and spiritually resonant, enhancing both their effectiveness and their legitimacy.

5. Policy & Religious Response

a. National Policy Integration

Effective climate strategies in Muslim contexts benefit when technocratic policy is reinforced by the moral authority of faith. National plans for renewables, water security, disaster risk reduction, and nature-based solutions can be embedded within narratives of stewardship and justice that enhance legitimacy and public uptake (Albaker et al., 2025).

The scale and urgency of contemporary climate change demand responses that go beyond the capacity of conventional policy instruments alone. For Muslim-majority societies, the integration of religious principles into environmental governance can provide both moral authority and cultural legitimacy, enabling climate action to resonate deeply within communities. Faith-based engagement offers a means to bridge the gap between scientific knowledge and public participation, transforming abstract global concerns into concrete moral imperatives. In Islamic contexts, where religious identity often informs political discourse and everyday decision-making, the mobilization of climate action through theological and cultural frameworks is particularly potent.

Policy responses must therefore integrate water governance, food systems, health adaptation, and just transition strategies within credible national frameworks supported by regional cooperation (Albaker et al., 2025). One of the most significant challenges facing Muslim-majority states is water scarcity.

b. Religious Institutions as Platforms

Religious institutions play a critical role in this process. Mosques, religious schools, and community centers have historically served as spaces for moral instruction, public dialogue, and the dissemination of knowledge. By incorporating environmental education into sermons, curricula, and community programs, religious leaders can raise awareness of climate issues and inspire practical action. Initiatives such as mosque-based solar panel installations, water conservation campaigns during Ramadan, or tree-planting projects linked to charitable giving can serve as visible demonstrations of faith in action. These initiatives not only reduce environmental impact but also create tangible symbols of the compatibility between Islamic values and modern sustainability goals.

Non-governmental organizations and civil society networks also have an important part to play. Many Islamic environmental groups are already active in promoting sustainable agriculture, renewable energy, and community-based conservation. By working in partnership with governments, international agencies, and local religious authorities, these organizations can ensure that climate action strategies are socially inclusive and culturally appropriate. The involvement of women, youth, and marginalized groups in environmental decision-making is particularly crucial, as these communities often bear the brunt of climate impacts and can bring valuable perspectives to adaptation strategies.

c. Regional Cooperation

International cooperation among Muslim-majority nations can further amplify the impact of such efforts. Platforms such as the Organization of Islamic Cooperation (OIC) provide opportunities to develop coordinated climate policies, share best practices, and pool resources for research and development. Regional collaboration is especially critical for addressing transboundary challenges, such as water management in shared river basins or the protection of migratory species.

Mosques, madrasas, and community organizations can also support global partnerships by acting as trusted communication channels for environmental messaging. Faith-based diplomacy grounded in shared moral vision can help overcome political tensions and facilitate joint action for resource protection and climate resilience.

Ultimately, mobilizing Muslim communities for climate action requires creating a narrative that connects faith, heritage, and survival. The synthesis of Qur'anic principles, Prophetic teachings, classical environmental jurisprudence, and modern scientific insights provides robust foundations for coordinated policy responses and community-driven adaptation efforts. In this way, climate action becomes not only a technical or political challenge but an act of worship, a fulfillment of divine trust, and an investment in intergenerational justice.

D. Conclusion

This study shows that the relationship between Islamic culture and the environment is rooted in history, with resource governance, environmental stressors, and climatic circumstances continuously influencing Muslim countries' resilience or fragility across time. Islamic teachings on balance, moderation, and stewardship (*amānah*) comprise not only spiritual direction but also a cogent ethical framework for environmental responsibility that is still highly relevant today, according to the analysis of classical texts.

Examining current climate challenges reveals that many Muslim-majority nations are under severe strain, from water scarcity and declining agricultural productivity to social instability brought on by climate change. This underscores the need for integrated responses that incorporate community-based engagement, adaptive policymaking, and scientific evidence. These results highlight the significance of placing climate strategies inside morally and culturally significant local narratives.

Overall, the study demonstrates that a strong and culturally relevant basis for climate action in the Muslim world is provided by combining historical insights, Islamic theology concepts, and contemporary climate science. Muslim societies may improve climate resilience and contribute to global environmental governance by reviving the ideals of stewardship and bolstering the role of religious organizations as platforms for education and mobilization. By doing this, the study's goals are achieved: it shows how Islam's ethical and intellectual legacy, when combined with current scientific understanding, may guide practical and long-lasting approaches to climate adaptation and mitigation.

E. Acknowledgment

The authors would like to sincerely thank the Indonesian Journal for Islamic Studies (IJFIS) editorial team and reviewers for their helpful criticism, which greatly enhanced the manuscript's quality and clarity. We also thank researchers and colleagues who contributed insightful comments while this work was being developed. Their advice and academic contributions have been crucial in improving the analysis and bolstering the main point made in this study. The writers alone are accountable for any lingering mistakes.

F. Author Contribution Statement

MAI helped establish the theoretical framework, formulate the research hypothesis, analyze the literature, and draft the first publication. In response to reviewer comments, MAI oversaw the rewriting process and made sure the work maintained academic coherence. The creation of the results and discussion sections, methodological analysis, and data gathering and verification fell under the purview of NIHJ. Additionally, NIHJ was crucial to the manuscript's final editing, reference verification, and compliance with the journal's author requirements.

References

- (IPCC), I. P. on C. C. (2022). *Climate Change 2022 Impacts, Adaptation and Vulnerability*. Unit, Working Group II Technical Support.
- Adamo, N., & Al-ansari, N. (2020). The Abbasids and Tigris Irrigation Canals : The Nahrawan. *Journal of Earth Sciences and Geotechnical Engineering*, 10(3), 183–222.
- Albaker, H. B., Ellis, K. N., First, J., Herrera, D. A., & Muñoz, S. (2025). Knowledge , Attitudes , and Practices on Climate Change in a Muslim Community in Knoxville , Tennessee. *Sustainability*, 17(15), 1–17. <https://doi.org/10.3390/su17156770>
- Borroni, M. (2024). Meteorology and Environment in Islamic Scientific Tradition. *Heidelberg: Heidelberg University Publishing*, 29(1), 69–87. <https://doi.org/10.17885/heiup.mial.2024.1.24960>

- Brown, P. J. (2022). Supplying a medieval metropolis : water management and agriculture in the hinterland of early Islamic Basra. *Water History*, 14(3), 379–398. <https://doi.org/10.1007/s12685-022-00313-y>
- Che, P., & Lan, J. (2021). Climate Change along the Silk Road and Its Influence on Scythian Cultural Expansion and Rise of the Mongol Empire. *Sustainability*, 13, 1–17. <https://doi.org/10.3390/su13052530>
- Farahat, E. (2024). Dendrochronological studies in North Africa : reality and prospects. *Frontiers in Ecology and Evolution*, 12(January), 1–13. <https://doi.org/10.3389/fevo.2024.1299472>
- Hu, H., Michel, V., Valensi, P., Mii, H., Starnini, E., Zunino, M., & Shen, C. (2022). Stalagmite-Inferred Climate in the Western Mediterranean during the Roman Warm Period. *Climate*, 10(7), 1–10. <https://doi.org/10.3390/cli10070093>
- Hussein, R., Qasem, M., & Scholz, M. (2025). Climate change impact on resources in the MENA region : a systematic and critical review. *Physics and Chemistry of the Earth*, 139(March), 103936. <https://doi.org/10.1016/j.pce.2025.103936>
- Ibrahim, M. T., Jaafar, A. J., Ismail, H., & Mohmud, M. S. (2023). Hima and Environmental Conservation in Islamic Civilization : A Preliminary Study of Its Need and Impact. *Journal of Contemporary Islamic Studies*, 9(1), 1–13. <https://doi.org/10.24191/jcis.v9i1.7>
- Kalolickal, V. (2025). Climate Change and Ancient Civilizations : How Environmental Shifts Shaped Societal Collapses or Migrations. *International Journal of Social Science Reseach Studies (IJSSRS)*, 1(1), 8–13. <https://www.eduresearchjournal.com/index.php/ijssrs/article/view/329/339>
- Kraak, V. I., & Niewolny, K. L. (2024). A Scoping Review of Food Systems Governance Frameworks and Models to Develop a Typology for Social Change Movements to Transform Food Systems for People and Planetary Health. *Sustainability*. <https://doi.org/10.3390/su16041469>
- Kushnir, Y., & Stein, M. (2019). Medieval Climate in the Eastern Mediterranean : Instability and Evidence of Solar Forcing. *Atmosphere*, 10(1). <https://doi.org/10.3390/atmos10010029>
- Lelieveld, J., Proestos, Y., & Hadjinicolaou, P. (2016). Strongly increasing heat extremes in the Middle East and North Africa (MENA) in the 21st century. *Climatic Change*, 245–260. <https://doi.org/10.1007/s10584-016-1665-6>
- Marx, W., Haunschild, R., & Bornmann, L. (2018). *Climate and the Decline and Fall of the Western Roman Empire : A Bibliometric View on an Interdisciplinary Approach to Answer a Most Classic Historical Question* (Issue Ad 117). <https://doi.org/10.3390/cli6040090>
- Mashadi, A. I. (2025). Teologi Islam Kontemporer dan Etika Lingkungan: Pendekatan Maqasid Dalam Mewujudkan Keberlanjutan. *FADZAT Jurnal Ekonomi Syariah*, 5(2).
- Mayoral, L., & Olsson, O. (2025). Floods , droughts , and environmental circumscription in early state development : the case of ancient Egypt. In *Journal of Economic Growth* (Vol. 30, Issue 2). Springer US. <https://doi.org/10.1007/s10887-024-09243-1>
- Meklach, Y. (2020). Arab Islamic historical documents as a climatological source in the Maghreb. *SCIENCE HIGHLIGHTS: Climate Reconstruction and Impacts from the Archives of Societies*, 28(2), 1–2. https://www.researchgate.net/publication/345676982_Arab_Islamic_historical_documents_as_a_climatological_source_in_the_Maghreb
- Morrell, K., & Dahlmann, F. (2023). Aristotle in the Anthropocene: The comparative benefits of Aristotelian virtue ethics over Utilitarianism and deontology. *The Anthropocene Review*, 10(3). <https://doi.org/10.1177/20530196221105093>
- Nienhuis, J. H., Kim, W., Milne, G. A., Quock, M., Slangen, A. B. A., & Törnqvist, T. E. (2023). River Deltas and Sea-Level Rise. *Annual Reviews*, 79–104. <https://doi.org/10.1146/annurev-earth-031621-093732>
- Rahman, N. A., Ayuni, F., Hatta, M., Jalil, M. H., Mohd, Z., Mohamad, A. D., Lukman, N., Ibrahim, N., Maryam, S., Hamzah, H., Azwa, A. S., Din, M. N., & Zain, N. M. (2024). The Green Mosque and Climate Change Mitigation : A Study of Green Mosques in The Klang Valley. *International Journal of Religion*, 3538(10), 1552–1564. <https://doi.org/10.61707/cy4prm29>
- Rahmat, M. B. (2025). The Idea of Islamic Ecotheology in Responding to the Global Environmental Crisis :

- An Analysis of the Concepts of A . Introduction Ecological crisis is a serious and systemic form of. *Indonesian Journal of Islamic Theology and Philosophy*, 7(1), 93–110. <https://doi.org/10.24042/ijitp.v7i1.83585>
- Rose, E., & Flierman, R. (2024). *City, Citizen, Citizenship, 400-1500 A Comparative Approach* (E. R. R. Flierman & M. de B. de Beek (eds.)).
- Sadali. (2023). Harnessing Islamic Teachings for Climate Justice: Pathways for Faith- Based Environmental Action. *Sinergi International Journal of Islamic Studies*, 1(3), 153–167. <https://doi.org/10.61194/ijis.v1i3.597>
- Sayem, A. B. U. (2021). Islam and Environmental Ethics: A Qur ' ā nic Approach. *Islamic Studies*, 2(December 2017), 157–172. <https://doi.org/10.52541/isiri.v60i2.1438>
- Sayem, A. M. (2019). Religions and Environmental Ethics A Comparative Study of John B . Cobb , Jr . and Seyyed Hossein Nasr. *Australian Journal of Islamic Studies* 4, 4(3), 34–50. <https://share.google/HVHxlyB0LJ2psYhP>
- Sörlin, S., & Lane, M. (2018). Historicizing climate change — engaging new approaches to climate and history. *Climatic Change*, 151, 1–13.
- Yulianto, Y., Rosalia, F., & Hutagalung, S. S. (2025). Adaptive Governance in Environmental Issue : Systematic Literature Review. *International Journal of Environmental Impacts*, 8(3), 615–625. <https://doi.org/10.18280/ijei.080319> Received:
- Zonneveld, K. A. F., Harper, K., Klügel, A., Chen, L., Lange, G. De, & Versteegh, G. J. M. (2024). Climate change , society , and pandemic disease in Roman Italy between 200 BCE and 600 CE. *Science Advances*, 1033(January), 1–11. <https://doi.org/10.1126/sciadv.adk1033>
- Zuhdi, A., Bilhaq, M. A. M., & Putri, L. R. (2024). Islamic Philosophy ' s Approach to Environmental Ethics : An Analysis of the Teachings of the Qur ' an and Hadith. *Journal of Noesantara Islamic Studies*, 1(August), 198–213. <https://doi.org/10.70177/ijnis.v1i4.1392>

Copyright Holder

© Iqbal, M.A., & Jamil, N.I.H.

First publication right:

Indonesian Journal for Islamic Studies

This article is licensed under:

