

Creating Environmentally Sustainable Mosques: Combining Religious Principles With Ecological Practices

Ahmad Fajri Asshdiqi¹, Alfiani Rif'atus Sholihah²

¹Universitas Islam Negeri Sunan Ampel, Surabaya

²Universiti Utara Malaysia

¹asshdiqe@gmail.com, ²alfianirifa98@gmail.com

Abstract: Global challenges like climate change and environmental degradation have led various sectors, including religion, to engage in mitigation and adaptation efforts. In Indonesia, home to the largest Muslim population, mosques possess substantial potential to drive environmental sustainability. This study examines how Islamic principles can be integrated with ecological practices to create sustainable mosques in Indonesia. By analyzing concepts such as *khilafah* (human leadership on earth), *amanah* (trust from God to protect nature), and *mizan* (balance). The study uses theoretical analysis and literature review, focusing on integrating Islamic theological principles. It reviews classical and contemporary Islamic literature on environmental management, linking Islamic teachings on nature protection with modern ecological practices. Findings show that the concept of *khalifah* designates humans as stewards of the earth, responsible for managing natural resources wisely. Mosques can become platforms for environmental education, encouraging worshippers to embrace their role as *khalifah* through programs highlighting Islamic teachings on nature. The study addresses the challenges of implementing eco-friendly mosque concepts in Indonesia and offers solutions based on religious values. This research aims to enhance understanding of mosques' roles in global sustainability, particularly in Indonesia, and showcase their potential contributions to climate change mitigation and environmental preservation for future generations.

Keyword: Environmentally Sustainable Mosques, Islamic Principles, Ecological Practices

1. INTRODUCTION

In recent decades, climate change and environmental degradation have become pressing global challenges [1]. Various sectors, including religion, are faced with the responsibility of contributing to efforts to mitigate and adapt to these changes [2]. In the context of Indonesia, as a country with the largest Muslim population in the world, mosques have great potential to be agents of change in promoting environmental sustainability [3]. Islam, with its teachings that emphasize the importance of protecting nature and the environment, offers a strong theological foundation to support this effort.

Along with the increasing global awareness of the importance of sustainability, the concept of environmentally friendly mosques has begun to be adopted in various countries [4]. One of the countries that has made mosques a model of environmental

sustainability practices is Malaysia, where there is an “Eco-Masjid” initiative that can be an inspiration for similar developments in Indonesia [4]. However, in Indonesia, the application of this concept is still relatively new and has not been studied in depth. This research seeks to fill the gap by exploring how Islamic religious principles can be integrated with ecological practices to create environmentally sustainable mosques [5].

In this study, the author will analyze how concepts such as *khilafah* (human leadership on earth), *amanah* (trust from God to take care of nature), and *mizan* (balance) can be translated into concrete actions that support sustainability. With a focus on the Indonesian context, this research will also highlight the challenges faced in implementing the concept of eco-friendly mosques and offer solutions that are grounded in religious values.

Overall, this research seeks to strengthen the understanding of the role of mosques in the global sustainability agenda, particularly in Indonesia. By combining religious principles with ecological practices, it is hoped that mosques in Indonesia can contribute significantly to climate change mitigation efforts and preserve the environment for future generations.

2. METHOD

The method used in writing this scientific article is theoretical analysis and in-depth literature study that focuses on the integration between Islamic theological principles and ecological practices in Indonesian mosques. The research began with a critical review of classical and contemporary Islamic literature relating to the concepts of *khilafah*, *amanah*, and *mizan*, as well as Qur'anic verses and authentic hadith relevant to environmental issues. Next, an analysis is conducted to explore how these concepts can be translated into concrete practices in mosques. This theoretical approach is also supported by case studies of mosques in Indonesia that have implemented environmentally friendly practices, to enrich the discussion and ensure relevance to the local context. Through this method, this article not only contributes to theory development but also offers practical guidance for Muslim communities in integrating religious principles with environmental conservation efforts.

Through theoretical analysis, this research will examine classical and contemporary Islamic literature related to environmental management. The aim is to build a conceptual framework that can guide the implementation of environmentally friendly practices in Indonesian mosques. By linking Islamic teachings that encourage the protection of nature with modern ecological practices, this research aims to show that mosques not only function as places of worship, but also as community centers that play a role in maintaining environmental sustainability.

3. RESULTS AND DISCUSSION

This research reveals some important findings regarding the application of Islamic principles in sustainability practices in mosques in Indonesia. The main findings of this research involve an in-depth understanding of how theological concepts in Islam, such as *khalifah*, *amanah*, and *mizan*, can be translated into concrete actions that support environmental sustainability.

3.1. Khalifah as the Basis for Environmental Responsibility

The Islamic caliphate places great importance on humanity's role as custodians of the soil, particularly in the context of environmental care centred around mosques. This information has the potential to transform mosques into centres for environmental education and activism.

3.1.1. The Khalifah and Environmental Responsibility

The Qur'an, specifically QS. Al-Baqarah [2]: 30,

وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي جَاعِلٌ فِي الْأَرْضِ خَلِيفَةً قَالُوا أَتَجْعَلُ فِيهَا مَنْ يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ قَالَ إِنِّي أَعْلَمُ مَا لَا تَعْلَمُونَ ﴿٣٠﴾

"And [mention, O Muhammad], when your Lord said to the angels, "Indeed, I will make upon the earth a successive authority." They said, "Will You place upon it one who causes corruption therein and sheds blood, while we exalt You with praise and declare Your perfection?" He [Allāh] said, "Indeed, I know that which you do not know."

Establishes humans as caliphs, tasked with managing the earth wisely, which inherently includes environmental stewardship. Islamic environmental ethics necessitates the responsible stewardship of land, with the aim of maximising material benefits while also upholding religious sustainability goals [6]. Islam places significant emphasis on rights and duties through the concept of khalifah. Humans own the entitlement to utilise natural resources, but they must refrain from abusing them. Theocentrism asserts that every aspect of creation is a manifestation of God's might and so deserves reverence and accountability. From this standpoint, environmental management is considered a dual obligation encompassing both religious and ecological responsibilities [6].

The anthropocentric view in Islam, when aligned with the caliphate concept, promotes sustainability rather than exploitation, urging communities to engage in responsible development. As khalifah or earthly leaders, humans bear moral and spiritual responsibilities to uphold the balance of nature. Islam emphasises that individuals have a dual role as both consumers and protectors of natural resources, with the responsibility to preserve ecological balance in a fair and responsible manner. This concept highlights the need of sustainable development, which aims to meet present needs while safeguarding natural resources for future generations, in order to prevent the exploitation of the environment. As the khalifah, it is imperative for people to actively engage in ecological sustainability endeavours, such as conservation, environmental restoration, and reducing human impact on nature [7].

3.1.2. Mosques as Community Centers

Mosques can serve as platforms for environmental education, inspiring worshippers to embrace their caliphate role through programs that highlight Islamic teachings on nature. Mosques educate Muslims about both the environment and religion. These projects aim to promote sustainable practices that protect the environment according to Islamic beliefs and scientific knowledge. Mosque sermons, lectures, and environmental activities have

the potential to enhance the sense of responsibility as stewards of the land and motivate communal efforts towards environmental conservation. This aligns with the socio-eco-religio-cultural approach, which highlights the use of spiritual and cultural knowledge to address environmental degradation, as seen in research that interpret the Qur'an and Hadith [8].

While the caliphate concept encourages environmental stewardship, some contemporary interpretations may challenge its applicability, suggesting a need for a broader dialogue on integrating traditional teachings with modern ecological practices.

3.2. Amanah and Implementation of Green Practices

The notion of trust, referred to as *amanah*, has a crucial role in advocating for ecologically sustainable practices in mosques, as emphasised in QS. Al-Ahzab [33]: 72.

إِنَّا عَرَضْنَا الْأَمَانَةَ عَلَى السَّمَوَاتِ وَالْأَرْضِ وَالْجِبَالِ فَأَبَيْنَ أَنْ يَحْمِلْنَهَا وَأَشْفَقْنَ مِنْهَا وَحَمَلَهَا الْإِنْسَانُ إِنَّهُ كَانَ ظَلُومًا
جَهُولًا ﴿٧٢﴾

"Indeed, We offered the Trust to the heavens and the earth and the mountains, and they declined to bear it and feared it; but man [undertook to] bear it. Indeed, he was unjust and ignorant."

This trust involves the responsible management of natural resources, encouraging mosques to embrace sustainable measures that align with Islamic environmental norms.

3.2.1. Islamic Environmental Ethics

Islamic teachings emphasize the responsibility of humans to protect the environment, rooted in the concepts of *tawhîd* (Oneness of God) and *khilâfah* (stewardship) [9]. The principle of *al-mizan* emphasises the obligation to preserve equilibrium and concord in the natural world, asking humans to behave responsibly towards their environment [10]. Furthermore, the principle of trust posits that natural resources are a sacred responsibility bestowed upon humanity, requiring us to prioritise the well-being of future generations and exercise responsible management [11]. This is consistent with the obligation paradigm in Islamic environmental law, which requires humanity to not only avoid depleting resources but also actively improve them [12]. These principles demonstrate that the Islamic framework for environmental conservation is not just a guideline, but a basic duty that reflects a comprehensive perspective to the connection between mankind and the environment [13].

3.2.2. Practical Applications in Mosques

The installation of solar panels in mosques not only reduces carbon footprints but also serves as a tangible reminder of the Islamic duty to safeguard nature [14]. Islam emphasizes the preservation of the environment and the wise use of natural resources. Muslims are encouraged to actively participate in ecological conservation by theological concepts such as *tawhid* (God's oneness), *khalifah* (human guardianship over the world), and *mizan* (balance). Mosques may solve their energy needs practically by using renewable energy sources like solar panels, but it also shows a deep spiritual commitment

to Islamic values. Therefore, it is possible to achieve ecological sustainability by combining religious principles with ecological practices, highlighting the concept that environmental preservation is a fundamental aspect of religious life.

Educational programs on environmental ethics can enhance community engagement and promote sustainable practices within mosque operations. Muslim countries still need to improve their environmental ethics and conservation efforts, even if Islamic teachings have provided clear guidance on environmental responsibility. Communities can be urged to be more aware of the environmental effects of mosque operations, such as garbage management and energy usage, by providing environmental ethics education and training. Mosques might act as role models for sustainability in this regard for the greater community [15].

While the integration of environmental ethics in mosques is promising, challenges remain in ensuring consistent application across diverse communities, necessitating ongoing education and commitment to sustainability.

3.3. *Mizan and Ecological Balance*

As explained in QS. Ar-Rahman [55]:7-9,

وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ ﴿٧﴾ أَلَّا تَطْغَوْا فِي الْمِيزَانِ ﴿٨﴾ وَأَقِيمُوا الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ ﴿٩﴾

"And the heaven He raised and imposed the balance, that you not transgress within the balance. And establish weight in justice and do not make deficient the balance."

The concept of mizan, or balance, highlights the significance of equilibrium in human interactions with the environment. Promoting ethical resource management and sustainable practices depend on this idea.

3.3.1. *Ecological Balance*

The need of ecological balance is emphasized throughout the Qur'an, especially in light of the Earth's role as a reservoir for water. This equilibrium is a component of the natural law (sunnatullah), which asserts that maintaining the balance of life depends on the proper operation of every element on Earth, including water. Water is mentioned 63 times in 41 surahs in the Qur'an, demonstrating its significance for life as we know it. The earth's function as a reservoir for water is disrupted by harmful human activities like deforestation, pollution, and illicit logging, which leads to natural disasters including floods, droughts, and climate change. Preserving the earth's capacity to hold water is essential for both the sustainability of nature and humankind [16].

3.3.2. *Spiritual and Social Balance*

The interconnectedness of God, man, and nature is emphasized in the Qur'an, indicating that the spiritual and material aspects of life must coexist in harmony. The Qur'an highlights the need of maintaining balance in one's relationships with God and the

natural world. The idea of balance includes life in this world and the next, as well as the harmony between obligations and rights, the rule of law and justice. Because of this, humans must lead balanced lives in which every decision and action considers the effects on the environment as well as the spiritual and material aspects of life. The Qur'an also emphasizes that God's creation is perfectly balanced, and it is our responsibility to uphold and respect this equilibrium in every aspect of our lives [17].

3.4. *The Role of Hadith in Motivating Environmental Action*

Hadith have an important role to play in motivating sustainable environmental actions, even though they are not explicitly mentioned in the given context. Some important points that can be concluded: Hadith as the second source of Islamic law after the Qur'an has an important function in explaining and interpreting Islamic teachings, including in terms of the environment [18]. In addition to the verses of the Qur'an, authentic traditions also provide important guidelines in protecting the environment. For example, the Prophet said.

عَنْ جَابِرٍ قَالَ قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ مَا مِنْ مُسْلِمٍ يَغْرِسُ غَرْسًا إِلَّا كَانَ مَا أَكَلَ مِنْهُ لَهُ صَدَقَةٌ وَمَا سُرِقَ مِنْهُ لَهُ صَدَقَةٌ وَلَا يَزُرُّهُ أَحَدٌ إِلَّا كَانَ لَهُ صَدَقَةٌ إِلَى يَوْمِ الْقِيَامَةِ

It means: "Jabir (may Allah be pleased with him) reported that the Messenger of Allah (peace and blessings of Allah be upon him) said: 'No Muslim plants a tree except that what he eats of it will be charity and what he steals of it will be charity. And no one reduces the fruit of his tree except that it will be a charity for the one who planted it until the Day of Resurrection.'", (Imam Zakiyuddin Abdul Azhim Al-Mundziri, *At-Tarhib wat Tarhib minal Hadithisy Sharif*, [Beirut, Darul Fikr: 1998 AD/1418 AH], juz III, page 304).

This Hadith emphasizes the value of worship in reforestation and environmental conservation efforts. The role of Hadith includes bayan al-tafsir (interpretative explanation), bayan al-tauqid (reinforcement), bayan al-tahqiq (investigation), and bayan al-tashri (legal determination). This shows that the Hadith can be used to understand and apply Islamic teachings related to the environment. Contextualization of Hadith, as done by Syuhudi Ismail, allows for a dynamic and progressive understanding of Hadith in accordance with the changing times and conditions of society [19][20]. This approach can be applied to interpret Hadith related to the environment in a modern context. The practice of "living hadith" in society, as seen in the activities of Gamelan Kiai Kanjeng and the lectures of Emha Ainun Najib, shows that hadith can be interpreted and applied in daily life to form good character and behavior [21]. This can include environmentally friendly behaviors. Although there is no specific discussion of Hadith in relation to the environment, a contextual and applicable understanding of Hadith can be the basis for motivating sustainable environmental actions in accordance with the universal teachings of Islam.

4. CONCLUSION

This research demonstrates that Indonesian mosques have the potential to achieve environmental sustainability by integrating Islamic principles with ecological methodologies. This study demonstrates the application of Islamic principles such as *khilafah* (stewardship), *amanah* (trust), and *mizan* (balance) to the concept of sustainability. Research indicates that mosques can serve as significant venues for environmental education and advocacy. Muslims can fulfil their role as khalifah or custodians of the Earth by installing solar panels, overseeing waste management, and advocating for sustainable resource use. These measures mitigate environmental impact and comply with religious environmental obligations. Furthermore, the paper emphasises equilibrium (*mizan*) in human-nature interactions and advocates for Islamic resource management. The provision of environmental ethics education in mosques has the potential to enhance community involvement and promote sustainability.

Although the integration of these ideas among diverse people poses challenges, this study offers a structure for mosques to serve as sustainable examples. By integrating religious principles with ecological practices, Indonesian mosques have the potential to alleviate climate change and safeguard the surrounding ecosystem. This study elucidates the potential of mosques to promote worldwide sustainability, namely in Indonesia. The application of theological concepts to actual ecological problems demonstrates that religious institutions have the capacity to effect positive environmental transformation.

REFERENCES

- [1] B. I. R. Harsritanto, S. Nugroho, F. Dewanta, and A. R. Prabowo, "Mosque design strategy for energy and water saving," *Open Eng.*, vol. 11, no. 1, pp. 723–733, May 2021, doi: 10.1515/eng-2021-0070.
- [2] R. N. Aulia, F. M. Jasin, D. Anggraeni, S. Narulita, I. Mardhiah, and A. Hadiyanto, "Environmental management model in coastal area (a case study of ecopesantren Al-Khairat Palu, Central Sulawesi)," in *IOP Conference Series: Earth and Environmental Science*, IOP Publishing, 2021, p. 012052. Accessed: Dec. 13, 2024. [Online]. Available: <https://iopscience.iop.org/article/10.1088/1755-1315/743/1/012052/meta>
- [3] S. W. Auvaria, "Improvement of awareness and aspect of community participation in environmental management and climate change adaptation by eco-mosque," *Al-Ard J. Tek. Lingkungan.*, vol. 4, no. 1, pp. 9–15, 2018.
- [4] R. A. M. Yamin, "Eco-Mosque: Overview, Potential and Challenges of Implementation in Malaysia," *TAFHIM IKIM J. Islam Contemp. World*, vol. 14, no. 2, 2021, Accessed: Dec. 13, 2024. [Online]. Available: <https://tafhim.ikim.gov.my/index.php/tafhim/article/view/150>
- [5] U. F. Andi and I. Irwin, "Tipologi Bentuk Arsitektur Masjid-Masjid Tradisional Di Pesisir Utara Kalimantan Barat," *Langkau Betang J. Arsit.*, vol. 9, no. 1, pp. 85–99, 2022.
- [6] K. D. Saputra and S. D. Maharani, "Makna Peran Manusia sebagai Khalifah dan Paradigma Teosentrisme dalam Etika Lingkungan Islam," *Kalimah J. Studi Agama Dan Pemikir. Islam*, vol. 21, no. 1, pp. 1–24, 2023.

- [7] F. K. A. Kadir, N. Rusli, A. H. Embong, A. H. A. Rahman, and N. Ali, "The role of human beings as Caliphs in preserving nature," *Multidiscip. Sci. J.*, vol. 5, pp. 2023059–2023059, 2023.
- [8] Z. Alwi, A. Ilyas, Z. Darussamin, and A. G. Syafii, "Socio-Eco-Religio-Cultural Approaches in Addressing Environmental Damage: An Interpretative Analysis Based on The Quran and Hadith," *Rev. Gest. Soc. E Ambient.*, vol. 18, no. 1, pp. e06524–e06524, 2024.
- [9] M. Yusuf and K. N. Marjuni, "Environmental ethics from perspective of the quran and sunnah," *Religia*, vol. 25, no. 2, 2022, Accessed: Dec. 13, 2024. [Online]. Available: <https://e-journal.uingusdur.ac.id/Religia/article/view/847>
- [10] R. Sabrina, "Environmental and Sustainable Development in Islamic Perspective," *Bp. Int Res Crit. Inst Humanit Soc Sci*, vol. 3, no. 4, pp. 2975–2985, 2020.
- [11] R. Preiser, L. M. Pereira, and R. O. Biggs, "Navigating alternative framings of human-environment interactions: Variations on the theme of 'Finding Nemo,'" *Anthropocene*, vol. 20, pp. 83–87, 2017.
- [12] S. Mustapha and B. Umar, "Islamic Law: A Model for Sustainable Development," 2019, Accessed: Dec. 13, 2024. [Online]. Available: https://sarpublication.com/media/articles/SARJHSS_12_152-159_c.pdf
- [13] M. Baharudin and A. Tanjung, "Islam and Environmental Conservation," in *1st Raden Intan International Conference on Muslim Societies and Social Sciences (RIICMuSSS 2019)*, Atlantis Press, 2020, pp. 105–109. Accessed: Dec. 13, 2024. [Online]. Available: <https://www.atlantis-press.com/proceedings/riicmusss-19/125946228>
- [14] B. K. Ocansey, "Diagnosis and Epidemiology of Serious Fungal Infections in Ghana," PhD Thesis, The University of Manchester (United Kingdom), 2023. Accessed: Dec. 13, 2024. [Online]. Available: <https://search.proquest.com/openview/e09963e5fbfd6e49718738c12d561370/1?pq-origsite=gscholar&cbl=2026366&diss=y>
- [15] D. A. Mardani, I. S. Masuroh, W. Pursita, and K. Kustana, "Religion and Ecology: Environmental Ethics in Maintaining the Food and Energy," *TEMALI J. Pembang. Sos.*, vol. 6, no. 1, pp. 45–54, 2023.
- [16] M. Munawarah, "ESENSI DAN URGENSI BUMI SEBAGAI RESERVOIR AIR (TINJAUAN TAFSIR EKOLOGI)," *Muà Sarah J. Kaji. Islam Kontemporer*, vol. 3, no. 1, pp. 36–42, 2021.
- [17] D. Danisha, "Konsep Sikap Keseimbangan dalam Beragama Menurut Al-Qur'an (Analisis Penafsiran Ibnu Katsir terhadap Surah Al-Maidah Ayat 77 dan Al-Hajj Ayat 78 dalam Tafsir Al-Quran Al-Azhim)," *ANWARUL*, vol. 3, no. 4, pp. 740–750, 2023.
- [18] K. Kamaruddin, "URGENSI ULUM AL-HADIS DALAM MEMAHAMI AL-QUR'AN DAN STATUS HADIS," *HUNAF A J. Stud. Islam.*, vol. 2, no. 1, pp. 39–50, 2005.
- [19] A. Amrulloh, "Kontribusi M. Syuhudi Ismail dalam Kontekstualisasi Pemahaman Hadis," *Mutawatir J. Keilmuan Tafsir Hadith*, vol. 7, no. 1, Art. no. 1, Jun. 2017, doi: 10.15642/mutawatir.2017.7.1.76-104.

- [20] H. Su'aidi, "Hermeneutika Hadis Syuhudi Ismail," *RELIGIA*, vol. 20, no. 1, p. 33, Jun. 2017, doi: 10.28918/religia.v20i1.837.
- [21] A. W. As'ari, "Living Hadits Oral, Lisan, dan Tulisan Jamaah Maiyah, Emha Ainun Najib, dan Gamelan Kyai Kanjeng," *TARBIYA Islam. J. Pendidik. Dan Keislam.*, vol. 7, no. 2, Art. no. 2, Sep. 2018.