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Cycling, Islamic Environmental Ethics, and Low-Carbon Mobility: A Socio-Legal Analysis of MUI Fatwa No. 86/2023 in Indonesia

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Abstract

Climate change presents legal and ethical challenges that require environmentally responsible mobility practices. This study examines the normative compatibility of cycling with Islamic environmental ethics under Indonesian Ulama Council (MUI) Fatwa No. 86/2023 and explores its implications for ecological halal lifestyle and Islamic philanthropy. Employing normative Islamic legal analysis supported by descriptive analysis of secondary data, the study examines the fatwa through Islamic legal reasoning, particularly the principles of preventing environmental harm and promoting public welfare. Empirical data were obtained from the Bike to Work Indonesia dashboard integrated with Strava, covering January 2025 to January 2026. The legal analysis indicates that cycling is consistent with the fatwa's environmental obligations and climate mitigation objectives, without establishing a distinct legal category of halal mobility or automatically assigning cycling the status of mandūb. The platform recorded 65,577 cycling activities covering 1,404,551.60 km, corresponding to an estimated 337,092.35 kg CO_2 in avoided emissions. These figures represent platform-generated estimates rather than independently verified emission reductions. The study contributes to reconceptualizing halal lifestyle beyond consumption as an ecologically responsible everyday practice. Cycling-based environmental incentives may also inform environmentally oriented Islamic philanthropy, although their classification as Green Zakat requires further jurisprudential and institutional justification.

Keywords: *MUI Fatwa No. 86/2023; Islamic Environmental Ethics; Sustainable Mobility; Islamic Legal Reasoning; Cycling; Green Zakat; Islamic Philanthropy.*

Abstrak

Perubahan iklim menghadirkan tantangan hukum dan etika yang menuntut pengembangan praktik mobilitas berkelanjutan berdasarkan tanggung jawab ekologis. Penelitian ini bertujuan menganalisis kesesuaian normatif aktivitas bersepeda dengan etika lingkungan Islam berdasarkan Fatwa Majelis Ulama Indonesia (MUI) Nomor 86 Tahun 2023 serta mengkaji implikasinya terhadap pengembangan *halal lifestyle* dan filantropi Islam berorientasi lingkungan. Penelitian menggunakan pendekatan hukum Islam normatif yang didukung analisis deskriptif terhadap data sekunder aktivitas bersepeda. Analisis hukum dilakukan melalui prinsip *uṣūl al-fiqh*, khususnya pencegahan kerusakan lingkungan dan pencapaian kemaslahatan, sedangkan data empiris diperoleh dari dashboard Bike to Work Indonesia yang terintegrasi dengan Strava selama Januari 2025 Januari 2026. Hasil penelitian menunjukkan bahwa bersepeda selaras dengan prinsip perlindungan lingkungan dan kewajiban mitigasi perubahan iklim dalam fatwa, tetapi tidak secara otomatis memperoleh status hukum *mandūb* atau membentuk kategori hukum baru berupa *halal mobility*. Data platform mencatat 65.577 aktivitas bersepeda dengan total jarak 1.404.551,60 km dan estimasi emisi karbon yang dapat dihindari sebesar 337.092,35 kg CO_2. Angka tersebut merupakan estimasi berbasis algoritma platform, bukan pengukuran langsung terhadap pengurangan emisi aktual. Kontribusi teoritis penelitian terletak pada pengembangan konsep *halal lifestyle* dari orientasi konsumsi menuju praktik keseharian yang bertanggung jawab secara ekologis. Inisiatif insentif penghematan karbon juga membuka peluang pengembangan filantropi Islam berorientasi lingkungan, meskipun penggolongannya sebagai *Green Zakat* masih memerlukan justifikasi fikih dan kelembagaan lebih lanjut.

Kata Kunci: Fatwa MUI No. 86/2023; Etika Lingkungan Islam; Mobilitas Berkelanjutan; Penalaran Hukum Islam; Bersepeda; Green Zakat; Filantropi Islam.

INTRODUCTION

Climate change is a global issue that not only affects environmental sustainability but also raises legal and ethical challenges regarding human responsibility in preventing ecological damage. A report by the Intergovernmental Panel on Climate Change (IPCC) indicates that approximately 3.3 billion people worldwide are vulnerable to the impacts of climate change, including increased frequency of droughts, floods, and heat waves, as well as disruptions to food security and biodiversity.[1] This crisis demonstrates that climate change can no

[1] Valérie Masson-Delmotte et al., *Shukla, Eds* (IPCC, 2022), https://doi.org/10.1017/9781009157940; Andrea Monica D Ortiz et al., "A Review of the Interactions between Biodiversity, Agriculture, Climate Change, and International Trade: Research and Policy Priorities," *One Earth* 4, no. 1 (2021): 88–101, https://doi.org/10.1016/j.oneear.2020.12.008; Melese Genete Muluneh, "Impact of Climate Change on Biodiversity and Food Security: A Global Perspective—a Review Article," *Agriculture & Food Security* 10, no. 1 (2021): 36, https://doi.org/10.1186/s40066-021-00318-5.

longer be understood solely as a consequence of economic activity and technological development, but also as a matter of normative responsibility toward environmental protection and intergenerational well-being. From a legal and ethical perspective, this situation raises questions about how religious norms can provide a basis for restricting behaviors that cause ecological damage while simultaneously encouraging actions that contribute to climate change mitigation. Thus, addressing climate change requires an approach that integrates environmental policy, moral responsibility, and societal practices.

The transportation sector is a key area in climate change mitigation efforts due to its reliance on fossil fuels and its contribution to greenhouse gas emissions. The International Transport Forum indicates that transportation accounts for a significant portion of global emissions, while increasing mobility needs and dependence on motor vehicles remain challenges for the decarbonization agenda.[2] In the Indonesian context, the growth in the number of motor vehicles is exacerbating the challenge of controlling emissions, as demonstrated by Angin in a study on carbon emissions from daily transportation activities.[3] Meanwhile, Ferrer and Thomé emphasize that reducing transportation emissions requires a multidimensional approach that takes into account the characteristics of technology, policy, and the behavior of transportation users.[4] This situation indicates that emissions mitigation does not rely solely on the development of low-carbon vehicle technologies, but also requires changes in people's mobility practices. One relevant alternative is the use of bicycles for daily travel, especially when such travel replaces trips by motor vehicles. Brand points out that active mobility, including cycling, has the potential to reduce transportation emissions in urban life.[5] Nevertheless, the effectiveness of emission reductions must

[2] Corporate Partnership Board (CPB), "GHG Emissions Accounting and Reporting for Transport" (International Transport Forum, 2024), https://www.itf-oecd.org/sites/default/files/docs/ghg-emissions-accounting-reporting.pdf.

[3] Ria Angin et al., "Using the IPCC Formula to Calculate CO2 Emissions from Everyday Motorized Vehicles as the Baseline for Climate Change Mitigation Policies," *IOP Conference Series: Earth and Environmental Science* 1105, no. 1 (2022): 12049, https://doi.org/10.1088/1755-1315/1105/1/012049.

[4] Ana Luiza Carvalho Ferrer and Antonio Márcio Tavares Thomé, "Carbon Emissions in Transportation: A Synthesis Framework," *Sustainability* 15, no. 11 (2023): 8475, https://doi.org/10.3390/su15118475.

[5] Christian Brand et al., "The Climate Change Mitigation Effects of Daily Active Travel in Cities," *Transportation Research Part D: Transport and Environment* 93 (2021): 102764, https://doi.org/10.1016/j.trd.2021.102764.

be distinguished from normative considerations and individual motivations in choosing a mode of transportation. Thus, low-carbon mobility practices not only require an assessment of their environmental contributions but can also be examined in relation to the value systems and norms that underpin society's ecological responsibility.

In the tradition of Islamic law, responsibility toward the environment can be examined through the principles of preventing harm (*dar' al-mafāsid*), promoting the public good (*jalb al-maṣāliḥ*), and protecting human interests and the sustainability of life. These principles provide a normative foundation for considering the ecological consequences of an action as part of Islamic legal reasoning. Zahrah emphasizes that Islamic law possesses the adaptive capacity to respond to changing social conditions and contemporary issues, including climate change.[6] In line with this, Khuluq and Asmuni developed an argument regarding *ḥifẓ al-bī'ah*, or environmental protection, within the framework of *maqāṣid al-sharī'ah*.[7] Although the status of environmental protection as a standalone Sharia objective still requires conceptual debate, this idea reflects the evolution of Islamic legal thought in responding to ecological issues. Within this framework, Islamic environmental ethics is not only concerned with prohibiting actions that harm nature but also with the responsibility to consider the ecological impacts of everyday behavior. However, the relationship between these normative principles and society's mobility choices cannot be assumed to occur automatically. An explanation is needed regarding how Islamic legal norms can be interpreted in the context of concrete actions without conflating legal legitimacy, ethical recommendations, and empirical behavioral change.

In the Indonesian context, the normative response to climate change has been institutionally articulated through Fatwa No. 86 of 2023 issued by the Indonesian Ulema Council (MUI) on the Law Regarding the Control of Global Climate Change. The fatwa stipulates that actions causing environmental damage and contributing to the climate crisis are prohibited. Furthermore, the fatwa affirms the obligation of all parties to

[6] Zahrah Zahrah et al., "The Flexibility of Islamic Law in Responding to Climate Change Impacts on the Economy," *Al-'Aqdu: Journal of Islamic Economics Law* 4, no. 2 (2024): 2, https://doi.org/10.30984/ajiel.v4i2.3294.

[7] M Khusnul Khuluq and Asmuni Asmuni, "Hifz Al-Bi'ah as Part of Maqashid Al-Shari'ah and Its Relevance in the Context of Global Climate Change," *Indonesian Journal of Interdisciplinary Islamic Studies* 7, no. 2 (2025), https://doi.org/10.20885/ijiis.vol7.iss2.art3.

contribute to climate change mitigation and adaptation, reduce non-essential carbon footprints, and support a just energy transition.[8] These provisions indicate that the issue of climate change has garnered attention in contemporary Islamic legal discourse in Indonesia. However, the status of fatwas as products of Islamic legal thought must be distinguished from legislation, which has formal binding force within the national legal system. Pelu and Tarantang, as well as Sidqi and Witro, explain that the authority of fatwas relates to religious legitimacy and social acceptance, although they do not automatically become positive legal norms that are binding on the entire society.[9] Therefore, the significance of MUI Fatwa No. 86 of 2023 lies not only in the formulation of its legal provisions but also in its potential use as a normative framework for evaluating and guiding ecological practices in daily life. The question that then arises is how the fatwa's general provisions regarding the prevention of environmental damage can be interpreted contextually in the practice of low-carbon mobility, particularly cycling.

A number of studies have examined MUI Fatwa No. 86 of 2023 in relation to Islamic law, environmental ethics, and the ecological behavior of the public. Holifurrahman and Sulistyowati examined the relationship between the fatwa and the ecological behavior of Muslims,[10] Meanwhile, Permadi and Risnawati highlighted the implementation of the fatwa in strengthening environmental ethics within the Muslim community.[11] Desky and Windatria emphasize the theological and ethical dimensions

[8] Komisi Fatwa Majelis Ulama Indonesia, "Fatwa Majelis Ulama Indonesia No 86 Tahun 2023 Tentang Hukum Pengendalian Perubahan Iklim Global" (2023), https://fatwamui.com/storage/607/Fatwa-MUI-Nomor-86-Tahun-2023-tentang-Hukum-Perlindungan-Perubahan-Iklim-Global.pdf.

[9] I.E.A.S. Pelu and J Tarantang, "Fatwa Majelis Ulama Indonesia Sebagai Solusi Permasalahan Umat Islam Di Indonesia," *Al-Manahij: Jurnal Kajian Hukum Islam* 14, no. 2 (2020): 307–16, https://doi.org/10.24090/mnh.v14i2.3927; Imaro Sidqi and Doli Witro, "Kedudukan Fatwa Majelis Ulama Indonesia (MUI) Dalam Perspektif Hukum Islam Dan Nasional: Studi Implikasi Fatwa Terhadap Masyarakat," *Nizham Journal of Islamic Studies* 8, no. 01 (2020): 20–31, https://doi.org/10.32332/nizham.v8i01.2103.

[10] Holifurrahman Holifurrahman and Sulistyowati Sulistyowati, "Fatwa MUI No. 86 Tahun 2023 Dan Perilaku Ekologis Umat Islam," *Jurnal Pemuliaan Lingkungan Hidup Dan Sumber Daya Alam* 2, no. 02 (2025), https://jurnal.mui.or.id/index.php/lplhsda/article/view/6.

[11] Muhammad Permadi and Atin Risnawati, "Implementasi Fatwa MUI No. 86 Tahun 2023 Tentang Perubahan Iklim: Studi Kasus Penguatan Etika Lingkungan Pada Komunitas Muslim Di Indonesia," *Jurnal Pemuliaan Lingkungan Hidup Dan Sumber Daya Alam* 2, no. 02 (2025), https://jurnal.mui.or.id/index.php/lplhsda/article/view/27.

of the fatwa as the foundation of human responsibility toward the environment,[12] Meanwhile, Iqbal links this to the development of a sustainable lifestyle.[13] These studies contribute to our understanding of the relevance of religious norms in responding to the climate crisis. However, the issue that still requires further development is not merely the limited number of empirical studies on the implementation of fatwas, but rather the lack of adequately formulated conceptual mechanisms linking Islamic legal norms to specific ecological practices. Specifically, it is necessary to distinguish between four analytical issues: the permissibility of an action under Islamic law; the ethical value of that action in supporting environmental protection; the influence of religious norms on individual decisions; and the effectiveness of the action in reducing ecological impacts. These four dimensions have different bases for argumentation and different evidentiary requirements. An activity can be assessed in accordance with the principles of Islamic law without having to prove that the actor was motivated by a fatwa, just as a practice can yield environmental benefits without automatically acquiring a new legal status. This distinction is important so that the analysis of the relationship between fatwas and sustainable mobility does not get trapped in the assumption that the existence of religious norms directly results in changes in public behavior.

This issue is also related to the development of the concept of the halal lifestyle in contemporary Islamic studies. The literature on the halal lifestyle generally positions halal as a principle that influences consumption preferences, economic decisions, and the formation of Muslim social identity. Maysyaroh and Akbar point out that studies on the halal lifestyle are expanding into various fields, particularly food, beauty, Islamic finance, and product development.[14] Alam examines the

[12] Harjoni Desky and Windatria, "Theological and Ethical Dimensions of Global Warming in MUI Fatwa No. 86 of 2023," *Jurnal Pemuliaan Lingkungan Hidup Dan Sumber Daya Alam* 1, no. 01 (2025), https://jurnal.mui.or.id/index.php/lplhsda/article/view/15.

[13] M Iqbal, M Ali Rezaei Asfahani, and H Reza Tousi, "PRESUPPOSITIONS AND LEVELS OF UNDERSTANDING IN SCIENTIFIC EXEGESIS: Insights from Indonesian Quranic Scholars," *Miqot: Jurnal Ilmu-Ilmu Keislaman* 48, no. 2 (2024): 246–61, https://doi.org/10.30821/miqot.v48i2.1262.

[14] Siti Maysyaroh and Kelana Yudinta Akbar, "Halal Lifestyle: A Bibliometric Analysis," *Journal of Islamic Economics Literatures* 5, no. 2 (2024), https://doi.org/10.58968/jiel.v5i2.576.

development of halal studies in the tourism sector,[15] Meanwhile, Rahman and Indra are examining the relationship between the halal lifestyle and fashion preferences.[16] This development indicates that "halal" has become an important category in explaining the relationship between religious norms and everyday practices. However, the dominance of consumption-based approaches raises conceptual questions regarding whether the "halal lifestyle" can be used to understand non-consumptive actions that have social and ecological consequences. Expanding this concept is not sufficient merely by stating that an activity is permissible under Islamic law, because legal permissibility does not automatically imply the presence of ethical qualities that distinguish that activity from others. Therefore, expanding the "halal lifestyle" toward ecological practices requires an argument that links the permissibility of an action to the principles of public interest, the prevention of harm, and environmental responsibility.

Based on these issues, this study positions the halal lifestyle as a conceptual framework that can be expanded from a consumption-oriented perspective toward daily practices that take ecological consequences into account. This expansion is not intended to establish a new legal category such as "halal mobility," but rather to explain how legally permissible actions can acquire ethical relevance when carried out with consideration for the public good and the prevention of environmental damage. Within this framework, the principle of "halal" refers to the permissibility of an action under Islamic law, while the dimension of "ṭayyib" can be used to discuss the qualities of goodness, benefit, and responsibility associated with such practices. The two must be analytically distinguished because not every permissible activity contributes equally to ecological well-being. This approach is relevant to the development of Islamic environmental ethics, which emphasizes the importance of maintaining balance and avoiding actions that cause harm. Thus, a halal lifestyle is not treated as a religious label for a specific mode of transportation, but rather as an ethical perspective for understanding the relationship between mobility choices, individual responsibility, and broader ecological interests. The conceptual contribution offered here is the development of an understanding of the

[15] Azhar Alam et al., "Systematic Literature Review on Halal Label Studies of Halal Tourism," *TEM Journal* 13, no. 1 (2024): 635–45, https://doi.org/10.18421/TEM131-66.

[16] Anita Rahman, "Early Marriage Law (Perspective of Islamic Law and Juridic/State Law)," *Sakena: Jurnal Hukum Keluarga* 9, no. 1 (2024): 27–34.

halal lifestyle as an ethical-ecological practice that is not limited to consumption decisions but also encompasses consideration of the environmental impacts of daily activities.

Cycling serves as a relevant case study for examining this relationship because it is a form of active mobility that has the potential to reduce emissions when it replaces the use of motor vehicles. In his study on sustainable transportation, Brand highlights the contribution of active mobility to reducing emissions in daily commutes.[17] However, studies on sustainable mobility generally frame these issues within the context of shifts in transportation modes, environmental impacts, and travel behavior, whereas the relevance of Islamic legal norms to the ethical assessment of mobility practices has not yet been a primary focus in the literature reviewed in this study. To bridge these two fields, this study uses data on estimated carbon savings recorded through the cycling activities of the Bike to Work Indonesia community from January 2025 to January 2026. This data provides a quantitative picture of the estimated emissions that can be avoided through cycling trips based on the calculation method used in the community's tracking system. However, the data does not reveal the cyclists' religious motivations, the community members' level of knowledge regarding MUI Fatwa No. 86 of 2023, or the causal relationship between the issuance of the fatwa and the decision to use bicycles. Furthermore, the magnitude of carbon savings is an estimate dependent on assumptions regarding comparable modes of travel; therefore, it cannot be directly equated with measurements of actual emission reductions. Consequently, empirical data are used to illustrate the potential ecological contribution of cycling, while Islamic legal analysis is employed to assess its alignment with the normative principles of climate change mitigation. The distinction between these two types of data forms the basis for integrating normative analysis and social data in this study.

Beyond the legal and ecological dimensions, the development of low-carbon mobility may also be linked to Islamic philanthropy, particularly through the discourse on Green Zakat. In the Green Zakat Framework, Achmad develops the idea of integrating principles of environmental sustainability into the management and utilization of zakat.[18] This framework highlights opportunities to link the social goals

[17] Brand et al., "The Climate Change Mitigation Effects of Daily Active Travel in Cities."

[18] Noor Achmad et al., *Green Zakat Framework-Implementasi Green Economy Di BAZNAS* (Puskas BAZNAS, 2025),

of Islamic philanthropy with ecological concerns. One relevant practice in the context of this study is a campaign to exchange carbon savings credits earned through cycling for products from Difabis Coffee and Tea an economic empowerment program related to the management of zakat, infak, and sedekah by BAZNAS (BAZIS) DKI Jakarta.[19] Although this suggests a possible link between sustainable mobility and social activities rooted in Islamic philanthropy, these practices cannot yet be considered evidence of the establishment of a "Green Zakat" model with specific legal and institutional legitimacy. The development of a zakat model based on carbon reduction incentives still requires further study regarding funding sources, the status of beneficiaries within the aṣnāf categories, distribution mechanisms, and its alignment with zakat management principles. Therefore, this study positions Green Zakat as a potential conceptual expansion and policy implication, rather than as a primary finding regarding the implementation of a new zakat model.

Based on these developments in the literature, there are several interrelated research gaps. First, in Islamic legal studies, research on fatwas regarding climate change has not yet fully explained how general normative provisions can be used to assess everyday mobility practices without resulting in excessive legal generalizations. Second, in socio-legal studies, the relationship between fatwa authorities, the interpretation of norms, and social practices requires a clearer distinction between the normative appropriateness and the empirical influence of a fatwa on public behavior. More broadly, critical socio-legal scholarship in Islamic law demonstrates that religiously framed authority should be examined not only at the level of doctrinal formulation but also through the social relations and institutional structures through which authority is interpreted, recognized, and exercised.[20] Third, in studies of the halal lifestyle, the dominance of the consumption-based approach has not yet

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https://drive.google.com/file/d/1IktMSRaeC6rnAd611BfHS8XxbFUG9Cl4/view?usp=drive_link&usp=embed_facebook.

[19] Elvara Nuzulla, "Implementasi Manajemen Zakat Produktif Pada Program Coffee Difabis Di BAZNAS (Bazis) DKI Jakarta," *Jurnal Manajemen Dakwah* 2, no. 2 (2024): 153–68, https://doi.org/10.22515/jmd.v2i2.9981; Bike to Work Indonesia, "Tukar Strava Carbon Saved Bersepedamu," 2026, https://www.instagram.com/b2w_indonesia/p/DVxC63Pgf3w/.

[20] Al Fiqri Ardiansyah, Marhamah Annazah Tambunan, Randy Putra Alamsyah, Idrus Afandi Akbar, and Nuruddin, "Qiwāmah and Epistemic Violence: A Critical Socio-Legal Analysis of Gendered Authority in Islamic Family Law," *Mawaddah: Jurnal Hukum Keluarga Islam* 3, no. 2 (2025): 605–626, https://doi.org/10.52496/mjhki.v3i2.100.

provided an adequate theoretical explanation for the extension of halal principles to non-consumptive ecological actions. Fourth, in studies of sustainable mobility, evidence regarding the environmental benefits of cycling has not yet been extensively integrated with a normative reading of Islamic law, particularly in the context of MUI Fatwa No. 86 of 2023. Fifth, in studies of Islamic philanthropy, the relationship between incentives for low-carbon behavior and the Green Zakat framework still requires clarification regarding conceptual boundaries as well as the institutional and legal foundations of zakat. These five gaps highlight the need for an analytical framework that can link Islamic legal norms, the ecological consequences of everyday practices, and the development of environmentally responsible lifestyles without conflating legal compliance, behavioral motivations, and the effectiveness of emissions mitigation.

To clarify the relationship between the normative dimensions of Islamic law, low-carbon mobility practices, and the development of the concept of a halal lifestyle, this study develops a conceptual framework as shown in Figure 1. This framework distinguishes legal and ethical foundations from empirical evidence regarding the potential ecological contributions of cycling. This framework also positions Green Zakat as a potential philanthropic implication that still requires further development, rather than as a proven legal or institutional mechanism. Thus, the relationships between elements in the conceptual framework illustrate the research's line of argumentation, not a cause-and-effect relationship between the issuance of a fatwa, the public's decision to cycle, and the magnitude of carbon emission savings.

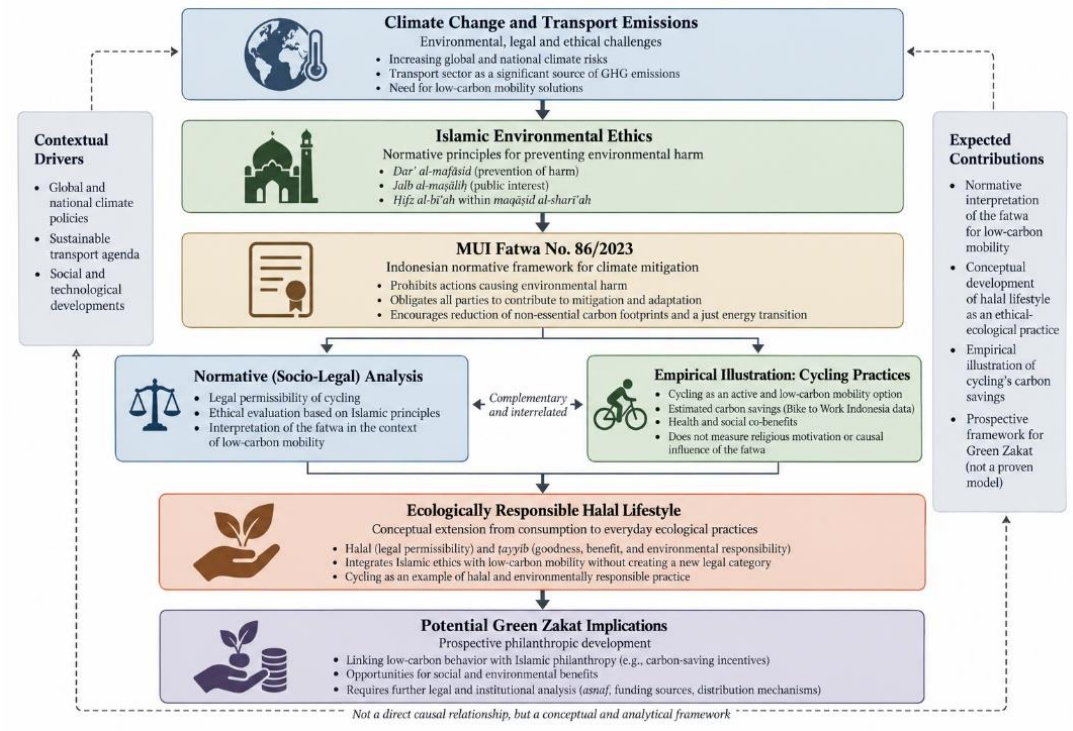


Figure 1. Conceptual Framework of the Relationship Between Islamic Environmental Ethics, MUI Fatwa No. 86 of 2023, Low-Carbon Mobility, and the Development of a Halal Lifestyle.

Source: Developed by the author based on a literature review and the research's analytical framework.

Given this gap, the primary novelty of this study lies in the development of a conceptual argument regarding the halal lifestyle as an ethical-ecological practice through a contextual analysis of MUI Fatwa No. 86 of 2023 and the use of estimated carbon savings data from cycling as an empirical illustration. This study does not aim to prove that the fatwa causes changes in public behavior, establish a new legal category in the form of "halal mobility," or develop an institutionally tested "Green Zakat" model. Rather, this study proposes an analytical framework that distinguishes between the normative legitimacy, ethical considerations, and estimated ecological contributions of a mobility practice. Based on this framework, this study formulates three main research questions: (1) how the provisions of MUI Fatwa No. 86 of 2023

can be interpreted as a normative foundation consistent with low-carbon mobility practices through cycling; (2) how estimated carbon savings data from the Bike to Work Indonesia community can be used to illustrate the ecological benefits of cycling and its relevance to the development of the "halal lifestyle" concept; and (3) how low-carbon mobility practices can be considered as opportunities for developing ecological campaigns within the framework of Islamic philanthropy without undermining the legal and institutional provisions of zakat. In line with these questions, this study aims to analyze the normative relevance of MUI Fatwa No. 86 of 2023 to cycling activities, explain the conceptual relationship between Islamic environmental ethics and sustainable mobility practices based on estimated carbon savings data, and identify the limitations and possibilities for developing an Islamic philanthropy approach that supports ecological behavior. Thus, the contribution of this research does not lie in proving a causal relationship between the fatwa and transportation choices, but rather in developing a socio-legal understanding of how Islamic legal norms can be used to evaluate ecological practices in contemporary society.

RESEARCH METHODS

This study employs a normative Islamic legal research approach, supplemented by a descriptive analysis of secondary data on carbon emission reductions resulting from cycling. The normative approach is used to examine the provisions of the Indonesian Ulema Council (MUI) Fatwa No. 86 of 2023 on the Law of Global Climate Change Mitigation through the perspective of uṣūl al-fiqh, particularly the principle of sadd al-dharī'ah, as well as Islamic environmental ethics and maqāṣid al-sharī'ah. This analysis aims to assess the normative compatibility of cycling as a form of low-carbon mobility with the principle of preventing environmental harm, without establishing a new legal category such as "halal mobility." The empirical component serves as a quantitative illustration of cycling's potential ecological contribution, not to test a causal relationship between the fatwa and public behavior. Thus, the unit of normative analysis is the legal provision in MUI Fatwa No. 86 of 2023, while the unit of empirical analysis is the monthly aggregate data on cycling activity and estimated avoided carbon emissions as recorded on the Bike to Work Indonesia dashboard.

The research data sources include MUI Fatwa No. 86 of 2023 as the primary legal source, as well as secondary data obtained from the official Bike to Work Indonesia dashboard (https://carbonsaved.bike2work.id/Dashboard), which is integrated with

the Strava platform. Data were collected through a documentary review of the fatwa, Islamic legal literature, scientific publications on sustainable mobility, and a compilation of cycling activities over a 13-month period, from January 2025 to January 2026. This period aligns with the scope of the data analyzed in the study and covers one calendar year plus the following month; it is not intended as a pre- and post-fatwa evaluation design. Bike to Work Indonesia was selected based on its relevance as a community that promotes cycling for daily commuting and provides data on estimated carbon savings. The analyzed data includes the number of cycling activities, distance traveled, reported number of participants, and monthly estimated carbon savings. Commute activities refer to cycling trips marked as "commutes" by users in the Strava app and recorded on the community dashboard. The scope of the analysis is limited to these activities; trips not marked as commutes and activities outside the observation period are not included in the analyzed data. Because the study used aggregate data, the number of unique individuals over the study period, the possibility of repeated activities by the same participants, and the procedures for controlling duplication at the individual activity level could not be independently verified. Therefore, the monthly number of participants was not treated as the number of unique individuals over the entire study period.

The analysis was conducted in two complementary stages. First, an analysis of Islamic law was performed by examining the provisions of MUI Fatwa No. 86 of 2023 and interpreting them based on the principles of preventing environmental damage, the public interest, and Islamic ecological ethics. Because Qur'anic and Prophetic language carries distinctive argumentative authority in Islamic legal discourse, its incorporation into environmental legal reasoning also requires source fidelity, contextual coherence, and interpretive transparency.[21] Second, cycling activity data were analyzed using descriptive statistics, including the total number of rides, monthly averages, trends in activity changes, and estimates of avoidable carbon emissions. Carbon savings estimates were derived from the platform's calculation system, which compares cycling trips marked as commutes with travel scenarios using private motor vehicles, as described in Strava's documentation.[22] Conceptually,

[21] Ridho Wahyudi and Muhammad Khairul Fikri, "Iqtibās in Islamic Rhetorical Tradition: Aesthetic Function, Argumentative Force, and Ethical Quotation of Sacred Texts," *An-Najah: Jurnal Ushuluddin dan Studi Islam* 1, no. 1 (2026): 124–140

[22] Meg Meg, "Carbon Saved," 2025, https://support.strava.com/hc/en-us/articles/18133159832717-Carbon-Saved.

estimates of avoided emissions depend on trip distance, the emission factors of the comparison mode of transportation, and the assumption that cycling trips replace motorized trips. However, the manuscript does not provide access to individual trip data, complete calculation parameters, or independent verification of the platform's algorithm. Therefore, the carbon savings figures are treated as platform-estimated carbon savings, not direct measurements of actual emission reductions. Nor can this data be used to conclude that community members cycle due to the influence of MUI Fatwa No. 86 of 2023. The results of the normative and descriptive analyses were then compared interpretatively to explain the alignment between Islamic legal principles and low-carbon mobility practices, while distinguishing between normative legitimacy, actual behavior, and estimated environmental effectiveness.

RESULTS AND DISCUSSION

The Status of the Fatwa of the Indonesian Ulema Council (MUI)

A fatwa is a product of Islamic legal thought that serves to provide religious explanations and guidance on issues faced by Muslims. Conceptually, a fatwa is a legal opinion issued by a mufti or a fatwa institution based on reasoning derived from the sources and methodology of Islamic law. Its status must be distinguished from court decisions and legislation because a fatwa is essentially a religious legal opinion that does not automatically carry the force of state law. Ansori explains that fatwas play a crucial role in the development of Islamic law, particularly in responding to social issues and changes in societal conditions.[23] Within this framework, a fatwa can be understood through two interrelated dimensions: as a product of Islamic legal reasoning that possesses normative authority, and as a religious guideline whose acceptance depends on societal recognition and practice. This distinction is important because the legitimacy of a fatwa as an Islamic legal opinion does not in and of itself indicate its level of acceptance or its effectiveness in shaping social behavior

In the Indonesian context, the Indonesian Ulema Council (MUI) is a religious institution that plays a role in providing advice and issuing fatwas on various issues affecting the Muslim community. The MUI's authority can be understood through several dimensions that must be analytically distinguished. First, normative authority relates to the status of the fatwa as a guideline for determining the legal status and consequences of an action based on Islamic legal reasoning. Second,

[23] Ansori.

religious legitimacy stems from recognition of scholarly competence, the procedures for issuing fatwas, and the standing of the ulama involved in the decision-making process. Third, moral authority relates to the ability of fatwas to provide ethical guidance regarding actions that are considered good, responsible, or should be avoided based on religious values. These three dimensions indicate that fatwas can have normative and moral significance for Muslims without necessarily attaining the status of state law. Recent comparative scholarship similarly conceptualizes contemporary fatwa authority as institutionally hybrid, emerging through the interaction of scholarly legitimacy, bureaucratic capacity, political recognition, regulatory incorporation, and public acceptance rather than through a simple distinction between binding and non-binding legal opinions.[24] The expansion of fatwa production and circulation into digital environments further transforms this structure of religious authority by widening the channels through which legal opinions are disseminated, interpreted, and socially recognized beyond conventional institutional settings.[25] However, the existence of this authority should not be equated with social compliance, as acceptance of fatwas may vary depending on religious understanding, social experience, and the context of people's lives.[26]

In addition to having normative and moral dimensions, the status of MUI fatwas can also be examined through sociological acceptance and institutional influence. Sociological acceptance indicates the extent to which individuals or social groups are aware of, acknowledge, interpret, and use fatwas as guidelines in their daily lives. Meanwhile, institutional influence relates to the likelihood that fatwas will be used as a reference by religious organizations, educational institutions, social institutions, and policymakers in formulating specific programs or guidelines. Both dimensions are empirical and contextual in nature; therefore, conclusions cannot be drawn solely based on the institutional status of the MUI. Sidqi and Witro discuss the status of MUI fatwas from

[24] Asrim Muda Harahap, Nosudera TTR, Ilman Sakti Siregar, and Umi Amaliyah, "Fatwa, State, and Public Morality: Islamic Legal Authority in Contemporary Governance Systems," *Islamicate Futures: Knowledge, Ethics, and Muslim Societies* 1, no. 2 (2026): 282–309, https://doi.org/10.68051/ifkems.v1i2.47.

[25] Marhamah Annazah Tambunan and Maulida Fitria, "Digital Fatwas and the Transformation of Religious Authority in Contemporary Muslim Societies," *Islamicate Futures: Knowledge, Ethics, and Muslim Societies* 1, no. 1 (2026): 96–123, https://doi.org/10.68051/ifkems.v1i1.41.

[26] Majelis Ulama Indonesia, "Sejarah MUI."

the perspectives of Islamic law and national law, as well as their implications for society.[27] However, recognition of a fatwa's socio-religious status must be distinguished from evidence that the fatwa actually influences individual behavior. Therefore, an analysis of a fatwa's social effectiveness requires evidence demonstrating the level of knowledge, acceptance, interpretation, or use of the fatwa by the community group under study.

From the perspective of Indonesian positive law, MUI fatwas are not included in the hierarchy of legislation as stipulated in Article 7 of Law No. 12 of 2011 on the Formation of Legislation and its amendments. Therefore, MUI fatwas do not possess general binding force that can be enforced through state legal mechanisms solely based on their issuance. Pelu and Tarantang point out that the status of MUI fatwas must be distinguished between their authority as guidelines for Islamic law and their position within the national legal system.[28] Although fatwas may serve as a reference in certain institutional discourses and policies, this does not mean that all provisions of a fatwa automatically become binding under positive law. Formal legal enforceability can only be linked to the state's legal mechanisms if specific provisions are given a basis for enforcement through relevant regulations or legal instruments. Thus, the use of terms such as "obligatory," "forbidden," or "recommended" in fatwas must be understood within the context of Islamic legal reasoning and religious authority, and should not be directly equated with obligations subject to state legal sanctions.

MUI Fatwa No. 86 of 2023

The Indonesian Ulema Council (MUI) Fatwa No. 86 of 2023 on the Legal Rulings Regarding Global Climate Change Mitigation constitutes an Islamic legal response to the issues of environmental degradation and climate change. From a legal-religious perspective, the structure of this fatwa illustrates the relationship between theological considerations, foundational evidence, the principle of public interest (maslahah), and the established legal provisions. In its preamble, the MUI positions humanity as khalīfah entrusted with the amānah to preserve the earth, while also affirming that climate change mitigation and adaptation are necessary responsibilities to prevent harm (mafsadah). This orientation is then translated into legal provisions that

[27] Sidqi and Witro, "Kedudukan Fatwa Majelis Ulama Indonesia (MUI) Dalam Perspektif Hukum Islam Dan Nasional: Studi Implikasi Fatwa Terhadap Masyarakat."

[28] Pelu and Tarantang, "Fatwa Majelis Ulama Indonesia Sebagai Solusi Permasalahan Umat Islam Di Indonesia."

prohibit actions causing environmental damage that contribute to the climate crisis, and require contributions toward mitigation, adaptation, the reduction of non-essential carbon footprints, and a just energy transition.[29] Thus, the legal framework of the fatwa does not rely solely on prohibiting activities that harm the environment, but rather links humanity's responsibility as stewards of the earth to efforts to prevent ecological harm. However, the status of obligations and prohibitions formulated in the fatwa must be understood within the normative framework of Islamic law, not as state legal provisions that can automatically be enforced against all citizens.

The normative basis of this fatwa can be traced to Qur'anic verses and hadiths that govern the relationship between humans and the environment, as well as the prohibition against causing harm. MUI Fatwa No. 86 of 2023 refers, among other things, to Qur'anic verse al-Rūm [30]:41 regarding damage on land and at sea caused by human actions; Qur'anic verse al-A'rāf [7]:56 regarding the prohibition against causing destruction on earth after it has been restored, and Surah al-Qaṣaṣ [28]:77, which reaffirms the prohibition against seeking or causing destruction on the face of the earth. These verses form the ethical foundation for the concept of fasād actions that disrupt the order of life and cause destruction. Their use in contemporary environmental reasoning, however, should move beyond normative citation by making the selection of scriptural evidence, contextual mediation, theoretical assumptions, and the argumentative connection between Qur'anic concepts and contemporary ecological claims analytically explicit.[30] In the contemporary ecological context, the concept of fasād can be used to evaluate human activities that have detrimental effects on environmental balance, provided that the relationship between the action and the damage can be explained through reasoned argument and supported by scientific knowledge. The fatwa also draws on the hadith regarding the prohibition against causing harm known through the principle of *lā ḍarar wa lā ḍirār* as the basis for preventing actions that harm oneself or others. Thus, the prohibition against environmental damage is not merely a response to the technical issue of carbon emissions, but has a normative

[29] Indonesia, Fatwa Majelis Ulama Indonesia No 86 Tahun 2023 Tentang Hukum Pengendalian Perubahan Iklim Global.

[30] Al Fiqri Ardiansyah and Marhamah Annazah Tambunan, "From Normative Citation to Critical Analysis: Evaluating Methodological Problems in Contemporary Indonesian Qur'anic Scholarship," *Dialogues in Qur'anic and Hadith Studies* 1, no. 1 (2026): 1–26, https://doi.org/10.68051/dqhs.v1i1.12.

foundation in the principle of harm avoidance and human responsibility toward life.

The concepts of khalīfah and amānah provide a dimension of responsibility regarding the principle of preventing fasād. Humanity's status as khalīfah cannot be interpreted as a justification for the unlimited exploitation of natural resources; rather, it entails a moral obligation to safeguard the sustainability of life. Meanwhile, amānah emphasizes human accountability for the use of resources and the consequences of actions that affect the environment. From the perspective of maqāṣid al-sharī'ah, this responsibility can be linked to efforts to achieve public interest (maṣlaḥah) and avoid harm (mafsadah), especially when ecological damage threatens human safety, public health, and the sustainability of resources. Khuluq and Asmuni developed the concept of ḥifẓ al-bī'ah as environmental protection within the framework of the objectives of Sharia.[31] Although its recognition as an independent Sharia objective still requires further argumentation, this idea demonstrates that environmental protection can be understood through the public interest-oriented objectives of Islamic law. Contemporary maqāṣid-based legal hermeneutics likewise emphasizes that the rearticulation of Islamic legal norms should remain grounded in textual authority, socio-historical contextualization, identifiable legal-moral objectives, and disciplined normative reasoning rather than deriving new legal classifications solely from desirable contemporary outcomes.[32] In the context of MUI Fatwa No. 86 of 2023, the relationship between khalīfah, amānah, maṣlaḥah, and mafsadah clarifies the normative rationale for the obligation to contribute to climate change mitigation, without necessarily implying that every action deemed environmentally friendly automatically carries the same legal status.

The structure of the provisions in MUI Fatwa No. 86 of 2023 highlights the distinction between prohibitions (taḥrīm), obligations (īj̈āb), and recommendations directed at stakeholders. In the second dictum, the fatwa declares as prohibited any actions that cause environmental damage and contribute to the climate crisis, including uncontrolled deforestation and forest fires that destroy ecosystems. In the

[31] Khuluq and Asmuni, "Hifz Al-Bi'ah as Part of Maqashid Al-Shari'ah and Its Relevance in the Context of Global Climate Change."

[32] Warda Mardiana Tambunan, Tiara Hidayah B, and Miftahur Rahmah, "Recontextualizing Āyāt al-Aḥkām: Maqāṣid-Based Legal Hermeneutics in Contemporary Qur'anic Exegesis," *Journal of Qur'anic Legal Studies and Exegesis* 1, no. 1 (2026): 21–39.

same provision, the fatwa mandates contributions to climate change mitigation and adaptation, the reduction of non-essential carbon footprints, and efforts toward a just energy transition. Meanwhile, the third provision contains recommendations for the government, businesses, and the public regarding actions that can support climate change mitigation. This structural distinction is important because prohibitions and obligations are legal provisions, whereas recommendations guide the fulfillment of ecological responsibilities in accordance with each party's capacity and status. Therefore, recommendations regarding environmentally friendly behavior cannot simply be equated with the legal designation of "mandūb" for every action mentioned or consistent with the fatwa's objectives. In the context of mobility, these provisions provide a normative basis for evaluating the ecological impacts of transportation choices, but they do not explicitly establish bicycle use as an obligation or a separate legal category.

Although MUI Fatwa No. 86 of 2023 has established a prohibition against actions that cause environmental damage and an obligation to contribute to climate change mitigation, its application to mobility choices requires more specific legal reasoning. The fatwa does not stipulate that all use of fossil-fuel-powered motor vehicles is haram, just as it does not stipulate that all use of low-carbon transportation is a legally recommended action. The assessment of an activity must take into account the nature of the action, the purpose of use, the needs being met, the level of risk, and the resulting environmental impacts. In the context of transportation, this distinction is important because the emissions generated by a trip do not always carry the same legal significance, particularly when it comes to basic needs, limited transportation alternatives, and the socioeconomic conditions of users. Therefore, an Islamic legal analysis of cycling should focus on its alignment with the goal of preventing ecological damage, rather than on establishing an automatic legal connection between the use of motor vehicles and prohibition or between the use of bicycles and religious encouragement.

To explain the relationship between transportation activities and the prevention of environmental damage, this study employs the principle of *sadd al-dharī'ah* as a preventive analytical tool within uṣūl al-fiqh. This principle pertains to the restriction of means (wasīlah) that are originally permissible but have a demonstrable causal link to the occurrence of harm (mafsadah). Its application cannot be based solely on the general existence of negative impacts; rather, it requires an

assessment of the nature of the means, the strength of the cause-and-effect relationship, the likelihood of harm occurring, and the degree of harm caused. Munawwaroh explains the preventive function of sadd al-dharī‘ah in addressing contemporary fiqh issues.[33] In the context of this study, this principle is used to evaluate activities that increase the risk of ecological damage without automatically deeming all emission-generating activities as prohibited. Thus, sadd al-dharī‘ah is positioned as a reasoning tool to assess the possibility of restricting means that pose a risk of damage, rather than as the sole basis for declaring every form of fossil-fuel-powered transportation to be prohibited.

Applying *sadd al-dharī‘ah* to the issue of mobility requires identifying five analytical elements: the action (fi‘l), the means (wasīlah), the ecological consequences, the degree of harm (mafsadah), and the legal basis for classification. In the context of using fossil-fuel-powered motor vehicles, the action being analyzed is the use of vehicles to meet travel needs, while the aspect that may warrant preventive legal concern is the excessive or disproportionate use of transportation means when it contributes to the risk of environmental harm. The combustion of fossil fuels produces carbon dioxide (CO_2) emissions that contribute to the accumulation of greenhouse gases, while also generating air pollutants such as nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter that affect air quality.[34] However, a contribution to emissions cannot be directly equated with declaring every motorized trip to be haram. From the perspective of sadd al-dharī‘ah, legal restrictions on a means of transportation must consider whether there is a clear causal link to the prohibited harm, whether the risk of harm is sufficiently significant and foreseeable, and whether the restriction is proportional to the benefits and needs it fulfills. Therefore, the application of the precautionary principle in transportation matters must weigh both the level of ecological risk and the public interest inherent in societal mobility activities.

The relationship between transportation activities and ecological harm can be explained through a more systematic chain of cause and effect. First, the use of fossil-fuel-powered vehicles produces greenhouse

[33] Hifdhotul Munawwaroh, “Sadd Al-Dzari’at Dan Aplikasinya Pada Permasalahan Fiqih Kontemporer,” *Ijtihad : Jurnal Hukum Dan Ekonomi Islam* 12, no. 1 (2018): 63, https://doi.org/10.21111/ijtihad.v12i1.2584.

[34] Jeanly Syahputri et al., “Dampak Polusi Udara Dari Sektor Transportasi Terhadap Kesehatan Di Indonesia,” 2023, https://lcdi-indonesia.id/wp-content/uploads/2024/03/1-IND-Policy-Note-2023.10.16.pdf.

gas emissions as a consequence of the fuel combustion process. Second, the accumulation of these emissions contributes to climate change and the risk of environmental damage at the aggregate level. Third, the significance of the harm must be assessed based on the volume of emissions, intensity of use, availability of alternatives, and potential impacts on the public interest. Angin indicates that the growth in motor vehicles is linked to an increase in projected transportation emissions in the context of Indonesian cities.[35] These findings are relevant for explaining the scientific basis of the relationship between transportation activities and ecological issues, but they are insufficient to determine the legal status of every individual motorized trip. Within the framework of *sadd al-dharī'ah*, empirical evidence regarding emissions serves as the basis for assessing the risk of harm, while its legal classification still requires consideration of Sharia objectives, the level of danger, necessity, and the proportionality of preventive measures. Thus, the use of low-carbon transportation, including cycling, can be understood as one alternative for reducing ecological risks when it effectively replaces motorized travel, without necessitating the conclusion that all other transportation activities are prohibited acts.

The use of mafhum mukhālafah to interpret the provisions of MUI Fatwa No. 86 of 2023 requires methodological caution. In uṣūl al-fiqh, mafhum mukhālafah is a method of interpretation that derives different legal consequences for situations not explicitly mentioned based on specific limitations within a legal text. However, the validity of this reasoning is not universal, as it depends on the form of the restriction, the context of the statement, and the fulfillment of the requirements for legal authority (ḥujjiyyah) according to the applicable usul al-fiqh framework. A fatwa provision that prohibits actions causing environmental damage cannot simply be reversed to conclude that all actions that do not cause damage are recommended. The wording of the fatwa is more accurately understood as establishing a prohibition based on the nature and consequences of a specific action, whereas the legal status of other actions must be determined through relevant legal evidence and considerations. Therefore, this study does not use mafhum mukhālafah as an independent basis for establishing the status of cycling as mandūb. Legal reasoning is directed toward testing the compatibility

[35] O Angin, "An Autoethnography of an Islamic Teacher Education Programme," *Education Sciences* 15, no. 1 (2025), https://doi.org/10.3390/educsci15010090.

of cycling with the normative objectives of the fatwa, while distinguishing between legal permissibility (mubāḥ), recommendation (mandūb or mustaḥabb), and the ecological virtue (faḍīlah) inherent in an action.

Contribution of Cycling to Estimated Carbon Emission Savings

The Bike to Work Indonesia community is a grassroots movement that promotes the use of bicycles as a mode of transportation for daily activities, particularly commuting to work. In the context of sustainable mobility, this community is relevant for study because it provides information on cycling activities and estimates of carbon emissions that can be avoided through a dashboard integrated with the Strava platform. This study uses monthly aggregate data covering distance traveled, frequency of activity, reported number of participants, and estimated carbon savings from January 2025 to January 2026. The use of this data enables a descriptive analysis of cycling mobility patterns and their potential contribution to transportation emissions mitigation. However, the carbon savings figures generated by the platform should be understood as estimated avoided emissions, not a direct measurement of actual emission reductions. This distinction is important because the estimated savings depend on assumptions regarding the mode of transportation being replaced, trip distances, and the emission factors used in the calculations. Therefore, this study positions the Bike to Work Indonesia data as descriptive evidence of low-carbon mobility activities, rather than as a causal measure of changes in emissions or the impact of MUI Fatwa No. 86 of 2023 on individuals' decisions to cycle.

During the 13-month observation period, the Bike to Work Indonesia community recorded a total cycling distance of 1,404,551.60 km across 65,577 rides, resulting in an estimated cumulative reduction in carbon emissions of 337,092.35 kg of CO_2 or approximately 337.09 metric tons of CO_2. The monthly average was 108,042.43 km, comprising 5,044 rides, with an estimated reduction of 25,930.18 kg of CO_2. The number of reported participants ranged from 245 to 401 people per month, with an average of about 342 participants. Aggregately, these figures indicate that the cycling activities recorded on the platform occurred consistently throughout the observation period, albeit with fluctuating intensity. However, the total number of activities and the monthly number of participants cannot be used to identify the number of unique cyclists throughout the study period because the same individuals may have been recorded multiple times across different activities and

months. Details of the cycling activity data and estimates of avoided carbon emissions are presented in Table 1.

Table 1. Monthly Cycling Activities, Reported Participants, and Platform-Estimated Avoided CO_2 Emissions (January 2025-January 2026)

Month	Distance (km)	Cycling activities	Reported participants	Estimated avoided CO_2 (kg)
Jan 2025	106,522.06	4,806	324	25,565.29
Feb 2025	92,041.98	4,554	312	22,090.05
Mar 2025	56,773.60	3,541	245	13,625.66
Apr 2025	97,740.94	4,378	320	23,457.85
May 2025	109,268.97	4,768	339	26,224.58
Jun 2025	85,770.39	3,869	313	20,584.89
Jul 2025	104,913.14	5,285	339	25,179.15
Aug 2025	124,586.96	5,661	375	29,900.85
Sep 2025	129,137.17	5,965	401	30,992.92
Oct 2025	122,729.88	6,206	380	29,455.12
Nov 2025	126,150.13	5,772	383	30,275.99
Dec 2025	141,938.08	5,664	365	34,065.16
Jan 2026	106,978.30	5,108	352	25,674.84
Total	**1,404,551.60**	**65,577**	**—**	**337,092.35**
Monthly mean	**108,042.43**	**5,044.38**	**342.15**	**25,930.18**

Source: Bike to Work Indonesia dashboard, processed by the authors. Note: Reported participants are monthly counts and should not be summed to estimate unique cyclists across the entire observation period. Carbon-saving values are platform-generated estimates.

To provide a more in-depth interpretation of the data, this study calculated three derived indicators: estimated carbon emissions avoided per participant-month, per cycling activity, and per kilometer traveled. The per-participant-month indicator was obtained by dividing the estimated avoided emissions by the number of participants reported for the month in question, while the per-activity and per-kilometer indicators were obtained, respectively, by dividing the estimated avoided emissions by the number of activities and the distance traveled. The results show that the aggregate ratio of estimated avoided emissions reached 75.79 kg CO_2 per participant-month, 5.14 kg CO_2 per cycling activity, and approximately 0.240 kg CO_2 per kilometer. The per-participant-month

ratio is not an estimate of unique individual contributions over the study period, but rather an indicator of activity intensity based on the recorded monthly number of participants. Differences in values between months reflect variations in the number of trips, distance traveled, and participation recorded by the platform. Details of the derived indicators are presented in Table 2.

Table 2. Monthly Derived Indicators of Platform-Estimated Avoided CO_2 Emissions

Month	CO_2 per participant-month (kg)	CO_2 per activity (kg)	CO_2 per km (kg)
Jan 2025	78.91	5.32	0.240
Feb 2025	70.80	4.85	0.240
Mar 2025	55.61	3.85	0.240
Apr 2025	73.31	5.36	0.240
May 2025	77.36	5.50	0.240
Jun 2025	65.77	5.32	0.240
Jul 2025	74.27	4.76	0.240
Aug 2025	79.74	5.28	0.240
Sep 2025	77.29	5.20	0.240
Oct 2025	77.51	4.75	0.240
Nov 2025	79.05	5.25	0.240
Dec 2025	93.33	6.01	0.240
Jan 2026	72.94	5.03	0.240
Aggregate ratio	**75.79**	**5.14**	**0.240**

Source: Authors' calculations based on Table 1. Aggregate ratios were calculated by dividing total estimated avoided emissions by the corresponding aggregate denominators. The participant-month denominator is the sum of monthly reported participant counts, not the number of unique individuals.

Further analysis revealed an almost perfectly proportional relationship between travel distance and estimated avoided carbon emissions. The ratio of total estimated emission savings to distance traveled was 0.240 kg CO_2/km, with a value that remained virtually constant across all months of observation. The Pearson correlation between monthly travel distance and estimated avoided emissions was nearly perfect ($r \approx 1.000$). However, this correlation cannot be treated as independent empirical evidence of the effectiveness of emissions

mitigation because the carbon estimate values appear to be the result of a mathematical conversion of travel distance using a relatively fixed factor. Thus, the near-perfect relationship more accurately reflects the characteristics of the platform's calculation procedure rather than a causal effect between increased cycling activity and actual emission reductions. The effective factor of 0.240 kg CO_2/km also cannot automatically be considered representative of conditions across all modes of transportation in Indonesia, as vehicle types, fuel consumption, passenger numbers, and characteristics of the comparison trips have not been identified in the aggregated data. These findings highlight the importance of distinguishing algorithm-based estimates from empirical measurements of changes in transportation emissions.Variations in cycling activity throughout the study period are shown in Figure 2. The lowest number of cycling trips occurred in March 2025, with 3,541 trips, while the highest number was recorded in October 2025, with 6,206 trips. Following a decline in March 2025, the number of trips increased in April and May, declined again in June, and then increased in the following months. This pattern reveals temporal variations in the frequency of cycling trips but does not yet indicate a consistent growth trend throughout the observation period. The decline in March 2025 coincided with Ramadan 1446 H, while the decline in June 2025 occurred around the Eid al-Adha period. This temporal proximity suggests a possible association with changes in the rhythm of community activities, but it is not sufficient to prove a causal effect of religious activities on cycling intensity. Puspitawati (2019) indicates that Ramadan may be associated with changes in sports activities, but findings regarding sports activities cannot be directly generalized to commuting behavior. Other factors, including rainfall, the number of workdays, holidays, travel conditions, and changes in app usage intensity, may also influence monthly patterns. With an observation period of 13 months, this study has not yet been able to convincingly identify recurring seasonal effects.

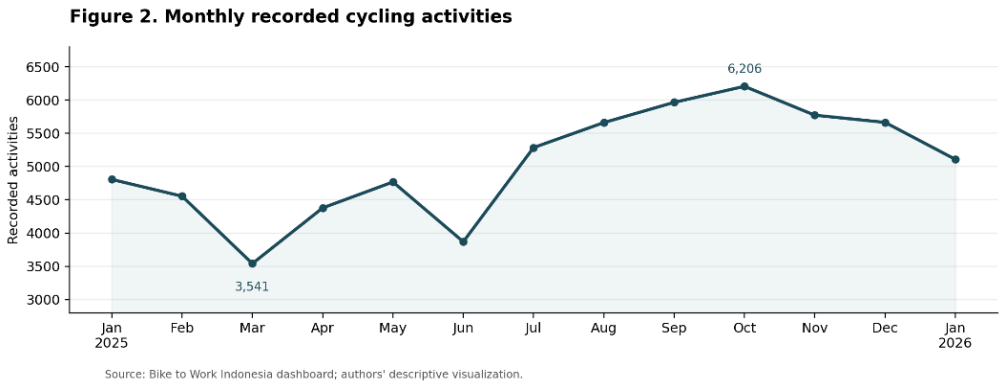


Figure 2. Monthly Variation in Recorded Cycling Activities among Bike to Work Indonesia Participants (January 2025–January 2026).

Source: Authors' visualization based on Bike to Work Indonesia dashboard data.

Changes in the reported number of participants show a pattern related to variations in cycling activity, as presented in Figure 3. The lowest number of participants was recorded in March 2025 at 245 people, while the highest number occurred in September 2025 at 401 people. An increase in the number of participants is not always accompanied by a proportional increase in activity, as the intensity of trips can vary among individuals. Furthermore, the aggregated monthly data does not allow us to determine whether changes in participation reflect the entry of new cyclists, the withdrawal of certain participants, changes in the frequency of trips by the same participants, or variations in activity logging within the platform. A participant may also generate multiple trip records in the same month and reappear in the following month's summary. Therefore, the study results cannot be used to determine the number of unique individuals or the participant retention rate during the observation period. Further analysis of participation patterns requires anonymized individual data that allows for the identification of repeated trips and the control of potential double-counting.

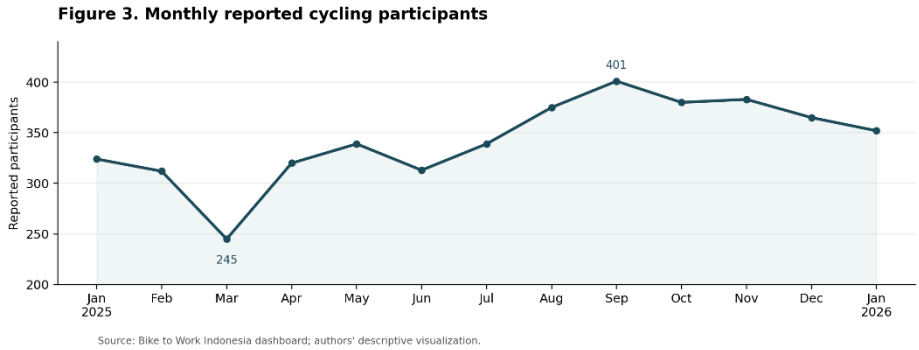


Figure 3. Monthly Variation in Reported Cycling Participants in Bike to Work Indonesia (January 2025–January 2026).

Source: Authors' visualization based on Bike to Work Indonesia dashboard data.

The variation in estimated carbon emissions avoided during the observation period is shown in Figure 4. The lowest value was recorded in March 2025 at 13,625.66 kg CO_2, while the highest value occurred in December 2025 at 34,065.16 kg CO_2. The estimated savings in March decreased by 38.32% compared to February, while the decrease in June reached 21.51% compared to May. The sample coefficient of variation of 20.54% indicates relative month-to-month differences in the magnitude of estimated avoided emissions. Nevertheless, this variation must be interpreted while considering the mathematical relationship between travel distance and the emission conversion factor used. The magnitude of estimated savings in a given month is primarily related to the accumulated recorded travel distance; therefore, an increase in this figure cannot be directly interpreted as an increase in environmental awareness, a shift in transportation preferences, or the impact of religious policies. Similarly, the low estimated savings in March and June do not prove that Ramadan and Eid al-Adha were the causes of the decrease in avoided emissions. The available data only allows for the identification of monthly patterns of change, while an explanation of the underlying causes requires additional information regarding travel conditions, the environment, and participant characteristics.

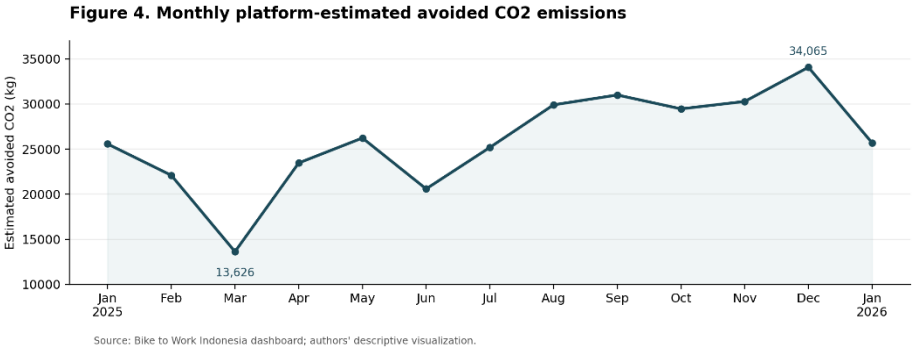


Figure 4. Monthly Platform-Estimated Avoided CO_2 Emissions from Cycling Activities (January 2025–January 2026).

Source: Authors' visualization based on Bike to Work Indonesia dashboard data.

Another limitation relates to the basis for calculating estimated avoided emissions. In calculating transportation emission reductions, the relevant comparison is between the emissions from trips actually taken by bicycle and the emissions from alternative trips that would realistically be taken if bicycles were not used. However, the aggregate data from Bike to Work Indonesia does not provide information on the modes of travel that are replaced by each cycling activity. Thus, it cannot be confirmed that all recorded trips would have been made by car or motorcycle if participants had not cycled. Some trips may have replaced the use of public transportation, walking, or other modes of travel with lower emission intensities. Furthermore, emission calculations based on trip distance require adjustments for the characteristics of the comparison vehicles, fuel type, energy efficiency, passenger occupancy, and travel conditions. The platform's estimates also likely do not account for indirect emissions related to bicycle production and maintenance, additional energy requirements resulting from physical activity, or the life-cycle emissions of comparable modes of transportation. Therefore, the use of the platform's conversion factors without validation against Indonesian transportation characteristics limits the study's ability to determine the actual magnitude of emission reductions.

To evaluate the dependence of emission estimates on assumptions regarding comparison trips, this study conducted an illustrative

sensitivity analysis using four scenarios for the proportion of bicycle trips assumed to replace motorized trips: 25%, 50%, 75%, and 100%. In these calculations, the total estimated emissions avoided 337,092.35 kg of CO_2 was multiplied by the substitution proportion for each scenario, while the emission factors identified from the platform's data were kept constant. The calculation results are presented in Table 3. These scenarios do not represent the substitution proportions observed within the Bike to Work Indonesia community; rather, they constitute a hypothetical approach to demonstrate how emission estimates change when only a portion of bicycle trips is assumed to replace motorized trips. Furthermore, this analysis does not constitute a life-cycle emissions calculation and does not replace the need for validation of emission factors based on vehicle characteristics in Indonesia.

Table 3. Illustrative Sensitivity Analysis of Platform-Estimated Avoided CO_2 Emissions under Alternative Motorized-Travel Substitution Assumptions

Scenario	Assumed motorized-trip substitution	Adjusted estimated avoided CO_2 (kg)
A	25%	84,273.09
B	50%	168,546.18
C	75%	252,819.26
D	100%	337,092.35

Source: Authors' calculations based on the aggregate platform estimate of 337,092.35 kg CO_2. Note: These are hypothetical sensitivity scenarios, not observed substitution rates. The calculation assumes that the platform's effective emission factor remains constant and that non-substituting journeys receive zero avoided-emission credit. It does not account for heterogeneity in vehicle types, occupancy, energy use, or life-cycle emissions.

The results of the sensitivity analysis show that the estimate of avoided emissions is highly dependent on the assumption regarding the proportion of motorized trips replaced by cycling. If only 25% of trips are assumed to replace motorized trips with emission characteristics based on the platform's effective factor, the resulting estimate is 84,273.09 kg CO_2. Conversely, if all trips are assumed to replace motorized travel, the value reaches 337,092.35 kg CO_2. This difference indicates that estimates of carbon savings cannot be separated from the

validity of the comparison scenario. However, since the actual substitution rate and emission factors are unknown, the analysis results cannot be used to establish empirical minimum or maximum limits for emissions actually avoided. This analysis merely demonstrates the mathematical sensitivity to changes in a single key assumption. Further research needs to collect information on travel modes prior to bicycle use, the characteristics of the vehicles being replaced, trip frequency, and local emission factors to produce more representative estimates.

Overall, the Bike to Work Indonesia data provide a descriptive overview of cycling mobility and estimates of potential transportation emissions avoided during the observation period. The main contribution of this data lies in its ability to illustrate trip intensity, variations in participation, and how estimates of carbon savings depend on distance traveled and assumptions regarding comparable trips. However, this study cannot determine the exact magnitude of actual emission reductions, identify all unique cyclists, or prove that cycling activity was influenced by the issuance of MUI Fatwa No. 86 of 2023. Taking these limitations into account, cycling can be positioned as a mobility practice with the potential to support climate change mitigation if it replaces motorized trips with higher emission intensities. Within the context of Islamic environmental ethics, this potential contribution aligns with the goals of preventing environmental damage and reducing the carbon footprint, as emphasized in MUI Fatwa No. 86 of 2023. However, this ecological relevance indicates a alignment between mobility practices and the normative orientation of the fatwa, not evidence that the fatwa causes behavioral change or that the estimated environmental benefits in and of themselves establish a new legal status for cycling.

Cycling, Environmental Incentives, and the Prospects of Green Zakat in Islamic Philanthropy

The concept of Green Zakat is an approach to zakat management that seeks to integrate social welfare objectives with the principles of environmental sustainability. Through the Green Zakat Framework, Achmad has developed the idea that the management and utilization of zakat can be directed toward supporting sustainable development, including the economic empowerment of communities while taking environmental conservation into account. However, the integration of these ecological goals does not alter the status of zakat as a financial act of worship (ibadah māliyyah) that has specific legal provisions regarding its subject, object, recipients, and distribution mechanisms. In Islamic law, zakat is a religious obligation on wealth that meets certain

requirements and is distributed to eligible recipient groups (aṣnāf) as stipulated in Surah al-Tawbah [9]: 60. Therefore, Green Zakat should be understood as an ecological orientation in the management and utilization of zakat that remains subject to the provisions of Islamic jurisprudence (fiqh), not as a new category of zakat that automatically encompasses all environmental conservation activities. This distinction is important because a program that contributes to reducing carbon emissions is not necessarily a zakat activity, even if it is carried out by an institution engaged in the management of Islamic philanthropy.

The development of environmental programs within the Islamic philanthropy ecosystem also requires a distinction between zakat, infak, sedekah, waqf, corporate social responsibility (CSR), and incentive-based sustainability campaigns. Zakat is a religious obligation with specific requirements regarding assets and distribution to the eight categories of aṣnāf, whereas infak and sedekah have different scopes of application depending on the source of funds and applicable regulations. Waqf has its own distinct characteristics regarding asset management and the utilization of its proceeds in accordance with the waqf's designated purpose, while CSR is a form of corporate social responsibility that is not automatically categorized as the fulfillment of zakat. Similarly, the provision of products as rewards for emission-reduction activities is more appropriately understood as an environmental incentive as long as there is no evidence that such activities meet the distribution requirements for zakat. Within the Green Zakat Framework, the integration of Environmental, Social, and Governance (ESG) principles and the concept of ḥalālan ṭayyiban can serve as a guiding framework for developing programs that prioritize sustainability.[36] However, the fact that an activity aligns with the principle of sustainability does not automatically classify it as zakat. Such classification must still take into account the source of funding, the purpose of distribution, the status of the beneficiaries, and the fund management mechanism.

From a fiqh perspective, the development of emission-reduction incentives through the zakat mechanism requires clarity regarding the party paying zakat (*muzakkī*), the eligible recipients (*mustaḥiq*), the assets subject to the zakat obligation (*māl al-zakāh*), the intention (*niyyah*), and the distribution mechanism. The obligation to pay zakat is also tied to ownership requirements and the characteristics of the assets,

[36] Achmad et al.

including the niṣāb and ḥawl thresholds, if applicable to the type of asset subject to zakat. The distribution of zakat must take into account the eight categories of recipients as stipulated in Surah al-Tawbah [9]: 60, namely the fuqarā', masākīn, 'āmilīn, mu'allaf, riqāb, ghārimīn, fī sabīlillāh, and ibn al-sabīl. Furthermore, the principle of tamlīk the transfer of ownership to the zakat recipient is a key issue in the jurisprudence of zakat distribution, although its application in contemporary empowerment programs is subject to differing interpretations among scholars. In the context of cycling incentives, carbon savings cannot automatically be categorized as assets subject to zakat or as a substitute for the payment of zakat obligations. If a program uses zakat funds to provide incentives to cyclists, it must be demonstrated that the recipients meet the aṣnāf criteria and that the distribution mechanism complies with Islamic law. Therefore, the alignment of an activity with environmental goals cannot be used as the sole basis for classifying it as a form of Green Zakat implementation.

In the empirical context of this study, one initiative that demonstrates a potential link between low-carbon mobility and social activities rooted in Islamic philanthropy is the campaign to exchange carbon savings records from cycling activities for products from Difabis Coffee and Tea. Based on information published by Bike to Work Indonesia, the campaign provided cyclists with the opportunity to receive coffee, tea, or specific products by presenting proof of their cycling activities and estimated carbon savings recorded via the Strava app. The event, held in March 2026, demonstrated the use of environmental indicators as the basis for rewarding individuals who participate in sustainable mobility. Nevertheless, this initiative is more appropriately classified as an environmental behavioral incentive program rather than as a mechanism for the distribution of zakat. The available information does not sufficiently clarify the source of funding for the incentives, the status of cyclists as zakat beneficiaries, or whether zakat obligations are being fulfilled through this initiative. Furthermore, the activity took place after the observation period for cycling activity data—from January 2025 to January 2026—and thus cannot be used as evidence that the provision of incentives influenced cyclists' behavior during the study period. Consequently, the campaign is positioned as an illustration of environmental collaboration and social initiatives, rather than as evidence of a causal relationship between incentives, fatwas, and changes in mobility behavior.

Difabis Coffee and Tea is an economic empowerment program related to the management of zakat, infak, and sedekah by BAZNAS (BAZIS) of DKI Jakarta Province. The program was developed to support the economic empowerment of people with disabilities through productive business activities aimed at enhancing economic independence and social inclusion. Nuzulla examines Difabis Coffee and Tea as a form of productive zakat management, while institutional information from BAZNAS (BAZIS) DKI Jakarta indicates that the program is oriented toward the empowerment of beneficiary groups.[37] Difabis' involvement in the cycling incentive campaign demonstrates the potential for integration between social and economic empowerment and the promotion of environmentally friendly mobility. However, its institutional relationship with zakat administrators does not prove that all of Difabis' operational activities or campaigns are funded by zakat. Determining this status requires information regarding funding sources, financial records, funding objectives, beneficiary status, and distribution mechanisms. Thus, Difabis' involvement in the carbon-saving campaign is more accurately understood as a collaboration between economic empowerment programs and sustainable mobility communities within the Islamic philanthropy ecosystem, rather than as empirical evidence of the establishment of a Green Zakat mechanism that meets fiqh requirements.

Distinguishing between carbon savings and carbon credits is another crucial aspect in assessing the potential for developing ecological incentives through Islamic philanthropy.The carbon savings estimates displayed on the Bike to Work Indonesia dashboard are based on calculations of emissions that could hypothetically be avoided through cycling, using a comparative travel scenario as a baseline. Meanwhile, carbon credits are instruments related to the calculation and recognition of units of emission reductions or removals based on relevant mechanisms, standards, and verification processes. Thus, carbon savings recorded in the Strava app do not in and of themselves indicate ownership of verified or tradable carbon credits. If carbon savings are to be developed into economic or philanthropic instruments, an assessment is required regarding ownership status, the validity of the transaction's subject matter, measurement and verification methods, and the possibility of double counting. From the perspective of fiqh al-muamalah

[37] Nuzulla, "Implementasi Manajemen Zakat Produktif Pada Program Coffee Difabis Di BAZNAS (Bazis) DKI Jakarta."

(Islamic commercial law), such mechanisms also require clarification regarding the subject matter of the contract, legally recognized benefits, ownership rights, and potential uncertainty (gharar) that could affect the validity of the transaction. Therefore, exchanging cycling activity records for consumer products cannot automatically be considered a carbon credit transaction or a carbon-based zakat payment. Such activities are more appropriately understood as the provision of incentives that use estimated emission savings as an indicator to support participation in sustainable mobility.

These legal and institutional distinctions indicate that the relationship between cycling activities and Green Zakat offers several avenues for development, but each requires a different basis for legitimacy. Rewarding cyclists through infaq, sadaqah, or CSR funding can be developed as an environmental incentive program as long as it complies with regulations regarding funding sources and management. Meanwhile, the use of zakat funds to support environmental programs requires stricter justification, particularly in ensuring that the program's benefits are directed toward groups that meet the aṣnāf criteria. For example, support for mobility facilities for needy zakat recipients could be considered part of an economic empowerment program if it has a clear connection to the recipients' needs, the distribution objectives, and the provisions governing zakat management. However, this possibility is a conceptual illustration that still requires legal and institutional testing; it is not a mechanism that has been proven in this study. The differences in characteristics between zakat, other philanthropic instruments, and environmental incentives are summarized in Table 4.

Table 4. Legal and Institutional Distinctions between Zakat, Islamic Philanthropy, and Carbon-Based Environmental Incentives

Mechanism	Legal and institutional characteristics	Relevance to the cycling campaign
Zakat	Obligatory religious payment subject to specific asset requirements, intention, and distribution to eligible *aṣnāf*.	Use of zakat funds for cycling incentives has not been established.
Infaq and sadaqah	Charitable giving with rules and potential beneficiaries	Potential sources of environmental campaign funding,

	distinct from obligatory zakat.	subject to donor conditions.
Waqf	Endowment governed by rules concerning endowed assets and designated benefits.	Potential support for sustainable mobility infrastructure or community facilities.
CSR	Corporate social responsibility activities financed through organizational resources.	Potential funding mechanism for environmental rewards or campaigns.
Carbon saving	Platform-estimated avoided emissions based on recorded cycling activities and counterfactual assumptions.	Used as an indicator for environmental incentives, not as zakat payment.
Carbon credits	Carbon units requiring recognition under applicable standards, accounting, verification, and registration procedures.	No evidence that verified carbon credits were used in the campaign.
Environmental incentive	A reward or benefit designed to encourage environmentally responsible behavior.	Most consistent classification of the documented cycling reward initiative.
Green Zakat	Environmental orientation in zakat management and distribution that remains subject to Islamic zakat law.	A potential conceptual framework requiring further legal and institutional examination.

Source: Authors' conceptual synthesis based on Achmad et al. (2025), Nuzulla (2024), Islamic legal principles, and the Bike to Work Indonesia campaign documentation (2026).

Based on this overall analysis, the relationship between cycling, carbon-reduction campaigns, and Green Zakat must be situated within the framework of Islamic philanthropy, while remaining within the legal boundaries of zakat. The primary contribution of the "Bike to Work Indonesia" campaign in partnership with Difabis Coffee and Tea lies in

its potential to link rewards for eco-friendly behavior with socio-economic empowerment initiatives, rather than in the creation of a new zakat mechanism. Similar incentive programs can be developed through appropriate funding sources, including infak, sadaqah, and CSR, while the use of zakat funds still requires a separate assessment of the eligibility of beneficiaries, the objects of funding, and the alignment of distribution mechanisms with fiqh principles. Thus, this study does not position carbon savings as a substitute for the obligation of zakat or as a zakat asset that has obtained legitimacy under Islamic law, but rather as an environmental indicator that can be utilized in the development of sustainability-oriented philanthropy programs. In relation to MUI Fatwa No. 86 of 2023, this potential development suggests that ecological responsibility can be translated into cooperation between community groups and socio-religious institutions. However, this normative relevance does not prove that the activities under study constitute the implementation of Green Zakat or that the issuance of the fatwa directly influences participants' behavior. Therefore, the contribution of this study lies in clarifying the conceptual boundaries and potential for developing innovations in environmental philanthropy within the framework of Islamic law, while also emphasizing the need for further research on fiqh legitimacy, financing, institutional governance, and the empirical effectiveness of such programs.

Islamic Environmental Ethics and Sustainable Mobility: From Green Deen to Everyday Ecological Practices

Islamic environmental ethics provides a normative foundation for understanding the relationship between religious responsibility and ecological behavior in daily life. In the Islamic tradition, humanity's status as khalīfah and stewards of amānah affirms that the use of natural resources cannot be separated from the responsibility to safeguard the sustainability of life. Al-Hamid explains that the concept of khalīfah entails humanity's responsibility as stewards of the earth, while amānah emphasizes the moral obligation to preserve God's creation. These two principles can be linked to the prohibition against causing harm (fasād) and the obligation to avoid actions that result in ecological harm. Recent Hadith-based environmental ethics further conceptualizes ecological responsibility through the interconnected dimensions of care, accountability for the consequences of human agency, and the creation

of beneficial conditions for human and nonhuman life.[38] Recent reconstruction of ecological ethics from Fakhr al-Dīn al-Rāzī likewise demonstrates the potential of classical Islamic interpretive resources to contribute to contemporary environmental reasoning, while also emphasizing the methodological limits of translating premodern theological and exegetical concepts directly into modern ecotheological policy.[39] In the context of MUI Fatwa No. 86 of 2023, these principles are relevant because the fatwa affirms the obligation to contribute to climate change mitigation and the reduction of carbon footprints that are not basic necessities. However, the relationship between religious principles and ecological behavior must be understood proportionally. Religious norms can provide an ethical basis for evaluating human actions, but their existence does not automatically prove that people change their behavior due to the influence of these norms. Therefore, in this study, Islamic environmental ethics is used as an interpretive framework to assess the compatibility of cycling activities with ecological responsibilities, rather than as a causal explanation for the motivations of members of the Bike to Work Indonesia community.

This ethical framework can be further explored through the concept of "Green Deen" developed by Ibrahim Abdul-Matin.[40] This concept positions environmental protection as an integral part of the lived practice of Islamic values through six interrelated principles: tawḥīd (the oneness of God), āyāt (signs of God's greatness in creation), khalīfah (human responsibility as stewards of the earth), amānah (the trust and responsibility entrusted to humanity), ʿadl (justice), and mīzān (balance). The principles of tawḥīd and āyāt provide a theological foundation for humanity's relationship with creation, while khalīfah and amānah emphasize moral responsibility regarding the use of natural resources. Meanwhile, the principles of ʿadl and mīzān direct attention toward ecological justice and the maintenance of environmental balance.In the context of sustainable mobility, these principles can be

[38] Mukhammad Syamsul Huda bin Lahuri and Suprisno Baderan, "Beyond Stewardship: Toward a Relational Ecological Responsibility through Hadith," *TSIQAH: Journal of Hadith and Prophetic Tradition* 1, no. 1 (2026): 84–114.

[39] Al Fiqri Ardiansyah, Yusuf Rahman, Zubair, Marhamah Annazah Tambunan, and Nur Cholis, "Reconstructing Ecological Ethics from Fakhr al-Dīn al-Rāzī: The Possibilities and Limits of Its Contextualization in Indonesian Ecotheological Policy," *AL QUDS: Jurnal Studi Alquran dan Hadis* 10, no. 2 (2026): 385–414, https://doi.org/10.29240/alquds.v10i2.15999

[40] Ibrahim Abdul-Matin, *Green Deen: What Islam Teaches about Protecting the Planet* (Berrett-Koehler Publishers, 2010).

used to evaluate transportation options based on their impact on the environment and the public interest. The use of bicycles to replace motorized travel, which produces higher emissions, for example, can be understood as a practice consistent with ecological responsibility because it has the potential to reduce transportation emissions. However, this alignment constitutes an ethical assessment, not a basis that in and of itself establishes cycling as a new legal category in Islam. Thus, Green Deen enriches the interpretation of MUI Fatwa No. 86 of 2023 by providing an ethical framework that connects religious principles and ecological considerations in everyday mobility practices.

The relationship between Islamic environmental ethics and ecological actions can also be observed, for example, through the experiences of Muslim organizations outside Indonesia. In Germany, organizations such as HiMA e.V. and NourEnergy e.V. have developed various activities that integrate Islamic values with environmental concerns. HiMA e.V. focuses on environmental education, raising ecological awareness, and engaging the Muslim community in various nature conservation activities. Meanwhile, Nour Energy e.V. has developed initiatives related to energy conservation, the use of renewable energy, and the Green Iftar campaign to promote more environmentally friendly practices during Ramadan. These experiences demonstrate that Islamic environmental values can be translated into community activities through education, social participation, and the development of ecological programs. However, the experiences of Muslim organizations in Germany cannot be directly applied to assess the effectiveness of MUI Fatwa No. 86 of 2023, as the two contexts differ in terms of institutional structure, religious authority, and social environment. Unlike the Indonesian context, which has the MUI as the fatwa-issuing body, the examples of Muslim organizations in Germany primarily showcase community-led initiatives in articulating ecological responsibilities. Therefore, these examples serve as limited comparative illustrations of the potential for translating Islamic values into environmental activities, rather than as systematic empirical comparisons or evidence that specific religious norms directly result in changes in public behavior.

In the context of this study, the primary relevance of Islamic environmental ethics lies in its ability to provide a conceptual bridge between MUI Fatwa No. 86 of 2023 and the development of a halal lifestyle as an ecologically responsible daily practice. The fatwa provides normative guidance on preventing environmental damage and reducing carbon footprints, while the principles of Green Deen expand the

understanding of these responsibilities through spiritual, moral, and social dimensions. Data on cycling activities by the Bike to Work Indonesia community then offers an empirical illustration of mobility practices that have the potential to support the goal of reducing transportation emissions, although it does not prove that community members cycle due to religious motivations or the influence of the fatwa. The relationship among these three dimensions demonstrates that the development of a halal lifestyle should not be understood as an expansion of the legal category of "halal" to encompass all human activities, but rather as an effort to understand how legally permissible actions can be evaluated based on their contribution to the public good and the prevention of environmental damage. Within this framework, cycling can acquire ethical-ecological value when it serves as a mobility option that realistically reduces the use of higher-emission transportation. However, such an assessment must continue to distinguish between legal permissibility (mubāḥ), ethical merit, and environmental effectiveness, which requires empirical evidence. Thus, the contribution of this study lies in the development of a conceptual relationship between Islamic legal norms, environmental ethics, and low-carbon mobility as part of an understanding of a halal lifestyle that is more oriented toward ecological responsibility, without assuming a causal relationship between fatwas and cycling behavior.

CONCLUSION

This study shows that Fatwa No. 86 of 2023 issued by the Indonesian Ulema Council (MUI) on the Legal Rulings Regarding Global Climate Change Mitigation provides a normative foundation for the development of low-carbon mobility practices oriented toward environmental protection. Through the principles of preventing harm (dar' al-mafāsid), public interest (maṣlaḥah), and humanity's ecological responsibility as khalīfah and stewards (amānah), cycling can be understood as a mobility practice consistent with the fatwa's provisions regarding climate change mitigation and the reduction of unnecessary carbon footprints. However, the fatwa does not explicitly designate cycling as a separate legal category of "halal mobility." Reasoning through sadd al-dharī'ah also requires consideration of causal relationships, the degree of harm, and the proportionality of preventive measures, whereas mafhum mukhālafah cannot be automatically applied to transform what is legally permissible (mubāḥ) into what is recommended (mandūb). Thus, the primary legal finding of this study is not the establishment of a new legal classification for cycling, but rather

the affirmation of the normative alignment between low-carbon mobility and the principles of environmental ethics formulated in MUI Fatwa No. 86 of 2023.

Empirically, aggregate data on cycling activities by the Bike to Work Indonesia community from January 2025 to January 2026 recorded 65,577 activities with a total travel distance of 1,404,551.60 km and an estimated 337,092.35 kg of CO_2 in avoided emissions. The aggregate estimated savings ratio reached approximately 0.240 kg CO_2 per kilometer and 5.14 kg CO_2 per cycling trip. These findings illustrate the potential contribution of cycling mobility to mitigating transportation emissions, particularly when such trips replace the use of motor vehicles with higher emission intensities. However, the carbon savings figures are platform-based estimates (platform-estimated avoided emissions), not the result of direct measurements of actual emission reductions. The available data also does not yet allow for the identification of the number of unique cyclists, verification of the modes of transportation replaced, or an assessment of the impact of MUI Fatwa No. 86 of 2023 on individual decisions to cycle. In the context of Islamic philanthropy, the campaign to exchange carbon savings records for Difabis Coffee and Tea products demonstrates a potential link between incentives for eco-friendly behavior and social empowerment activities, but has not yet proven the establishment of a Green Zakat mechanism. The development of such a program still requires clarification regarding funding sources, the status of the muzakkī and mustaḥiq, the provisions regarding aṣnāf, and the alignment of distribution with the principles of zakat fiqh.

The theoretical contribution of this study lies in the development of an understanding of the halal lifestyle shifting the focus from consumption to daily practices that take ecological responsibility into account without making ethical compliance an automatic basis for the creation of new legal categories. In the study of contemporary Islamic law, these findings highlight the importance of distinguishing between the normative authority of fatwas, religious legitimacy, social acceptance, and empirical effectiveness when linking Islamic legal rulings to societal practices. The implication for fatwa studies is the need for an interpretive approach that proportionally integrates the principles of uṣūl al-fiqh, environmental ethics, and empirical knowledge, so that religious provisions can be contextualized without generating legal claims or causal relationships that go beyond the research evidence. The study's limitations primarily lie in the use of aggregated secondary data, the reliance of emission estimates on platform assumptions, and the lack

of data regarding participants' religious understanding and motivations, as well as the funding mechanisms for philanthropic campaigns. Therefore, future research should integrate interviews with cyclists, religious scholars or MUI fatwa drafters, the administrators of Bike to Work Indonesia, and zakat institutions; validate emission estimates using emission factors appropriate to the characteristics of transportation in Indonesia; and examine the legal and institutional feasibility of environmental philanthropy programs based on carbon reduction incentives. Thus, the relationship between Islamic law, sustainable mobility practices, and ecological philanthropy can be further explored through more comprehensive normative and empirical evidence.

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