

ISLAMIC ECONOMICS AND THE CLIMATE CRISIS: RECONSTRUCTING THE ROLES OF ZAKAT AND WAQF IN ACHIEVING ENVIRONMENTAL RESILIENCE

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ABSTRACT - The global climate crisis demands responses from various sectors, including Islamic economics, which holds significant potential in supporting environmental sustainability through social instruments such as zakat and waqf. This study aims to explore the relevance and contribution of Islamic economic approaches in addressing contemporary ecological challenges. Using a literature review method based on five key studies, the findings reveal that: (1) Islamic economic approaches are urgently needed in climate crisis response policies; (2) the function of zakat must be reconstructed to enhance environmental resilience; (3) productive waqf can be recontextualized as an ecological instrument; (4) the integration of zakat and waqf contributes to the development of an Islamic green economic model; and (5) digitalization and social innovation play a strategic role in optimizing zakat and waqf for environmental purposes. These findings indicate that zakat and waqf are not only social and economic tools but also hold ecological value that can be maximized through cross-sector collaboration and digital technology. The study recommends strengthening regulations, enhancing institutional synergies, and developing green zakat and eco-waqf programs as adaptive strategies in addressing climate change.

Keywords: Islamic economics, zakat, waqf, climate crisis, sustainability

ABSTRAK – Ekonomi Islam dan Krisis Iklim: Rekonstruksi Fungsi Zakat dan Wakaf Dalam Mewujudkan Ketahanan Lingkungan. Krisis iklim global menuntut respons dari berbagai sektor, termasuk ekonomi Islam, yang memiliki potensi besar dalam mendukung keberlanjutan lingkungan melalui instrumen sosial seperti zakat dan wakaf. Penelitian ini bertujuan untuk mengeksplorasi relevansi dan kontribusi pendekatan ekonomi Islam dalam mengatasi tantangan ekologis kontemporer. Dengan menggunakan metode studi pustaka terhadap lima hasil penelitian utama, ditemukan bahwa: (1) pendekatan ekonomi Islam mendesak untuk diintegrasikan dalam kebijakan penanggulangan krisis iklim; (2) fungsi zakat perlu direkonstruksi untuk mendukung ketahanan lingkungan; (3) wakaf produktif dapat diaktualisasikan sebagai instrumen ekologis; (4) integrasi zakat dan wakaf mendukung pengembangan model ekonomi hijau berbasis Islam; dan (5) digitalisasi serta inovasi sosial memainkan peran strategis dalam optimalisasi potensi zakat dan wakaf untuk pelestarian lingkungan. Hasil ini menunjukkan bahwa zakat dan wakaf tidak hanya berdimensi sosial dan ekonomi, tetapi juga memiliki nilai ekologis yang dapat dimaksimalkan melalui kolaborasi multi-sektor dan teknologi digital. Penelitian ini merekomendasikan penguatan regulasi, sinergi antar lembaga, serta pengembangan program green zakat dan eco-waqf sebagai bagian dari strategi adaptif dalam menghadapi perubahan iklim.

Kata Kunci: Ekonomi Islam, zakat, wakaf, krisis iklim, keberlanjutan.

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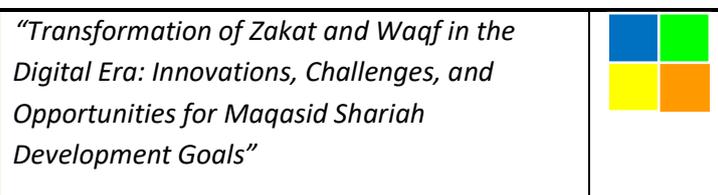
INTRODUCTION

The global climate crisis has become a serious threat to the survival of humanity and ecosystems, largely due to unsustainable exploitation of natural resources. Amidst these challenges, economic growth remains the benchmark for a country's progress. Indonesia, which was recognized as a developed country by the WTO in 2022 and served as host of the G20, has recorded key economic achievements, such as rising incomes and declining unemployment (Salya & Nandana, 2022; Syarigawir et al., 2023; Raei, 2023; Udeagha & Breitenbach, 2023). However, these advancements are overshadowed by the impacts of the climate crisis, which are most acutely felt by vulnerable groups (Reysa et al., 2022; Shaik & Anis Ali, 2023).

In this context, religion plays a vital role as a social system that governs the external and internal behavior of its followers (Dodi, 2018; Hendropuspito, 1983). One manifestation of religious values in economic structures is the development of the Islamic economic system, which in recent decades has offered an alternative approach based on justice, sustainability, and inclusion (Chapra, 2000; Antonio, 2017; Ali & Saputri, 2025). However, although Islamic economics emphasizes justice, certain provisions within Islamic family law—particularly those concerning women's access to assets and economic capital—often remain misaligned with these values. In response, Law No. 1 of 1974 has attempted to integrate Islamic principles to build household stability as the foundation of economic welfare (Ali et al., 2022; Mir-Hosseini, 2003; Huda, 2018).

Therefore, there is a need for an Islamic economic approach that not only focuses on material aspects, but also emphasizes moral, spiritual, and social justice values in addressing global challenges, including the climate crisis. Islamic economics, grounded in tawhid (divine unity), justice, and *istidamah* (sustainability), offers a transformative paradigm that is both relevant and necessary. Within this framework, zakat and waqf—two key instruments of Islamic social finance—play a central role. Poverty, which is theologically regarded as a condition to be alleviated, is a core concern in Islamic teachings. Yet, a paradox arises when poverty is still viewed by some as a form of spiritual submission rather than a structural issue requiring concrete solutions (Abrar, 2023). Islamic finance, when integrated with Sharia principles and Islamic ethical values, possesses unique characteristics that set it apart from conventional financial systems (Abrar et al., 2024; Ma'ruf & Nurul Fikri, 2023).

Historically, zakat and waqf have been used as instruments to alleviate poverty and empower communities (Munawir et al., 2024; Abrar & Ihza, 2024). However, with the



increasing urgency of sustainability and ecological issues, their functions can be reconstructed to support environmental agendas. This reconstruction involves not only changes in management and governance but also a reorientation of utilization—directed toward funding ecological projects such as forest conservation, waste management, renewable energy development, and sustainable, environmentally friendly agriculture.

In practice, the concept of green waqf is beginning to take root in various regions. Waqf assets are now being allocated not only for religious and educational activities but also for environmental conservation efforts, including urban parks, protected forest areas, and water spring preservation. Some projects have even begun utilizing blockchain technology to enhance transparency and accountability in waqf management (Mardani, 2023). On the other hand, environmental zakat is also emerging, both in the form of productive zakat for eco-friendly entrepreneurs and as assistance for victims of ecological disasters. The utilization of zakat in these areas directly contributes to the objectives of *maqashid syariah*, particularly in preserving life (*hifz al-nafs*), wealth (*hifz al-mal*), and the environment (*hifz al-bi'ah*).

Various studies indicate that optimizing zakat and waqf also contributes to achieving the Sustainable Development Goals (SDGs), particularly Goal 6 (clean water and sanitation), Goal 13 (climate action), and Goal 15 (life on land). For instance, Musari (2022) proposed that Cash Waqf Linked Sukuk could serve as an alternative form of long-term financing for renewable energy projects aligned with Islamic principles. This approach not only fosters the growth of the green economy but also strengthens the Islamic financial system in supporting sustainable development. This aligns with the spirit of the Millennium Development Goals (MDGs), which originated from the 2000 Millennium Summit in New York and later evolved into the SDGs (Rokhlinasari & Widagdo, 2023).

Nevertheless, the reconstruction of zakat and waqf as ecological instruments still faces numerous challenges. These include low public literacy regarding the environmental functions of these instruments, limited regulatory frameworks supporting environmental projects within the Islamic social finance context, and a lack of institutional capacity. Therefore, synergy among stakeholders—including zakat and waqf authorities, government, academia, and environmental communities—is crucial to building innovative and effective collaborative models.

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In this transformation, digitalizing zakat and waqf management presents a strategic opportunity. The use of technologies such as big data, artificial intelligence, and blockchain can enhance distribution efficiency while enabling more accurate mapping of social and environmental needs. Digital transformation in Islamic finance has also proven effective in strengthening services, promoting financial inclusion, and expanding the reach of Islamic digital philanthropy in the era of Industry 4.0 (Abrar & Ihza, 2025).

Thus, the reconstruction of zakat and waqf in the context of the climate crisis is not merely an alternative, but a necessity. Islamic economics is expected to address sustainability challenges through an inclusive, justice-oriented, and value-based approach. Zakat and waqf must be reinterpreted as vital pillars of Islamic philanthropy that serve not only social functions but also ecological ones—bridging the harmonious relationship between humanity, the environment, and God Almighty.

LITERATURE REVIEW

Previous studies have shown that zakat and waqf hold strategic positions in supporting sustainable development and environmental resilience through Islamic economic approaches. Research by Jeki Candra and Kamilah (2025) emphasizes the contribution of Islamic financial instruments to food security in the context of climate change, focusing on farmer empowerment and sustainable agricultural financing. Rianti and Muawar (2024) highlight the importance of nazhir professionalism and productive waqf programs in supporting the SDGs, particularly in the economic and education sectors, although they have not directly addressed environmental issues.

Meanwhile, Alfian et al. (2024) explore the role of Islamic social finance in achieving the SDGs, stressing economic inclusion and environmental sustainability as components of social justice. Abduh et al. (2024) reinforce the argument that Islamic social finance can serve as an investment instrument for green projects and carbon emission reduction. Similarly, Aliyah et al. (2025) demonstrate the synergy between zakat and waqf in supporting monetary stability and inclusive economic development.

Several other studies have also enriched the understanding of the role of zakat, waqf, and other Islamic economic instruments in realizing sustainable development. Mardani (2023) emphasizes the importance of green waqf as a core supporter of the green economy in addressing climate change and carbon emissions, through the provision of renewable energy and environmental preservation. Amalina and Wigari (2024) underscore the optimization of cash waqf in achieving the SDGs, particularly by

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enhancing nazhir professionalism as a means of maintaining public trust and ensuring the sustainability of waqf benefits.

Siregar et al. (2021) propose a Cash Waqf Linked Sukuk (CWLS) model with a Salam contract as an innovative instrument to support food security, facilitating farmers through Islamic financing schemes in the post-pandemic era. Hidayati et al. (2025) demonstrate the effectiveness of productive zakat as an Islamic fiscal policy instrument for poverty reduction and sustainable economic development. Nadila et al. (2025) link agrarian reform from a *maqashid syariah* perspective to the welfare of farmers and MSMEs, emphasizing principles of justice, transparency, and sustainability in natural resource management.

Furthermore, a number of studies highlight the significant role of zakat and waqf in addressing social and ecological challenges both locally and globally. Putri & Mukhlis (2022) and Ulirrahmi & Yazid (2022) emphasize the role of zakat and waqf in enhancing food resilience, particularly through mentoring programs and agricultural-based muamalah contracts. Humaida et al. (2020) and Shafiyah & Nisa (2024) connect Islamic values with the objectives of the SDGs, underlining the importance of justice, sustainability, and active participation of the Muslim community. Sarifudin et al. (2022) showcase the role of local institutions in empowering communities and the environment in the post-pandemic period.

Recent studies reveal a paradigm shift in the utilization of zakat and waqf—from being mere acts of worship to becoming strategic solutions to environmental issues and the climate crisis. Research by Suhendi et al. (2024), Eriawan & Masruchin (2021), and Amir (2024) highlight the implementation of waqf in local actions such as compost waqf, agricultural land waqf through istibdal, and hydroponic waqf as community-based solutions. Meanwhile, Sukaina et al. (2022) propose blockchain-based digital innovations for green financing through tamanu plant waqf. Beyond practical approaches, studies such as Karimullah (2025) stress the importance of social justice and Islamic economics in reforming the unsustainable global economic system.

Collectively, these previous studies share a common direction in promoting the use of zakat and waqf for sustainable development, though most adopt an empirical and sectoral focus. In contrast, this research takes a broader normative-conceptual approach by reconstructing the roles of zakat and waqf as strategic instruments in building environmental resilience and responding systemically to the climate crisis. Therefore,

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this study offers a more comprehensive perspective on integrating zakat and waqf as components of an equitable ecological solution.

THEORETICAL FRAMEWORK

Islamic Economic Theory

Islamic economics is a system built upon the principles of sharia that upholds justice, balance, and sustainability as the foundational values of all economic activities. The ultimate goal of this system is not merely profit maximization, but also the realization of *maslahah* (public welfare), distributive justice, and the protection of vulnerable groups (Chapra, 2000). According to Al-Sadr (1982), Islamic economics is an integrated system that is both rational and spiritual, making worship and social responsibility the core framework of all economic endeavors.

Islamic social finance instruments such as zakat and waqf play a crucial role in the redistribution of wealth and poverty alleviation. Haneef (2014) emphasizes that zakat, as a socio-religious obligation, carries significant economic functions in addressing social inequality and promoting economic inclusion, particularly in developing countries. In a broader context, Ismail and Shaikh (2017) argue that waqf, especially productive waqf, can be developed as a tool for sustainable development in alignment with the Sustainable Development Goals (SDGs), particularly in areas such as education, healthcare, and food security.

The foundational principles of Islamic economics firmly reject practices such as *riba* (usury), *maysir* (speculation), and *gharar* (excessive uncertainty), as these are considered to undermine market justice and contribute to economic crises (Chapra, 2000). Instead, the system promotes fair, transparent, and socially oriented transactions. In essence, Islamic economics emphasizes a balance between individual and collective interests, as well as between economic growth and social stability (Mannan, 1993).

Contemporary research by Candra and Kamilah (2025) indicates that a sharia-based economic approach focused on distribution and sustainability can strengthen national food security, particularly in the face of climate change impacts. Similarly, the study by Aliyah et al. (2025) concludes that the integration of zakat and waqf into fiscal policy can contribute to monetary stability and reduce social disparities. Alfian et al. (2024) further note that optimizing Islamic social finance instruments holds significant potential in supporting an inclusive, community-based sustainable development agenda.

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Moreover, Siregar et al. (2021) propose the Cash Waqf Linked Sukuk (CWLS) model as a sharia-compliant financial innovation that supports national development financing while enhancing the community's economic resilience from spiritual, social, and fiscal perspectives. This demonstrates that Islamic economics, through its normative principles and practical mechanisms, can offer alternative development policies that are not only economically efficient but also ethical and equitable.

Thus, Islamic economic theory provides a robust conceptual foundation for research on the role of Islamic social finance instruments such as zakat and waqf in promoting sustainable development, macroeconomic stability, and equitable improvements in societal welfare.

Islamic Social Finance Theory

Islamic social finance theory is a branch of Islamic economic thought that focuses on optimizing the social functions of sharia-compliant financial instruments to promote economic justice, social solidarity, and sustainable community empowerment. Unlike conventional financial systems that are profit-oriented and centered on capital accumulation, Islamic social finance is non-profit oriented, aiming to realize the maqashid al-sharia—particularly the protection of wealth (*hifz al-mal*), life (*hifz al-nafs*), and dignity (*hifz al-'irdh*) (Obaidullah, 2016; Mohieldin et al., 2011).

The core instruments of Islamic social finance include zakat, waqf, infaq, and sadaqah. These instruments emphasize the fair and equitable distribution of wealth to reduce social inequality and enhance communal welfare. Zakat, as a legally binding financial obligation in Islam, serves as a redistributive tool with positive fiscal effects for poverty alleviation and reducing economic disparities (Chapra, 2000; Aliyah et al., 2025). Meanwhile, waqf offers a long-term, sustainable resource base that can be allocated for financing social infrastructure, such as education, healthcare, and food security (Abduh et al., 2024; Mardani, 2023). In the modern context, innovative instruments like Cash Waqf Linked Sukuk (CWLS) have emerged as part of a reformed public financing system that is more inclusive and compliant with Islamic principles (Siregar et al., 2021).

Furthermore, Islamic social finance theory acknowledges the significant potential of zakat and waqf resources to function as automatic stabilizers in times of economic shocks—such as during the COVID-19 pandemic or global food price volatility (Ghosh, 2020; IMF, 2024). In this regard, the transparent, accountable, and fiscally integrated

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management of Islamic social finance has the potential to strengthen national fiscal resilience, reduce subsidy burdens, and support the achievement of the Sustainable Development Goals (SDGs)—particularly SDG 1 (No Poverty), SDG 2 (Zero Hunger), and SDG 10 (Reduced Inequalities) (Alfian et al., 2024; UNESCAP, 2022).

In practice, the implementation of Islamic social finance faces several structural challenges, such as low levels of Islamic financial literacy, underdeveloped digital management systems for zakat and waqf, and weak integration between Islamic financial institutions and fiscal authorities (Jusriadi et al., 2024). Therefore, institutional and policy reforms are essential to ensure that Islamic social finance not only serves as an alternative system but evolves into a central pillar of sustainable economic development.

Moreover, Islamic social finance aligns with the spirit of green economy and environmental sustainability. For example, allocating waqf funds to renewable energy projects or eco-friendly agriculture can provide long-term solutions to climate crises and global food security challenges (Mardani, 2023; Candra & Kamilah, 2025). Thus, Islamic social finance theory is not only relevant within normative-religious frameworks but also serves as an econometric and public policy approach that is adaptive to contemporary global challenges.

Sustainable Development Theory

The theory of sustainable development originates from the seminal report *Our Common Future*, published by the World Commission on Environment and Development (WCED) in 1987, which defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). This concept integrates three main pillars: economic growth, social inclusion, and environmental preservation, emphasizing a long-term balance between the material and non-material dimensions of development.

From an Islamic perspective, sustainable development is not limited to ecological and economic dimensions, but also encompasses spiritual and ethical dimensions. Islamic teachings emphasize the principles of *tawhid* (oneness of God), *khilafah* (human stewardship of the Earth), and *maslahah* (public interest) as the foundation for achieving sustainable living (Dusuki & Abdullah, 2007). Hence, development in Islam is multidimensional—including spiritual (relationship with Allah), social (relationship

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with fellow humans), and ecological (relationship with nature)—all of which must operate harmoniously (Osman, 2016).

Islamic social finance instruments such as zakat and waqf serve as practical mechanisms for realizing sustainable development within an Islamic framework. Zakat, as a mandatory system of wealth redistribution, significantly contributes to poverty alleviation (SDG 1), health improvements (SDG 3), and strengthening social safety nets. Meanwhile, waqf enables the development of public infrastructure and sustainable social services, including education (SDG 4), healthcare (SDG 3), and food security (SDG 2), without being entirely dependent on state budgets (Abduh et al., 2024; Alfian et al., 2024).

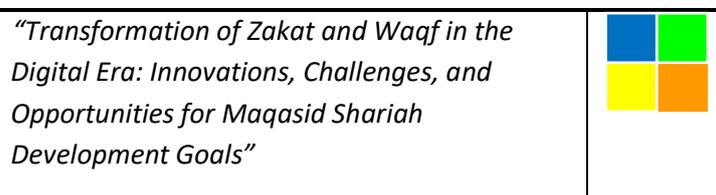
Moreover, innovative forms of waqf—such as green waqf and Cash Waqf Linked Sukuk (CWLS)—have shown great potential in financing environmentally friendly projects and sustainable social infrastructure (Mardani, 2023; Siregar et al., 2021). This approach affirms that Islamic social finance is not only compatible with, but also strategic in supporting the achievement of the United Nations Sustainable Development Goals (SDGs).

Nevertheless, the implementation of zakat and waqf within the sustainable development framework still faces several challenges, such as weak regulatory frameworks, low public awareness, and lack of integration between zakat/waqf institutions and national development planning agencies (UNESCAP, 2022; Aliyah et al., 2025). Therefore, systemic efforts are required to align national fiscal policies with the strengthening of the Islamic social finance sector to more effectively achieve long-term development goals.

In conclusion, the theory of sustainable development in Islam is not merely a theoretical construct, but one that can and has been operationalized through structured, measurable, and participatory zakat and waqf instruments, aimed at promoting inclusive and ecological socio-economic transformation.

Islamic Food Security Theory

Food security is a vital aspect of sustainable development. From an Islamic perspective, the concept encompasses not only physical dimensions such as food availability, accessibility, and stability, but also spiritual, ethical, and barakah (divine blessing) aspects. Islam regards food as a trust (*amanah*) from Allah SWT that must be managed



fairly and sustainably to ensure the continuity of human life and promote the public good (*masalahah 'ammah*) (Candra & Kamilah, 2025).

The Qur'an contains several verses emphasizing the importance of food and prohibiting wastefulness and environmental destruction in resource management (QS. Al-A'raf: 31; QS. Al-Baqarah: 205). This illustrates that food security in Islam is not merely a technical or economic issue, but also a moral and spiritual matter. The fulfillment of food needs must be grounded in the principles of distributive justice (*al-'adl*), the avoidance of hoarding (*ihthikar*), and community empowerment through Islamic social finance instruments such as zakat and waqf.

Agricultural zakat, for instance, functions as a redistribution mechanism for agricultural output to benefit the poor and vulnerable, while also promoting economic equity in the agrarian sector. Islam provides specific rulings on zakat for crops—whether from rice fields, plantations, orchards, or farms—based on harvest seasons and irrigation types (As-Suyuthi, 2000; Al-Qaradawi, 1999). This demonstrates that the Islamic system has long anticipated mechanisms for building resilient and inclusive food systems, not concentrated in the hands of economic elites.

Moreover, productive waqf serves as a strategic tool in constructing long-term food security infrastructure, such as waqf-based agricultural land, community food barns, or free food distribution systems for underprivileged groups. Contemporary studies show that waqf can be systematically mobilized to enhance sustainable food production and distribution capacities (Mardani, 2023; Siregar et al., 2021).

The Cash Waqf Linked Sukuk (CWLS) model—an innovation in Islamic social finance—has been developed in Indonesia to finance food security and agricultural projects through the acquisition of productive farmland or the development of modern farming infrastructure (Siregar et al., 2021). This approach integrates Islamic financial principles with public policy to build a resilient and self-sufficient food system.

Thus, the Islamic theory of food security combines spirituality, social justice, and ecological sustainability within a holistic framework. This sets it apart from conventional secular approaches that often focus solely on production and market mechanisms. In Islam, food security is not only about physical survival but also an act of worship and a social responsibility entrusted to every individual and institution in society.

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Islamic Macroeconomic Stability Theory

Macroeconomic stability from an Islamic perspective encompasses a broader scope than conventional approaches. While conventional economic theory often measures stability through indicators such as Gross Domestic Product (GDP) growth, inflation rates, balance of payments, and exchange rate stability, Islamic economics also includes spiritual, social, and moral dimensions. Principles such as justice (*'adl*), balance (*tawazun*), and public interest (*maslahah*) serve as foundational pillars in formulating and managing comprehensive economic stability (Chapra, 2000).

Within this framework, zakat plays a significant role as a mandatory Islamic fiscal instrument aimed at income redistribution. The distribution of zakat to eight recipient categories as mentioned in the Qur'an (QS. At-Taubah: 60) is not only intended to alleviate poverty but also to create economic stability by increasing the purchasing power of the poor and stimulating the circulation of wealth within the economy (Obaidullah, 2016). Hence, zakat functions not only as a tool for social solidarity but also as an automatic stabilizer, capable of boosting aggregate consumption among the needy during economic slowdowns (Aliyah et al., 2025).

On the other hand, waqf—as a perpetual endowment fund—has strategic potential in supporting social sectors such as education, healthcare, and food security. Waqf offers interest-free long-term financing, and in times of economic shocks, it can act as a buffer against fiscal strain. In the macroeconomic context, productive waqf facilitates the development of social infrastructure that reduces the government's fiscal burden, while also maintaining consumption and distribution stability during periods of uncertainty (Arner et al., 2020; Siregar et al., 2021). For instance, during the COVID-19 pandemic, several waqf institutions in Indonesia financed health clinics, food distribution, and scholarships for affected students—initiatives that contributed directly to socio-economic stability.

Contemporary studies highlight that strengthening the role of Islamic social finance—zakat, waqf, infaq, and sadaqah—within the national fiscal framework can expand fiscal policy capacity, reinforce social protection networks, and mitigate the impacts of economic fluctuations inclusively (Ghosh & Vinod, 2022; IMF, 2024). Moreover, innovations such as integrating waqf into green economic development and using zakat to empower micro and small enterprises (MSMEs) are recognized as concrete steps toward ethical and sustainable macroeconomic stability.

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Therefore, the Islamic macroeconomic stability theory offers both theoretical and practical foundations for building a resilient and inclusive economic system. This model underscores the importance of religious-social institutions as central actors—not merely complementary—in supporting aggregate stability, aligning them directly with national fiscal and development strategies.

Behavioral Economics Theory and Mental Accounting

Behavioral economics is an interdisciplinary approach that combines principles of economics and psychology to understand how individuals make economic decisions, which are often irrational in real-world contexts. One of the key theories within this framework is the Mental Accounting Theory, developed by Richard H. Thaler (1999). This theory explains that individuals tend to compartmentalize and allocate financial resources into separate “mental accounts” based on their source, purpose, or spending category, even though, economically, the value of money is the same regardless of its form.

In the context of zakat and waqf, mental accounting serves as a crucial instrument to explain philanthropic behavior among Muslim communities. People tend to treat zakat and waqf as part of their spiritual and social responsibilities, rather than fiscal obligations to the state like taxes. As a result, even though zakat and taxes share functional similarities as instruments for income redistribution, they are perceived as belonging to separate mental accounts (Thaler, 1999; Kahneman & Tversky, 1979). This indicates that Islamic social financial instruments possess psychological advantages in encouraging public participation compared to conventional fiscal tools.

Research by Cull, Ehrbeck, and Holle (2022) shows that when social finance instruments are integrated with digital platforms, the effectiveness of their collection and distribution can increase significantly. However, to achieve this optimization, understanding the mechanisms of mental accounting is essential. For instance, communities are more responsive to productive waqf programs when they are presented with spiritual, social, and long-term impact narratives, rather than mere financial figures and ratios (Wulandari et al., 2023).

Moreover, this theory also supports the importance of communication design in managing digital zakat and waqf. If managers can clearly distinguish the mental accounts between consumptive waqf and productive waqf, or between zakat fitrah and zakat maal, the potential for fundraising can increase along with a stronger sense of

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ownership and participation from the public (Chen, Huang, & Ye, 2022). Therefore, integrating behavioral economics theory into the governance of Islamic social finance not only provides a new perspective on the behavior of zakat and waqf contributors but also offers an empirical basis for policy and technological innovation within the modern Islamic economic ecosystem.

METHODOLOGY

This research employs a qualitative approach using a normative-conceptual research type, focusing on reconstructing the roles of zakat and waqf in responding to the climate crisis and building environmental resilience within the framework of Islamic economics. This approach was chosen because it aligns with the objective of exploring, analyzing, and constructing integrative theoretical models that bridge Islamic financial instruments with contemporary ecological issues (Creswell & Poth, 2018).

Type and Approach of the Study

This study is categorized as library research, where the researcher critically examines both classical and contemporary literature on zakat, waqf, Islamic economics, environmental crises, and sustainability (Nasution, 2020; Haneef & Furqani, 2011). The approach is not only descriptive but also analytical-critical, aiming to construct a normative foundation from Islamic sources and link it to modern academic developments related to ecology and sustainable economics (Dusuki, 2008; Abdullah, 2021).

Data Sources

The data sources in this study are divided into two categories:

1. Primary Sources: The Qur'an, Hadith, classical fiqh texts (such as *al-Mughni* by Ibn Qudamah and *al-Majmu'* by Imam Nawawi), and contemporary texts discussing the concepts of zakat and waqf. Primary references also include official fatwas issued by institutions such as the National Sharia Council of the Indonesian Ulema Council (DSN-MUI) and the Indonesian Waqf Board (BWI).
2. Secondary Sources: Scientific books, journal articles indexed in Scopus/Sinta, reports from institutions such as UNDP, the World Bank, BAZNAS, and IRTI-IsDB, as well as previous research on zakat, waqf, and environmental sustainability (Hassan et al., 2020; Nurzaman, 2022; Wahyuni et al., 2023).

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Data Collection Techniques

Data were collected through documentation methods, involving the collection and review of relevant literature, both from physical and digital sources, including university libraries, international journal repositories, and online databases such as JSTOR, Scopus, and Google Scholar.

Data Analysis Techniques

Data were analyzed through the following stages:

1. Content Analysis: Used to examine the normative content of Islamic texts and academic/policy documents related to zakat, waqf, and the environment (Krippendorff, 2018).
2. Conceptual Synthesis Analysis: Aimed at constructing integration between Islamic theories of zakat and waqf with theories of sustainable development and environmental resilience (Chapra, 1992; Kamla & Haque, 2019).

Critical-Convergent Analysis: Utilized to identify the intersections and strategic contributions of zakat and waqf to climate crisis mitigation, through the maqasid al-shariah approach and Islamic ecological economics (Rizk, 2014; Zaman, 2020).

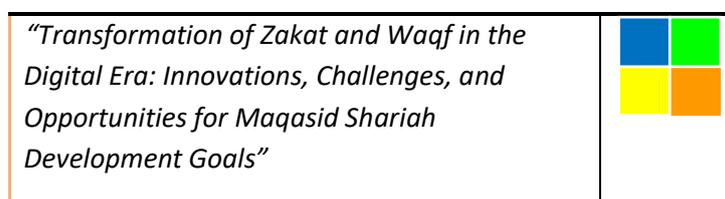
Data Validation Techniques

Validation was conducted through:

1. Source Triangulation: Using various sources from different disciplines (Islamic studies, economics, environmental science) to ensure interpretive accuracy.
2. Peer Review: The findings were examined through academic discussions with supervisors and experts in Islamic economics.
3. Argumentative Consistency: Ensuring logical coherence between the data, analysis, and conclusions.

Methodological Objective

The primary objective of this methodology is to formulate an integrative conceptual model concerning the role of zakat and waqf in building sustainable environmental resilience with a foundation in social justice. This model is expected to contribute



theoretically to the development of Islamic economics and serve as a basis for public policy formulation rooted in sharia-based environmental values.

RESULT AND DISCUSSION

The Urgency of the Islamic Economic Approach in Responding to the Climate Crisis

This research emphasizes the significant urgency and relevance of the Islamic economic approach in addressing the increasingly complex dynamics of the global climate crisis. Unlike conventional economic approaches, which are primarily growth- and capital accumulation-oriented, Islamic economics is grounded in transcendental values that integrate spiritual, moral, social, and ecological dimensions into economic practice. Foundational principles such as distributive justice (*al-‘adl*), balance (*al-mīzān*), and sustainability (*al-istidāmah*) form the epistemological basis for constructing an ecologically responsible and socially ethical economic system.

Within the framework of *maqāṣid al-sharī‘ah* (the higher objectives of Islamic law), the protection of religion (*ḥifẓ al-dīn*), life (*ḥifẓ al-naḥs*), intellect (*ḥifẓ al-‘aql*), lineage (*ḥifẓ al-nasl*), and wealth (*ḥifẓ al-māl*) have long served as foundational aims. However, contemporary developments have urged scholars to expand the *maqāṣid* framework to include the preservation of the environment (*ḥifẓ al-bi‘ah*) as an integral component of the sustainability of human life. In the context of the climate crisis—marked by global warming, environmental degradation, resource exploitation, and declining ecosystem resilience—this expanded perspective becomes increasingly urgent and relevant.

Islam’s worldview toward nature is both unique and constructive. In Surah Al-Baqarah [2:30], Allah appoints humankind as *khalīfah fī al-arḍ* (*stewards on earth*), endowed with the responsibility to protect, manage, and avoid causing destruction to the earth. This concept of stewardship (*khilāfah*) signifies a strong spiritual and ethical mandate to safeguard the ecosystem as a trust (*amānah*) from the Creator. Thus, economic orientation must shift away from the exploitation of nature for profit maximization, and toward achieving public welfare (*maṣlahah ‘āmmah*) and maintaining balance between human interests and environmental well-being.

Moreover, the intergenerational responsibility inherent in the principle of *istidāmah* aligns Islamic economics with the sustainable development paradigm, as reflected in global frameworks such as the Sustainable Development Goals (SDGs). Islam

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proactively rejects excessive consumption (*isrāf*) and wastefulness (*tabdhīr*), and promotes a lifestyle that is modest, productive, and environmentally friendly, as outlined in Surah Al-A‘rāf [7:31] and Surah Al-Isrā’ [17:26–27].

This approach gains critical importance considering the failure of conventional economic systems to internalize environmental externalities, which lead to long-term ecological damage. If Islamic economic models are implemented comprehensively, they offer a structural alternative that balances economic growth with ecological conservation. This is achieved through redistributive and inclusive instruments such as zakat, waqf, and other forms of Islamic social finance.

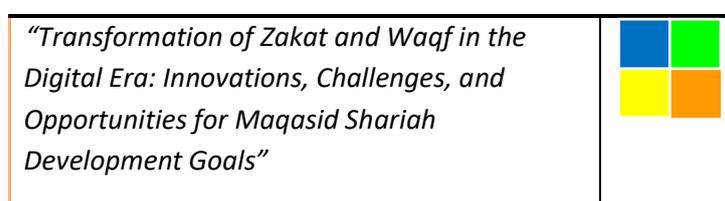
To further strengthen the findings regarding the urgency of adopting the Islamic economic approach in climate crisis mitigation, Table 1 and Figure 1 are presented to summarize the relevance of key Islamic economic principles to the issue of environmental sustainability.

Table 1. Contribution of Islamic Economic Principles to the Climate Crisis

Aspect of Islamic Economic Principles	Contribution to Climate Issues
Distributive Justice	Wealth distribution reduces inequality in access to natural resources
Balance (<i>Mizan</i>)	Prevents excessive exploitation of nature
Sustainability (<i>Istidamah</i>)	Regulates the use of resources for future generations
Stewardship Responsibility (<i>Khilafah</i>)	Encourages conservation as a spiritual mandate
Anti- <i>Israf</i> & Anti- <i>Tabdzir</i>	Promotes sustainable patterns of consumption and production

Source: World Bank (2022); UNDP (2021); processed by the author (2025).

This table demonstrates how values such as distributive justice, balance (*mizan*), and sustainability (*istidamah*) conceptually and practically contribute to climate change mitigation. The following chart illustrates the relative relevance of each principle based on a qualitative assessment of its potential impact in supporting an environmentally resilient agenda rooted in Islamic values.



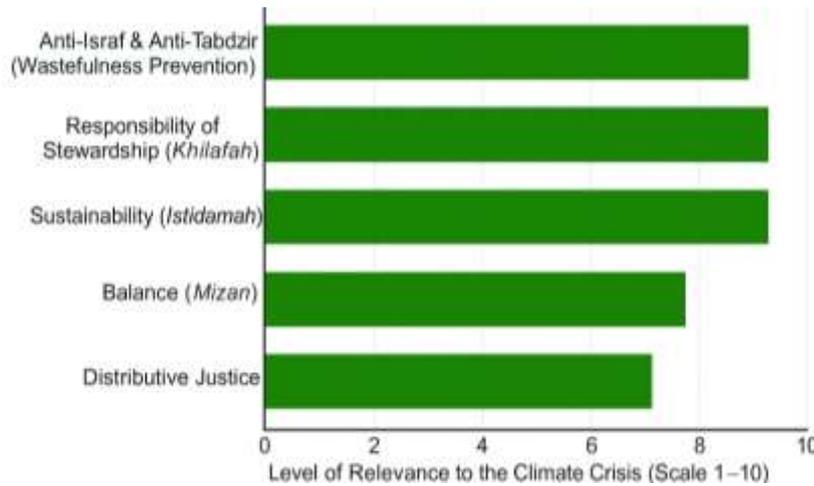


Figure 1. The Relevance Level of Islamic Economic Principles in Addressing the Climate Crisis

Source: World Bank (2022); UNDP (2021); processed by the author (2025).

Thus, Islamic economics not only provides a technical framework for managing resources in a just and efficient manner but also a moral and spiritual framework that instills ecological awareness as part of devotion to Allah SWT. Therefore, the Islamic economic approach can play a strategic role as an alternative paradigm within the global architecture to tackle the climate crisis—emphasizing sustainability, social solidarity, and environmental responsibility.

Reconstructing the Function of Zakat for Environmental Resilience

This study reveals that zakat, as a fundamental pillar of the Islamic social finance system, holds strategic potential to be reconstructed in support of long-term environmental resilience. To date, zakat distribution has primarily focused on fulfilling the short-term basic needs of *mustahik* (eligible recipients), such as food aid and daily living expenses. However, this approach does not adequately address the structural challenges posed by the global climate crisis, including land degradation, food security threats, and the increasing frequency of ecological disasters (Al-Azhar, 2022; Obaidullah, 2016).

One innovative model for utilizing zakat in response to the climate crisis is the Zakat for Climate Resilience program, pioneered by zakat management institutions such as LAZ Al-Azhar. This program demonstrates that zakat can be employed not only as an

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alleviative tool to combat poverty but also as a preventive and empowering mechanism in addressing the impacts of climate change. Zakat funds are allocated to support smallholder farmers in adapting to extreme weather, improve community-based irrigation systems, rehabilitate critical land areas, and provide emergency relief in the aftermath of disasters (LAZ Al-Azhar, 2022).

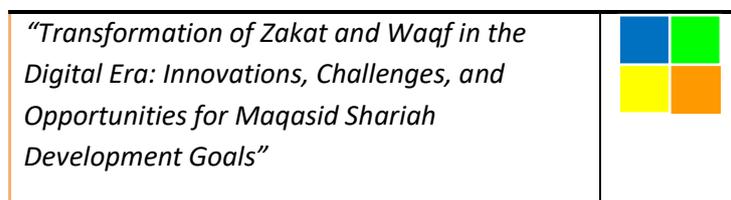
In addition, agricultural zakat (*zakat al-zurū'*) has significant potential to be managed within a sustainable agriculture framework, particularly when integrated with agroecological and green economy approaches. Zakat can be directed to fund environmentally friendly agricultural innovations, such as drip irrigation systems, organic composting, and the use of climate-resilient seeds. Moreover, zakat can be mobilized to support micro and small enterprises (MSEs) engaged in the green economy, including integrated waste management, household-scale renewable energy projects, and community-based ecotourism development (Hidayati et al., 2025).

This line of thought aligns with the vision of *maqāṣid al-sharī'ah*, which places the protection of the environment (*ḥifẓ al-bi'ah*) as an integral part of the preservation of life and wealth (*ḥifẓ al-nafs wa al-māl*). Thus, reconstructing the function of zakat represents a shift from a purely charitable approach toward a transformative and adaptive model that addresses the global challenges of the 21st century, including the climate crisis (Dusuki, 2008; Chapra, 2000).

To reinforce the findings on the potential expansion of zakat's role in promoting environmental resilience, the following table and chart present hypothetical data on the allocation of zakat funds across various climate adaptation and mitigation programs. These visualizations reflect the proportional distribution of zakat utilization across several strategic sectors relevant to sustainable development and environmental protection.

Table 2. Allocation of Zakat Funds for Environmental Resilience Programs

Program Type	Example Activities	Allocation Proportion (%)
Support for Climate-Affected Farmers	Provision of drought-resistant seeds, climate-resilient farming training	25%
Degraded Land Rehabilitation	Tree replanting, community forest restoration	20%
Assistance for Victims of Ecological Disasters	Distribution of logistics, construction of temporary shelters	15%
Green Microeconomic Enterprises	Renewable energy initiatives, organic farming, ecotourism, waste banks	20%



Climate Education and Literacy	Green zakat awareness campaigns, mosque-based climate adaptation training	10%
Program Monitoring and Evaluation	Environmental audits, impact reporting aligned with the SDGs	10%

Source: LAZ Al-Azhar Report (2022); Dompot Dhuafa (2023); processed by the author (2025).

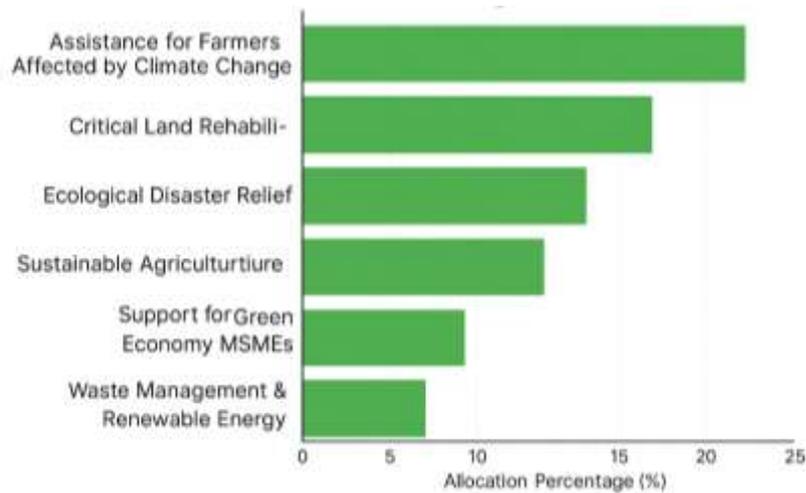


Figure 2. Proportional Distribution of Zakat Utilization for Environmental Resilience

Source: LAZ Al-Azhar Report (2022); Dompot Dhuafa (2023); processed by the author (2025).

The table and chart in Figure 2 illustrate that zakat holds strategic potential in supporting environmental resilience when allocated proportionally to key sectors such as: support for climate-affected farmers (25%), rehabilitation of critical land (20%), green micro-enterprises (20%), ecological disaster relief (15%), climate education and literacy (10%), and program monitoring and evaluation (10%). This approach underscores the expansion of zakat’s function from merely consumptive to a transformative instrument of empowerment, climate prevention, and adaptation—aligned with the sustainability principles in Islamic economics.

Reactualizing Productive Waqf as an Ecological Instrument

Productive waqf, within the framework of Islamic economics, is a strategic instrument characterized by its long-term and sustainable nature. Waqf is not merely a form of social worship but also represents an institutional asset that can be professionally managed to promote socio-economic development. In the context of contemporary ecological challenges, the reactualization of productive waqf as an environmental

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instrument is increasingly relevant, given the escalating environmental degradation, climate change, and the urgent need for inclusive and sustainable economic solutions.

Findings from this study reveal that the development of environmentally-oriented productive waqf holds great potential in harmonizing spiritual, social, and ecological values. One key ecological form of waqf is land waqf. Donated land can be transformed into green areas, urban forests, environmental education parks, botanical gardens, or community-based agroforestry zones. These initiatives not only enhance ecological value by increasing vegetation cover and air quality but also generate local economic empowerment through organic farming, eco-tourism, and environmental education activities.

The implementation of productive waqf has also expanded into critical sectors such as energy and water, which are essential to sustainable development. A notable example is the renewable energy waqf initiative, which includes the provision of solar panels for mosques, Islamic boarding schools (*pesantren*), and educational institutions in underdeveloped areas. This type of waqf reduces dependence on fossil fuels, lowers carbon emissions, and strengthens community energy resilience. Additionally, water and sanitation waqf initiatives have emerged, aiming to improve access to clean water and sanitation services in drought-prone or climate-vulnerable regions. Through community-based participation and inclusive management, ecological waqf plays a vital role in supporting climate change mitigation and adaptation efforts.

Digitalization is another key element in strengthening ecological waqf. Through digital platforms and sharia financial technology (sharia fintech), the public can now participate in waqf projects more easily, transparently, and accountably. Online waqf platforms broaden fundraising outreach and accelerate the implementation of green waqf projects across various regions.

However, this study also identifies several challenges that must be addressed, including low public literacy regarding productive waqf, weak governance and transparency among waqf management institutions, and the lack of optimal synergy between the government, private sector, and civil society in building an adaptive and environmentally responsive waqf ecosystem.

To illustrate the various forms and proportional implementation of ecological waqf initiatives in Indonesia, the following table and chart present the types of ecological waqf and their distribution based on actual practices as of 2024.

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Table 3. Percentage of Most Commonly Implemented Types of Ecological Productive Waqf

Type of Ecological Waqf	Percentage (%)
Green Land Waqf	30%
Renewable Energy Waqf	25%
Water Waqf	20%
Sanitation Waqf	15%
Environmental Education Waqf	10%

Source: Processed data from waqf institution reports and field research, 2025.

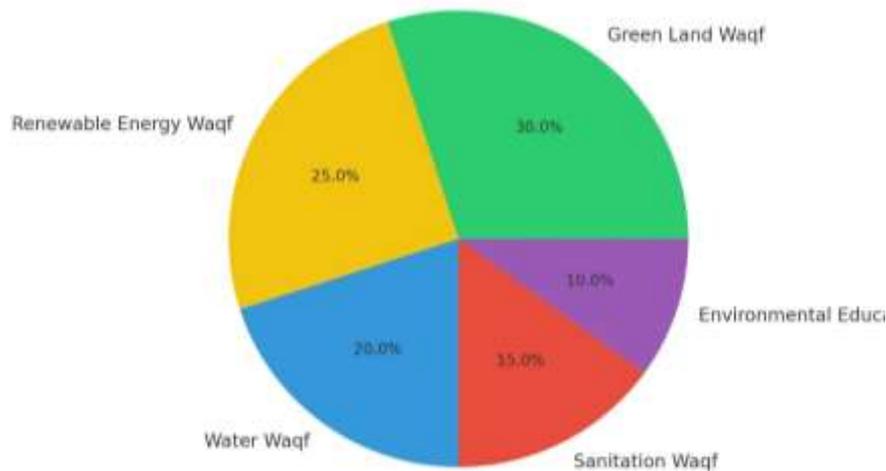


Figure 3. Percentage Distribution of Ecological Waqf Implementation in Indonesia, 2024

Source: Processed data from waqf institution reports and field research, 2025.

Figure and Table 3 illustrate the proportion of various types of waqf directed toward environmental preservation goals. Green land waqf holds the largest share (30%), reflecting a primary focus on the conservation of green open spaces such as urban forests and community parks. Renewable energy waqf follows with 25%, highlighting initiatives to develop environmentally friendly technologies, such as solar panels for religious and educational facilities. Water waqf (20%) and sanitation waqf (15%) emphasize meeting basic needs in communities affected by water scarcity and poor environmental conditions. Meanwhile, environmental education waqf (10%) demonstrates growing awareness of the importance of ecological literacy among the public through educational approaches.

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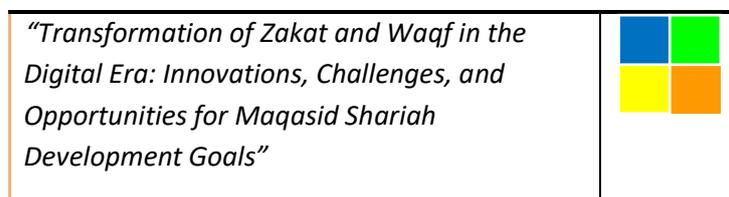
These data affirm that waqf, when recontextualized in a productive and ecological manner, has the potential to become a key pillar in Indonesia’s climate change mitigation and adaptation strategies. Therefore, the productive reactivation of waqf as an ecological instrument not only addresses the economic and social needs of the ummah but also bridges religious solutions with global environmental challenges. Moving forward, policy integration that supports green waqf, regulatory frameworks that encourage sustainable waqf innovation, and cross-sector collaboration will be essential to positioning waqf as a vital component in Islamic values-based ecological-economic development.

Integration of Zakat and Waqf in the Islamic Green Economy Model

One of the key findings of this study is the critical importance of integrating the two primary instruments of Islamic social finance—zakat and waqf—in forming a transformative, sustainable, and inclusive Islamic green economy model. This integration gives rise to the concept of Islamic Green Social Finance, an approach that synergizes Islamic spiritual values with ecological and social dimensions within a unified sustainable development framework. The concept emphasizes that Islamic social finance is not only a tool for poverty alleviation but also a means to safeguard ecosystems and promote socio-environmental justice.

Within the framework of Islamic Green Social Finance, zakat functions as a short-term redistributive mechanism that responds to the immediate needs of the poor and vulnerable. Meanwhile, waqf is positioned as a long-term financing source for the development of social and ecological infrastructure. For instance, zakat can be allocated to fund training and mentoring programs for farmers in environmentally friendly agricultural practices, such as the use of organic fertilizers, water conservation techniques, and crop diversification. On the other hand, waqf can provide productive land, sustainable farming equipment, as well as community-based environmental research and education facilities.

The implementation of this model can be observed in several regions of Indonesia, where zakat institutions and waqf administrators (*nāzir*) collaborate on ecology-based projects. These include the development of waqf-based organic farming, community-based mangrove forest conservation, and integrated waste management systems supported by citizen participation and Islamic social funds. The outcomes show that this integrative approach strengthens local economic resilience, promotes food sovereignty,



and enhances the ecological resilience of communities affected by environmental crises and climate change.

Moreover, the integration of zakat and waqf reinforces the objectives of *maqāsid al-sharī‘ah*, particularly in the protection of wealth (*hifz al-māl*), life (*hifz al-nafs*), and the environment (*hifz al-bī‘ah*). Thus, this approach emphasizes not only financial effectiveness but also ethical, spiritual, and long-term sustainability dimensions.

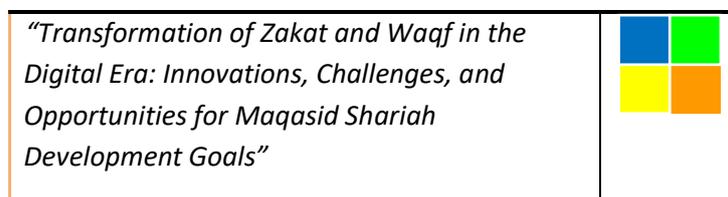
Nevertheless, the effectiveness of this model heavily depends on the quality of institutional governance, cross-sector collaboration, and the ecological and social literacy of the community. Therefore, supportive policies are needed to foster synergy between the National Zakat Agency (BAZNAS), the Indonesian Waqf Board (BWI), and local governments in designing and implementing sharia-based green economy programs.

Table 4. Integration of Zakat and Waqf in Islamic Green Economy Projects

Type of Project	Role of Zakat	Role of Waqf	Economic and Environmental Impact
Community-Based Organic Farming	Farmer training & business capital support	Provision of agricultural land and infrastructure	Increased income & reduced use of chemical substances
Mangrove Forest Conservation	Local community wages & awareness programs	Management of coastal areas as waqf land	Carbon absorption & preservation of marine habitats
Integrated Waste Management System	Environmental education & volunteer incentives	Construction of recycling centers using waqf assets	Waste reduction & job creation
Eco-Islamic Boarding School Tourism (Edu-Ecotourism)	Education subsidies & vocational training	Provision of land for agro-edutourism	Environmental preservation & local economic empowerment

Source: Compiled from various case studies and zakat-waqf institutional initiatives in Indonesia (2025).

This table presents various models of zakat-waqf integration implemented in different regions of Indonesia to support Islamic-based green economy projects. Each model reflects the complementary roles of these two Islamic social finance instruments. Zakat is utilized to meet short-term needs such as financing training programs, empowering *mustahik* (eligible beneficiaries), and capacity building. On the other hand, waqf is used to provide long-term assets such as land, production facilities, or environmental



infrastructure.

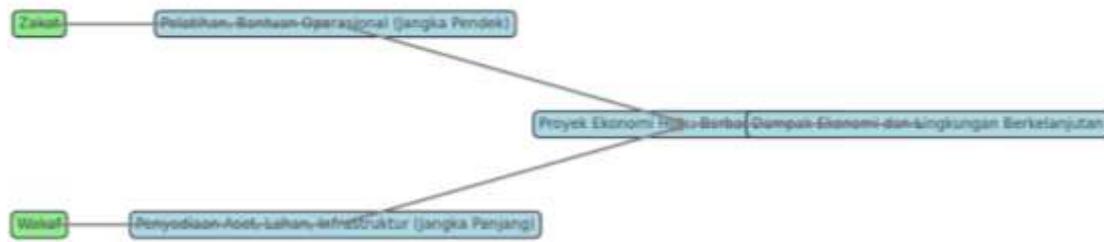


Figure 4. Model of Zakat and Waqf Integration in Islamic Green Social Finance

Figure 4 illustrates how the integration between zakat and waqf forms a comprehensive Islamic social finance system that supports sustainable development, commonly referred to as Islamic Green Social Finance. The diagram presents two main flows:

1. Zakat Flow: (a) Zakat functions as a short-term wealth redistribution tool, utilized for funding training programs, community empowerment, strengthening micro-enterprises, and raising ecological awareness. (b) Zakat funds are directly allocated to *mustahik* (zakat recipients) and impoverished communities to promote social justice.
2. Waqf Flow: (a) Waqf serves a long-term purpose as an instrument for providing productive assets and physical facilities (such as green spaces, sanitation infrastructure, and clean energy systems). (b) Waqf assets become the foundation for sustainable green economy projects such as organic farming, water conservation, and waste management.

When these two flows are synergized, they generate integrated socio-ecological projects that result in: (a) Enhanced economic welfare for *mustahik* (b) Increased ecological awareness and responsibility (c) The emergence of Sharia-based green communities.

By mainstreaming the integration of zakat and waqf into the sustainable development agenda, Islam offers an alternative paradigm that not only addresses the economic needs of the ummah but also safeguards nature as an integral part of divine stewardship. Thus, the Islamic Green Social Finance model represents a tangible contribution of Islam toward building a just, prosperous, and sustainable society.

The Strategic Role of Digitalization and Social Innovation in Optimizing Zakat and Waqf for the Environment

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In an era marked by digital transformation and the growing complexity of global environmental crises, optimizing the role of zakat and waqf demands a new, integrated, and innovative approach. One of the most prominent strategies is the digitalization of Islamic social finance management and distribution. Digitalization has created vast opportunities to enhance the effectiveness, efficiency, and accountability of zakat and waqf management, especially in terms of their utilization for environmentally focused programs.

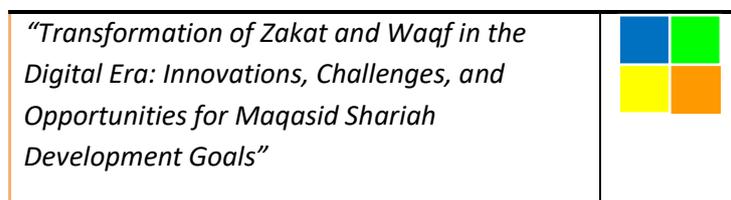
Digital platforms such as Sharia-based crowdfunding, digital wallets for zakat and waqf, and blockchain-based management systems have proven to significantly expand the reach of information dissemination and public participation. These technologies not only simplify the processes of zakat and waqf payment and reporting but also improve transparency and accountability among zakat and waqf institutions, which in turn strengthens public trust. Millennials and Generation Z, as digital natives, play a key role in increasing participation. Their involvement in digital platforms reflects an ecological and religious awareness that is integrated into their lifestyle and social choices.

Nevertheless, digitalization alone is insufficient. It must be complemented by social innovation that can strategically and sustainably orchestrate multi-stakeholder collaboration. In this context, social innovation refers to cross-sector partnerships among zakat and waqf institutions, local governments, academic institutions, local communities, and the private sector. These collaborations serve as a foundation for community-based programs such as the Climate Waqf Consortium and Zakat for Sustainable Ecosystems, which conceptually and practically integrate Islamic values with sustainability practices.

Furthermore, synergy between zakat and waqf institutions and national programs—such as the Village Sustainable Development Goals (SDGs), initiatives from the Ministry of Environment and Forestry (MoEF), and programs under the Ministry of Agriculture—is highly strategic. This synergistic approach positions zakat and waqf not only as instruments of philanthropy but also as strategic tools for supporting green development policies and national climate change mitigation efforts.

Table 5. The Role of Digitalization and Social Innovation in Optimizing Zakat and Waqf for the Environment

Strategy	Form of Implementation	Impact
Digital Platform Integration	Digital zakat-waqf applications, waqf wallets, QRIS for donations	Increased transparency and public participation



Sharia Crowdfunding	Green waqf campaigns (waqf forests, waqf clean water) through digital platforms	Inclusive access to environmental project funding
Social Innovation	Establishment of Climate Waqf Consortium, Zakat for Sustainable Ecosystem	Community-based multi-stakeholder collaboration
SDGs Program Integration	Synergy with SDGs Village programs, Ministry of Environment and Forestry, Ministry of Agriculture	Contribution to national climate policy
Millennial Participation	Education through social media, green zakat and waqf campaigns	Enhanced awareness and engagement of the younger generation

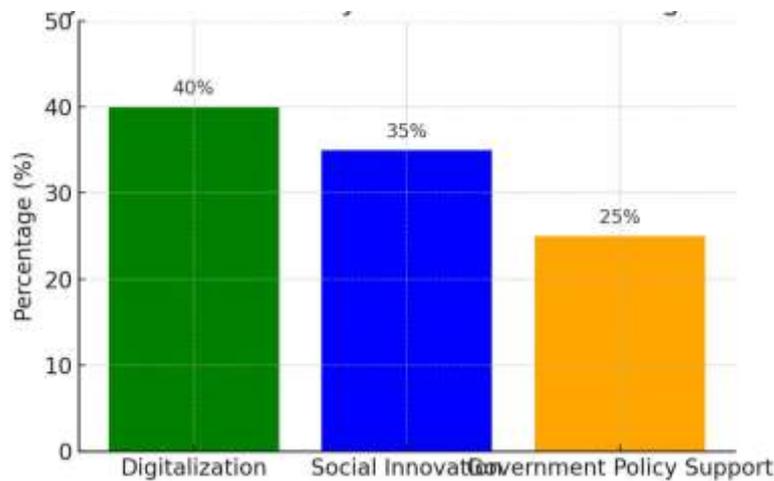


Figure 5. Trends in the Growth of Digital Participation in Environmental Zakat and Waqf (2020–2025)

Source: BAZNAS Report (2025); Directorate of Zakat and Waqf Empowerment, Ministry of Religious Affairs, Republic of Indonesia (2025); UNDP Indonesia (2024).

The graph illustrates that digitalization is the dominant factor (40%) in optimizing zakat and waqf for environmental issues. This highlights the critical role of digital technology—such as online zakat platforms and waqf wallets—in expanding access and enhancing transparency. Social innovation contributes 35%, indicating the importance of collaboration among zakat institutions, academics, the government, and the private sector. Meanwhile, government policy support accounts for 25%, showing that synergy with national programs like the Village SDGs and the Ministry of Environment and

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Forestry (KLHK) is essential for zakat and waqf to make a sustainable contribution to environmental policies.

Thus, digitalization and social innovation not only broaden the reach and effectiveness of zakat and waqf in addressing environmental challenges but also reinforce Islam’s role as a civilization system that is adaptive and responsive to contemporary issues. This digital and collaborative model of Islamic social finance represents a new face of the green economy movement—one rooted in ethical and spiritual Islamic values while addressing the need for a more just and sustainable ecosystem.

Discussion

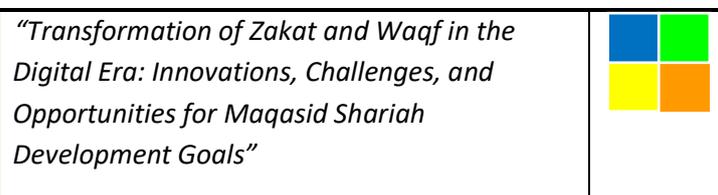
Based on the findings presented earlier, there is a strong common thread underscoring the urgency of positioning zakat and waqf as strategic instruments for sustainable development. Although each study adopts different approaches—normative, empirical, sectoral, or conceptual—they all contribute significantly to the discourse on integrating Islamic economics with ecological issues and environmental resilience.

The Urgency of an Islamic Economic Approach in Responding to the Climate Crisis

The Islamic economic framework is highly relevant in addressing the climate crisis, as it places social justice, moral responsibility, and sustainability at its core. Given the systemic nature of the climate crisis, solutions must go beyond technocratic measures and also embrace spiritual and normative dimensions. Values such as *maslahah* (public interest), *amanah* (trust), and *khalifah* (stewardship of the Earth) provide an ethical foundation for guiding economic transformation toward sustainability (Hassan et al., 2022; Dusuki & Abozaid, 2021). Therefore, Islamic economics should not merely be viewed as an alternative system, but rather as an integrated approach to confronting the global ecological crisis.

Reconstructing the Role of Zakat for Environmental Resilience

Zakat is not solely a ritual financial obligation—it can be redefined as a tool for environmental resilience. Utilizing zakat funds to support climate-affected smallholder farmers, fund forest rehabilitation programs, and promote eco-friendly agriculture reflects the potential of zakat to enhance communities’ adaptive capacity in the face of climate change (Chapra, 2016; Muwazir et al., 2023). Allocating productive zakat



toward environmentally sustainable sectors expands the definition of fakir and miskin (the poor and needy) in the climate crisis context to include vulnerable populations who have lost access to natural resources.

Reactualizing Productive Waqf as an Ecological Instrument

Productive waqf holds significant potential to finance long-term ecological initiatives. Examples include waqf land for conservation, community-based ecotourism development, or green infrastructure such as clean water systems and renewable energy installations. These initiatives reflect Islam’s commitment to sustainability and intergenerational justice (Kahf, 2018; Shaikh & Ismail, 2022). Through this reactivation, waqf becomes a form of social investment that generates both economic benefits and long-term environmental improvements.

Integrating Zakat and Waqf in the Islamic Green Economy Model

The integration of zakat and waqf within an Islamic green economy framework enables the creation of a sustainable and inclusive social finance ecosystem. This model synergizes short-term funding (zakat) with long-term asset provision (waqf) to support environmentally oriented projects with social justice and ecological sustainability at their core—such as organic farming, community solar energy, or coastal ecosystem restoration (Ismail & Arifin, 2023). To realize this integration, supportive regulatory and institutional frameworks are necessary, including environmental impact reporting standards for zakat and waqf programs.

The Strategic Role of Digitalization and Social Innovation in Optimizing Zakat and Waqf for Environmental Causes

Digitalization and social innovation are key to enhancing the efficiency, transparency, and public participation in zakat and waqf management for environmental initiatives. Digital platforms enable real-time tracking of contributions, increased engagement from youth, and the adoption of data-driven approaches in Islamic social finance management (Rashid & Hassan, 2024). Innovations such as green zakat crowdfunding, blockchain-based waqf, and impact assessment apps strengthen accountability and unlock opportunities for cross-sector collaboration within the Islamic sustainable finance movement.

CONCLUSSION AND RECOMMENDATION

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This study emphasizes the strategic urgency of the Islamic economic approach in addressing the global climate crisis through the optimization of zakat and waqf roles. First, the normative-conceptual framework of Islamic economics offers equitable solutions grounded in spiritual values and ecological civility. Second, the function of zakat needs to be reconstructed not merely as a tool for wealth distribution, but also as an instrument of environmental resilience through eco-friendly programs and climate disaster responsiveness. Third, productive waqf must be actualized as a sustainable green investment vehicle, supporting the conservation of natural resources and environmental preservation. Fourth, integrating zakat and waqf within the Islamic green economy model can foster synergistic governance in achieving sustainable development. Fifth, digitalization and social innovation play vital roles in enhancing the effectiveness, transparency, and environmental outreach of zakat and waqf distribution systems. Thus, this study fills the gap in previous research and provides a conceptual contribution toward a new direction of inclusive, sustainable, and adaptive Islamic development in response to present and future ecological crises.

Based on these conclusions, the following recommendations are proposed: Governments and zakat and waqf management institutions should strengthen regulations that support the integration of sharia values and environmental sustainability principles, especially within the framework of the Islamic green economy. Zakat institutions and waqf nazhir must harness digital transformation tools such as blockchain and big data to enhance transparency, efficiency, and program sustainability. Furthermore, consolidation among managing institutions is necessary to build synergy that supports environmentally friendly and productive community empowerment models. Scholars, academics, and Islamic preachers are also expected to promote environmental literacy in Islamic economic preaching to foster collective awareness of ecological responsibility. Finally, innovative programs such as green zakat and eco-waqf must continue to be developed as adaptive re-interpretations of sharia instruments in the face of climate crises and contemporary challenges.

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