Islamic Review: Jurnal Riset dan Kajian Keislaman ISSN. 2089-8142
DOI: doi.org/10.35878/islamicreview.v14.i1.1357 e-ISSN. 2654-4997
Volume 14 Nomor 1 April 2025

Optimizing Cash Waqf for Financing Climate Change Mitigation Programs: Opportunities and Challenges

Thifal Raniah[1*] & Ade Nur Rohim[2]
Universitas Pembangunan Nasional Veteran Jakarta, Indonesia
Email: 2110116044@mahasiswa.upnvj.ac.id[1], adenurrohim@upnvj.ac.id[2]

Abstract
Financing climate change mitigation requires substantial expenditures from all nations, particularly developing countries, which are more vulnerable to climate change impacts. Cash waqf, as one of the Islamic social finance instruments, has the potential to serve as an alternative financing mechanism to support climate change mitigation efforts. This study aims to introduce a new paradigm for developing cash waqf-based climate change mitigation programs. Using a qualitative research method, data were collected through literature studies and analyzed using descriptive content analysis. Waqf and environmental sustainability align with the objectives of Maqashid Shariah, which emphasize human well-being. Innovations in climate change mitigation financing can be implemented through Cash Waqf Linked Sukuk (CWLS), Blue Waqf, and Green Waqf. Although cash waqf presents opportunities as an alternative financing mechanism for climate change mitigation, establishing a supportive ecosystem remains essential for its effective implementation. Enhancing stakeholder engagement, regulatory frameworks, and public awareness of cash waqf and climate change mitigation is crucial to maximizing its potential.

Pembiayaan mitigasi perubahan iklim membutuhkan biaya yang cukup besar dari semua negara, terutama negara-negara berkembang yang lebih rentan terhadap dampak perubahan iklim. Wakaf uang, sebagai salah satu instrumen keuangan sosial Islam, memiliki potensi untuk menjadi salah satu mekanisme pembiayaan alternatif untuk mendukung upaya mitigasi perubahan iklim. Penelitian ini bertujuan untuk memperkenalkan paradigma baru dalam mengembangkan program mitigasi perubahan iklim berbasis wakaf tunai. Dengan menggunakan metode penelitian kualitatif, data dikumpulkan melalui studi literatur dan dianalisis dengan menggunakan analisis isi deskriptif. Wakaf dan kelestarian lingkungan hidup sejalan dengan tujuan maqashid syariah yang menekankan pada kesejahteraan manusia. Inovasi dalam pembiayaan mitigasi perubahan iklim dapat diimplementasikan melalui Cash Waqf Linked Sukuk (CWLS), Wakaf Biru, dan Wakaf Hijau. Meskipun

History of Article:
Submitted: Okt 8, 2024; Accepted: March 15, 2025; Published: Apr 27, 2025
*Correspondening Auhtor: Thifal Raniah

wakaf uang memiliki peluang sebagai mekanisme pembiayaan alternatif untuk mitigasi perubahan iklim, membangun ekosistem yang mendukung tetap penting untuk implementasi yang efektif. Meningkatkan keterlibatan pemangku kepentingan, kerangka kerja peraturan, dan kesadaran masyarakat tentang wakaf uang dan mitigasi perubahan iklim sangat penting untuk memaksimalkan potensinya.
Keywords: Islamic Social Finance; Cash Waqf; Climate Change; Financing; Environmental Sustainability

Introduction

Climate change has significantly disrupted ecosystems, leading to the extinction of hundreds of native animal species, both on land and in the ocean. This phenomenon is supported by research indicating that adaptation efforts in the agricultural sector to cope with extreme temperatures have yet to accelerate agricultural productivity, which has been declining for the past 50 years.[1] As Earth's environmental conditions become increasingly unpredictable, ecological imbalances will heighten disaster risks and, if left unaddressed, may ultimately threaten global food security.[2] Such environmental instability inevitably impacts human populations. The quality of human life is expected to decline across various aspects, including health and economic stability. It is no longer possible to deny the reality of climate change, as it is both occurring and largely driven by human activities. Every storm, flood, landslide, and centimeter of rising sea levels should serve as a stark reminder that Earth has long been mistreated by its inhabitants.[3] Immediate and extensive efforts are necessary to safeguard life on this planet. This urgency is particularly pronounced in Southeast Asia, a region identified as one of the most vulnerable to climate change. Given the mounting evidence, communities in Southeast Asia should be increasingly concerned, as time continues to pass and climate change has the potential to evolve into an existential crisis for the region.[4]

---

[1] Intergovernmental Panel On Climate Change (Ipcc), *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, 1st ed. (Cambridge University Press, 2023), https://doi.org/10.1017/9781009157896.

[2] Shouro Dasgupta and Elizabeth J. Z. Robinson, "Attributing Changes in Food Insecurity to a Changing Climate," *Scientific Reports* 12, no. 1 (March 18, 2022): 4709, https://doi.org/10.1038/s41598-022-08696-x.

[3] Matthew Schneider-Mayerson, *Eating Chilli Crab in the Anthropocene* (Ethos Books, 2022).

[4] The ASEAN Admin, "Acting Now for Tomorrow: Addressing Climate Mobility Challenges in Southeast Asia," *The ASEAN Magazine* (blog), February 1, 2024, https://theaseanmagazine.asean.org/article/acting-now-for-tomorrow-addresing-climate-mobility-challenges-in-southeast-asia/.

Optimism must be maintained, and all necessary efforts must be undertaken to combat climate change. One concrete step in this endeavor is the Paris Agreement, a global commitment in which countries have pledged to limit global warming to a maximum increase of 1.5°C. This optimism is further embodied in the Nationally Determined Contributions (NDCs) or Enhanced Nationally Determined Contributions (ENDCs), which require each participating country to report and update their strategies for achieving these temperature targets. These reports encompass various key aspects, including mitigation, adaptation, financing, technology transfer, capacity building, and transparency. The ultimate goal is to curb global temperature rise, enhance resilience to climate change, and ensure that financial flows are aligned with climate objectives.[5]

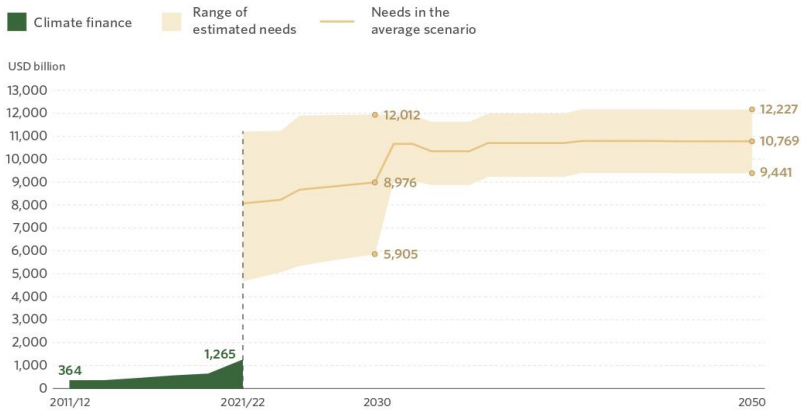
As one of the 179 countries that have endorsed the Enhanced Nationally Determined Contributions (ENDC), Indonesia has updated its climate action report. In its mitigation efforts, the country has increased its Greenhouse Gas (GHG) emissions reduction target from 29% to 31.89% through domestic efforts, while with international support, the target has risen from 41% to 43.2% by 2030. Additionally, Indonesia has accelerated its Net Zero Emissions (NZE) target by a decade, aiming to achieve it before 2050. To meet these objectives, Indonesia's mitigation strategies are focused on the energy, forestry, waste management, agriculture, and industrial sectors. Meanwhile, in its adaptation efforts, Indonesia is committed to enhancing climate resilience through infrastructure development, community empowerment, and ecosystem protection, supported by an integrated climate risk management approach. The adaptation process prioritizes key sectors, including water resources, agriculture, coastal and marine ecosystems, and public health, particularly for communities most vulnerable to climate change impacts.[6] With increasing ambitions in both mitigation and adaptation, alternative funding sources are essential to support the growing financial needs required for these climate actions.

According to Graph 1, global climate finance needs have steadily increased, rising from $364 billion in 2011/2012 to $1.265 trillion in 2021/2022. Despite this growth, the figure remains significantly below the projected annual climate

[5] European Capacity Building Initiatives. Pocket Guide to NDCs. accessed September 15, 2024, https://ndcpartnership.org/knowledge-portal/climate-toolbox/2020-pocket-guide-ndcs.

[6] "Enhanced NDC - Republic of Indonesia | UNFCCC," accessed September 16, 2024, https://unfccc.int/documents/615082.

finance requirement of $12 trillion by 2050.[7] The gap between available and required funding highlights the urgent need for alternative financing sources, particularly for developing countries like Indonesia, which remains highly vulnerable to climate change impacts. According to the Intergovernmental Panel on Climate Change (IPCC), developing nations will require $127 billion annually until 2030 and approximately $295 billion per year by 2050 to effectively adapt to climate change.[8] Therefore, innovative and alternative financing strategies are essential to bridge the funding gap and strengthen global climate resilience.



Graph 1.
Global Tracked Climate Finance and Average Estimated Annual Needs Through 2050

Islamic finance provides social financial instruments that reflect the integration of Shariah financial principles with environmental and energy-related aspects in a mutually supportive manner. One of these instruments is waqf.[9] Shariah-compliant financing, particularly through the waqf scheme, offers a potential solution to bridge the funding gap in financing climate change mitigation programs, as outlined in the Green Waqf Framework. Beyond asset-

[7] "Global Landscape of Climate Finance 2023," CPI, https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/.

[8] Katherine Calvin et al., "IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (Eds.)]. IPCC, Geneva, Switzerland.," First (Intergovernmental Panel on Climate Change (IPCC), July 25, 2023), https://doi.org/10.59327/IPCC/AR6-9789291691647.

[9] "GREEN WAQF FRAMEWORK," UNDP, https://www.undp.org/indonesia/publications/green-waqf-framework.

based waqf, cash waqf can also serve as an effective instrument for climate change mitigation financing. According to data from the Indonesian Waqf Board (BWI), the potential of cash waqf in Indonesia reaches IDR 180 trillion per year. However, as of 2023, actual collection stood at only around 2%, approximately IDR 2.23 trillion.[10] This figure underscores the vast untapped potential of cash waqf in supporting climate mitigation initiatives. If left unused, this potential would be wasted. Conversely, optimal utilization of cash waqf can generate substantial economic, social, and environmental benefits for all stakeholders.

Several previous studies have explored the potential of cash waqf as a financing instrument to support environmental sustainability. Musari highlights the concept of cash waqf and green sukuk as potential instruments for climate finance in Indonesia. However, this study does not delve into the practical mechanisms, feasibility, and challenges associated with implementing cash waqf in climate change mitigation projects.[11] Mardani explores the theoretical role of waqf in promoting the green economy and environmental sustainability, but the study lacks empirical analysis on its implementation, financing optimization, and practical challenges.[12] Similarly, Muhammad's research confirms that cash waqf holds potential for climate change mitigation and adaptation, particularly within Malaysia's policy framework.[13] However, this study does not further examine the opportunities and challenges faced by various stakeholders, nor does it compare policy differences across countries, including Indonesia. Although existing studies indicate that cash waqf can be utilized for environmental conservation, its implementation as an alternative climate finance instrument remains suboptimal. Additionally, discussions on the opportunities and operational challenges of cash waqf utilization remain limited.

---

[10] Redaksi BWI, "GERAKAN INDONESIA BERWAKAF," *Badan Wakaf Indonesia | BWI.go.id* (blog), June 9, 2024, https://www.bwi.go.id/9509/2024/06/09/gerakan-indonesia-berwakaf/.

[11] Khairunnisa Musari, "Integrating Green Sukuk and Cash Waqf Linked Sukuk, the Blended Islamic Finance of Fiscal Instrument in Indonesia: A Proposed Model for Fighting Climate Change," *International Journal of Islamic Khazanah* 12, no. 2 (July 6, 2022): 133–44, https://doi.org/10.15575/ijik.v12i2.17750.

[12] Dede Aji Mardani, "Wakaf dan Ekonomi Hijau: Upaya Mengurangi Perubahan Iklim dan Emisi Gas Karbon," *La Zhulma | Jurnal Ekonomi dan Bisnis Islam* 2, no. 1 (March 30, 2023): 23–34, https://journal.iaitasik.ac.id/index.php/LaZhulma/article/view/114.

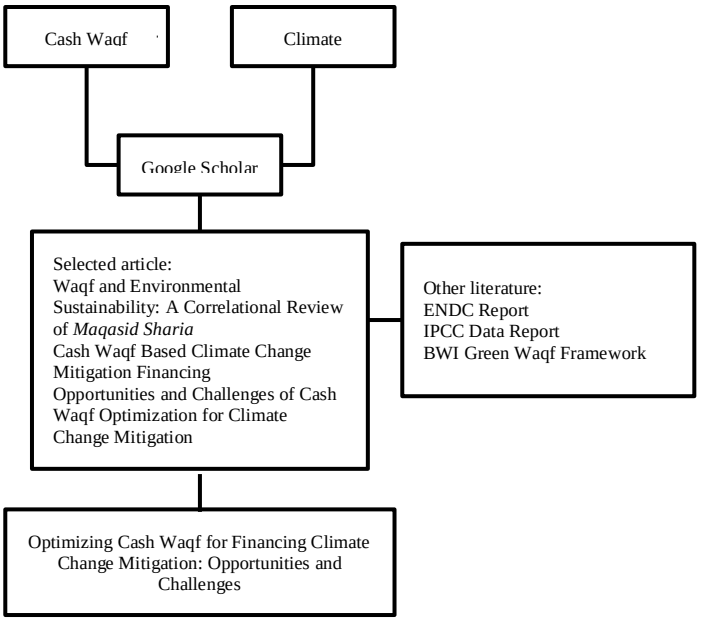
[13] Nor Asiah Mohamad and Sharifah Zubaidah Syed Abdul Kader, "Feasibility of Cash Waqf in Enhancing Climate Change Mitigation and Adaptation in Malaysia: A Regulatory Analysis," in *Islamic Sustainable Finance* (Routledge, 2024).

Based on a review of existing studies on cash waqf for environmental conservation, further research is needed to examine the role of waqf in supporting climate change mitigation efforts and strategies to optimize its contribution to sustainable development. This study aims to identify the relationship between waqf and the environment, as well as to explore the mechanisms of waqf-based financing for climate change mitigation programs. Additionally, this research investigates the opportunities and challenges of utilizing cash waqf as an alternative funding source for climate-related programs. By doing so, this study is expected to provide a new paradigm for developing cash waqf-based climate change mitigation initiatives.

Method

This study employs a qualitative method with a descriptive approach to analyze the optimization of cash waqf in financing climate change mitigation programs, as well as the opportunities and challenges involved. The research is descriptive in nature, aiming to provide a detailed overview of the conditions, opportunities, and challenges in utilizing cash waqf as an alternative financing mechanism for climate change mitigation and adaptation programs. This approach is used to understand and elaborate on various factors influencing the implementation of waqf in the climate change context. The data collection technique employed in this study is library research, where data is gathered from various sources, including books, academic journals, and articles. The selection of journal articles is conducted using Google Scholar, applying the keywords "Cash Waqf" and "Climate Change". Articles are selected based on their relevance to the topic and recency of publication.

In addition to journal articles, this study also utilizes secondary data, such as research reports and relevant documents. The collected data is analyzed using content analysis, involving a pattern-mapping process through the classification of articles based on the following themes, the correlation between waqf and environmental sustainability, the utilization of cash waqf for climate change program financing, and the opportunities and challenges of cash waqf implementation. The results of this mapping are reviewed descriptively, exploring the potential for optimizing cash waqf and the challenges associated with its implementation as a financing instrument for climate change programs.



Graph 2.
Framework for Climate Change Mitigation Financing Study Based on Cash Waqf

Result and Discussion

Waqf and Environmental Sustainability: A Maqasid Shariah Perspective

Effective waqf management, aligned with *maqasid sharia*, can significantly contribute to achieving complex objectives, including the Sustainable Development Goals (SDGs). The fundamental alignment between these two concepts lies in their shared goal of promoting *maslahah* (public benefit and well-being). Conceptually, *maqasid sharia*, as outlined by Al-Ghazali, comprises five essential principles: *Hifz al-Din* (preservation of religion), *Hifz al-Nafs* (preservation of life), *Hifz al-'Aql* (preservation of intellect), *Hifz al-Nasl* (preservation of lineage), and *Hifz al-Mal* (preservation of wealth). These principles not only emphasize human well-being but also extend to environmental sustainability and intergenerational responsibility, underscoring the broader role of waqf in fostering ecological conservation and sustainable development.

The concept of *maslahah* plays a crucial role in environmental action[14] as Islam not only serves as a catalyst for social change but also provides guidance

[14] "Fiqh Ekologi; Upaya Merawat Lingkungan Hidup Berbasis Konsep Maqashid Syariah | Syariah: Journal of Fiqh Studies," accessed October 2, 2024, https://ejournal.mahadalylirboyo.ac.id/index.php/syariah/article/view/31.

in maintaining ecological balance. From a *Maqasid Sharia* perspective, environmental sustainability is not only essential for present-day human well-being but also represents an intergenerational responsibility to ensure a sustainable future.[15] This principle aligns with two key aspects of *maqasid sharia* the preservation of life (*Hifz al-Nafs*) and the preservation of lineage (Hifz al-Nasl), both of which are closely linked to environmental conservation. A healthy environment supports a better quality of life, enabling individuals to carry out their activities optimally and ensuring long-term benefits. Conversely, environmental degradation negatively impacts various aspects of life. *Maqasid Sharia* follows a complex and holistic framework that encompasses moral, financial, and intergenerational sustainability dimensions. This approach allows for the optimal utilization of waqf funds to support sectors such as education, healthcare, and even the development of green infrastructure, aligning with the SDGs.[16]

As one of the key social finance instruments in Islam, waqf holds significant potential for enhancing societal well-being.[17] Its alignment with *Maqasid sharia* underscores its broad benefits, encompassing various aspects of life regardless of the religious or social background of both the donor (*wakif*) and the beneficiary (*mauquf 'alaih*). What makes waqf unique is its perpetual nature, distinguishing it from one-time or depletable donations. This model enables waqf funds to continuously generate long-term benefits and provide sustainable financing for various initiatives, including environmental conservation efforts.[18] Beyond benefiting humanity, waqf also plays a crucial role in maintaining ecological balance and supporting sustainable development. Several studies have highlighted that waqf can contribute to financing green infrastructure,

[15] "An Islamic Perspective on Ecology and Sustainability | IntechOpen," accessed October 2, 2024, https://www.intechopen.com/chapters/82219.

[16] Aam Slamet Rusydiana, Raditya Sukmana, and Nisful Laila, "Developing Green Waqf Model for Environmental Issues," *Islamic Economics Methodology* 2, no. 2 (December 14, 2023), https://doi.org/10.58968/iem.v2i2.319.

[17] Neni Hardiati, "Wakaf Tunai (Cash Waqf) Menurut Persfektif Ulama Dan Tinjauan Maqashid Syari'ah," *Akselerasi: Jurnal Ilmiah Nasional* 2, no. 3 (December 21, 2020): 106–17, https://doi.org/10.54783/jin.v2i3.322.

[18] Yusuf Othman, Mohd Sholeh Sheh Yusuff, and Muhammad Nasri Md Hussain, "An Analysis of Green Waqf as an Instrument for Sustainable Development," *Environment-Behaviour Proceedings Journal* 10, no. SI24 (January 25, 2025): 267–72, https://doi.org/10.21834/e-bpj.v10iSI24.6394.

such as the development of urban parks, city forests, and other green open spaces, which help reduce air pollution and carbon emissions.[19]

Environmental waqf can take the form of non-monetary assets, such as land and vegetation, or waqf funds that are managed productively. One notable example is the waqf of forest land in Cibunian Village, Bogor, which aims to protect ecosystems, prevent land degradation, and maintain environmental balance in the region.[20] This forest waqf aligns with *maqasid sharia*, particularly in preserving life (*Hifẓ al-Nafs*), intellect (*Hifẓ al-'Aql*), and future generations (*Hifẓ al-Nasl*). Additionally, environmental waqf strengthens the concept of *tawhid* (oneness of Allah) by acknowledging Allah SWT as the Creator of the universe, with humanity bearing the responsibility of safeguarding its sustainability. By allocating wealth through waqf for public benefit, individuals not only gain spiritual rewards but also contribute to sustainable development.

Cash Waqf-Based Financing for Climate Change Programs

Cash Waqf Linked Sukuk (CWLS) presents an alternative financial instrument that supports the achievement of the Sustainable Development Goals (SDGs) through the development of sustainable Islamic economics.[21] Research has shown that CWLS can be utilized to facilitate the provision of agricultural and food products.[22] This financial innovation integrates the concept of waqf with sukuk-based investments, offering the advantage of liquidity compared to zakat, making it a versatile funding mechanism for social and development programs.[23] In the context of climate change mitigation and adaptation, CWLS can be integrated with green sukuk schemes to finance ecosystem restoration projects.[24] However, CWLS also faces challenges,

---

[19] Raditya Sukmana and Aam Slamet Rusydiana, "Waqf Model for Climate Change: A Delphi Method Approach," *International Journal of Waqf* 3, no. 1 (December 29, 2023), https://doi.org/10.58968/ijw.v3i1.335.

[20] Anisah Firdaus, "Inovasi Sosial di Hutan Wakaf Bogor dalam Mencapai Pembangunan Berkelanjutan," *Jurnal Ilmiah Ekonomi Islam* 10, no. 1 (March 5, 2024): 64–72, https://doi.org/10.29040/jiei.v1i1.11918.

[21] Aam Slamet Rusydiana and Mohammad Mahbubi Ali, "Clustering Research on Sukuk-Waqf," *International Journal of Waqf* 3, no. 1 (June 2, 2023), https://doi.org/10.58968/ijw.v3i1.241.

[22] Patria Yunita, "Cash Waqf Linked Sukuk (CWLS) Model: For Indonesia Sustainable Food Security," *Al-Awqaf: Jurnal Wakaf Dan Ekonomi Islam* 13, no. 1 (2020): 59–72, https://doi.org/10.47411/al-awqaf.v13i1.96.

[23] Ubaidillah Ubaidillah, Masyhuri Masyhuri, and Nanik Wahyuni, "Cash Waqf Linked Sukuk (CWLS): An Alternative Instrument for Infrastructure Financing," *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* 4, no. 1 (August 2021): 35–49, https://e-journal.ikhac.ac.id/index.php/iijse/article/view/1473.

[24] Rusydiana, Sukmana, and Laila, "Developing Green Waqf Model for Environmental Issues."

particularly in the state's obligation to return the funds collected to investors upon sukuk maturity.[25] Once the sukuk term ends, the waqf funds are returned to the *nazhir* (waqf manager) for allocation to other waqf programs. This temporary nature of funds raised through CWLS underscores the need for strategic optimization to ensure the sustainability of its benefits.

Beyond Cash Waqf Linked Sukuk (CWLS), Green Waqf emerges as an alternative financing mechanism that integrates waqf principles with environmental sustainability. This model aims to promote ecological balance while delivering social and economic benefits to communities.[26] The application of cash waqf in environmental conservation has been implemented in various forms, including forest preservation and land ecosystem protection. One notable implementation of Green Waqf is in waste management using carbonization technology—an energy-efficient process that converts organic waste into high-value products.[27] However, the effectiveness and long-term viability of this model require further analysis. In this framework, cash waqf contributions from donors (wakif) are managed by *nazhir* through Islamic Financial Institutions Receiving Waqf Funds (LKS PWU). These funds are then allocated to Green Waqf projects, such as the cultivation of Tamanu plants (*Calophyllum inophyllum*). In this initiative, *nazhir* utilizes the managed waqf funds to purchase Tamanu seedlings, which are cultivated until they bear fruit. The harvested Tamanu fruit is processed into various green products, including medicinal extracts, cosmetic ingredients, and biofuel sources. Revenue generated from these products is reinvested into sustaining Tamanu cultivation and production activities.[28] Through this Green Waqf model, environmental conservation efforts can operate sustainably, preserving ecosystems while simultaneously offering economic benefits to local communities. Despite its promising potential, this model faces several challenges. The success of Green Waqf largely depends on the governance capacity and accountability of *nazhir* in managing funds transparently and productively. Additionally, the market and

[25] Musari, "Integrating Green Sukuk and Cash Waqf Linked Sukuk, the Blended Islamic Finance of Fiscal Instrument in Indonesia."

[26] Tim Konten WaCIDS, "Mitigasi Krisis Iklim Melalui Skema Wakaf Hijau," *WaCIDS* (blog), October 7, 2023, https://wacids.or.id/2023/10/07/mitigasi-krisis-iklim-melalui-skema-wakaf-hijau/.

[27] Nurul Fatma Hasan and Syahruddin Syahruddin, "Enhancing Green Waqf For Carbonization Technology: Opportunities for Sustainable Development Goals (SDGs) in Indonesia," *El Barka: Journal of Islamic Economics and Business* 5, no. 2 (December 27, 2022): 235–51, https://doi.org/10.21154/elbarka.v5i2.4739.

[28] Rusydiana, Sukmana, and Laila, "Developing Green Waqf Model for Environmental Issues."

supply chain for green products remain underdeveloped, posing a significant challenge in scaling up this innovative waqf instrument.

In Malaysia, a green technology-based waqf initiative, implemented across four mosques over a period of one to two years, demonstrates how the integration of waqf with technology can generate tangible ecological and social benefits. This program, successfully managed by Yayasan Waqaf Malaysia (YWM), focuses on key projects such as the installation of solar panels on mosque rooftops, the development of mosque gardens, and the construction of rainwater harvesting systems. These innovations not only contribute positively to the environment but also provide direct benefits to local communities. For instance, the initiative has led to an increase in mosque visitors, reduced operational expenses, and ensured water availability for up to three months during the rainy season through an efficient rainwater collection system.[29] The program's mechanism involves a collaboration between YWM and the government, particularly institutions specializing in green technology. Funds collected from the public—through social media campaigns and various outreach activities—are managed by *nazhir* under YWM. Meanwhile, external parties, including government agencies and renewable energy experts, are responsible for selecting the most suitable mosques for project implementation. The managed waqf funds are allocated to finance these projects, while the principal amount remains under YWM's management to ensure long-term sustainability. YWM's primary fundraising strategy focuses on fostering an emotional connection between the community and the program's vision, increasing the likelihood of contributions. Additionally, YWM engages corporate employees by offering flexible cash waqf options, such as one-time donations or automated payroll deductions for recurring waqf contributions. The success of YWM's program lies in its transparency with the public—both as wakif and beneficiaries—as well as its collaboration with the government and private sector. Furthermore, Malaysia's supportive policy framework for green waqf initiatives and climate-related programs has been a key factor in ensuring the optimal and sustainable growth of this project.

In addition to Green Waqf, the concept of Blue Waqf focuses on preserving marine ecosystems through cash waqf mechanisms. In Indonesia, this concept

[29] Raka Fathurrohman Hidayat, Murtadho Ridwan, and Suhadi Selo Dimejo, "The Role of Waqf Institutions as a Strategy to Accelerate the Transition to the Use of Green Technology as an Effort to Realize SDGs: A Qualitative Study of Yayasan Waqaf Malaysia," *INTERNATIONAL CONFERENCE ON RESEARCH ISSUES AND COMMUNITY SERVICE* 1, no. 1 (January 3, 2025): 185–94, https://doi.org/10.31332/i-cores.v1i1.11081.

is materialized through the rehabilitation of blue forests, such as the reforestation of degraded mangrove forests. This initiative not only contributes to restoring coastal ecosystems but also significantly impacts marine life—including fish and other species—while sequestering carbon dioxide from the atmosphere. The implementation strategy of Blue Waqf begins with the collection of cash waqf, which is then managed by a *nazhir*. The managed funds are allocated to Blue Waqf programs and actively promoted through media and community engagement to attract more wakif. As a risk management measure, the program is insured through takaful or sharia-compliant insurance to mitigate potential failures in managing waqf funds.[30] At the policy level, the Indonesian government has introduced Cash Waqf Linked Blue Sukuk (CWLBS), where the principal waqf funds are invested in Blue Sukuk—a sovereign Islamic bond specifically designed to finance water conservation and marine ecosystem projects. The CWLBS mechanism begins with the collection of cash waqf, which is then entrusted to the Ministry of Finance. The ministry issues sukuk and provides periodic coupon returns to the *nazhir*. The *nazhir* then allocates the returns to programs that support the maritime sector and improve the welfare of coastal communities, particularly fishermen. In terms of execution, the Ministry of Marine Affairs and Fisheries plays a key role in operational support and program monitoring. Upon the maturity of the sukuk, the Ministry of Finance returns the principal waqf funds to the *nazhir*. For term-based cash waqf, the funds are returned to the wakif, whereas for perpetual cash waqf, the *nazhir* continues to reinvest them in sustainability-focused programs.[31] The involvement of multiple stakeholders underscores the need for synergy and coordination among Islamic financial institutions, government agencies, and the private sector to ensure the long-term success of Blue Waqf.

As part of its Blue Economy program, Malaysia has developed the Waqf Boat initiative—an innovative cash waqf-based program managed by Waqf Perak Ar-Ridzuan as the *nazhir*. The primary objective of this program is to provide boats for fishermen, thereby improving their social and economic well-being. The program operates through a collaboration with Maybank Islamic as the main recipient of cash waqf funds, supported by five other banks that

[30] Vika Annisa Qurrata et al., "Blue Waqf Framework for Blue Forest Sustainability: A Conceptual Framework," *KnE Social Sciences* 9, no. 4 (January 24, 2024): 398–407, https://doi.org/10.18502/kss.v9i4.15088.

[31] Redaksi BWI, "Cash Waqf Linked Blue Sukuk (CWLBS) For Sustainable Marine Ecosystem: a Conceptual Model - BWPS No. 3 2022," Badan Wakaf Indonesia | BWI.go.id, October 31, 2022, https://www.bwi.go.id/8421/2022/10/31/cash-waqf-linked-blue-sukuk-cwlbs-for-sustainable-marine-ecosystem-a-conceptual-model-bwps-no-3-2022/.

actively promote the initiative.[32] The involvement of multiple financial institutions significantly accelerates the fundraising process, demonstrating the importance of financial sector engagement in waqf-based sustainability initiatives. This innovation further reinforces the role of strong community-based support in advancing both Green Waqf and Blue Waqf programs.[33] The integration of waqf mechanisms into climate change financing aligns well with community-driven development approaches, making it a viable social finance instrument that not only promotes environmental sustainability but also enhances economic and social welfare.[34]

Opportunities and Challenges in Optimizing Cash Waqf for Climate Change Programs

The alignment between cash waqf and the *maqasid sharia* principles, along with its application in various programs such as CWLS, Green Waqf, and Blue Waqf, highlights the significant potential of waqf-based financing in supporting climate change mitigation and adaptation efforts. The synergy between waqf and environmental sustainability enables cash waqf to serve as an alternative funding mechanism that complements other financial sources. Several studies emphasize the critical role of waqf in ensuring sustainable financing while fostering innovation in green and blue economic sectors.[35] The inherent flexibility of Islamic-based financing opens up vast opportunities for its application in various beneficial programs for society. However, despite its promising potential, the optimization of cash waqf in climate change programs still faces several challenges.

One of the main challenges is low public literacy on waqf. According to the Waqf Literacy Index (ILW) 2020, the national waqf literacy score stood at 50.48, indicating a moderate level of understanding. However, specific literacy on cash waqf is even lower, as this concept remains relatively unfamiliar to

---

[32] Zaki Ahmad, Mushtaq Ahmed, and Mahvish Nawaz Mokal, "Waqf Management Through Fintech in Malaysia," *Journal of Islamic Finance* 12, no. 2 (December 31, 2023): 114–25, https://doi.org/10.31436/jif.v12i2.829.

[33] Abdul-Jalil Ibrahim, "Renewable Energy Financing in Islamic Finance: A Community Green Waqf Financing Model for Rural Electrification," SSRN Scholarly Paper (Rochester, NY, January 29, 2023), https://doi.org/10.2139/ssrn.4341419.

[34] Raditya Hendra Pratama, Resi Ariyasa Qadri, and Akhmad Khabibi, "The 'Nusantara' Cash-Waqf Model: Designing Alternative Scheme for Infrastructure Financing," *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah* 15, no. 1 (June 30, 2023), https://journal.uinjkt.ac.id/index.php/iqtishad/article/view/32032.

[35] "Green Investment and Sustainable Development : The Case of Islamic Finance," accessed October 2, 2024, https://platform.almanhal.com/Details/Articles/142469?lang=en.

many people.[36] This low level of awareness directly impacts participation rates, which in turn hinders the development of a waqf-based climate finance system. For this financing system to function optimally, a well-structured and supportive ecosystem is required. Thus, raising public awareness about cash waqf is crucial to ensure its role as a viable financial instrument for climate change mitigation and adaptation programs.

In addition to public awareness, risk management in cash waqf must be emphasized. Since waqf is closely tied to public trust, transparency and accountability are crucial.[37] Key risk factors in managing cash waqf include, preserving the principal value, according to Waqf Core Principles (WCP), the principal amount of waqf must remain intact for a set period. Then the reputation and asset loss risk because any mismanagement can damage public trust, operational and Sharia compliance risk has to ensure that all waqf activities align with Sharia principles, distribution risk which the allocation of waqf returns has to be efficient to beneficiaries, and market risk which is an economic fluctuations that could affecting the returns on waqf investments.[38] One of the major challenges in cash waqf management is the risk of stagnant funds. If funds are not strategically managed, the principal amount could be threatened, which goes against the principle of waqf permanence. To mitigate this, Nazhir must implement structured planning, management, and risk control strategies.[39] Supervisors should oversee risk management strategies, policies, limits, and information systems to ensure effective governance.[40] Instead of merely depositing cash waqf in banks, a more effective approach is to convert it into gold reserves. Since waqf is typically long-term, gold is a suitable asset because it preserves value and is not subject to liquidity constraints.[41]

---

[36] M. Roem Syibly, "Cash Waqf Literacy in Indonesia and Malaysia: An Analysis of Journal Publications and Trends (2018-2023)," *Millah: Journal of Religious Studies*, August 28, 2024, 681–702, https://doi.org/10.20885/millah.vol23.iss2.art6.

[37] Nor Asiah Mohamad, "Risk Management in Waqf Administration in Malaysia," *Journal of Financial Technologies (Fintech), Inclusion and Sustainability* 1, no. 1 (December 31, 2022): 1–8, https://doi.org/10.52461/jftis.v1i1.1792.

[38] "Waqf Core Principles," Badan Wakaf Indonesia | BWI.go.id, accessed March 10, 2025, https://www.bwi.go.id/waqf-core-principles/.

[39] Hepy Kusuma Astuti, "Pemberdayaan Wakaf Produktif Sebagai Instrumen Untuk Kesejahteraan Umat" (OSF, May 14, 2022), https://doi.org/10.31219/osf.io/fcmve.

[40] Humas BWI, "Risk Management in Cash Waqf Linked Sukuk Based on the Waqf Core Principle: A Preliminary Study - BWPS No. 07 2021," *Badan Wakaf Indonesia | BWI.go.id* (blog), September 30, 2021, https://www.bwi.go.id/7342/2021/09/30/risk-management-in-cash-waqf-linked-sukuk-based-on-the-waqf-core-principle-a-preliminary-study-bwps-no-07-2021/.

[41] Mohamad, "Risk Management in Waqf Administration in Malaysia."

Risks associated with cash waqf must be assessed in relation to capital and liquidity adequacy to determine whether they are viable for climate change programs. *Nazhir* must have a comprehensive understanding of risk levels in climate-related waqf initiatives. Additionally, data-driven decision-making is essential for risk analysis,[42] By leveraging data insights, *nazhir* can proactively assess environmental risks that may impact waqf assets, optimize sustainable waqf investments to ensure long-term financial viability, safeguard the perpetual nature of waqf assets to benefit future generations. Given these factors, program clarity and strategic planning are crucial. A well-structured and transparent program framework ensures that stakeholders can monitor the allocation and management of waqf funds effectively. To further mitigate financial risks, Takaful (Islamic insurance) can be implemented as a protective measure.[43] Takaful provides financial security by protecting waqf assets from unforeseen losses, sustainability assurance by ensuring the long-term funding of climate-related waqf projects, and economic and social benefits by enhancing both financial stability and environmental impact. By integrating data-driven risk management and takaful mechanisms, cash waqf can be optimized for sustainable climate financing, ensuring resilience against financial uncertainties while maximizing its long-term impact.

A strong public role is essential in supporting the investment ecosystem of cash waqf, particularly in ensuring that *nazhir* operates with professionalism and integrity. This is especially critical for waqf programs aimed at addressing climate change challenges.[44] However, the lack of readiness among stakeholders remains a significant barrier to the development of cash waqf in Indonesia. As a result, collaborative efforts and the strategic allocation of waqf funds for climate-related initiatives have yet to be fully realized. The successful development of waqf-based programs requires active engagement from multiple stakeholders[45] including regulators to establish a supportive legal and

---

[42] Onyeka Chrisanctus Ofodile et al., "Predictive Analytics in Climate Finance: Assessing Risks and Opportunities for Investors," *GSC Advanced Research and Reviews* 18, no. 2 (2024): 423–33, https://doi.org/10.30574/gscarr.2024.18.2.0076.

[43] Rusni Hassan, Syed Ahmed Salman, and Syarah Syahira Mohd Yusoff, "Risk Mitigation of Sustainable Finance and the Effective Role of Takaful," in *Islamic Sustainable Finance* (Routledge, 2024).

[44] Diah Sulistyani Et Al., "Pelaksanaan Dan Pengembangan Wakaf Uang Di Indonesia," *Jurnal Usm Law Review* 3, no. 2 (December 11, 2020): 328–43, https://doi.org/10.26623/julr.v3i2.2874.

[45] Ascarya Ascarya, Muhamad Nadratuzzaman Hosen, and Siti Rahmawati, "Designing Simple Productive Waqf Models for Indonesia," *International Journal of Ethics and Systems* 38, no. 3 (2022): 380–401, https://econpapers.repec.org/article/emeijoesp/ijoes-07-2020-0101.htm.

policy framework, *nazhir* to ensure effective and transparent fund management, the public to contribute to and support waqf-based initiatives. To enhance awareness and promote Green Waqf as a viable solution for environmental sustainability, campaigns must go beyond simple advocacy. They should include capacity-building efforts and educational initiatives to ensure that waqf practices are effectively implemented and aligned with climate adaptation and mitigation goals..[46] Furthermore, waqf institutions must take on a coordinating role, guiding the strategic vision for cash waqf programs. By aligning their objectives with environmental sustainability, these institutions can ensure that waqf-based funding mechanisms contribute meaningfully to climate resilience efforts.

Conclusion

The potential of cash waqf as an alternative financing mechanism for climate change programs lies in its flexible innovation and sustainability principles. This potential enables cash waqf to complement existing climate change financing instruments. The success of climate change programs supported by cash waqf as an alternative financing source can be achieved through capacity-building for stakeholders and increasing public awareness of both cash waqf and climate change. This study examines the paradigm of opportunities and challenges in utilizing cash waqf as an alternative climate change financing mechanism. Specifically, further research is needed to explore empirical, exploratory, and comparative analyses of cash waqf financing innovations. Additionally, as a strategic step, the Indonesian Waqf Board (*Badan Wakaf Indonesia*-BWI) and the Ministry of Religious Affairs (*Kemenag RI*) are expected to formulate more comprehensive policies and regulations while fostering institutional collaboration with environmental sector stakeholders to optimize the role of cash waqf in financing climate change programs.

****

[46] Othman, Yusuff, and Hussain, "An Analysis of Green Waqf as an Instrument for Sustainable Development."

Bibliography

Admin, The ASEAN. "Acting Now for Tomorrow: Addresing Climate Mobility Challenges in Southeast Asia." *The ASEAN Magazine* (blog), February 1, 2024. https://theaseanmagazine.asean.org/article/acting-now-for-tomorrow-addresing-climate-mobility-challenges-in-southeast-asia/.

Ahmad, Zaki, Mushtaq Ahmed, and Mahvish Nawaz Mokal. "Waqf Management Through Fintech in Malaysia." *Journal of Islamic Finance* 12, no. 2 (December 31, 2023): 114–25. https://doi.org/10.31436/jif.v12i2.829.

"An Islamic Perspective on Ecology and Sustainability | IntechOpen." Accessed October 2, 2024. https://www.intechopen.com/chapters/82219.

Ascarya, Ascarya, Muhamad Nadratuzzaman Hosen, and Siti Rahmawati. "Designing Simple Productive Waqf Models for Indonesia." *International Journal of Ethics and Systems* 38, no. 3 (2022): 380–401. https://econpapers.repec.org/article/emeijoesp/ijoes-07-2020-0101.htm.

Astuti, Hepy Kusuma. "Pemberdayaan Wakaf Produktif Sebagai Instrumen Untuk Kesejahteraan Umat." OSF, May 14, 2022. https://doi.org/10.31219/osf.io/fcmve.

Badan Wakaf Indonesia | BWI.go.id. "Waqf Core Principles." Accessed March 10, 2025. https://www.bwi.go.id/waqf-core-principles/.

BWI, Humas. "Risk Management in Cash Waqf Linked Sukuk Based on the Waqf Core Principle: A Preliminary Study - BWPS No. 07 2021." *Badan Wakaf Indonesia | BWI.go.id*

BWI, Redaksi. "Cash Waqf Linked Blue Sukuk (CWLBS) For Sustainable Marine Ecosystem: a Conceptual Model - BWPS No. 3 2022." Badan Wakaf Indonesia | BWI.go.id, October 31, 2022.

———. "GERAKAN INDONESIA BERWAKAF." *Badan Wakaf Indonesia | BWI.go.id* (blog), June 9, 2024. https://www.bwi.go.id/9509/2024/06/09/gerakan-indonesia-berwakaf/.

Calvin, Katherine, Dipak Dasgupta, Gerhard Krinner, Aditi Mukherji, Peter W. Thorne, Christopher Trisos, José Romero, et al. "IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (Eds.)]. IPCC, Geneva, Switzerland." First. Intergovernmental Panel on Climate Change (IPCC), July 25, 2023. https://doi.org/10.59327/IPCC/AR6-9789291691647.

CPI. "Global Landscape of Climate Finance 2023." Accessed September 17, 2024. https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/.

Dasgupta, Shouro, and Elizabeth J. Z. Robinson. "Attributing Changes in Food Insecurity to a Changing Climate." *Scientific Reports* 12, no. 1 (March 18, 2022): 4709. https://doi.org/10.1038/s41598-022-08696-x.

"Enhanced NDC - Republic of Indonesia | UNFCCC." Accessed September 16, 2024. https://unfccc.int/documents/615082.

European Capacity Building Initiatives. Pocket Guide to NDCs. Accessed September 15, 2024. https://ndcpartnership.org/knowledge-portal/climate-toolbox/2020-pocket-guide-ndcs.

Fiqh Ekologi; Upaya Merawat Lingkungan Hidup Berbasis Konsep Maqashid Syariah | Syariah: Journal of Fiqh Studies." Accessed October 2, 2024. https://ejournal.mahadalylirboyo.ac.id/index.php/syariah/article/view/31.

Firdaus, Anisah. "Inovasi Sosial di Hutan Wakaf Bogor dalam Mencapai Pembangunan Berkelanjutan." *Jurnal Ilmiah Ekonomi Islam* 10, no. 1 (March 5, 2024): 64–72. https://doi.org/10.29040/jiei.v1i1.11918.

Green Investment and Sustainable Development : The Case of Islamic Finance. Accessed October 2, 2024. https://platform.almanhal.com/Details/Articles/142469?lang=en.

Hardiati, Neni. "WAKAF TUNAI (CASH WAQF) MENURUT PERSFEKTIF ULAMA DAN TINJAUAN MAQASHID SYARI'AH." *AKSELERASI: Jurnal Ilmiah Nasional* 2, no. 3 (December 21, 2020): 106–17. https://doi.org/10.54783/jin.v2i3.322.

Hasan, Nurul Fatma, and Syahruddin Syahruddin. "Enhancing Green Waqf For Carbonization Technology: Opportunities for Sustainable Development Goals (SDGs) in Indonesia." *El Barka: Journal of Islamic Economics and Business* 5, no. 2 (December 27, 2022): 235–51. https://doi.org/10.21154/elbarka.v5i2.4739.

Hassan, Rusni, Syed Ahmed Salman, and Syarah Syahira Mohd Yusoff. "Risk Mitigation of Sustainable Finance and the Effective Role of Takaful." In *Islamic Sustainable Finance*. Routledge, 2024.

Hidayat, Raka Fathurrohman, Murtadho Ridwan, and Suhadi Selo Dimejo. "The Role of Waqf Institutions as a Strategy to Accelerate the Transition to the Use of Green Technology as an Effort to Realize SDGs: A Qualitative Study of Yayasan Waqaf Malaysia." *INTERNATIONAL CONFERENCE ON RESEARCH ISSUES AND COMMUNITY SERVICE* 1, no. 1 (January 3, 2025): 185–94. https://doi.org/10.31332/i-cores.v1i1.11081.

Ibrahim, Abdul-Jalil. "Renewable Energy Financing in Islamic Finance: A Community Green Waqf Financing Model for Rural Electrification." SSRN Scholarly Paper. Rochester, NY, January 29, 2023. https://doi.org/10.2139/ssrn.4341419.

Intergovernmental Panel On Climate Change (Ipcc). *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. 1st ed. Cambridge University Press, 2023. https://doi.org/10.1017/9781009157896.

Mardani, Dede Aji. "Wakaf dan Ekonomi Hijau: Upaya Mengurangi Perubahan Iklim dan Emisi Gas Karbon." *La Zhulma | Jurnal Ekonomi dan Bisnis Islam* 2, no. 1 (March 30, 2023): 23–34. https://journal.iaitasik.ac.id/index.php/LaZhulma/article/view/114.

Miswanto, and Muhammad Tasrif. "MAQASHID SHARIA'S ANALYSIS OF THE GREEN ECONOMY CONCEPT IN INDONESIA." *Jurnal Syarikah : Jurnal Ekonomi Islam* 10, no. 1 (June 26, 2024): 70–80. https://doi.org/10.30997/jsei.v10i1.10976.

Mohamad, Nor Asiah. "Risk Management in Waqf Administration in Malaysia." *Journal of Financial Technologies (Fintech), Inclusion and Sustainability* 1, no. 1 (December 31, 2022): 1–8. https://doi.org/10.52461/jftis.v1i1.1792.

Mohamad, Nor Asiah, and Sharifah Zubaidah Syed Abdul Kader. "Feasibility of Cash Waqf in Enhancing Climate Change Mitigation and Adaptation in Malaysia: A Regulatory Analysis." In *Islamic Sustainable Finance*. Routledge, 2024.

Musari, Khairunnisa. "Integrating Green Sukuk and Cash Waqf Linked Sukuk, the Blended Islamic Finance of Fiscal Instrument in Indonesia: A Proposed Model for Fighting Climate Change." *International Journal of Islamic Khazanah* 12, no. 2 (July 6, 2022): 133–44. https://doi.org/10.15575/ijik.v12i2.17750.

Ofodile, Onyeka Chrisanctus, Adedoyin Tolulope Oyewole, Chinonye Esther Ugochukwu, Wilhelmina Afua Addy, Omotayo Bukola Adeoye, Chinwe Chinazo Okoye, Onyeka Chrisanctus Ofodile, et al. "Predictive Analytics in Climate Finance: Assessing Risks and Opportunities for Investors." *GSC Advanced Research and Reviews* 18, no. 2 (2024): 423–33. https://doi.org/10.30574/gscarr.2024.18.2.0076.

Othman, Yusuf, Mohd Sholeh Sheh Yusuff, and Muhammad Nasri Md Hussain. "An Analysis of Green Waqf as an Instrument for Sustainable Development." *Environment-Behaviour Proceedings Journal* 10, no. SI24 (January 25, 2025): 267–72. https://doi.org/10.21834/e-bpj.v10iSI24.6394.

Pratama, Raditya Hendra, Resi Ariyasa Qadri, and Akhmad Khabibi. "The 'Nusantara' Cash-Waqf Model: Designing Alternative Scheme for Infrastructure Financing." *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah* 15, no. 1 (June 30, 2023). https://journal.uinjkt.ac.id/index.php/iqtishad/article/view/32032.

Qurrata, Vika Annisa, Muhammad Hakimi Mohd Shafiai, Suhaili Alma'amun, Hairunnizam Wahid, Abdul Ghafar Ismail, and Pudji Purwanti. "Blue Waqf

Framework for Blue Forest Sustainability: A Conceptual Framework." *KnE Social Sciences* 9, no. 4 (January 24, 2024): 398–407. https://doi.org/10.18502/kss.v9i4.15088.

Rusydiana, Aam Slamet, and Mohammad Mahbubi Ali. "Clustering Research on Sukuk-Waqf." *International Journal of Waqf* 3, no. 1 (June 2, 2023). https://doi.org/10.58968/ijw.v3i1.241.

Rusydiana, Aam Slamet, Raditya Sukmana, and Nisful Laila. "Developing Green Waqf Model for Environmental Issues." *Islamic Economics Methodology* 2, no. 2 (December 14, 2023). https://doi.org/10.58968/iem.v2i2.319.

Schneider-Mayerson, Matthew. *Eating Chilli Crab in the Anthropocene*. Ethos Books, 2022.

Sukmana, Raditya, and Aam Slamet Rusydiana. "Waqf Model for Climate Change: A Delphi Method Approach." *International Journal of Waqf* 3, no. 1 (December 29, 2023). https://doi.org/10.58968/ijw.v3i1.335.

Sulistyani, Diah, Nur Asikin, Soegianto Soegianto, and Bambang Sadono. "PELAKSANAAN DAN PENGEMBANGAN WAKAF UANG DI INDONESIA." *JURNAL USM LAW REVIEW* 3, no. 2 (December 11, 2020): 328–43. https://doi.org/10.26623/julr.v3i2.2874.

Syibly, M. Roem. "Cash Waqf Literacy in Indonesia and Malaysia: An Analysis of Journal Publications and Trends (2018-2023)." *Millah: Journal of Religious Studies*, August 28, 2024, 681–702. https://doi.org/10.20885/millah.vol23.iss2.art6.

Ubaidillah, Ubaidillah, Masyhuri Masyhuri, and Nanik Wahyuni. "Cash Waqf Linked Sukuk (CWLS): An Alternative Instrument for Infrastructure Financing." *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* 4, no. 1 (August 2021): 35–49. https://e-journal.ikhac.ac.id/index.php/iijse/article/view/1473.

UNDP. "GREEN WAQF FRAMEWORK." Accessed September 16, 2024. https://www.undp.org/indonesia/publications/green-waqf-framework.

WaCIDS, Tim Konten. "Mitigasi Krisis Iklim Melalui Skema Wakaf Hijau." *WaCIDS* (blog), October 7, 2023. https://wacids.or.id/2023/10/07/mitigasi-krisis-iklim-melalui-skema-wakaf-hijau/.

Yunita, Patria. "Cash Waqf Linked Sukuk (CWLS) Model: For Indonesia Sustainable Food Security." *Al-Awqaf: Jurnal Wakaf Dan Ekonomi Islam* 13, no. 1 (2020): 59–72. https://doi.org/10.47411/al-awqaf.v13i1.96.