
The Potential of Forest Waqf as an Islamic Social Financial Instrument in Mitigating Climate Crisis

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Abstract

The global climate crisis has intensified the urgency to develop sustainable and ethical environmental protection models. Deforestation, a major contributor to greenhouse gas emissions, has led to severe ecological and socio-economic consequences. In Indonesia, where forest biodiversity is critical to ecosystem stability and community livelihoods, innovative solutions rooted in local values are essential. This study aims to examine the potential of forest waqf as a strategic model within Islamic social finance to address environmental degradation and promote sustainable development. Using a qualitative research design with a library research approach, this study analyzes data obtained from journal articles, government reports, and official publications. The findings reveal that forest waqf through mechanisms such as agroforestry, ecotourism, and sustainable land management offers a dual function in ecological restoration and community empowerment. Case studies from Aceh and Bogor highlight the model's effectiveness in reforesting degraded land while generating income for local populations. However, challenges remain, including limited public awareness, governance gaps, and regulatory barriers. Strategic recommendations include improving legal frameworks, integrating digital tools, and fostering multi-sectoral collaboration. Overall, forest waqf represents a promising solution for climate action that aligns with religious, ecological, and economic values, and could be expanded to other biodiversity-rich regions.

Keywords: *forest waqf; Islamic social finance; sustainable development; environmental conservation; community empowerment; climate resilience*

INTRODUCTION

The global climate crisis refers to significant changes in weather patterns and a rise in the Earth's average temperature, primarily driven by human activities such as the burning of fossil fuels, deforestation, and industrial processes that increase greenhouse gas emissions especially carbon dioxide (CO₂). The accumulation of these gases in the atmosphere creates a greenhouse effect, trapping heat and triggering global warming (Antarissubhi et al., 2023). The impacts are vast and complex, ranging from ecosystem disruptions and species extinction to the destruction of natural habitats and extreme weather events such as floods, droughts, and rising sea levels. This situation not only threatens the environment but also poses serious risks to economic, social, and political sectors, including disruptions to food production, increased natural disasters, and potential conflicts arising from migration caused by environmental degradation.

As the world faces accelerating environmental degradation, innovative and ethical financial solutions are urgently needed to ensure sustainability for future generations, for the example is deforestation of forest. Deforestation (the conversion of forested areas into non-forested land) is a critical issue, as its rapid rate contributes significantly to global warming through frequent forest fires (Fakhri, Beik, and Nugrahani, 2023). Forests play a vital role in the survival of all living beings; beyond serving as the lungs of the Earth by producing oxygen, they also help sustain essential water resources needed for life (Irfany and Nur, 2024). Environmental degradation can occur naturally through disasters or be deliberately caused by human actions, such as illegal deforestation, which is a clear example of intentional harm to nature (Syawal and Handayani, 2021).

People residing in or near forest areas often rely heavily on forest resources, as many of them are economically vulnerable and depend on nature to support their livelihoods. Given that many communities still depend on forests for their livelihoods, it is essential to implement sustainable socioeconomic development in forest areas (Firdaus, 2024). Such development should prioritize community empowerment, equitable resource access, and environmental preservation. Integrating Islamic social finance instruments like forest waqf can offer innovative solutions that align with both ecological sustainability and social welfare goals.

Forest Waqf is an extension of the wakaf concept focused on forest protection through waqf, aimed at long-term goals and serving as a tool to support environmental conservation (Irfany and Nur, 2024). Waqf is the act of preserving an asset with enduring value, whose benefits are allocated for charitable purposes. It involves retaining ownership of the property while donating its benefits for the greater good, with the asset legally remaining under the ownership of the waqif (donor). Forest waqf is a conservation initiative that begins with voluntary contributions from the public, which are then used to acquire and restore degraded land, transforming it back into forested areas.

The concept of forest waqf was first introduced nationally in Indonesia in 2012, initiated by individuals from Aceh who were deeply concerned about the widespread conversion of forest lands in the region (Rohmaningtyas, 2022). These lands, which should have been preserved, were crucial for safeguarding the environment and wildlife. This initiative aimed to restore and protect these vital ecosystems through community-driven efforts, ensuring sustainable environmental stewardship for future generations.

RESEARCH METHODOLOGY

This research method used a qualitative research method with a library research approach, which includes activities such as gathering bibliographic data, reading, taking notes, and analyzing research materials.

a. Data and Data Sources

Documentary study is a method of gathering data indirectly through relevant documents. These documents can include journals, specific work notes, and other pertinent materials.

b. Data Collection Techniques

Data collection involves gathering information from various sources such as books, articles, journals, magazines, websites (internet), and other related materials. Essentially, the research focuses on analyzing and synthesizing information obtained from these diverse sources to gain a thorough understanding of the topic.

RESULTS AND DISCUSSION

Overview of Forest Waqf Concept

A forest waqf refers to a forest that is created and managed on endowment land, obtained through either land donations or cash waqf contributions from donors (Ali and Jannah, 2019). Through community involvement in donating funds or giving cash waqf, the gathered money is allocated to acquire damaged land, which is later restored and transformed into forest waqf (Firdaus, 2024). This approach not only revitalizes degraded areas but also empowers communities to take part in sustainable environmental stewardship. Forest waqf contributes to the long-term conservation of forests, supported by legal safeguards from both government regulations and religious principles (Jannah et al., 2020). It serves as a form of Islamic social finance that bridges ecological preservation with social responsibility, making it a strategic solution in addressing environmental crises.

Indonesia's inaugural forest waqf, named the Jantho Waqf Forest, was founded in 2012 in the province of Aceh. Established in 2018, the Bogor Forest Waqf is jointly managed with the local community through an intercropping system. The Bogor Forest Waqf Foundation, acting as the waqif, oversees its development by integrating productive, economic, and ecological approaches (Ali and Kassim, 2021). The implementation of forest waqf reflects a broader shift toward innovative, faith-based environmental solutions that combine spiritual values with ecological action. As highlighted by Ali and Jannah (2019), the forest waqf model serves not only as a conservation tool but also as a socio-economic development strategy. By engaging local communities as stakeholders in both the funding and management processes, forest waqf initiatives foster a sense of shared responsibility and ownership, which is essential for long-term sustainability.

Forest waqf supports the goals of the Sustainable Development Goals (SDGs), particularly in areas such as climate action (SDG 13), life on land (SDG 15), and responsible consumption and production (SDG 12). It offers a replicable model that can be adapted to other regions facing deforestation and environmental degradation. With proper governance and collaboration between religious institutions, government bodies, and civil society, forest

waqf has the potential to become a key pillar in the framework of Islamic social finance aimed at addressing both environmental and social challenges.

Potential Environmental Impacts

Forests are essential for maintaining biodiversity, supporting local economic development, and mitigating carbon dioxide emissions linked to global warming. However, despite these important roles, forest destruction and deforestation are escalating at an alarming and uncontrolled rate (Firdaus, 2024). A sustainable forest waqf land management model that integrates both economic and ecological elements holds significant potential for broader implementation, particularly in biodiversity-rich countries like Indonesia.

Managing waqf land based on environmental conservation and community welfare is a strategic step to address climate change challenges while also empowering local economies. This model offers an alternative solution to forest degradation and the overexploitation of natural resources (Wijaya, 2023). Wijaya emphasizes that the success of such a model relies on strong collaboration between waqf institutions, local communities, and the government. Forest waqf lands can serve as effective instruments to safeguard protected areas from harmful conversion, but their success depends on good governance and clear policy support. Additionally, he highlights that applying sustainable practices like agroforestry and ecotourism on forest waqf lands can enhance community well-being, provided these initiatives follow strict sustainability standards.

Local communities actively participate in forest conservation by protecting forest areas, cleaning up waste, and replanting degraded land; the initiation of the forest waqf program has further increased their awareness of forest preservation, especially due to the direct economic benefits they experience (Rosadi, 2024). This enhanced awareness not only promotes sustainable environmental practices but also fosters a stronger sense of ownership and responsibility among the local population. Through participatory approaches, communities become key stakeholders in forest management, which increases the long-term success of conservation programs. The integration of local wisdom and traditional ecological knowledge further strengthens the implementation of environmentally conscious activities.

The economic dimension of the forest waqf program serves as a motivating factor that bridges environmental and social goals. By generating income through sustainable practices such as agroforestry, ecotourism, or the sale of non-timber forest products, the program supports livelihood diversification. This dual benefit environmental protection and economic empowerment highlights the forest waqf as a holistic model within Islamic social finance that addresses both ecological sustainability and community welfare. Moreover, the income generated can be reinvested into forest maintenance, environmental education, and infrastructure development, creating a self-sustaining cycle of growth and conservation. Forest waqf initiatives also provide job opportunities for local residents, reducing economic dependency on destructive land-use practices like illegal logging. As communities become economically engaged in preserving their natural resources, a stronger sense of ownership and environmental responsibility emerges. This inclusive economic approach strengthens resilience against climate change impacts while simultaneously fulfilling religious obligations through waqf.

Challenges and Opportunities of Forest Waqf

The development of waqf in Indonesia still faces several structural and practical challenges. According to Pertaminawati (2025), these include limited public awareness, lack of professional management, regulatory inconsistencies, and underutilized waqf assets. Many waqf properties remain idle or are not optimized due to poor governance and a lack of strategic planning. Additionally, the perception of waqf as merely a religious act, rather than a socio-economic instrument, further restricts its potential role in broader development agendas, including disaster response and community resilience.

Forest waqf encounters even more complex challenges, given its intersection with environmental, legal, and community dynamics. The long-term nature of forest rehabilitation often discourages short-term investments, and acquiring critical land for conservation purposes requires significant funding and administrative coordination. Moreover, aligning religious values with ecological practices demands a strong narrative that integrates Islamic philanthropy with sustainability science. Without consistent collaboration between waqf institutions, environmental stakeholders, and local communities, the forest waqf model may struggle to gain traction and remain underutilized as a viable tool for ecological preservation.

Waqf as an Islamic social finance instrument, holds significant potential in supporting sustainable development, particularly through the utilization of land and natural resources. When managed productively, waqf can address various social and environmental challenges, including economic inequality, environmental degradation, and limited access to productive land among marginalized communities that social innovations in waqf management, such as those implemented in the Bogor Waqf Forest, exemplify how waqf can evolve into a dynamic model of empowerment and sustainability. By fostering participatory and collaborative approaches, waqf can transcend its traditional philanthropic role and function as a strategic tool for ecological restoration and socio-economic development. The alignment of spiritual values with environmental stewardship enhances waqf's relevance in addressing contemporary crises while fulfilling religious obligations (Firdaus, 2024).

The opportunities offered by forest waqf are particularly compelling, as they offer practical solutions for both ecological conservation and economic empowerment. Forest waqf initiatives contribute not only to the rehabilitation of degraded land but also to the creation of sustainable livelihoods for surrounding communities. The management of waqf-protected forest land in Rokan Hulu, Riau, has improved local well-being through the integration of agroforestry and ecotourism practices. These initiatives not only generate employment but also raise public awareness about the importance of forest preservation. Moreover, the active involvement of waqf institutions, local communities, and government entities has proven essential in maintaining the long-term viability of such projects. As such, forest waqf represents an innovative economic-ecological model with the potential to be replicated in other regions facing similar environmental challenges (Rosadi, 2024).

Forest waqf presents a robust model for national-scale application, especially in a biodiversity-rich country like Indonesia. Forest waqf integrates environmental conservation with the philanthropic ethos of Islam, making it both a moral and ecological imperative. Lands that are unproductive or vulnerable to destructive conversion can be repurposed into green areas that provide long-term environmental and social benefits. Supported by both religious and legal frameworks, forest waqf can serve as a stable mechanism for ecosystem preservation. With stronger regulatory support and enhanced public awareness of waqf, the

model can be expanded to various ecological hotspots across the archipelago, contributing to Indonesia's national strategy for climate resilience and sustainable resource governance (Purnama et al., 2020).

Strategic Recommendations of Forest Waqf

One of the key strategies in developing forest waqf is the integration of local wisdom and cultural values within indigenous communities. Hamdani and Pasummah (2021) emphasize that protecting customary or indigenous forests through waqf mechanisms requires a participatory approach that respects traditional land rights and social structures. In the context of Aceh Province, where indigenous communities have long maintained a symbiotic relationship with the forest, waqf is positioned not only as a religious obligation but also as a culturally rooted conservation method. The authors highlight that the success of forest waqf depends on acknowledging the role of customary institutions in forest management and involving them directly in decision-making and land stewardship. Empowering indigenous communities to act as custodians of waqf forests ensures both ecological protection and cultural preservation. Furthermore, this community-based strategy enhances the legitimacy and sustainability of waqf programs by aligning conservation goals with social identity and historical land-use practices.

A more structured and institutionalized strategy can be observed in the development of the Bogor Waqf Forest, which has been systematically analyzed through a combination of SWOT (Strengths, Weaknesses, Opportunities, and Threats) and ANP (Analytic Network Process) methodologies. According to Ali and Kassim (2021), the most critical factors in the success of the Bogor Forest Waqf program are the community's involvement, the strong commitment of waqf institutions, and the collaboration with external stakeholders such as government agencies, NGOs, and academic institutions. Their analysis reveals that the program's internal strengths like clear institutional objectives and the availability of waqf land must be complemented by external opportunities, such as rising environmental awareness and legal support for waqf. However, weaknesses like limited funding and threats including land-use conflict and regulatory ambiguity must be addressed proactively. The authors suggest strengthening institutional capacity, enhancing public outreach to attract more donors, and leveraging governmental support for legal recognition as part of the strategic roadmap to scale forest waqf initiatives nationwide.

Further refining the operational framework, Jannah et al. (2024) explore productive strategies for waqf-based forest management, particularly in the case of the Bogor Forest. Their study focuses on optimizing land productivity through sustainable economic models such as agroforestry, ecotourism, and the cultivation of non-timber forest products (NTFPs). These initiatives are not only designed to ensure ecological preservation but also to generate income that can sustain waqf operations in the long run. The researchers emphasize the importance of strategic planning in aligning waqf objectives with local development goals. Key recommendations include strengthening governance mechanisms, developing transparent benefit-sharing models, and incorporating digital technologies for monitoring and evaluation. Moreover, fostering multi-sectoral partnerships is seen as essential for mobilizing resources and enhancing the resilience of waqf forests. These strategies exemplify how forest waqf can evolve into a dynamic and sustainable instrument of Islamic social finance, capable

of addressing both environmental and socio-economic challenges through innovative and inclusive management practices.

In addition to institutional and community-based strategies, future development of forest waqf can benefit significantly from the integration of digital technology and innovation. The use of Geographic Information Systems (GIS), satellite monitoring, and blockchain for waqf asset transparency can enhance governance, tracking, and land-use efficiency. These digital tools allow for real-time environmental monitoring, improved donor accountability, and transparent management of waqf funds and land utilization. Furthermore, digital platforms can facilitate broader community engagement and waqf crowdfunding campaigns, expanding the reach and impact of forest waqf initiatives. By incorporating digital transformation into forest waqf operations, stakeholders can build more resilient, scalable, and data-driven models that align with global environmental governance standards and modern Islamic finance practices. This transformation also opens avenues for collaboration with environmental startups, fintech platforms, and sustainable investment institutions, which could further amplify the effectiveness and sustainability of forest waqf models in the face of climate change.

CONCLUSION

Forest waqf represents an innovative convergence between Islamic social finance and environmental sustainability. It offers a long-term, faith-driven mechanism to address ecological degradation, especially deforestation, while simultaneously promoting social welfare. The implementation of forest waqf in regions such as Aceh and Bogor has shown that when communities, religious institutions, and stakeholders collaborate, forest conservation efforts can become more inclusive, culturally grounded, and effective. By utilizing strategies such as agroforestry, ecotourism, and community empowerment, forest waqf not only restores degraded land but also generates sustainable livelihoods, thereby aligning environmental preservation with economic development goals.

Despite its potential, the development of forest waqf still faces challenges including limited public awareness, underutilized waqf assets, and regulatory uncertainties. To scale this model nationally, it is essential to strengthen governance structures, foster multi-sector partnerships, and implement innovative financing and management strategies. Forest waqf initiatives must be supported by clear legal frameworks and institutional commitment to ensure long-term impact. As a holistic approach rooted in Islamic values and modern sustainability principles, forest waqf holds great promise for contributing to climate resilience, biodiversity protection, and the achievement of the Sustainable Development Goals (SDGs) in Indonesia and other Muslim-majority regions.

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