

From Waqf Land to Socio-Ecological Impact: Utilization of Forest Waqf for Conservation, Sociopreneurship, and Community Empowerment in Indonesia

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ABSTRACT

This study examines the socio-ecological utilization of forest waqf by exploring how waqf land can be transformed into a conservation-based productive forest that promotes environmental sustainability, sociopreneurship (social entrepreneurship), and community empowerment. A qualitative case study was conducted at Yayasan Pendidikan Sosial dan Ma'arif (YPM) Sidoarjo, Indonesia. Data were collected through in-depth interviews, participatory observation, and institutional document analysis, and analyzed using thematic analysis supported by methodological triangulation. The findings indicate that forest waqf generates integrated socio-ecological value by enhancing biodiversity, strengthening conservation practices, and increasing environmental awareness. It also supports sustainable livelihoods through green micro-enterprises, particularly value-added coffee production, while inclusive benefit-sharing mechanisms reinforce community participation and institutional sustainability. The study proposes a cyclical model of forest waqf utilization that integrates conservation, productive use, community empowerment, and reinvestment. This study enriches the Islamic social finance literature by positioning forest waqf as an innovative and scalable instrument for linking environmental conservation with socio-economic development. The proposed model provides practical insights for waqf institutions and policymakers in optimizing waqf assets to support sustainable development and community resilience in developing countries.

Keywords: *Community Empowerment; Conservation Finance; Forest Waqf; Green Waqf Utilization; Sociopreneurship.*



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INTRODUCTION

Deforestation and forest degradation remain among the most critical environmental challenges (Duguma et al., 2019; Kumar et al., 2022; Pooja et al., 2026) of the twenty-first century (Mohiuddin, 2026), exerting substantial impacts on climate change (Mugadza, 2022; Patra et al., 2022), biodiversity loss (Berenguera et al., 2021; Mugadza, 2022), and the socio-economic vulnerability of rural populations (Ahmed et al., 2023; Prochazka et al., 2023). As home to some of the world's largest tropical forest ecosystems, Indonesia faces mounting pressures from land-use transformation driven by economic development imperatives and demographic expansion (Gunawan et al., 2024; Indrajaya et al., 2022). Despite the implementation of various conservation policies, the absence of sustainable and inclusive financing mechanisms (Triyatno & Julaihah, 2024) continues to constrain the effectiveness and long-term viability of forest management initiatives (Raihan et al., 2026; Sam & Onyena, 2026).

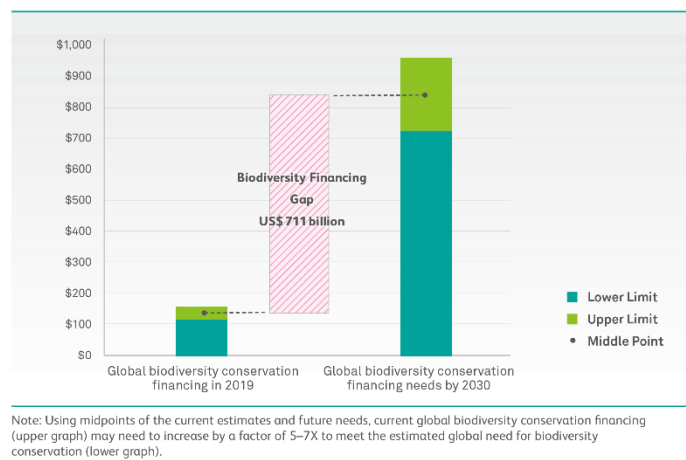


Figure 1. *Global Biodiversity Conservation Financing Gap*
Source: Deutza et al. (2020)

As illustrated in Figure 1, a significant disparity persists between global biodiversity conservation financing requirements and the actual volume of funds mobilized. Recent estimates suggest that annual conservation financing needs exceed USD 700 billion, while available funding remains substantially below this threshold. This persistent financing gap reflects structural weaknesses in environmental funding architectures, particularly within forest conservation. Consequently, there is growing recognition of the need for alternative and complementary financing instruments capable of mobilizing long-term, socially embedded, and sustainability-oriented capital (Deutza et al., 2020).

Within this context, Islamic social finance (ISF) offers a distinctive and underexplored opportunity (Al-Daihani et al., 2025; Napitupulu et al., 2024). Islamic philanthropic instruments, particularly waqf, are characterized by their perpetual nature and inherent orientation toward long-term public benefit (Dilsyaadi et al., 2026). Beyond their traditional socio-religious functions, productive waqf can be strategically mobilized to support environmental sustainability when governed by systematic, professional management frameworks (Kahf, 2015). The emergence of green waqf, defined as waqf assets and funds (Alhaq et al., 2023) dedicated to environmental protection and conservation objectives, represents an important institutional innovation that extends the role of waqf into ecosystem preservation and climate change mitigation (Haji-Othman et al., 2024; Mohamed & Akande, 2025). This approach is conceptually aligned with the *maqāṣid al-sharī'ah*, particularly *hifz al-bī'ah* (environmental protection) and *hifz al-māl* (wealth preservation), thereby

embedding sustainability objectives within an Islamic ethical and governance framework (Gumansari et al., 2025).

Existing empirical and conceptual studies suggest that integrating waqf mechanisms with environmental objectives can enhance the effectiveness of conservation financing while strengthening community participation and social ownership (Ascarya & Yumanita, 2019). Ali & Kassim (2020), for instance, proposed a waqf forest model to support the Sustainable Development Goals (SDGs), highlighting the dual potential of waqf to promote forest conservation and local economic empowerment. Prior studies have largely emphasized theoretical potential and normative prescriptions, leaving the practical dynamics of implementation, institutional coordination, and conservation effectiveness underexplored (Mohamed & Akande, 2025).

This study addresses this gap by examining the case of Yayasan Pendidikan Sosial dan Ma'arif (YPM, The Social and Ma'arif Education Foundation) Sidoarjo, which represents a rare empirical example of waqf-based forest management explicitly oriented toward conservation and community empowerment (Neta & Kalimah, 2025). The YPM initiative encompasses not only the mobilization of cash and land waqf (Ashfahany & Lestari, 2023), but also structured nadzir governance, stakeholder engagement, and hybrid financing strategies designed to enhance long-term sustainability (Wardhana & Kholili, 2025). The primary contribution and novelty of this study lie in the development of an empirically grounded, operational, and replicable green waqf financing framework that integrates three interrelated dimensions: Islamic social finance principles, green finance instruments and mechanisms, and forest conservation performance indicators (Ma & Sukmana, 2025; Mohamed & Akande, 2025).

LITERATURE REVIEW

Forest Waqf and the Productive Utilization of Waqf Assets

Waqf has evolved from a traditional charitable instrument into a strategic component of Islamic social finance that supports sustainable economic (Afifah & Iqbal, 2022) and social development (Jafar et al., 2025; Shaikh et al., 2017). Contemporary studies argue that productive waqf emphasizes optimizing waqf assets to generate continuous socio-economic benefits while preserving the principal asset in accordance with Islamic principles (Zafar & Ali, 2026). Unlike conventional waqf utilization, productive waqf focuses on creating sustainable revenue streams through professionally managed economic activities, thereby enhancing institutional resilience and public welfare. Within this context, forest waqf represents an emerging form of productive waqf that expands the function of waqf beyond religious and social services toward environmental stewardship and sustainable natural resource management. The integration of conservation objectives with productive economic activities demonstrates that waqf can simultaneously achieve financial sustainability and long-term public benefit (*maslahah*), making forest waqf an innovative instrument for addressing contemporary environmental and socio-economic challenges (Haji-Othman et al., 2024; Mohamed & Akande, 2025).

Forest Conservation and Socio-Ecological Sustainability

Forest ecosystems play a critical role in maintaining biodiversity, regulating climate, protecting watersheds, and providing ecosystem services that support human well-being (Sharma & Birman, 2024). However, increasing rates of deforestation, land degradation, and climate change have intensified the need for community-based conservation models that combine ecological preservation with local economic incentives (Dawson et al., 2021). The socio-ecological systems perspective suggests that environmental sustainability cannot be separated from

social and institutional dimensions because ecosystem resilience depends on collective action, local participation, and adaptive governance (Van Assche et al., 2019). In this regard, forest waqf offers an alternative conservation mechanism by protecting forest resources under perpetual waqf ownership while enabling productive utilization that remains consistent with ecological carrying capacity. Such an approach aligns environmental conservation with Islamic ethical principles of stewardship (*khalifah*) and responsibility toward future generations (Hamdan, 2026; Silva et al., 2025).

Sociopreneurship and Community Empowerment

Sociopreneurship (social entrepreneurship) has increasingly been recognized as an effective approach for addressing social problems through entrepreneurial innovation that prioritizes social value creation alongside economic sustainability (Mundzir et al., 2024; Rahdari et al., 2016). In the context of waqf management, sociopreneurship enables waqf institutions to transform natural resources into productive assets that generate employment opportunities, increase household income, and strengthen community self-reliance (Ayub et al., 2024). Community empowerment is achieved not only through income generation but also through capacity building, skills development, participatory decision-making, and equitable distribution of benefits. By integrating conservation-based enterprises, such as sustainable agroforestry and value-added agricultural products, forest waqf encourages local communities to become active stakeholders in environmental protection while simultaneously improving their economic welfare. Consequently, sociopreneurship serves as the operational mechanism through which the social objectives of waqf are translated into measurable development outcomes (Kamaruzaman & Ishak, 2023).

Underpinning Theory: Sustainable Livelihoods Framework (SLF)

This study is grounded in the Sustainable Livelihoods Framework (SLF), which posits that sustainable development is achieved through the effective interaction between natural, financial, human, social, and physical capital (Natarajan et al., 2022). The framework explains how communities utilize available assets within supportive institutional structures to develop livelihood strategies that improve welfare while maintaining environmental sustainability (Dube & Chatterjee, 2022). Forest waqf reflects this perspective by preserving natural capital through conservation, strengthening financial capital through productive enterprises, enhancing human and social capital via community participation and capacity building, and reinforcing institutional capital through professional waqf governance (Dilsyaadi et al., 2026). Accordingly, the SLF provides a comprehensive theoretical lens for explaining how forest waqf simultaneously generates ecological conservation, economic resilience, and social empowerment, thereby supporting sustainable and inclusive development (Fahrezi, 2025).

Sustainable Livelihoods, Community Forestry, and Environmental Financing

The Sustainable Livelihoods Framework (SLF) provides a useful lens for understanding how communities mobilize natural, human, social, physical, and financial capital to achieve sustainable livelihood outcomes (Tambe, 2022). This perspective is complemented by the community-based forest conservation literature, which emphasizes local participation, collective governance, and equitable benefit-sharing as important conditions for balancing forest conservation and community welfare. Similarly, Payments for Ecosystem Services (PES) demonstrates how economic incentives can connect environmental conservation with livelihood

improvement by rewarding communities or resource users for maintaining ecosystem services. Compared with these approaches, forest waqf combines community participation and productive resource utilization with a distinctive Islamic institutional foundation based on the perpetual preservation of endowed assets. In this study, forest waqf is therefore conceptualized as a socio-ecological mechanism in which conservation protects natural capital, productive activities generate financial capital, community participation strengthens social and human capital, and reinvestment sustains both ecological and livelihood outcomes. This perspective extends the SLF by emphasizing a cyclical relationship between conservation, productive utilization, community empowerment, and reinvestment, providing a broader conceptual basis for understanding the socio-ecological transformation of waqf land (Natarajan et al., 2022).

Previous Studies

Table 1. *Comparison of Previous Green Waqf Studies and the Present Study*

Study	Main Focus	Research Context / Approach	Key Contribution	Limitation / Research Gap	Position of the Present Study
Ali & Kassim (2020a)	Productive waqf forest and SDGs	Conceptual study based on literature and interpretative analysis	Proposed a productive waqf forest scheme integrating tangible and intangible benefits for conservation and SDG achievement	Primarily conceptual; does not empirically examine how the model operates in a specific institutional setting	Empirically examines the transformation of waqf land into a productive conservation-based forest and identifies how ecological and socio-economic benefits are generated in practice
Ali et al. (2021)	Development strategy of waqf forest	Bogor Waqf Forest; SWOT-ANP	Identified strategic priorities for developing waqf-based forests	Emphasis on strategic factors rather than the actual socio-ecological outcomes generated by forest waqf	Moves from strategic formulation toward examining the mechanisms and outcomes of forest waqf utilization
Jannah et al. (2024)	Management strategies of productive waqf-based forest	Bogor Waqf Forest; interviews, AHP, FGD	Identified legal, ecological, Islamic, economic, social, and aesthetic	Focuses on determining management priorities rather than	Integrates management, conservation, productive activities, empowerment, benefit

			dimensions as key management consideratio ns	explaining the transforma tion of manageme nt activities into cumulative socio- ecological impacts	sharing, and reinvestment into a cyclical utilization model
Malahay ati & Anggrae ni (2025)	Green waqf, forest conservatio n, and livelihoods	Jantho and Bogor Waqf Forests; case-based analysis	Demonstrate d the potential of waqf for reforestation, biodiversity enhancement , sustainable land management , and community livelihoods	Identifies potentials and institutiona l challenges but provides limited explanatio n of the internal cycle through which ecological and economic benefits are reproduced	Explains the circular mechanism through which conservation generates productive opportunities, productive activities support community welfare, and benefits are reinvested into conservation and waqf sustainability
Ali et al. (2025)	National Waqf- Based Forest Index	Expert- based quantitative approach; AHP	Developed the National Waqf-Based Forest Index covering institution, process, system, outcome, and impact dimensions	Provides a standardize d measureme nt framework rather than an in-depth explanatio n of how socio- ecological transforma tion occurs at the community level	Provides qualitative empirical evidence explaining the processes underlying outcomes and impacts within a specific forest waqf institution

Source: Author's synthesis based on previous studies (2026)

The comparison presented in Table 1 indicates that the literature on green and forest waqf has progressively evolved from conceptualizing the potential of waqf for environmental conservation toward developing management strategies and performance measurement frameworks. Ali and Kassim (2020a), for instance,

established the conceptual foundation of productive waqf forests by linking conservation with tangible economic benefits, while subsequent studies have emphasized management priorities, agroforestry, community livelihoods, and standardized performance measurement. However, an important gap remains in understanding how these dimensions interact dynamically within an actual waqf institution to generate sustained socio-ecological value.

Recent scholarship has increasingly expanded the role of forest waqf beyond conventional asset management toward environmental conservation, community livelihoods, and climate action. Empirical studies on productive waqf forests in Bogor highlight the importance of balancing economic productivity, ecological protection, institutional governance, and community participation (Jannah, Sarkawi, & Othman, 2024), while recent research on Bogor and Mojokerto demonstrates the potential of Islamic social finance to support conservation, environmental education, and community-based productive activities.

Emerging bibliometric studies further indicate the growing integration of green waqf with environmental sustainability, climate finance, and the SDGs. From a normative perspective, the linkage between waqf, climate action, and *maqāṣid al-sharī'ah* is reinforced by recent studies and MUI Fatwa No. 86 of 2023 on global climate change control, which provides an important Islamic foundation for environmental protection in Indonesia. However, limited attention has been given to how conservation, productive utilization, sociopreneurship, community empowerment, benefit sharing, and reinvestment interact as a continuous process. Addressing this gap, the present study examines the YPM Sidoarjo case and develops a cyclical model of forest waqf utilization that explains how ecological conservation and socio-economic empowerment can mutually reinforce the long-term sustainability of waqf assets.

This study addresses this gap through an empirical case study of forest waqf management at YPM Sidoarjo, Indonesia. Rather than treating conservation, productive utilization, and community empowerment as separate outcomes, the study conceptualizes them as interconnected stages within a cyclical process. The proposed model demonstrates how conservation creates the ecological foundation for productive activities; productive activities generate economic value and livelihood opportunities; community empowerment and inclusive benefit-sharing strengthen social participation; and a proportion of the resulting benefits is reinvested to sustain conservation and productive activities. This cyclical perspective constitutes the principal contribution of the study, extending existing forest waqf literature from a static framework of asset utilization toward a dynamic model of socio-ecological value creation and institutional sustainability.

RESEARCH METHOD

This study adopts a qualitative approach with a case study strategy to obtain an in-depth understanding of green waqf financing mechanisms in the context of forest conservation managed by YPM Sidoarjo. This approach is particularly suitable for capturing the institutional complexity, governance dynamics, and multi-actor in the interactions involved in environmental waqf practices (Gul, 2021; Lubis et al., 2025). Informants were selected using purposive sampling (Yusuff et al., 2024). The study utilizes both primary and secondary data sources. Primary data were collected through in-depth interviews (Aldeen et al., 2022).

Informants were purposively selected for their direct involvement, knowledge, or experience in the management and socio-ecological activities of the YPM Sidoarjo forest waqf. The primary informants comprised YPM management, operational waqf administrators, and local community members who were directly involved in or affected by the waqf forest activities. To broaden the contextual interpretation,

supplementary perspectives were also obtained from individuals involved in collaborative research activities and a representative of a waqf institution in Gresik. However, these external perspectives were used as supporting contextual evidence rather than as primary in-depth interview data. In addition, publicly available comments and community responses posted on the official social media account of the YPM waqf forest were reviewed as supplementary evidence of community perceptions. The study, therefore, distinguished between primary interview evidence and supplementary contextual sources to avoid overstating the depth of external stakeholder engagement. Data collection and analysis continued until thematic saturation was reached, indicated by the point at which subsequent data sources no longer generated substantively new themes relevant to the research questions.

Table 1. *Primary Informants and Supplementary Data Sources*

No.	Informant / Source	Position / Role	Data Contribution
1	Ahmad Maki	Chairperson of YPM Sidoarjo	Institutional governance, waqf utilization, conservation, and community programs
2	Agus Sugiarto	Head of Waqf Forest Management, YPM Sidoarjo	Forest management, conservation practices, MSME empowerment, and benefit distribution
3	Yusuf	Alumnus and Administrator, YPM Sidoarjo	Waqf forest activities, community empowerment, and institutional practices
4	Rusmadi	Resident of Ngembat Village	Community experience, coffee production, value-added processing, and local benefits
5	External research collaborators	Participants involved in collaborative research activities	Supplementary contextual perspectives on forest waqf development
6	Representative of a waqf institution in Gresik	Waqf institution practitioner	Comparative contextual perspective on waqf management
7	Public comments on the official social media account of the YPM waqf forest	Community/public responses	Supplementary evidence of community perceptions and engagement

Source: Processed data by authors (2026)

Secondary data were obtained from academic publications (Alshater et al., 2022), official policy documents, and regulatory frameworks related to waqf governance and environmental conservation. Data analysis was conducted using methodological triangulation. Methodological triangulation was applied at three levels. First, source triangulation compared information obtained from YPM management, operational staff, community members, external institutional stakeholders, and comparative waqf actors. Second, method triangulation compared interview findings with direct observations and documentary evidence. Third, theoretical triangulation interpreted the empirical findings through complementary

perspectives from Islamic social finance, the Sustainable Livelihoods Framework, and green finance. A claim was considered analytically robust when it was supported by convergent evidence from multiple sources or methods. Where discrepancies occurred, the researchers retained the divergent accounts and examined them as part of the institutional and social complexity of forest waqf management rather than eliminating them from the analysis.

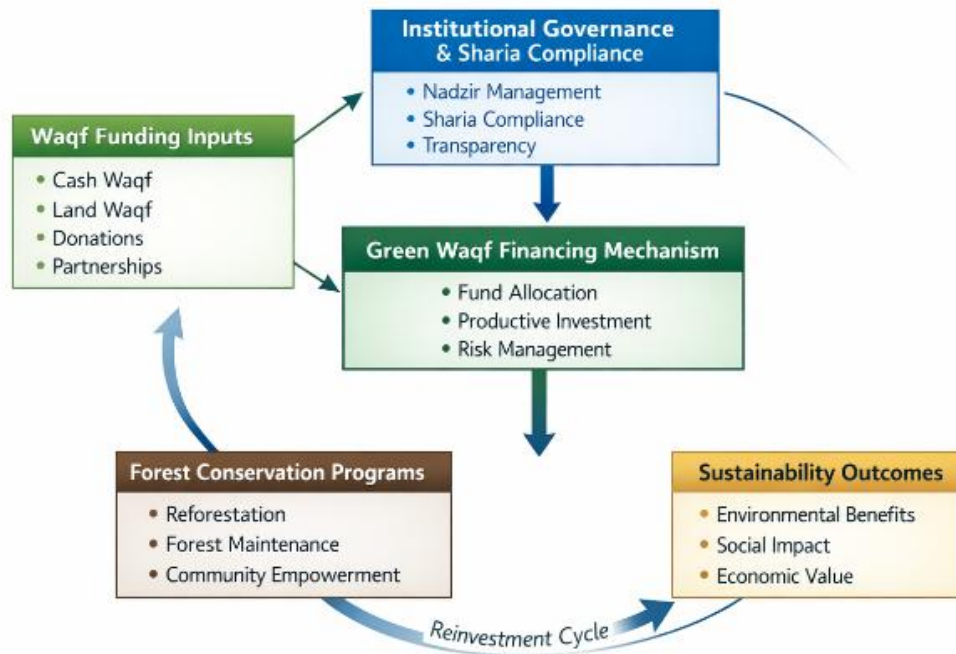


Figure 2. *Green Waqf Financing Framework for Forest Conservation*
Source: Processed data by authors (2026)

Figure 2 presents the proposed Green Waqf Financing Framework, which integrates Islamic social finance instruments, institutional governance, and sustainability-oriented conservation mechanisms within the management of waqf forests at YPM Sidoarjo. The model illustrates how waqf funding inputs, including cash waqf, land waqf, donations, and strategic partnerships, are managed through Sharia-compliant governance structures and the institutional capacity of *nadzir* to ensure accountability and transparency (Ridwan, 2012). Furthermore, the framework highlights sustainability outcomes in terms of environmental preservation, social welfare enhancement, and economic value creation, supported by a reinvestment cycle that strengthens the long-term financial sustainability of the waqf ecosystem (Afifi, 2024; Mohamed & Akande, 2025)

RESULTS

Transformation of Waqf Land into Conservation-Based Productive Forests

The findings indicate that the management of the waqf forest at YPM Sidoarjo has successfully transformed previously underutilized land into a conservation-oriented, productive waqf forest area. This outcome was highlighted by Ahmad Maki, Chairperson of YPM Sidoarjo, who stated:

"The waqf forest we manage is used for environmental education through tree planting activities involving teachers, students, and other stakeholders under the YPM Sidoarjo foundation. Land or forest areas that were previously unproductive, with only five plant species, have now been

transformed into areas supporting 33 different plant species". (Ahmad Maki, personal communication, September 9, 2025)

The informant explained that prior to the systematic management of waqf assets, the land was dominated by approximately five plant species. Following the implementation of the development program, plant diversity increased significantly to 33 productive and conservation-oriented plant varieties. A similar perspective was expressed by Agus Sugiarto, Head of Waqf Forest Management at YPM Sidoarjo:

"Clearly, trees and plants in the waqf forest are not harvested on a large scale. The community has become more aware of forest conservation that can provide livelihoods. Several wildlife species, such as birds and other wild animals, have begun to return because food sources are now available due to forest development". (Agus Sugiarto, personal communication, September 10, 2025)

These statements reflect the implementation of productive waqf principles that extend beyond asset preservation toward the optimization of ecological and social benefits. Crop diversification has contributed to increased biodiversity while strengthening the ecological function of the forest as an environmental buffer. Furthermore, the conservation-based approach has enhanced community awareness regarding the importance of avoiding large-scale deforestation and maintaining ecosystem sustainability. Overall, these findings reinforce the argument that environmentally oriented waqf can function not only as an instrument for protecting natural resources but also as a form of long-term social capital that supports sustainable development objectives (Haji-Othman et al., 2024; Mahardika & Tanweer, 2025).

The first theme concerns the transformation of previously underutilized waqf land into a conservation-oriented productive forest. Ahmad Maki, Chairperson of YPM Sidoarjo, reported that the area previously contained approximately five plant species, whereas the development program had expanded the observed variety to 33 species. Agus Sugiarto, Head of Waqf Forest Management, further explained that large-scale harvesting was avoided and that increased vegetation had contributed to the return of birds and other wildlife.

These accounts indicate that waqf land was not treated merely as a preserved asset but as a form of natural capital capable of generating both ecological and social value. From an SLF perspective, the diversification of vegetation strengthens natural capital and creates the ecological foundation for subsequent livelihood activities. From a *maqāṣid al-sharī'ah* perspective, conservation entails protecting environmental resources and preventing harm. Importantly, the finding suggests that productive waqf does not necessarily require intensive extraction; productivity can instead be achieved through conservation-compatible utilization. The reported increase from five to 33 plant species should, however, be interpreted as an observed or reported ecological outcome rather than as an independently verified biodiversity index. The evidence primarily demonstrates perceived changes in vegetation diversity and conservation practices (Kasoki et al., 2025).

Waqf Utilization Model Based on Sociopreneurship and Green MSMEs

The management of the YPM Sidoarjo waqf forest is not limited to physical environmental conservation but is also developed as a platform for experiential environmental education. This approach was explained by Ahmad Maki, Chairperson of YPM Sidoarjo, who stated *that* "not only environmental education, but also the development of sociopreneurship. We continuously strive to improve the

management process so that the existence of the YPM Sidoarjo waqf forest can generate tangible impacts for both the community and the environment.”

The informant emphasized that waqf functions not merely as a passive asset but as an educational platform. Several programs have been developed, including waqf forest schools, tree-planting activities, and contextual learning initiatives involving teachers, students, and other educational stakeholders within the YPM institutional network. A similar view was expressed by Yusuf, an alumnus and administrator at YPM Sidoarjo. *He said that* “the main activities of the waqf forest include the waqf forest school, tree planting, contextual learning, and MSME empowerment.”

This approach demonstrates that waqf financing is not solely directed toward physical infrastructure development but also toward strengthening human capital capacity. Waqf-based environmental education facilitates the formation of ecological awareness from an early stage while embedding sustainability values within both formal and non-formal educational activities. Furthermore, the YPM Sidoarjo waqf forest is managed through a sociopreneurship approach that integrates business activities with social and environmental missions. This concept emphasizes empowerment, sustainability, and the enhancement of welfare (Restuti et al., 2026). Within this framework, waqf utilization is designed not only to support conservation objectives but also to stimulate productive economic activities by empowering local micro, small, and medium enterprises (MSMEs) (Hidayati et al., 2026).

Conceptually, these findings expand the role of waqf from a conventional philanthropic instrument to a platform for building a sustainable educational and green-economic ecosystem (Azwar, 2023; Mahardika & Tanweer, 2025). Informants explained that waqf utilization is directed toward both conservation and productive economic development. In particular, waqf resources are used to support local MSME productivity, especially in the coffee and forest-based product sectors. This was further emphasized by Agus Sugiarto, Head of Waqf Forest Management at YPM Sidoarjo. He stated, “through our community network, local residents are able to empower MSMEs across the entire value chain, from production and labeling to distribution and marketing, using both online and offline channels.”

Interview results indicate that MSME empowerment plays a strategic role in the waqf utilization model. Empowerment activities encompass production processes, branding and labeling, distribution systems, and market access. This integrated approach demonstrates a synergistic relationship among waqf, MSMEs, and sociopreneurship, positioning waqf as a source of productive social capital (Rumasukun, 2023) that supports the strengthening of local economies around forest areas (Ali et al., 2021; Hassan, 2014).

This model reflects a paradigm shift in waqf management from a charity-based approach toward an empowerment-based approach (Alfian et al., 2025; Wijaya, 2025). Communities are not merely passive recipients of benefits but actively engaged in production, processing, and marketing. Such an approach generates economic value-added while enhancing local community self-reliance. Within the Islamic social finance framework, this waqf-based sociopreneurship model highlights the significant potential of waqf as an inclusive and sustainable instrument for green economic development (Ayub et al., 2024; Kamaruzaman & Ishak, 2023).

Innovation and Distribution of Waqf Benefits for Local Communities and Ecosystems

The YPM Sidoarjo waqf program has been developed through a range of strategic innovations, one of which is the processing of coffee commodities. This innovation was described by Rusmadi, a resident of Ngembat Village, as follows:

“Behind my house, as you can see, we have coffee and clove seedlings, fruit trees, and other plants that will be planted during the next planting season. ... Coffee beans harvested from the waqf forest are processed into higher-value coffee products. For example, the beans are soaked in large containers for several weeks before further processing. We now also have processing equipment at home. Previously, before the waqf forest development program, we did not have coffee drying or processing facilities”. (Rusmadi, personal communication, September 11, 2025)

Interview findings indicate that the development of the coffee commodity represents a tangible example of innovation in waqf forest utilization. Community members involved in waqf forest management not only cultivate coffee plants but also implement post-harvest processing techniques, including fermentation and the use of improved production equipment.

The value-added impact has been strongly perceived by local communities. Residents reported significant benefits from improvements in post-harvest processing and the adoption of MSME-level production technologies. Prior to the implementation of the waqf development program, communities lacked adequate drying and processing facilities. Following program implementation, production capacity increased, and product quality improved, resulting in a substantial rise in the market value of waqf-based coffee products.

These innovations demonstrate that green waqf financing contributes not only to environmental conservation but also to the transfer of appropriate technologies that directly enhance local economic welfare (Mahardika & Tanweer, 2025; Mohamed & Akande, 2025). The benefit distribution scheme of the YPM Sidoarjo waqf forest is implemented through inclusive profit-sharing and community access mechanisms. This was explained by Yusuf, an alumnus and administrator at YPM Sidoarjo. He stated, “As far as we know, for economic activities, tree branches are distributed to local NU community branches around the waqf forest, while the fruit harvests are made available for use by surrounding residents.”

The informant stated that in economic activities, tree branches are distributed to local NU community branches surrounding the waqf forest, while fruit harvests are utilized by nearby residents. A similar statement was provided by Agus Sugiarto, Head of Waqf Forest Management at YPM Sidoarjo. *He explained that* “Coffee harvests are distributed to the community to improve household economic income. Fruits such as bananas, avocados, rambutan, and other waqf forest products are also provided to residents free of charge, alongside MSME empowerment initiatives in the second waqf forest area.”

The interview results indicate that coffee harvests are distributed to nearby communities to support household income generation. In addition, fruit harvests, including bananas, avocados, and *rambutan*, are shared freely with local residents. This practice reflects a community-oriented benefit-sharing model that characterizes environmentally oriented waqf. Community access to waqf forest outputs illustrates a sharing-benefit mechanism that enhances social inclusion and economic participation (Ali et al., 2021).

Beyond economic outcomes, the distribution of benefits has also strengthened social solidarity and institutional relationships within the local community, including the allocation of tree branches to nearby community organizations (Jafar et al., 2025). This pattern reflects the foundational values of waqf as an instrument of social justice, extending beyond financial returns to emphasize equitable distribution of benefits and social cohesion (Afifi, 2025). Consequently, waqf functions not only as a mechanism for economic empowerment but also as an integrated instrument for social and ecological welfare (Maulana, 2024; Wagay & Nabi, 2025).

These practices indicate that value creation within the waqf forest is not limited to financial returns for the managing institution. Benefits are distributed through access to forest products, income-generating opportunities, technology, and community enterprises. Within the SLF, this mechanism strengthens financial and social capital, while from a maqāṣid al-sharī‘ah perspective, it supports social welfare and equitable access to economic benefits. The evidence, therefore, suggests that benefit distribution is not merely an outcome of waqf utilization but an institutional mechanism that strengthens community participation and reinforces the legitimacy of conservation activities (Malahayati & Anggraeni, 2025).

Strengthening the Green Waqf Financing Model through Community Development

Green waqf financing represents a strategic approach to supporting sustainable environmental management (Haji-Othman et al., 2024; Mahardika & Tanweer, 2025). The management of the YPM Sidoarjo waqf forest has been further strengthened through the implementation of various community development programs. This was explained by Agus Sugiarto, Head of Waqf Forest Management at YPM Sidoarjo, who stated that “We have developed several programs, including *nyemplung kalen* (river-cleaning activities), MSME empowerment programs, particularly for coffee farmers, compost processing using forest leaf waste, as well as broader conservation and community development initiatives.”

Interview findings indicate that the green waqf financing model is reinforced through community development programs such as compost production from forest biomass, environmental conservation activities, and the empowerment of coffee farmers. This community-based approach enhances local ownership of waqf assets and increases active participation in maintaining forest sustainability (Malahayati & Anggraeni, 2025).

The findings further demonstrate that the effectiveness of environmentally oriented waqf financing is determined not only by the availability of financial resources but also by the quality of social governance and the level of community engagement. The integration of waqf financing, environmental conservation, and community empowerment creates an adaptive and sustainable green waqf ecosystem. This model positions waqf financing not merely as a funding mechanism, but as an integrated rural development ecosystem that supports long-term environmental and socio-economic sustainability (Kamaruzaman & Ishak, 2023; Ridwan et al., 2021).

The findings suggest that institutional sustainability depends on the interaction between community participation, productive utilization, and ecological stewardship. Forest biomass, for example, is converted into compost rather than treated solely as waste, creating a circular relationship between ecological resources and productive activities. Such practices strengthen human, social, natural, and financial capital simultaneously. The four themes, therefore, form a cumulative process rather than independent outcomes. Conservation establishes the natural resource base; productive utilization converts this ecological asset into livelihood opportunities; benefit sharing distributes the resulting socio-economic value; and community development and reinvestment contribute to maintaining the productive and ecological capacity of the forest. This empirical sequence constitutes the basis for the Green Waqf Financing Cycle presented in Figure 3.

Table 2. *Thematic Summary of Findings and Linkages to the Green Waqf Financing Cycle*

Main Theme	Key Sub-themes	Supporting Empirical Evidence	Informant Sources	SLF / Maqāsid al-Sharī'ah Interpretation
Conservation-based transformation	Land restoration; plant diversification; wildlife habitat; conservation awareness	Reported increase from 5 to 33 plant species; reduced large-scale harvesting; return of birds and wildlife	YPM Chairperson; Waqf Forest Manager	Natural capital; hifz al-bī'ah and prevention of environmental harm
Sociopreneurship and green MSMEs	Waqf Forest School; contextual learning; coffee production; MSME value chain	Environmental education; coffee cultivation; production, labeling, distribution, and marketing	YPM Chairperson; Waqf Forest Manager; Administrator	Human, social, and financial capital; hifz al-māl
Benefit distribution and innovation	Value addition; post-harvest processing; community access; income generation	Coffee fermentation and processing equipment; distribution of coffee and fruit products to residents	Waqf Forest Manager; Administrator; Local resident	Financial and social capital; welfare and equitable benefit sharing
Community development and reinvestment	Environmental activities; farmer empowerment; composting; collective stewardship	River cleaning; coffee-farmer programs; compost from forest biomass; conservation activities	Waqf Forest Manager; Community	Social, human, natural, and financial capital; maslahah and environmental protection

Source: Authors' analysis of interview, observation, and documentary data (2026)

The thematic synthesis demonstrates that the YPM model operates through a mutually reinforcing cycle rather than a linear financing process. Conservation maintains the natural capital required for productive activities; productive use creates economic opportunities; benefit-sharing converts economic value into community welfare and social legitimacy; and community development and reinvestment maintain the ecological and productive capacity of the waqf asset. Accordingly, the Green Waqf Financing Cycle represents an empirically derived

integration of conservation, livelihood development, social inclusion, and institutional sustainability.

DISCUSSION

Based on a synthesis of empirical findings, the management of the YPM Sidoarjo waqf forest can serve as a best-practice model for developing conservation-based, environmentally oriented waqf financing. The resulting model demonstrates a systemic integration of the spiritual dimension of waqf, ecological management, community economic empowerment, and social sustainability. This integration extends the conventional paradigm of waqf from a philanthropic instrument toward a strategic Islamic social finance mechanism oriented to sustainable development (Jafar et al., 2025; Ma & Sukmana, 2025).

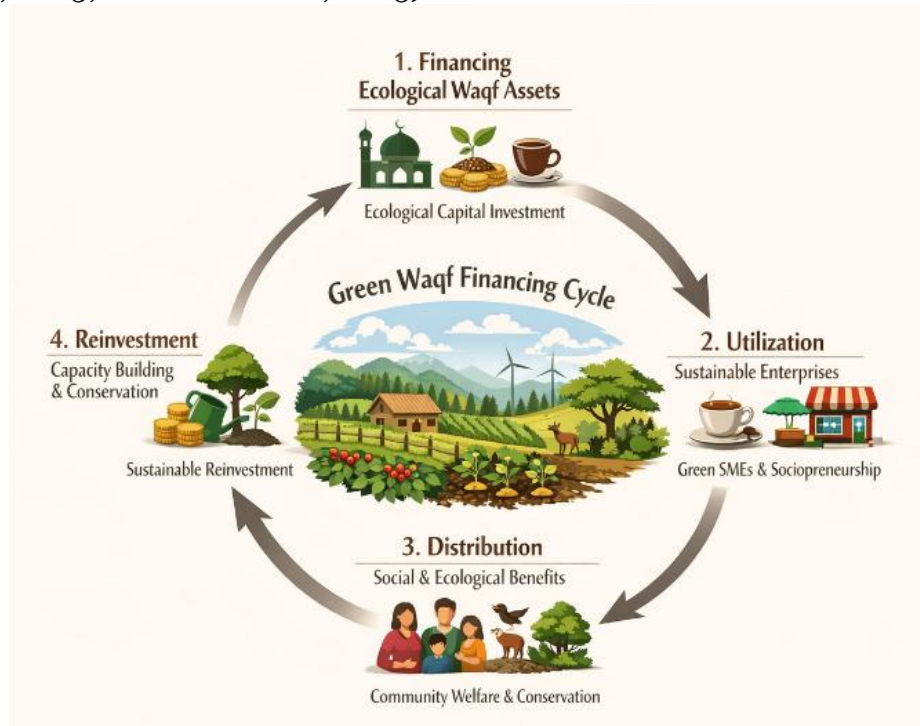


Figure 3. *Green Waqf Financing Cycle*

This study formulates a green waqf financing framework based on a sustainability-driven cyclical model comprising four interrelated stages: financing, utilization, benefit distribution, and reinvestment. At the financing stage, waqf assets are conceptualized as ecological capital rather than static endowments, aligning with the asset-based Islamic social finance paradigm that emphasizes mobilizing productive assets for sustainable development. The utilization stage integrates conservation-oriented forest management with sociopreneurship and green micro-enterprises, particularly through value-added coffee production and post-harvest processing. This approach reinforces empirical evidence that Islamic social finance instruments can serve as catalysts for inclusive green economic activities at the community level (Rabbani et al., 2020).

The distribution stage ensures that economic returns are accompanied by social inclusion and ecological restoration, as reflected in improved household incomes, enhanced biodiversity, and habitat preservation. This multidimensional benefit-sharing mechanism is consistent with the expanded maqashid al-shariah framework, which incorporates environmental protection alongside wealth and human well-being (Abdullah, 2018; Mubarak et al., 2022). The final reinvestment stage strengthens institutional sustainability by channeling part of the generated surplus into forest maintenance, seedling development, SME capacity building, and environmental education programs. This self-reinforcing financing cycle enhances

the resilience of waqf institutions against external funding volatility and positions green waqf as a scalable model for integrated conservation finance (Mohamed & Akande, 2025).

Conceptually, the field findings indicate that green waqf financing at YPM Sidoarjo does not operate linearly but rather follows a sustainable cyclical pattern comprising four main stages: waqf financing mobilization, conservation-based productive utilization, socio-ecological benefit distribution, and reinvestment for program sustainability. This cyclical structure reinforces the argument that waqf has strong potential as an impact-oriented Islamic finance instrument capable of simultaneously addressing environmental challenges and economic inequality (Hidayat et al., 2024; Rabbani et al., 2020).

Overall, the YPM Sidoarjo green waqf financing model represents a form of eco-productive waqf financing. The findings indicate that the success of the YPM Sidoarjo model is driven not merely by the availability of waqf land but by the institutional capacity of the nadzir to develop an integrated green financing ecosystem. Waqf assets are transformed into ecological capital and managed through conservation-based practices, environmental education, and the diversification of productive crops. While this approach aligns with the concept of productive waqf, the YPM model extends it by positioning environmental sustainability as a primary objective, thereby enabling waqf to generate both economic and ecological value (Ali & Kassim, 2020a; Hasan & Wigati, 2024), as a responsive instrument for addressing climate change and global development challenges (Mahardika & Tanweer, 2025; Ridwan et al., 2021).

Compared with previous studies that predominantly emphasize governance structures or the economic optimization of waqf assets (Kamaruzaman & Ishak, 2023; Neta & Kalimah, 2025), this research provides empirical evidence that waqf functions as an environmental conservation instrument within Islamic social finance. The YPM Sidoarjo case demonstrates that green waqf can simultaneously achieve social inclusion, ecological sustainability, and economic productivity, a combination that remains underexplored in existing empirical literature. Overall, the proposed model positions waqf as an impact-oriented Islamic social finance instrument with significant implications for sustainable development policy and practice (Wahyudi & Yama, 2024).

The findings extend the Sustainable Livelihoods Framework by demonstrating that the five livelihood capitals not only function as inputs to livelihood strategies but can also be continuously reproduced through a conservation–production–distribution–reinvestment cycle. Natural capital provides the ecological foundation for productive activities, while human and social capital enable communities to transform forest resources into economic value. Financial returns are subsequently distributed through community-oriented mechanisms and reinvested in conservation and capacity building. Thus, the YPM case suggests a circular rather than linear relationship between livelihood assets and outcomes. This finding also refines the conventional productive waqf perspective, in which productivity is primarily associated with economic returns, by demonstrating that ecological preservation can itself constitute a productive function of waqf (Qurrata et al., 2025).

The findings further operationalize the *maqāṣid al-sharīʿah* perspective by showing how environmental protection, economic welfare, and social well-being are simultaneously embedded in institutional practices. Rather than treating environmental protection as an additional outcome of waqf, the YPM model places ecological sustainability at the foundation of productive utilization. This creates a complementary relationship between *hifẓ al-bīʿah*, *hifẓ al-māl*, and broader *maslahah*. The contribution of the study, therefore, lies not simply in confirming that forest waqf can support conservation and community welfare, but in explaining the

institutional mechanism through which these objectives reinforce one another over time.

This study strengthens the theoretical foundation of Islamic environmental finance by demonstrating that the *maqāsid al-sharī'ah* principles can be operationalized in the design of practical green waqf financing (Seman et al., 2025). Environmental protection (*hifz al-bī'ah*), community economic welfare (*hifz al-māl*), and social sustainability (*hifz al-nafs*) are not merely normative ideals, but are translated into concrete mechanisms through conservation management, green sociopreneurship, and equitable benefit distribution. Consequently, this study bridges the conceptual gap between value-based *maqāsid al-sharī'ah* theory and sustainable financing practice, a gap that has been underexplored in empirical research. This contribution enriches the global discourse on Islamic sustainable finance by presenting a context-specific and replicable waqf-based empirical model (Maulida & Rusydiana, 2025; Sirait, 2024).

CONCLUSION

This study concludes that the green waqf financing model at YPM Sidoarjo provides an integrated framework linking forest conservation, community empowerment, and Islamic social finance. The transformation of waqf land into conservation-based productive forests has supported ecological stewardship while creating socio-economic value through sociopreneurship, green MSMEs, and inclusive benefit sharing. These findings underpin a cyclical mechanism comprising waqf asset mobilization, conservation-based productive utilization, benefit distribution, and reinvestment. The model, therefore, extends the conventional concept of productive waqf toward an eco-productive paradigm in which ecological, social, and economic objectives are mutually reinforcing and can be interpreted through the lens of the Sustainable Livelihoods Framework and *maqāsid al-sharī'ah*. The study further implies that *nazhir* can adopt this cycle by assessing local ecological and socio-economic conditions, developing context-appropriate green enterprises, establishing transparent benefit-sharing mechanisms, and reinvesting part of the generated value in conservation and community development. Policymakers can support replication through green waqf guidelines, *nazhir* capacity-building, impact reporting, and cross-sector partnerships, all within existing waqf, *sharia*, and environmental regulations. However, replication should be adaptive rather than uniform because ecological conditions, institutional capacity, markets, and community livelihoods vary across regions. Future research should therefore test the model across multiple contexts using comparative or mixed-method approaches and measurable ecological, economic, and social indicators to assess its effectiveness, financial viability, and scalability.

LIMITATION

This study has several limitations. First, the qualitative single-case design focuses exclusively on the YPM Sidoarjo waqf forest, limiting the generalizability of the findings to other institutional, ecological, and socio-economic contexts. Second, the study primarily relies on interviews, field observations, and supplementary documentary evidence, without longitudinal quantitative measurements of ecological outcomes such as carbon sequestration, biodiversity indices, forest cover changes, or ecosystem service valuation. Consequently, the reported environmental impacts should be interpreted primarily as qualitatively observed or stakeholder-reported outcomes rather than independently verified ecological effects. Third, the proposed Green Waqf Financing Cycle has not been assessed using detailed financial indicators, such as investment returns, cost-effectiveness, or long-term financial sustainability. Moreover, the framework has yet to be validated across multiple waqf institutions or

geographical contexts. Future research should therefore employ comparative or mixed-method designs that integrate ecological indicators, financial performance measures, and longitudinal data to assess the robustness, scalability, and broader applicability of the proposed model.

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