

## Integrating Islamic Social Finance and Environmental Conservation: Evidence from Bogor and Mojokerto Waqf Forests

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### Highlight

Waqf forests in Indonesia combine religious legitimacy and community engagement to support conservation and socio-ecological initiatives, yet face persistent financing and institutional constraints. This study highlights the potential of green sukuk to complement waqf-based resources and enhance sustainability. The findings contribute to emerging discussions on linking Islamic philanthropy with green finance instruments.

### Abstract

This study examines the management practices of waqf forests in Bogor and Mojokerto, Indonesia, to identify their strategic resources and assess the potential integration of green sukuk as a complementary financing mechanism to support sustainable Islamic social finance. Drawing on the Resource-Based View (RBV) as an analytical lens, the study explores how religiously embedded assets and community-based resources are mobilized to support environmental conservation and local development. A qualitative case study approach was employed, involving in-depth interviews with waqf managers, community members, and volunteers, complemented by field observations and analysis of institutional documents. The data were analyzed using thematic analysis guided by RBV concepts. The findings indicate that waqf forests possess distinctive resources, including permanently endowed land, Shariah legitimacy, and strong social capital. These resources are translated into conservation, educational, and productive activities, such as waqf forest schools, ecotourism initiatives, and small-scale enterprises. However, limited financing, institutional capacity constraints, and discontinuous external support hinder long-term sustainability. The study finds that green sukuk has the potential to function as a complementary resource by addressing financing gaps, enhancing institutional legitimacy, and aligning waqf forest initiatives with the Sustainable Development Goals (SDGs). By extending the application of RBV to the context of Islamic social finance, this research highlights how faith-based environmental initiatives can be strengthened through innovative linkages with green financing instruments in Indonesia.

### Keywords

waqf forest, green sukuk, Resource-Based View, Islamic social finance, sustainable development.

### Introduction

Indonesia is endowed with extensive forest resources and remarkable biodiversity, positioning the country as one of the world's principal biodiversity hotspots. Despite retaining substantial forest cover, Indonesia continues to face persistent pressures from deforestation and forest degradation. According to the State of Indonesia's Forests 2024, the country lost approximately 259,000 hectares of natural forest in 2024, with most of the loss occurring within legally designated concession areas (Ministry of Environment and Forestry, 2024; Global Forest Watch, 2025). Further assessments indicate that the deforestation rate reached 261,575 hectares in 2024, the highest level since 2021, with nearly 97% of deforestation occurring in concession zones rather than in protected conservation areas (Jong, 2025). These figures suggest that, despite policy measures such as moratoriums on new permits, forest rehabilitation programs, and enhanced monitoring, economic pressures and governance challenges continue to undermine forest sustainability.

Beyond regulatory and policy constraints, a critical structural challenge lies in the financing of forest conservation, particularly for initiatives operating at the local and community levels. Studies on biodiversity finance in Indonesia identify a persistent funding gap for conservation, where state budget allocations remain focused on broader infrastructure priorities, and alternative finance mechanisms are needed to support biodiversity management and local initiatives (Oktaviani et al., 2025). While state-led programs and market-based green finance instruments have expanded in scale, they tend to prioritize large, infrastructure-oriented projects and often remain weakly connected to community-driven conservation initiatives. This limitation is especially evident in

conservation efforts rooted in religious and social institutions, where ecological objectives are intertwined with spiritual values, social legitimacy, and community engagement.

Within the framework of Islamic finance, waqf (Islamic endowment) instruments are increasingly being explored as mechanisms to bridge the financing gap in forest conservation. One notable innovation is the concept of a waqf forest, which extends beyond its religious dimension to encompass ecological and social development. Environmentally oriented waqf, commonly referred to as green waqf, has been shown to align with the Sustainable Development Goals (SDGs) and *maqāṣid al-sharī'ah*, particularly in promoting environmental stewardship and intergenerational justice (Rusydiana et al., 2023). Empirical studies further demonstrate that green waqf initiatives support activities such as reforestation, renewable energy development, and sustainable land use, illustrating how religious values can be mobilized to address contemporary environmental challenges (Othman et al., 2025).

Parallel to these developments, the Government of Indonesia has introduced green sukuk since 2018 as a Sharia-compliant financing instrument dedicated to funding environmentally sustainable projects. Green sukuk offers a key advantage in its ability to mobilize large-scale capital from both public and capital markets while adhering to Sharia principles, including the prohibition of *riba* (usury), transparency, and the earmarking of proceeds for green purposes (Damayanti, 2025). In practice, however, green sukuk issuances have largely been directed toward national-scale infrastructure projects, such as renewable energy, transportation, and water management. As a result, integration between green sukuk and localized, community-based initiatives, such as waqf forest management, remains limited (Rusydiana et al., 2023). This reveals a structural disconnect between capital market-oriented green finance instruments and grassroots conservation initiatives grounded in religious and social institutions.

Existing literature on waqf in Indonesia has predominantly focused on cash waqf management, digital waqf platforms, and governance and regulatory frameworks (Adinugraha et al, 2024; Puspita & Tanjung, 2024; Salsabila et al., 2025; Nashirudin et al., 2025). While these studies provide valuable insights into institutional reform and financial innovation, they offer a limited explanation of how waqf-based environmental assets can be transformed into viable and sustainable financing mechanisms. In particular, the literature has yet to adequately address the mechanisms through which waqf forests, characterized by permanent land endowment, religious legitimacy, and embedded community trust, can be integrated with market-based green financing instruments such as green sukuk. This gap is not merely empirical, but conceptual, as it concerns the translation of faith-based social resources into bankable ecological assets capable of supporting long-term conservation efforts.

Addressing this conceptual gap requires an analytical framework that explains how unique institutional and social resources are mobilized and leveraged to achieve sustainability. Accordingly, this study adopts the Resource-Based View (RBV) as its analytical framework. From an RBV perspective, waqf forests constitute strategic resources that are valuable and rare, while their inimitability stems not from the physical forest itself but from the socially and historically embedded combination of permanent endowment status, Sharia legitimacy, and accumulated community trust (Akingbola, 2013; Oliveira et al., 2021). However, the mere existence of strategic resources does not guarantee sustainability. The effective utilization of these resources is often constrained by capability gaps, including limited access to long-term financing, institutional weaknesses, and managerial capacity limitations within waqf organizations. These constraints hinder the transformation of waqf forests from symbolic religious assets into operationally sustainable conservation initiatives.

Within this framework, green sukuk is conceptualized not merely as a financing instrument but as a complementary resource that can enhance the resource orchestration capacity of waqf institutions. By linking waqf forests with green sukuk, waqf organizations may strengthen their financial capabilities, improve project scalability, and enhance legitimacy within broader green finance and sustainable development ecosystems (Sisdianto et al., 2024). Such integration offers the potential to bridge the normative values of waqf with the financial logic of capital markets, thereby addressing long-standing sustainability challenges in community-based environmental conservation.

Building on this perspective, the present study explores the management practices of waqf forests in Bogor and Mojokerto, identifies resource-related constraints and capability gaps, and analyzes the potential for integration with green sukuk as a Sharia-compliant green financing mechanism. The study contributes theoretically by extending the application of the Resource-Based View to faith-based environmental assets and by bridging the

previously fragmented literatures on productive waqf and green finance. Practically, it offers insights for policymakers, waqf institutions, and Islamic finance stakeholders in designing sustainable financing models for waqf-based forest conservation.

## 2. Literature Review

### 2.1. Waqf Forest in Indonesia: Potentials and Challenges

Waqf has long been recognized as an Islamic philanthropic instrument with significant contributions to education, healthcare, and the socio-economic development of communities. Cizakca (2000) notes that throughout Islamic history, waqf has supported various educational and social institutions by providing inalienable assets that continuously generate benefits. Over time, however, waqf has undergone a transformation from passive forms to productive waqf, characterized by the active management of endowed assets to create sustainable economic value through business ventures, capital investment, or other productive uses (Ihsan et al., 2016). Contemporary waqf management increasingly emphasizes diversification and the optimization of endowed assets to ensure sustained social and economic returns (Halomoan, 2022).

One innovative manifestation of productive waqf is the waqf forest (also referred to as waqf-based forest), which integrates environmental conservation objectives with local community empowerment. Waqf forest initiatives combine forest preservation with livelihood enhancement, environmental education, and the sustainable management of ecosystems. In the Indonesian context, waqf forest programs have begun to emerge both legally and operationally. For instance, waqf forest initiatives have been practiced since 2012 in Jantho, Aceh, while several initiatives in Bogor have sought to develop waqf land for forest management (Jannah et al., 2020). These initiatives are increasingly framed as multi-dimensional approaches; ecological, economic, and social, that aim not only to mitigate environmental risks but also to empower forest-dependent communities (Ali et al., 2021).

Several studies further indicate that productive waqf and environmental waqf (green waqf) exhibit strong synergies with the Sustainable Development Goals (SDGs). Hadyantari (2022) argues that optimizing productive waqf can serve as a strategic alternative for advancing SDGs related to poverty alleviation, environmental protection, and social resilience. Moreover, recent research trends highlight a growing emphasis on integrating waqf with modern financial instruments, enhancing transparency, and strengthening professional governance (Judijanto et al., 2024). Nevertheless, empirical evidence on how such integration can be operationalized, particularly in environmentally oriented waqf initiatives, remains limited.

In practice, waqf forests continue to face substantial challenges. Nuradi et al. (2025) show that productive waqf models in Indonesia remain fragmented, with weaknesses in governance, managerial professionalism, and accountability hindering effective implementation. In the Indonesian context, Ascarya et al. (2021) identify financing constraints, limited institutional capacity, and regulatory uncertainty as key obstacles in selecting and sustaining productive waqf models suited to local conditions. Specifically with respect to waqf forests, Ali and Kassim (2021) emphasize persistent challenges related to land legality, limited support from formal institutions, and the absence of financing schemes that are accessible and applicable to local communities.

Thus, although waqf, including waqf forest, holds considerable potential as a vehicle for sustainable development, its practical advancement remains constrained by institutional limitations, funding challenges, managerial capacity gaps, and regulatory ambiguities. Further research that systematically and conceptually bridges waqf forest initiatives with modern Islamic financial instruments, such as green sukuk, is therefore both highly relevant and urgently needed.

### 2.2. Green Sukuk: Sharia-Compliant Innovation in Sustainable Finance

As an innovation in sustainable finance, green sukuk is a Sharia-compliant instrument designed to finance environmentally friendly projects in line with Islamic principles and environmental, social, and governance (ESG) standards. According to the United Nations Development Programme (2024), green sukuk operates as a Use-of-Proceeds (UoP) instrument, whereby funds are allocated exclusively to 'eligible green projects' under an agreed environmental framework, thereby strengthening transparency and accountability in sustainable financing. Indonesia became the first country to issue a sovereign green sukuk in 2018, with a value of USD 1.25 billion, the proceeds of which were allocated to renewable energy, sustainable transportation, and natural resource management projects, positioning Indonesia as a pioneer in the sustainable Islamic finance market (Santoso, 2020).

Empirical research indicates that green sukuk holds dual potential by supporting the energy transition while simultaneously broadening the base of Sharia-compliant investors with environmental concerns. Abdullah and Keshminder (2022) identify financing needs for green projects, national climate commitments, and growing investor preferences for sustainable instruments as key drivers of green sukuk issuance. Complementing this view, Riaz et al. (2024) demonstrate that green sukuk issuance enhances market confidence and delivers positive abnormal returns for Sharia-compliant investors, thereby reinforcing the legitimacy of this instrument within capital markets.

Nevertheless, the utilization of green sukuk in Indonesia has thus far remained dominated by large-scale government and infrastructure projects. Zanat and Betka (2024) argue that although green sukuk has contributed to advancing the SDGs, its application remains concentrated on large-scale infrastructure, while community-based initiatives have yet to be meaningfully integrated. Similarly, Riaz et al. (2024) point to limitations in corporate green sukuk markets, including low market awareness and insufficient regulatory incentives. This scale-oriented financing pattern creates a structural gap for locally grounded environmental initiatives, thereby opening an opportunity to link green sukuk with waqf forest initiatives. Such a linkage would integrate Islamic social finance with the Islamic capital market while expanding access to sustainable financing for community-based conservation projects.

### **2.3 . Resource-Based View (RBV)**

The Resource-Based View (RBV) is a strategic theoretical framework that posits an organization's sustained advantage stems not merely from external positioning, but from the possession, deployment, and orchestration of internal resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Across both profit and nonprofit contexts, RBV has been widely applied to explain how organizations create superior value by leveraging unique resource bundles that are not easily replicated. For example, Oliveira et al. (2021) demonstrate that, within nonprofit organizations, human resources can function as strategic competencies capable of differentiating organizational performance.

In the context of waqf forest, RBV is highly relevant in explaining how the mutawalli (waqf manager) can manage and orchestrate unique resources to generate sustainable benefits. These unique resources include:

- Permanently endowed land whose status prohibits sale or inheritance, making it a rare and long-term asset;
- Sharia legitimacy as a religious foundation that provides trust among donors and the wider community;
- Community trust and social capital (volunteers, community participation) that foster social bonds and local support;
- Socio-ecological capital (conservation values, ecosystems, environmental sustainability) that cannot easily be substituted by alternative resources

However, as indicated in the literature, the strategic potential of these resources is constrained by significant capability gaps, including limited financial capacity, managerial constraints (such as expertise in planning, monitoring, and evaluation), and underdeveloped regulatory frameworks (Ali & Kassim, 2021). From an RBV perspective, these limitations reflect deficiencies not in resource possession, but in the complementary capabilities required to effectively deploy those resources. It is within this context that green sukuk can be positioned as a complementary strategic resource, providing access to large-scale financial capital, enhancing institutional and regulatory legitimacy, and enabling more transparent mechanisms of reporting and accountability.

Accordingly, the application of RBV in the context of waqf forest initiatives is not merely an adaptation of a business-oriented theory, but a reinterpretation that highlights how waqf organizations, through mutawalli, can transform socially and religiously embedded resources into strategic capital. At the same time, this perspective underscores the necessity of complementary resources, such as green sukuk, to overcome internal capability constraints and support the long-term sustainability of waqf-based forest conservation.

### **3. Research Methodology**

This study employs a qualitative approach with a case study design to explore the management practices of waqf forests and to analyze their potential integration with green sukuk. A qualitative approach is appropriate given the study's objective to gain an in-depth understanding of socio-ecological and institutional dynamics within

specific local contexts, particularly how waqf forest resources are managed and leveraged by communities and supporting institutions. The case study design enables an intensive examination of empirical data from selected sites, allowing for a contextualized understanding of waqf forest governance and management practices. The study focused on two waqf forest initiatives: the Bogor Waqf Forest and the Mojokerto Waqf Forest. These cases were purposively selected as information-rich and illustrative examples of community-based waqf forest initiatives that are operational and institutionally embedded. The Bogor case represents a model supported by national-level institutions, including the National Zakat Agency (BAZNAS), the Ministry of Religious Affairs, and the Indonesian Waqf Forest Forum, while the Mojokerto case illustrates a locally driven model emphasizing community empowerment through a waqf forest school.

Primary data were collected through in-depth interviews with key informants, including waqf forest managers (mutawalli), volunteers, and representatives of supporting organizations. Semi-structured interviews were employed to facilitate systematic yet flexible exploration of experiences, strategies, and challenges in managing waqf forests. Field observations were conducted to document the physical conditions of waqf land, conservation activities, and community empowerment initiatives. Secondary data were gathered from institutional documents, program reports, official publications, and relevant literature on waqf, green sukuk, and sustainable development. Data analysis was conducted using thematic analysis. Interview transcripts and field notes were systematically coded and categorized to identify recurring patterns and themes, which were then interpreted using the Resource-Based View (RBV) as an analytical lens. The main analytical themes include: (1) strategic resources embedded in waqf forests; (2) internal and external capability constraints; and (3) opportunities for integrating green sukuk as a complementary resource. Data credibility was enhanced through source triangulation; by comparing interview, observation, and documentary evidence, and member checking with selected respondents to verify the accuracy of interpretations.

#### 4. Research Findings

##### 4.1 Origins and Founding Motivation

The Bogor Waqf Forest was initiated in 2018, followed by the establishment of the Mojokerto Waqf Forest in 2019. Both initiatives emerged from grassroots efforts driven by concerns over environmental degradation, education, and social sustainability, and were rooted in individual land endowments subsequently formalized as waqf. In Bogor, the waqf forest originated from a personal land donation that was later managed by a foundation. One of the managers explained that the initiative began on a relatively small scale:

“This first site covered only 1,500 m<sup>2</sup>... it was donated as waqf land by my wife’s friend. From there, we began, and the initiative gradually developed.”

As the initiative evolved, the motivations of the managers extended beyond the religious act of endowment toward broader ecological and social objectives. A manager emphasized that transforming the land into a waqf forest expanded its long-term benefits:

“If it were only used as a garden, the benefits would be limited. But when developed as a waqf forest, it carries the value of *ṣadaqah jāriyah*, provides social benefits, and also serves important environmental functions.”

In Mojokerto, the waqf forest similarly originated from land donations, but with a distinctive emphasis on educational actors. Managers highlighted that the initiative was driven by teachers who sought to realize *ṣadaqah jāriyah* through environmental conservation and education:

“The Mojokerto Waqf Forest originated from land donations by teachers, which were subsequently endowed as waqf. Its initial programs focused on establishing a waqf forest school and promoting environmental conservation.”

They further noted that the initial inspiration came from waqf practices in Aceh, which informed the development of the waqf forest school model:

“We were inspired by Aceh, where there are environmental waqf initiatives, so we sought to establish a waqf forest school in Mojokerto.”

Overall, the findings indicate that the origins of waqf forests in Bogor and Mojokerto are characterized by a shared foundation of spiritual motivation, particularly the pursuit of *ṣadaqah jāriyah*, combined with a growing commitment to long-term ecological and social responsibility.

#### 4.2. Resources and Management Activities

The management of waqf forests in Bogor and Mojokerto draws upon a combination of natural assets and socially embedded resources, which are mobilized through conservation, education, and community-based economic activities. In Bogor, waqf forest management encompasses both environmental conservation and small-scale productive initiatives aimed at supporting local livelihoods. One manager explained the establishment of a community-based enterprise that continues to operate:

“We set up a small community stall, and until now, alhamdulillah, it is still running... the local community continues to make use of it.”

Beyond the community stall, local residents are engaged in developing non-timber forest products, including honey and cloves, alongside modest ecotourism activities. As noted by a manager:

“We have honey and cloves as well, which we develop for the surrounding community. There is also ecotourism, although still on a small scale.”

These activities reflect efforts to utilize the ecological resources of the waqf forest while fostering community participation and local economic benefits. In Mojokerto, management activities place a stronger emphasis on environmental education and structured community empowerment. A central initiative is the Waqf Forest School, through which students regularly engage in experiential learning within the forest. A manager described the program as follows:

“There is a forest school, so once a month the students learn in the waqf forest, where they are taught about trees, vegetation, and even simple methods of calculating carbon.”

In addition to educational programs, the Mojokerto waqf forest has developed community-based enterprises, particularly coffee processing. The managers noted that farmers are trained to improve product quality, even to the extent of securing halal certification:

“We accompany coffee farmers from cultivation to processing. The ground coffee has already been registered for halal certification and has even been marketed abroad on a trial basis.”

Across both sites, social capital, manifested through community participation and volunteer involvement, plays a critical role in sustaining these activities. Community members contribute to tree planting, the operation of small business units, and the delivery of educational programs. Nevertheless, managers in both Bogor and Mojokerto acknowledged that limitations in funding and managerial capacity constrain the scalability of these initiatives:

“Community involvement is there, but professional management is still lacking... because we are limited in terms of funding and human resources.”

#### 4.3. External Institutional Support

The waqf forests in both Bogor and Mojokerto have received involvement from external institutions, although such support has so far been sporadic and unsustainable. In Bogor, the most significant support has come from BAZNAS and the Ministry of Religious Affairs through community development programs. One of the managers of the Waqf Forest Bogor recounted:

“The program with BAZNAS [National Zakat Agency] was originally intended to run for three years, with assistance provided until we became independent... but in practice it lasted only one year, so we never reached self-sufficiency.”

He added that the support was initially quite significant, both in the form of funding and empowerment programs:

“BAZNAS once provided assistance of around IDR 150 million, and the Ministry of Religious Affairs contributed approximately IDR 200 million, but after that there was no further support.”

This support contributed to strengthening community capacity and basic infrastructure, yet the cessation of funding forced the program to once again rely on community self-sufficiency. Meanwhile, in Mojokerto, external support has been virtually absent. Program development has largely depended on the internal initiatives of the foundation and the contributions of teachers, as well as the local community. One of the Mojokerto managers noted:

“External assistance has been almost nonexistent; at most, the local government provided tree seedlings. Beyond that, we have managed everything on our own.”

This condition has led Mojokerto to rely more heavily on community solidarity, with creative local fundraising initiatives such as tree waqf and plastic bottle donations.

#### **4.4. Funding and Institutional Constraints**

Financing has emerged as the most fundamental challenge faced by waqf forests in both Bogor and Mojokerto, constraining their ability to expand conservation and community empowerment initiatives. In Bogor, despite efforts to mobilize resources through cash waqf and tree waqf schemes, available funding remains insufficient relative to operational and development needs. One manager highlighted the financial barriers associated with accessing more advanced environmental financing mechanisms:

“When it comes to carbon certification, the costs are extremely high... we are not able to afford it yet.”

This condition makes it difficult for waqf forests to access carbon-based financing schemes, which are, in fact, highly promising. Beyond financial issues, institutional capacity also remains limited. The lack of professional human resources constitutes one of the main obstacles. As one of the managers noted:

“Community involvement is present, but professional management is still lacking... as we are constrained by limited funding and human resources.”

In Mojokerto, funding sources are modest and largely community-based. One of the managers explained:

“The main sources of funding come from community self-help, along with in-kind donations such as tree waqf and plastic bottle contributions.”

They have also experimented with other innovations, such as selling environmentally themed T-shirts to support operational activities. However, funding constraints have confined the program to a limited scale. Beyond financial constraints, both sites face institutional and managerial capacity limitations. The absence of professional human resources hampers effective planning, monitoring, and program development.

#### **4.5. Integrating Waqf Forests with Islamic Financial Instruments**

Despite facing various financial and institutional constraints, the managers of waqf forests have demonstrated an awareness of the need to seek alternative resources through modern Islamic financial instruments. In Bogor, this effort has already begun with the initiation of discussion forums involving key stakeholders. One of the managers recounted:

“Recently, we organized a focus group discussion with the Director of Islamic Social Finance... on how to integrate CWLS [Cash Waqf Linked Sukuk], sukuk, and other related instruments.”

This discussion reflected a strategic orientation toward linking community-based philanthropic practices with Islamic capital market instruments. However, the managers also acknowledged the practical limitations of green sukuk policies in Indonesia. As one respondent explained:

“So what are green sukuk currently used for? They are directed toward green projects, such as dams and hydroelectric power plants... but they have not yet extended to forests.”

This gap indicates that, although the waqf forest holds significant potential for integration with green financing instruments, national regulations and policies remain oriented toward large-scale macro projects. In Mojokerto, the discourse on integration with Islamic capital market instruments has not yet emerged explicitly, but there is an awareness that waqf management requires long-term financial support. This opens up opportunities to design integration schemes tailored to local community needs, such as conservation-based CWLS or small-scale green sukuk.

#### **4.6. Community Participation and Volunteer Involvement**

Community and volunteer participation constitutes a vital element in sustaining waqf forests in both Bogor and Mojokerto, supporting conservation, education, and community-based economic activities. In Bogor, community participation takes diverse forms, reflecting the broader scope of programs implemented. Beyond involvement in conservation activities, community members actively manage small-scale businesses based on non-timber forest products. One of the managers recounted:

“We set up a small community stall, and until now, alhamdulillah [praise be to God] it is still running... the community continues to make use of it.”

Other business units, such as honey and cloves, are also largely managed directly by community groups, with minimal oversight from the foundation. This reflects a strong sense of collective ownership over the waqf forest program. In addition to the community, volunteers play an important role, particularly in education, tree planting, and outreach activities. Their presence helps to compensate for the lack of professional human resources available to the managers. One of the Bogor managers acknowledged:

“There are many volunteers who help, especially during tree-planting activities. They also often assist in educating children, so their role is strongly felt.”

In Mojokerto, community involvement is clearly reflected through self-help contributions and active engagement in conservation programs as well as environmental education. One of the managers emphasized:

“The main source of funding comes from community self-help... people contribute by donating trees as waqf and through plastic bottle donations.”

This support is not limited to material contributions but also includes voluntary labor. Residents participate in tree planting, land maintenance, and even assist children in waqf forest school activities. One of the managers added:

“When there are tree-planting activities, community members come—even bringing their own seedlings. This makes us feel that the forest does not belong only to the foundation, but to everyone collectively.”

Despite these strong forms of engagement, both Bogor and Mojokerto experience fluctuations in community and volunteer participation. Activities tend to intensify during periods of high enthusiasm but slow down when participation declines. One manager observed:

“The volunteers have great enthusiasm, but their participation is fluctuating. When there is momentum, many come; when there is not, it becomes rather quiet.”

## **5 Discussions**

### **5.1 The Origins and Motivations for Establishment as Unique Resources**

The establishment of waqf forests in Mojokerto, initiated by teachers, and in Bogor, initiated by individual donors, reflects the presence of distinctive strategic resources in the form of permanently endowed land, religious legitimacy, and embedded social trust. Within the Resource-Based View (RBV) framework, these assets can be categorized as valuable, as they generate enduring spiritual, social, and ecological benefits, and rare, given the permanent and inalienable nature of waqf land. These findings are consistent with Ali and Kassim (2021), who argue that the principal strength of waqf forests lies in their religious legitimacy and community support,

distinguishing them from conservation models driven primarily by state agencies or international donors. They also reinforce Cizakca's (2000) argument that the religious dimension of waqf has historically functioned as a powerful driver of social participation and institutional continuity.

Religious motivation embedded in productive waqf represents an element that is inherently difficult to imitate by organizations operating outside the Shariah framework. The spiritual value associated with worship (*ṣadaqah jāriyah*) and public trust in the *mutawalli* generate symbolic capital that enhances institutional legitimacy. Accordingly, from their inception, the waqf forests in Bogor and Mojokerto have possessed a resource base with the potential to generate long-term advantages across spiritual, social, and ecological domains.

### **5.2. Conservation, Educational, and Productive Activities as Capabilities**

Findings from Bogor and Mojokerto demonstrate that waqf forests are not limited to static endowed assets but have evolved into activity-based systems that generate added value. In Mojokerto, the Waqf Forest School represents the transformation of natural and social resources into educational capabilities, while in Bogor, modest ecotourism initiatives, community stalls, and honey- and clove-based enterprises illustrate the conversion of ecological assets into productive capabilities.

From an RBV perspective, these activities indicate the ability of waqf organizations to orchestrate tangible resources (land, trees, forest products) and intangible resources (trust, social capital) into value-creating capabilities. However, limited managerial capacity has constrained the extent to which these capabilities can evolve into fully inimitable or non-substitutable advantages. This finding supports prior studies suggesting that environmental waqf can contribute meaningfully to the achievement of the Sustainable Development Goals, particularly climate action and life on land, provided that institutional capacity is strengthened (Jannah et al., 2020). Accordingly, conservation and productive activities in both Bogor and Mojokerto reflect the presence of emerging dynamic capabilities, though these remain fragile and dependent on further organizational development.

### **5.3 External Institutional Support as a Temporary Advantage**

External financial support from institutions such as BAZNAS and the Ministry of Religious Affairs in Bogor created valuable resources that contributed significantly to strengthening waqf forest programs during their initial phase, particularly in infrastructure development and community empowerment. However, because such support was temporary and non-continuous, the resulting advantages were inherently unstable.

Within the RBV framework, resources that are time-bound and externally controlled cannot serve as the basis for sustained advantage, as they fail to meet the criteria of inimitability and non-substitutability. This interpretation aligns with Alam et al. (2024), who demonstrate that dependence on unsustainable external assistance constitutes a major structural weakness in waqf forest initiatives. Similarly, Ali and Kassim (2021) emphasize that the resilience of waqf forests can only be achieved when institutions reduce donor dependency and strengthen internally controlled resources. Thus, while external grants may function as important initial triggers, they are insufficient to ensure long-term institutional sustainability without complementary financing strategies.

### **5.4 Funding and Institutional Challenges as Resource Constraints**

The findings further reveal that community-based funding in Mojokerto and limited grant-based support in Bogor reflect significant resource constraints. In Mojokerto, financing relies on tree waqf, plastic-bottle donations, and small-scale product sales, whereas in Bogor, institutional grants were temporary and unsustainable. These constraints have limited program scalability and restricted access to more advanced environmental financing mechanisms. Consistent with Malahayati and Anggraeni (2025), these findings suggest that environmental waqf institutions in Indonesia remain institutionally fragile, particularly in terms of financial management capacity and regulatory integration. From an RBV standpoint, this condition illustrates that the possession of unique resources alone is insufficient; organizations must also acquire complementary resources, including sustainable financing, professional human capital, and regulatory support, to achieve a durable advantage.

### **5.5. Integrating Islamic Financial Instruments as Complementary Resources**

Awareness among Bogor waqf forest managers regarding the potential linkage between waqf forests and Islamic capital market instruments, such as Cash Waqf Linked Sukuk (CWLS) and green sukuk, reflects an emerging recognition of the need for complementary resources. Within the RBV framework, green sukuk can provide financial capital that is valuable (large-scale funding), relatively rare (underutilized in community-based contexts),

and capable of enhancing institutional legitimacy. Santoso (2020) shows that green sukuk in Indonesia have supported climate mitigation through renewable energy and sustainable transport projects. However, their implementation remains concentrated at the national level, with limited penetration into community-based or waqf-oriented initiatives. This study extends prior discussions by highlighting the structural gap between national green finance policies and the financing needs of grassroots programs. If effectively integrated, green sukuk could function as a bridge between the Islamic capital market and philanthropic initiatives such as waqf forests, enabling green financing models that are both top-down and community-oriented. This finding aligns with Abdullah et al. (2022) and Riaz et al. (2024), who emphasize the importance of institutional drivers and investor confidence in expanding green sukuk markets.

### **5.6. Community and Volunteer Participation as Social Capital**

Community and volunteer participation constitute an intangible resource that is inherently difficult to imitate and represents a distinctive strength of waqf forests. In both Bogor and Mojokerto, social capital plays a central role in sustaining conservation, education, and productive activities. However, its fluctuating nature introduces vulnerability into program continuity. Ali and Kassim (2021) identify community participation as both a strength and a potential weakness when not supported by systematic management. The findings of this study extend this insight by demonstrating that volunteer enthusiasm alone is insufficient to sustain long-term initiatives without stable complementary resources.

Taken together, the findings indicate that waqf forests in Bogor and Mojokerto possess unique strategic resources, permanent waqf land, Shariah legitimacy, and community-based social capital, and have developed initial capabilities through conservation, education, and productive activities. However, financial and institutional constraints continue to limit their sustainability. The key theoretical contribution of this study lies in demonstrating that green sukuk can be conceptualized as a complementary resource that bridges financial gaps and enhances institutional legitimacy, thereby enabling waqf forests to evolve into a more sustainable model of Islamic social finance.

### **6. Conclusions**

This study concludes that waqf forests in Bogor and Mojokerto possess distinctive strategic resources in the form of permanently endowed land, Shariah legitimacy, and social capital derived from communities and volunteers. Management initiatives such as waqf forest schools, ecotourism activities, and small-scale productive enterprises demonstrate the presence of organizational capabilities that support environmental conservation and community empowerment. Nevertheless, persistent financial constraints, limited institutional capacity, and the discontinuity of external support continue to impede waqf forests from achieving sustained advantage and long-term sustainability.

Viewed through the Resource-Based View (RBV) framework, the findings indicate that the mere possession of unique resources is insufficient. Instead, waqf forests require complementary resources to overcome internal capability gaps. In this regard, green sukuk emerges as a strategic complementary instrument capable of strengthening financial capacity, enhancing institutional legitimacy, and improving alignment with regulatory and investor expectations. Such integration enables waqf forests to evolve beyond traditional philanthropic arrangements toward more sustainable models of Islamic social finance that are aligned with the objectives of the Sustainable Development Goals (SDGs). Based on these conclusions, several implications can be drawn. First, waqf forest managers need to strengthen institutional capacity through improved managerial competencies, systematic asset documentation, and the professionalization of governance structures, allowing their unique resources to be more effectively leveraged. Community and volunteer participation, while a critical source of social capital, should be institutionalized through structured programs and incentive mechanisms to ensure continuity and reduce reliance on fluctuating personal commitment.

Second, Islamic philanthropic institutions, including BAZNAS, the Indonesian Waqf Board (BWI), and zakat organizations, should move beyond short-term grant-based assistance toward longer-term partnerships that emphasize capacity building and program sustainability. More strategic allocation of cash waqf to environmentally oriented initiatives could provide waqf forests with more stable access to financial resources. At the policy level, government authorities and financial regulators are encouraged to broaden the scope of green sukuk beyond large-scale infrastructure projects to include community-based initiatives such as waqf forests. Policy support in the form of technical assistance, regulatory facilitation, and targeted subsidies, particularly for high-cost requirements such as carbon certification, would significantly enhance the ability of waqf forest managers to

access green financing mechanisms. Finally, future research should focus on developing more operational and context-sensitive models for integrating waqf forests with green sukuk, including financial feasibility analysis, risk assessment, and the design of hybrid instruments that combine social, ecological, and financial objectives. Comparative and cross-country studies on waqf forest initiatives and green finance innovations would further enrich the literature and contribute to a broader global understanding of sustainable Islamic social finance.

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