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Optimizing Waqf for Sustainable Land Management in Lazismu Kendal: An ISM-Based Analysis of the Indonesian Green Waqf Initiative

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ABSTRACT

Purpose: This study examines the hierarchical factors influencing Green Waqf-based land development in Indonesia. It aims to identify primary barriers, outline necessary institutional changes, and formulate a strategic model for ecosystem conservation and socio-economic welfare.
Methodology: Using a mixed-methods approach based on Interpretive Structural Modeling (ISM), primary data were collected via interviews and questionnaires from an expert panel of academics, nazhir, and farmers.
Results: ISM analysis reveals that the most critical constraints are the lack of regulatory support, limited fintech optimization, and low nazhir professionalism. Overcoming these requires structured education, specialized training, and robust inter-agency coordination. Furthermore, establishing specific legal provisions and socialization systems are foundational objectives for systemic success.
Conclusion: While Green Waqf holds immense potential for climate resilience and land rehabilitation, its current implementation Achieving sustainable impact requires legal formalization, capacity building, and cross-sectoral collaboration.
Implications: Policymakers must establish specific legal frameworks and guidelines for biological waqf assets (e.g., trees). Waqf institutions should adopt fintech solutions for transparency, and local communities must be empowered as active partners in agroforestry and environmental restoration.
Originality: Moving beyond normative literature, this study pioneers a structured hierarchical governance model for Green Waqf, mathematically mapping previously ill-defined causal relationships among regulatory, technological, and social variables.

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INTRODUCTION

Climate change and environmental degradation have emerged as pressing global challenges necessitating prompt, multifaceted solutions. Indonesia, one of the largest archipelagic nations globally, possesses abundant biodiversity yet is increasingly susceptible to the detrimental effects of global warming (Ahmed, Khan, & Augustine, 2018). The United Nations Children's Fund has identified Indonesia as one of the fifty nations most vulnerable to climate-related disasters, including floods, droughts, and air pollution, thereby endangering the health and livelihoods of millions of children (UNICEF, 2021). The World Bank's Global Risk Index ranks Indonesia tenth among thirty-five countries regarding mortality risk from extreme weather events. In accordance with its Nationally Determined Contribution (NDC) under the Paris Agreement, Indonesia aims to achieve substantial reductions in greenhouse gas emissions through the transition to renewable energy, land rehabilitation, and sustainable forest management (Mamat, Sani, & Sudhakar, 2019). Achieving these objectives necessitates substantial financial resources, projected at USD 534.15 billion by 2030, which poses difficulties under traditional fiscal and market-oriented funding methods.

In this context, Islamic finance presents a unique framework for mobilizing ethical and sustainable financing to achieve climate and environmental objectives (Rahim, Rathore, Rabbani, & Alam, 2024). Specifically, *waqf* (Islamic endowment) serves as a distinctive financial and social mechanism that integrates ongoing asset management with redistributive welfare aims (Medias, Rahman, Susamto, & Pambuko, 2021). Historically utilized for religious and social purposes, *waqf* has transformed into an effective and dynamic instrument capable of financing environmental restoration, renewable energy, and green infrastructure (Medias, Pratiwi, & Umam, 2019). The Green Waqf concept incorporates ecological stewardship with *waqf* management, ensuring endowed assets contribute to environmental preservation and socio-economic empowerment (Badan Wakaf Indonesia, 2022).

To ground this study theoretically, we propose a conceptual framework that bridges the divide between Islamic moral economy and sustainable land management (SLM) (Yilmaz, 2024). This framework is anchored in *Maqasid al-Shariah*, specifically extending the preservation of life (*hifz al-nafs*) and wealth (*hifz al-mal*) to include the preservation of the environment (*hifz al-bi'ah*) (Abdullah, 2018). In this synthesized framework, Green Waqf functions as a mechanism for collective stewardship (*Khilafah*), where the *mutawalli* (manager) and community co-manage ecological assets, ensuring the model addresses both spiritual mandates

and the technical requisites of land rehabilitation (Duasa & Munir, 2025).

Notwithstanding the increasing scholarly focus on Islamic social finance, investigations into Green Waqf are still constrained in both breadth and methodological robustness (Lutfi et al., 2024). Previous studies have predominantly concentrated on the conceptual and normative aspects of *waqf* (Aam Slamet Rusydiana & Devi, 2018), with less investigation into its implementation in environmental or climate-related activities (Aam Slamet Rusydiana, Sukmana, Laila, & Sanrego, 2023). These studies frequently neglect the intricate interconnections between legislative frameworks, institutional capacity, technology innovation, and community engagement that influence the effective execution of Green Waqf. Consequently, empirical evidence elucidating the interaction of factors affecting Green Waqf outcomes is limited.

This study utilizes the Interpretive Structural Modeling (ISM) method to examine the hierarchical links among the primary factors influencing Green Waqf-based land development in Indonesia (Aam Slamet Rusydiana, Riani, & Abdurrahman, 2022). While Multi-Criteria Decision Making (MCDM) methods such as the Analytic Hierarchy Process (AHP) or Analytic Network Process (ANP) are widely utilized to rank alternatives or weigh criteria, they are less effective in structuring the fundamental interactions within an ill-defined system. Green Waqf represents a nascent ecosystem where causal relationships between regulatory and social variables are not fully understood. Unlike AHP, which assumes a pre-existing hierarchy, ISM is designed to impose order on complexity by mapping 'driver' versus 'dependent' variables (Attri, Dev, & Sharma, 2013). Thus, to build a foundational model for Green Waqf governance where none currently exists, ISM is the requisite tool.

The study utilizes LAZISMU Kendal as a sample case study due to its pioneering involvement in the "One Million Avocado Trees" project, a community-oriented Green Waqf effort that integrates environmental rehabilitation with Islamic philanthropy. This study has three principal objectives: (1) to identify and categorize the principal barriers obstructing Green Waqf development in Indonesia; (2) to delineate the requisite institutional and behavioral modifications essential for its effective implementation; and (3) to formulate a comprehensive model for Green Waqf-based land development that promotes ecosystem conservation, sustainable financing, and socio-economic welfare.

METHODHOLOGY

This research utilizes a combined qualitative-quantitative approach based on the Interpretive Structural Modeling (ISM) technique, facilitating the methodical identification, structuring, and analysis of interactions among intricate factors within a system (Attri et al., 2013). ISM was chosen for its capability to convert subjective expert assessments into an objective, hierarchical framework that elucidates causal relationships and strategic priorities (Alamoudi, 2025). This scientific approach is especially pertinent for examining Green Waqf including legal, managerial, financial, environmental, and social dimensions.

The study employs a mixed-method approach utilizing both primary and secondary data (Creswell, 2017). Primary data were obtained via comprehensive semi-structured interviews and structured questionnaires administered to a panel of experts and practitioners engaged in Green Waqf initiatives. Secondary data were sourced from institutional reports, regulatory records, and academic literature pertaining to Islamic finance, philanthropy, and sustainability.

Given that Interpretive Structural Modeling (ISM) relies on the "mental models" of experts to map complex relationships rather than statistical frequency, the selection of respondents prioritized domain expertise over sample size. A purposive sampling technique was employed to select a panel of 3 (three) experts. To ensure the robustness and validity of the ISM model, strict inclusion criteria were established.

For academic experts and waqf researchers, selection was based on a demonstrated track record in Islamic finance and environmental sustainability, evidenced by peer-reviewed publications and a minimum of 5 (five) years of research experience. This category includes scholars and observers from the global academic community to provide a theoretical and comparative perspective. For practitioners and regulators, criteria included direct decision-making authority in waqf institutions (Nazhir) or relevant government bodies, with specific involvement in the "One Million Avocado Trees" project or similar Green Waqf initiatives.

The composition of the expert panel ensures a heterogeneous mix of theoretical knowledge and practical execution. The detailed profile and categorization of the respondents are presented in **Table 1**.

Table 1: Profile and Composition of Expert Panel

Category	Stakeholder Group	Role	Selection Criteria	Number (n)
Academic & Researchers	Universities & Research Institutes	Senior Lecturers, Professors, and Waqf Researchers	Minimum 5 years research experience; h-index or publication record in Islamic Social Finance.	3
Practitioners	LAZISMU Kendal	Nazhir / Program Managers	Direct management of Green Waqf assets; Leadership role in "One Million Avocado Trees" project.	2
Field Operators	Farmer Groups (Kelompok Tani)	Farmers / Land Stewards	Direct participation in the waqf program; Experience in avocado cultivation and land maintenance.	3
Total				8

Source: Authors own analysis

Case Selection: LAZISMU Kendal Regency

LAZISMU Kendal was deliberately selected as the primary case study because of its innovative execution of the “One Million Avocado Trees” initiative launched in 2021. This program exemplifies the pragmatic implementation of Green Waqf principles by directing waqf, infaq, and investment resources towards reforestation and flood mitigation on vital terrains. The choice of LAZISMU Kendal facilitates a comprehensive examination of the functioning of Green Waqf within Indonesia's regulatory, institutional, and communal frameworks. It is a representative instance of a locally initiated, faith-based environmental endeavor that connects Islamic philanthropy with ecosystem restoration.

Procedures for Data Collection and Analysis

The research process comprised two primary phases. Initially, qualitative content analysis was conducted in accordance with Hsieh & Shannon (2005) approach to identify themes and essential variables from interview transcripts and institutional documents. This phase highlighted essential aspects affecting Green Waqf performance, such as financial innovation, legislative framework, stakeholder collaboration, and public engagement. The second stage utilized the ISM approach to create a structured model that delineates the interrelationships among these variables.

The procedure entailed problem decomposition involving finding and delineating pertinent factors via expert consensus. To ensure the reliability of the Structural Self-Interaction

Matrix (SSIM), the data collection employed a rigorous, iterative consensus-building approach (Attri et al., 2013). Recognizing the complexity of the ISM logic (V, A, X, O), the questionnaires were not merely self-administered; rather, they were facilitated by the researchers to ensure that all respondents, particularly farmers and field practitioners, correctly interpreted the pairwise relationships. To mitigate the risk of 'groupthink,' experts first completed the evaluation individually. In instances of divergence where experts disagreed on specific variable interactions, the 'majority rule' principle was initially applied. For significant disagreements, the specific relationship was deliberated within the FGD until a conceptual consensus was reached.

Following this, the study proceeded with the development of the Structural Self-Interaction Matrix (SSIM) for evaluating pairwise correlations among variables utilizing contextual symbols (V, A, X, O), Creation of the Reachability Matrix (RM) for transforming qualitative assessments into binary relations (1 or 0), Level partitioning and canonical matrix construction for establishing hierarchical layers among items, and Model development and validation for visualizing the ISM framework and verifying its logical coherence via expert evaluation.

The integration of qualitative inquiry and ISM-based modeling offers both profundity and organization to the investigation. Interviews provide contextual depth and expert perspectives, while the ISM framework converts these insights into a structured model that facilitates strategic decision-making (Attri et al., 2013). This method identifies significant obstacles, like legislative deficiencies and insufficient nazhir professionalism, while also clarifying possible leverage points, such as inter-agency coordination, educational programs, and fintech integration.

There are several studies on Islamic economics and finance that have been carried out using the ISM method. For example, research conducted by Aam S Rusydiana (2018) on sharia cooperatives on waqf. This means that the use of ISM as a tool for analyzing green waqf-based land development is very relevant.

RESULT AND DISCUSSION

The *Green Waqf* initiative undertaken by LAZISMU Kendal Regency represents one of the most tangible community-based implementations of Islamic environmental finance in Indonesia. The program titled “Waqf for Planting One Million Avocado Trees” began in 2021 as a response to recurrent flash floods and land degradation affecting several highland villages

within Kendal Regency, particularly in Boja and Limbangan districts. The initiative is aligned with the *Green Waqf Framework* published by the Badan Wakaf Indonesia (2022), which promotes environmentally responsible endowment management to restore terrestrial ecosystems and support the Sustainable Development Goals (SDGs).

This program integrates *waqf* funds with community agroforestry by channeling *wakif* donations toward purchasing and planting avocado (*Persea americana*) seedlings. The *nazhir* institution (LAZISMU Kendal) collaborates with two local farmer groups, namely Kelompok Tani Joho Makmur and Kelompok Tani Alam Sejahtera, which provide land, labor, and maintenance for the avocado plantations. As expressed by one farmer group leader (R2):

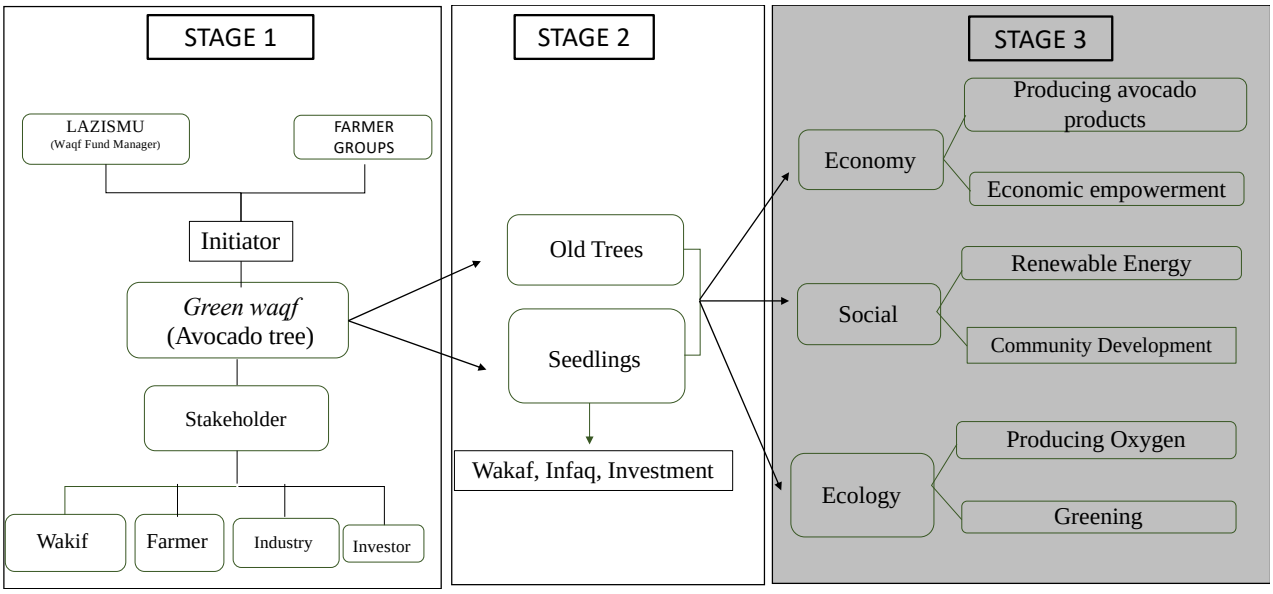
> *"We provide the land and care for the trees as a form of worship and trust, because these trees belong to the waqf for the benefit of our community."*

The avocado species was chosen for its ecological and economic characteristics. Avocado roots strengthen soil structure, minimizing erosion and surface runoff, while its canopy enhances carbon sequestration and microclimate stability. Economically, its fruit has strong local market potential and can generate long-term income for farmer cooperatives. As of mid-2024, 2,100 avocado trees have been successfully planted a small but significant start toward the target of one million trees.

As a follow-up to what has been done by WaCIDS, Lazismu Kendal initiated green waqf through the program of planting a million avocado trees to overcome the problem of flash floods in 2017. The determination of avocado trees as green waqf products is based on previous studies (Laily, Hadiyanti, Artini, Tafakresnanto, & Eko, 2023), which stated that avocados have benefits showing great potential to improve environmental quality and provide economic benefits to local communities. In addition, the reason for choosing avocado trees is because they are multifunctional, from their roots they can bind soil and water and their wide and potential market. Lazismu also plays the role of fund manager.

Implementation Stages of the Green Waqf Program

The operational phases of the LAZISMU Kendal *Green Waqf* project are shown in **Figure 1**.



Source: Authors Own Analysis

Figure 1. Green Waqf Stages

The **Figure 1** above explains 2 (two) different colors in the sense that the stages in white color have been completed, while the shaded ones have not been fully implemented. *The first stage* is carried out to determine stakeholders. This first stage is carried out by mapping stakeholders who have an interest in the *outcomes* of the *green waqf program.* The stakeholders involved are Wakif (a group of people who channel their funds for the purchase of avocado tree seedlings), Farmers (a group of people who provide their land to plant seedlings that have been waqfed), Companions (officers who assist the planting process until harvest), and Investors (a group of people who invest their funds for the purchase of seeds, fertilizers, and others. As expressed by nazhir (R1):

> "*We have completed stakeholder mapping and early planting, but we need stronger monitoring and transparency systems before entering the evaluation stage."*

In the second phase, current arboreal data is required to identify and delineate various species of existing trees. Establishing new avocado seedlings financed through waqf, infaq, and investment. In the third stage, the focus is on the economic outlook for 2025. Ecologically, the outcome will be observable once the aim of 1,000,000 avocado plants is attained; currently, there are 2,100 newly planted avocado trees. Socially, the influence will be evident once the preceding two goals have been attained, as indicated by the number of beneficiaries of this program. The Green Waqf Framework (Figure 2), released by the Indonesian Waqf Board (BWI) and the United Nations Development Program (UNDP), indicates that the efficacy of the Green Waqf program comprises five procedures: Mapping, Execution, Reporting, Project Evaluation,

and distribution of waqf benefits.

Source: Badan Wakaf Indonesia (2022)

Figure 2. Green waqf success assessment procedure

The pilot green waqf project for the Waqf Program aimed at planting one million trees has not been successfully validated, as it has only progressed to the Execution stage, with the Reporting, project evaluation, and utilization of proceeds stages remaining unaccomplished. The interview results indicate that the primary challenge encountered is the insufficient optimization of fintech in waqf fundraising (Nisa, Medias, & Triyanto, 2023). Secondly, the deficiency of public confidence in the Nazhir institution. The literacy rate of community waqf remains inadequate. The nazir's deficiency of professionalism. Fifth, insufficient education and socialization on green waqf. Sixth, the insufficient optimization of waqf for communal benefit. Seventh, there is an absence of support for green waqf regulations. Insufficient community engagement in the preservation of terrestrial ecosystems.

Analysis of Constraints, Expected Changes, and Objectives of the Green Waqf-Based Land Development Model

The second objective of this study is to identify, map, and analyze the relationships among factors influencing *Green Waqf*-based land development, as well as to formulate effective strategies to address key barriers. This objective is operationalized through the Interpretive Structural Modeling (ISM) approach, which integrates expert assessments and theoretical insights derived from relevant literature.

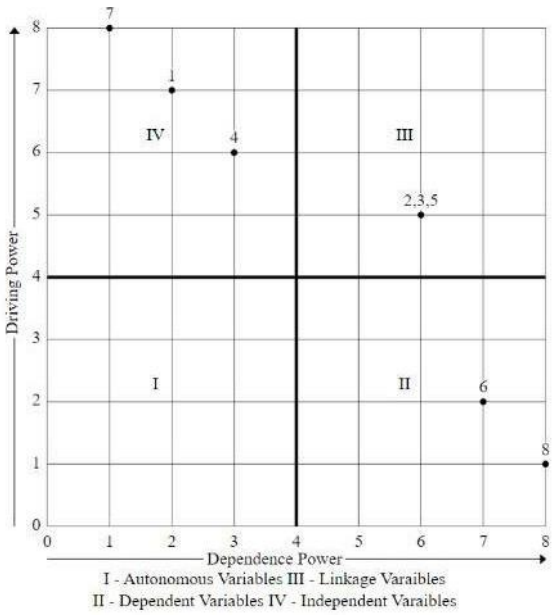
The data were obtained from a structured questionnaire distributed to waqf experts and practitioners, focusing on the “One Million Avocado Trees” program managed by

LAZISMU Kendal. Each expert conducted pairwise comparisons between sub-elements to determine their relative influence, after which the results were processed using SmartISM software. The ISM outputs classified variables into four quadrants (independent, dependent, linkage, and autonomous) to identify which sub-elements serve as key drivers and which depend on others. The analysis in this section consists of three main components: (1) constraints hindering Green Waqf development, (2) expected institutional and behavioral changes, and (3) the strategic objectives needed to ensure sustainability and impact.

Analysis of Constraints in Green Waqf-Based Land Development

Before constructing a Green Waqf development strategy, it is essential to understand the underlying constraints that limit program effectiveness. Constraints reflect the systemic weaknesses, managerial bottlenecks, and socio-cultural barriers that influence the performance of waqf-based environmental projects.

Through expert input and ISM processing, this study identified eight major constraint sub-elements, each representing a different aspect of institutional, technological, or community-level limitation. These elements were analyzed to understand their position within the Green Waqf system hierarchy and how they interact with one another (**Figure 3**).



Source: Authors Own Analysis

Figure 3. Results of the analysis of the contextual relationship between the sub-elements of the constraint

The ISM results show that three sub-elements fall into the independent quadrant, meaning they have strong driving power but low dependence on other factors (P.7) Lack of regulatory support for Green Waqf; (P.1) Limited fintech optimization in waqf fundraising; and (P.4) Lack of professionalism among *nazhir*. These three components act as core drivers influencing the overall development of the Green Waqf model. Respondent R3 highlighted that:

> *"Without formal regulatory recognition, Green Waqf remains a voluntary activity, lacking institutional authority."*

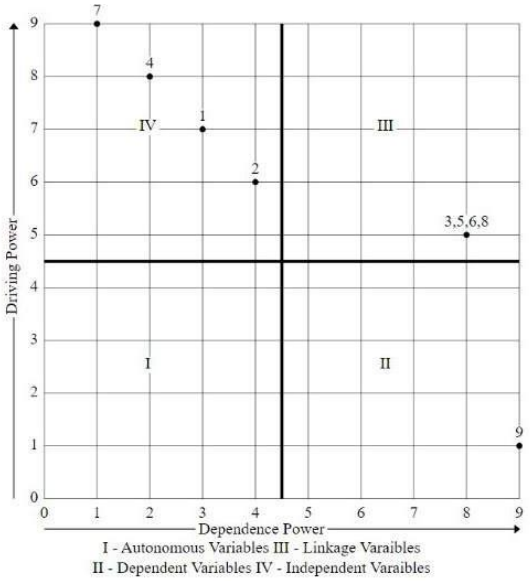
The identification of 'Lack of regulatory support' (P.7) as a key independent driver does not imply a total absence of waqf governance, but rather highlighting a critical legal vacuum regarding ecological assets. Specifically, this deficiency manifests across three hierarchical levels. First, at the national statutory level, the existing Waqf Law (No. 41/2004) predominantly cater to immovable property (land/buildings) and cash waqf, lacking specific clauses for biological assets (e.g., trees, carbon credits) that carry unique biological risks. Second, at the institutional level, there is a notable absence of standardized Technical Guidelines and Standard Operating Procedures (SOPs) from the Indonesian Waqf Board (BWI) specifically for Green Waqf. Unlike varying types of property waqf, green assets require distinct guidelines for asset depreciation, replanting protocols, and environmental impact reporting, which currently do not exist (Nurwajihah Ajlaa & Ruzian, 2020).

Two elements are (P.6) lack of waqf optimization for community welfare and (P.8) low community participation is belonged to the dependent quadrant, indicating they are outcomes rather than causes. Three other elements like P.2) low public trust in *nazhir*, (P.3) low waqf literacy, and (P.5) lack of education and socialization, are positioned in the linkage quadrant, reflecting mutual interaction and feedback effects. These findings reinforce of Masruroh, Nanggur, & Ngamal (2024) work, who assert that regulatory ambiguity and managerial limitations are the most persistent barriers in Indonesia's waqf ecosystem. In the Green Waqf context, weak regulatory foundations limit institutional legitimacy, while poor managerial capability reduces donor trust and community involvement.

Analysis of Expected Changes

After identifying key constraints, the next analytical step focuses on understanding the changes required to overcome them. Expected changes refer to shifts in institutional behavior, community engagement, governance mechanisms, and technological adaptation that

collectively enable successful Green Waqf implementation (**Figure 4**). The ISM framework captured expert perspectives on how specific interventions such as training, coordination, education, and technology can transform current barriers into enabling conditions for growth and impact.



Source: Authors Own Analysis

Figure 4. Results of the analysis of the contextual relationship between the sub-elements of the expected change

Nine sub-elements of expected change were analyzed. Four are positioned in the independent quadrant, serving as the primary drivers of transformation (G.7) Developing effective education, socialization, and cooperation programs; (G.4) Organizing structured training related to the Green Waqf program; (G.1) Enhancing coordination among BWI, *nazhir*, the Ministry of Forestry and Environment, and local governments; and (G.2) Establishing strong partnerships among *wakif*, *nazhir*, private companies, and MSMEs. One sub-element (G.9) transparency and accountability is in the dependent quadrant, indicating that it will improve once the other drivers are strengthened (Ahmad & Rusdianto, 2020). The linkage quadrant includes (G.3) environmentally friendly product development, (G.5) IT- based promotion, (G.6) creation of a solid legal framework, and (G.8) optimization of waqf land for avocado plantations.

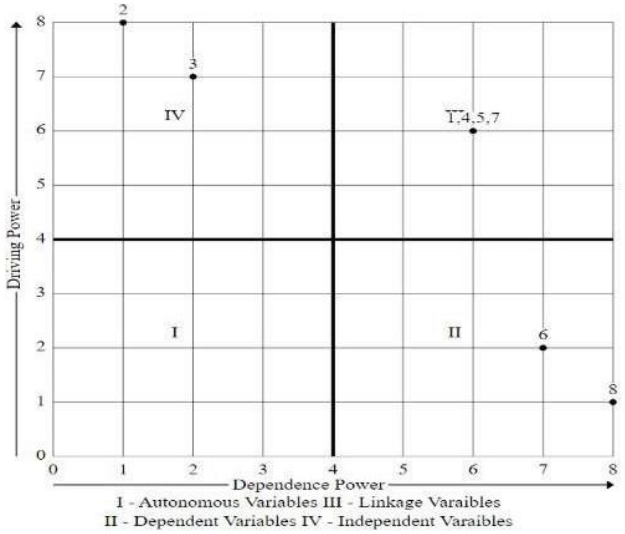
These findings suggest that education, coordination, and partnership-building are the fundamental levers for institutional transformation. Respondent R2 emphasized the importance of awareness campaigns:

"Most people still associate waqf with mosques or burial land. Education is key to broadening their understanding."

The emphasis on training (*G.4*) and inter-agency coordination (*G.1*) mirrors Irfany, Ningsih, & Hasanah (2023) findings that collaborative governance significantly increases the success rate of community-based sustainability programs. Partnership-building (*G.2*) with private actors also plays a strategic role, especially in mobilizing investment and promoting innovation in eco-friendly product development (*G.3*). The combined effect of these drivers creates a dynamic institutional environment that supports transparency (*G.9*) and enhances public confidence in Green Waqf programs.

Analysis of Objectives of the Green Waqf-Based Land Development Model

Having mapped both constraints and expected changes, the third analytical stage identifies the strategic objectives that underpin the Green Waqf model. Objectives reflect the desired end states or long-term goals that align institutional, regulatory, and social dimensions of the program. Through expert validation, eight objective sub-elements were classified within the ISM matrix to determine which serve as foundational drivers and which represent outcomes of system evolution (**Figure 5**).



Source: Authors Own Analysis

Figure 5. Results of the analysis of the contextual relationship between the sub-elements of the goal

Two objectives (C.2) establishment of an effective education, socialization, and communication system, and (C.3) enactment of regulations and legal provisions for Green Waqf, are located in the independent quadrant. These two sub-elements possess the highest driving power, meaning that they are core strategic enablers for the rest of the system. The dependent quadrant contains (C.6) optimization of waqf instruments and (C.8) creation of environmentally friendly products, while the linkage quadrant includes (C.1) fintech

optimization, (C.4) availability of professional *nazhir*, (C.5) transparency and accountability, and (C.7) community participation. The model shows that education and regulation (C.2 and C.3) are the two pillars essential for sustainable Green Waqf institutionalization. Respondent R1 underlined this point:

> *"Once a clear legal framework and public education exist, scaling up Green Waqf nationally becomes realistic."*

Education increases literacy, encourages participation, and enhances understanding of Green Waqf's dual spiritual and ecological values consistent with Abdullah (2018) notion of *maqasid al-shariah* alignment. Meanwhile, legal recognition ensures legitimacy, transparency, and protection of assets, which in turn facilitates fintech adoption (C.1) and strengthens managerial accountability (C.5) (Zakariyah, Salaudeen, Othman, & Rosman, 2023).

Synthesizing the three ISM analyses yields a coherent framework for understanding Green Waqf development such as (1) regulatory clarity and managerial professionalism are the foundational enablers that determine institutional stability, (2) Education, training, and cross-sector coordination act as catalysts for behavioral and operational transformation, and (3) Legal formalization and technological adoption are critical for scalability, transparency, and long-term sustainability. Together, these components demonstrate that Green Waqf is not merely a philanthropic instrument but a strategic socio-environmental innovation. The case of LAZISMU Kendal's avocado plantation project proves that, when legal, institutional, and community systems are aligned, *waqf* can serve as a viable tool for ecological restoration and community empowerment in Indonesia.

CONCLUSION

This study examined the implementation of a *Green Waqf*-based land development model through the "One Million Avocado Trees" program managed by LAZISMU Kendal Regency, which integrates Islamic social finance with environmental restoration and community empowerment. Using the Interpretive Structural Modeling (ISM) approach, the research identified the interrelationship among constraints, expected changes, and objectives in developing sustainable Green Waqf practices. The findings show that the primary obstacle include a lack of regulatory support, limited fintech optimization in waqf fundraising, and low professionalism among *nazhir* institutions. These structural constraints directly affect community participation, transparency, and overall program performance. In contrast, the

study highlights that education, training, coordination, and partnership building are the most influential drivers of change capable of transforming these barriers into opportunities for effective implementation.

Theoretically, this study contributes to the growing discourse on Islamic environmental finance by offering a structured analytical framework to understand the hierarchical relationships among institutional, legal, and behavioral factors influencing Green Waqf development. Practically, the findings provide essential guidance for policymakers, waqf institutions, and local communities. Policymakers should strengthen regulatory frameworks and integrate Green Waqf into Indonesia's national sustainable development agenda. *Nazhir* institutions must professionalize their management through capacity building and the adoption of fintech systems to enhance transparency and public trust. Meanwhile, communities and farmer groups should be empowered as active partners in environmental restoration to ensure long-term sustainability and shared economic benefits.

Based on these findings, several strategic recommendations are proposed. First, the government should establish a clear legal framework and operational guidelines for Green Waqf to ensure accountability and policy alignment. Second, waqf institutions must expand digital fundraising mechanisms, supported by transparent reporting and fintech-based management systems. Third, education and literacy programs should be continuously developed to improve public understanding of productive and environmental waqf. Lastly, cross-sector collaboration between *nazhir*, the private sector, and environmental agencies should be strengthened to enhance program innovation and sustainability. Through these collective efforts, Green Waqf can evolve into a transformative instrument that unites faith-based philanthropy with climate resilience and inclusive community development.

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