International Journal of Environmental Impacts
Vol. 7, No. 3, September, 2024, pp. 475-483
Journal homepage: http://iieta.org/journals/ijei

Implementing Waqf Forests in Indonesia: A SWOT and Internal-External Factor Evaluation Analysis

Azhar Alam[1*], Ahmad Nashiruddin[1], Faiz Adib Bafana[1], Mohamed Sharif Bashir[2], La Ode Alimusa[3]

[1] Department of Islamic Economic Laws, Universitas Muhammadiyah Surakarta, Surakarta 57162, Indonesia
[2] Applied College, Imam Mohammad IBN Saud Islamic University, Riyadh 11432, Saudi Arabia
[3] Faculty of Islamic Economics and Business, Universitas Muhammadiyah Kendari, Kendari 93127, Indonesia

Corresponding Author Email: aa123@ums.ac.id

https://doi.org/10.18280/ijei.070309

Received: 14 June 2024
Revised: 6 August 2024
Accepted: 13 August 2024
Available online: 30 September 2024

Keywords:
waqf forest, environmental conservation, SWOT analysis, Internal Factor Evaluation (IFE), External Factor Evaluation (EFE), sustainable forest management, community involvement, natural resource management

ABSTRACT

Forests play a pivotal role in environmental conservation, necessitating effective management strategies to ensure sustainability. This research aims to evaluate the potential implementation of forest endowments (waqf) through a strengths, weaknesses, opportunities, and threats (SWOT) analysis. The study employs two methodologies: a comprehensive SWOT analysis to examine internal and external factors and the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) methods within the SWOT matrix framework. Data were gathered via questionnaires distributed to representatives of environmental care communities. The findings indicate that internal factors, particularly potential strengths, support the implementation of waqf forests. Internal and external factors contribute to these strengths, enhancing the potential for successful implementation. Weaknesses can be mitigated by leveraging existing strengths. External factors are categorized into opportunities, which can promote the development of waqf forest strategies, and threats, which necessitate strategic interventions. The analysis reveals that the strength factor scores higher overall than the weakness factor, suggesting a promising outlook for successful implementation. These research findings contribute to a deeper understanding of waqf forest implementation by thoroughly analyzing the relevant internal and external factors. The identified strengths, weaknesses, opportunities, and threats provide valuable guidance for stakeholders aiming to optimize the use of waqf forests for environmental conservation and sustainable management.

1. INTRODUCTION

In Indonesia, the waqf system has experienced significant growth, with waqf assets currently valued at $123.38 million and encompassing a total land area of 420 hectares [1]. The contemporary management of these assets involves waqf institutions that manage them productively and professionally, with a keen consideration of future risks [1]. This productive endowment has the potential to become a crucial resource in addressing future social needs [2]. Waqf funds are utilized as financial resources to construct mosques and schools, provide scholarships to underprivileged communities, and establish free hospitals for the poor [3]. To maximize the utilization of waqf assets, it is essential to have waqf institutions that play a strategic role in addressing social issues, particularly concerning the economic welfare of the community [4].

The entire population can participate in waqf by contributing movable and immovable objects, starting with even a small amount of money [5]. However, it is unfortunate that waqf actions are predominantly undertaken by individuals with surplus assets, leading to a shortage of waqf assets in Indonesia. Consequently, a waqf optimization strategy is essential to maximize the role of waqf in Indonesia [5].

Forests are critical ecosystems that necessitate effective management and conservation, as they provide numerous resources that sustain the livelihoods of adjacent communities [6]. Globally, it is estimated that over 1.6 billion people living near forests rely on these resources to meet various needs, including animal husbandry, household fuel, traditional medicines, and significant income sources [7]. Assessments conducted in 2000 and 2012 underscore the extensive dependence on forest resources for sustenance and livelihoods among these communities [7]. Consequently, the effective management and conservation of forests are imperative to ensure the continued availability of these vital resources and to maintain the ecological balance upon which these communities depend.

Efforts to preserve the environment include managing forests to control watershed hydrology, mitigate flooding and erosion, and maintain soil fertility. Forests also play a pivotal role in safeguarding biodiversity and preserving distinctive natural features, benefiting scientific research, cultural heritage, national defense, and tourism [8]. Protected forest zones, crucial for conservation, attract public interest as natural tourist destinations. They are valued for their diverse

flora and fauna, striking natural landscapes, cultural and historical importance, and unique local lifestyles [9].

Forest rehabilitation seeks to restore the original land and habitat of plants damaged by agricultural land conversion from surrounding communities [6]. Agroforestry, which integrates forestry commodities such as wood plants with staple crops, is an effective method [10]. This approach not only aids in environmental conservation but also maximizes economic benefits [10]. Establishing urban forests in certain city areas is feasible, contingent upon the availability and suitability of land [10].

Forests, as ecosystems, can benefit significantly from the presence of waqf, encompassing trees and all biodiversity within them [11]. Forest endowments present an alternative approach to conducting conservation and rejuvenation programs. Additionally, monetary endowments offer another alternative, such as purchasing land around urban areas and transforming it into urban forests [12].

The Indonesian government's Social Forestry Program (SF) aims to reduce poverty and promote conservation by increasing community access to forest management permits and rights [13]. This initiative seeks to enhance local community participation in forest stewardship, aiming to enhance the welfare of residents in forested areas [13]. However, the ongoing transformation of forest status presents challenges in implementing new social forestry regulations [14]. Addressing these challenges requires significant resource support for forest managers and establishing robust institutions to implement these policies effectively [14].

Waqf, an Islamic financial product, contributes significantly to the community's economy through property and services. The waqf program focuses on enhancing worship, education, or health facilities while emphasizing environmental sustainability in quality and quantity [8, 15]. Despite its evolution across various fields as a social and financial instrument, the optimal development of waqf to preserve the environment remains challenging [16]. In Indonesia, waqf forests gained national recognition in 2012 in response to the conversion of Aceh forest lands, originally intended to safeguard the environment and its biodiversity, into land uses that threatened their existence [17].

This study examines the feasibility of implementing waqf forests in Indonesia through a SWOT analysis. It employs the IFE and EFE matrixes within the SWOT framework to identify critical internal and external factors influencing successful waqf forest development. The findings offer valuable insights for stakeholders, policymakers, and environmental organizations, facilitating optimized use of waqf for environmental conservation and sustainable forest management in Indonesia. Exploring waqf forests as a solution aligned with Islamic principles addresses significant environmental challenges. This research contributes to literature integrating Islamic financial instruments with sustainable development goals, providing a comprehensive assessment of waqf forest implementation to inform future strategies and initiatives.

2. LITERATURE REVIEW

The forest is an ecosystem that provides various benefits in terms of tropical and subtropical that can support sustainable development as well as the livelihood of the surrounding population, one of which is utilizing mangrove forest products in the form of wood and other resources that can be traded but still maintain the biodiversity and sustainability of environmental ecosystems [1]. As the host of various biodiversity, Indonesia has more than 40,000 species of plants, of which 6,000 have been used as traditional medicine [2]. Non-timber forest products (HHBK) have advantages in producing traditional medicine, sap, resin, copal, resin, ornamental plants, honey, and food sources [3].

Forest rehabilitation is vital in restoring, maintaining, and improving the function of forests and their land to maintain their function as a buffer for life and a supporting capacity in carrying out productive activities [4]. Research results from Abdullahi [5] show that reforestation carried out by several countries that are members of the OIC has a significant long-term positive impact. The amount of land that undergoes the process of reclamation from deserts and is used productively directly impacts the country's economy, especially on the climate, both on a regional and global scale.

Forest destruction occurs not only in state-owned forests but also in community-owned forests caused by massive logging. In conjunction with the Sustainable Development Goals, such damage can increase poverty due to climate change, the emergence of hunger caused by loss of water sources and insects, respiratory problems caused by forest fires, and infrastructure damage caused by floods and landslides [6]. In 2019-2020, the government stated that there had been a 75% reduction in deforestation in 2019-2020; however, this was not satisfactory enough because the implementation of reforestation only reached 3.1 thousand hectares or about 0.6 percent from previous years, so that this fact was inversely proportional to the goal of developing and preserving forests [7].

Degradation and efforts to convert forest land into agricultural land can cause various environmental problems, such as decreased soil fertility, erosion, extinction of flora and fauna, floods, droughts, and global environmental changes [8]. Development and industrial development not accompanied by a sense of responsibility results in land degradation. It can significantly affect the quality of the surrounding environment and decrease natural sustainability [9]. Careful consideration is needed in utilizing natural resources in terms of environment and economy and emphasizing cooperation between the community and stakeholders from various fields accompanied by combining various knowledge and methods used to create an equitable distribution of resources in the present and the future [1].

Waqf is a voluntary act of the community. The relationship between waqf and the environment is the same as the principle of environmental sustainability. Waqf has the nature of not being changeable, so it means waqf will remain forever [10]. Many studies have touched on the suitability of Islamic financial institution products with environmental sustainability missions such as green sukuk [11]. Islamic teachings teach the importance of global sustainability and the prosperity of all God's creations [12].

Yaakob et al. [13] stated that waqf can be one of the mediums to protect and preserve forests by allocating certain land or movable assets in the name of waqf so that the state can improve the quality of forest areas as a provider of water catchment areas, a means to control floods, and as a habitat for biodiversity. Ningsih et al. [10] stated that various waqf funds for protecting nature have been implemented in several countries, such as Kuwait, Indonesia, Singapore, and the United Kingdom. The function of productive endowments can

include social interests such as water flow, oxygen supply, and conservation of natural animals [14].

Based on the presentation that has been discussed, a study on the development of waqf is needed that focuses on digitizing waqf to increase community literacy, especially in the current generation related to waqf forest so that the community is aware and concerned about forest conditions that can affect the ecosystem; The role of Nazirs as waqf managers can also strengthen the integration of waqf data so that it helps develop environmentally friendly waqf or production forests that will later be managed [15].

No study has examined the potential implementation of waqf forest in an area based on SWOT analysis. SWOT analysis is one of the most concise methods of determining situations based on strengths and weaknesses, so this analysis provides a deep understanding of developing and planning strategies to deal with existing threats and weaknesses [16]. Based on a literature review conducted previously, this study aims to examine the analysis of potential implementation of the waqf forest with the SWOT analysis method.

3. METHOD

The study employed a comprehensive methodology to analyze the potential implementation of waqf forests. The research utilized a SWOT analysis to identify strengths, weaknesses, opportunities, and threats, which was then combined with interviews, documentation, and discussions to gather the necessary data [2, 6]. A qualitative descriptive approach was adopted, incorporating both SWOT and Quantitative Strategic Planning Matrix (QSPM) analyses to derive meaningful conclusions [17]. Data collection techniques included direct and online interviews, which were analyzed using the SWOT framework [18]. This mixed-method approach integrated quantitative and qualitative data to thoroughly understand the factors influencing waqf forest development [19].

The research subject originates from environmental and forestry experts in Central Java, Indonesia. The time frame for the study is between July and December 2023. Central Java, known for its rich cultural heritage and diverse ecosystems, offers a unique setting for implementing waqf forests. Central Java, known for its rich cultural heritage and diverse ecosystems, offers a unique setting for implementing waqf forests. The region is characterized by its significant agricultural activities, particularly rice production, which has faced challenges due to high conversion rates of paddy fields into non-agricultural land. This conversion impacts food security and agricultural sustainability, making integrating waqf forests a strategic solution to preserve agricultural land and enhance environmental conservation [20]. Central Java's proximity to urban areas and its role as a trade and tourism hub also provide opportunities for community engagement and economic activities that support sustainable forest management. These characteristics underscore the potential of waqf forests to address the region's environmental and socio-economic challenges.

The methods employed in this research, including SWOT analysis, IFE, and EFE, are well-established and widely recognized for their robustness and reliability. However, the innovation and progressiveness of this study lie in its novel application of these mature methodologies to the context of waqf forests in Indonesia. This research uniquely integrates Islamic financial principles with sustainable forest management, an area that has not been extensively explored. By applying SWOT analysis in conjunction with IFE and EFE matrices, the study provides a comprehensive evaluation of the internal and external factors influencing the implementation of waqf forests. This approach highlights the potential strengths and opportunities and identifies specific weaknesses and threats, offering strategic insights for stakeholders. The innovative aspect of this research is further underscored by its focus on leveraging waqf, an Islamic endowment practice, to address contemporary environmental challenges, thus contributing to both environmental conservation and socio-economic development. This dual focus enhances the relevance and applicability of the findings, making a significant contribution to the literature on sustainable development and Islamic finance.

First, the article begins with a literature review to understand the context and significance of waqf forests in Indonesia. Second, a SWOT analysis is conducted to identify the internal and external factors affecting waqf forest implementation. This method categorizes internal factors into strengths and weaknesses and external factors into opportunities and threats. Third, the Delphi method is employed to refine these factors through expert interviews. Twelve forestry and environmental conservation experts are selected based on their knowledge and experience. Fourth, the iterative Delphi process allows for the gradual development of consensus on the identified SWOT factors. Fifth, Delphi's final round involves participants rating each factor's importance and feasibility (Table 1). Finally, the SWOT and Delphi analyses data are used to construct a Quantitative Strategic Planning Matrix (QSPM) to prioritize strategic actions for waqf forest implementation. This structured approach ensures a comprehensive understanding of the factors influencing waqf forest development, facilitating effective strategic planning.

Table 1. List of questionnaire participants

Name	Gender	Work Status
DU	Male	Forestry
LF	Female	Environmental Activist
DF	Male	Forestry Supervisor
GR	Male	Forestry Activist
HA	Male	Forestry Supervisor
FA	Male	Forestry Supervisor
RF	Male	Environmental Activist
NZ	Male	Forestry Activist
JA	Male	Environmental NGOs
DM	Male	Environmental Care Community
AR	Male	Environmental Care Community
AH	Female	Environmental NGOs

SWOT analysis is used in compiling procedures hierarchically based on surrounding conditions [21]. SWOT identifies what factors impact both internal and external aspects. This kind of analysis has a role in helping organizations understand all existing factors so that they can significantly affect planning. Strengths and weaknesses are referred to as positive and negative internal factors, while opportunities and threats are called external factors [19]. The development of the SWOT strategy will be formed when linking the results of internal factors with the results of external factors in making a SWOT matrix [22].

SWOT analysis is an effective solution for improving

organizational performance by strengthening strengths and minimizing weaknesses. It also seizes opportunities and predicts future threats [21, 23]. The primary purpose of this analysis is to develop and facilitate decision-making based on the factors that have been analyzed [17]. Individuals and groups can quickly identify strengths, weaknesses, opportunities, and threats to anticipate future undesirable events.

The SWOT analysis utilizes a well-planned strategy framework to anticipate and overcome threats. It utilizes strengths as a buffer for threats to occur and reduces and eliminates weaknesses that still exist [24]. This analysis is applied because it has good development potential [25]. This method is simple but affordable in analyzing what will happen to minimize a threat and take advantage of pre-designed opportunities.

This method is used to analyze conditions that will occur in the future, situations that create weaknesses that cause disasters, and opportunities to optimize forest defense systems [26]. SWOT analysis is the most efficient method for analyzing strengths, weaknesses, opportunities, and threats. This analysis can build a horizon that creates an opportunity, overcomes a weakness, and overcomes a threat [16]. SWOT matrix analysis helps provide views to improve strengths and opportunities and overcome weaknesses and threats. Therefore, this SWOT analysis method makes it very easy to map a strategy. Factors were formulated internally and externally to limit weighted and ranking values obtained from the evaluated factors.

The Quantitative Strategic Planning Matrix (QSPM) method is applied in this study. The QSPM aims to find quantitative values by prioritizing higher values on each factor to solve each formulation used so that it can make it easier to evaluate the forest governance system [16]. QSPM is the result of an analysis of internal and external factor assessments. The higher value of each factor is utilized to optimize the system for the better [17]. This method uses calculations to determine the values of each factor with the following results:

1) This study came from the questionnaire scores, with each factor having a value of 1-4.

2) This study determines the analysis of internal factors, divided into strengths and weaknesses, by comparing each factor by assessing from a scale of 1-4.

3) The value obtained is the result of the calculation process of each factor that has been determined.

4) The internal factor strategy's (IFAS) value is determined based on the difference in the total value of the weaknesses and strengths. In contrast, the external factor strategy's (EFAS) value is determined based on the difference between the opportunity and threat sides [21].

5) This research refers to [16], which aims to find quantitative value by prioritizing each high factor value.

Average weight is the initial weight assigned to each external factor. Meanwhile, Normalized Average Weight is the adjusted weight after normalization. Average rating means the average score given to each factor based on its impact. Weight Score means the product of the normalized average weight and the average rating.

In the QSPM approach, internal and external factors are distinguished and analyzed separately to assess the strategic environment comprehensively. Internal factors are derived from the organization's strengths and weaknesses, focusing on aspects that can be controlled or influenced. For this study on waqf forests, internal factors likely include organizational capabilities, resources, management expertise, and existing waqf assets or programs. These are evaluated using an IFE matrix [27]. External factors, on the other hand, encompass opportunities and threats in the broader environment that are largely outside the organization's control [28]. These may include regulatory frameworks, environmental conditions, socio-economic trends, and stakeholder perceptions of waqf forests.

This study employed a qualitative descriptive approach utilizing the Delphi technique to identify and analyze factors in implementing waqf forests. Following an extensive literature review, 12 expert participants were selected based on their knowledge and experience in forestry and environmental conservation. The iterative nature of the Delphi technique allowed for the gradual development of agreed-upon factors, which were then categorized into strengths, weaknesses, opportunities, and threats (SWOT) for waqf forest implementation. The final round involved participants rating the importance and feasibility of each factor. This data was then used to construct a Quantitative Strategic Planning Matrix (QSPM) to prioritize strategic actions. The Delphi method's structured communication process facilitated the synthesis of expert knowledge while mitigating potential biases from face-to-face group dynamics [29, 30]. This approach aligned with the exploratory nature of the research, enabling the identification of fundamental elements and nuanced insights regarding waqf forest development [31, 32].

The study's questionnaire was designed to evaluate the potential implementation of waqf forests in Indonesia through a SWOT analysis, focusing on strengths, weaknesses, opportunities, and threats. The questionnaire included environmental benefits, governance challenges, community involvement, and economic impacts. It was developed based on a thorough literature review, expert consultations, and pretesting to ensure content validity and reliability. The questions were structured to gather qualitative and quantitative data, facilitating a comprehensive analysis of internal and external factors. The questionnaire's main items are summarized in the SWOT identification tables provided in the manuscript to enhance transparency. This approach ensures that the data collected is robust and supports the study's findings on the feasibility and strategic planning for waqf forest implementation in Indonesia.

4. RESULTS

Before calculating SWOT Analysis, this study conducted a literature review and interviewed expert respondents. The results of the literature review and in-depth interviews resulted in the following formulation in Table 2.

The IFE matrix, as shown in Table 3, involves internal factors to analyze the strengths and weaknesses of forest endowments. Each factor has a value weight used to evaluate these internal factors [17]. Table 3 shows that the strength factor has a value weight of 0.56 while the weakness factor has a value weight of 0.49, with a difference in values in the two mentioned factors of 0.07.

Table 2. Analysis of internal factors and external factors

	Strengths	**Weaknesses**
Internal Factor	1. Waqf forests could improve ecosystems and maintain air and water quality 2. Waqf forests can reduce global warming 3. Maintain soil fertility 4. Waqf forests can be used as fields for food and medicine 5. Waqf forests prevent natural disasters from occurring	1. Weak waqf forests, lack of forest governance implementation 2. Weak government contributes to carrying out forest functions 3. The industry utilizes it to extract natural wealth 4. Transfer of natural forests to agriculture and plantations 5. Weak forests during climate change
	Opportunities	**Threats**
External Factor	1. Waqf forests can be used as jobs 2. Utilizing forests as a source of life for the surrounding community 3. Raising awareness of Generation Z of the importance of waqf forests 4. Provide facilities to communities to empower forest endowments 5. Utilizing forest endowments for wood processing sources	1. Forest destruction caused by deforestation 2. The occurrence of forest fires due to irresponsible human activities 3. Reduced forest quality decreases, leading to a lack of oxygen and water quality 4. Forest destruction affects the economy of the community 5. Forests are used as an irresponsible industrial necessity

Table 3. Results of IFE method analysis

Aspects	**Internal Factors**	**Average Weight**	**Normalized Average Weight**	**Average Rating**	**Weight Score**
Strengths	Waqf forests help improve ecosystems, as well as maintain air and water quality	0.16	0.15	3.67	0.55
	Waqf forests can reduce global warming	0.09	0.08	3.67	0.30
	Maintain soil fertility	0.12	0.11	4.00	0.46
	Waqf forests can be used as fields for food and medicine	0.11	0.11	3.00	0.32
	Waqf forests prevent natural disasters from occurring	0.08	0.08	4.00	0.32
	Total strengths	**0.56**	**0.53**		**1.94**
Weakness	Weak waqf forests, lack of forest governance implementation;	0.10	0.09	1.67	0.15
	Weak government contributes to carrying out forest functions	0.10	0.10	1.67	0.16
	Raising awareness of Generation Z of the importance of waqf forests	0.16	0.15	2.00	0.30
	Provide facilities to communities to empower forest endowments	0.10	0.10	2.00	0.19
	Utilizing forest endowments for timber management resources	0.03	0.03	1.00	0.32
	Total weakness	**0.49**	**0.47**		**1.48**
	Total strengths-weakness	**1.05**	1		

Table 4. Results of EFE method analysis

Aspects	**External Factors**	**Average Weight**	**Normalized Average Weight**	**Average Rating**	**Weight Score**
Opportunities	Waqf forests can be used as jobs	0.13	0.11	3.33	0.36
	Utilizing forests as a source of life for the surrounding community	0.12	0.09	3.67	0.34
	Raising awareness of Generation Z of the importance of waqf forests	0.08	0.06	3.00	0.19
	Provide facilities to communities to empower forest endowments	0.15	0.12	4.00	0.48
	Utilizing forest endowments for timber management resources	0.04	0.04	3.00	0.11
	Total opportunities	**0.52**	**0.42**		**1.48**
Threats	Forest destruction caused by deforestation	0.18	0.14	1.67	0.24
	The occurrence of forest fires due to irresponsible human activities	0.17	0.13	2.00	0.27
	The reduction in forest quality has decreased so that it causes a lack of oxygen and water quality	0.08	0.06	1.33	0.08
	Forest destruction affects the economy of the community	0.15	0.12	2.00	0.24
	Forests are used as an irresponsible industrial necessity	0.15	0.12	2.00	0.24
	Total threats	**0.72**	**0.58**		**1.07**
	Total opportunities-threats	**1,243,00**	**1.00**		**0.12**

Table 5. SWOT analysis matrix

Aspects	**Strengths**	**Weaknesses**
	(SO)	**(WO)**
Opportunities	The community utilizes the forest ecosystem to facilitate its work. Utilizing soil fertility for the source of life of the surrounding community.	Communities help strengthen the implementation of forest governance as a job. The government can provide facilities to the surrounding community so that the community contributes to empowering the forest.
	(ST)	**(WT)**
Threats	Building forest ecosystem management so that oxygen and water quality are not reduced. The forest is used as a field for food and medicine so that the economy of the community around the forest remains stable.	Strengthening the implementation of forest governance so as not to occur deforestation so that forests become damaged. Strengthening the security of forest governance systems to prevent irresponsible industries.

As shown in Table 4, the EFE matrix involves external factors to analyze opportunities and threats related to waqf forest strategies. The value given to each existing strategy is obtained through a questionnaire, which is then determined by weight and rating against the results of EFE mathematical calculations [17]. Based on the results of the analysis presented in Table 4, the opportunity factor has a value weight of 0.52 while the threat factor has a value weight of 0.72, with the difference in value in the two factors mentioned at 0.2.

The data presented in Table 5 results from a SWOT analysis approach of Strengths, Weaknesses, Opportunities, and Threats. The data serves to compare internal factors (strengths and weaknesses) and external factors (opportunities and threats) by taking a greater value weight integrated to optimize the waqf management system [18]. SWOT analysis involves four aspects in formulating strengths, weaknesses, opportunities, and threats consisting of:

1) SO formula: prioritize forest strength by seizing opportunities to optimize forests.
2) WO formula: anticipate existing weaknesses by exploiting opportunities to optimize forests.
3) ST formula: prioritizing existing strengths in preventing threats to forests.
4) WT formula: evaluate weaknesses that can trigger threats to forests so that they can be anticipated.

5. DISCUSSION

Implementing waqf forest has a potentially positive impact on the surrounding community and is an effort to preserve nature. In forest management, waqf forest aims to support the function of forest protection and utilization. Article 30 of Law Number 5 of 1990 explains the function of protecting forests in preserving nature for living things and providing benefits for plants and other animals [33]. One small example of the potential of forests is that they provide agricultural land for the surrounding community, supporting soil fertility and maintaining various kinds of biodiversity for the surrounding community, which can later be utilized by the community [34]. Forests have a central role as a foundation for maintaining the environmental balance, protecting nature reserve areas, as a medium to prevent natural disasters, and as a forum for efforts to preserve biological natural resources and their ecosystems, so the community must play a role in preserving the forest [33].

Fire activity is one of the threats often faced by forests, with weather and climate being the most important factors influencing these activities, which can change due to climate change and cannot be separated from human behavior itself [35]. The development of the times in line with the increasing population in Indonesia causes the increasing needs of households, the agricultural sector, and employment can disrupt the environmental balance such as the emergence of degradation and degradation problems that can affect the quality and quantity of forests so that they can threaten people and ecosystems [1, 36, 37].

Nowadays, developing natural resources is an incredible opportunity, compared to previous times, due to the limitations of utilizing social media that focuses on field activities. Social media is essential in mobilizing community empathy to help develop natural resources and their ecosystems [38]. Generation Z (generation 1997-2012) is the generation that becomes the foundation that has the opportunity to develop natural resources so that they are always maintained and available for future generations [39].

The potential of forest endowments is needed to optimize ecosystems in Central Java; forest greening in urban areas affects how people live. Indonesian Forest areas need to be developed to preserve oxygen and water quality. The results of the analysis of forest potential in Central Java have excellent strength because the distance between forests and urban areas is relatively close to the trade industry, tourism, and community economic activities [40]. Forests can neutralize air pollution and can reduce soil erosion [41]. Land and water are essential units for forests, and they function to improve water [42]. Therefore, forests must receive special attention from the government because forests have an essential role in living things.

The implementation of the waqf forest in the Central Java region presents positive evidence for the ecosystem that it opens up great opportunities in implementing the function of the waqf forest, which is not only to preserve the environment but can potentially improve human life in terms of food needs, households, maintain ecosystem balance, and open new jobs that can have an effect in improving the community's economy [36, 43]. Forest endowments influence supporting the providers of primary community needs [44]. The study of [33] exposed Law Number 5 of 1990 concerning the Conservation of Natural Resources and their Ecosystems through activities. This law regulated the living systems in maintaining the diversity of plant species and animal ecosystems, utilizing the preservation of biological natural resources and their ecosystems".

Forest endowments in Central Java have enormous potential because forests function to optimize ecosystems, and communities utilize products from forests [1]. Developing forest endowments is the same as developing part of productive endowments.

As the years go by, there has been progress in various cities, big cities in various provinces, one of which is the province of Central Java, where in its development began much land that should be used to develop the natural environment, but it is widely used for buildings [45]. Research results by Herlitasar and Brata [46] state that implementing the waqf forest has an excellent opportunity factor compared to the threat factor. The community is aware of the benefits and potential of the waqf forest, which can play a role in optimizing natural resources and supporting the community's economy. There are differences in the results of study [45], which stated that the implementation of waqf forest has a more excellent threat factor than the opportunity factor, it has similarities with the results of research that has been conducted by the author today with the weight of the value possessed by the opportunity factor of 0.52 while the threat factor is 0.72.

This analysis can be an alternative way to balance deforestation's impacts and protect waqf forest land from land conversion for private use [7]. This study can minimize the function of waqf forest by looking at the results of the analysis of waqf forest implementation so that it can be aimed at conservation and environmental protection. This study is expected to strengthen the function of forest endowments by ensuring that the steps taken align with the objectives of why forest endowments are realized. This study involved various institutions, including the government, communities, and forestry. Implementing waqf forest will become more efficient and effective for sustainable forest management and sustainability.

6. CONCLUSIONS

The study examines the feasibility of implementing waqf forests in Indonesia using a SWOT analysis complemented by IFE and EFE methods. It identifies key internal strengths, such as enhancing ecosystems, maintaining air and water quality, mitigating global warming, and reducing natural disasters. These strengths are juxtaposed with internal weaknesses, including governance challenges and climate change impacts on forests. Externally, opportunities such as job creation, community empowerment, and awareness among Generation Z are highlighted, alongside threats like deforestation, forest fires, and unsustainable industrial practices. The findings suggest that the identified strengths and opportunities outweigh the weaknesses and threats, indicating significant potential for successful waqf forest implementation. The IFE analysis reveals a higher score for strengths than weaknesses, while the EFE analysis underscores more substantial opportunities compared to threats. Leveraging internal strengths and external opportunities can potentially mitigate weaknesses and threats, though governance improvements and enhanced engagement from younger generations are acknowledged as crucial. Future research should optimize waqf management practices and explore digital solutions to boost community engagement and literacy on waqf forests. Implementing waqf forests in Indonesia offers a promising environmental conservation and community development strategy. By addressing governance issues and capitalizing on community involvement and education opportunities, waqf forests can effectively contribute to sustainable forest management and environmental protection. This study provides a comprehensive framework to guide stakeholders in maximizing the benefits of waqf forests, supporting ecological sustainability and socio-economic advancement.

ACKNOWLEDGMENT

The author would like to thank all parties who have provided support through data or constructive suggestions to complete this study activity well.

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