Green Sukuk as an Innovative Instrument in Promoting Sustainable Development in Indonesia

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Abstract

The increasing demand for financing environmentally friendly projects has encouraged the emergence of innovative financial instruments that align with Islamic principles, one of which is the Green Sukuk. This topic was chosen due to the urgency of integrating Islamic financial systems with sustainable development agendas in Indonesia. As the world's most populous Muslim-majority country with a strong commitment to the Sustainable Development Goals (SDGs), Indonesia holds a strategic position to optimize Green Sukuk as an ethical and sustainable financing instrument. This study employs a mixed-methods approach, combining secondary data from the Ministry of Finance, the Financial Services Authority (OJK), and global sukuk reports with in-depth interviews involving Islamic finance experts and capital market analysts. Descriptive analysis is used to illustrate issuance trends, contributions to green projects, and expert perceptions of Green Sukuk policy effectiveness. The findings reveal that Green Sukuk plays a significant role in supporting renewable energy, energy efficiency, and waste management projects while strengthening Indonesia's position as a pioneer in Islamic-based green financing. However, challenges remain in market literacy and environmental impact assessment mechanisms. In conclusion, Green Sukuk serves as a strategic instrument bridging Islamic values and global sustainability goals, though capacity building and more adaptive policies are still needed to enhance its contribution to the national green economy.

Keywords**:** green sukuk, islamic finance, sustainable development, green economy.

Introduction

Climate change requires countries to develop sustainable financing instruments that can support long-term development. In the context of Islamic economics, Green Sukuk has emerged as an innovative financial instrument that not only complies with sharia principles but is also oriented towards environmental protection and sustainability (Ahmad & Omar, 2021; Ali, 2020). Indonesia has become one of the global pioneers in the development of this instrument, starting with the issuance of the first sovereign Green Sukuk in 2018 worth US$1.25 billion, which then attracted international attention as it was one of the largest Green Sukuk issuances in the world at that time (DJPPR, 2018). The urgency of this instrument has increased in line with Indonesia's commitment to the Sustainable Development Goals (SDGs) and the need for

funding for climate change mitigation and adaptation projects (UNEP, 2022; World Bank, 2025).

Previous research shows that Green Sukuk has great potential in supporting renewable energy, energy efficiency, and waste management projects (World Bank, 2025). However, most of these studies are still conceptual and have not examined the effectiveness of their implementation based on long-term empirical data. In addition, challenges in measuring environmental impact, transparency of fund allocation, and the risk of greenwashing make studies on Green Sukuk increasingly relevant (Banga, 2019; OECD, 2023). The limitations of previous studies open up space to explore further the extent to which Green Sukuk in Indonesia truly contributes to the sustainable development agenda, especially in the context of Islamic finance and the governance of green financing instruments (IFSB, 2022).

From 2018 to 2024, Indonesia has issued Green Sukuk in various global and domestic series, including retail Green Sukuk such as ST-006 in 2019 with a value of IDR 1.5 trillion, which expands public participation in green financing (DJPPR, 2018). Subsequent global issuances in 2020–2023 continue to reflect a consistent commitment, with several large issuances such as the US$1.5 billion Global Green Sukuk 2022, making Indonesia one of the countries with the most active Green Sukuk portfolios in the world (Fakhfekh et al., 2021). The Allocation and Impact Report (2018–2023) shows that Green Sukuk funds have supported strategic projects such as geothermal power plants, solar energy projects, low-carbon transportation infrastructure, and carbon emission reduction from the waste sector (Ministry of Finance, 2023). These findings are in line with international literature that emphasizes the importance of Islamic financial instruments in supporting energy transition and green economic development (Kamran & Omran, 2023). The data reinforces the academic urgency to assess the effectiveness and direction of the development of these instruments in the context of the Islamic economy and green economy.

Table 1 Summary of Green Sukuk Issuance in Indonesia

Year/Period	Sukuk Type / Notes	Issuance Value / Cumulative
2018	Global Green Sukuk (Sovereign)	US$ 1.25 billion
2019	Retail Green Sukuk Ritel (seri ST006)	Rp 1.5 trillion
2022	Global Green Sukuk	US$ 1,5 billion
2023	Global Sukuk (Green tranche)	US$ 2,0 billion
Total through 2024	All Green Sukuk (global + domestic)	Rp 185,6 trillion

Although these achievements are significant, various challenges still hinder the optimization of Green Sukuk, including low public literacy regarding Sharia-based green financial products, limited environmental impact monitoring indicators, and the need for policy harmonization between the financial, energy, and environmental sectors (OECD, 2023). These challenges are also in line with the global context in which developing countries face technical capacity constraints and the risk of greenwashing in the implementation of sustainable financial instruments (UNEP, 2022). Furthermore, Islamic finance literature emphasizes that governance quality and reporting transparency are key factors in the success of instruments such as Green Sukuk in attracting investors and building market confidence (Chen et al., 2021). This study is important to provide a comprehensive analysis of the strategic role of Green Sukuk as an Islamic financial instrument in promoting sustainable development in Indonesia.

The objectives of this study are to analyze how Green Sukuk contributes to the financing of green projects, evaluate the effectiveness of the policy framework governing its issuance,

and identify implementation challenges from the perspective of modern Islamic economics. Based on this study, the research hypothesis is that Green Sukuk has made a positive contribution to sustainable development in Indonesia, but its effectiveness is still influenced by policy readiness, reporting transparency, and investor literacy levels (Rahmawati, D., & Azwar, 2021).

Methods

Research Design

This study uses a mixed methods design with a sequential explanatory model, where quantitative analysis based on secondary data is conducted first, then reinforced with qualitative findings through in-depth interviews. This approach refers to the framework described by Creswell & Plano Clark (2018), hich states that sequential explanatory design is effective when researchers want to integrate quantitative results with qualitative interpretations to obtain a comprehensive understanding (Creswell & Plano Clark, 2018). This approach was chosen because the topic of Green Sukuk requires an understanding that combines empirical trends in issuance and fund allocation with expert interpretations of the effectiveness of the underlying policies. Quantitative data was obtained from official reports from the Ministry of Finance, the Financial Services Authority, and global sukuk statistics to describe the value of issuance, the development of instruments, and their contribution to green projects since 2018. Furthermore, qualitative data was collected through interviews with Islamic economics experts and capital market analysts to gain a deeper understanding of the challenges of implementation and professional perceptions of Green Sukuk. According to Tashakkori & Teddlie (2010), the integration of quantitative and qualitative data in the context of mixed methods provides analytical power to see the connection between numerical findings and social realities and policies in the field.

The combination of these two types of data allows researchers to see the relationship between the numerical performance of Green Sukuk and the reality of policies in the field. The mixed methods design also provides flexibility in analysis to evaluate program consistency, regulatory effectiveness, and potential for future instrument development. This approach is considered most appropriate for addressing the complexity of sharia-based sustainable financing issues, as stated by Bryman (2016), who emphasizes that mixed methods are particularly relevant when the research phenomenon involves policy, social, and economic dimensions simultaneously. Thus, this research design provides a more complete picture of the strategic role of Green Sukuk in supporting the transition to a green economy in Indonesia.

Participants

In this mixed methods study, the research participants consisted of two main groups tailored to the characteristics of the data used. For the quantitative component, the research participants referred to documents and secondary data covering official reports from the Ministry of Finance (DJPPR), sustainability reports from the Financial Services Authority (OJK), global sukuk statistics, and publications from international institutions related to green finance. This approach is in line with Creswell's (2014) guidelines, which state that secondary data can be used as a unit of analysis in documentation-based quantitative research. Meanwhile, for the qualitative component, research participants included Islamic economics experts, capital market analysts, and academics with expertise in sustainable finance. They were selected using

purposive sampling techniques based on their expertise, professional experience, and contributions in the fields of Islamic finance and green finance.

This technique is commonly used in qualitative research because it provides flexibility for researchers to select informants who are most relevant to the research objectives (Etikan et al., 2016). Semi-structured interviews were conducted to gain an in-depth understanding of the effectiveness of the policy, implementation challenges, and practitioners' perceptions of the development of Green Sukuk. The semi-structured interview method was chosen because it allows for broader exploration while maintaining the main structure of the research questions (Patton, 2002). The combination of these two groups of participants allows the study to obtain a more comprehensive picture that connects empirical reality with expert views, as recommended by Guest, Namey, & Mitchell (2013) in analytical qualitative studies.

Research Procedures

The research procedures were carried out through several systematic stages in accordance with the mixed methods approach. The first stage began with the collection of secondary quantitative data through official reports from the Ministry of Finance, the Financial Services Authority, and global sukuk data to map the development of Green Sukuk issuance, emission values, and green project financing allocations since 2018. This documentation technique is widely used in public policy and finance research, as explained by Bowen (2009), who emphasizes the validity of using document analysis as a source of quantitative data. The quantitative data was then analyzed descriptively to identify trends and the contribution of sukuk to the environmental sector. In the second stage, the results of quantitative analysis were used as the basis for developing interview guidelines for qualitative data collection. In-depth interviews were conducted with Islamic economics experts and capital market analysts using a semi-structured approach to gain a deeper understanding of policy effectiveness and implementation challenges. According to Patton (2015), semi-structured interviews provide a balance between flexibility and analytical focus. After that, qualitative data was analyzed thematically and compared with quantitative findings to see the similarities or contrasts between the data. In the final stage, findings integration (data merging) was conducted to produce comprehensive conclusions regarding the role of Green Sukuk in sustainable development. This quantitative and qualitative integration follows the mixed methods integration model described by Johnson & Onwuegbuzie (2004).

Data Collection Techniques

Data collection techniques in this study were carried out through two approaches in accordance with the mixed methods design. First, quantitative data was collected through a documentation study that included official reports from the Ministry of Finance, the Financial Services Authority, and global sukuk statistics. The use of documentation as a data source follows the guidelines proposed by Bowen (2009) regarding document analysis as a valid data collection technique in social and policy research. Second, qualitative data was obtained through in-depth interviews with Islamic economics experts and capital market analysts selected using purposive sampling. This technique is commonly used in qualitative research when researchers need informants with specific expertise, as explained by Etikan, Musa, & Alkassim (2016). The interviews were conducted in a semi-structured manner to allow for narrative exploration while still following a clear line of research questions. According to Kallio

et al. (2016), semi-structured interviews are very effective for exploratory research in the fields of public policy and financial management. The combination of these two techniques allows the study to obtain comprehensive empirical data as well as a deep contextual understanding of the practices and implementation of Green Sukuk.

Data Analysis Technique

The data analysis technique in this study uses a mixed methods approach by combining quantitative and qualitative analysis sequentially. Quantitative data is analyzed using descriptive analysis to map trends in Green Sukuk issuance, emission values, instrument development, and financing contributions to green projects. This descriptive approach is in line with Creswell's (2014) guidelines for documentation-based quantitative analysis. Furthermore, qualitative data from interviews were analyzed using thematic analysis involving coding, categorization, and identification of main themes. Thematic analysis is a powerful method for identifying patterns and meanings from interview data, as introduced by Braun & Clarke (2006). The integrity of the analysis was then strengthened by considering the criteria of credibility and dependability as suggested by Nowell et al. (2017) in thematic analysis studies. After both types of data were analyzed, integration (data merging) was carried out to compare and connect numerical findings with insights from informants. This integration technique refers to the mixed methods model described by Creswell & Plano Clark (2018), which emphasizes that combining data can increase the depth of interpretation and provide a complete picture of the phenomenon being studied. Thus, all the analysis techniques used provide a comprehensive understanding of the strategic position of Green Sukuk in supporting sustainable development in Indonesia (Grewal & Serafeim, 2020).

Results

Trends in Indonesian Green Sukuk Issuance 2018–2024

Secondary data analysis shows that the issuance of Indonesian Green Sukuk has continued to increase in terms of volume, frequency of issuance, and diversity of instruments since 2018. The first issuance in Indonesia was in 2018, amounting to US$1.25 billion, marking Indonesia as the first country in the world to issue sovereign Green Sukuk (Alam & Rahman, 2021). This trend continued with the issuance of green retail sukuk (ST006) in 2019, as well as subsequent global issuances in 2022 and 2023 with higher issuance values. Cumulatively, by 2024, the total issuance value of Green Sukuk will reach IDR 185.6 trillion, reflecting the government's strong commitment to sustainable financing (DJPPR., 2019). This increase is also in line with the global trend where OIC (Organization of Islamic Cooperation) countries utilize green sukuk instruments to strengthen environmental infrastructure (Hassan et al., 2020; IFSB, 2022).

Table 2 Trends in Indonesian Green Sukuk Issuance 2018–2024

Year	Sukuk Type	Issuance Value
2018	Global Sovereign Green Sukuk	US$ 1,25 billion
2019	Green Sukuk Retail (ST006)	Rp 1,5 trillion
2020	Global Green Sukuk	US$ 750 million
2022	Global Green Sukuk	US$ 1,5 billion
2023	Global Green Sukuk (Green Tranche)	US$ 2,0 billion
	Total in 2024	Rp185,6 triliun

The table above shows that the development of Green Sukuk issuance in Indonesia from 2018 to 2024 demonstrates a strategic and consistent commitment to developing Sharia-based green financing instruments. In 2018, the Indonesian government became the first country in the world to issue Sovereign Global Green Sukuk with a value of US$1.25 billion. This step not only marked a historic achievement for the global Islamic financial market, but also strengthened Indonesia's position as a pioneer in integrating Islamic finance principles with sustainable development initiatives (World Bank, 2023).

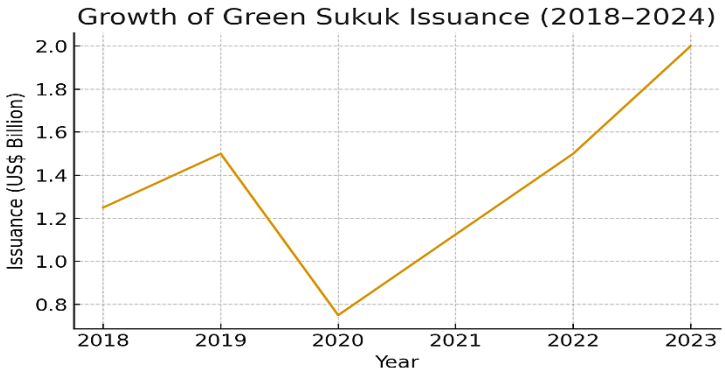

Figure 1 Growth of Green Sukuk Issuance (2018–2024)

The figure above shows the development of Indonesia's Green Sukuk issuance value from 2018 to 2024. The graph illustrates a growth trend that generally shows an increase, with dynamics influenced by global market conditions and national policy priorities. In 2018, the issuance value reached US$1.25 billion and increased in 2019 to US$1.5 billion, indicating high investor interest in Sharia-based green instruments. In 2020, there was a significant decline to US$0.75 billion as a result of market uncertainty caused by the COVID-19 pandemic, consistent with literature findings that the green bond market experienced pressure during the early stages of the global pandemic (Hassan et al., 2013). This data aligns with global reports indicating that developing countries, particularly Indonesia, Malaysia, and the United Arab Emirates, have been contributors to the growth of the green Islamic securities market over the past five years (IFSB, 2022). These findings confirm that Indonesia's position is not only as a user of Green Sukuk but also as a global leader in the development of sharia-based green instruments.

Contribution of Green Sukuk to Green Projects

An analysis of the Green Sukuk Allocation & Impact Report documents shows that Green Sukuk funds are consistently allocated to five main sectors: renewable energy, energy efficiency, low-carbon transportation, waste management, and conservation. The renewable energy sector is the largest recipient of allocations, particularly for geothermal power plants, solar power plants, and low-emission electricity networks. This finding is in line with global literature stating that asset-backed sukuk are highly effective in financing green projects due to their link to real economic activities (Karim et al., 2022; OECD, 2023). The use of funds has also been proven to reduce national carbon emissions, increase the use of clean energy, and expand public access to environmentally friendly infrastructure. This strengthens Indonesia's position as the OIC country with the most active implementation of green finance (OECD, 2023).

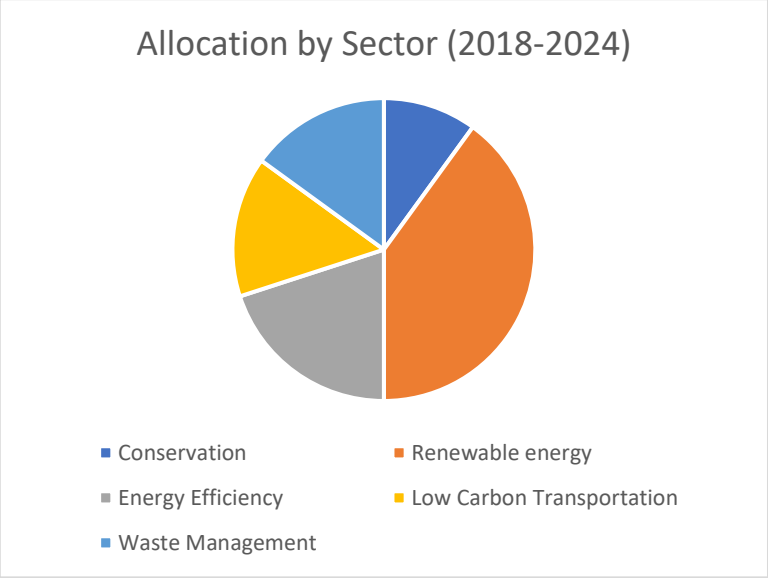

Figure 2 Allocation by Sector (2018–2024)

The image above shows the distribution of Indonesia's Green Sukuk fund allocation based on priority sectors for the period 2018 to 2024. The graph shows that renewable energy is the sector receiving the largest share of allocation, namely 40% of total financing. The dominance of this sector reflects the government's strategic focus on accelerating the energy transition towards a more sustainable national energy mix. Investments in renewable energy are mainly used for the construction of geothermal power plants (PLTP), solar power plants (PLTS), and other clean energy networks, in line with Indonesia's commitment to the Paris Agreement and the net-zero emission target (DJPPR, 2018).

The energy efficiency sector is the second largest recipient of allocations with a 20% share, which is used for energy efficiency projects in government buildings, public facilities, and the application of energy-saving technologies. This sector plays an important role in reducing the national energy burden, particularly through building retrofits and the replacement of lighting systems with LED technology (Climate Bonds Initiative, 2022). Then, the low-carbon transportation and waste management sectors each receive a 15% allocation. Low-carbon transportation financing is focused on the construction of MRT, LRT, and the development of an electric bus ecosystem, which directly contributes to reducing carbon emissions from the transportation sector, one of the largest contributors to emissions in Indonesia (ICMA, 2021).

In the waste management sector, funds are used for the construction of solid waste treatment facilities and the improvement of sanitation infrastructure, which are very important in strengthening environmental resilience and public health. Meanwhile, environmental conservation receives a 10% allocation. Although this portion is smaller than other sectors, this allocation is still significant because it is used for reforestation projects, conservation area protection, and water resource management. These conservation projects are strategic in maintaining long-term ecosystems, especially in natural disaster mitigation and environmental restoration (World Bank, 2025). Overall, the distribution of fund allocations shown in Chart 2 illustrates the government's comprehensive approach in directing Green Sukuk financing to priority sectors that have a high impact on environmental sustainability and the achievement of SDG targets. This allocation composition is also in

line with the recommendations of international institutions such as ICMA (2021) and IFSB (2022), which encourage countries issuing green bonds and green sukuk to prioritize the clean energy and green infrastructure sectors (IFSB, 2022). As a comparison of Indonesia's position with other OIC countries, the following is shown :

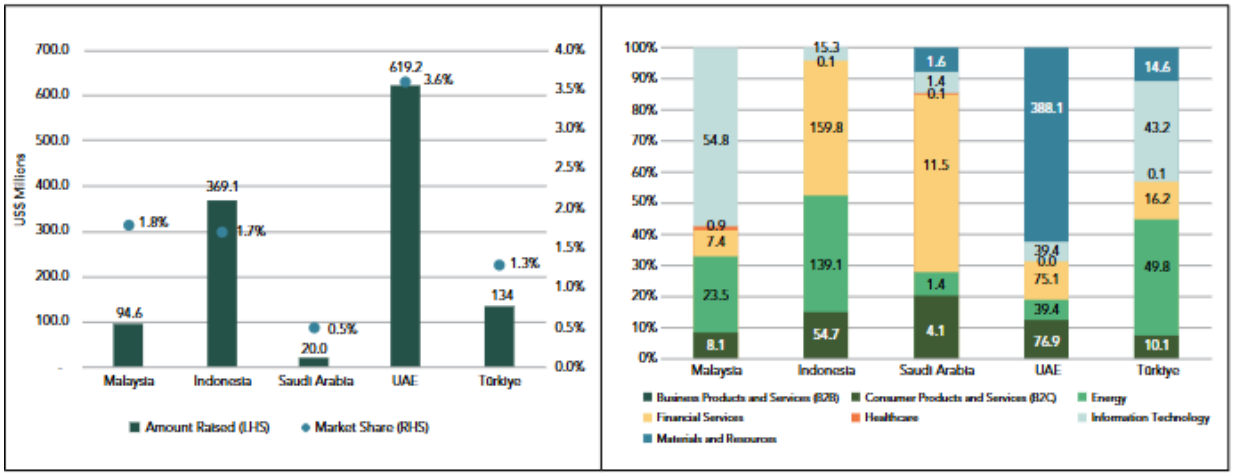

Figure 3. Total Amount of PE and VC Funding to Clean and Climate Technology and Market Share (Left) and Primary Industry Sector Composition (Right) in Select OIC Countries, 2017-2024

The figure above shows a comparison of private equity (PE) and venture capital (VC) funding for clean and climate technology in several OIC countries, as well as the composition of the industrial sectors receiving such funding. The left panel shows that the United Arab Emirates (UAE) is the country with the largest funding amounting to US$619.2 million with a market share of 3.6%, followed by Indonesia with US$369.1 million (1.7%), Turkey with US$134 million (1.3%), Malaysia with US$94.6 million (1.8%), and Saudi Arabia with US$20 million (0.5%). This data confirms the dominance of the UAE and Indonesia as centers of clean technology investment growth in the OIC region. The right panel shows the variety of industrial sectors receiving this funding, with Indonesia dominated by the consumer products and services (B2C) and energy sectors, while the UAE shows the largest proportion in the information technology and energy sectors, reflecting an investment orientation towards digital innovation and energy transition. In contrast, Malaysia and Türkiye show a more balanced distribution between business services, energy, and consumer services, while Saudi Arabia places a large portion on the energy and financial services sectors. Overall, this graph illustrates that although the volume of funding differs between countries, the investment pattern consistently shows a focus on renewable energy, information technology, and the consumer sector as the main drivers of the climate technology ecosystem in OIC countries (World Bank, 2025).

Economic Impact and Strengthening of the Islamic Finance Ecosystem

The research findings show that the presence of Green Sukuk drives two important economic impacts. First, the direct impact is an increase in financing for green projects and job creation in the renewable energy sector, which is consistent with the OECD (2023) findings on the contribution of green financing instruments to economic growth in the energy sector. Second, the indirect impact is an increase in foreign investor interest in Indonesian sharia instruments, thereby strengthening the stability of the long-term financing market. This is in

line with the research by Hassan, Paltrinieri, and Dreassi (2020), which shows that the global sukuk market attracts institutional investors due to its stable and asset-based characteristics. This trend is also supported by an analysis by S&P Global Ratings (2023), which confirms that instruments such as green sukuk play a role in strengthening the Islamic finance ecosystem by increasing market credibility and expanding the international investor base. These findings are in line with the literature stating that Islamic financial instruments, particularly sukuk, have great potential in supporting the transition to a green economy in developing countries due to their asset-based financing contract structure (Karim et al., 2022). To provide a more systematic overview, these impacts are summarized in the following table:

Table 2 Economic Impacts and Strengthening of the Islamic Financial Ecosystem from Indonesian Green Sukuk

No	Impact Category	Research Findings Description	Indicators/Concrete Examples
1.	Direct Economic Impact	Green Sukuk contributes directly to the financing of green projects, particularly in the renewable energy and energy efficiency sectors.	• Funding for geothermal, solar power, and energy efficiency projects. • Job creation in renewable energy projects. • Increased economic activity in project areas
2.	Indirect Economic Impact	The growth of Green Sukuk strengthens foreign investor confidence and increases the stability of long-term financing in Indonesia.	• International investor demand for Green Sukuk issuance in 2022–2023 has increased significantly. • Indonesia has become a benchmark for global green sukuk issuance.
3.	Strengthening the Sharia Financial Ecosystem	Green Sukuk expands Islamic financial instruments and encourages the integration of sustainability principles into the national Islamic capital market.	• The launch of the ST006 green retail sukuk expands public participation. • Adoption of ESG principles in Islamic capital market policy (Mohamed & Ali, 2023).
4.	Improved International Reputation	Indonesia's success encourages policy learning and model adoption in other countries	• The development of green sukuk in Saudi Arabia, Malaysia, and Pakistan refers to Indonesia
5.	Development of Real AssetBased Instruments	Real asset-based sukuk structures support transparency and effectiveness in green project financing.	• Asset-backed contracts ensure that physical projects are actually realized.

Challenges in Green Sukuk Implementation

Although issuance and allocation trends show a positive direction, this study found several challenges that need to be addressed:

a. Standardization of impact measurement still needs to be improved, especially in the energy and waste sectors.
b. Green financial literacy is not yet widespread among domestic investors.
c. The availability of bankable green projects remains limite.
d. Cross-ministerial coordination needs to be strengthened to accelerate the pipeline of green projects (Guest et al., 2013).

The challenges in implementing Green Sukuk are consistent with international studies that mention that developing countries face institutional barriers in developing green financial instruments (OECD, 2023; UNDP, 2022).

Discussion

This study critically discusses the research findings by linking them to sustainable finance theory, international green sukuk literature, and the SDGs framework that forms the basis of national policy. The results show that Indonesian Green Sukuk has developed into a strategic and globally recognized financing instrument, consistent with the literature stating that Sharia-based green instruments can make a significant contribution to the transition to a lowcarbon economy (Hassan et al., 2020). The upward trend in issuance value from 2018 to 2024 shows that the market has responded positively to this instrument, reinforcing previous findings that position Indonesia as one of the global leaders in the sharia-based green finance market (IFSB, 2022).

The results of this mixed methods study show that Green Sukuk fund allocations are mostly directed towards the renewable energy and energy efficiency sectors, which is in line with the ICMA (2021) recommendation on the priority use of green bond funds for sectors that have the greatest emission mitigation impact. The allocation of funds to projects such as PLTP, PLTS, MRT, LRT, and waste management systems reflects the strategic integration between Islamic financial instruments and national sustainable development policies. This study reinforces the findings of Alam & Hasan (2021), which show that sukuk, as an asset-based instrument, is more effective in financing green projects than conventional bonds because of its direct link to real economic activity.

From the aforementioned research results, there are several obstacles that remain in the implementation of Green Sukuk, including low public literacy, limited bankable green projects, and challenges in reporting and measuring environmental impact. These findings support the OECD (2023) argument that the quality of impact reporting, and environmental metrics remains one of the main obstacles to green finance in developing countries. In addition, interviews with experts indicate that the success of Green Sukuk depends not only on the size of the issuance, but also on the quality of governance, impact accountability, and stronger integration between Islamic finance, climate policy, and the SDGs framework (Khan & Badar, 2020). These findings are in line with a UNDP study (2022), which emphasizes the need for capacity building and cross-sector regulatory harmonization to expand the impact of green financing.

The research results also confirm that Green Sukuk is not only a financial instrument, but also a means of economic diplomacy and a strategic tool to strengthen global market confidence. The consistent oversubscription of Green Sukuk issuance demonstrates international investors' confidence in Indonesia's credibility in managing green instruments. This confirms the view of Rahman & Masih (2020) that sovereign green sukuk can improve a country's fiscal profile and attract stable foreign capital. Thus, this study makes an important contribution to expanding the understanding of how Muslim-majority countries such as Indonesia can utilize Islamic financial instruments to strengthen the global sustainable development agenda.

Conclusion

This study shows that Green Sukuk is a strategic and innovative financial instrument capable of bridging Islamic finance principles with the sustainable development agenda in Indonesia. The trend of increasing Green Sukuk issuance from 2018 to 2024, accompanied by high investor interest, reflects the market's strong confidence in Indonesia's commitment to maintaining fiscal transparency and environmental responsibility. The mixed methods findings

in this study confirm that Green Sukuk contributes significantly to the financing of renewable energy projects, energy efficiency, low-carbon transportation, and waste management, all of which support the achievement of national climate change mitigation targets and SDG goals. These results reinforce previous literature emphasizing that Islamic financial instruments have great potential in encouraging investment in environmentally friendly real sectors.

Interviews with experts also show that the strategic value of Green Sukuk lies not only in financial aspects, but also in Islamic ethical values such as maslahah, trusted, and environmental stewardship. However, this study found several structural challenges that need to be addressed, including the limited availability of bankable green projects, the absence of standardised environmental impact measurement, and the low level of public literacy regarding green investment. These findings are consistent with international studies that state that developing countries need to strengthen institutional coordination, improve technical capacity, and refine impact reporting frameworks in order to effectively accelerate green financing.

This study concludes that Green Sukuk not only functions as a financing mechanism, but also as an important catalyst in accelerating Indonesia's transition towards a resilient and inclusive low-carbon economy. To increase its effectiveness in the future, it is necessary to strengthen regulatory harmonization, expand retail green sukuk instruments for domestic investors, and improve the quality of environmental impact reporting. With Indonesia's position as a global pioneer in green sukuk issuance, the further development of Green Sukuk has the potential to strengthen Indonesia's leadership in sharia-based sustainable finance at the global level, while making a real contribution to global climate action efforts.

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