Green Islamic Sukuk as a Tool for Financing Sustainable Projects

(A Case Study of Malaysia and Indonesia)

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Abstract:

This study aims to highlight the effectiveness of Islamic Green Sukuk as a tool for financing sustainable projects and environmental conservation. These Sukuk instruments are characterized by their adherence to Islamic Sharia principles and the principles of sustainable environmental development. Additionally, the study investigates the factors that have contributed to their proliferation and development. To understand their current status, the experiences of Malaysia and Indonesia in various applications have been referenced.

Several key findings emerge from this study, including the effectiveness and transparency of Islamic Green Sukuk in financing sustainable projects. Furthermore, these Sukuk instruments have attracted investors due to their alignment with their ethical and religious beliefs.

Keywords: Islamic finance; Islamic Sukuk; Green Islamic Sukuk; sustainable projects.

JELClassificationCodes: G19, G23, Q01.

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1. INTRODUCTION

- Islamic finance shares common features and principles with green finance,which revolve around environmental conservation,Given the climate changes characterized by phenomena like drought and deforestation due to pollution, it has become imperative to seriously address these issues and adopt projects that mitigate these effects while promoting sustainable environmental development , With the rapid pace of environmental, economic, and financial changes, funding such projects necessitates more contemporary and flexible approache .In this context,Islamic finance encompasses several modern techniques, including Green Islamic Sukuk, aimed at financing environmentally friendly projects while adhering to Sharia principles.

- Problem Statement: In pursuit of sustainable environmental development within the realm of Islamic finance, the choice of appropriate tools becomes essential. Among these tools, Green Islamic Sukuk stands out due to its flexibility in accommodating various economic changes. Its nomenclature itself indicates its purpose of environmental preservation

In light of this, the following problem is posed: "To what extent are Green Islamic Sukuk adopted in financing sustainable projects in both Malaysia and Indonesia?"

-Hypotheses :

-Green Islamic Sukuk adhere to Sharia principles and prioritize environmental consideration in their transactions.

-Both Malaysia and Indonesia heavily rely on Green Islamic Sukuk for financing their sustainable projects .

These hypotheses form the foundation for exploring the role and prominence of Green Islamic Sukuk in the sustainable financing landscape of Malaysia and Indonesia .

2. Sustainable Projects .

2.1 Definition Sustainable Projects.

Sustainable projects can be defined as those projects that contribute to the development of society and industry, while making optimal and

effective use of all environmental and social resources. They are oriented towards the long-term future, focusing on maintaining a high-value, improved quality of life for every individual in the community, both in the present and the future.

Another definition states that sustainable projects are those that achieve a balance between the developmental and environmental needs of both the present and future generations.

They encompass a set of complex processes that extend over the long term and are comprehensive and integrated across their economic, socail, political, and cultural dimensions. These projects are designed to serve the members of the community while not neglecting environmental and natural resource constraints (Ziyad, 2020-2021, p. 08).

2.2 Characteristics of Sustainable Projects.

Sustainable projects possess several characteristics, including:

- They exhibit interplay and complexity, considering both social and environmental perspectives.
- They aim to fulfill the needs and requirements of various impoverished segments in order to reduce poverty rates.
- They foster the development of spiritual and cultural aspects, preserving the cultural uniqueness of each society.
- Sustainable projects have an international dimension, as international efforts intensify to assist less developed countries in achieving sustainable development and ensuring the effective implementation of these projects.
- They are long-term projects designed to safeguard the future for upcoming generations.
- These projects prioritize the human aspect and strive to fulfill basic human requirements.
- They involve environmental management processes aimed at conserving natural capital. (Ziyad, 2020-2021, p. 9)

2.3 Importance of Sustainable Projects.

Sustainable projects are of paramount importance, which can be highlighted through the following points:

- Enhancing national capacity for conscious and prudent management of natural resources, with the goal of achieving a dignified and better life for all members of society.
- Promoting environmental awareness among individuals by establishing a connection between human activities and environmental elements.
- Focusing on countries facing economic challenges and environmental hazards, such as desertification and polluted water, in order to provide assistance.
- Utilizing technology for the wise exploitation of natural resources and the preservation of future generations. (Ziyad, 2020-2021, p. 10)

3. Definition of Islamic Green Sukuk.

Islamic Green Sukuk can be defined as investments that are compliant with the principles of Islamic Sharia in several aspects, while also considering environmental factors. The generated proceeds are utilized to preserve the environment and natural resources, promote energy efficiency, enhance renewable technologies, and mitigate greenhouse gas emissions. (Laqwi & Mustafa, 2021, p. 16)

These Sukuk are also defined as financial instruments that hold equal value and are tradable, issued based on well-known Sharia contracts. The funds raised through these Sukuk are directed towards financing projects related to the environment, such as renewable energy, sustainable transportation, water management, green buildings, waste management, and land management. (Belaasri, 2022, p. 82)

Based on the preceding definitions, we can infer the following definition: Islamic Green Sukuk are financial instruments issued within an Islamic framework that serve environmental objectives.

3.1 Advantages of Islamic Green Sukuk*.*

The significant advantages of Islamic Green Sukuk can be highlighted as follows (Al-Tahami & Raziq, 2019, p. 111):

- **Market Expansion and Bridging the Gap**: Islamic Green Sukuk have the potential to expand the market and bridge the gap between the traditional financial world and the Islamic one.
- **Investor Confidence**: These Sukuk provide investors with a high level of confidence that their funds will be used for a specific purpose and in accordance with Islamic principles. The funds raised through issuing Sukuk are directed towards environmentally-focused assets and projects.
- **Attractiveness to Environmentally-Conscious Investors**: Sukuk that meet these criteria and provide environmentally sustainable financing can be particularly appealing to investors who have a special interest in environmental matters.
- **Dual Environmental and Islamic Financing**: These Sukuk can facilitate obtaining financing within both environmental and Islamic frameworks.

3.2 Fields of Islamic Green Sukuk Usage.

The utilization of Islamic Green Sukuk is focused on environmental conservation and achieving sustainable development through investments in the following areas (Hafay & Shakhoum, 2018, p. 342):

- **Green Buildings**: These are buildings and structures that utilize environmentally-friendly materials with a long-term impact, aiming to achieve sustainable development.
- **Renewable Energy**: These are investments related to clean, low-carbon energy sources, such as solar and wind energy projects, and other environmentally friendly investments.
- **Sustainable Transportation**: This involves investments in transportation systems that do not negatively impact the climate, environment, or health and are part of a safe ecosystem.
- **Waste Management**: This encompasses investments in recycling operations, reusing various products and transforming them into valuable items while considering the environment.
- **Sustainable Agriculture**: This includes investments that contribute to increasing green spaces and mitigating negative effects on agricultural lands, such as desertification and urban encroachment.

- **Water Management**: Water is a fundamental element of sustainable development. Water management involves irrigation, providing drinking water, and health-related considerations. Environmentally friendly water projects include water reuse, desalination, water-based energy generation, and recycling of used water, all aimed at preserving water resources.

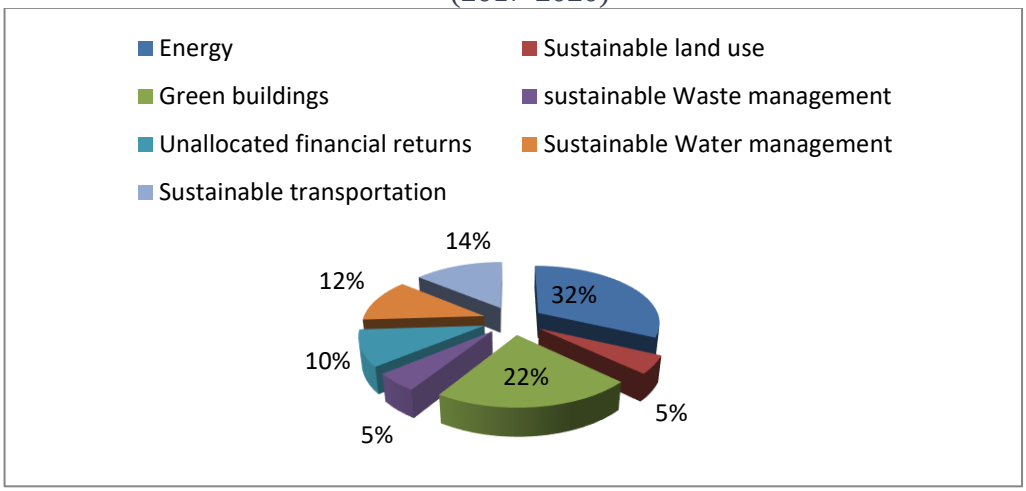
Islamic Green Sukuk play a crucial role in financing projects that align with these areas, promoting environmental sustainability, and fostering the principles of Islamic finance.

Figure 2 : Fields of Islamic Green Sukuk Usage.

Source: Ministry of Finance, february 2019, page 05.

Through Figure 2, we review the various applications of Islamic Green Sukuk, represented by renewable energy, sustainable transportation, green buildings, climate change initiatives, waste-to-energy conversion, and sustainable natural resource management.

Figure 3 : Uses of Global Green Sukuk Issuances' Proceeds during the Period (2017-2020)



Source: Barakah Forum for Islamic Economics, 2021/2022, Page 47.

Through Figure 3, it can be observed that energy accounts for 32 percent of the proceeds of Islamic Green Sukuk issuances, followed by green buildings at 22 percent. Sustainable transportation comes next at 14 percent, followed by sustainable water management at 12 percent. Lastly, sustainable land use and waste utilization each represent 5 percent of the proceeds.

3.3 Evolution of Islamic Green Sukuk.

The inception of Islamic Green Sukuk dates back to 2007 when the European Investment Bank issued approximately 600 million euros in "Climate Bonds" for renewable energy projects. These investments linked returns to environmentally friendly projects. However, the green bonds market experienced significant growth in several countries following the global financial crisis of 2008. In that context, the World Bank collected 6.4 billion US dollars through green bonds across 67 issuances and 17 different currencies. The World Bank stands as a pioneer in mobilizing investments for sustainable development purposes. (Siakhn & Rabahi, 2019, p. 66)

Additionally, the Malaysian government issued its first green sukuk under the name "SRI" in 2017, valued at 250 million Malaysian Ringgit, by Tadawul Energy Company. (Laqwi & Mustafa, 2021, p. 171)

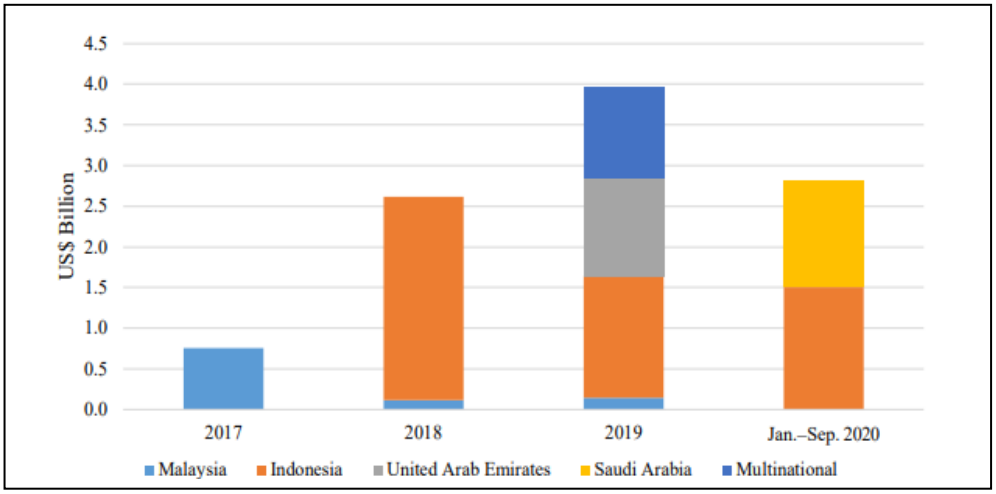
Moreover, the Malaysian government offered financial incentives through the Green Technology Financing Scheme (GTFS) with a total allocation of 5 billion Malaysian Ringgit until 2022. (Saleh, 2022, p. 48)

The global market for green sukuk also witnessed a 40 percent growth to reach 47 billion US dollars in the first quarter of 2019. In 2019 alone, 15.9 billion US dollars of these issuances were dedicated to funding high-quality initiatives related to climate change mitigation, as institutional sukuk, according to the credit rating agency "Mudis." (Ali & Hamdoush, 2021, p. 64)

Additionally, there were substantial efforts to merge sustainability and Islamic finance, exemplified by Indonesia, which issued the world's first sovereign green sukuk by the end of 2018, valued at 82.16 billion US dollars, representing 22.09 percent of total sukuk issuances in 2018. These funds were used to finance and refinance projects contributing to greenhouse gas emissions reduction, climate adaptation, biodiversity preservation. In May 2021, sukuk worth 3 billion dollars were issued, financing projects in renewable energy, sustainable transportation, waste-to-energy conversion, and climate resilience in vulnerable areas of Indonesia (Zervos, 2017)

Furthermore, the Gulf Cooperation Council countries assigned significant importance to this field. Saudi Electricity Company issued green sukuk worth around 1.3 billion US dollars in September 2020. Additionally, the Islamic Development Bank raised 2.5 billion dollars through environmentally friendly and sustainable sukuk issuances in March 2020. (Sustainability)

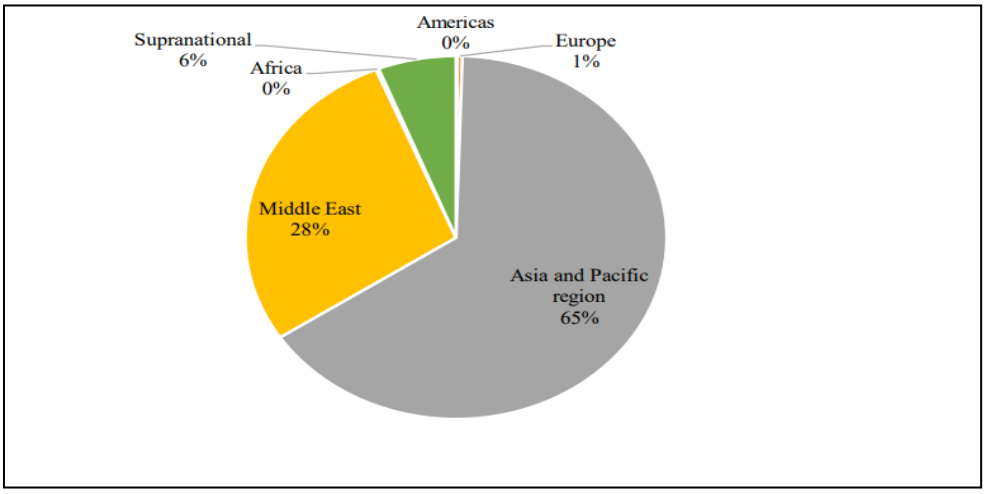
Figure 4 : Islamic Green Sukuk Issuances during the Period (2017-2020)



Source: azhgaluyeva, 2021, page 02

Based on Figure 4, it is evident that the issuance of green sukuk globally commenced in 2017 and exhibited continuous and upward growth until 2019. However, there was a decline in 2020, attributed to the COVID-19 pandemic.

Figure 5: The issuance of Islamic Green Bonds by region



Source: azhgaluyeva, 2021, page 02

Through Figure 05, we observe the dominance of the Asia-Pacific region in the issuance of Islamic Green Sukuk, followed by the Middle East region, and then the rest of the regions including Europe and the Americas. This dominance could be attributed to the region's attempt to align transactions with Sharia principles.

3.4 Reasons and Incentives for Resorting to Issuing Islamic Green Sukuk.

There are various incentives coming from both governmental and individual levels, including:

- **Public Sector Policies:** Financing for sustainability has become a global and national policy objective. This has served as an incentive for the issuance of Islamic Green Sukuk. The focus on green financing is evident through international agreements and resolutions, such as: (Commission, 2019)
- The World Bank and the United Nations jointly created a roadmap for sustainability in 2017. Sustainability considerations, including positive and negative externalities, were integrated into their operations, redirecting resources towards more inclusive and sustainable activities.
- The World Bank adopted an action plan on climate change in April 2016. This plan sets forth tangible measures to assist countries in contributing to climate action, including clean energy, green transportation, and smart agriculture. The private sector is encouraged to invest in developing countries.
- **Green Tax Incentives:** Green tax incentives, provided by governments, aim to encourage the adoption of green financing and environmentally qualified economic entities. However, Islamic Green Sukuk might not benefit from the same tax incentives as other green financing tools. These incentives include tax exemptions and reductions.

Ethical and Environmental Motivations: Ethical and environmental motivations are essential yet less common incentives, emphasizing the intrinsic value of environmental ethics. Individuals and societies deal with their resources while ensuring optimal utilization that safeguards the needs of future generations, especially non-renewable resources. These ethical motivations educate market participants, cultivate personal satisfaction and reward systems, encouraging ethical behavior. They foster knowledge to create sustainable values in business and investment, promoting environmental conservation. (Azhgaluyeva, 2021, p. 2)

3.5 Challenges and Prospects of Issuing Islamic Green Sukuk

- Challenges:

-Lack of Awareness: There is a lack of awareness about the benefits of Islamic Green Sukuk, as well as the relevant international guidelines and standards.

- Absence of Local Guidelines: The absence of local guidelines can hinder the issuance of Islamic Green Sukuk, as clear and standardized principles are necessary for proper implementation.

-Costs of Issuance: The requirements for issuing Islamic Green Sukuk might entail significant costs, including compliance with environmental standards and reporting.

- Limited Local Investors: In some cases, the lack of local investors interested in green investments can be a challenge.

- Prospects:

-Rising Energy Demand: The current International Energy Agency (IEA) projections indicate a 45% increase in energy demand between 2015 and 2040, indicating a potential market for Islamic Green Sukuk.

-Shift in Energy Sources: As current energy sources are gradually being phased out, there is a growing need to explore alternative and renewable energy sources that are environmentally friendly (Ali & Hamdoush, 2021, p. 66)

4. The Reality of Issuing Islamic Green Sukuk in Malaysia.

Malaysia is among the pioneering countries in issuing Islamic Green Sukuk. In 2017, Tadau Energy, a company in Malaysia, issued Islamic Green Sukuk amounting to more than $8 billion. These funds were directed towards financing environmentally friendly projects. By the end of 2020, Malaysia's issuance of Islamic Green Sukuk had reached MYR 1.015 billion, equivalent to 63.16% of the total bonds and sukuk issued by the government. (Islamic, 2021, p. 184)

4.1 Experiences of Issuing Islamic Green Sukuk in Malaysia by Use.

In this section, we will review the experiences and cases of issuing Islamic Green Sukuk in Malaysia according to each use (Commission, 2019, p. 56.58.64.65):

- **Solar Energy Sukuk Issuance:** Malaysian company Semenanung accomplished the largest solar energy project linked to Green Sukuk issuance. The proceeds from the issuance were used to build three large solar power stations in Malaysia's states of Kedah and Melaka. The total cost of the project was MYR 1.25 billion, and it is expected to generate around 282,000 megawatts of electricity annually, contributing to sustainability efforts by reducing carbon emissions by 193,000 tons per year. The project covers the electricity needs of around 90,000 households and creates approximately 3,000 job opportunities.
- **Green Building Sukuk:** Malaysian investment company PNB (Permodalan National Bhd) launched a MYR 2 billion sukuk program to finance its 83-story office tower, part of the Merdeka PNB complex. The sukuk issuance, named Merdeka ASEAN Green SRI Sukuk, was launched by Merdeka Ventures Sdn Bhd, a subsidiary of PNB. The tower is expected to be the

tallest building in Southeast Asia, and this issuance is the third-largest green sukuk issuance in Malaysia.

- **Integrated Waste Management Center:** Malaysian company Cenviro is a leader in sustainable development and owns and manages Malaysia's first integrated waste management center. The center handles waste collection, processing, recycling, and electronic waste conversion to energy, contributing to reducing landfill usage. The financing for these processes includes the issuance of green sukuk.

Renewable Energy Projects: Malaysian company Cenergi is engaged in renewable energy projects and energy performance contracts with local universities to improve energy efficiency. It uses Islamic financing for its investments and is in the process of issuing green sukuk ranging from MYR 60 million to MYR 100 million (approximately $15 million to $25 million) for its renewable energy projects.

5. The Reality of Issuing Islamic Green Sukuk in Indonesia.

The Indonesian government stands as the largest issuer of green sukuk to date. It has issued several sukuk, including the Green Global and Retad sukuk, with the aim of enhancing Indonesia's position in the global Islamic financial market and supporting the development of Islamic finance. These sukuk are used to finance and refinance green projects, contributing to climate change mitigation and adaptation. In late 2020, Indonesia issued green sukuk worth $3.2 billion and received 8 international awards for its green sukuk initiatives. (Islamic, 2021, p. 193)

5.1 Experiences of Issuing Islamic Green Sukuk in Indonesia by Use.

In this section, we will review the experiences and cases of issuing Islamic green sukuk in Indonesia according to various uses:

- **Solar Energy Sukuk:** In 2016, the Indonesian government implemented clean energy technology by installing smart street lighting integrated with solar power stations. This project covered 4,915 locations across Indonesia

and contributed to reducing greenhouse gas emissions by 2,325.61 tons of carbon dioxide. Additionally, solar energy projects were initiated in various states, promoting the installation of photovoltaic solar systems on government building roofs in 2018. All these projects were funded by returns from the Islamic green sukuk issued by the Indonesian government. (Finance, 2019, p. 15)

- **Green Building Sukuk:** Perumnas, the Indonesian housing company, provides affordable housing for individuals with medium and low incomes. The company aims to develop housing projects near train stations to reduce commuting, lower pollution, and preserve the environment. These housing projects are aligned with sustainable and responsible investment (SRI) principles. (Commission, 2019, p. 63)
- **Integrated Waste Management Center:** In 2016, the Indonesian government undertook the development and rehabilitation of waste disposal sites, expanding waste treatment capacity and transitioning towards sanitary landfill systems. The government also implemented the integrated management of solid waste through the application of the 3R principles (reduce, reuse, recycle), resulting in reduced greenhouse gas emissions and improved basic infrastructure services, particularly sanitation. (Finance, 2019, p. 17)

Renewable Energy Projects: The Indonesian government aims to achieve 23% of its primary energy supply from new and renewable energy sources and 31% by 2050 as part of its plan to mitigate greenhouse gas emissions. Green sukuk supports the generation and transmission of energy from renewable sources through projects that provide electricity in off-grid and remote areas using locally available resources. In 2016, a project covered 121 units of renewable energy facilities and infrastructure to provide electricity in these areas. (Finance, 2019, p. 13)

6. Conclusion:

Islamic green sukuk have emerged as a modern tool in the realm of Islamic finance, with several countries, including Malaysia and Indonesia, adopting them in recent times. Numerous successful experiences have highlighted the effectiveness and significance of this instrument in financing sustainable projects. The rapid trend of investment in green sukuk is driven by both financial and ethical incentives, as well as environmental consciousness, which are crucial elements in its evolution.

Based on this study, the following conclusions can be drawn:

- Islamic green sukuk offer financial flexibility and efficiency in response to economic and financial changes.
- Their compliance with Sharia principles and their environmental preservation attributes have attracted investors.
- The diverse applications of Islamic green sukuk have addressed environmental challenges from various angles, such as water, energy, pollution reduction, and more.
- Government and individual incentives have contributed to the development of Islamic green sukuk and stimulated increased investment.
- The experiences of Malaysia and Indonesia have highlighted the effectiveness and success of Islamic green sukuk in financing sustainable projects.

In light of the above, the following recommendations are suggested:

- Embrace and encourage this form of financing due to its advantages in maintaining environmental sustainability and securing the future for generations to come.
- Governments should incentivize Islamic green sukuk financing through tax incentives and green subsidies to promote environmental preservation.

- Rely on financing through Islamic green sukuk, given its proven effectiveness. The successful experiences of Malaysia and Indonesia are indicative of this trend's potential.

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