

Green Sukuk As A Mechanism For Enhancing Green Islamic Finance -An Analytical Study Of The Green Sukuk Market During The Period (2017 - Third Quarter Of 2023)-

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Abstract:

This research aims to identify the green sukuk and their role in green Islamic finance, then highlighting of the green sukuk market, based on the descriptive analytical approach. We concluded that this market has demonstrated remarkable growth, propelled by a rising interest from investors seeking sustainable and eco-friendly financial solutions. Despite a temporary downturn in 2020 and 2021, primarily due to the impacts of the COVID-19 pandemic on financial markets, the market exhibited a robust recovery, evidenced by a substantial uptick in activity from 2022 onwards. This resurgence underlines the pressing need for reforms within Islamic financial, which will further catalyze the advancement of green sukuk.

Keywords: Green finance, Islamic finance, green Islamic finance, green sukuk.

1. Introduction:

The concept of green finance has recently achieved significant international prominence, emphasizing the symbiotic relationship between human economic activities and the natural ecosystem. Regarded as an ethical, inclusive, and socially responsible financing mechanism, Islamic finance aligns with the principles of social justice, solidarity, and ethical investment, eschewing sectors deemed unethical.

This alignment heralds a potential paradigm shift towards an Islamic green economy, facilitated through green Islamic finance. This niche of finance focuses on nurturing industries and backing environmentally sustainable projects.

In this context, green sukuk have surfaced as a novel and innovative financial instrument within Islamic finance, designed specifically to meet the needs of environmental and climate protection projects. These instruments prioritize green investments and socially responsible initiatives, reflecting a broader commitment to sustainable development.

1.1 Research Problem:

Based on the preceding information, the research problem crystallizes by posing the following main question:

What is the extent of the contribution of green sukuk in enhancing green Islamic finance?

1.2 Sub-questions:

To facilitate a comprehensive understanding of the various aspects of the topic, we decided to break down the main research question into the following sub-questions:

- What is the role of green sukuk in enhancing green Islamic finance?
- How has the green sukuk market developed during the study period?

1.3 Research Hypotheses:

To address the identified research problem, we propose the following hypotheses:

- **First Hypothesis:** Green sukuk represent an innovative mechanism for enhancing green Islamic finance, merging the principles of Islamic finance with those of green finance.
- **Second Hypothesis:** The green sukuk market has undergone significant growth and development from 2017 to the third quarter of 2023, notwithstanding the array of challenges and difficulties it continues to face.

1.4 Research Objectives:

This research is designed to:

- Thoroughly comprehend the conceptual underpinnings of green finance and green sukuk.

- Meticulously study and analyze the trajectory of the green sukuk market from 2017 through to the third quarter of 2023.
- Illuminate the principal challenges that confront the green sukuk market.

1.5 Research Importance:

The significance of this study is underscored by the transformative potential of green Islamic finance, particularly through the instrument of green sukuk, which synergistically merges the principles of green finance with those of Islamic finance.

1.6 Research Methodology:

In order to comprehensively address the research question and thoroughly explore the topic, this study employs a descriptive analytical approach. This involves collecting and synthesizing information pertinent to green sukuk and green Islamic finance, subsequently extracting key insights based on a variety of data and statistics sourced from electronic databases.

1.7 Research Plan:

The investigation is structured around the following thematic axes:

- **First Axis:** The conceptual framework of green finance.
- **Second Axis:** The dynamics of green Islamic finance and green sukuk.
- **Third Axis:** The practical experiences of green sukuk, juxtaposing realities with challenges.

2. The Conceptual Framework of Green Finance

Green finance is a critical lever for promoting climate action and underpins the development of a resilient, sustainable green economy.

2.1 Concept of Green Finance:

Green finance is defined as the channelling of funds into projects aimed at reducing carbon emissions, optimizing the use of environmental resources, and mitigating climate change impacts. This involves encouraging banks and financial institutions to adopt environmentally considerate financing practices and to integrate environmental considerations into their operations.

2.2 Importance of Green Finance:

The significance of green finance was initially recognized with the inception of the United Nations Environment Programme Finance Initiative (UNEP FI) in 1992, which saw several commercial banks join the environment program to bolster environmental awareness in the banking sector.

This initiative formed a pioneering partnership between the United Nations Environment Programme and the banking community, marking the genesis of green finance.

The importance of green finance manifests in several ways: (UNEP, 2011, p. 2)

- a. It provides essential capital for investments in agriculture, enhancing the conservation, productivity, and efficiency of agricultural lands. (United Nations, 2008, p. 8)
- b. It fosters increased efficiency in the industrial sector through the adoption of renewable energies, thereby alleviating the strain on natural resources over both short and long terms.
- c. It contributes to reducing unemployment rates by generating job opportunities, particularly in the agriculture and renewable energy sectors.
- d. It ensures commercial, infrastructural, and institutional operations are reoriented to incorporate environmental considerations, thereby increasing the proportion of green sectors within the economy.
- e. It steers economic resources towards environmentally friendly sectors, curbing waste and reducing greenhouse gas emissions.

In essence, the importance of green finance lies in its ability to harmonize economic growth with environmental conservation, enhance efficiency in agricultural and industrial sectors, and promote the optimal use of natural resources.

3. The Nature of Green Islamic Finance and Green Sukuk

The concept of green Islamic finance is a burgeoning field that integrates the ethical and ecological dimensions represented by Islamic finance and green finance, respectively. This section elucidates the key principles underpinning these concepts, alongside an

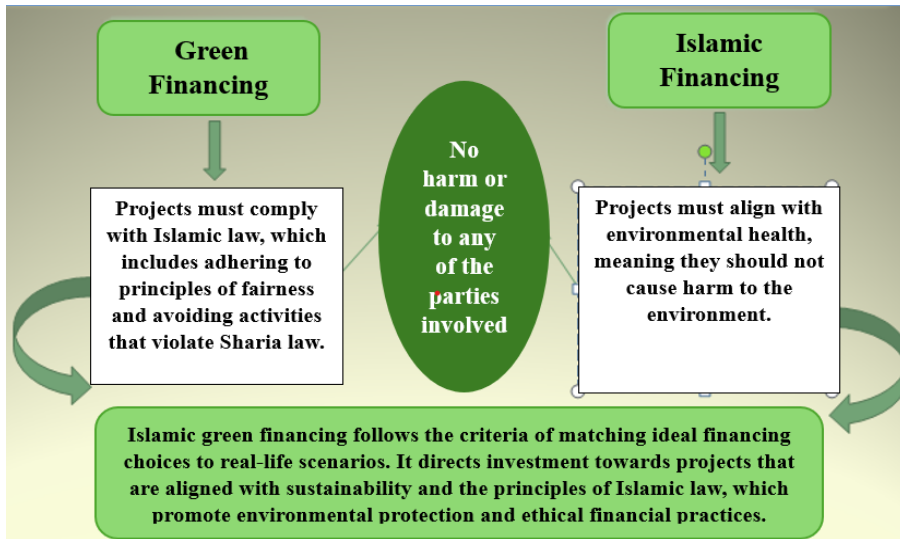
exploration of green sukuk, which stand as pivotal financial instruments within this domain.

3.1 Definition of Green Islamic Finance:

Islamic finance is anchored in several core principles that ensure the compliance of funded projects with Islamic law. These principles mandate that financial activities must be permissible, involve real assets, and adhere to profit and loss sharing.

In parallel, green or sustainable finance stipulates that projects must be environmentally benign, thereby preventing ecological damage. The confluence of these principles is depicted in Figure (1), which illustrates the relationship between Islamic finance and green finance.

Figure (1): The Relationship Between Islamic Finance and Green Finance



Source: Prepared by the researcher

As illustrated, both Islamic and green finance share a foundational commitment to preventing harm—whether it be financial harm to investors in the case of Islamic finance, or environmental harm in the context of green finance. Consequently, green Islamic finance emerges as a superior model for sustainable financing, directing capital towards environmentally friendly projects while strictly adhering to the principles and regulations of Islamic law.

3.2 Advantages of Green Islamic Finance:

Green Islamic finance offers several compelling advantages: (UNDP, 2021, p. 12)

a. **Investor Attraction:** It appeals to a broad spectrum of investors, including traditionalists and those particularly interested in green ventures, by facilitating the establishment of projects that are both environmentally sound and compliant with Islamic tenets.

b. **Sustainability Fulfilment:** This mode of finance plays a crucial role in enabling the Islamic financial market to channel more funds into infrastructure projects in emerging markets and developing economies, thereby promoting sustainability.

c. **Funds Direction:** It guarantees that investments are channelled into sustainable environmental projects, providing investors with the assurance that their capital is exclusively utilized for green initiatives.

3.3 Concept of Green Sukuk:

Green sukuk represent a Sharia-compliant alternative to conventional green bonds, embodying a novel investment paradigm that aligns with the principles of sustainable development and environmental protection.

3.3.1 Definition of Green Sukuk:

Linguistically, 'sukuk' is an Arabic term that translates to 'certificates' (Bacha & mirakhor, 2013, p. 172). In the financial realm, an Islamic sukuk represents a financial certificate issued in equal denominations (Hassan & Mahlknecht, 2011, p. 191), each symbolizing an undivided share in the ownership of assets, benefits, or rights associated with a specific project or its cash flows. (Salman Syed, 2012, p. 4)

Green sukuk, therefore, are defined as innovative financial instruments structured according to Islamic financing principles and aimed at supporting environmentally sustainable projects. They serve as documents of equal value, each representing a share in the capital of an enterprise or project dedicated to environmental protection and

compliance with Shariah regulations. (Imam Arifiadi Ramadhan, 2019, p. 96)

3.3.2 General Principles of Green Sukuk:

Islamic sukuk, permissible under Shariah law as affirmed by the Islamic Fiqh Academy and the Accounting and Auditing Organization for Islamic Financial Institutions (Badri & Mikail, 2014), are tailored for directing funds towards lawful investments. Their issuance relies on contracts that adhere strictly to Shariah regulations. (IOFI, 2011, p. 235)

From a theological standpoint, green Islamic sukuk align with the principles of partnership, which is predicated on the pooling of funds for the purpose of profit generation. (Mohammed Omar & Hamza Hussein Qutaish, 2022, p. 89)

The issuance of Islamic sukuk incorporates several fundamental Shariah principles, including: (Meysam & Mohamed, 2012, p. 17)

- a. Each green certificate signifies a shared real ownership interest.
- b. Green certificates are issued pursuant to a Shariah-compliant contract, deriving their rulings directly from these contracts.
- c. There is no guarantee from the manager (Mudarib), agent, or partner, with investors fully assuming the investment risks, alongside the responsibilities and outcomes associated with ownership of the certificates.
- d. Sukuk holders are entitled to a share of the profits in a predetermined ratio and bear losses commensurate with their share in the sukuk.

3.3.4 Advantages of Green Sukuk:

Green sukuk offer several distinct benefits that enhance their appeal to a diverse array of stakeholders—issuers, investors, and the broader economy: (Azhar, Ririn Tri , Isnani Latifathul, & Afief, 2023, p. 65)

- a. They provide investors with an opportunity to fill the financial void in environmental activities, thus facilitating more robust income generation from green initiatives.
- b. Green sukuk serve as a conduit for bridging the gap between the conventional financial markets and the evolving landscape of contemporary Islamic finance.
- c. They offer investors a high level of assurance that their capital is being deployed for well-defined, tangible, and Shariah-compliant purposes and assets.
- d. Specifically appealing to environmentally conscious investors, green sukuk meet stringent standards and channel funding into sustainable development projects.
- e. They also attract traditional investors by potentially offering returns at lower risks, especially when marketed effectively, thereby expanding the investor base to include those not traditionally engaged with Islamic finance.

Through these mechanisms, green sukuk not only foster economic growth but also promote environmental sustainability, making them a cornerstone of modern Islamic financial instruments.

3.3.5 The Difference Between Green Sukuk and Green Bonds:

Green bonds are debt instruments or securities issued by sovereign states and conventional (interest-based) banks to mobilize funds specifically for financing environmentally oriented projects such as those related to renewable energy and environmental sustainability. These bonds are essentially interest-bearing loans where the holders are entitled to a fixed interest return, positioning them as creditors to the issuer.

In contrast, green Islamic sukuk, often issued by Islamic states and banks, are financial instruments designed to secure financing for similar environmentally beneficial projects. (Mohammed Omar & Hamza Hussein Qutaish, 2022, p. 86) However, they adhere strictly to

Islamic Shariah laws, which prohibit interest. Sukuk holders are not merely creditors but are considered partners in the investment projects they fund. This partnership aspect underlines a fundamental philosophical and financial difference from traditional bonds.

Thus, while both green sukuk and green bonds are employed as financial tools to support various sectors of the green economy—such as renewable energies, green buildings, sustainable transport, waste management, and water conservation—their foundational principles and implications for investors differ significantly:

- a. Sukuk symbolizes an ownership stake, whereas bonds signify a debt obligation.
- b. Sukuk holders are viewed as partners in the projects, sharing in the profits and risks, whereas bond holders are creditors, primarily concerned with the return of their principal plus interest.
- c. Sukuk is typically issued by states and Islamic banks that follow Shariah principles, while bonds are issued by both sovereign states and traditional financial institutions operating on an interest-based model.

4. The Experience of Green Sukuk between Reality and Challenges

The concept of green bonds was pioneered in 2006 when the European Investment Bank issued the first such bond, raising 600 million Euros to fund green projects. Although this bond was fundamentally focused on green activities, it was not explicitly labelled as a green bond. The formalization of the green bond concept occurred in late 2007 with an issuance by the World Bank for Reconstruction and Development, which was explicitly designated as a green bond.

Green sukuk entered the financial landscape significantly later, marking their debut in Malaysia in 2017. This later introduction highlights the progressive integration of Shariah-compliant structures

into the global finance arena, addressing both the environmental and ethical investment needs of Islamic finance stakeholders.

4.1 The Reality of Green Sukuk:

The developments in the green sukuk market can be tracked as follows: 1.1- Development of Total Green Sukuk Issuances During the Period (2017- Third Quarter of 2023): The development of total green sukuk issuances globally can be seen in the following figure:

Figure (2): Development of Total Green Sukuk Issuances During the Period (2017- Third Quarter of 2023)



Source: Green and sustainability sukuk update, Financing a Sustainable Future, report 2023, available at: www.lseg.com/en/data-analytics/resources/reports/green-sustainability-sukuk-update-2023-report.

From the data presented above, it is clear that the market for environmental sukuk has experienced substantial growth and development from its inception until the third quarter of 2023. Initially valued at \$442 million in 2017, the market swelled to \$10.090 billion in 2023, following a record issuance of about \$9.4 billion in 2022.

Concurrently, the specific segment of green sukuk also witnessed significant expansion, escalating from \$421 million in 2017 to \$5.631 billion in the third quarter of 2023. This represents 55.8% of the total environmental (green and sustainable) sukuk issued during this period, showcasing a notable ascent from the rates of 36.3% in 2021 and 28.6% in 2022.

This resurgence of interest in green sukuk in 2023 is largely attributable to the reinvigorated dedication of governments to achieve their objectives in various sectors of energy transition. Despite these strides, green sukuk still constitute only 1.6% of the global environmental bond market and just 6.8% of the total global sukuk issuance.

It is also noteworthy that the green sukuk market demonstrated increasing growth rates during 2018 and 2019, spurred by escalating global interest and robust demand from both Muslim and non-Muslim investors who are increasingly drawn to sustainable green investments.

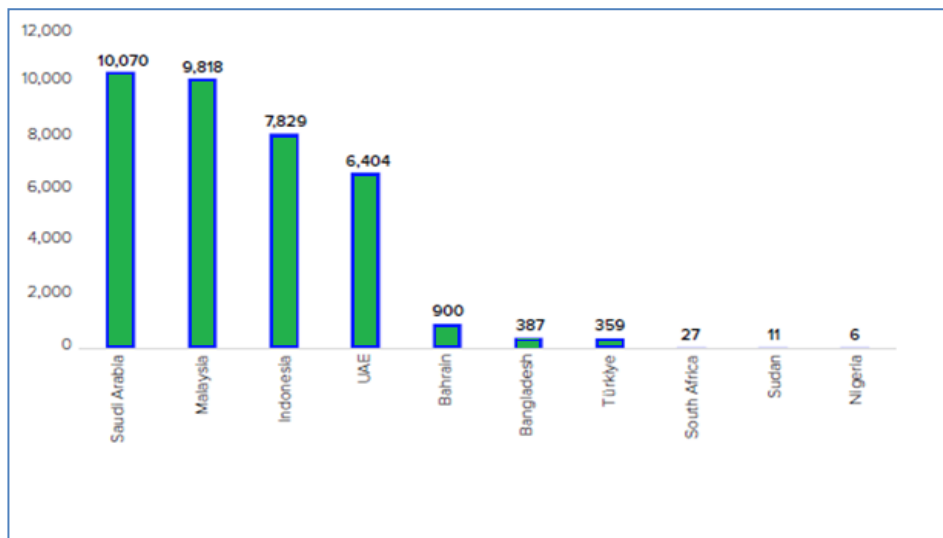
Conversely, the years 2020 and 2021 witnessed a marked decline in the total value of green sukuk issuances, predominantly due to the disruptive impact of the COVID-19 pandemic, which introduced significant volatility into financial markets, coupled with a severe global economic recession that precipitated liquidity shortages.

Nonetheless, the green sukuk market quickly regained its momentum in the first half of 2022, fuelled by the economic recovery and growth in the GDP of the issuing countries, alongside the stabilization of oil prices.

4.2 Development of Total Green Sukuk Issuances by Country:

The development of total green sukuk issuances by country can be tracked in the following figure:

Figure (3): Development of Total Green Sukuk Issuances by Country (2017- Third Quarter of 2023)



Source: Green and sustainability sukuk update, Financing a Sustainable Future, report 2023, available at: www.lseg.com/en/data-analytics/resources/reports/green-sustainability-sukuk-update-2023-report.

From the data presented, it is clear that Saudi Arabia, Malaysia, and Indonesia have emerged as leaders in the realm of green and sustainable sukuk issuances up to the third quarter of 2023, collectively representing a significant 77.4% of total market activity. These nations are followed by the member countries of the Gulf Cooperation Council, which have issued approximately \$6.1 billion in sukuk, nearly doubling their total issuances from the year 2022. Subsequently, Bangladesh, Turkey, South Africa, Sudan, and Nigeria are also notable contributors in this sector.

In terms of issuance frequency, Malaysia is at the forefront until the first half of 2022, with a total of 244 issuances. This is followed by Indonesia with eight, Saudi Arabia with four, and both the Islamic Development Bank and Turkey with three each. Countries such as

Bahrain, Bangladesh, Turkey, Sudan, and Nigeria have registered a single issuance during this period.

In a significant development within the United Arab Emirates, companies issued green and sustainable sukuk totaling a record \$3.9 billion, accounting for 38% of the global total. This substantial figure positions the UAE as the primary hub for the issuance of environmental sukuk in 2023.

4.3 Leading Entities in Green Sukuk Market Issuances:

To further analyze the major players in the global sukuk market, the following data is provided:

Table (1): Top 10 Issuers of Green Sukuk Until the Third Quarter of 2023 (Unit: US million dollars)

Issuers	Amounts
DP World	1500
Government of Malaysia	1244
Saudi Electricity Company	1200
Government of Indonesia	1048
Al Rajihi Bank	1000
Dubai Islamic Bank	1000
Majid Al Futtain Properties	500
Aldar Investment	500
TNB Power Generation	425
First Abu Dhabi Bank	354

Source: Green and sustainability sukuk update, Financing a Sustainable Future, report 2023, available at: www.lseg.com/en/data-analytics/resources/reports/green-sustainability-sukuk-update-2023-report.

The table illustrates that the governments of Indonesia and Malaysia are prominent leaders in sovereign green sukuk issuances, collectively accounting for 27.2% of the total issuances up to the third quarter of 2023.

Moreover, banks and electric utility companies have secured the largest share of the market during the same period, representing 27% and 19% respectively. Most of these banking institutions are based in Saudi Arabia and the United Arab Emirates, which have been instrumental in financing projects aimed at enhancing energy efficiency, particularly in Malaysia.

DP World has issued green sukuk valued at \$1.5 billion with a ten-year term, financing projects that enhance clean transportation, green buildings, energy efficiency, and renewable energy initiatives. Notably, while these green instruments are advancing sustainable development, major oil and gas companies, primarily based in the Gulf Cooperation Council (GCC) countries, have not yet tapped into the green sukuk market. This is despite these nations setting ambitious targets to reduce greenhouse gas emissions and committing to the Sustainable Development Goals (SDGs) to be achieved by 2030.

4.4 Challenges of Green Sukuk:

According to insights from the Organization for Economic Cooperation and Development (OECD), the Islamic sukuk market confronts several significant challenges: a. A scarcity of local investors. b. An underdeveloped credit rating system. c. The absence of standardized metrics for assessing returns. d. A lack of instruments for risk hedging.

Despite these hurdles, the green sukuk market holds considerable promise. Projections by the International Finance Corporation in the United Kingdom estimate the potential for raising between \$30 billion and \$50 billion through green sukuk, specifically allocated for sustainable development initiatives over the coming years.

5. Conclusion:

This research has yielded several key findings:

- Green Islamic finance represents an ideal strategy for securing balanced financing directed towards environmentally sustainable projects. It effectively reduces harmful carbon emissions and incorporates ecological considerations while ensuring compliance with the principles and regulations of Islamic law.
- Green sukuk have emerged as innovative financial instruments that enhance green Islamic finance, appealing to two distinct investor groups: those invested in Islamic sukuk and those who prioritize environmental sustainability.
- The green sukuk market has demonstrated remarkable growth and development, despite its relative novelty and the array of challenges it faces.

Based on these insights, we propose the following recommendations:

- Bolster the green Islamic economy by increasingly relying on innovative Islamic financial mechanisms that support environmental projects and programs.
- Enhance awareness about the benefits of green sukuk, including their role in mobilizing Sharia-compliant capital for sustainable environmental projects, and provide incentives to stimulate investment in these instruments.
- Leverage research findings on the development of green Islamic finance and its various products, particularly green sukuk, to inform policy and practice.
- Develop specialized Islamic financial markets for financing green projects and establish the necessary legislative and legal infrastructure to support green sukuk.
- Encourage governments to increase the issuance of sovereign green sukuk, which will enhance the activity and liquidity of

- financial markets and motivate the private sector to escalate their issuances.
- Standardize disclosure requirements and methodologies for calculating returns to ensure transparency and reliability in the market.
 - Draw on the experiences of leading countries in issuing green sukuk to inform and optimize practices, particularly with respect to regions like Algeria.

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