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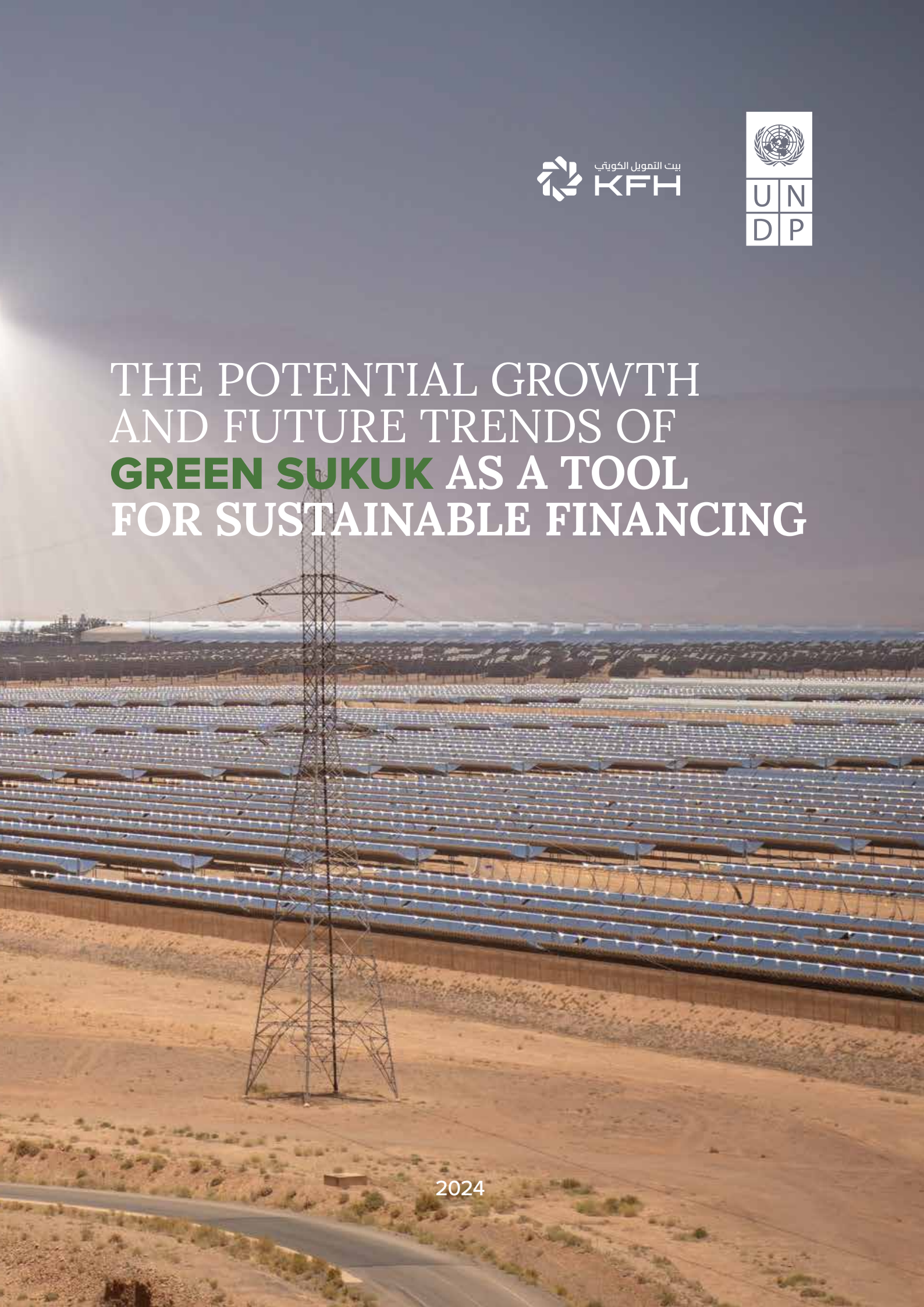
THE POTENTIAL GROWTH AND FUTURE TRENDS OF **GREEN SUKUK** AS A TOOL FOR SUSTAINABLE FINANCING



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Cover Photo: UNEP

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AfDB	African Development Bank
ASEAN GBS	The ASEAN Green Bond Standards
BOOT	Build, Own, Operate, and Transfer
CAR	Central African Republic
CBI	The Climate Bonds Initiative
CBT	Climate Budget Tagging
CMA	Capital Market Authority
CMB	Capital Markets Board
CRD	Climate Resilient Development

DEWA	Dubai Electricity and Water Authority
EGD	European Green Deal
EIB	European Investment Bank
EPR	Extended Producer Responsibility
ESG	Environmental, Social and Governance
EU PR	EU Prospectus Regulation
EuGB	EU Green Bond Standard
GBP	Green Bond Principles
GCC	Gulf Cooperating Countries
GHG	Greenhouse Gas
GRI Standards	Global Reporting Initiative Standards
GSS	Green, Social and Sustainability
GWh	Giga Watts hour
IFC	International Finance Corporation
ICMA	International Capital Market Association
IFSB	Islamic Financial Services Board
IRENA	International Renewable Energy Agency
IsDB	Islamic Development Bank
ISSB	International Sustainability Standards Board
LDCs	Least Developed Countries
MDBs	Multilateral Development Banks
MCs	Member Countries
MRT	Mass Rapid Transit
MW	Mega Watts
MWh	Mega Watts hour
NDCs	Nationally Determined Contributions
OIC	Organization of Islamic Cooperation
PPP	Public-Private Partnerships
PRI	Principles for Responsible Investment
QSPS	Quantum Solar Park (Semenanjung) Sdn
SFF	Sustainable Finance Framework
SFRD	European Union, Sustainable Finance Disclosure Regulation
SDGs	The Sustainable Development Goals
SPO	Second Party Opinion
SSA	Sub-Saharan Africa
SRI Sukuk Framework	Sustainable and Responsible Investment Sukuk Framework in Malaysia
TCFD	Task Force on Climate-related Financial Disclosures
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
UNGC	United Nations Global Compact

Executive Summary

As the global community accelerates efforts to mitigate climate change and transition to sustainable economies, the role of innovative financing mechanisms has become increasingly important. Islamic finance, grounded in principles of social justice, risk-sharing, and environmental stewardship, offers a unique and ethical avenue to mobilize capital in support of the green transition. Among its instruments, green sukuk stands out as a powerful enabler, aligning sustainable development objectives with Shariah-compliant financial frameworks.

Photo UNDP Malaysia

Islamic finance has emerged as a crucial and innovative financing mechanism to provide alternative funding sources and address the funding deficit for the Sustainable Development Goals (SDGs). Green Sukuk is emerging as a critical enabler in transitioning to a low-carbon economy and advancing global sustainability financing agenda. The UNDP Istanbul Centre for the Private Sector in Development (ICPSD), an agency with a non-geographical mandate, is gaining recognition as a significant player in Islamic finance, providing support to other UNDP agencies globally. UNDP ICPSD and the Global Islamic Finance Investment Impact Platform play a crucial role in guiding innovative capital sources for public and private financing and collaborating with financial sector stakeholders. Through the creation and issuance of green sukuk, UNDP enables firms and governments to synchronize their financial plans with embedded sustainability objectives, potentially attracting environmentally concerned clients and partners.

Despite the widespread macroeconomic disruptions in 2022 that caused a sharp contraction and reconfiguration of the world economy, the issuance of green and sustainable Sukuk

has recovered in 2023 due to renewed government commitment to the energy transition agenda. It achieved another **record year in 2024 reaching $11 billion by the third quarter of 2024 as sustainability sukuk maintained its strong growth** momentum in the aftermath of the Covid-19 pandemic. This marks significant growth since its market inception in 2017, indicating strong momentum and promising future growth potential. However, despite this growth, Green Sukuk still represents a small fraction of total ESG bonds and Sukuk issuance, suggesting substantial room for expansion.

$11 billion
issuance of green and sustainable Sukuk
in the 3/4 of 2024

It is estimated that $30- $50 billion of capital dedicated to financing the SDGs funding gap could be raised through Green and sustainability Sukuk by 2025. However, for the nascent Green Sukuk market to attain this level of momentum, it must overcome several challenges. These encompass elevated expenses for bond issuance due to external certification and reporting mandates, a lack of qualifying green projects in certain regions, and inadequate knowledge about utilizing Islamic financing tools to attain sustainability objectives.

This study predicts a rise in investor interest and demand, with around 55% of investors intending to invest in green and sustainability Sukuk in the forthcoming years. Investor interest in Green Sukuk is increasing due to the global transition towards ESG and sustainable finance, favorable pricing dynamics, including the potential for “greenium,” where Green Sukuk are traded at a premium due to high demand, and the growing confidence in established frameworks such as ICMA’s Green Bond Principles (GBP) and the ASEAN Green Bond Standards. In this context, governments and business entities are implementing measures to expand the investor base, with initiatives like **Indonesia**’s retail Green Sukuk and **Malaysia**’s deepening of its sukuk ecosystem.

On the other hand, the report highlights issues originating from the supply side. The private sector’s interest in Green Sukuk issuance remains moderate, with a significant proportion of investors identifying regulatory framework challenges, lack of standardization, and inadequate market infrastructure as primary impediments, in addition to limited investor knowledge and understanding of Sukuk and sustainability principles. This underscores the necessity for capacity enhancement and increased awareness to close the knowledge gap and expand the market.

To address these challenges, governments, private and multilateral sector synergies play a pivotal role in creating the enabling environment for scaling Green Sukuk. Supportive regulatory frameworks and taxonomies in countries like **Malaysia**, **Indonesia**, and the **UAE** are examples of governmental initiatives to foster the growth of the Green Sukuk market.

In this context, the establishment of Nationally Determined Contributions (NDCs) and renewable energy targets, and benchmarking sovereign Green Sukuk issuances shall provide a lever to establish yield curves facilitating private sector pricing. In addition, offering grant schemes within the mechanism of blending philanthropic capital with private capital to unlock capital can help issuers offsets certification and reporting costs, and lowers barriers for private sector issuers.

Therefore, this report calls principally to promote common regional and international standards, build capacity within the market, and expand the investor base beyond traditional Sukuk investors. Substantial growth in the Green and sustainability Sukuk market results from collaborative efforts. By enhancing market depth through innovation and education, and leveraging favorable regulatory frameworks, the industry could boost yearly issuance from $30 billion to $50 billion, significantly advancing global sustainable finance goals and objectives.

EMERGENCE, MARKET DEVELOPMENTS AND REGULATORY CHALLENGES

Photo UNDP Afghanistan

1. Green Sukuk: Emergence, Market Developments and Regulatory Challenges

Objectives:

- **Showcase the potential of Green Sukuk as a sustainable financing tool,** aiding in bridging gaps for financing the SDGs in developing countries.
- Provide a comprehensive understanding of the **latest trends in the Green Sukuk** market incentivizing the opportunity of taking on a regional and global leadership role from both issuer and investor sides by actively engaging in Green and ESG Sukuk.
- **Identifying the most prevalent regulatory challenges hindering Green Sukuk's issuance** into the mainstream and highlighting the necessity of the adoption of unified principles, framework, and taxonomies among issuers.

1.1 Background

Sustainability has become a global imperative, driven by global challenges like climate change, biodiversity loss, and water scarcity.[1] The United Nations Trade and Development (UNCTAD) estimates that achieving the SDGs will require an annual investment of $5-7 trillion, with developing countries facing an annual shortfall exceeding $2.5 trillion.[2] According to the UN Environment Programme (UNEP), global biodiversity loss is accelerating, with one million species at risk of extinction, and climate-related disasters are continuing to increase in terms of frequency and severity.[3] Addressing these interconnected issues requires collaborative action across governments, civil society, and the financial sector. In response, the financial community has increasingly embraced green finance instruments, which have seen remarkable growth in recent years.[4] In 2023, the global green bond market reached a record $600 billion, and projections for 2024 indicate further growth, with estimates suggesting a potential $750 billion in issuance.[5] Green Sukuk has also emerged as a key instrument for raising funds for environmental projects. These include renewable energy, waste management, and water conservation initiatives, allowing investors to align their portfolios with sustainability goals while earning competitive returns. This growing market reflects a shift in investor priorities, with over 50% of institutional investors in 2024 reporting that environmental, social, and governance (ESG) factors play a critical role in their investment decisions, up from 43% in 2021.[6]

The increasing interest in issuance of Green Sukuk is very much shaped by initiatives at the

1 United Nations Framework Convention on Climate Change, What is the triple planetary crisis?, accessed November 20, 2024, https://unfccc.int/news/what-is-the-triple-planetary-crisis

2 United Nations Conference on Trade and Development, Developing countries face $2.5 trillion annual investment gap in key sustainable development sectors, accessed November 20, 2024, https://unctad.org/press-material/developing-countries-face-25-trillion-annual-investment-gap-key-sustainable

3 United Nations Environment Programme, Facts about the nature crisis, accessed November 20, 2024, https://www.unep.org/facts-about-nature-crisis

4 Global Market Insights, Sustainable finance market size and industry analysis, accessed November 20, 2024, https://www.gminsights.com/industry-analysis/sustainable-finance-market

5 Climate Bonds Initiative, "Green Bond Market Summary 2023", published in January 2024.

6 Global Sustainable Investment Review, 2024

United Nations through its affiliated agencies and other international financial and capital market organizations.[7] These internationally recognized organizations gather best practices and identify universal principles and standards, for example, the UN Global Compact (UNGC) embodies 10 high-level principles to support a corporation's just transition, aligning their business strategies and operations with principles on environmental and social issues and promote the practice of good conduct and governance.[8] To support the growth of the thematic bonds market, the ICMA's principles and guidelines outline the framework over what constitutes green, social, sustainability (GSS) and sustainability-linked Bonds / Sukuk.[9] Likewise, regional sustainability-related bond standards such as the EU Green Bond Standards and the ASEAN GSS Bond Standards and Sustainability-linked Bond Standards build the case for domestic Bond / Sukuk regulatory framework to align themselves with these principles to gain credibility and integrity for Bond and Sukuk issuances by private corporations.[10] Equally, recommendations by the Task Force on Climate Financial Disclosure (TCFD) and Global Reporting Initiatives (GRI) Standards are intended to promote greater transparency by making available sustainability-related data by deploying the various tools.[11] This availability of sustainability information derived from applying these standards is not only important to financial supervisors to manage financial risks primarily from financial stability but equally they are important for investors, consumers, and financial lenders to make robust financing and investment due diligence assessment and informed decisions that generate positive outcomes and impact. Likewise, they mitigate the growing risks of greenwashing by ensuring that financial instruments are designed true-to-label and fit-for-purpose with alignment to institutional and national climate and environmental goals.

1.1.1 Climate Emergency and Achieving Climate and Sustainability Goals

The rise of green bonds began with the European Investment Bank's (2007) issuance of "Climate Awareness Bonds," followed by the World Bank's entry into the green bond market in 2008. These early initiatives were driven by international frameworks like the 1997 Kyoto Protocol and the 2015 Paris Agreement, which seek to curb greenhouse gas emissions, and the United Nations SDGs which emphasized the need for financing to support the developmental agenda and paved the way for green finance to emerge as a pillar of sustainable development.

The Intergovernmental Panel on Climate Change (IPCC) reports that global warming has led to severe climate consequences worldwide, from heat waves to extreme weather events, with no regions unaffected. Achieving net-zero emissions and limiting temperature rise requires a rapid reduction in carbon dioxide and other greenhouse gases, estimated to need $6.2 trillion annually by 2030 and $7.3 trillion by 2050.

The IPCC highlights the importance of climate-resilient development (CRD) as critical guidance to implementing the available options on greenhouse gas mitigation and climate adaptation to support sustainable development for all. Climate action and sustainable development are interdependent processes. Advancing climate resilient development is only possible when this interdependence is fully leveraged, and pursued in an integrated manner, increasing their effectiveness in bolstering human and ecological well-being. They include integrating sustainable practices concerning ecosystem stewardship, promoting knowledge diversity, inclusion, equity, and justice. These dimensions act as the building blocks for ambitious pathways towards driving positive climate and social outcomes – i.e.

7 United Nations Development Programme, Pioneering Green Sukuk in Indonesia, accessed November 20, 2024, https://www.undp.org/stories/pioneering-green-sukuk-Indonesia
UK Islamic Finance Council, High-level working group on Green Sukuk launched at UN Climate Summit, November 3, 2021, accessed November 20, 2024, https://ukifc.com/2021/11/03/media-release-high-level-working-group-on-green-sukuk-launched-at-un-climate-summit/

8 United Nations Global Compact, The ten principles of the UN Global Compact, accessed November 20, 2024, https://unglobalcompact.org/what-is-gc/mission/principles

9 United Nations Global Compact - https://unglobalcompact.org/

10 European Commission, European Green Bond Standard: Supporting the transition, accessed November 20, 2024, https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/european-green-bond-standard-supporting-transition_en
ASEAN Capital Markets Forum, ASEAN Green Bond Standards, May 2020, accessed November 20, 2024, https://afcwp.asean.org/wp-content/uploads/2020/05/4.1-ASEAN-Green-Bond-Standards.pdf

11 Global Reporting Initiative, Global alignment of the GRI Standards, accessed November 20, 2024, https://www.globalreporting.org/how-to-use-the-gri-standards/global-alignment/
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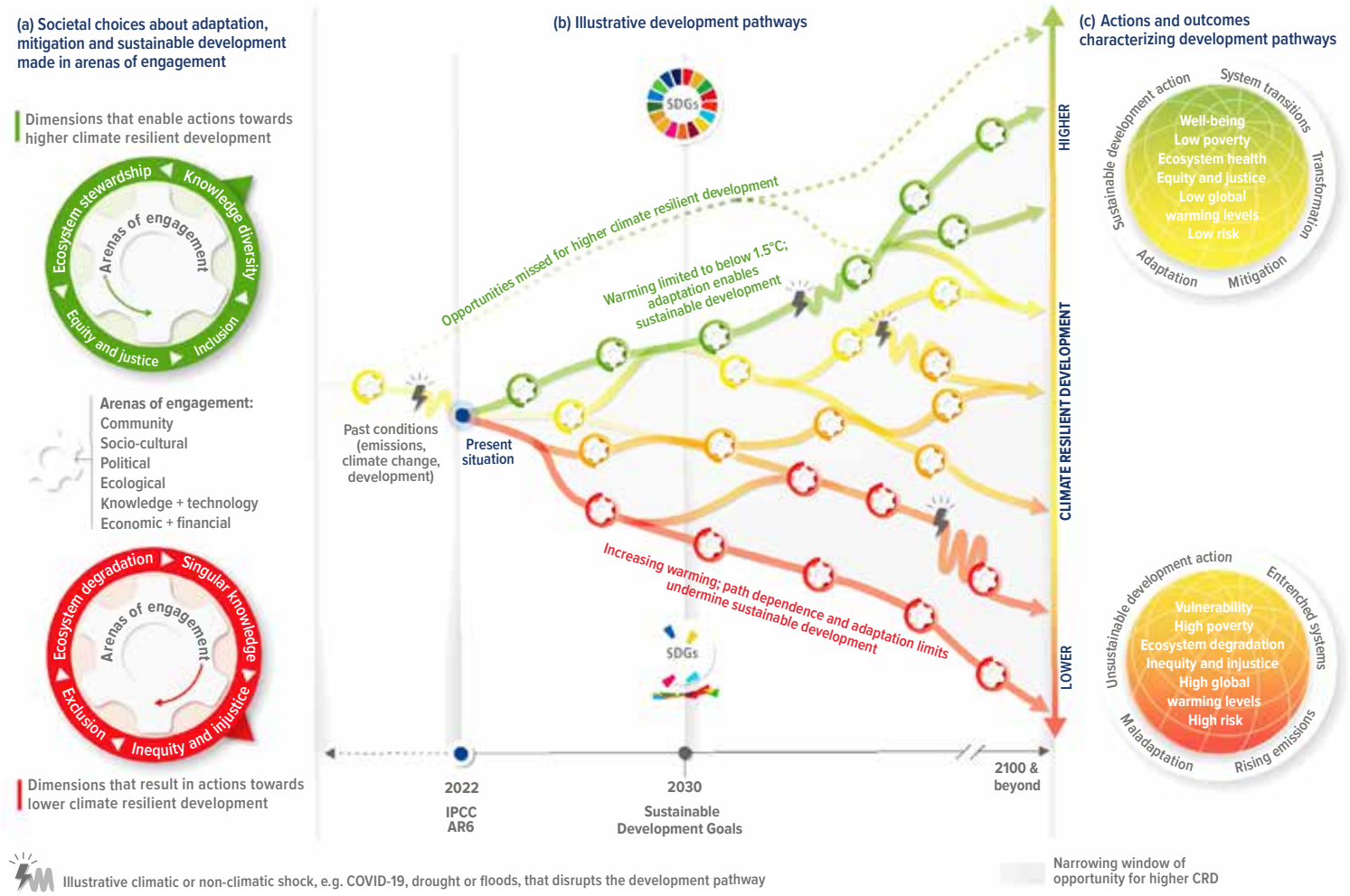

Figure 1

The IPCC Climate Resilient Development Pathways

improved social well-being, low poverty, ecosystem health, equity and justice, and low global warming levels.[12] On the contrary, opting for misaligned pathways - one that integrates systems that pursue ecosystem degradation exclusions, inequity, and injustice - are likely to steer activities and efforts toward adverse climate and social outcomes (see figure 1). In essence, the CRD framework enables financial institutions and businesses to work towards climate-resilient pathways as they give and gain access respectively to sustainable finance e.g. via green debt financing.

In this regard, Islamic finance given its nature and emphasis on ethical and responsible investment, can unlock these new emerging opportunities for climate and ensure a just transition. Being an established form of responsible and ethical finance, Islamic finance in general is overwhelmingly aligned with financing climate actions and delivering positive environmental outcomes and impact. Amongst a variety of Islamic financial instruments, Green Sukuk by its very nature is a long-term financing instrument suitable for climate smart investments and for greening the economy. In fact, not only it can potentially offer innovative climate solutions to manage climate-related risks but also it can unlock sustainable capital to seize new emerging opportunities and support businesses towards low carbon, climate

12 IPCC WG2: 6th Assessment Report Chapter 18 Climate Resilient Development Pathways

resilient, and a just transition.[13] Businesses can utilize Green Sukuk to access sustainable finance as they align with national and sector-specific policies.[14] By facilitating investment in priority sectors, Green Sukuk helps companies manage climate risks, tap into new growth areas, and support the low-carbon transitions. Therefore, fostering and scaling up Green Sukuk would be a key imperative for the financial sector, primarily in emerging markets, e.g. member countries of the Organization of Islamic Cooperation (OIC), many of which continue to face economic and climate-related challenges as well as curtailment and progress to achieving the key SDGs e.g. zero hunger, good health and wellbeing, gender equality, clean water and sanitation and those with impact on people, justice and institutions.[15]

In fostering climate action, countries' climate pledges, or their Nationally Determined Contributions (NDCs) can play a central role in guiding both public and private sector investments toward high-impact environmental projects. Many governments are developing green taxonomies that align investment in specific sectors, like renewable energy, sustainable transport, and waste management with climate and SDGs targets.

1.1.2 Climate Budget Tagging as a Tool for Sustainable Finance

An emerging practice, climate-budget tagging (CBT), enables governments to track and report climate-related spending within national budgets. CBT fosters transparency in government spending, aligns budget allocations with climate goals, and helps nations communicate their commitments to investors.[16] Governments increasingly use CBT to identify climate-oriented projects and public funding, which can support green bonds and sukuk issuances. **Indonesia**, a leader in CBT adoption, has tagged climate-related expenditures since 2016, incorporating climate goals into budget planning. Its Green Sukuk issuance has raised over $3.9 billion for projects in renewable energy, energy efficiency, sustainable transport, and resilience to climate change, significantly reducing CO_2 emissions.[17]

1.1.3 Changing Consumer Behavior, Market Demand, and the Need for Transparency

Consumer behavior increasingly reflects climate concerns, with a growing preference for green-labeled products that minimize environmental impact. Transparency around a product's carbon footprint and green attributes has shaped demand, prompting companies to adopt sustainable practices. For instance, carbon labeling and clear environmental data help consumers make climate-friendly choices, driving demand for products and services that align with sustainable values. This trend encourages corporations to adopt responsible practices and cater to the eco-conscious market, further influencing the growth of green finance instruments and contributing to the broader sustainability movement.[18]

1.1.4 Catalyzing ESG Investments Through Strengthened Reporting and Disclosure

The financial sector faces increasing pressure to manage climate-related risks, as climate events can significantly impact economic

13 ILO Guidelines for a just transition towards environmentally sustainable economies and societies for all https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf

14 Climate Bonds Initiative, Climate Bonds Taxonomy, 2022, accessed November 20, 2024, https://www.climatebonds.net/files/reports/cbi_taxonomy_ukpact_2022_01f.pdf

15 OECD Development Policy Paper June 2020 No. 30: How Islamic Finance Contributes to Achieving the Sustainable Development Goals

16 World Bank, Roundtable discussion: Climate budget tagging and engaging with investors, September 11, 2022, accessed November 20, 2024, https://www.worldbank.org/en/events/2022/09/11/roundtable-discussion-climate-budget-tagging-and-engaging-with-investors
United Nations Development Programme, Knowing what you spend: Guidance note for governments to track climate change finance in their budgets, accessed November 20, 2024, https://www.undp.org/publications/knowing-what-you-spend-guidance-note-governments-track-climate-change-finance-their-budgets

17 Ministry of Finance of the Republic of Indonesia, Sovereign Green Sukuk framework, accessed November 20, 2024, https://api-djppr.kemenkeu.go.id/web/api/v1/media/C65110FE-4CAF-4C08-9DF7-E3FEFA1BB61B

18 McKinsey & Company, Consumers are, in fact, buying sustainable goods: Highlights from new research, accessed November 20, 2024, https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-are-in-fact-buying-sustainable-goods-highlights-from-new-research#/

stability. Regulatory and Supervisory Bodies require financial institutions to report on ESG factors, allowing investors and policymakers to assess institutions' exposure to climate risks.[19] The Network for Greening the Financial System (NGFS), an international coalition of central banks, provides guidelines for integrating climate risks into financial supervision which promotes greater accountability among financial institutions. These measures include stress testing for financial institutions to evaluate their level of resilience to climate risks.[20] Banks and investment firms are encouraged to use ESG data in their decision-making and develop ESG-compliant products to foster sustainable finance and support clients' sustainable practices.[21] Most stock exchanges today require listed companies to report on ESG practices following reporting and disclosure standards with the equivalent of the Global Reporting Initiative (GRI), promoting transparency and responsible corporate behavior.[22]

1.1.5 Developing Global Standards for Green Sukuk Issuance

The rise of Green Sukuk is supported by international standards established by agencies under the United Nations and international bodies such as ICMA, as well as regional grouping frameworks like the ASEAN Green Bond Standards. These standards not only ensure transparency, accountability, and alignment with global sustainability goals but also help reduce greenwashing practices, with initiatives like the Task Force on Climate-Related Financial Disclosures (TCFD) encouraging the availability of sustainability data for firms and investors alike to make better financial and investment decisions.

As a case example, the issuance of the world's first corporate Green Sukuk in **Malaysia** (i.e. Tadau Energy's MYR250 Ringgit Green Sukuk) aligned with global standards and leveraged on its Islamic capital market SRI Sukuk framework which was framed with alignment to ICMA's principles and guidelines. These international alignments not only brought credibility to the issuance but also gained access to the pool of international sustainable investors and liquidity.[23] Subsequent Green Sukuk Issuances aligned with the ASEAN GSS Bond Standards, such as the PNB Merdeka Ventures RM2 billion Green Sukuk Programme, which partially financed their internationally accredited energy-efficient building—the second tallest tower in the world.[24]

1.1.6 National and Regional Sustainable Finance Taxonomies and Frameworks

Sustainable finance taxonomies, such as the EU's and ASEAN's, classify economic activities that align with environmental and climate goals, guiding capital flows toward low-carbon and resilient projects. The EU's taxonomy, often seen as a gold standard, employs technical criteria to design sustainable activities, enabling investors to fund projects with minimal risk of greenwashing.[25] Additionally, national taxonomies, informed by regional standards, allow countries to customize sustainable finance frameworks that align with their national

19 U.S. Securities and Exchange Commission, SEC announces new measures to enhance climate-related disclosures, 2024, accessed November 20, 2024, https://www.sec.gov/newsroom/press-releases/2024-31

20 Network for Greening the Financial System, Guide for supervisors: Integrating climate-related and environmental risks into prudential supervision, accessed November 20, 2024, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_for_supervisors.pdf
Network for Greening the Financial System, NGFS Scenarios Portal, accessed November 20, 2024, https://www.ngfs.net/ngfs-scenarios-portal/

21 McKinsey & Company, ESG data governance: A growing imperative for banks, accessed November 20, 2024, https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/tech-forward/esg-data-governance-a-growing-imperative-for-banks
World Financial Review, The rise of ESG financial products, accessed November 20, 2024, https://worldfinancialreview.com/the-rise-of-esg-financial-products/
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22 Global Reporting Initiative, Capital markets and sustainability reporting, accessed November 20, 2024, https://www.globalreporting.org/public-policy/capital-markets/.

23 International Capital Market Association, The principles, guidelines, and handbooks for sustainable finance, accessed November 20, 2024, https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/.

24 MIDF Amanah Investment Bank Berhad, Sustainability Sukuk framework, accessed November 20, 2024, https://www.midf.com.my/node/424.

25 European Commission, EU taxonomy for sustainable activities, accessed November 20, 2024, https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en.

economic and environmental priorities. The taxonomy framework also supports Green Sukuk issuers in determining whether their projects qualify as sustainable. For instance, the **Malaysian** SRI Sukuk framework allows issuers to align with national standards or ICMA's Green Bond Principles (GBP), enhancing credibility and transparency in Green Sukuk offerings. In Europe, the EU Green Bond Standards closely align with the EU Taxonomy, fostering a consistent regulatory environment for green bond and sukuk markets, strengthening investor confidence, and ensuring that finance is directed toward genuine sustainability projects

1.2 Overview of the Green Bonds and Sukuk Markets

In recent years, many countries and institutional frameworks have been actively formulating effective policies aimed at reducing carbon emissions. These policies align with ambitious commitments to foster sustainable growth and address climate-related risks through robust risk management strategies.[26] A significant catalyst for this momentum was the implementation of the European Green Deal (EGD) by the EU in December 2019. This comprehensive policy framework placed climate change at the center of all policy domains, establishing a transformative agenda to make Europe the first carbon-neutral continent by 2050.[27]

The EGD outlines various strategic focuses, including:

- **Decarbonization:** Efforts to significantly lower greenhouse gas emissions across all sectors.
- **Biodiversity:** Protecting and restoring ecosystems to ensure a sustainable future.
- **Circular Economy:** Promoting waste reduction through recycling and sustainable product design.
- **Clean Air Initiatives:** Implementing measures to improve air quality for public health and environmental protection.

In addition to these strategies, the EGD includes sector-specific roadmaps targeting sustainable food production, agriculture, energy transition, construction practices, and transportation systems. These roadmaps delineate the necessary steps to facilitate a transition towards an economic model capable of achieving net-zero emissions by 2050.[28]

In pursuit of these ambitious sustainability goals, governments have increasingly emphasized green and sustainable bond issuances as vital tools for financing sustainable development objectives. Particularly in Europe, a growing number of portfolio management firms have begun integrating ESG principles into their investment decision-making processes. Many firms are committed to allocating a portion of their portfolios to sustainable investments, reflecting a significant shift in market dynamics and heightened interest in green capital market instruments.

1.2.1 Green Bonds Market Trends and Performance

Examining the current landscape of the ESG bond market, data from the Climate Bonds Initiative indicates that global ESG bond issuances reached approximately **USD 554 billion** in the first half of 2024, representing a **7% increase** compared to the same period in 2023. Within this total, green bonds constituted a significant majority, accounting for **70%** of the overall thematic bond issuance volume with **USD 385.1 billion** issued USD 93.9 billion, while social bonds experienced a notable decrease, totaling **USD 70.5 billion**.

Sustainability-linked bonds (SLBs), which have been a growing segment in recent years, saw a substantial decline in issuance, totaling only **USD 4.6 billion** in H1 2024—a staggering **45% year-over-year decrease** from H1 2023. The cumulative issuance of SLBs has now reached **USD 52.9 billion**, a significant slowdown compared to previous periods characterized by robust growth. Overall, the cumulative issuance of thematic bonds reached **USD 5.1 trillion**, with green bonds making up approximately **63%** of this total. Forecasts suggest that this volume could surpass **USD 5 trillion** by 2025.

26 Intergovernmental Panel on Climate Change (IPCC), AR6 Synthesis Report: Climate Change 2023, 2023, [Accessed: December 11, 2024]. Available at: https://www.ipcc.ch/report/sixth-assessment-report-cycle/.

27 European Commission, The European Green Deal (COM/2019/640 final), 2019, accessed November 20, 2024, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN.

28 European Commission, The European Green Deal

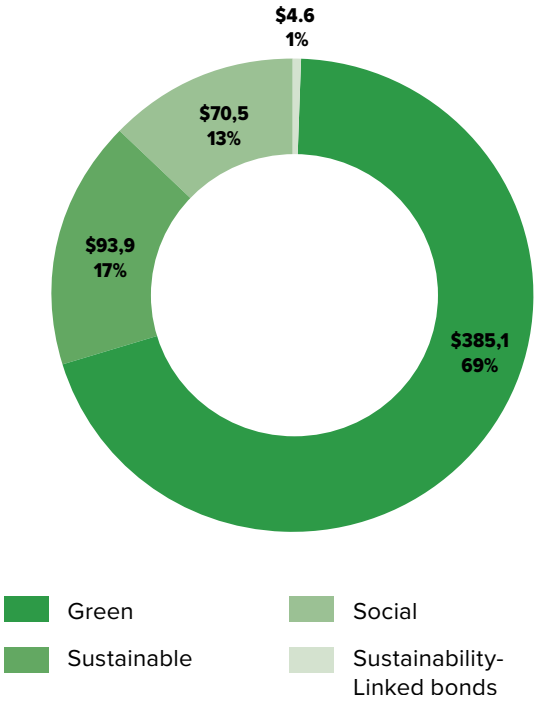


Figure 2

Global ESG Bond Issuances in 2024 H1 (in USD Billion)

Europe remains the dominant player in sustainable bond issuance, contributing **53%** of the global total, which amounted to **USD 291.1 billion** in aligned sustainable bond issuance during H1 2024. Key contributors to this growth include:

- **Germany:** Issued **USD 47.2 billion** in aligned green bonds.
- **France:** Contributed **USD 41.1 billion** in aligned green bonds.
- **The United States:** also played a significant role, with USD 47.6 billion issued, reflecting a 57% increase from H1 2023.

The performance of other bond types exhibited a mixed picture. While sustainability bonds totaled **USD 93.9 billion**, social bonds witnessed a **21%** decline year-over-year, reaching **USD 70.5 billion**. The sharp decline in SLB issuance can largely be attributed to several factors:

- **Tightening Financial Conditions:** Rising interest rates and higher capital costs have made it challenging for issuers, particularly in emerging markets, to secure favorable terms for SLB issuance.
- **Complexity in Structuring:** SLBs require issuers to meet specific sustainability-linked targets, which may have deterred potential issuers as investors increasingly shifted their focus toward more straightforward green and sustainability bonds.

1.2.2 The Emergence of Green Sukuk as a Pioneering Sustainable Finance Tool

The evolution of Green Sukuk can be traced back to the mid-2000s, with **Malaysia** emerging as a pioneering force in the realm of Islamic finance. The journey began in earnest in 2014 when **Malaysia**'s Securities Commission introduced the "Sustainable and Responsible Investment (SRI) Sukuk Framework" This initiative was a significant step toward promoting sustainable finance within Islamic capital markets.[29]

I. Milestones and Global Expansion in Green Sukuk Development

The landmark moment for Green Sukuk occurred in 2017 when Tadau Energy, a **Malaysian** energy company, issued MYR 250 million (approximately USD 59 million) in Green Sukuk to finance a large-scale solar photovoltaic power plant.[30] This landmark issuance was certified by the Center for International Climate and Environmental Research – Oslo (CICERO) and marked a significant advancement in sustainable finance within the Islamic capital markets. The issuance not only marked the first Green Sukuk globally but also illustrated the potential for a harmonious integration of Islamic finance principles with sustainable investment.

This expansion reflects the increasing demand for ethical and socially responsible investment options within the Islamic finance sector.

29 Climate Bonds Initiative, Market report: H1 2024, 2024, accessed November 20, 2024, https://www.climatebonds.net/files/reports/cbi_mr_h1_2024_02e_1.pdf

30 CICERO Shades of Green, Tadau Energy Green Bond Framework, 2017, accessed November 20, 2024, https://pub.cicero.oslo.no/cicero-xmlui/bitstream/handle/11250/2720351/tadau_energy_2017.pdf

II. Current Market Landscape and Challenges

Despite the progress made, Green Sukuk currently accounts for a relatively small percentage of the overall ESG investment market. As of 2023, Green Sukuk represented approximately 6.8% of the total sukuk issuance and 1.6% of the overall ESG bond issuance globally:[31]

- **Investor familiarity:** Many investors outside the OIC member countries remain unfamiliar with Islamic finance structures, resulting in hesitance to invest in Green Sukuk.
- **Complexity of Shariah Compliance Requirements:** The additional complexity associated with Shariah compliance can deter potential investors, posing a barrier to wider adoption.
- **Perceived Burdens:** Some investors view the reporting and certification requirements as cumbersome or costly.
- **Lack of Awareness:** There is a continued lack of awareness and education about the benefits and opportunities of Green Sukuk remains a significant challenge.

III. Efforts to Bridge the Gap

In response to these challenges, various initiatives are underway to enhance the attractiveness of Green Sukuk. Key efforts include:

- **Regulatory Frameworks:** Development of legal and regulatory frameworks that facilitate the issuance of Green Sukuk, ensuring investor confidence.
- **Tax Incentives:** Implementation of tax exemptions or reductions aimed at encouraging participation from both issuers and investors.
- **Capacity Building:** Investments in education and awareness programs to bolster knowledge about green finance and sukuk among financial institutions, issuers, and potential investors.

1.2.3 Latest Trends and Developments in the Green Sukuk Market

The Green Sukuk market is experiencing significant growth, fueled by a shift toward sustainability and responsible investing. Issuers with well-structured, measurable metrics are increasingly attracting mainstream investors, which may influence the future direction of sukuk issuance.[32] This trend could lead to tighter pricing and strategically positioned sukuk offerings. Traditional institutional investors are becoming more familiar with Green Sukuk instruments, particularly those that emphasize sustainability. Additionally, growing interest in carbon markets, credits, offsets, and trading signals represent a promising outlook for the Islamic finance sector, despite existing funding limitations.

I. Growth in ESG Sukuk Issuance

The ESG sukuk market continues to thrive, driven by a global focus on sustainability. According to the LSEG Global Sukuk Update Report, ESG sukuk issuances reached **$9.9 billion** in H1 2024, accounting for **74%** of total ESG sukuk issuances in 2023. This period also saw sustainability sukuk regain momentum; when combined with sustainability-linked and social sukuk, they represented **63%** of total ESG sukuk issuances. In H1 2024, ESG sukuk accounted for **7.1%** of the total sukuk issued globally, while ESG bonds made up **2.2%** of total ESG bond issuances.

Leading issuers in H1 2024 included **Indonesia** and **Saudi Arabia**, both surpassing their issuance totals from 2023. The market expanded to include issuances from **12 jurisdictions,** with Qatar participating for the first time. However, a decline in domestic ESG sukuk from **Malaysia** was noted, likely due to expectations of lower borrowing costs later in the year.[33]

The issuance of ESG sukuk has broadened beyond traditional regions, driven by regulatory incentives, rising investor interest, and global sustainability initiatives. At the same time thematic Sukuks such as Green Sukuk, Social

31 Global Ethical Finance Initiative, Refinitiv report 2023, December 2, 2023, accessed November 20, 2024, https://www.globalethicalfinance.org/wp-content/uploads/2023/12/GEFI592_Refinitive_Report_20231202.pdf

32 Islamic Development Bank (IsDB), Mobilising Islamic Banking for Climate Action, 2023, [Accessed: June 13, 2024]. Available at: https://www.isdb.org/sites/default/files/media/documents/2023-10/Mobilising-Islamic-Banking-for-Climate-Action.pdf

33 Fitch Ratings, Global ESG Sukuk Outlook Dashboard: 1H24, July 30, 2024, accessed November 20, 2024, https://www.fitchratings.com/research/non-bank-financial-institutions/global-esg-sukuk-outlook-dashboard-1h24-30-07-2024.

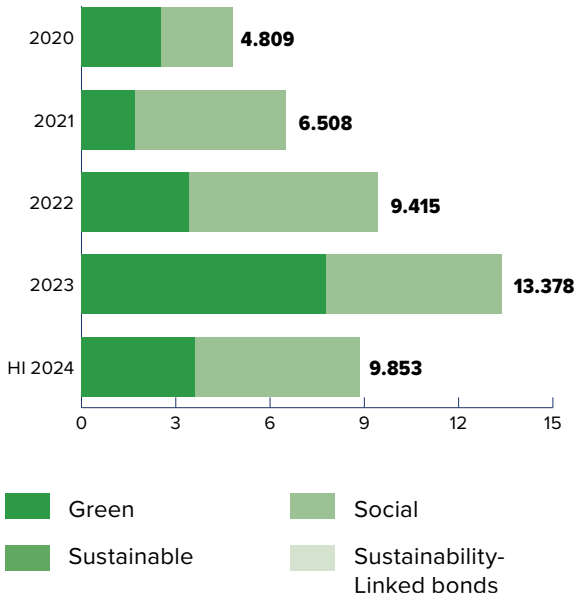


Figure 3

Green Sukuk Issuances Over the Years 2020 - H1 2024 (Million USD)*

* LSEG Data & Analytics. (2024). Global Sukuk Update. London Stock Exchange Group. https://www.lseg.com/data

Sukuk, and Sustainability Sukuk are gaining prominence, with issuers responding to the increasing demand for financial products that align with environmental, social, and governance criteria. In terms of management, Standard Chartered led the ESG sukuk market in H1 2024, managing **$858.3 million** in issuances, followed by Dubai Islamic Bank PJSC at **$777.8 million** and Emirates NBD PJSC at **$729.2 million**.[34] These institutions are crucial in structuring and facilitating ESG sukuk, highlighting the growing role of international banks in this space.

II. Investor Market Dynamics and Greenium

The global ESG, Green Sukuk market is poised for further expansion, driven by heightened focus on climate action and social impact investment. In this sense, issuers are expected to increase their green, social, and sustainability sukuk offerings as part of broader ESG strategies, particularly in the Middle East, Southeast Asia, and Africa. Global initiatives, such as the UN SDGs and the Paris Agreement, are likely to influence the growth and direction of the ESG sukuk market, making it a vital instrument for financing sustainable projects.

However, while there is growing interest from institutional investors in responsible investment practices, there remains a scarcity of ESG investment opportunities globally that green and sustainability sukuk can address some of this shortfall, particularly for Shariah-compliant investors. Notably, interest from Western investors in regions like the US and Europe, where ESG principles are increasingly embraced, is set to diversify the investor base for this type of sukuk.

While traditional sukuk issuance provides access to Islamic and conventional funds, Green Sukuk also attracts thematic funds, increasing demand and leading to a reduction in funding costs, though not necessarily to desired levels. This phenomenon, known as “greenium,” refers to the price premium or cost advantage that issuers of Green Sukuk may experience compared to conventional sukuk. This premium arises because some investors are willing to pay a slightly higher price for Green Sukuk due to their environmentally and socially responsible nature.[35]

For instance, in 2020, the National Mortgage Corporation of **Malaysia** issued both a 3-year Sustainability SRI Sukuk and a non-SRI sukuk. Notably, the SRI Sukuk recorded a lower yield by **2 basis points** compared to the non-SRI

TYPE OF INSTRUMENT	NON-GREEN	GREEN
Bond	Conventional investors	Conventional + Conventional green investors
Sukuk	Conventional + Shariah-compliant investors	All investors

Table 1

Investor Network of Green Sukuk

34 DDCAP Group, Bank Sukuk – Emirates Islamic US$750mn Sustainability Sukuk, June 26, 2024, accessed November 20, 2024, https://www.ddcap.com/bank-sukuk-emirates-islamic-us750mn-sustainability-sukuk/

35 Climate Bonds Initiative, Green Bond Pricing in the Primary Market, 2023, accessed June 13, 2024, https://www.climatebonds.net/resources/reports/green-bond-pricing-primary-market.

Sukuk.[36] ESG sukuk transactions are likely to attract a larger order book, driven by a wider base of ESG-focused investors. While the exact pricing advantage remains uncertain due to limited comparable transactions, we can interpret greeniums as the "cost" associated with reducing financed emissions.

III. Increasing Investor Appetite

Investor appetite for green and sustainability sukuk has notably increased compared to conventional sukuk structures. Green and sustainability sukuk offerings exhibited an average oversubscription rate of **4.4 times**, surpassing the **3.3 times** oversubscription rate observed for traditional sukuk.[37] The primary incentive driving investments in green and sustainability sukuk is the fulfillment of ESG investment mandates, emphasizing that the demand for thematic sukuk is largely influenced by non-traditional sukuk investors who are not constrained by Shariah-compliance criteria.

According to the Refinitiv study,[38] the main motivations for investing in Green Sukuk are: fulfilling the ESG investment mandate, alignment with Shariah principles, higher returns and attractive pricing. Repartition of investors according to those factors are summarized in the figure 4.

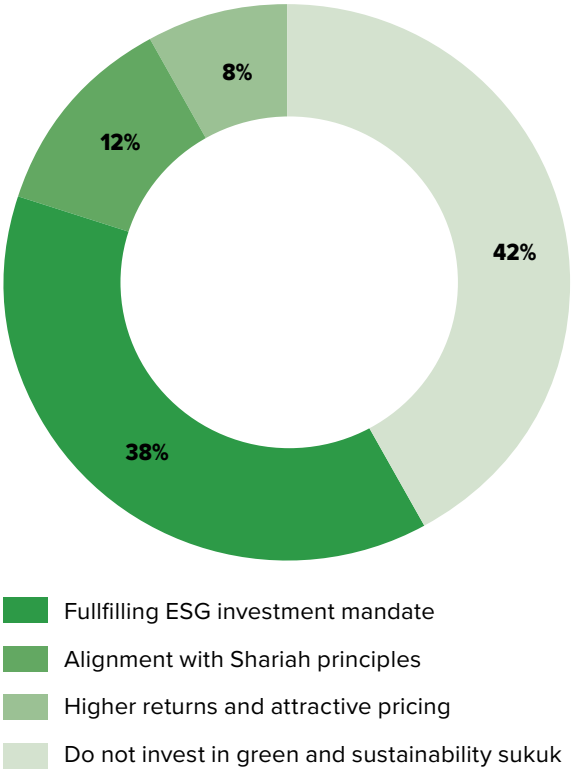


Figure 4

Main Reasons for Investing in Green and Sustainability Sukuk

IV. Maturity Trends and Market Growth

Investors demonstrate a willingness to allocate funds to sustainable sukuk instruments with extended durations, enabling issuers to support sustainability projects that require long-term capital commitments. For instance, **Indonesia** issued the world's first sovereign Green Sukuk in 2018 with a **5-year term**, followed by a **30-year Green Sukuk** in 2021 and a **10-year tranche** in June 2022.

As of March 2023, Islamic ESG funds experienced a **6% growth**, reaching a total of **$6.9 billion** in assets. This growth aligns with the global trend of ESG funds benefiting from a resurgence of technology equities, a significant component of many funds' portfolios. However, some ESG funds faced challenges during the March banking crisis, primarily due to holdings in bank shares characterized by lower carbon emissions.[39]

In **Malaysia**, the Islamic ESG funds market is evolving, with Bursa **Malaysia** updating its primary market listing requirements for Real Estate Investment Trusts and Exchange-Traded Funds to incorporate waqf features. These changes enhance transparency

36 Cagamas Berhad, Overwhelming response to Cagamas' issuance of Malaysia's first ASEAN Sustainability SRI Sukuk for affordable housing, October 22, 2020, accessed November 20, 2024, https://www.cagamas.com.my/press-release/overwhelming-response-cagamas-issuance-Malaysias-first-asean-sustainability-sri-sukuk.
United Nations Development Programme, Identifying the 'greenium', April 25, 2022, accessed November 20, 2024, https://www.undp.org/blog/identifying-greenium.

37 London Stock Exchange Group and RFI Foundation, Islamic Finance ESG Outlook 2023, accessed December 22, 2024, https://www.lseg.com/content/dam/data-analytics/en_us/documents/reports/lseg-islamic-finance-esg-outlook-2023-report.pdf.

38 Refinitiv, London Stock Exchange, UKIFC and GEFI (2022), Green and Sustainability Sukuk Report 2022: Financing a Sustainable Future

39 Refinitive (2023)

regarding waqf arrangements, requiring funds to disclose modifications, provide interim updates on income distributions, and offer information on accessing waqf recipients.[40]

Furthermore, the Securities Commission **Malaysia** has revised guidelines for Socially Responsible Investment (SRI) funds as of February 2024, aiming to strengthen reporting requirements and align with ASEAN Standards. These changes align with the ASEAN Sustainable and Responsible Funds Standard, issued by the ASEAN Capital Markets Forum in October 2022, and reflect a commitment to improving transparency and adherence to sustainability goals.

V. Market Performance and Future Outlook

By the end of Q3 2023, the global ESG sukuk market reached a total of **USD 33.3 billion**. This growth is propelled by government sustainability initiatives and issuers' desire to broaden their funding sources for both Shariah-compliant and ESG-conscious investors. However, ESG sukuk has not yet reached its full potential, facing hurdles such as a lack of green assets or projects, additional costs and complexities associated with Shariah compliance and ESG goals, and longer time-to-market. In many predominantly Muslim countries, both debt capital markets and ESG themes are experiencing limited development, hindered by deficiencies in essential regulations, infrastructure, and incentives.

During Q3 2023, only **USD 2.3 billion** worth of ESG sukuk were issued, marking a **37% decrease** compared to the previous quarter.[41] This decline occurred within the context of a broader slowdown in the debt capital market due to the calmer summer season and rising oil prices, which reduced funding requirements for some issuers in the Gulf Cooperation Countries (GCC). Additionally, escalating geopolitical uncertainties in the MENA region pose risks that could impact investor sentiment, appetite, and pricing.

VI. Role of Digitalization

Digitalization has the potential to significantly advance the sustainable/Green Sukuk market by enhancing efficiency, transparency, access, and credibility. As global emphasis on environmental sustainability increases, digital tools and technologies are expected to play a vital role in this market's growth. **Russia**'s first digital sukuk issuance, in collaboration with As Salam Group and Status, exemplifies this trend, showcasing how blockchain can enhance transparency in Islamic finance.[42] However, establishing common standards across different Shariah interpretations remains a challenge for broader adoption.

VII. Regulatory Advancements

In 2024, significant regulatory advancements and initiatives in the field of sustainable finance are shaping both international and local markets, with a growing focus on taxonomy, collaborations, and sustainability-linked financial instruments. These developments highlight the global commitment to integrating ESG criteria into financial systems and expanding the use of tools like Green Sukuk.

Malaysia and **Indonesia** are at the forefront of promoting Green Sukuk issuance. By creating supportive legal and regulatory environments, alongside educational initiatives, these countries are working to integrate Green Sukuk into the global sustainable finance landscape effectively.

In 2022, **Malaysia** introduced a dedicated regulatory framework for the Green Sukuk market, which includes a certification process for Green Sukuk and transparency requirements for proceeds allocation. The framework aims to provide investors with greater confidence in the sustainability claims of sukuk issuers, thus stimulating further market growth. The framework has been widely endorsed by the Bank Negara **Malaysia** (BNM) and the Securities Commission **Malaysia** (SC), who are collaborating with local agencies to ensure the framework's effectiveness.

40 Securities Commission Malaysia. (2022). Guidelines on Islamic Capital Market Products and Services. https://www.sc.com.my/api/documentms/download.ashx?id=7279989d-00f8-4ebc-8c18-fbf6c260ab1a

41 Global Sukuk ESG Dashboard: 3Q23. (2023). Fitch Ratings. https://www.fitchratings.com/research/islamic-finance/global-sukuk-esg-dashboard-3q23-25-10-2023

42 Press Release. (2024, September 15). Digital Mudarabah: For the first time in Russia, a transaction was carried out to raise funds on an investment platform in accordance with Shariah. ACE Times. https://www.zawya.com/en/press-release/companies-news/digital-mudarabah-for-the-first-time-in-russia-a-transaction-was-carried-out-to-raise-funds-on-an-investment-platform-in-accordance-with-shariah-drc8mmrp?utm_source=chatgpt.com

The Capital Markets Board of **Türkiye** (CMB) has been actively integrating international sustainable finance frameworks into the local market. In 2022, the CMB issued the "Guidelines on Green Debt Instruments, Sustainable Debt Instruments, Green Lease (Sukuk) Certificates, and Sustainable Lease (Sukuk) Certificates", designed to facilitate the issuance of green bonds and Green Sukuk in **Türkiye**. These guidelines align with ICMA Green Bond Principles and Sustainability-Linked Bond Principles, providing a clear framework for issuers to adhere to global standards. In 2024, **Türkiye** is set to implement a new Sustainability-Linked Capital Market Instruments Guide, which will establish a regulatory framework for sustainability-linked bonds and sukuk. This guide outlines the key components and general principles for issuing these instruments, emphasizing the need for issuers to set measurable sustainability goals, tracked via key performance indicators (KPIs), with external verification. The goal is to enhance transparency and ensure that proceeds are used for projects that contribute to sustainability objectives.

The rise of sustainability-linked instruments has introduced more complexity into the regulatory landscape. Unlike traditional Green Sukuk/bonds, where proceeds are earmarked for specific projects, sustainability-linked bonds and sukuk tie the overall financial performance of the instrument to the achievement of sustainability targets. In **Türkiye**, the new Sustainability-Linked Capital Market Instruments Guide sets clear rules for external verification of these targets, ensuring that issuers are held accountable for meeting their sustainability commitments.

External reviews and certifications are becoming increasingly important for Green Sukuk and all sustainability-linked bonds. Additionally, the Second Party Opinions provided by independent agencies assess whether the projects financed by Green Sukuk align with environmental standards and whether they meet the criteria outlined in frameworks like ICMA's Green Bond Principles (GBP). By offering a standardized framework for the monitoring and reporting of green bonds, these principles facilitate comparability among different issuers and contribute to the broader acceptance of green bonds by a more extensive investor base.

1.3 The ICMA's Green Bond Principles

The global proliferation of green bonds has led to active engagement by numerous stock exchanges and financial institutions worldwide. As the green bond market has rapidly evolved, particularly with the integration of ESG considerations into the decision-making processes of various thematic funds, several voluntary initiatives have been established to ensure transparent, reliable, and consistent issuance, monitoring, and reporting of green bonds. [43]

In 2014, as a solution to these concerns, the ICMA's Green Bond Principles (GBP) were introduced on a voluntary basis. These principles aim to establish a standard for green bonds and maintain market integrity. ICMA's Green Bond Principles serve as a framework to promote the adoption and growth of green bonds and other sustainable financing instruments in the market, with the overarching goal of enhancing transparency and trust. The GBP, on a voluntary basis, promotes the explicit **disclosure** of the purposes and projects for which green bonds are utilized. This practice provides assurance to investors and other relevant stakeholders that green bonds align with sustainability objectives.

Furthermore, organizations issuing green bonds are required to regularly **monitor** the progress of the projects and **report** this progress to investors. This ensures that projects funded by green bonds are being carried out in accordance with the intended sustainability goals.

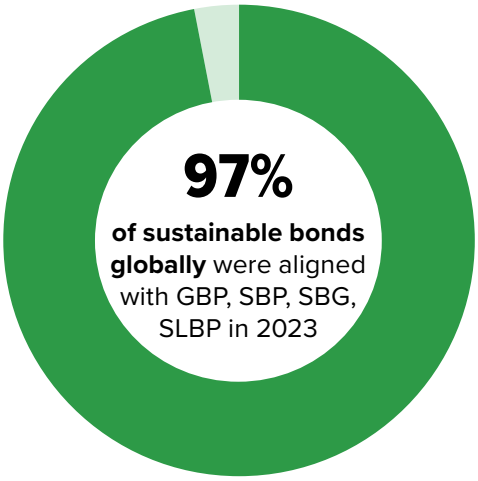
The GBP proposes an open process and information-sharing mechanism that can be utilized among investors, banks, guarantors, regulators, placement agents, and other issuers to understand the characteristics of a green bond. The GBP addresses this issue through fundamental components and key recommendations, emphasizing the importance of transparency, accuracy, and integrity in issuers' information presented and reported to stakeholders. These principles aim to enhance the credibility of the green bond market, facilitate the monitoring of the impacts of sustainability projects, and ease stakeholders' access to information about green bonds.

The key components of the GBP: use of proceeds, project evaluation and selection, management of proceeds, and reporting,

43 International Capital Market Association, Green project mapping, June 2021, accessed November 20, 2024, https://www.icmagroup.org/assets/documents/sustainable-finance/2021-updates/green-project-mapping-june-2021-100621.pdf.

SUSTAINABLE BONDS ALIGNED WITH GBP, SBP, SBG AND SLBP IN 2023

ICMA supported standards underpin global sustainable bond market



Total sustainable bond issuance globally:

USD 863 BN

Aligned with ICMA supported standards:

USD 835 BN

Percentage of sustainable bonds by region that were based on GBP, SBP, SGB, SLBP in 2023:
Circle size is proportionate to total sustainable bond issuance by region

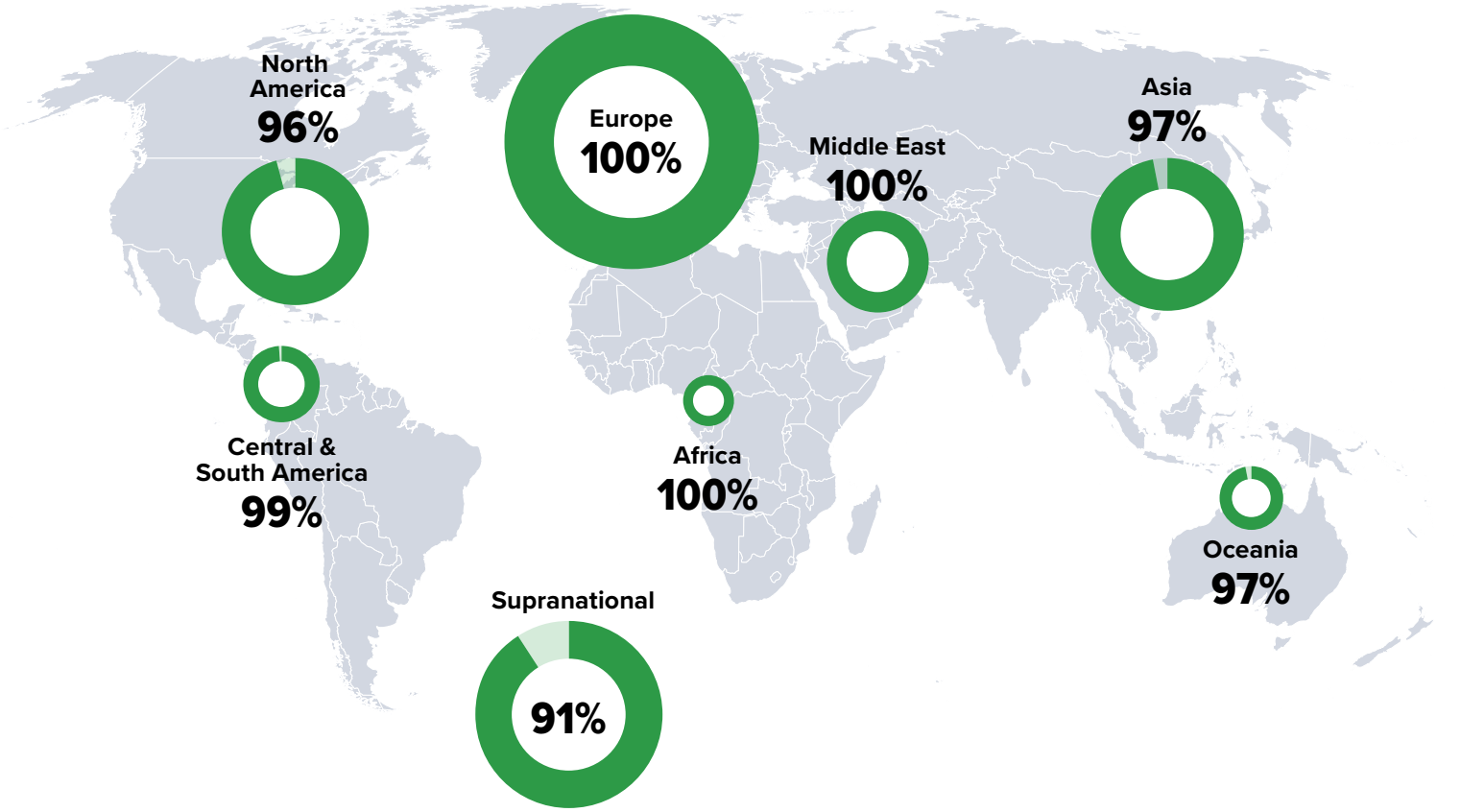


Figure 5

Sustainable Bonds aligned with GBP, SBP, SBG, SLBG in 2023

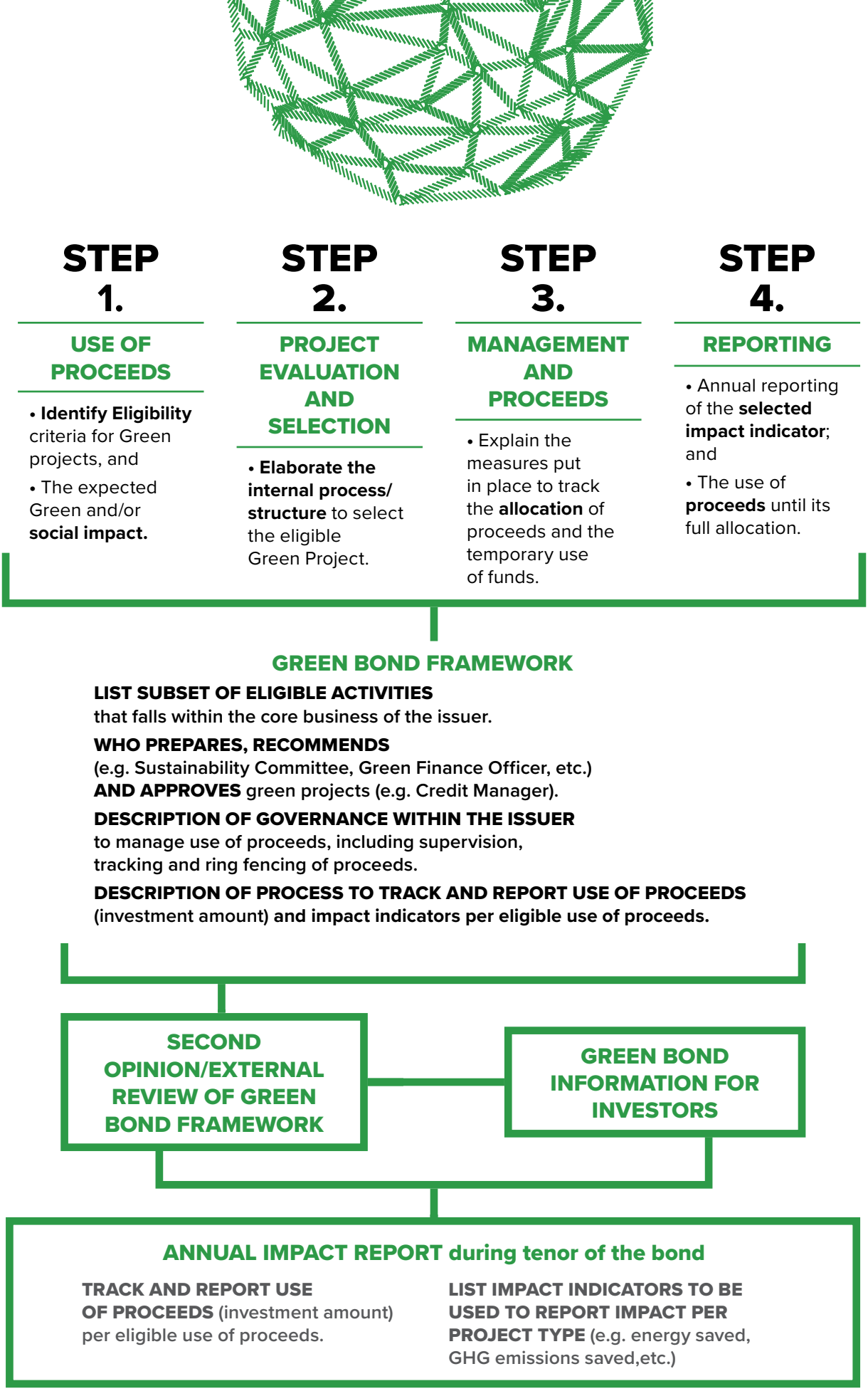


Figure 6

The Green Bonds Principles (GBP) pillars

provide the ground for establishing a structured framework to ensure transparency, proper allocation of funds, and accountability in the issuance and management of green bonds.

1.4 Eligible Projects

The GBP explicitly defines a broad range of eligible green project categories that contribute to environmental objectives, such as **mitigating the impacts of climate change, adapting to climate change, conserving natural resources, preserving biodiversity, and preventing and controlling pollution.**

The categories of eligible green projects capture the most financed types of projects supported or expected to get the support of the Green Bond market. The list includes the following categories, but is not limited to:

Energy Efficiency: This category encompasses projects aimed at improving energy efficiency, such as investments in enhancing the energy efficiency of buildings or industrial projects with a focus on reducing energy consumption.

Renewable Energy: Projects in this category aim to generate electricity from renewable energy sources. Examples include wind energy farms, solar energy projects, and hydroelectric power plants.

Climate Change Adaptation: This involves initiatives aimed at making infrastructure more resilient to the impacts of climate change. It also includes the development of information support systems like climate observation and early warning systems.

Clean Energy: Sustainable Transportation and Technologies: This category includes projects that promote sustainable transportation systems, such as the development of public transportation infrastructure or the installation of electric vehicle charging stations. It also includes projects aimed at clean energy production and the development of environmentally friendly transportation technologies. Projects can involve innovative energy storage systems and hybrid vehicles.

Sustainable Water and Waste Management: Projects in this category involve sustainable water resource management and waste reduction. Examples include the renovation of water treatment facilities and waste recycling facilities.

Importance of establishing a Green Bond Framework

Establishing a Green Bond Framework is recommended for issuers to ensure alignment with the four core components of the GBP. This Framework, while initially designed for green bond issuances, is more commonly preferred by issuers to encompass all thematic debt instruments (such as green, social, sustainability-linked debt instruments, etc..) within a Sustainable Finance Framework. Several considerations should be taken into account when crafting such a Framework:

Providing concise and clear information about issuer within the Framework is encouraged. This entails offering a comprehensive overview of the issuer, covering aspects like its objectives, ownership, organizational structure, operational domains, geographical reach, and more.

Aligning with the GBP's four core components is essential. Within the Framework, it is advisable for issuers to detail their overarching and inclusive sustainability strategies, encompassing areas such as strategy formulation, governance structures, and ESG risk management. Additionally, issuers should elucidate the taxonomies, green standards, or certifications they reference in the selection of projects.

Types of External Review

Second Party Opinion: A Second Party Opinion (SPO) provides an external assessment of how well a green bond or green bond program complies with green and sustainable finance criteria, offering investors and other stakeholders an independent perspective on the issuer's environmental and sustainability claims.

Verification: Verification reviews the issuer's reporting practices in order to ensure they provide transparent and accurate information about the environmental impact and utilization of proceeds related to the Green Bond.

This verification process is often carried out by independent external parties, such as verification firms or SPO providers, to provide investors and other stakeholders with an assurance that the issuer is adhering to its green finance commitments as per the GBP

Certification: It typically refers to the process of obtaining a third-party certification or external verification of the environmental or sustainability attributes of a bond or bond program. This certification confirms that the issuer's green bond aligns with certain environmental standards, criteria, or frameworks.

Certification can be conducted by independent certification bodies or recognized external providers, and it involves a comprehensive assessment of the bond's alignment with established green or sustainable finance criteria, as well as its adherence to the issuer's stated green bond framework. The purpose of certification is to provide investors and other stakeholders with an additional level of assurance regarding the environmental or sustainability claims made by the issuer. It enhances transparency and credibility in the green finance market by demonstrating that the green bond meets specific environmental objectives or standards as defined in the issuer's framework and by recognized industry guidelines. This can make green bonds more attractive to investors seeking environmentally responsible investment opportunities.

Scoring/Rating: In the context of green bonds, "scoring" or "rating" refer to assessments or evaluations carried out by external parties to determine the environmental or sustainability performance of the issuer's projects or investments funded by the green bond. These assessments can include environmental impact assessments, sustainability ratings, or scores related to specific sustainability criteria.

Eco-Friendly Buildings: This category encompasses green and environmentally friendly building projects. Projects may include green building design, energy-efficient construction, and green building certifications.

Conservation of Natural Resources: This category focuses on projects aimed at preserving natural resources and sustaining biodiversity. Examples include forest conservation and habitat restoration projects.

These categories are utilized to better define green bond projects and provide investors with a clearer understanding of the environmental impacts of these projects. The GBP does not provide a uniform or binding definition of what is "Green". Therefore, the issuer must determine whether the projects fit within the eligible green projects.

In this regard, the Taxonomy may give further guidance to Green Bond issuers as to what is in line with environmental and climate

objectives and meets investors' sustainability requirements as well. While the GBP's purpose is not to provide eligibility criteria on which green technologies, standards, sectors are optimal for achieving environmental objectives, it is noteworthy that there are several international and national initiatives producing taxonomies and nomenclatures to produce mere 'recommendations' and 'guidelines' to be adopted on a voluntary basis in order ensure that bond issuances labeled as 'Green Bonds' align with environmental challenges. Issuers classify their projects according to the above-mentioned categories to demonstrate the alignment of their green bonds with sustainability objectives.

It's important to note that specific scoring or rating methodologies may vary among different organizations, and issuers may choose to work with recognized rating agencies or sustainability assessment providers to provide this information to investors. The GBP framework encourages clarity and transparency in reporting to enhance the credibility of green bonds in the market.

Scoring or rating green bonds can offer several advantages for both issuers and investors in the green bond market:

Enhanced Credibility: Rating or scoring green bonds provides an independent assessment of their environmental or sustainability attributes. This enhances credibility and transparency, making it easier for investors to assess the green credentials of the bonds.

Investor Confidence: Investors, especially those with a focus on environmental or sustainable investments, frequently depend on third-party evaluations to assess the environmental consequences of their investments. Scoring or rating provides investors with confidence that the bonds meet specific green standards.

Market Recognition: Green bonds that receive high scores or ratings from reputable agencies can gain recognition and prominence in the market. They are more likely to attract environmentally conscious investors and may trade at favorable terms.

Access to a Broader Investor Base: Green bonds with strong scores or ratings are more likely to attract a broader investor base, including those who have specific sustainability or ESG investment mandates. This can lead to increased demand for the bonds.

Market Standardization: Scoring or rating can contribute to standardizing environmental and sustainability criteria in the green bond market. This promotes consistency and comparability among different green bonds, making it easier for investors to assess their impact.

Alignment with ESG Goals: Rating or scoring helps issuers align their green bonds with broader ESG goals, demonstrating their commitment to sustainability and responsible business practices.

Overall, scoring or rating green bonds adds an extra layer of credibility and transparency to the market, making it more attractive to investors while also promoting environmentally sustainable projects and practices.

1.5 Strong Synergy between GBP and Green Sukuk

On April 29, 2024, the **ICMA,** the **IsDB,** and the **LSEG** published new guidance on the issuance of green, social and sustainability sukuk (the "Guidance").

The stated aims of the Guidance include "Providing practical information to issuers and other market participants on how sukuk may be labeled as green, social or sustainability sukuk aligned with the ICMA Principles".

The Guidance builds upon and is intended to be used alongside, the existing ICMA's Green Bond Principles (GBP), the Social Bond Principles (SBP), the Sustainability Bond Guidelines (SBG), and the Sustainability-linked Bond Principles (SLBP).

However, a correlation between the GBP pillars identified in the previous section and the Green Sukuk logic can be established, which can give an operational frame for issuers and financial institutions to work towards Islamic logic and comply with ICMA's principles.

This high convergence with the GBP pillars is reflected in the structure of Green Sukuk which are Use of Proceeds (UoP) instruments that finance or re-finance eligible green projects in line with the GBP that are also Shariah compliant. Sustainability sukuk are another widely used type of instrument, where the proceeds are allocated to a mix of Shariah-compliant green and social projects, in line with the SBG. Social sukuk, are UoP instruments that finance or re-finance eligible social projects in line with the SBP and that

are Shariah-compliant, but like social bonds they have seen a lower volume of issuance.[44]

In addition, for Islamic finance instruments such as Green Sukuk to obtain approval by a Shariah board, the business and the assets of the issuer should align with the overarching objectives of Shariah which promote societal well-being.

In that sense, Shariah compliance implies a certain level of adherence to Maqasid al-Shariah. In a new form proposed by the CIBAFI Sustainability Guide for Islamic Financial Institutions an ESG-augmented Maqasid al-Shariah Framework articulates Maqasid goals in the form of 'Human Life', 'Economic', 'Environmental', 'Societal' and 'Governance' Goals.[45]

At its core, sustainability is a requirement of Islamic logic which is expected to be produced by aligning with Maqasid al-Shariah. Therefore, in the Green Sukuk logic, sustainability is not treated as an exogenous factor imposed by the GBP, but as an embedded imperative and actualization of Maqasid al-Shariah framework.

1.5.1 Shariah Compliance: An Additional Layer of Governance in Using Proceeds

Due to the fact of their adherence to Islamic moral values and axioms, namely promoting environmental safeguarding, Green Sukuk embraces global actions such as climate change mitigation in line with the defined role of humans as trustees and stewards of the Earth. This helps in the allocation of issuance proceeds and directs them towards projects that are aligned with both Shariah standards and ESG/sustainability criteria.

1.5.2 Negative/Positive Screening

In both Green Bonds and Green Sukuk, the concept of exclusions/negative screening is often extended to investments that would be harmful to the environment or detrimental to social objectives. As an example, the ASEAN Green Bond Standards which are aligned with the GBP and include green bonds and Green Sukuk, explicitly mention ineligible projects as being "Fossil fuel power generation projects".

In line with mentioned commonalities between Islamic principles and SRI, ineligible projects under the ASEAN Social Bond Standards mention exclusions that are equally not deemed Shariah-compliant or sustainable as being "Projects which involve activities that pose a negative social impact related to alcohol, gambling, tobacco and weaponry".

Additionally, Shariah Supervisory Boards are generally focused on transaction-based negative screening which involves removing interest (riba), excessive uncertainty (gharar). On the other hand, the use of proceeds essentialized in the GBP articulates a more proactive role oriented towards substance in terms of resource allocation. This will ensure negative screening related to shariah based prohibitions is complemented with a positive screening approach whereby project proceeds are allocated efficiently and will provide a significant development from the sustainability perspective to elevate the position of Green Sukuk issuers as well as investors vis-à-vis the impact created.

1.5.3 Impact Reporting as a Tool for Scaling Governance on Positive Screening

Green Sukuk are designed not only to reduce greenhouse gas emissions but also to deliver positive social outcomes. A growing body of investors now expects that sustainable finance instruments will also contribute to social objectives, such as improving livelihoods, creating jobs, and fostering social equity. This is particularly important in the context of the just transition, which ensures that the shift to a green economy does not leave vulnerable communities behind.

Impact reporting is critical for scaling green and sustainable finance. Issuers must provide regular reports on the environmental and social impacts of their projects. These reports should quantify benefits such as carbon reduction, energy savings, or job creation, and include a broader discussion of how projects contribute to community development and social well-being.

A prime example of this approach is the **Tropical Landscape Financing Facility (TLFF),** a green

44 International Capital Market Association (ICMA), 2024, Guidance on Green, Social and Sustainability Sukuk

45 General Council for Islamic Banks and Financial Institutions (CIBAFI), 2024, Sustainability Guide for Islamic Financial Institutions

and social bond issued to finance sustainable rubber production in **Indonesia**. The project, which spans over 88,000 hectares, has contributed to the planting of rubber trees, the creation of thousands of jobs, and the protection of biodiversity. TLFF demonstrates how Green Sukuk can finance projects that not only deliver environmental benefits but also create positive social impact, aligning with investor expectations of a just and inclusive transition.

1.6 Regulatory Challenges hindering the development of Green Sukuk

Despite its promising potential, the growth of Green Sukuk faces a range of obstacles that hinder its widespread adoption and market expansion. These challenges encompass regulatory gaps, structural complexities, and market limitations. Each factor contributes to the complexity of fostering a mature, global Green Sukuk market.

1.6.1 Absence of a Clear Taxonomy

The lack of a universally accepted taxonomy in green finance is a major barrier to the Green Sukuk market's development. Taxonomies define and standardize what qualifies as "green" or "environmentally sustainable", helping investors and issuers understand which projects meet green criteria. Without such clarity, Green Sukuk issuance is slowed by concerns about greenwashing, as issuers may hesitate to enter a market where sustainability criteria are ambiguous. Furthermore, investors may shy away from Green Sukuk without a clear understanding of their environmental impact. Establishing a widely accepted taxonomy, such as the EU Taxonomy, would improve transparency and build confidence in Green Sukuk, ensuring that funds are genuinely allocated toward environmentally beneficial projects.

1.6.2 Lack of Standardized Regulations

Standardized regulations are essential for the domestic and international development of Green Sukuk. In 2024, the Islamic Development Bank (IsDB), in collaboration with the International Capital Market Association (ICMA) and the London Stock Exchange Group (LSEG), introduced comprehensive guidance on structuring green, social, and sustainability sukuk. This guide outlines best practices, aligning sukuk with sustainable development goals (SDGs) and environmental, social, and governance (ESG) principles. Alongside this effort, regulatory bodies in **Malaysia**, the **UAE**, and other Islamic finance hubs are establishing frameworks that clarify which projects qualify as sustainable. Such efforts align Islamic finance with global sustainability standards, like the ICMA Green Bond Principles, increasing transparency and investor confidence.

1.6.3 Transparency and Reporting Challenges

Investors require transparent information regarding the use of proceeds and environmental impact of projects funded by Green Sukuk. Reporting and transparency are often challenging due to limited systems and resources among issuers, which can deter potential investors. Addressing these challenges requires the establishment of efficient reporting and tracking mechanisms to ensure compliance with both Islamic finance principles and sustainability objectives.

1.6.4 Addressing Greenwashing Risks

Greenwashing, where issuers misrepresent the environmental benefits of their projects, undermines the credibility of the Green Sukuk market. To combat this, issuers must prioritize transparency and accurate reporting. Regulatory standards like the EU's recently introduced requirements for green bonds, which aim to counter deceptive environmental claims, serve as a model for enhancing transparency and maintaining trust in Green Sukuk markets. This framework enables investors to distinguish between truly sustainable projects and those that fall short, ensuring that investments align with genuine environmental goals.

CREATING AN ENABLING ENVIRONMENT FOR GREEN SUKUK DEVELOPMENT

Photo: UNDP Malaysia

2. Creating an Enabling Environment for Green Sukuk Development

Objectives:

- Identify implementation gaps and policy influences on the success of Green Sukuk initiatives.
- Identify the most prevalent factors hindering Green Sukuk's growth into the mainstream with the objective of mapping the enabling ecosystem and the main drivers of establishing a viable Green Sukuk market and sustaining its growth trajectory.
- Provide a practical insight by case studying the **Malaysian** success story of designing and implementing an effective Green Sukuk ecosystem and supporting it through building partnerships and programs strengthening the pipeline of Islamic impact instruments.

2.1 Factors hindering the development of Green Sukuk: The investors' perspective

Catalyzing public sector policies, green incentives, increasing private sector participation and development of key supporting infrastructure (i.e. regulatory framework, capacity building, classification tools, ESG data, demand and supply and building a marketplace) are part of the building blocks to scaling Islamic sustainable finance, Islamic green finance and Green Sukuk issuance. The absence of these ecosystem components or their lack thereof are obstacles to fostering its orderly development and growth

2.1.1 Data Gaps, Greenwashing Risks and Credible Use of Green Sukuk Proceeds

Data and capacity gaps hinder the effective application of sustainable finance taxonomies by users and thus limit its usability for classification and due diligence of eligible economic activities. whilst its linkage to disclosure requirements remains minimal. Respondents to a survey by the International Finance Corporation (IFC) indicated that many emerging economies have adopted (or are in the process of developing) green or sustainable finance taxonomies, but these often have limited coverage, are not sufficiently granular, or require data and know-how that are not always available. As a result, individual financial firms have considerable discretion in assessing and reporting climate-related exposures and risks. The inevitable inconsistencies and fragmentation in disclosures create scope for "greenwashing" and aggravate the uneven playing field.

Meanwhile, Green Sukuk investors expect proceeds from Green Sukuk issuance are used to finance eligible green projects that generate significant identifiable climate or other benefits (e.g. mitigation or adaptation outcomes) and whose use is pre-defined and made transparent to the investor. It is therefore important for a Green Sukuk issuance to assess the project activities and, where feasible, quantified by the issuer in terms of its environmental targets based on the latest climate science. For example, to ensure the credible use of the proceeds the eligible projects should determine the activity's metrics and thresholds that would classify it as being environmentally sustainable or align with the 1.5 degree Celscius Paris Agreement trajectory to limit global warming Issuers should also track the progress over time and make the appropriate reporting.

This in turn would enhance the project's transparency and allow its environmental performance to be quantitatively measured. For Green Sukuk investors, this would allow them to see the environmental benefits tied to their investment, track the activity's progress and to better manage their financial and reputational risks tied to greenwashing.

Indeed, Green Sukuk investors consider greenwashing as a key risk as they could lead to financial losses, reputational damage and expose investors to liability risk and disrupt their long-term sustainable investment goals. These practices lack integrity and are inconsistent with the fundamental principles for responsible business. To protect against the risk of greenwashing, investors must strengthen their due diligence through robust internal processes, deploy and leverage on prevailing sustainability-related data and market-based tools to make credible assessments. This includes deploying greater stewardship by directly engaging companies, relying on available impact reporting and the demand for assurance from third parties on companies' sustainability reporting. On the other hand, potential issuers of Green Sukuk should be aware of legal consequences from any acts of misrepresentation especially climate or environmental issues. Misleading investors about the environmental benefits of their Green Sukuk could expose them to liability risks, including lawsuits or reputational damage.

2.1.2 Lack of availability in Sustainability Data

Investors rely on credible sustainability information to conduct due diligence assessment and make informed investment decisions whilst companies used them (e.g. baseline emissions) to manage their climate risk exposures Gaining access to material ESG-related information is key to this process as they mitigate the associated risks and create business value. Given this, issuers of Green Sukuk will have fiduciary obligation to communicate their financially material climate-related disclosures to investors. Aligning their disclosures with prevailing standards such the Task Force on Climate Financial Disclosures (TCFD), the Global Reporting Initiative (GRI), the International Sustainability Standards Board (ISSB) reporting standards or any applicable national sustainable finance taxonomy would facilitate investors making a robust and measured assessment and due diligence, thereby enhancing the quality of their investment decisions.

The disclosure should include critical information on the issuer's climate risk strategy, including their potential impact on operations and investments under different climate scenarios. For example, the TCFD's scenario-based disclosures provide investors with insights into the issuer's ability to withstand future climate-related challenges, helping them assess the potential risks and opportunities.

2.1.3 Absence of comprehensive Islamic Sustainable Finance Ecosystem

Whilst the Paris Agreement's climate goals are defined at country-level NDCs, the climate finance ecosystem is the important nexus to deliver the much-needed green transition – a low-carbon, climate-and-socially resilient net zero future.[46] With almost USD 26 trillion needed to finance the transition - within the emerging economies alone - Islamic finance and Green Sukuk can be part of these opportunity. Establishing the framework for a holistic Islamic sustainable finance is vital consistent with the Islamic legal maxim supporting the principle of do no harm.[47]

2.1.4 Lack of Investors' Awareness

In many Islamic jurisdictions, it is uncommon to find large presence of ESG-aligned investors and market for sustainable investment. On the contrary, the global conventional Sustainable and Responsible Investment (SRI) market is experiencing phenomenal growth. The high number of conventional asset owners and asset managers who are signatory to the Principles for Responsible Investment (PRI) signify their support and commitment to a sustainable global financial system. According to the PRI, the number of PRI signatories

46 Paris Agreement, "climate finance" https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations/climate-finance#Climate-Finance-in-the-Paris-Agreement-

47 Bamgbose, O. (2023, September 1). Understanding legal maxims in Islamic Finance - Islamic Finance Council UK. Islamic Finance Council UK. https://ukifc.com/2023/09/01/understanding-legal-maxims-in-islamic-finance/

have increased 10% year-on-year, reaching 5,391 signatories (4,841 investors and 550 service providers) by 31 March 2023.[48]

Similarly in Islamic jurisdictions where national sustainable finance principles and taxonomy have yet to be established, Green Sukuk issuance may lack the guidance to credibly manage their climate-related risks and opportunities and meaningfully implement a just transition. For a Green Sukuk to not adequately address these considerations may impact demand and not achieve the anticipated "greenium" that gives a pricing advantage to Green Sukuk issuers.

Additionally, the differing practices of the various participants and varying levels of communication with investors and other stakeholders could potentially affect the credibility of the issuance.

2.1.5 High Costs and Lack of Market Incentives

Issuing a Green Sukuk incurs additional costs as they require additional layers of safeguards. Leveling these costs will make Green Sukuk appeal to not only potential issuers who wish to align with climate goals but equally green investors who are in search of alpha. Nonetheless, not all jurisdictions and markets can provide the right incentives e.g. establishing a grant scheme to ensure a level playing field between traditional sukuk and Green Sukuk. For a potential Green Sukuk issuer not being accorded to such schemes, the higher issuing costs pose obstacles to incentivizing a green issuance and promoting growth. Current market practices require labeling a Green Sukuk issuance to take on additional processes that are intended to mitigate the risks of greenwashing and urgently limit global warming. For instance, ICMA's Green Bond Principles require a second opinion, verification and/or external reviews pre and post-issuance in which a traditional sukuk issuance would not incur but could still use the proceeds for eligible green projects.[49]

This may not incentivize potential issuer and stifle the development and growth of the Green Sukuk market.

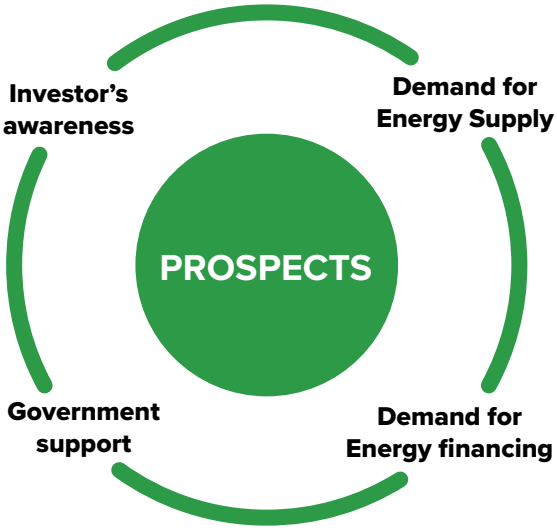


Figure 7

The Enabling Environment for Green Sukuk*

* Securities Commission Malaysia 2019 "Islamic Green Finance: Development, Ecosystem and Prospects" https://documents1.worldbank.org/curated/pt/591721554824346344/pdf/Islamic-Green-Finance-Development-Ecosystem-and-Prospects.pdf

2.2 Market Dynamics for Private Sector issuances of Green Sukuk

2.2.1 Rising Demand for Green Sukuk Amid Global Sustainable Finance Momentum

Demand for Green Sukuk is discernibly on the rise. The growing interests are marked by a variety of global factors that influence both investor sentiment and corporate financing needs and underscore the urgency the importance of galvanizing the private sector and private investments to deal with the risks and opportunities of climate change. As sustainability practices gain prominence across sectors and so are their integration into corporate strategies and practices, Green Sukuk has emerged as an attractive investment vehicle for those seeking to align their business operations and portfolios with ESG principles.

48 PRI Annual Report 2023, "Responsible Investment Ecosystems" https://www.unpri.org/annual-report-2023/responsible-investment-ecosystems#:~:text=Building%20the%20responsible%20investment%20community,providers)%20by%2031%20March%202023.

49 The Green Bond Principles 2021 "Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds"https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles-June-2022-060623.pdf

The business sector, especially industries with a high carbon footprint (e.g., energy, manufacturing, and construction), is under pressure to transition towards greener operations. For many companies in Islamic finance markets, Green Sukuk provides an ideal tool to finance the shift toward sustainable practices without compromising on Shariah compliance. As international commitments such as the Paris Agreement and the United Nations Sustainable Development Goals (SDGs) place greater emphasis on climate action and climate impact, investors increasingly demand that companies adopt sustainable financing methods.[50] This creates a steady demand for Green Sukuk as a way for private sector players to raise funds specifically earmarked for sustainable projects, such as renewable energy installations, energy-efficient construction, and waste management facilities.

Moreover, the demand surge is bolstered by the heightened awareness and action among institutional investors. Many of these investors now operate under mandates that favor or even require investment in green or ESG-compliant securities. Private sector issuers of Green Sukuk benefit from this trend, as their green credentials attract dedicated ESG funds and global investors looking to meet internal and regulatory sustainability targets.

2.2.2 Strengthening the Supply Side Through Innovation and Regulatory Incentives

As national climate policies take on a more ambitious trajectory and increase awareness amongst businesses and financial institutions to manage their climate-related risk exposures, so are the pipelines of corporate Green Sukuk issuance. With interest rates showing signs of stabilization and macroeconomic conditions improving, private issuers are increasingly motivated to enter the Green Sukuk market. Flexible programme issuance structures allow companies to draw funds in stages, making financing more adaptable to project timelines and avoiding a negative carry (where the cost of holding the investment exceeds the yield). This is especially valuable for large-scale infrastructure and renewable energy projects that require phased financing and where project timelines can stretch over multiple years.

The GCC region, **Malaysia**, and **Indonesia**—the three key hubs for Islamic finance—governments and regulatory bodies have introduced initiatives that make it easier for private entities to issue sukuk and Green Sukuk. These initiatives often include incentives, tax breaks, and even partial guarantees to enhance the financial viability of green projects. For example, **Malaysia**'s Green Investment Tax Allowance and Green Income Tax Exemption provide tax incentives to eligible companies, thereby reducing issuance costs and attracting more corporate participants to the Green Sukuk market.

2.2.3 Evolving Global Climate-related Policies and Regulations

Policies like the EU Green Bond Standard and the US Inflation Reduction Act, though not directly focused on Sukuk, have a positive spillover effect on Green Sukuk by normalizing and incentivizing sustainable finance. These policies spur demand for capital to fund renewable energy, clean transportation, and other green sectors, where private sukuk issuers can capitalize on opportunities in the many Islamic jurisdictions in the Middle East, Southeast Asia, and Africa.

Furthermore, as governments increasingly implement sustainable finance taxonomies, companies have clearer guidance on eligible projects that qualify as "green." For instance, the ASEAN Sustainable Finance Taxonomy offers a unified framework for companies operating in the ASEAN region, ensuring transparency and enhancing investor confidence.[51] By following these taxonomies in the form of a recalibrated national-level sustainable finance taxonomy, private issuers can improve the credibility of their Green Sukuk offerings and align with recognized standards, thus attracting a broader pool of global investors.

50 Harasheh, M., Bouteska, A., & Manita, R. (2023). Investors' preferences for sustainable investments: Evidence from the U.S. using an experimental approach. Economics Letters, 234, 111428. https://doi.org/10.1016/j.econlet.2023.111428 https://www.sciencedirect.com/science/article/abs/pii/S0165176523004548

51 Association of Southeast Asian Nations, ASEAN Taxonomy for Sustainable Finance Version 1, November 2021, https://asean.org/wp-content/uploads/2022/06/ASEAN_Taxonomy_V1_final_310522.pdf.

2.2.4 Catalysts for Demand: "Green Subsidy Race" and Corporate Race to Net Zero

The intensifying "green subsidy race" between the US and the EU has catalyzed corporate spending on green initiatives, creating ripple effects in emerging markets where Green Sukuk is issued. Generous subsidies and incentives from these major economies encourage companies worldwide to increase their green capital expenditures (capex), and Islamic finance jurisdictions are not immune to this trend. In the MENA region and Southeast Asia, corporations are under mounting pressure to meet climate targets, either in line with national goals, reporting and disclosure regulations, or as part of global supply chains that demand adherence to sustainability benchmarks. Given this, corporates have set their decarbonization pathways and transition strategies towards meeting net-zero emission.

In this context, Green Sukuk serves as both a financing tool and a signal of the issuer's commitment to sustainability. As companies look to finance their decarbonization plans, particularly in industries that avail feasible technological solutions to facilitate their transition, Green Sukuk provides a Shariah-compliant mechanism for accessing funds while meeting ESG criteria. This dynamic is expected to drive Green Sukuk demand over the coming years, especially as companies prepare to meet stricter regulatory standards and fulfill pledges toward net-zero emissions.

2.2.5 Potential for Expansion into New Sectors and Asset Classes

The private sector's interest in Green Sukuk is expanding beyond traditional industries like energy and real estate into new sectors, such as technology, telecommunications, and transport, where there are growing opportunities to support green initiatives. These sectors are exploring Green Sukuk to finance energy-efficient upgrades, sustainable infrastructure, and circular economy practices. For example, the transportation sector could use Green Sukuk to finance electric vehicle (EV) infrastructure and sustainable transit systems, while the tech sector could channel proceeds toward greener data centers and other energy-efficient facilities.

With sustainable finance taxonomies evolving to include a broader range of activities, Green Sukuk issuers can explore innovative structures and asset classes that may attract specific investor groups. By expanding eligibility to new projects like smart cities,

The Association of Southeast Asian Nations Green Bond Standards (ASEAN GBS)

The ASEAN Green Bond Standards are guidelines and criteria for the issuance of green bonds in the ASEAN region. These standards aim to promote transparency, consistency, and credibility in the issuance of green bonds by entities within ASEAN member countries. They help facilitate the flow of investments toward environmentally sustainable projects and initiatives. ASEAN GBS and ICMA GBP are both frameworks designed to ensure transparency, credibility, and consistency in the issuance of green bonds. They share similarities in areas such as eligible project categories, use of proceeds, reporting, external verification, ongoing monitoring, and their common goal of promoting environmentally sustainable projects. While the ASEAN GBS is specific to the ASEAN region, the ICMA GBP has global applicability, making it attractive to international investors. Issuers may choose to follow one or both standards, depending on their investor base and objectives.

water management, and biodiversity, Green Sukuk can tap into rising interest from green and impact investors seeking to diversify their ESG portfolios - giving rise to portfolio risk diversification and enhance yield.

2.2.6 Long-Term Outlook for Private Sector Green Sukuk

The outlook for the private sector Green Sukuk is highly favorable, especially if macroeconomic conditions stabilize and interest rates peak. As more companies recognize the dual benefit of Green Sukuk in meeting financing needs while enhancing their sustainability profile, issuance is likely to increase. In OIC countries where sustainable finance is actively promoted by government and financial institutions, Green Sukuk may become a dominant funding instrument for green projects, fostering a robust pipeline of issuances across different sectors.

In the long run, the expansion of Green Sukuk can help diversify the financing landscape. This growth trajectory, supported by an evolving regulatory environment, favorable macro conditions, and increasing investor demand, can position Green Sukuk as a mainstay of private sector sustainable finance.

2.3 Governments' Role in Green Sukuk Market and Investor Interest

Governments are uniquely positioned to influence the growth of investors' interest in Green Sukuk markets. Through proactive policy frameworks, infrastructure investments, and incentives, governments can attract both domestic and international investors, encouraging them to view Green Sukuk as a viable instrument for sustainable investing. Below are keyways in which governments are fostering this growth, accompanied by examples that illustrate their impact.

2.3.1 Policy Initiatives and Targeted Sectoral Investments

Governments play a leading role in setting sectoral priorities and developing pipelines of eligible green projects, which is foundational for Green Sukuk issuance. These policies are often anchored in national climate objectives and contribute to broader SDGs. In sectors like renewable energy, green transportation, and sustainable infrastructure, government policies directly impact the availability of projects that can be financed through Green Sukuk.

For instance, **Malaysia** has taken a leading role in green finance within the ASEAN region. With a commitment to increasing renewable energy to 70% by 2050, **Malaysia** is setting ambitious targets that require significant investment in renewable projects, estimated at around USD 150 billion.[52] The **Malaysian** government issued incentives and enabled regulatory frameworks that spurred the issuance of the world's first corporate Green Sukuk in 2017 by Tadau Energy.[53] This RM 250 million sukuk financed solar projects and demonstrated the feasibility of using sukuk for green projects, catalyzing investor interest in **Malaysia** and beyond.[54]

Indonesia issued the world's first sovereign the NDC Green Sukuk in 2018, raising USD 1.25 billion to finance green infrastructure projects, including renewable energy, sustainable transportation, and waste management.[55] With subsequent Green Sukuk issuances, **Indonesia** has attracted both domestic and international investors, reflecting growing investor confidence in the **Indonesian** Green Sukuk market.

I. Ambitious Climate Policies Advance the Process of Corporate Transition and Scale Sustainable Finance

As each country prepares, communicates and progressively reviews their Nationally Determined Contributions (NDCs) businesses seek to respond by aligning their sustainability

52 "Renewable Energy Capacity Targeted at 70% by 2050 - MIDA | Malaysian Investment Development Authority," MIDA | Malaysian Investment Development Authority, May 22, 2023, https://www.mida.gov.my/mida-news/renewable-energy-capacity-targeted-at-70-by-2050/.

53 The World Bank. "Helping Malaysia Develop the Green Sukuk Market: Facilitating Sustainable Financing". World Bank, 2019. Accessed December 22, 2024. https://documents1.worldbank.org/curated/en/586751546962364924/Helping-Malaysia-Develop-the-Green-Sukuk-Market-Facilitating-Sustainable-Financing-Case-Study.pdf.

54 The World Bank, 2019

55 Indonesia Investments 2018 "First in Asia; Indonesia Sells $1.25 Billion of Global Green Bonds" https://www.Indonesia-investments.com/news/todays-headlines/first-in-asia-Indonesia-sells-1.25-billion-of-global-green-bonds/item8619?

strategies with the national goals and to manage their climate-related exposures, protect shareholder value, and seize on any new emerging climate-related opportunities. As businesses transition (e.g., reach peaking GHG emissions to align with national climate targets and undertake rapid reductions thereafter in accordance with the best available science and technology), the demand for sustainable finance will increase. Green Sukuk can be a suitable instrument as long as they are treated the same as traditional bond/sukuk. In lieu of the additional costs it must incur. Green Sukuk National sustainable finance taxonomy can facilitate businesses to issue Green Sukuk. Mapping and aligning the activities to be financed against the taxonomy framework i.e. the use of proceeds to finance the eligible projects gives greater credibility to the issuance and enhances investors' demand. Additionally, many governments adopt sector coverage as credible pathways to voluntarily meet their respective climate pledge as they are key priority sectors of the economy that can meaningfully contribute to climate goals. In the context of climate change, the key environmental goals are climate change mitigation and adaptation. Typically, eligible economic activities from the priority sectors can be determined from using internationally recognized industrial codes. The most common industrial standard used is the International Standard Industrial Classification (ISIC). As an illustration, the list of eligible activities using ISIC is outlined in table 2 below.

EXAMPLES OF PRIORITY SECTORS (NDC-LINKED)	EXAMPLES OF ELIGIBLE GREEN ACTIVITIES HAVING THE MOST POTENTIAL TO CONTRIBUTE TO ENVIRONMENTAL GOALS
ENERGY	· Electricity generation from renewable energy (e.g., solar PV, concentrated solar, wind and ocean energy) · Transmission and distribution of renewable energy. · Energy storage systems including green hydrogen. · Cogeneration, production of heat/cool from renewable energy.
TRANSPORT	· Zero tail pipe emissions micro-mobility. · Zero tail pipe emissions transport (road, rail, water – passenger and freight) · Infrastructure for zero emission transport.
MANUFACTURING	· Manufacturing of low carbon technologies (e.g., renewable energy equipment, electric vehicles, green hydrogen etc.). · Installation of specific low/zero carbon technologies such as waste heat boilers and LED lighting
WATER, WASTE AND OTHER REMEDIATION	· Carbon capture, utilization and storage. · Efficient wastewater treatment plants. · Efficient organic waste treatment plants (e.g., composting, and anaerobic digestion) and material recovery systems. · Separate collection of municipal solid waste. · Landfill gas capture in closed landfills.

Table 2

Priority NDC linked green sectors and activities*

* UNDP 2023 "What are NDCs and how do they drive climate action?"https://climatepromise.undp.org/news-and-stories/NDCs-nationally-determined-contributions-climate-change-what-you-need-to-know

II. Climate Budget Tagging: A Catalyzer for Climate Smart Investments

The emerging practice by governments of climate-budget tagging (CBT) in national budget system -primarily used to monitor and track what they spend on climate-related activities i.e. eligible expenditures – is increasingly becoming a valuable tool to communicate with their investors and other types of financiers. The tagging help governments integrate climate change considerations, primarily climate mitigation and adaptation, into the planning and budget process.[56] They help identify programs and expenditures with some form of climate dimension and track climate-relevant public funding that report on climate finance flows, improve the governance of climate finance, facilitate the assessment of results from climate investments and support better project design.

As more ministries of finance are engaging in such mechanisms, integrating CBT bring multiple benefits. They promote transparency and accountability, enabling the prioritization of investments towards national objectives i.e. country-level NDCs and Net Zero Targets and international commitments such as the Paris Goals. It also raises awareness of and highlights government's visibility and efforts to tackle climate challenges, fosters better cooperation between government ministries, and mobilizes domestic and international finance by enabling the tracking of the allocation of resources. The latter have led to increasing issuances by governments including in emerging markets of labelled or thematic bonds and sukuk i.e. green, social, sustainability sukuk (GSS). They include issuance of sovereign Green Sukuk either in domestic currency or foreign denominated. For investors investing in thematic sovereign debt issuances, CBT contributes toward a holistic understanding of a country's sustainability agenda by gaining better access to climate-related information (i.e. use of proceeds of green sovereign bonds).[57]

As an illustration, **Indonesia** has been an early adopter of CBT practices. Its Ministry of Finance implemented this process in 2016 and integrated the system in the national planning

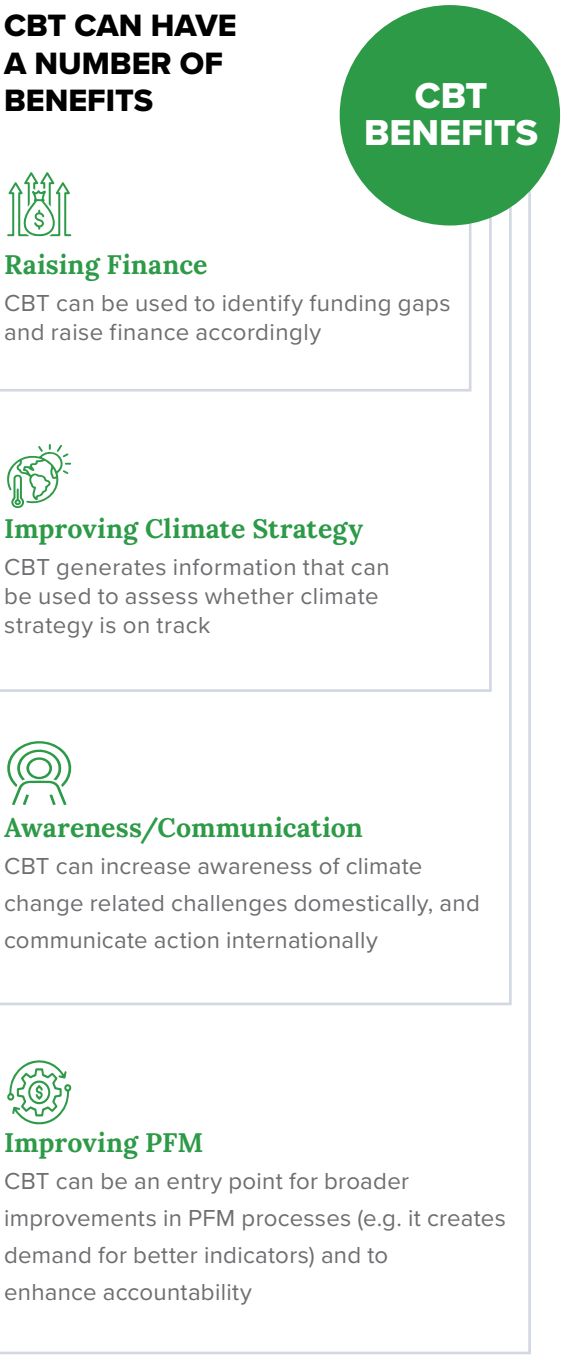


Figure 8

The Benefits of Climate Budget Tagging*

* World Bank Group 2021 "Climate Change Budget Tagging: A Review of International Experience" https://openknowledge.worldbank.org/server/api/core/bitstreams/ca65ecfc-90b8-5b40-a6e7-689d14c8ccef/content

56 World Bank - Climate Change Budget Tagging: A Review of International Experience https://openknowledge.worldbank.org/server/api/core/bitstreams/ca65ecfc-90b8-5b40-a6e7-689d14c8ccef/content

57 World Bank: Roundtable Discussion: Climate Budget Tagging and Engaging with Investors

and budgeting cycle.[58] Line ministries tag climate-related outputs during the work plan formulation. The allocated climate budget is then tracked and monitored, and results are published annually in a climate expenditure report. Between 2016-2020, the government of **Indonesia** allocated USD 33.9 billion to finance climate change.[59] Further, in 2018, **Indonesia** became the first government in the world to issue a sovereign Green Sukuk as part of its public financial management.[60] Since then, the government has mobilized over US$3.9 billion towards green investments through its six Green Sukuk issuances (four times in the global market and twice in the retail market).[61] The proceeds from the Green Sukuk were used to finance projects in renewable energy, energy efficiency, sustainable transport, waste management, and resilience to climate change sectors – contributing towards reducing up to 10.3 million tonnes of CO2 emissions, along with the strengthening of climate resilience.[62]

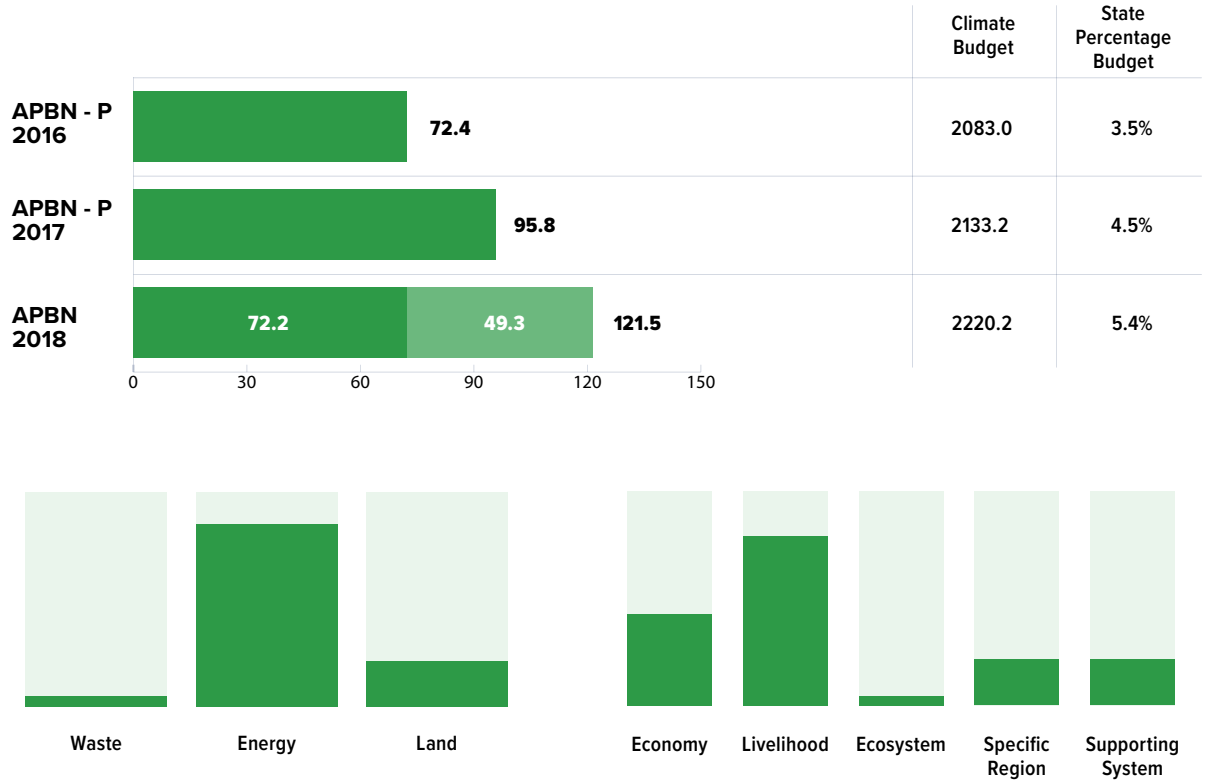


Figure 9

Indonesia's Climate Budget Tagging for Climate Change Mitigation and Adaptation 2016-2018*

* Fiscal Policy Agency Ministry of Finance Republic of Indonesia 2019 "Public Finance for Climate Change in Indonesia: 2016-2018" https://www.undp.org/sites/g/files/zskgke326/files/migration/id/INS-ENGLISH-Full-Report-Public-Finance-for-Climate-Change-in-Indonesia-2016-2018_compressed.pdf

58 Rulliadi, Dudi. 2019 "Climate Budget Tagging and Green Sukuk / Islamic Bond: An Indonesian Experience" https://www.financeministersforclimate.org/sites/cape/files/inline-files/Session%204%20-%2 Indonesia%20CBT%20and%20Green%20Bonds.pdf

59 Fiscal Policy Agency, MOF Indonesia - Indonesia's GCF Country Programme Document: A Handbook

60 Indonesia Investments 2018 "First in Asia; Indonesia Sells $1.25 Billion of Global Green Bonds" https://www.Indonesia-investments.com/news/todays-headlines/first-in-asia-Indonesia-sells-1.25-billion-of-global-green-bonds/item8619

61 UNDP 2021 "Strengthening Indonesia's Climate Finance Governance through Climate Budget Tagging and Green Sukuk Issuance" https://sdgfinance.undp.org/news-events/strengthening-Indonesias-climate-finance-governance-through-climate-budget-tagging-and

62 UNDP: Strengthening Indonesia's Climate Finance Governance through Climate Budget Tagging and Green Sukuk Issuance, 3rd August 2021.

These targeted policies not only create a market for Green Sukuk by developing eligible projects but also provide investors with clear opportunities to support projects that align with national climate goals. By prioritizing sectors like renewable energy, governments offer investors attractive, mission-aligned assets with potential long-term returns.

III. Creating Market Infrastructure for Green Sukuk Issuance

A well-functioning Green Sukuk market requires robust market infrastructure, from transparent issuance processes, building benchmark yield curve to liquidity mechanisms. To establish these foundational elements, governments often leverage on the existing bond and sukuk market infrastructure while introducing additional mechanisms specific to green bond and sukuk issuance.

Benchmark Issuances and the Creation of a Green Yield Curve: Sovereign Green Sukuk issued by governments serve as pricing benchmarks that private sector issuers can use to price their Green Sukuk accurately. These benchmark government issuances help establish a green yield curve that reflects the market's valuation of Green Sukuk relative to conventional debt. For example, **Indonesia**'s Green Sukuk issuances since 2018 have set a pricing standard that private issuers can refer to when structuring their own Sukuk. As a result, the yield curve facilitates efficient pricing and at times gives rise to "greenium"—a pricing advantage that Green Sukuk issuer may command due to high demand from environmentally-conscious investors.[63]

Supporting Green Bond Standards and Certifications: Countries like **Malaysia** and **Indonesia** typically align their Green Sukuk frameworks with international standards, such as the International Capital Market Association's (ICMA) Green Bond Principles and the ASEAN Green Bond Standards to build integrity and create trust amongst investors. These frameworks not only provide transparency and credibility, but they aim to attract sustainable global finance liquidity to finance their green transition. The alignment is key to building investors' confidence in the credibility of Green Sukuk instruments, leading to increased demand in building their mission-aligned green asset pool.

IV. Developing a Sustainable Finance Taxonomy to Guide Green Investments

A sustainable finance taxonomy is a critical tool that governments can use to classify economic activities eligible to green finance. By establishing a national-level sustainable finance taxonomy, governments create clarity on what qualifies as a "green" project, thus reducing the risk of greenwashing and ensuring that Green Sukuk proceeds are directed toward genuine environmental projects. It also helps investors of Green Sukuk to perform due diligence and make informed decisions, thus boosting investor confidence and encouraging greater investment in Green Sukuk.

63 Pirgaip, Burak. Arslan-Ayaydin, Ozgur. 2024. "Exploring the greenium in the Green Sukuk universe: evidence from the primary market". International Journal of Islamic and Middle Eastern Finance and Management, Vol. 17 No. 3, pp. 423-440.

Brief Features of Sustainable Finance Taxonomies Around the World

The EU Taxonomy's Influence on Emerging Markets

The inaugural and most commonly well-known sustainable finance taxonomy and often described as the gold standard is the EU Taxonomy Regulation. It's a classification framework with activity-based technical screening criteria and a set of other assessment criteria. Going through this process it designates eligible economic activities as environmentally sustainable, gaining access to sustainable finance. With the activities' designation, it allows banks and investors to finance and invest in these sustainable economic activities, thus accelerating the pace of economic transition whilst mitigating the risk of greenwashing.

While the EU Taxonomy is often viewed as the gold standard, it has influenced many emerging markets to adopt similar standards. The taxonomy's alignment with carbon neutrality and sustainability goals provides a clear, investor-friendly classification for green finance projects. In OIC countries, many are increasingly developing their own national taxonomies (e.g., **Malaysia**, **Indonesia**, Qatar). Additionally, regional groupings such as ASEAN have embarked on e.g. the ASEAN Sustainable Finance Taxonomy.[64] Regional taxonomy standards adopt a more inclusive approach with a view to guiding all member states that are at varying levels of economic development. It further seeks to scale sustainable finance to meet their respective climate and environmental goals and ensure a just transition.

Internationally, countries like South Africa, **Chile**, **Thailand**, **China**, **Malaysia**, and the Philippines have since established their national taxonomy whilst many others are working on building the same.[65] A unique approach to most sustainable finance or green taxonomy development work is the importance of contextualizing the taxonomy framework to account for local needs but ensuring that it remains credible, usable, inclusive, and interoperable and is aligned with national climate and other environmental and SDG goals.

The ASEAN Sustainable Finance Taxonomy

This regional taxonomy aligns the sustainable finance strategies of ASEAN countries, including those with significant Green Sukuk activity like **Malaysia** and **Indonesia**. It provides a regional framework for identifying green and transitioning projects across various sectors, thus harmonizing definitions and ensuring comparability across ASEAN Member States. This has made Green Sukuk more attractive to investors who want clear criteria for sustainability and alignment with regional climate goals. The ASEAN taxonomy continues to evolve as modern technology prevails, climate policies and priorities change, and with advancement in economic development.

64 ASEAN Taxonomy Board 2021 "ASEAN Taxonomy for Sustainable Finance Version 1" https://asean.org/wp-content/uploads/2022/06/ASEAN_Taxonomy_V1_final_310522.pdf

65 Climate Bonds Initiative "Global green taxonomy development, alignment, and implementation" https://www.climatebonds.net/files/reports/cbi_taxonomy_ukpact_2022_01f.pdf

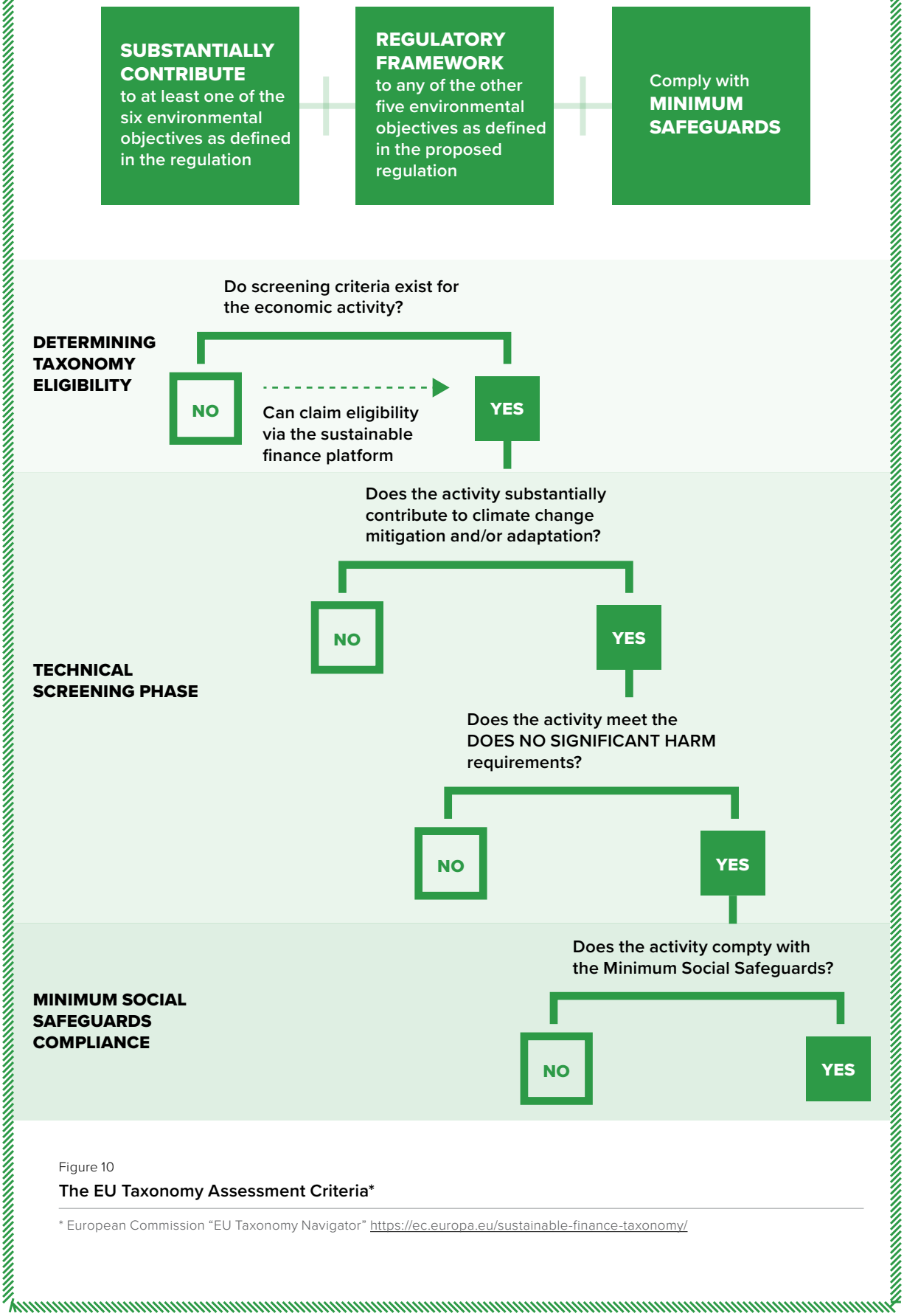


Figure 10

The EU Taxonomy Assessment Criteria*

* European Commission "EU Taxonomy Navigator" https://ec.europa.eu/sustainable-finance-taxonomy/

V. Incentives and Grant Schemes to Offset Issuance Costs

Issuing Green Sukuk involves additional costs related to external verification, impact reporting, and compliance with green standards, which may discourage potential issuers. To overcome these barriers, governments can introduce grant schemes and incentives to cover or reduce related expenses, especially in emerging markets where the green finance sector is nascent. Several jurisdictions have embarked on establishing incentive schemes to create a greater level playing field between green bond and sukuk and the traditional straight bond and sukuk.

Grant Schemes in Malaysia: Malaysia's capital market authority has provided grants to cover the certification and external review costs associated with Green Sukuk issuance[66] These grants lower the entry barriers for issuers, making it more financially feasible for corporations to pursue Green Sukuk. By absorbing some of the additional issuance costs, these grants incentivize more companies to enter the Green Sukuk market, thus expanding the range of investment opportunities for investors.

Subsidies and Tax Incentives in the UAE: The **UAE** has introduced tax breaks and subsidies for green projects, which benefit companies looking to issue Green Sukuk by reducing their operational costs. These incentives have attracted investors interested in the MENA green finance market, where the **UAE**'s ambitious renewable energy goals align well with the financing structure offered by Green Sukuk.[67]

Such incentives attract a broader range of issuers, diversify the Green Sukuk market, and offer investors a wider array of projects to choose from. By making Green Sukuk issuance more accessible and reducing financial barriers, governments help ensure that investor demand is met with an adequate supply of high-quality Green Sukuk.

VI. Encouraging Institutional Investor Participation

Governments can also stimulate Green Sukuk demand by encouraging domestic institutional investors, such as pension funds, sovereign wealth funds, and insurance companies, to allocate a portion of their portfolios to sustainable finance products. Institutional investor participation not only increases demand for Green Sukuk but also sets an example for other investors to follow.

Indonesia's Sovereign Wealth Fund Investments: The **Indonesian** Investment Authority (INA), **Indonesia**'s sovereign wealth fund, has expressed interest in investing in sustainable projects, including Green Sukuk. By allocating resources to Green Sukuk, INA signals its commitment to sustainable finance, which can attract both local and international investors to the Green Sukuk market.

Malaysia's Khazanah Nasional Berhad: Malaysia's sovereign wealth fund (Khazanah Nasional) has also invested in green projects and can serve as a key participant in the Green Sukuk market. By prioritizing sustainable investments, Khazanah sets a precedent that encourages private institutional investors to follow suit, thereby broadening the investor base for Green Sukuk.

2.4 Malaysia: One of the Best Jurisdictional Practices

The rise of Green Sukuk aligns with **Malaysia**'s strategic objectives to strengthen its Islamic financial market and maintain its leadership in financial innovation within the Islamic finance sector. In its 2011 development plan, the Securities Commission **Malaysia** (SCM) identified the capital market as a key platform for fostering innovative solutions in environmental finance. Building on this vision, the SRI sukuk framework was introduced in 2014, which also encompasses Green Sukuk, to facilitate the growth of sustainable financing and investment within the capital market (SCM, 2014).[68]

66 Malaysian Sustainable Finance Initiative "SRI Sukuk and Bond Scheme" https://www.msfi.com.my/incentives-sri-sukuk-and-bond-grant-scheme/

67 Securities and Commodities Authority 2023 "Green bonds and Sukuk Issuances in UAE reach AED15 billion: SCA" https://www.sca.gov.ae/en/media-center/news/11/12/2023/green-bonds-and-sukuk-issuances-in-uae-reach-aed15-billion-sca.aspx

68 Suruhanjaya Sekuriti Securities Commission Malaysia 2014 "Sustainable and Responsible Investment Sukuk Framework An Overview" https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416

	SINGAPORE MAS'S SUSTAINABLE BOND GRANT SCHEME	MALAYSIA'S SECURITIES COMMISSION SRI SUKUK AND BOND SCHEME	HONG KONG HKMA'S GREEN AND SUSTAINABLE FINANCE GRANT SCHEME
DESCRIPTION	MAS' Sustainable Bond Grant Scheme (SBGS) offsets up to S$125,000 of expenses incurred for external reviews of eligible green, social, sustainability, sustainability linked as well as transition bonds and promotes the adoption of internationally recognised standards and taxonomies	The Scheme, administered by Capital Markets Malaysia (CMM), covers up to 90% of the costs incurred by issuers subject to maximum of RM300,000 per issuance on independent expert reviews of sustainable sukuk issuances under the SC's SRI Sukuk Framework or bonds issued in Malaysia under the ASEAN Green, Social and Sustainability Bond Standards and SRI-linked Sukuk	The Scheme provides subsidy for eligible bond issuers and loan borrowers to cover their expenses on bond issuance and external review services as follows: Track 1: Green Bond Issuance - 50% of eligible expenses up to HK$2.5 million per instrument Track 2: External Review - 100% of eligible expenses up to HK$800,000 per instrument
ELIGIBILITY CRITERIA	- The bonds issued are properly categorized as green bonds for the purposes of the Scheme; - The bonds must be issued in Singapore and listed on the Singaporean stock exchange (the SGX); - The issuer itself need not be a Singapore company; - The principal amount of the issue must be at least S$200m (or the equivalent in any other currency); - The tenor of the bonds must be at least three years, and, with limited exceptions, the bonds must be non-redeemable during such three year period; - The bonds must be a qualifying debt security under Singapore's Income Tax (Qualifying Debt Securities) Regulations (ITR); - The lead manager must be a Financial Sector Incentive (FSI) company in Singapore2; - More than half of the gross revenue earned for work undertaken in arranging the issuance of the bonds, must be attributable to a FSI3; and - An independent external review or rating, based on internationally recognized green bond standards, must be performed.	Green SRI Sukuk issuances made under the SC's SRI Sukuk Framework from July 2017 onwards.Social, sustainability or other SRI sukuk issuances made under the SC's SRI Sukuk Framework from 25 August 2020 onwards. Bonds issuances made under the ASEAN Sustainability-Linked Bonds Standards from 28 October 2022 onwards. SRI-linked sukuk issuances made under the SC's SRI-Linked Sukuk Framework from 8 August 2022 onwards	- Issued in Hong Kong - Listed in Hong Kong or lodged with CMU - Pre-issuance external review services by recognized external reviewer - As the administrator of the Scheme, the HKMA announced a guideline on the GSF Grant Scheme on 4 May 2021 and the Scheme has come into operation on 10 May 2021

Table 3

Green Bond and Sukuk Grant Schemes in Selected Countries

Beyond enhancing the **Malaysian** capital market and reinforcing its position as a hub for Islamic banking and finance innovation, Green Sukuk also supports **Malaysia**'s environmental sustainability goals, which have been emphasized in national development strategies, including the 10th and 11th **Malaysia** Plans and the New Economic Model (Economic Planning Unit, 2009, 2015).[69] In this context, the development of Green Sukuk represents the SCM's proactive response to the increasing concerns about the environmental and social impacts of business practices and the rising demand for stronger corporate governance and ethical standards (SCM, 2014).[70]

In the design and promotion of Green Sukuk, two key challenges were addressed. The first concerns the structural limitations of the green bond market, particularly regarding eligibility criteria, which can contribute to the risk of greenwashing. Any new structuring and issuance of Green Sukuk must ensure that these issues are mitigated to avoid perpetuating misleading practices and maintaining investor confidence.

The second challenge revolves around **Malaysia**'s ambition to lead in the development of innovative Islamic banking and financial products. Historically, **Malaysia** has successfully achieved this goal by leveraging the cooperation between state actors and the private sector. To secure a first-mover advantage in green Islamic finance, **Malaysia** must address gaps in local expertise and knowledge in green finance, either by fostering domestic expertise through training programs or by seeking external guidance and credibility.

To maintain its position as a global leader in Islamic finance, **Malaysia** also needed to expand the reach of Green Sukuk internationally. This requires that Green Sukuk be designed in a way that is both clear and acceptable to global markets, ensuring that it resonates with international investors.

To achieve these goals, the Securities Commission **Malaysia** (SCM) has identified three key processes: **Green Sukuk standard setting, multi-agency promotion, and growing international influence.**[71] These processes are central to positioning **Malaysia** as a leader in green Islamic finance.

Figure 11 illustrates the dynamic interaction between international and domestic actors who create the enabling environment for Green Sukuk expansion.

The **Sustainable and Responsible Investment (SRI)** sukuk framework, introduced by the Securities Commission **Malaysia** (SCM) in July 2014, was a pioneering set of standards that established the requirements for a financial product to simultaneously fulfill the criteria of social and environmental sustainability while adhering to Islamic principles.[72] This framework marked the beginning of Green Sukuk emergence in **Malaysia**. However, the first Green Sukuk issuance did not take place until 2017, following a strategic partnership with the World Bank to further promote the instrument (see Figure 11). The World Bank played a pivotal role in shaping the Green Sukuk landscape by aligning **Malaysia**'s **SRI sukuk guidelines** with international green bond standards, specifically the **Green Bond Principles (GBP)**. This collaboration allowed for Green Sukuk issuances even in the absence of national green bond guidelines. A comparison between the original and current SRI sukuk framework reveals a significant evolution. Initially, the eligible project categories under the SRI sukuk framework were designed to be compatible with the GBP. Over time, however, these categories have become more aligned, and now they mirror the GBP's indicative project categories for environmental sustainability, including natural resources, renewable energy, and energy efficiency projects. Additionally, the scope of eligible projects has expanded to include **social projects,** such as those related to **Islamic**

69 The Economic Planning Unit 2010 "Tenth Malaysia Plan 2011-2015" https://www.ekonomi.gov.my/sites/default/files/2021-09/RMK10.pdf The Economic Planning Unit 2015 "Eleventh Malaysia Plan 2016-2020: Anchoring growth on people" https://www.ekonomi.gov.my/sites/default/files/2021-05/Chapter%201.pdf

70 Suruhanjaya Sekuriti Securities Commission Malaysia 2014 "Sustainable and Responsible Investment Sukuk Framework An Overview" https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416

71 Liu, Felicia HM. Lai, Karen PY. 2021. "Ecologies of green finance: Green Sukuk and development of green Islamic finance in Malaysia". EPA: Economy and Space, col 53(8): 1896-1914.

72 Liu, Felicia HM. Lai, Karen PY. 2021.

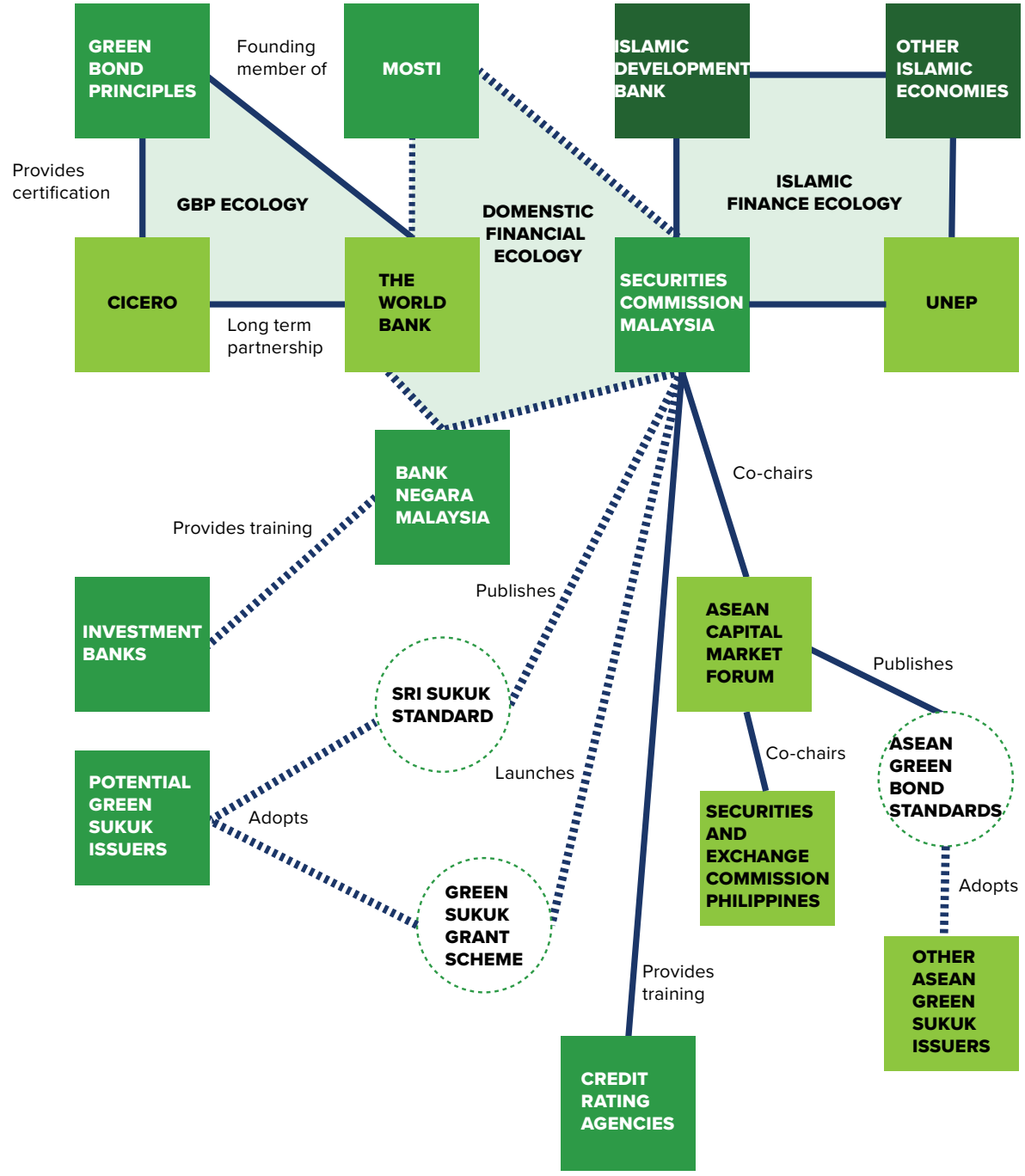


Figure 11

Malaysia's ecosystem for Green Sukuk*

* Felicia HM Liu and Karen PY Lai (2021), Ecologies of green finance: Green Sukuk and development of green Islamic finance in Malaysia, Environment and Planning A: Economy and Space, Volume 53, Issue 8.

charitable initiatives, thereby broadening the appeal and impact of Green Sukuk (ICMA, 2018; SCM, 2014, 2019a) (see Table 4).[73]

Moreover, the framework's requirements for **information disclosure** and **external review** have also evolved, reflecting the practices and recommendations of the **GBP** to ensure transparency, accountability, and credibility in Green Sukuk issuances (ICMA, 2018; SCM, 2014, 2019a).[74] Together with the Securities and Exchange Commission of the Philippines, SCM co-chaired the Association of Southeast Asian Nations (ASEAN) Capital Markets Forum in 2017 and took a leadership role in designing the ASEAN Green Bond Standards (see figure 11, connections on the bottom right). This new standard serves similar purposes as the domestic SRI sukuk framework of legitimizing the asset class and consensus-building on the scale of the regional trade bloc. SCM's efforts to internationalize Green Sukuk has seen early signs of fruition with the **Indonesian** government issuing the first sovereign Green Sukuk that complies with the framework in February 2019.[75] Efforts to promote green Islamic finance also extend beyond ASEAN. In September 2018, SCM entered into a partnership with UNDP and the Islamic Development Bank based in **Saudi Arabia** to promote green Islamic finance in Muslim-majority countries (see figure 11, connections labelled 'Islamic finance ecology' on the top right). Having the Islamic Development Bank in **Saudi Arabia** as one of the partners increases the theological legitimacy of Green Sukuk, and thus investors' trust in the issuer.

Figure 11 illustrates the diverse network of knowledge pathways and relationships that **Malaysia** has successfully leveraged in the development of Green Sukuk. This coalition includes contributions from the World Bank, as well as Sharia expertise from both **Malaysia** and the Middle East. **Malaysian** authorities have implemented a variety of formal policies and exerted informal pressure (outlined in blue) to foster the growth of Green Sukuk. These efforts, however, have been strategically augmented by tapping into broader knowledge ecologies, which have played a critical role in enhancing the legitimacy and expanding the influence of **Malaysia**'s Green Sukuk framework.

One key aspect of this strategy is **Malaysia**'s collaboration with the World Bank and its partners, who are instrumental proponents of the Green Bond Principles (GBP). This collaboration addresses **Malaysia**'s initial gap in specialized green finance knowledge, while at the same time aligning **Malaysia**'s Green Sukuk framework with international standards. By adopting the GBP model, **Malaysia** ensures that Green Sukuk remains attractive to global investors, as it utilizes a widely recognized and trusted framework.

Additionally, the engagement with Middle Eastern Sharia expertise (in figure 11) is crucial for building confidence among other Islamic financial markets regarding the legitimacy and viability of Green Sukuk. This connection enhances the broader appeal of Green Sukuk and helps attract interest from Islamic investors, increasing their willingness to participate in **Malaysia**'s unique approach to green Islamic finance. By drawing on both international green finance expertise and regional Sharia legitimacy, **Malaysia** strengthens the credibility and appeal of its Green Sukuk offerings, fostering the growth of a sustainable Islamic finance ecosystem.

73 ICMA 2018 "Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds" https://www.icmagroup.org/assets/documents/regulatory/green-bonds/green-bonds-principles-june-2018-270520.pdf

Suruhanjaya Sekuriti Securities Commission Malaysia 2014 "Sustainable and Responsible Investment Sukuk Framework An Overview" https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416
SCM 2019 "Sustainable and Responsible Investment Sukuk Framework An Overview" https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416

74 ICMA 2018

Suruhanjaya Sekuriti Securities Commission Malaysia 2014

SCM 2019

75 Liu, Felicia HM. Lai, Karen PY. 2021. "Ecologies of green finance: Green Sukuk and development of green Islamic finance in Malaysia". EPA: Economy and Space, col 53(8): 1896-1914.

	SRI SUKUK FRAMEWORK	GREEN BOND PRINCIPLES
CORE COMPONENTS	• Utilization of proceeds • Process for project evaluation and selection • Management of proceeds • Reporting	• Use of proceeds • Process for project evaluation and selection • Management of proceeds • Reporting
INDICATIVE CATEGORIES OF ELIGIBLE USE OF PROCEEDS	• Renewable energy • Energy efficiency • Pollution prevention • Management of living natural resources and land use • Eco-efficient / circular economy adapted products • Clean transportation • Sustainable water and wastewater management • Terrestrial / aquatic conservation • Climate change adaptation • Green building • Affordable housing • Employment generation • Access to essential service • Socioeconomic advancement and empowerment • Affordable basic infrastructure • Food security • Development of waqf properties or assets (towards a Muslim religious, educational or charitable use)	• Renewable energy • Energy efficiency • Pollution prevention and control • Environmentally sustainable management of living natural resources and land use • Terrestrial and aquatic biodiversity conservation • Clean transportation • Sustainable water and wastewater management • Climate change adaptation • Eco-efficient and /or circular economy adapted products • Production technologies and processes • Green buildings
EXTERNAL REVIEW	Optional	Optional

Table 4

SRI: Sustainable and Responsible Investment; GBP: Green Bond Principles*

* Felicia Hm Liu and Karen Py Lai, "Ecologies of Green Finance: Green Sukuk and Development of Green Islamic Finance in Malaysia," Environment and Planning a Economy and Space 53, no. 8 (August 19, 2021): 1896–1914, https://doi.org/10.1177/0308518x211038349.

EXISTING AND POTENTIAL OPPORTUNITIES FOR GREEN SUKUK: A REGIONAL GAP ANALYSIS

UN Photo/Ali Mustofa

3. Existing and Potential Opportunities for Green Sukuk: A Regional Gap Analysis

Objectives:

- Regional gap analysis of the Green Sukuk market, and identify existing geographical areas where growth is possible.
- Explore the potential of Green Sukuk investment opportunities and identify green developmental sectors with a specific emphasis on OIC (Organization of Islamic Cooperation) countries, highlighting the best strategies to enhance the bankability of these projects
- Present strategies for stakeholders, including financial institutions, investors and policy-makers, for catalyzing private sector engagement, expanding the scope of eligible projects, increasing market liquidity, and encouraging global cooperation through partnerships.

3.1 Regional Gap Analysis for Green Sukuk Market

This chapter conducts a gap analysis of Green Sukuk markets in several OIC countries, including Southeast Asia, the GCC, Arab countries, and African countries. The chapter also lists and discusses potential eligible projects in low-income and least-developed countries (LDCs) within OIC that are bankable and investable with the potential to profit from Green Sukuk funding. Green Sukuk offers a scalable funding option for projects involving waste management, energy efficiency, renewable energy, water management, sustainable transportation and waste management and circular economy in these countries.[76] The chapter also discusses the strategies to enhance the bankability of pipeline projects to attract Green Sukuk issuance. Green Sukuk serves as a financing vehicle for governments and private sector organizations in low-income and LDCs to raise funds for sustainable projects as countries work to fulfill their climate pledges under the Paris Agreement and pursue the SDGs.[77]

To provide a deep and contextual understanding of the market gaps and prospects in Green Sukuk financing, the study combines academic and market methodologies, integrating insights from surveys with subject matter experts, literature reviews, and empirical market conduct analysis.

The results show regional differences in the uptake of Green Sukuk, with some markets—like Sub-Saharan Africa—remaining in their infancy while others, like **Malaysia** and **Indonesia**, are showing signs of uptake. The findings also highlight the necessity of inter-governments, multilateral institutions and the private sector working together to create a Green Sukuk ecosystem that enhances the bankability of pipeline projects. This can be achieved through feasibility studies, de-risking

76 Aassouli, D., Asutay, M., Mohieldin, M., & Nwokike, T. C. (2018). Green Sukuk, energy poverty, and climate change: A roadmap for Sub-Saharan Africa (Policy Research Working Paper No. 8680). The World Bank. https://documents1.worldbank.org/curated/en/595861545145005026/pdf/WPS8680.pdf

77 Ministry of Finance, Republic of Indonesia. (2018). Indonesia's green bond & Green Sukuk initiative. United Nations Development Programme. https://climatepromise.undp.org/sites/default/files/research_report_document/undp-ndcsp-green-sukuk-share.pdf

of pipeline projects through incentives and guarantees, attracting investors with different risk appetites and cross-border cooperation.

3.1.1 Southeast Asia

In Southeast Asia, the primary OIC member countries involved in the Green Sukuk market are **Indonesia**, **Malaysia**, and **Brunei** Darussalam. These countries, particularly **Indonesia** and **Malaysia**, have shown leadership in Green Sukuk issuance, but there remain gaps and opportunities for further development in the sustainable finance landscape. As of 2023, the total outstanding value of Green Sukuk in Southeast Asia is estimated to be around USD 5-6 billion, with **Malaysia** and **Indonesia** being the most significant contributors.[78] This has put the region at the forefront of Green Sukuk development. **Malaysia** and **Indonesia** have spearheaded initiatives to integrate sustainable finance within Islamic financial instruments, notably through Green Sukuk. These initiatives support national climate goals, align with global sustainability frameworks, and attract both regional and international investors. Before discussing the market gaps in this market, it is important to highlight the regional strengths that have driven the Green Sukuk.[79]

I. Early Adoption of Green Sukuk

Malaysia and **Indonesia** have emerged as pioneers, with **Malaysia** issuing the world's first corporate Green Sukuk in 2017 and **Indonesia** launching the world's first sovereign Green Sukuk.[80] These countries have implemented regulatory frameworks and incentives to support Green Sukuk issuances, setting an example for other countries in the region and other Islamic finance markets.

II. Alignment with National Development Plans

Green Sukuk in Southeast Asia is closely aligned with national sustainability agendas, such as the Nationally Determined Contributions (NDCs) under the Paris Agreement and SDGs. Thus, efforts to address climate change have increasingly prioritized Islamic finance as a key avenue for mobilizing financial resources to achieve this objective.

III. Strong Investor Interest

Institutional investors, particularly from Islamic countries, are showing growing interest in Green Sukuk as part of their ESG strategies. This has served as a demand stimulant towards Green Sukuk.

IV. Green Sukuk Regulatory Frameworks and Incentives

Southeast Asia has established regulatory frameworks and incentives to support the issuance and growth of Green Sukuk. The SRI Green Sukuk Framework in **Malaysia** has provided some incentives to attract investors towards the Green Sukuk space. For instance, the **Malaysian** government has offered tax deductions on the costs associated with the issuance of SRI Sukuk, which has been extended until 2027. This tax exemption applies to both issuers and investors in Green Sukuk, encouraging more market participants to explore sustainable investment opportunities.[81]

Indonesia's Green Sukuk has enjoyed strong investor demand, with many issuances being oversubscribed. The oversubscription signals market confidence in the regulatory framework and the strong demand for sustainable finance

78 SC Malaysia(2024). Islamic Capital Market. Accessed on December 4, 2024 at https://www.sc.com.my/api/documentms/download.ashx?id=67e592e9-24df-4ea4-a842-f876d7bc17d7#:~:text=Corporate%20SRI%20sukuk%20issuances%20in,of%20total%20corporate%20sukuk%20outstanding.

Ministry of Finance(2023). Green Sukuk : Allocation and Impact Report. Accessed on December 4 2024 at https://api-djppr.kemenkeu.go.id/web/api/v1/media/18D7F060-7F13-41F5-9FE9-4B254B58D3E6

79 Azhgaliyeva, D. (2021). Green Islamic bonds. Asian Development Bank. https://www.adb.org/sites/default/files/institutional-document/691951/ado2021bn-green-islamic-bonds.pdf

80 United Nations Development Programme. (2020, November 11). Pioneering the Green Sukuk in Indonesia. https://www.undp.org/stories/pioneering-green-sukuk-Indonesia

81 Kim Quan Cho(2023). Malaysia Progress in Green Sukuk. Accessed on December 4, 2024 at https://www.phillipinvest.com.my/Malaysias-progress-in-green-sukuk/

instruments. While tax incentives are not as prominent as in **Malaysia**, the government's commitment to climate action and robust reporting frameworks has attracted both conventional and Islamic investors.[82]

Despite these advances, significant gaps remain in market development, regulatory frameworks, investor awareness, and cross-border issuance challenges.

V. Gaps in the Current Market

Despite these strides, several critical gaps hinder the further development and scaling of Green Sukuk in Southeast Asia, such as:

Limited Private Sector Participation: Most Green Sukuk issued within the Southeast jurisdiction are dominated by the government and this is particularly noted in the case of **Indonesia**. Recently, interest from corporates is building up as **Indonesia**'s largest Islamic bank, Bank Syariah **Indonesia** (BSI), successfully launched the country's first ESG-based Sukuk, the BSI Sustainability Sukuk, for IDR3 trillion (approximately US$184.2 million) in 2024. This is a significant development in the Green Sukuk market in the country as the dominance of the sovereign may restrict the Green Sukuk market's depth and diversity.

Narrow Project Scope: While **Indonesia** has primarily financed renewable energy and sustainable transport through Green Sukuk, other sectors like water management and sustainable agriculture are underfunded. Similarly, most Green Sukuk in **Malaysia** are issued to fund renewable energy projects, with less emphasis on other sectors such as water management or sustainable transport. There is a need to broaden the range of projects financed through Green Sukuk to attract diverse investors. Expanding the scope of eligible projects could attract broader investor interest.

Investor Base: Like **Indonesia**'s, **Malaysia**'s Green Sukuk market is heavily reliant on institutional investors. Efforts to attract retail investors and smaller institutions have been limited, thereby constraining market expansion.

Investor Awareness: Although institutional investors have been quick to respond, retail investors are less familiar with Green Sukuk, limiting domestic investment demand.

High Transaction Costs and Complex Issuance Processes: Issuing Green Sukuk can be a complex and costly process, especially for smaller issuers. Costs related to certification, compliance, and reporting requirements are often higher compared to conventional Sukuk. These high transaction costs deter smaller issuers, such as SMEs and municipalities, from entering the Green Sukuk market, limiting market depth.

Lack of Green Sukuk Issuance in Brunei: **Brunei** has yet to issue a Green Sukuk or establish a regulatory framework to support one. The absence of Green Sukuk issuances means that investors in **Brunei** may be less familiar with this instrument, potentially limiting early adoption.

3.1.2 GCC Countries

The GCC countries have shown a growing interest in sustainable finance, with Green Sukuk emerging as a key tool to support climate action and sustainable development projects in the region. However, despite some early successes, the Green Sukuk market is still in its infancy and faces several challenges.

There are few notable issuances to date within the GCC region. The **UAE** and **Saudi Arabia** have taken initial steps in this regard. In 2019, the Jeddah-based IsDB issued its first USD 1 billion Green Sukuk, aimed at financing climate-friendly projects across its member countries, including those in the GCC. While this issuance set a precedent in multilateral issuance of Green Sukuk, it was largely focused on international rather than domestic projects.

The **UAE**, specifically the Dubai Electricity and Water Authority (DEWA), issued the region's first sovereign-backed Green Sukuk in 2020 to fund a solar power project. This issuance has played a pioneering role in the Green Sukuk market emergence in the country. In 2023, further Green Sukuk issuance came Abu Dhabi Islamic Bank, Aldar propertie, Dubai Dp World and Majid Al Futtaim with issuance amount of US$500 million, US$500 million, US$1,500 million and US$500, respectively. These issuances are significant especially for the corporate sector where Aldar Properties and Majid Al Futtaim

82 Ministry of Finance(2023). Green Sukuk : Allocation and Impact Report. Accessed on December 4 2024 at https://api-djppr.kemenkeu.go.id/web/api/v1/media/18D7F060-7F13-41F5-9FE9-4B254B58D3E6

debut their Green Sukuk. Qatar followed suit through the issuance of a corporate Green Sukuk of US$500 million sustainable Sukuk by Qatar International Islamic Bank in 2024.[83]

The existing issuances in the GCC have focused on large-scale renewable energy projects, such as solar power and sustainable infrastructure, but there is limited diversification in the types of projects being financed. There is increasing interest from the corporate sector, which has set a brighter prospect for Green Sukuk in the region.

I. Gaps in the current Market

Regulatory Support: Regulatory frameworks for Green Sukuk in the GCC are still evolving. The **UAE** has taken steps toward establishing green finance standards, while **Saudi Arabia**'s Capital Market Authority (CMA) has yet to introduce specific regulations for Green Sukuk, which has slowed the pace of issuances. Despite the homogeneity of the GCC countries, there is no unified GCC-wide regulatory framework for Green Sukuk, which would have stimulated cross-border green investments. However, the recent creation of the GCC Green Finance Working Group could pave the way for more coordinated regulatory efforts.

Compared to **Malaysia**, the GCC governments have offered fewer tax incentives or subsidies to encourage Green Sukuk issuances. This lack of fiscal support has been a key gap in accelerating the adoption of Green Sukuk by private issuers.

Limited Issuer Participation: The Green Sukuk market in the GCC is currently dominated by public-sector issuers or quasi-sovereigns, with relative limited participation from the private sector except for Qatar and **UAE** where the private sector is developing strong interest.

Lack of Diversification: Most Green Sukuk issued so far have been used to finance renewable energy projects, particularly in the solar power sector. Other sectors like water management, waste-to-energy, and sustainable transportation are underrepresented.

Investor Awareness: Similar to Southeast Asia and other regions, awareness among retail investors is low in the GCC. The lack of education on sustainable finance and ESG investment opportunities limits the demand for Green Sukuk products, especially for retail Green Sukuk.

3.1.3 Middle East and North Africa (excluding GCC)

The development of Green Sukuk in Middle Eastern and North African countries outside the GCC has been slow. **Jordan** and **Lebanon** have made strides in exploring green finance, but they have not yet issued any Green Sukuk. For instance, in **Jordan**, there is a growing interest in renewable energy and sustainable infrastructure projects, but the Islamic finance sector has not capitalized on the potential for Green Sukuk. **Jordan** has yet to introduce specific policies for Green Sukuk. While the country has established a strategy for renewable energy and has strong ties with the IsDB, regulatory frameworks to encourage the issuance of Green Sukuk are absent.

Egypt has been proactive in supporting sustainable finance, launching its Sovereign Green Bond framework in 2020 to finance projects in areas like clean transport and renewable energy. However, specific regulatory support for Green Sukuk is lacking. There are no defined regulations to facilitate Green Sukuk issuance, even though the infrastructure for conventional sukuk exists.

Similarly, **Türkiye**, a key player in both the Islamic finance and renewable energy sectors, is yet to fully embrace Green Sukuk as a financing instrument for sustainable development. The private sector has shown leadership in the Green Sukuk market in **Türkiye**. For instance, KFH-Turkey successfully arranged a Tier 2 sustainability Sukuk issuance valued at USD 350 million in 2021. Recently, EkoVar, in collaboration with Turkiye Emlak Katılım Bank (Turkish Real Estate Participation Bank) and its wholly owned subsidiary, Emlak Varlık Kiralama A.Ş. (Emlak VKŞ), has issued a Green Sukuk valued at 50 million TRY, with a 6-month maturity period in September 2024. This demonstrates some uptake in the Green Sukuk from private sector.[84]

83 IFSB(2024). Islamic Financial Services Stability Report 2024. Accessed on December 4, 2024 at https://www.ifsb.org/press-releases/the-ifsb-issues-the-islamic-financial-services-industry-stability-report-2024/

84 GIFIIP(2024). UNDP ICPSD and GIFIIP Provide Technical Assistance to Türkiye's First Private Sector Social Sukuk Issuance. Accessed on December 4, 2024 at https://gifiip.org/undp-icpsd-and-gifiip-provide-technical-assistance-to-turkiyes-first-private-sector-social-sukuk-issuance/

Türkiye recently released the regulatory guidelines on green debt instruments, sustainable debt instruments, green lease certificates and sustainable lease certificates. These guidelines provide specificity for Green Sukuk. This regulatory milestone will remove the barrier on issuers pertaining to sustainable and green projects through Islamic finance channels in **Türkiye**. Although the country has made strides in green finance through conventional bonds, several gaps persist within the Green Sukuk ecosystem that have hindered the widespread issuance and development of Green Sukuk in the country. These gaps are in the areas of market uptake, government support, and private sector engagement. **Lebanon** and **Iraq** face economic and political instability, which have delayed progress in both Islamic finance and sustainability initiatives. In these countries, governments have not prioritized green finance, making it challenging for Green Sukuk to emerge as a viable financial tool.

Unlike Southeast Asian countries, where Green Sukuk issuers benefit from tax incentives and regulatory support, these Middle Eastern and North African counties have not introduced specific incentives to encourage the issuance of Green Sukuk. The absence of such incentives makes it less attractive for potential issuers to enter this market.

3.1.4 African Countries

Green Sukuk hold a significant potential to support the SDGs in sub-Saharan Africa (SSA), addressing key sustainability challenges while promoting Shariah-compliant financing. This potential lies in its capacity to finance projects across sectors such as renewable energy, agriculture, water management, sustainable transport, and waste management—all critical to achieving the SDGs and the NDCs of many African countries. Despite the current underdevelopment of the Green Sukuk market in the region, SSA presents a unique opportunity for growth given the continent's vast natural resources, underdeveloped infrastructure, and urgent need for climate adaptation and mitigation.

Several OIC member countries in SSA have significant potential for Green Sukuk issuance. These countries face substantial environmental challenges, ranging from clean energy access to sustainable water management and agriculture, which align well with the objectives of Green Sukuk.

I. Gaps in the Current Market

Despite the strong alignment between Green Sukuk and the SDGs and NDCs, several key gaps hinder market development in OIC African countries such as:

Limited Issuance and Market Activity: To date, there have been no Green Sukuk issuances in SSA countries. **Nigeria** has been exploring sustainable finance through green bonds, but Green Sukuk has not yet gained significant traction.

Lack of Private Sector Participation: Similar to other regions, the private sector in SSA has not been heavily involved in issuing Sukuk. Most sukuk issuances have been government-led, with little participation from corporations or financial institutions. This has affected the Green Sukuk attraction to the private sector in the region. This limits the uptake, scalability and diversity of the market, as Green Sukuk could attract more private sector investment in key areas such as renewable energy, agriculture, and water management.

Absence of Green Finance Regulations: Unlike Southeast Asia, where there is developed robust frameworks for Green Sukuk issuance, most African countries lack specific regulations governing Green Sukuk. Existing sukuk frameworks are in place in some countries but they do not integrate sustainability criteria, making it challenging for issuers to launch green financial products.

Inadequate Incentives: As a consequence of the lack of regulatory framework, there are currently no significant tax or financial incentives for Green Sukuk issuance in most African countries. Unlike markets such as **Malaysia** which provide tax deductions for green projects, African countries have yet to implement similar incentives to stimulate the Green Sukuk and sustainable finance market.

High Perceived Risk: Investors may perceive green projects, particularly those in emerging markets and low-income countries, as higher risk. This perception is exacerbated by political instability or economic volatility in some OIC countries in SSA, such as **Sudan**, Mali, Burkina Faso, Niger, making it difficult to attract investment for long-term green projects.

3.2 Identifying potential opportunities

In exploring the landscape of Green Sukuk development, our research identifies several key areas of opportunity that could catalyze market growth and foster sustainable finance innovation. To support and corroborate the results of the precedent regional gap analysis, a global survey on determinants of investor's appetite has been conducted in 2024 .

3.2.1 Determinants of Private Sector and Investor's Appetite

The survey aimed to identify the factors determining private sectors and investors' interest in Green Sukuk.

The demography of participants in this study is segregated by both working areas and their corresponding geographical locations. The survey's participant location reflects a wide geographical distribution, including regions such as the Middle East, Africa, Europe, Asia, and Oceania. It includes respondents from countries such as **Afghanistan, Australia, Bahrain, Central** African **Republic, Egypt, Ethiopia, France, Germany, Ghana, India, Indonesia, Italy, Ivory Coast, Kuwait, Malaysia, Morocco, Nigeria, Qatar, Saudi Arabia, Singapore, Switzerland, Tunisia, Türkiye, Uganda, UAE, United Kingdom, United States.**

This diverse representation underscores the global relevance of Green Sukuk as a tool for sustainable finance. The inclusion of participants from countries with strong Islamic finance roots, like **Malaysia**, **Saudi Arabia**, and the **UAE**, alongside emerging markets like **Ethiopia** and **Ghana**, signals growing awareness and interest in Green Sukuk across varying economic landscapes.

From a professional perspective, the participants span multiple domains, including Islamic finance practitioners, individuals from the Marketing and Sales team, Islamic finance experts, researchers, academics, policymakers (primarily regulators or supervisors), Shariah board members or Shariah experts, and investors. This diversity is critical as Green Sukuk ecosystem is not confined to financial stakeholders but draws interest from fields like academia, regulation, and Shariah compliance, essentializing the need for multidimensional parties' engagement.

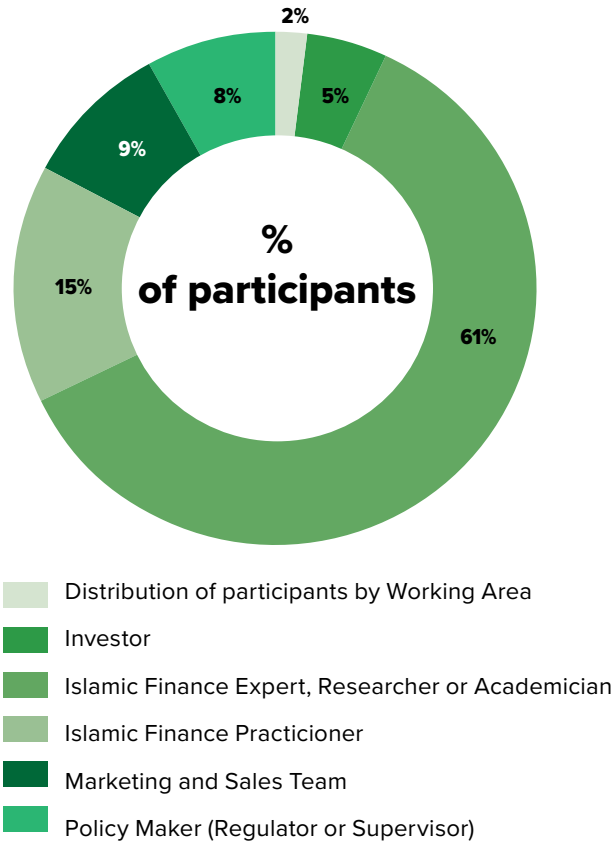


Figure 12

Percentage of distribution of participants by working area

Based on the analysis of the open-ended questions, several key themes and narratives emerge: The responses revealed significant regional differences in Green Sukuk development, with some regions having advanced frameworks while others lack basic Islamic finance infrastructure. Figure 16 highlights key challenges in structuring and issuing Green Sukuk. As mentioned in the first part of this report, a lack of standardization and market infrastructure, along with complex regulatory frameworks, significantly hinders the spread of Green Sukuk adoption.

For instance, one respondent from Central African Republic noted: "Since there are no Islamic finance institutions, regulations, or significant awareness in the Central African Republic or the broader CEMAC region, the government and capital markets have not taken specific measures to promote Green Sukuk." The responses indicate varying levels of government support across different regions. Some countries have established comprehensive frameworks while others

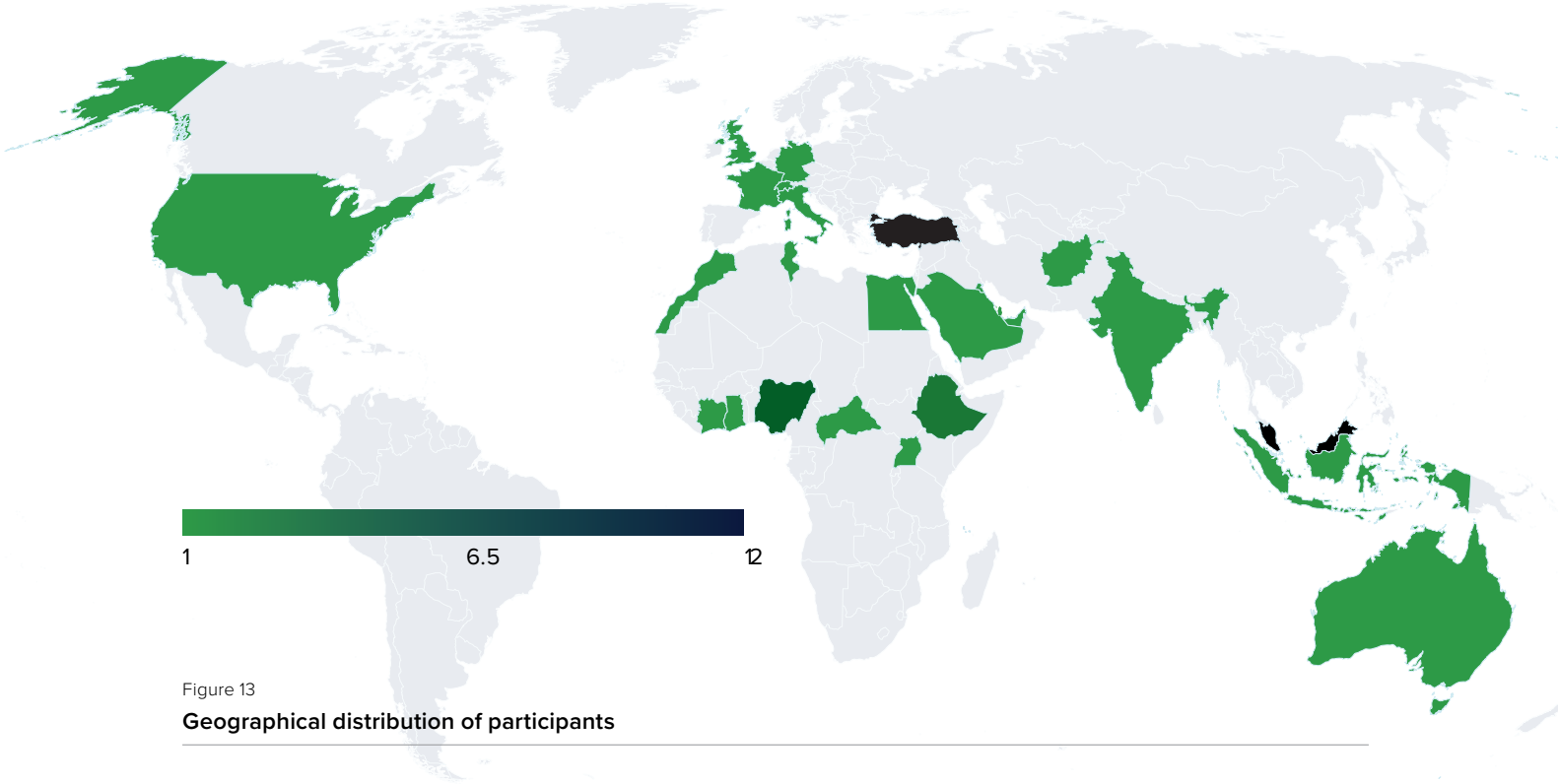


Figure 13

Geographical distribution of participants

lack basic Islamic finance infrastructure. A detailed response from **Türkiye** highlighted their progress: “The Capital Markets Board (CMB) has publicly announced the acceptance of the Green Debt Instrument, Sustainable Debt Instrument, Green Lease Certificate, and Sustainable Lease Certificate Guide.”

From another perspective, limited investor awareness further underscores the need for education and outreach. For issuers, high costs and complexities in certification and verification pose additional financial and procedural barriers. While not as frequently cited, compliance with Shariah and Sustainability Standards remains a critical hurdle, especially in ensuring that issuances align with both Islamic ethics and global sustainability criteria. These revelations from the survey validate some of the findings from our desktop reviews as presented in the previous sections in the Green Sukuk gap analysis.

With regards to the private sector’s interest, responses indicate that while interest and participation in Green Sukuk issuance in their

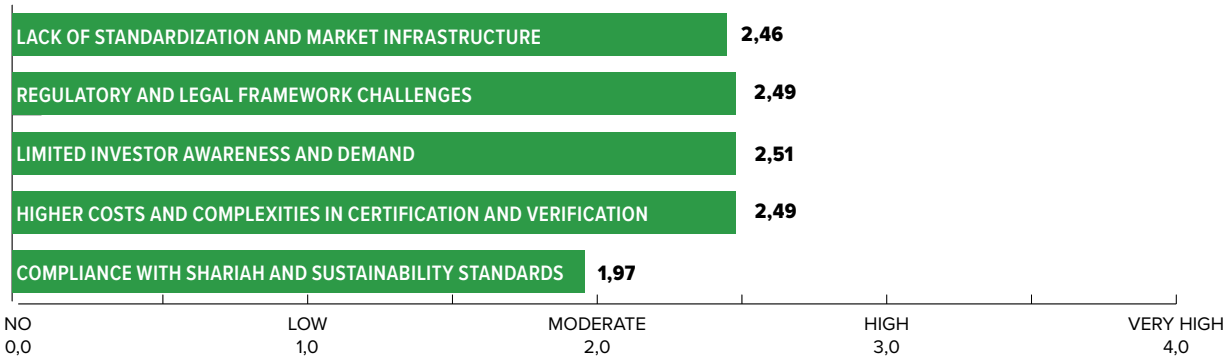


Figure 14

Main challenges in Green and thematic Sukuk issuance

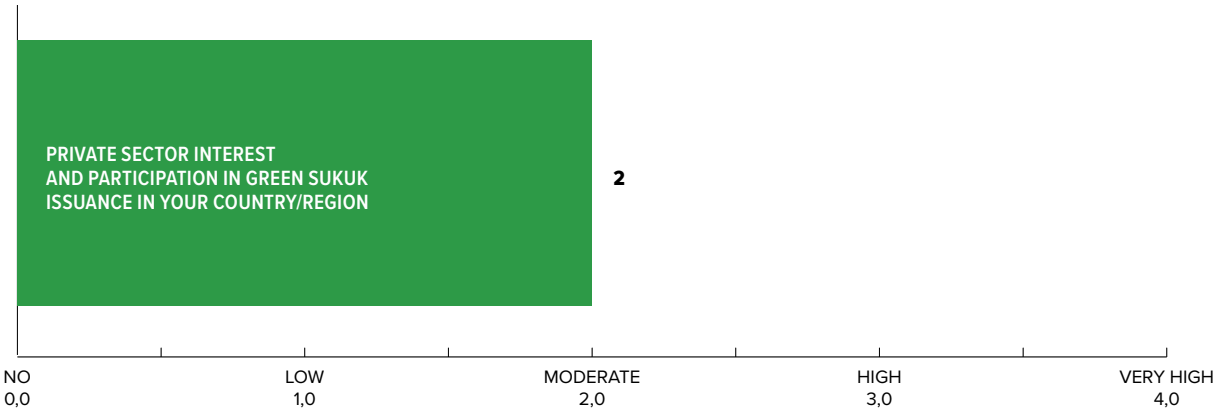


Figure 15

Private sector level of interest in Green Sukuk

respective countries is still moderate (see figure 15), many private sector institutions are adopting ESG criteria into their sukuk strategies, though implementation levels varied. One respondent emphasized: “When undertaking thematic Sukuk issuance, we rely on our Sustainable Finance Framework and conduct our issuances in accordance with the principles outlined in this document.” A strategic adoption was mentioned as “We are going beyond to Impact Investments which has a higher bar, incorporating ESG criteria into all financial strategies.”

However, high transaction costs and additional expenses related to green certification emerged as a common concern. Particularly noteworthy was this response from respondent in **Türkiye**: “The Capital Markets Board (CMB) offers a 50% discount on registration fees; however, this reduction remains insufficient. The savings generated through these discounts do not adequately offset the fixed third-party costs required for issuance, such as SPOs, verification, and impact reporting.”

Digging further about key factors that influence the investment and trading of green or thematic sukuk, respondents indicate that withholding tax often acts as a barrier for foreign investors, reducing the attractiveness of sukuk compared to other financial instruments. Also, favorable pricing and yields can position Green Sukuk as a preferred investment option, particularly for institutional investors seeking stable returns. From the regulatory aspect, central banks’ recognition of

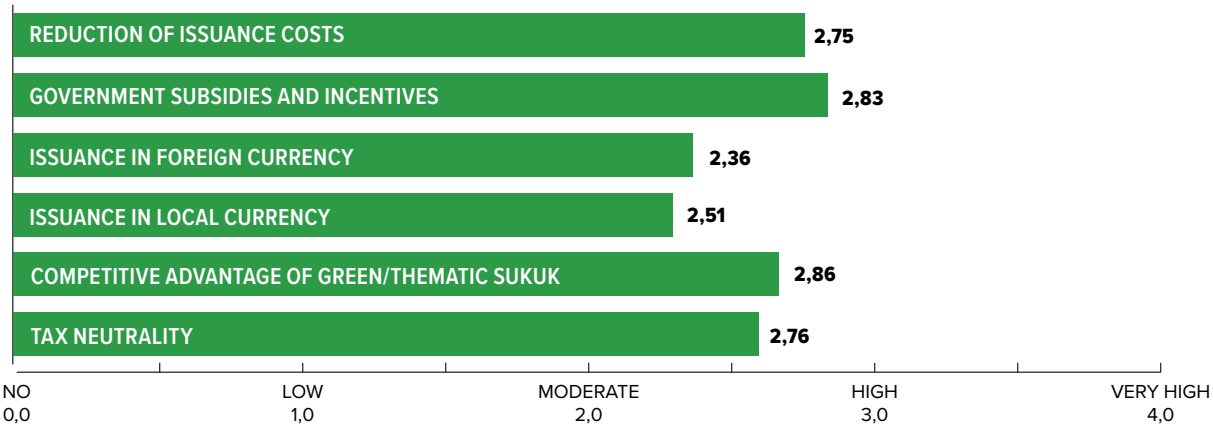


Figure 16

Incentives for Private sector participation in Green Sukuk issuance

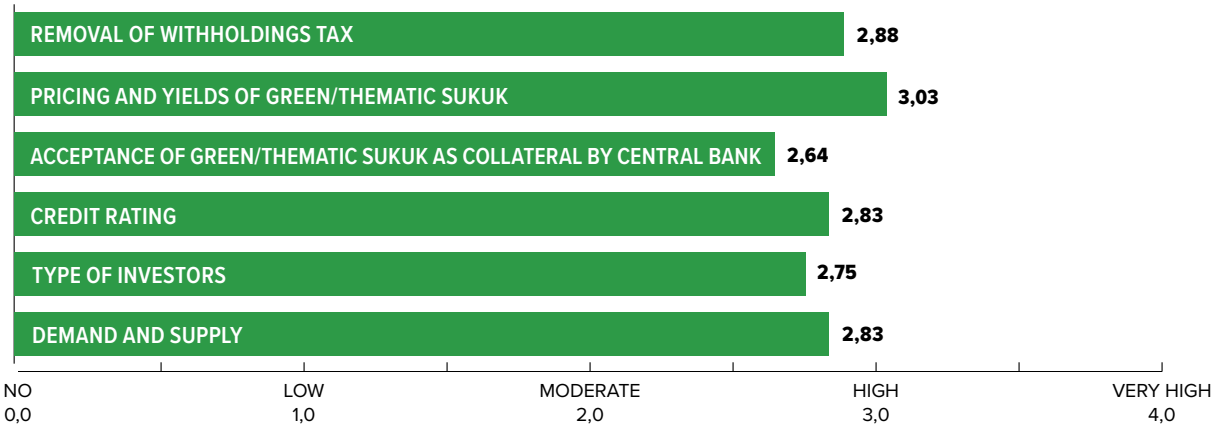


Figure 17

Incentives for Green and thematic Sukuk investment and trading

Green Sukuk as eligible collateral is considered as a significant boost for market demand enhancing the sukuk's credibility and usability for financial institutions as a secure and liquid asset, encouraging banks to hold Green Sukuk in their portfolios. Also, credit ratings seem to be pivotal in determining investor confidence, transparent and credible ratings help investors assess the financial stability and project viability of sukuk issuances.

On a positive note, while investors' appetite and marketing of Green Sukuk is described as moderate, rising awareness of ESG factors seemed to push some investors to seek instruments that not only deliver returns but also align with global sustainability goals like the UN SDGs. There is a broader shift in investor priorities toward sustainability and ethical finance. Green Sukuk sits at the intersection of these domains, appealing to investors committed to environmental and social impact. The alignment of Green Sukuk with Islamic principles of ethics and social responsibility adds significant appeal for faith-driven investors. This intrinsic value proposition creates a natural market for Green Sukuk among Islamic finance institutions and retail investors seeking Shariah-compliant, socially conscious investments.

Additionally, from their perspective, investors recognize that diversification adds resilience to portfolios, particularly in volatile market conditions. Green Sukuk offers exposure to sectors like renewable energy and infrastructure, often overlooked in conventional investments. Additionally, the perception of Green Sukuk as a vehicle for stable, long-term returns resonates strongly with investors. This appeal is amplified by their alignment with global sustainability megatrends and focus on long-

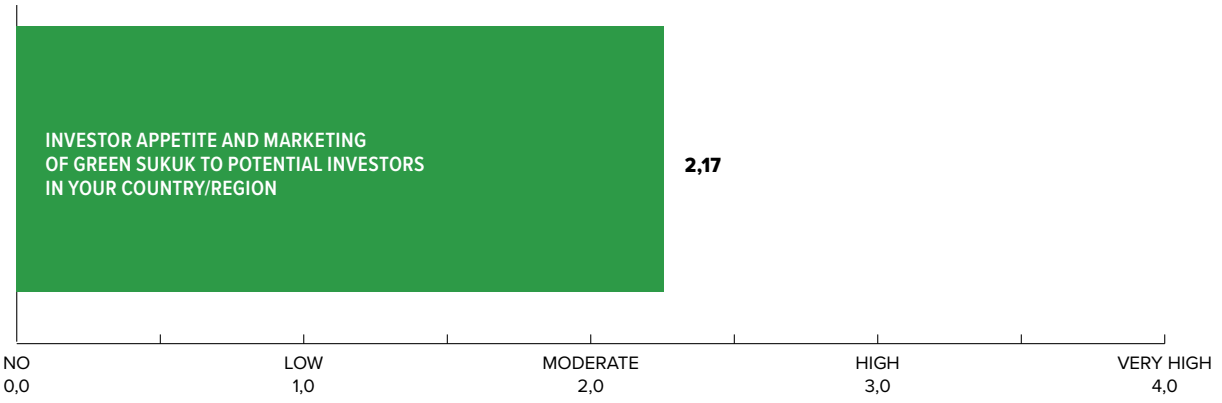


Figure 18

Level of Investor's appetite for Green Sukuk

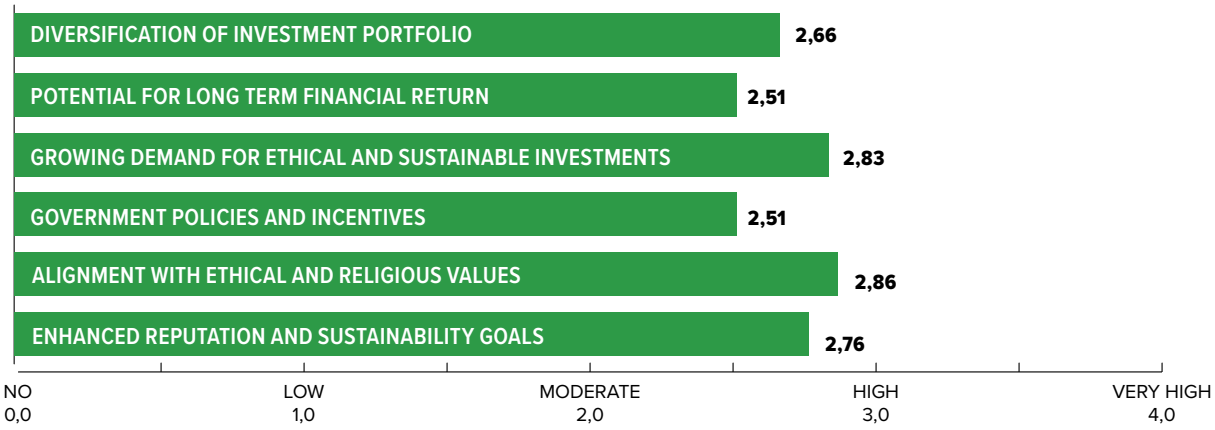


Figure 19

Key Drivers for investor's interest in Green Sukuk

term projects like solar farms and sustainable housing which attract patient capital, such as pension funds and insurance companies.

The survey highlights the interconnected roles of various stakeholders in the Green Sukuk ecosystem:

- **Policymakers and Regulators:** Their role in creating enabling environments through clear taxonomies, supportive regulations, and streamlined processes is critical.
- **Shariah Experts:** As gatekeepers of Islamic principles, their involvement ensures that Green Sukuk aligns with Maqasid al-Shariah while delivering ESG outcomes.
- **Investors:** Their awareness and demand shape market dynamics. Institutional investors, in particular, can drive growth by allocating capital to ESG-aligned sukuk.
- **Academics and Researchers**: By analyzing market trends and publishing case studies, they provide insights that inform best practices and innovation in Green Sukuk structures as well as essentializing the embeddedness of the global sustainability agenda in Islamic business ethics.

3.2.2 Green Investable Projects in low-income countries within the OIC

Given the diversity of OIC member states in terms of economic development, financial capacity, regulatory frameworks, and Islamic finance maturity, identifying bankable and investable projects to attract Green Sukuk issuance will have to be context-specific.

Based on a systematic review and synthesis of market and policy data, these projects can be grouped into thematic areas with SDGs and NDCs as the overarching guide: Renewable Energy, Energy Efficiency, Sustainable Transport, Water Management, Waste Management, and Circular Economy. The next sections provide an analysis of each theme and its potential across various regions within the OIC.

3.2.3 Renewable Energy Projects

The Middle East and North **Africa** (MENA) region has abundant renewable energy resources, particularly solar and wind, making it one of the most promising areas for renewable energy projects. According to the International Renewable Energy Agency (IRENA), the region has the potential to derive 26% of its total primary energy supply from renewables by 2050. In the power sector, the share of renewables could rise to 53%, significantly reducing carbon emissions—equivalent to a reduction of 1.1 gigatons of CO2 per year (Gt CO2/yr). Additionally, under the Transforming Energy Scenario, employment in the renewable energy sector could expand dramatically, reaching 2 million jobs by 2050, compared to 542,000 jobs in 2017.[85] This

85 IRENA(2023) Energy Transformation in the MENA. Accessed on December 4, 2024 at https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_GRO_R07_MENA.pdf

transition emphasizes the socio-economic benefits of renewable energy adoption, including emissions reduction and job creation across the region. Regionally, countries like **Morocco**, **Egypt**, and **Jordan** have already made significant strides in solar energy, and the regulatory frameworks for green finance are relatively advanced, particularly in **Egypt**.

Also, energy consumption efficiency has to improve for some OIC countries to meet their climate change goals. Figure 20 shows that energy intensity of many OIC countries in MENA region are above the world average and when this is juxtaposed with the renewable energy penetration within these countries, it is evident that there is a need to decarbonize. For instance, figure 23 highlights that most of the countries in the MENA region are trailing behind the global renewable energy penetration of 20% as at 2021.

Large-scale solar parks such as **Morocco**'s Noor Ouarzazate Solar Complex and **Egypt**'s Benban Solar Park are prime examples of investable projects that could be funded through Green Sukuk. These projects align with the countries' commitments to renewable energy targets and have attracted both domestic and international investment. At the capital supply side, **Egypt** and **Morocco** have moderately developed Islamic finance sectors, but there is still room for greater integration of Islamic finance into green projects. Green Sukuk could become a more prominent instrument in for mobilizing capital to fund these renewable energy initiatives if proper frameworks are developed. Also, investments in the renewable energy sector have gained traction over the years and it is now cheaper to add new renewable energy projects than before. The levelized cost of energy for renewable energy has seen a dramatic decline in 2023, as it reduced from 0.45USD/kWh in 2010 to 0.044 USD/kWh in 2023 for solar photovoltaic (see figure 24). Similar trends are observed with onshore and offshore wind, geothermal, biomass and concentrated solar. This reduction in cost of generating renewable energy has seen capacity additions of renewable increase by 73% globally with the Middle East achieving 84% of capacity additions of solar photovoltaic in 2023.[86]

Energy access in Africa remains critically low, with 60% of the population lacking reliable energy. Without swift intervention, an additional 45 million people could be affected by this deficit by 2030. Although the continent receives an average surface solar irradiance of 260 W/m^2

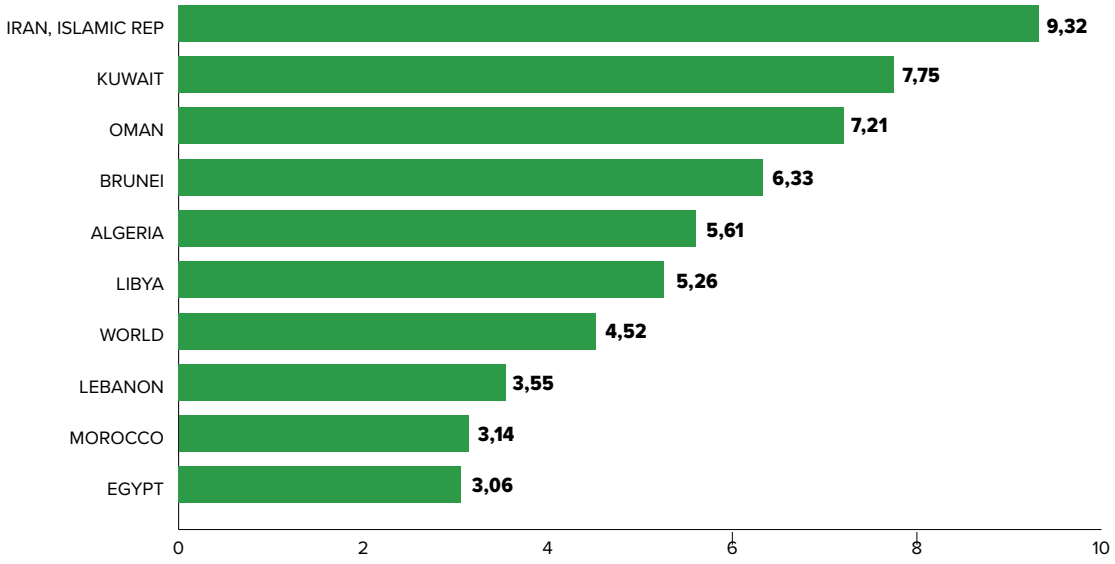


Figure 20

Energy Intensity of the MENA region countries, 2021

86 IRENA(2024). Renewable Power Generation Costs in 2023. Accessed on December 4, 2024

TECHNOLOGY	Africa	Asia	Eurasia	Middle East	Global
SOLAR PHOTOVOLTAIC	31%	73%	68%	84%	73%
ONSHORE WIND	34%	23%	17%	6%	22%
OFFSHORE WIND	0%	2%	0%	0%	2%
HYDROPOWER	34%	1%	11%	3%	1%
BIOENERGY	0%	1%	4%	0%	1%
CONCENTRATED SOLAR POWER	0%	0%	0%	6%	0%
GEOTHERMAL	1%	0%	0%	0%	0%
OCEAN/TIDAL/WAVE	0%	0%	0%	0%	0%

Table 5

Share of renewable energy capacity additions by technology in 2023 on a regional level and trading*

IRENA, 2024

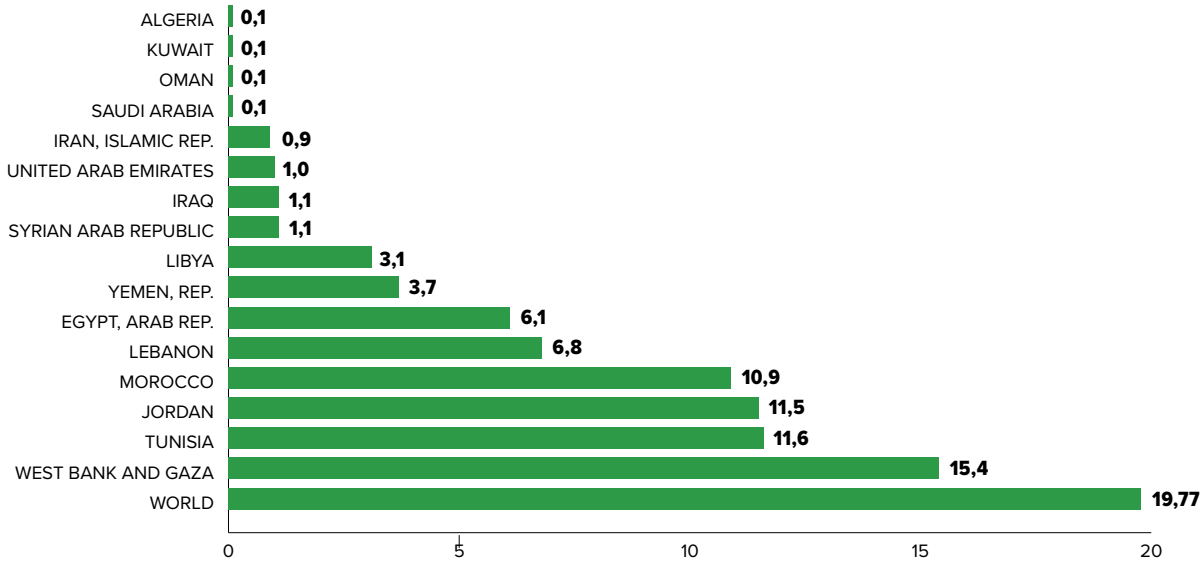


Figure 21

Renewable Energy Use in the Mena Region, 2021

annually, Africa accounts for only 0.8% of the world's installed solar capacity.[87] Figure 23 shows that in 2022, some OIC member countries in Africa have less than 20% electricity access with many of the countries experiencing less than 60%. The need for investment for renewable energy is essentialized when the gap in electricity access is juxtaposed with the low level of access to clean energy and technology for cooking in Africa (See figure 26). Addressing the need for sustainable and reliable energy across Africa is essential for achieving significant progress toward the SDGs and improving the quality of life for millions.

In 2013, the African Development Bank (AfDB) introduced a green bond program aimed at attracting international impact investors to support climate solutions across Africa.

As part of this initiative, the AfDB facilitated **Nigeria**'s first sovereign Green Bond issuance in December 2017, making **Nigeria** the

87 [1] UNDP Regional Bureau for Africa, 2018. Transforming lives through renewable energy access in Africa. https://www.undp.org/content/dam/rba/docs/Issue%20Briefs/Africa_Renewable_Energy_v8_web.pdf

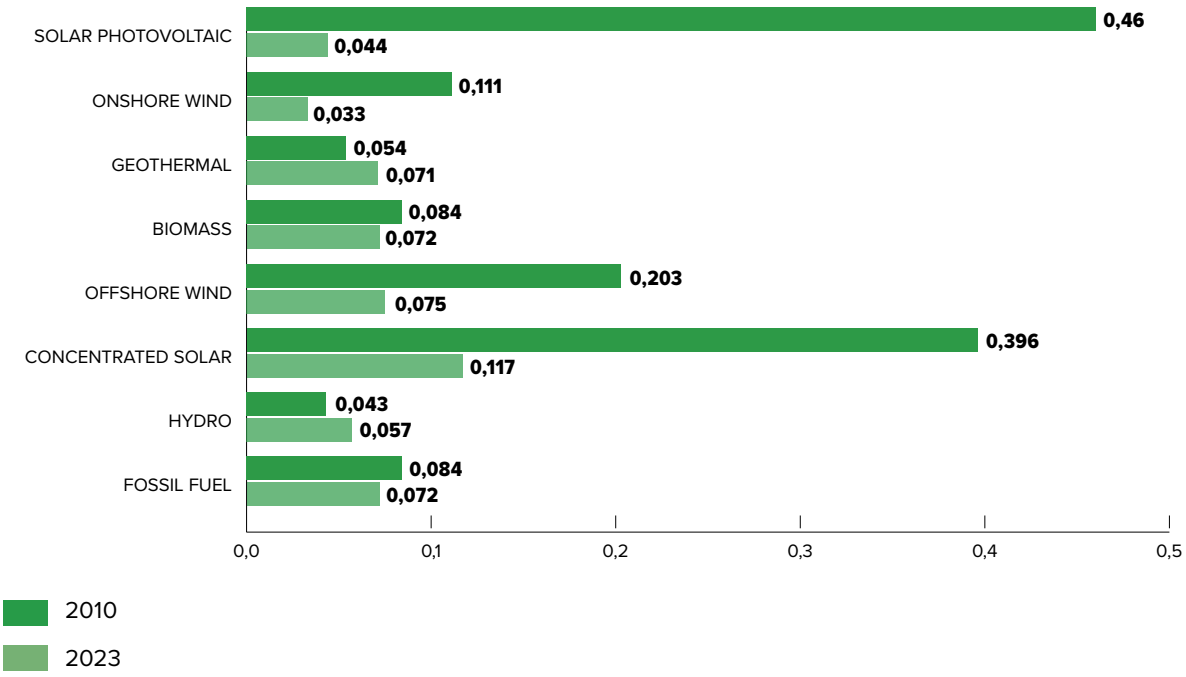


Figure 22

Levelized Cost of Renewable Energy, 2010 - 2023*

*IRENA, 2024

first African nation and the fourth globally to issue such a bond.[88] In countries like **Nigeria**, **Sudan**, and **Senegal**, renewable energy holds immense potential, particularly in addressing energy poverty and rural electrification through solar energy. However, financial endowment and regulatory support for green finance remain relatively weak.

With the availability of forward-looking renewable energy policies such as feed-in tariffs in SSA, private investment into the renewable energy sector can be attractive. For instance, in **Nigeria**, under the renewable energy regulation, electricity distribution companies will be required to obtain a minimum of 50% of their total energy supply from renewable sources.

Nigeria has shown leadership in Islamic finance, particularly with the issuance of sovereign sukuk. Green Sukuk could become a vital financing tool for **Nigeria**'s renewable energy goals, especially with the country's regulatory support for Islamic finance. Off-grid solar energy projects for rural electrification, such as those being piloted in **Nigeria**, could be supported by Green Sukuk, particularly in regions where access to electricity is low. Additionally, wind energy potential in Mauritania and Djibouti could be further explored.

Southeast Asia, particularly **Indonesia** and **Malaysia**, is a hotspot for renewable energy development, especially in geothermal and hydropower projects. **Indonesia**'s geothermal energy projects and **Malaysia**'s solar power initiatives are highly bankable. With strong regulatory support for Islamic finance and sustainability, these projects are ideal candidates for Green Sukuk financing.

Both **Indonesia** and **Malaysia** are global leaders in Islamic finance, with established regulatory frameworks for Green Sukuk, making renewable energy projects in these countries highly investable.

In the GCC, countries are actively working to diversify their economies away from oil dependency and towards sustainable development. Renewable energy (RE) capacity represents about 0.6% of the total electricity capacity in the region with **UAE** having the biggest share of renewable energy capacity (68%), followed by **Saudi Arabia** (16%) and

88 Debt Management Office(2017). Green Bond. Accessed on December 4, 2024 at https://www.dmo.gov.ng/fgn-bonds/green-bond

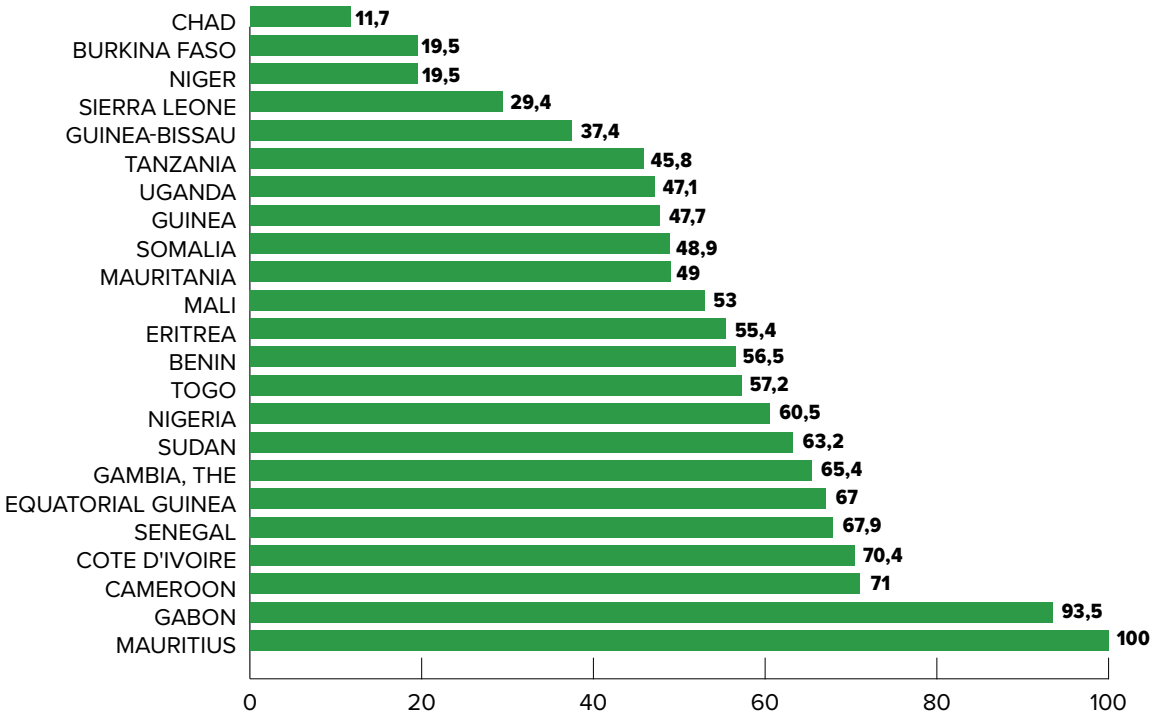


Figure 23

Access to electricity in OIC countries in Africa, 2022*

Source: World Bank, 2024

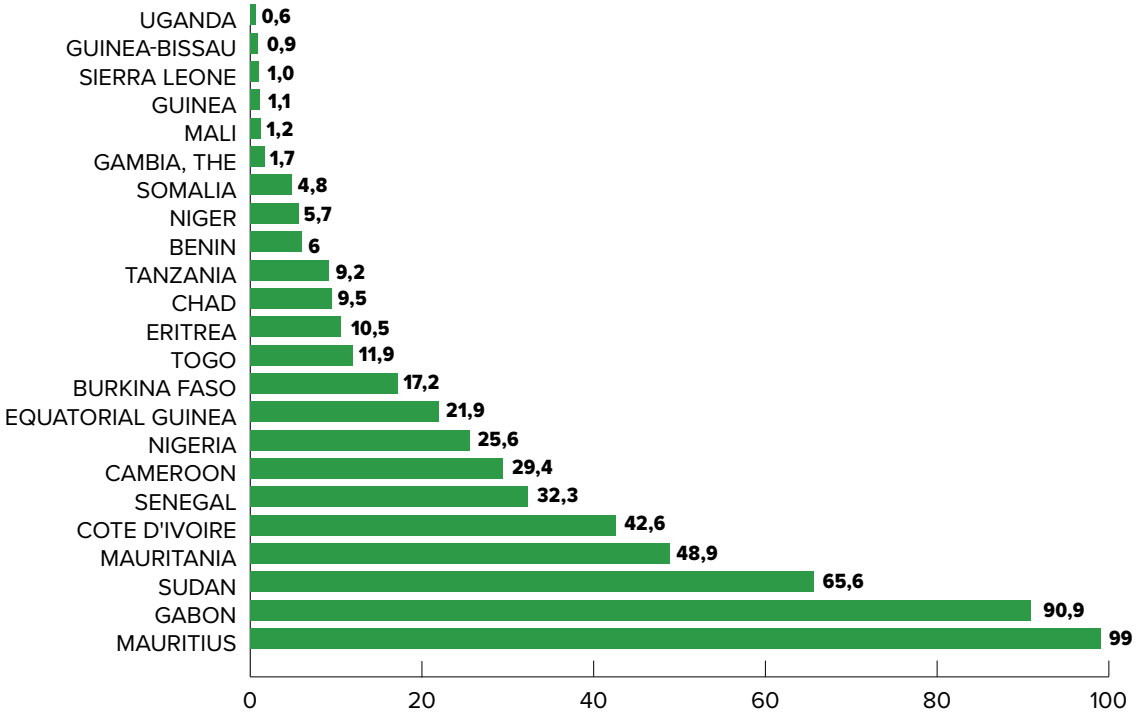


Figure 24

Access to clean fuel and technologies for cooking in OIC countries in Africa, 2022*

Source: World Bank, 2024

Kuwait (9.11%). The United Arab Emirates has set a target to achieve 25% of its installed capacity from renewable sources by 2025 and 45% of its total energy consumption by 2050. Similarly, Dubai aims to produce 30% of its electricity from renewables by 2030, increasing to 70% by 2050.

Saudi Arabia government's goal is to generate 50% of energy from renewables by 2030. Government-led projects like the Neom Solar Park in **Saudi Arabia** are pivotal, but the private sector must engage in scaling these initiatives.

In Qatar, a key objective of Qatar National Vision 2030 is to achieve 20% of its energy from non-gas sources by 2030, primarily through investments in PV solar energy. As part of this initiative, various sustainable energy projects are being developed, including an 800MW PV solar plant operating under the build, own, operate, and transfer (BOOT) model for a 25-year period. Additionally, Qatar Energy has announced two new solar energy projects in Mesaieed and Ras Laffan. Once completed, these projects are expected to double the country's renewable energy capacity, generating 875 megawatts of clean electricity. Companies could partner in the construction of renewable energy infrastructure and benefit from Green Sukuk issuances as a financing vehicle.

While governments in the region have taken leading roles in driving green initiatives, private sector participation is lacking but crucial for scaling up green finance and fostering long-term economic diversification.

3.2.4 Energy Efficiency Projects

The average energy efficiency as measured by energy intensity is lower for many OIC countries compared to the global average. According to data from the World Bank, average energy intensity in OIC member countries in 2021 stood at 5.19 whereas global average stood at 4.5. In the MENA region, energy efficiency is critical for countries like **Jordan**, **Lebanon**, and **Egypt**, where reducing energy consumption in the industrial and residential sectors is a priority. Retrofitting public and commercial buildings for energy efficiency, energy storage, district heating, smart grids, uptake of efficient appliances and products present opportunities for Green Sukuk financing. Energy-efficient infrastructure for industries could also attract investment. However, the green finance framework for energy efficiency is not as developed as that for renewable energy.

Although Islamic finance is moderately developed in the region, governments and private issuers need to push for Greener Sukuk instruments targeting energy efficiency.

In SSA, there is growing demand for energy efficiency in the construction and manufacturing sectors in countries like **Senegal** and **Nigeria**, particularly given the high energy costs and reliance on inefficient technologies. For instance, energy audit studies reveal that up to 25% of industrial energy can be conserved through basic housekeeping practices.[89] Additionally, energy generation can be enhanced by minimizing the current 30% to 40% losses in transmission and distribution systems.

Projects focusing on the implementation of energy-efficient appliances, industrial machinery, and retrofitting public buildings with energy-efficient systems could attract Green Sukuk financing. These projects have the potential to create substantial cost savings and reduce carbon emissions.

While Islamic finance is still emerging in SSA, there is potential to expand the use of Green Sukuk for energy efficiency as governments begin to embrace sustainable finance frameworks.

3.2.5 Sustainable Transport Projects

In the OIC countries, the transportation sector constitutes the second largest contributor to carbon emissions according to a report published by SESRIC (2023).[90] This means that decarbonizing the sector will lead to achieving some of the SDGs. Most of the OIC countries have potential in greening the transportation system. Green Sukuk could finance the expansion of electric vehicle infrastructure, public transit systems, and railways.

Specifically, **Morocco**'s Al Boraq high-speed rail project, linking major cities, and Cairo's metro

89 Ministry of Power (2015). National Renewable Energy and Energy Efficiency Policy. Accessed on December 4, 2024 at https://www.power.gov.ng/download/NREEE%20POLICY%202015-%20FEC%20APPROVED%20COPY.pdf

90 SESRIC (2023) OIC Environment Report 2023: Resilient Recovery for a Sustainable Environment. Accessed on December 4, 2024 at https://www.sesric.org/publications-oic-environment-report.php

expansion could be funded through Green Sukuk, both of which align with sustainable transport goals. Green Sukuk could be a new avenue for financing large-scale infrastructure projects such as electric trains and buses, that contribute to SDG 9 (Industry, Innovation, and Infrastructure) in many OIC countries.

Indonesia and **Malaysia** are investing heavily in sustainable transport solutions, particularly in electric public transport. Projects like **Malaysia**'s Mass Rapid Transit (MRT) system[91] and **Indonesia**'s expansion of electric buses[92] are potential investable pipeline projects for Green Sukuk financing, offering returns on investment while promoting sustainable urban mobility.

Qatar is heavily investing in sustainable infrastructure as part of its National Vision 2030,[93] particularly in the transportation sector. However, the country still relies on public investment. Private companies could invest in electric vehicle infrastructure, charging stations, and smart transport systems. The recently launched Green Sukuk and Sustainable Bonds framework provides a guide on unlocking private sector capital in Qatar. This development can provide a low-cost financing option for private firms entering this space.

3.2.6 Water Management Projects

Many OIC member countries face issues with sustainable water access. Water stress is intensifying as rising population and changing consumption patterns drive higher demand. Simultaneously, climate change is expected to further alter water availability in the coming years. By 2040, most OIC regions are projected to experience a 1.4-fold increase in water stress levels.[94] Regions already facing water scarcity are likely to see further deterioration, while others may begin to encounter water stress for the first time. To address these challenges, OIC countries will need to enhance water-use efficiency through strategic management and implement measures to reduce consumption.

Green Sukuk could finance projects such as water desalination plants in countries in the MENA region and the GCC where desalination contributes to water supply. Also, urban and rural water supply systems in SSA would not only address water scarcity but also improve public health and agriculture.

The potential for Green Sukuk in financing water management projects is strong, particularly with international support from organizations like the IsDB working in tandem with other multilateral development organizations and governments within the OIC.

The GCC region is one of the highest water-stressed regions in the world.[95] Figure 25 shows that Qatar consumes 431% of its freshwater available and similar trend is observed in other GCC countries. For example, Kuwait has a limited reserve of fresh groundwater with no surface source of useable water. Therefore, the country depends on plants for the majority of its freshwater needs, which leads to an increased demand for fresh water. The projections of freshwater demand, carried out by Burney et al. have indicated that by 2025, the freshwater demand could be anywhere in the range of 722 Mm3/y (2 Mm3/d) to 3036 Mm3/y (8.3 Mm3/d).

The potential for Green Sukuk in financing water management projects is strong, particularly with international support from organizations like the IsDB working in tandem with other multilateral development organizations and governments within the OIC.

In the MENA region, large investments are needed to augment the desalination capacity of the countries and support groundwater extraction projects. The private sector can play a larger role in renewable-energy powered desalination and water conservation projects, which are critical for ensuring sustainable water supply.

Through public-private partnerships (PPP), private firms and sovereigns can issue Green Sukuk to fund water infrastructure projects, offering an opportunity for diversified, and

91 Seah, E. H., & Ong, S. (2022, March 15). MoF to raise up to RM50b to fund MRT3. The Edge Malaysia. https://theedgeMalaysia.com/article/mof-raise-rm50b-fund-mrt-line-3

92 United Nations in Indonesia. (2023, December 15). Switching over: Transjakarta to electrify bus fleet, with support from UNEP. https://Indonesia.un.org/en/255945-switching-over-transjakarta-electrify-bus-fleet-support-unep

93 Al-Naimi, H. R. (2024, February 6). Qatar's third national development strategy: The road ahead. Invest Qatar. https://www.invest.qa/en/media-and-events/news-and-articles/qatars-third-national-development-strategy-the-road-ahead

94 SESRIC (2021). OIC Environment Report 2021. Accessed December 4 2024 at https://www.sesric.org/publications-detail.php?id=547

95 ESCWA (2017). Climate Change and Disaster Risk Reduction in the Arab Region. Accessed December 1, 2024 at https://www.unescwa.org/sites/default/files/event/materials/escwa-water-development-report-7-english.pdf

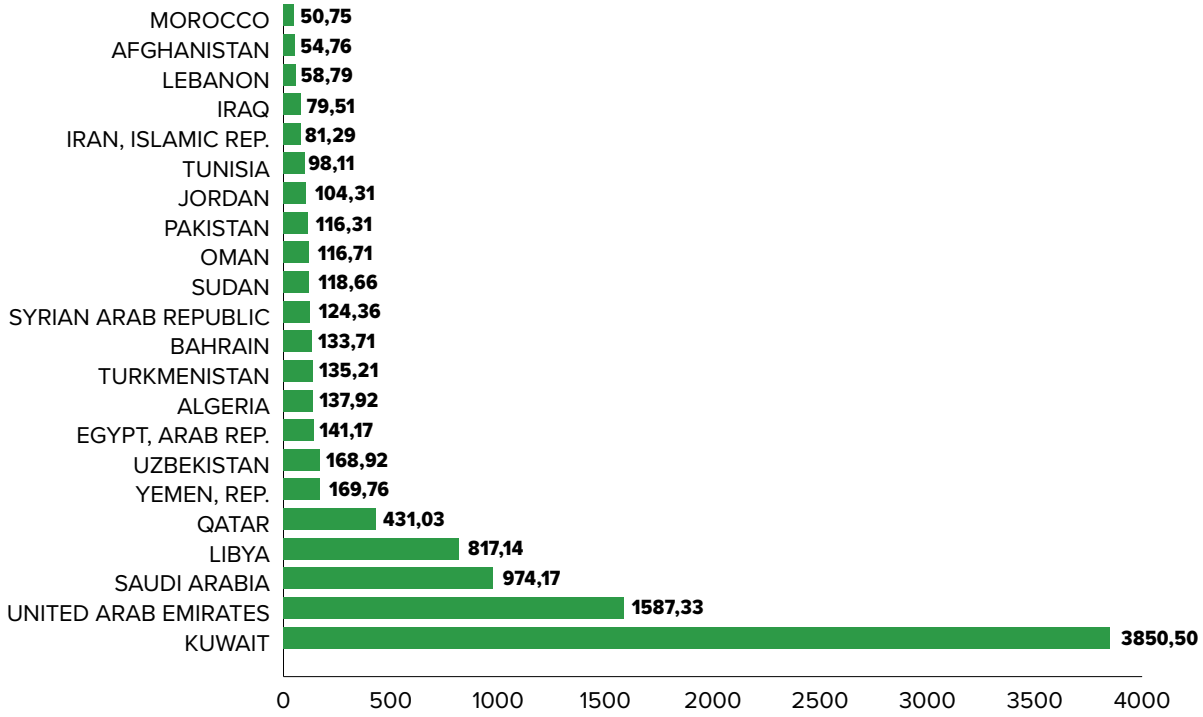


Figure 25

Water stress in some OIC member countries

non-government financing. Desalination plants and water recycling systems are investable projects that could be financed through Green Sukuk, which can help the region achieve water sustainability.

3.2.7 Waste Management and Circular Economy

Waste management and circular economy projects are gaining traction in some OIC countries. Circularity projects are viewed as avenues to improve on municipal waste recovery rate in many countries. In the OIC countries, waste recovery rates are among the lowest in the world (see figure 26). Some countries within the OIC have developed a policy framework to tackle waste management and circularity. Notably, the **UAE** Circular Economy Policy 2021-2031 aims to adopt consumption and production methods ensuring the quality of life for current and future generations, enhancing resource efficiency, and reducing waste. **Malaysia** has also developed circular economy policy, at the same time, Qatar, **Egypt** and **Morocco** are developing frameworks for managing urban waste, recycling, and reducing landfill waste. Waste-to-energy projects, such as those planned in **Egypt**, and recycling initiatives in **Morocco**, could be prime targets for Green Sukuk financing, contributing to SDG 12 (Responsible Consumption and Production). Waste management and circular economy projects are gaining traction in countries like **Egypt** and **Morocco**. These countries are developing frameworks for managing urban waste, recycling, and reducing landfill waste. waste-to-energy projects, such as those planned in **Egypt**, and recycling initiatives in **Morocco**, could be prime targets for Green Sukuk financing, contributing to SDG 12 (Responsible Consumption and Production).

Further, **Nigeria**'s Circular Economy Roadmap aims to transition the country to a circular economy by 2050, focusing on sectors like agriculture, waste management, energy, construction, water, mining, and industrial processing, with specific actions to boost sustainability and economic growth. By leveraging Green Sukuk, **Nigeria** and other OIC member countries can attract sustainable investment to finance its circular economy initiatives, driving environmental sustainability and economic resilience in line with Islamic finance principles.

Indonesia and **Malaysia** have strong recycling and waste management initiatives, making them suitable for circular economy projects. **Malaysia** recently introduced its Circular

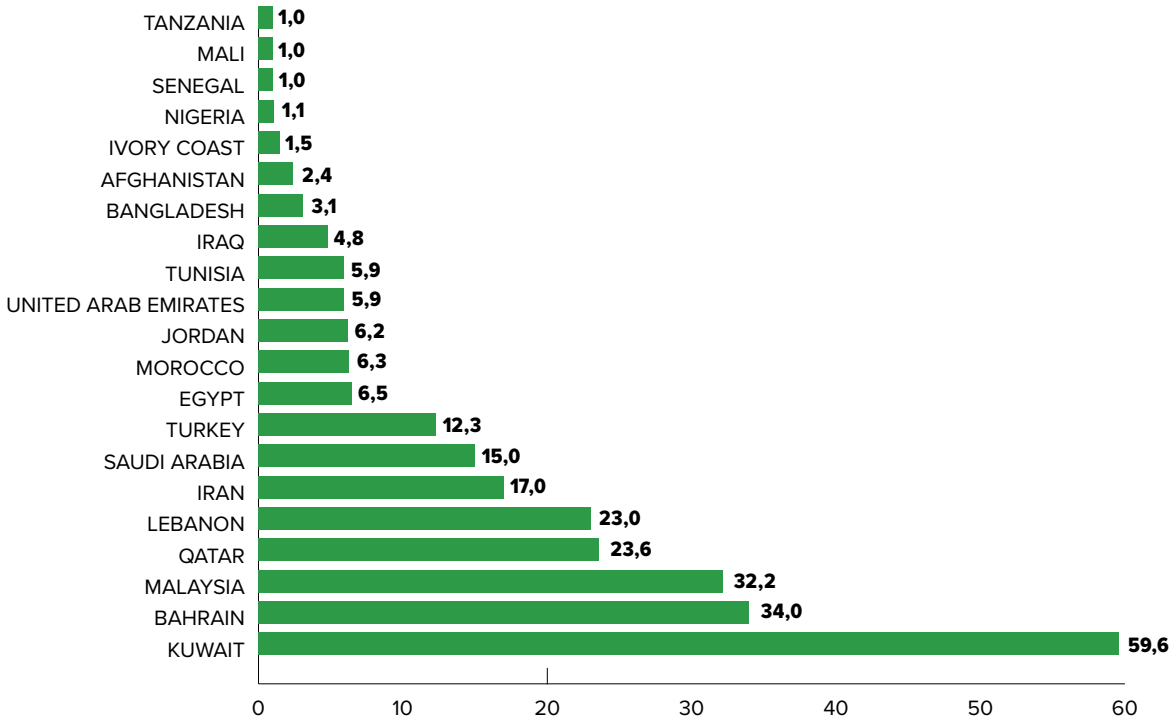


Figure 26

Waste recovery rates in OIC countries

Economy Blueprint for Solid Waste (2025-2035), aimed at enhancing sustainable waste management practices. The blueprint includes significant initiatives, such as establishing legislation for the Extended Producer Responsibility (EPR) scheme and introducing a zero-waste-to-landfill certification for manufacturers (The Ministry of Housing and Local Government, 2024). **Indonesia**'s waste-to-energy projects and **Malaysia**'s plastic recycling initiatives offer avenue for use of Green Sukuk financing, providing sustainable solutions to waste management challenges.

3.3 Strategies for enhancing the bankability of pipeline projects

Using Green Sukuk as a financing vehicle is not an impediment to the deployment of pipeline projects identified above, but the limited availability of bankable projects is. Even in challenging environments, when bankable projects are tendered, investors actively respond to these opportunities and mobilize private investment. Enhancing the bankability of the projects across the identified sectors remain essential in realizing the attraction of Green Sukuk into these areas.

Increasing the bankability of targeted projects requires coordinated interventions by governments to address specific barriers and risks within each country in order to lead the transition in the identified areas. To achieve this, governments, supported by Multilateral Development Banks (MDBs) and other development partners, can address country- and project-specific barriers to lower the perceived risk for private investors as presented in figure 27. This will help in creating an environment that fosters the development of a pipeline of projects across these sectors. Also, there should be mechanisms to blend different capital flavors in terms of return expectations to improve commercial viability.

With the support of multilateral development institutions, and the private sector, governments could prioritize the following interventions to establish an enabling environment that unlocks a pipeline of bankable projects within renewable energy, energy efficiency, sustainable transport, water management, and waste management projects. Each stakeholder plays a unique role in de-risking and improving viability of projects, ensuring bankability, and building investor confidence.

3.3.1 Government Role

Governments are critical in creating a conducive environment for green projects through supportive policies, incentives, and risk mitigation. Governments may focus on:

- **De-Risking through Guarantees and Insurance:** Government-backed guarantees, such as sovereign guarantees or political risk insurance, lower project risk by ensuring compensation in cases of default, currency risk, or political instability.
- **Encouraging Public-Private Partnerships (PPPs):** By collaborating with the private sector through PPPs, governments can share project risks and leverage private capital, expertise, and efficiency. Structured PPPs in sectors like renewable energy and transport infrastructure enable more robust project development and financing.
- **Developing and Supporting Project Preparation Facilities:** Governments can establish or support project preparation facilities to provide funding for initial feasibility studies, impact assessments, and technical evaluations. This support ensures that projects are well-prepared before seeking private investment, improving their attractiveness.

3.3.2 Role of Multilateral Development Institutions (MDIs)

Multilateral development institutions (e.g., the World Bank, International Finance Corporation (IFC), Islamic Development Bank (IsDB), Asian Development Bank and African Development Bank (AfDB)) play a key role in mobilizing resources, providing technical assistance, and mitigating risks for green projects.

- **Providing Concessional Financing and Blended Finance:** MDIs offer concessional loans with lower interest rates, as well as blended finance options that combine concessional and commercial capital to reduce the financing cost for projects. This makes projects more affordable and financially viable for private investors.
- **De-Risking Mechanisms and Guarantees:** MDIs can offer risk-sharing instruments such as partial credit guarantees, political risk insurance, and currency hedging facilities, which make projects less risky for private investors. These tools are particularly valuable in emerging markets and low-income countries where risks are perceived to be high.
- **Technical Assistance and Capacity Building:** MDIs provide technical assistance for project structuring, regulatory support,

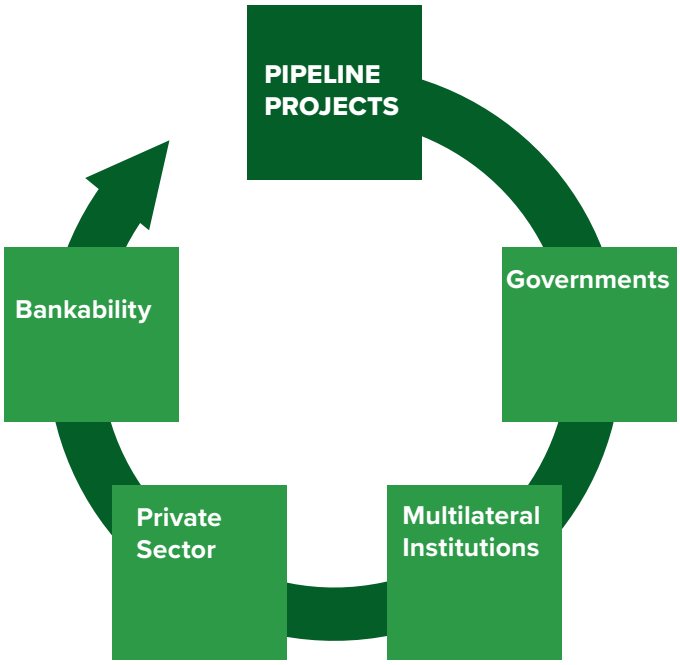


Figure 27

Strategies of enhancing pipeline bankability

and capacity building for both governments and local project developers. This support helps improve project quality and ensures that projects are aligned with international standards and best practices.

- **Developing Pooled Investment Vehicles and Aggregated Portfolios:** MDIs can aggregate smaller projects into a single investment portfolio, making it easier to attract larger institutional investors. For example, the IFC or AfDB might bundle several small renewable energy projects into a portfolio, enhancing their bankability through economies of scale and diversified risk.
- **Catalyzing Private Investment through Co-Financing:** By co-financing projects, MDIs signal confidence and reduce perceived risks, encouraging private sector investors to participate. This crowds-in private capital and helps bridge financing gaps in high-impact sectors like renewable energy and water management.

3.3.3 Private Sector Role

The private sector's involvement is essential for executing, financing, and scaling pipeline projects. Private companies bring in capital, innovation, and operational efficiency, but need supportive policies and incentives to engage actively in green projects.

- **Project Development and Implementation:** Private companies are typically responsible for the development, construction, and operation of projects. They contribute to bankability by ensuring high-quality project execution, cost-efficiency, and timely delivery, which enhances investor confidence and project viability.
- **Innovative Financing Structures:** Private sector financial institutions and developers can explore innovative financing structures, such as Green Sukuk and green bonds, and other sustainable financing instruments to attract environmentally conscious investors. These structures make projects more appealing to institutional and retail investors seeking sustainable investment options.
- **Leveraging Technology and Operational Expertise:** The private sector can introduce new technologies and operational practices that increase project efficiency and reduce costs. For example, private companies can implement smart grid technologies in energy projects or advanced irrigation systems in agriculture, improving both sustainability and financial returns.
- **Market-Making and Liquidity Provision:** Private financial institutions, such as banks and asset managers, can create secondary markets for Green Sukuk to enhance their liquidity. A liquid secondary market allows investors to buy and sell green investments more easily, making them more attractive.
- **Project Aggregation and Scaling:** Private sector investors, particularly asset managers and financial institutions, can aggregate smaller projects into investable portfolios, making them more attractive to institutional investors. Aggregation is essential in sectors like off-grid renewable energy and waste management, where individual projects may be too small to attract direct investment.

GREEN SUKUK IN ACTION: EXPLORING GLOBAL CASE STUDIES

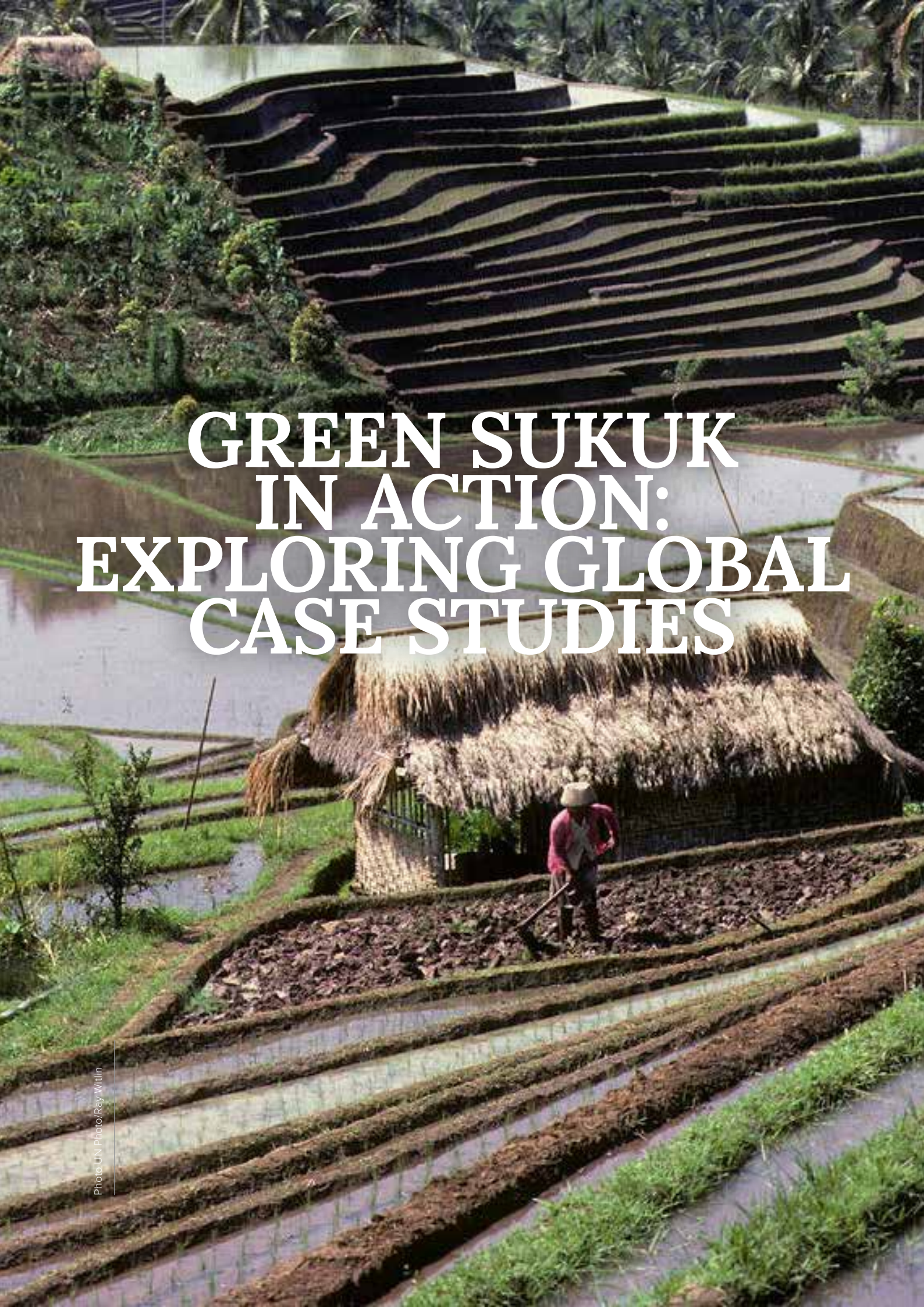


Photo: UN Photo/Ray Witlin

4. Green Sukuk in Action: Exploring Global Case Studies

Objectives:

- Highlight real-world examples of Green Sukuk issuance and implementation from various countries
- Provide a knowledge resource and serving as best practices manual for case studies on effective Green Sukuk initiatives and programs showcasing their direct impact from environmental perspective.

4.1 Case Selection

The cases analyzed in this study were drawn from sustainable and Green Sukuk issuances in member countries of the Organization of Islamic Cooperation (OIC). The reason for considering OIC member countries is that, according to IFSB (2023), the global Islamic banking assets has reached domestic systemic significance in 15 OIC member countries, collectively holding USD 2,071.9 billion as of 2022.[96] This amount represents 92.1% of the worldwide assets in Islamic banking.[97] This level of penetration of Islamic finance in the OIC justifies the selection of the cases from these countries. With the OIC as the population where we drew our sample, we then consider a number of factors in the inclusion criteria for our sample cases. These factors include geographical balance, types of issuers (sovereign/quasi-sovereign and corporate), availability of data, and significant milestone in the Green Sukuk issuance trajectory, country and regions. To have an inclusive sample of cases, we ensured that there is at least one case from the GCC, Southeast Asia, and **Türkiye** (representing an OIC country where Islamic finance has not achieved systematic importance but growing). Table 6 presents the sample selection criteria.

4.2 Data Collection

Data of various Green Sukuk from the select cases were collected, including quantitative data on the Sukuk issuance (e.g.: size, tenure, return, structure, and impact). Qualitative data on the Green Sukuk origination and impact were also collected through short survey and interview with experts involved in the Green Sukuk issuance. These experts include Islamic finance professionals, practitioners managing the Green Sukuk, Shariah board members, legal advisors, marketing and sales teams (see Appendix 1). The team gathered qualitative information on the projects funded by the sukuk (use of sukuk proceeds, impact on sustainability, and contribution to the UN's SDGs).

4.3 Analysis of cases

The selected Green Sukuk will be analysed using the Sustainable Finance Framework (SFF) as the prime reference. The SFF outlines the blueprint for issuing Green Sukuk by issuers. Premised on the SFF, the analysis focused on Shariah compliance of the sukuk structure, use of proceeds from the Green Sukuk, impact of the sukuk issuance on environmental and social outcomes. The financial performance of the Green Sukuk was assessed to ensure that there is a judicious balance of environmental, social and financial impacts. The analytical framework is presented in figure 28 below.

96 Islamic Financial Service Board 2023 "Islamic Financial Services Industry Stability Report" https://www.ifsb.org/wp-content/uploads/2023/10/Islamic-Financial-Services-Industry-Stability-Report-2023_En.pdf

97 Islamic Financial Service Board 2023

GREEN SUKUK ISSUER	COUNTRY	OIC MEMBER	GEO-GRAPHICAL BALANCE	TYPE OF ISSUER	IMPORTANT MILESTONE/ REMARK	DATA AVAILA-BILITY
ISLAMIC DEVELOPMENT BANK	Saudi Arabia	Yes	GCC	Quasi-Sovereign	An important Market Maker in Green Sukuk	Yes
KUVEYT TÜRK PARTICIPATION BANK	Türkiye	Yes	Islamic Finance is yet to achieve systematic importance	Corporate	First Islamic financial institution to issue Green Sukuk	Yes
INDONESIA GREEN SUKUK	Indonesia	Yes	Southeast Asia	Sovereign	Huge Support of Green Sukuk from Government	Yes
SOLAR SUKUK PROGRAM – QUANTUM SOLAR PARK	Malaysia	Yes	Southeast Asia	Corporate	Malaysia is a pioneer in Green Sukuk Issuance	Yes

Table 6

Summary of factors in cases sample construction

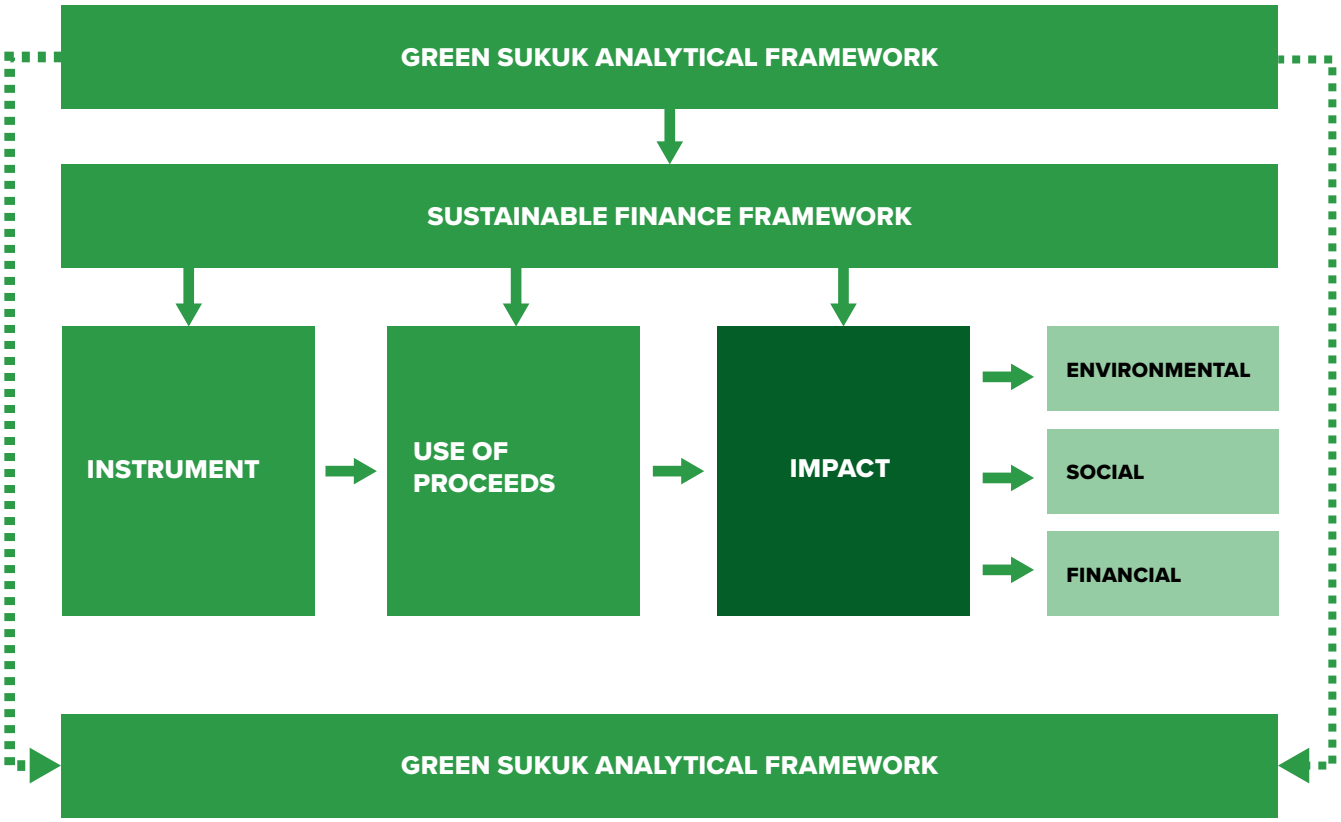


Figure 28

Analytical Framework for Green Sukuk*

ICMA 2024 "Guidance on Green, Social and Sustainability Sukuk" https://www.icmagroup.org/assets/documents/Sustainable-finance/ICMA-IsDB-LSEG-Guidance-on-Green-Social-and-Sustainability-Sukuk-April-2024.pdf

4.4 Presentation of Cases

PROJECT NAME	ISSUANCE YEAR	HOST COUNTRY	ISSUER	PROJECT BRIEF	• ELIGIBLE GREEN PROJECTS	SUKUK AMOUNT	SOVEREIGN/ CORPORATE	DURATION	• IMPACT RESULTS	SDG IMPACT	ESG IMPACT
USD fixed Rate Reset-table Sustainability Tier 2 Certificate	2021	Türkiye	Kuveyt Turk	The sukuk was structured on Wakala and Murabaha princi-ples. Proceeds were used by the Trustee to buy Shariah-com-pliant commodities for deferred sale to Kuveyt Türk and to acquire Kuveyt Türk's interests in the Initial Wakala Portfolio	• Renewable Energy • Pollution prevention and control • Energy Efficiency • Green Building • Clean Transportation • Environmentally sustainable management of living natu-ral resources and land use • SME financing / employment generation • Affordable Housing • Access to essential servic-es: Education & Healthcare	USD 350 Million	Corporate	10 years	• Women entrepreneurship supported- US$258, 269, 380 and young entrepreneurs' disbursement - US$2,738,232		Environment and Social
Green Sukuk	2019	Saudi Arabia	IsDB	In November 2019, the Islamic Development Bank (IsDB) launched its inaugural Green Sukuk, successfully raising €1 billion. The funds were allocated to a variety of projects within its 57 member countries	• Renewable Energy, Clean Transporta-tion, Pollution Prevention and Control, Sustainable Water and Waste Manage-ment and Energy Efficiency, environ-mentally sustainable management of natural living resources and land use	EUR 1 billion	Quasi Sovereign	5 years	• 1,025 MW clean energy capacity installed • 3,233 GWh clean energy generated annually • 291 GWh/year saved through energy efficiency • 12.1 million metric tons of CO2 emissions avoided annually • 20,000 residents in 2,000 households gained ac-cess to affordable housing with utilities • 69 hectares protected from flooding • 10,000 jobs created in flood-protected zones • 2,000 climate-resilient housing units built for urban poor • 110,000 metric tons CO2 emissions reduced in transport • 361 km railway for low-carbon mobility • 1,000+ jobs in high-speed train operations • 4-hour travel time reduction (17% decrease) • 406 hectares of irrigation upgraded for climate resilience • 315 hectares of new irrigation developed • 3,100 hectares of arboriculture • 140 km of sewerage networks upgraded • 38% increase in treated wastewater ratio • 48,763 cubic meters of wastewater treated daily • 50% project energy needs met by co-generation • 80% reduction in urban disease rates • 1,400 hectares of agricultural land flood-protected • 22 dryland communities with access to clean water • 2,110 permanent jobs in climate-smart farming		Environment and Social
Indonesia First Green Sukuk	2018	Indonesia	Government of Indonesia	USD Wakala Trust Certificate issuance ("Sukuk"), issued under a USD25 bn Trust Certificate Programme	• Sustainable Transport • Renewable energy • Resilience to Climate Change for Highly Vulnerable Areas and Sec-tors/ Disaster Risk Reduction. • Energy Efficiency • Waste to Energy and Waste Management	USD 1.250 billion	Sovereign	5	• 3913133.47 CO2e avoided • 355394 CO2e reduced • 1711615.93 CO2e avoided • 5,776,497.49 tonnes of CO2 emissions reduced		Environment and Social
Solar Sukuk Program – Quantum Solar Park (Semenanjung) Sdn Bhd (QSPS	2017	Malaysia	Quantum Solar Park	designed for a specific purpose vehicle, has floated the largest Green Sukuk linked to a solar project to date. This funding is earmarked for the construction of three sizable solar photo-voltaic installations across the Malaysian states of Kedah, Mel-aka, and Terengganu, with an aggregate cost of RM1.25 billion	• Renewable Energy	RM 1 billion	Corporate	17.5 years	• The ventures are projected to cut carbon emissions by 193,000 tonnes annually, which equates to the energy consumption of over 90,000 homes and will generate 3,000 job opportunities.		Environment and Social

Table 7

Presentation of Cases

4.4.1 Kuveyt Türk Participation Bank

Authorized by the Central Bank of the Republic of **Türkiye**, Kuveyt Türk Katılım Bankası A.Ş. has been operating in the non-interest-based financial sector since March 31, 1989. Headquartered in Istanbul, **Türkiye**, the bank functions as a subsidiary of Kuwait Finance House (KFH). Kuveyt Türk is a leader among participation banks in **Türkiye**, ranking first in total deposits collected, loans disbursed, and overall asset size. Additionally, the bank excels in gold banking, holding the top position among participation banks and ranking third in the entire Turkish banking sector.

Kuveyt Türk marked significant milestones by joining the Istanbul Gold Exchange in 2007 and the London Bullion Market Association in 2011. It achieved another remarkable feat by becoming the first Turkish company to enter the Shanghai Gold Exchange in January 2019.[98] The bank provides services such as gram gold accounts and ATM gram gold withdrawals to its customers, contributing over 20 tons of gold to the Turkish economy to date.[99]

I. Kuveyt Türk SFF

Kuveyt Türk's sustainability strategy is driven around its mission "We grow with our values". In that regard, the bank as a participation bank, adopts sustainability for its practices not only targeting company-level gain but also a wider achievement. With this larger view, it embraces an inclusive approach comprising all its stakeholders and targeting national economic growth in a broader perspective.

In order to meet the banks mission, and finance projects that will deliver benefits to support Kuveyt Türk Bank's business strategy and vision, Kuveyt Türk has elected to create a SFF under which it can issue Green Certificate(s)/Financing(s) or Social Certificate(s)/Financing(s) or Sustainability Certificate(s)/Financing(s) (including Sukuk or any other financing instruments), to finance 'Eligible Green Projects' and/or 'Eligible Social Projects'.[100] This Framework is in accordance with the ICMA's (GBP) 2021, ICMA Social Bond Principles (SBP) 2021, ICMA Sustainability Bond Guidelines (SBG) 2021, the LMA Social Loan Principles (SLP) 20217 and the LMA Green Loan Principles (GLP) 2021.[101] In alignment with these

ISSUER	Kt21 t2 Company Limited
OBLIGOR	Kuveyt Türk Katılım Bankası A.Ş.
OBLIGOR RATINGS	B+ (Fitch)
ISSUE RATINGS	B (Fitch)
STRUCTURE	Sukuk based on the principles of Wakala and Murabaha
FORMAT	RegS
INSTRUMENT	USD Fixed Rate Resettable Sustainability Tier 2 Certificates
RATING	Tier II
SIZE	US$ 350 million
TENOR	10.25NC5.25
OPTION	3-month car call issuer option
ISSUE DATE	16 September 2021
MATURITY DATE	16 December 2031
PROFIT DATE	6.125% p.a.
BENCHMARK	T O ¾ 09/31/26
BENCHMARK RATE	UST5(0.793%)
RESET MARGIN	5.332%
USE OF PROCEEDS	An amount equal to the net proceeds will be applied to finance and/or refinance ligible green and/or social projects in accordance with Kuveyt Türk's Sustainable Finance Framework
SPO PROVIDER	Sustainalytics
LISTING	Regulated Market of Eurnext Dublin
LAW	English Law, except subordination which will be governed by Turkish Law

Table 8

Kuveyt Turk Green Sukuk*

Kuveyt Türk 2023 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Allocation and Impact Report" https://www.kuveytturk.com.tr/medium/sustainable-finance-impact-report-2023-1974.pdf

98 Kuveyt Türk "Kuveyt Türk from Past to Present" https://www.kuveytturk.com.tr/en/about-us/about-kuveyt-turk/kuveyt-turk-from-past-to-present

99 Kuveyt Türk 2021 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Framework" https://www.kuveytturk.com.tr/medium/sustainable-finance-framework-549.pdf

100 Kuveyt Türk 2021

101 Kuveyt Türk 2021

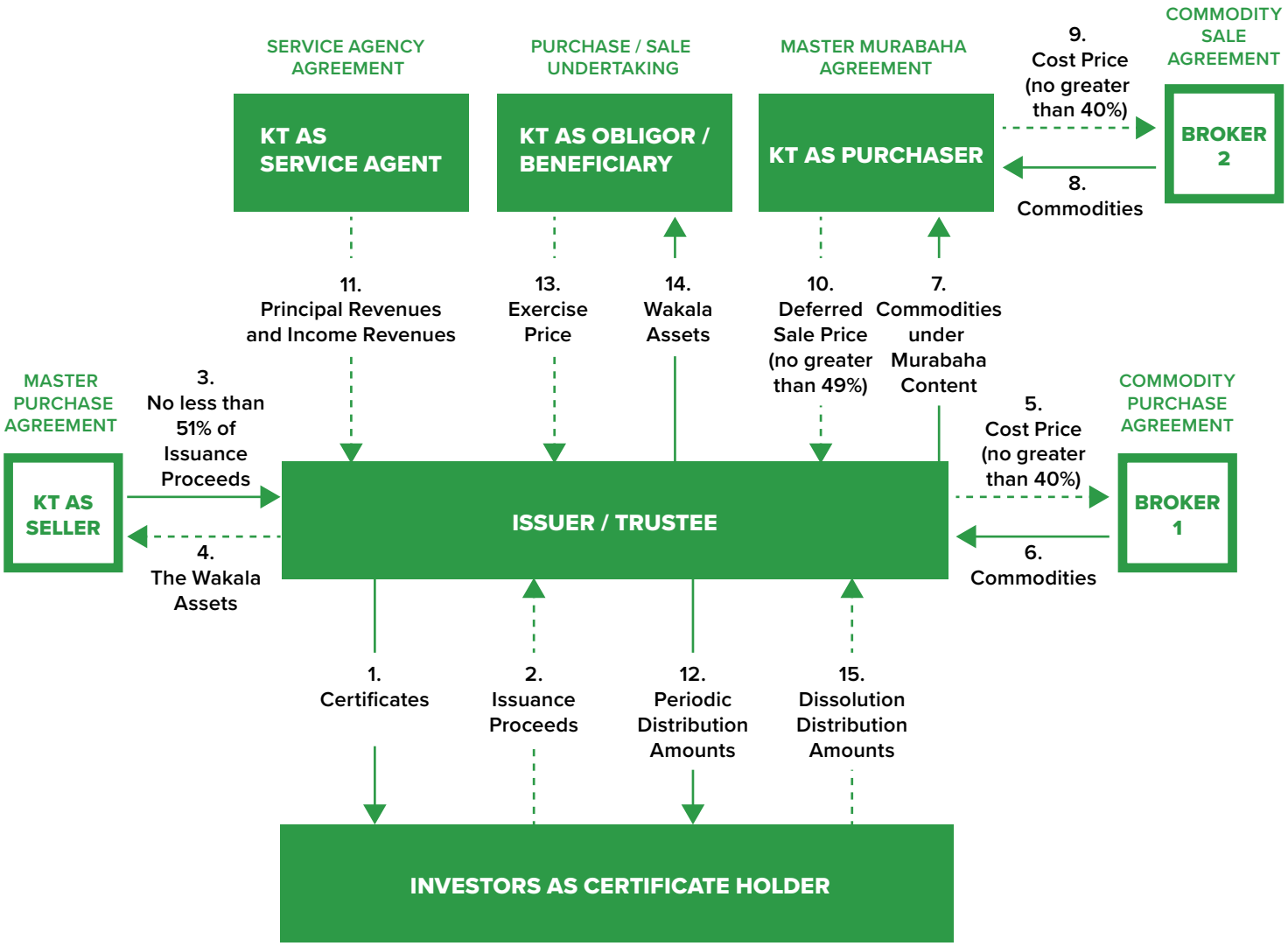


Figure 29

Kuveyt Turk Green Sukuk Structure*

* Kuveyt Turk(2017). U.S$350,000,000 Fixed Rate Resettable Sustainability Tier 2 Certificates due 2031. Kuveyt Turk Sustainability Sukuk Prospectus

Principles, for each Green, Social or Sustainable Certificate(s)/Financing(s) issued, Kuveyt Türk asserts that it will adopt the four pillars of GBP previously discussed, notably 1) Use of Proceeds 2) Process for Project Evaluation and Selection 3) Management of Proceeds 4) Reporting.

II. Green Sukuk Issuance

The Sukuk was structured based on Wakala and Murabaha. The proceeds from the issuance of the Certificates was applied by the Trustee pursuant to the terms of the relevant Transaction Documents to purchase (i) certain Shariah-compliant commodities through the Commodity Agent, which the Trustee will sell to Kuveyt Türk (as purchaser) on a deferred payment basis for a sale price specified in a letter of offer and acceptance pursuant to the Murabaha Contract; and (ii) Kuveyt Türk's interests, rights, benefits and entitlements in, to and under the Initial Wakala Portfolio pursuant to the Purchase Agreement (see figure 29 above).

This sukuk was the first ever global Tier-2 Sustainability Sukuk to have been issued and was also the first sustainability sukuk issued by an Islamic Financial Institution. There was a significant yield compression of 62.5 basis points from the initial price thoughts

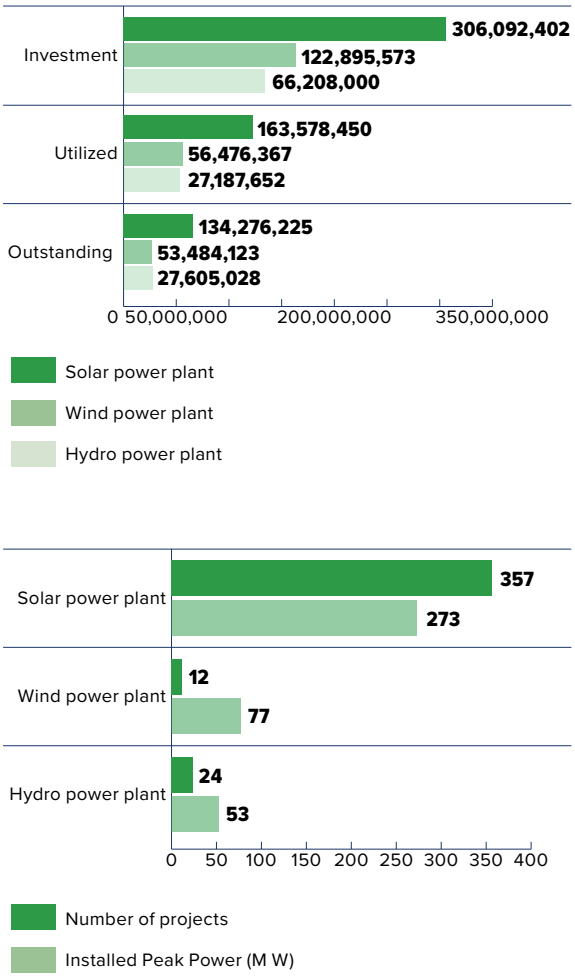


Figure 30

Green allocations and number of green projects*

Kuveyt Türk 2023 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Allocation and Impact Report" https://www.kuveytturk.com.tr/medium/sustainable-finance-impact-report-2023-1974.pdf

(IPTs).[102] There was strong international demand for these sukuks, with international accounts making up 24% of the order book.[103] Kuveyt Turk achieved its highest ever oversubscription rate at 12.3 times in the international debt capital markets. A Turkish bank has secured the tightest yield/coupon for a Basel III Tier 2 issuance since 2017.

The largest order book for such an issuance from **Türkiye** peaked at USD 4.4 billion. [104]

III. Use of proceeds

Current Portfolio of green and social assets stands at US$ 422.9 million with 51% constituting financing of renewable energy projects such as solar, wind, hydro and bioenergy.[105] The rest are dedicated to women and youth entrepreneurship related funding.

SOCIAL PROJECTS	NUMBER OF PROJECTS	UTILIZED	OUT-STANDING
WOMEN ENTREPRE-NEURSHIP	5,865	258,269,380	205,367,307
YOUNG ENTREPRE-NEURSHIP	167	2,738,232	2,128,146

Table 9

Social Projects*

* Kuveyt Türk 2023 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Allocation and Impact Report" https://www.kuveytturk.com.tr/medium/sustainable-finance-impact-report-2023-1974.pdf

IV. Impact

The solar power plant with an installed peak power of 273 MW would produce approximately 418,509 MWh of electricity annually. This would result in a reduction of about 188,329 metric tons of CO2 emissions.[106]

The wind power plant with an installed peak power of 77 MW would generate about 202,356 MWh of electricity annually. This would lead to a reduction of approximately 91,060 metric tons of CO2 emissions. [107]

102 Kuveyt Türk 2023 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Allocation and Impact Report" https://www.kuveytturk.com.tr/medium/sustainable-finance-impact-report-2023-1974.pdf

103 Kuveyt Türk 2023

104 ZAWYA 2016 "KFH 2015 Sukuk Volume Traded Outpaces USD 4.4 Bln" https://www.zawya.com/en/press-release/kfh-2015-sukuk-volume-traded-outpaces-usd-44-bln-mxgezvsa

105 Kuveyt Türk 2023

106 Kuveyt Türk 2023

107 This is calculated based on the emission avoided using Turkey's . To calculate the CO_2 emissions avoided by the solar power plant in Turkey, we need to compare the emissions that would have been produced if this electricity were generated using conventional fossil fuel sources. According to the International Energy Agency (IEA), Turkey's average grid emissions factor is approximately 0.4–0.5 tons of CO_2 per MWh for electricity generated from fossil fuels. For this calculation, we used an average of 0.45 tons CO_2/MWh.

The hydro power plant with an installed peak power of 53 MW would produce approximately 208,926 MWh of electricity annually. This would result in a reduction of around 94,017 metric tons of CO2 emissions.

These figures represent the estimated direct impact of these renewable energy projects in reducing carbon emissions annually.

Thus, Green Sukuk has made positive impact on the achievement of various SDGs. The Kuveyt Turk Green Sukuk, with its focus on financing renewable energy, SME financing/employment generation, affordable housing, and access to essential services such as education and healthcare, has impacted a range of SDGs. For instance:

SDG 3 (Good Health and Well-being): By facilitating access to healthcare services, the sukuk supports efforts to ensure healthy lives and promote well-being for all at all ages.

SDG 4 (Quality Education): Investment in education services contributes to ensuring inclusive and equitable quality education and promoting lifelong learning opportunities.

SDG 7 (Affordable and Clean Energy): Financing renewable energy projects is directly linked to ensuring access to affordable, reliable, sustainable, and modern energy.

SDG 8 (Decent Work and Economic Growth): By providing financing for SMEs and fostering employment generation, the sukuk aligns with the goal of promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

SDG 11 (Sustainable Cities and Communities): Investment in affordable housing contributes to making cities and human settlements inclusive, safe, resilient, and sustainable (see Table 9).

The Kuveyt Turk Green Sukuk has also impacted the ESG pillars in a number of ways. The environmental impact is manifested in the renewable energy financing. The financing of renewable energy projects underlines the sukuk's commitment to environmental sustainability by reducing carbon footprint and fostering a shift towards low-carbon energy sources.

The Kuveyt Turk Green Sukuk has significantly contributed to the ESG pillars in various ways. Its environmental impact is evident through the financing of renewable energy projects, demonstrating a strong commitment to environmental sustainability. By supporting these initiatives, the sukuk plays a vital role in reducing carbon emissions and promoting the transition to low-carbon energy solutions.

The social impact is highlighted in small and medium-sized enterprises (SMEs) Financing/Employment Generation, Affordable Housing, Education, and Healthcare. Support for SMEs not only drives economic growth but also creates jobs, which has a positive social impact by improving livelihoods and reducing poverty. Investments in affordable housing promote social equity by ensuring more people have access to safe and secure living conditions. The sukuk's allocation to essential services like education and healthcare directly enhances the social fabric by improving educational outcomes and health conditions in communities.

The governance aspect is addressed indirectly through the responsible investment criteria inherent in the issuance of the Green Sukuk, which requires adherence to specific ethical and sustainable guidelines. Also, the nature of sukuk securities typically involves clear reporting and use of proceeds, fostering greater transparency and accountability in financial operations.

V. Challenge and Opportunities

The main challenges associated with Kuveyt Türk's Green Sukuk issuance involve familiarizing investors with the concept, as green financial instruments may be relatively new to some markets. Ensuring investor confidence in the stability of cash flows from environmental projects can also be challenging. This is especially magnified by the fluctuation of the Turkish Lira which may affect the USD denominated fixed resettable return of the sukuk. On the opportunity side, Green Sukuk offers a way to fund environmentally friendly projects, tapping into the growing market of ethical and sustainable investing. It also aligns with global efforts to combat climate change, potentially attracting a diverse group of investors and enhancing Kuveyt Türk's corporate reputation for sustainability.

PROJECT CATEGORY	PROJECT DESCRIPTION	SDGS IMPACT	ESG IMPACT
Renewable Energy	Financing and/or refinancing construction, operation and maintenance of Renewable energy projects that sources from solar, wind and hydro		Environment
SME financing / employment generation	Financing or refinancing all SMEs 18 micro enterprises or start-ups Owned (at least 51%) or led by women, youth, facing the effects of natural disasters (including covid-19 pandemic, earthquakes, floods etc.)		Social
Affordable Housing	Financing or refinancing social housing mortgages to disadvantaged groups alls within the category of (i) low income or (ii) middle income		Social
Access to essential services: Education & Healthcare	Financing or refinancing construction, improvement, maintenance, expansion and operation in educational and health sectors		Social

Table 10

Impact of Green Sukuk on SDGs*

* Kuveyt Türk 2021 "Kuveyt Türk Katılım Bankası A.Ş. Sustainable Finance Framework" https://www.kuveytturk.com.tr/medium/sustainable-finance-framework-549.pdf

4.4.2 Islamic Development Bank Green and Sustainable Sukuk

The IsDB was established in 1974 and headquartered in Jeddah, Kingdom of **Saudi Arabia**. It is a multilateral development financing institution with 57 member countries (MCs) with significant Muslim communities.[108] All financial transactions are in compliance with Islamic law. The Bank's total assets as at September 2023 stood at US$36.1 billion.[109] The bank is rated Aaa, AAA, and AAA by Moody's / S&P / Fitch respectively. [110]

IsDB has subsidiaries that are mandated to provide specific solutions. International Islamic Trade Finance Corporation supports trade financing transactions amongst Member Countries. Also, Islamic Corporation for the Development of the Private Sector supports the development of private sector in the Member Countries. The Islamic Corporation for the Insurance of Investment and Export Credit provides investment protection and export credit insurance for Member Countries.

I. IsDB SFF

IsDB targets to achieve the SDGs in accordance with the specific development needs of its Member Countries (MCs). IsDB is part of MDBs' working groups on climate change mitigation. The bank also supports 'Just Transition' for MCs seeking to transition towards low-carbon energy solutions and efforts toward achieving their net zero target.

As part of its continued commitment to sustainability, IsDB has decided to create SFF which is in accordance with the four components of Green Bond Principles 2018, Social Bond Principles 2018, and Sustainability Bond Guidelines 2018, and under which IsDB can issue Green or Sustainability Sukuk. Under this SFF, IsDB has secured a Second Party Opinion (SPO) from CICERO with a shading of Medium Green. Under this Framework, IsDB can issue two types of Sukuk (the "Sukuk"): 1. Green Sukuk – for which the funds raised are exclusively allocated to Green Projects Categories; 2. Sustainability Sukuk – whereby

108 About IsDB https://www.isdb.org/who-we-are/about-isd

109 IsDB 2024 "Investor Presentation" https://www.isdb.org/sites/default/files/media/documents/2024-02/IsDB%20Investor%20Presentation%20%28February%202024%29.pdf

110 IsDB 2024 "IsDB issues US$ 2 billion Sukuk in First Benchmark of the Year" https://www.isdb.org/news/isdb-issues-us-2-billion-sukuk-in-first-benchmark-of-the-year

the funds raised are allocated to Green Projects Categories and to Social Projects Categories.

Based on this SFF, IsDB issued its first Green Sukuk in November 2019 and subsequent labelled issuances. Identified an eligible assets portfolio of US$ 6.1bn in line with the SFF, of which US$ 3.9bn are social assets and US$ 2.2bn are green assets.[111] These serve as the foundation for Green, Social and Sustainability (GSS) Sukuk.

As per the SFF, IsDB allocates an amount equivalent to the proceeds raised through GSS Sukuk to the financing and/or refinancing, of new and/or existing Eligible Projects which includes a variety of sectors in IsDB MCs such as, among others, renewable energy, clean transportation, energy efficiency, access to finance for micro, small and medium enterprises and expanding access to free/subsidized healthcare

111 IsDB 2023 "Investor Presentation" https://www.isdb.org/sites/default/files/media/documents/2023-03/IsDB%20Investor%20Presentation%20%28March%202023%29.pdf

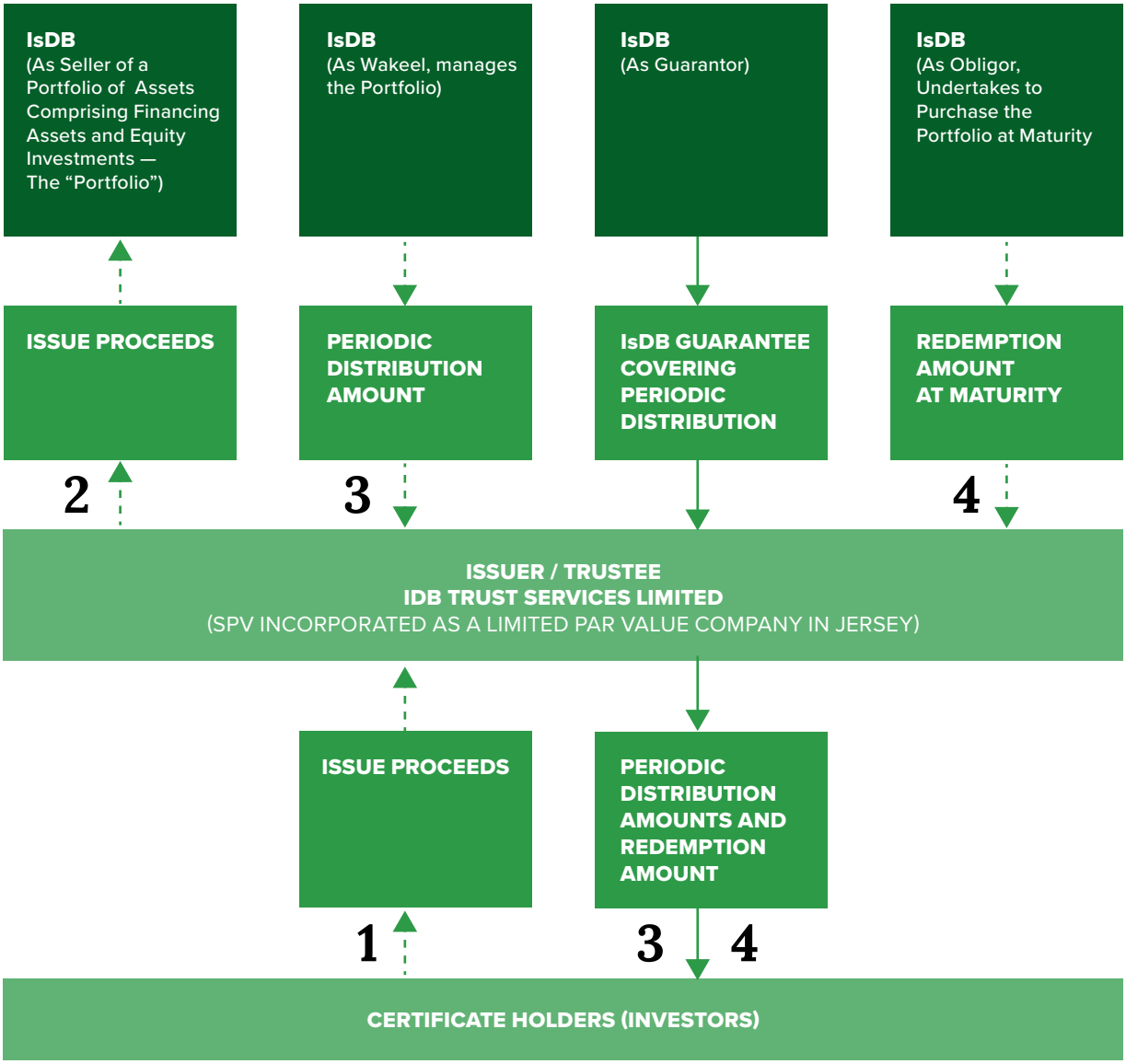


Figure 31

IsDB Green Sukuk Structure*

* IsDB(2019). Investor Presentations. IsDB. Accessed on December 4, 2024 at https://www.isdb.org/publications/isdb-sustainable-investor-presentation-november-2019

II. IsDB First Green Sukuk Issuance

In November 2019, the IsDB launched its inaugural Green Sukuk, successfully raising €1 billion.[112] The funds were allocated to a variety of projects within its 57 member countries, focusing on renewable energy, clean transportation, energy efficiency, pollution prevention and control, sustainable natural resource and land management, as well as sustainable water and wastewater management.

The sukuk was structured using a Wakala agreement and issued in accordance with the IsDB SFF (see Figure 31). CICERO Green conducted an assessment and awarded it a Medium Green rating. The offering was met with considerable interest, being oversubscribed by 4.5 times, and it attracted a diverse group of investors from regions including Europe, Asia, and the Middle East. The sukuk is commercially identical to a conventional bond. It is an asset-based financing that eliminates the key prohibitions from conventional bonds (not asset-backed).

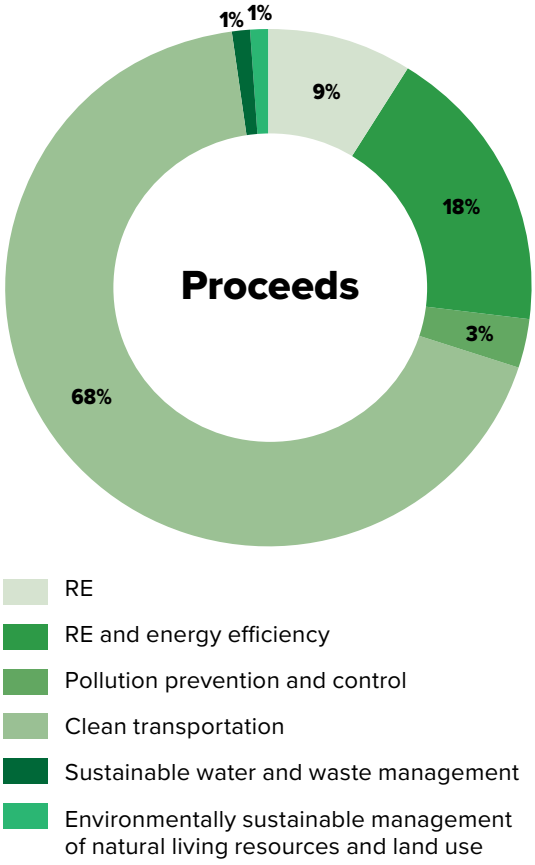


Figure 32

Allocation of Green Sukuk Proceeds*

IsDB 2020 "Annual Impact Report on IsDB Debut Green Sukuk" https://www.isdb.org/sites/default/files/media/documents/2021-01/Annual%20Impact%20Report%20on%20IsDB%20Debut%20Green%20Sukuk%20%28Dec%202020%29_0.pdf

III. Use of proceeds

The Green Sukuk proceeds have been fully allocated to 11 green projects in alignment with the Climate Change Mitigation and Climate Change Adaptation environmental objectives (see figure 32).

IV. Green Sukuk Impact

- 1,025 MW of clean energy generation capacity installed.
- 3,233 GWh of clean energy generated annually.
- 291 GWh/year saved through energy efficiency projects.
- 12,148,412 metric tons of CO2 emissions avoided each year in the energy sector.
- 20,000 inhabitants across 2,000 households gained access to decent, affordable housing with electricity, clean water, and flood risk protection.
- 69 hectares of urban development safeguarded from flooding and water disasters.
- 10,000 direct and indirect jobs created in flood-protected zones.
- 2,000 climate-resilient, decent, and affordable housing units built for the urban poor.
- 110,000 metric tons of CO2 equivalent emissions are reduced annually in the transport sector.
- 361 kilometers of railway track have been constructed for low carbon mobility.
- Over 1,000 jobs have been created through high-speed train operations.

112 IsDB, 2019 "Islamic Development Bank Achieves New Milestone with Debut Green Sukuk Worth EUR 1 Billion for Green Financing in its Member Countries" https://www.isdb.org/news/islamic-development-bank-achieves-new-milestone-with-debut-green-sukuk-worth-eur-1-billion-for-green-financing-in-its-member-countries#:~:text=27%20November%202019%20%2D%20The%20Islamic,billion%20Trust%20Certificate%20Issuance%20Programme.

- 4 hours of travel time have been saved, a 17% decrease in overall travel time.
- 406 hectares of existing irrigation perimeters have been upgraded to address climate risks.
- 315 hectares of new irrigation perimeters have been developed to build climate resilience.
- Arboriculture has been developed over 3,100 hectares of land.
- 140 kilometers of sewerage networks have been constructed, installed, and upgraded.
- There's been a 38% increase in the ratio of wastewater treated to wastewater collected.
- 48,763 cubic meters of wastewater are collected and treated daily.
- 50% of annual project energy needs are covered through co-generation.
- There's been an 80% reduction in the number of disease patients due to an unhealthy urban environment.
- 1,400 hectares of agricultural land are protected against flood risks.
- 22 dryland communities now have access to clean water through a rural water scheme.
- 2,110 permanent jobs have been created for climate-smart farming activities.

The issuance of Green Sukuk by the IsDB represents a pioneering step towards aligning Islamic finance with global sustainability goals, particularly the UN SDGs. By channelling investments into projects across various sectors such as renewable energy, energy efficiency, pollution prevention, sustainable land use, clean transportation, water management, and social infrastructure like education, healthcare, and affordable housing, the IsDB's Green Sukuk initiative is making a significant impact on achieving the SDGs (see table 7).

Firstly, the focus on renewable energy and energy efficiency projects directly contributes to SDG 7 (Affordable and Clean Energy) by promoting the adoption of clean and renewable energy sources among its member countries. This not only aids in reducing the carbon footprint but also enhances energy security and supports economic development in regions where energy access remains a challenge. The investment in clean transportation through Green Sukuk further supports SDG 11 (Sustainable Cities and Communities), making cities and human settlements inclusive, safe, resilient, and sustainable by reducing pollution and improving public health through cleaner air.

Pollution prevention and control, along with the environmentally sustainable management of natural resources, directly address SDG 12 (Affordable and Clean Energy) and SDG 6 (Clean Water and Sanitation). In addition, the IsDB's commitment to financing sustainable water and wastewater management projects is crucial for directly addressing SDG 13 (Climate Action) by mitigating climate change impacts through targeted actions. By improving access to clean water and sanitation facilities, the bank is addressing fundamental health and well-being needs, which also has ripple effects on SDG 3 (Good Health and Well-being).

Moreover, the Green Sukuk's emphasis on SME financing and employment generation tackles SDG 8 (Decent Work and Economic Growth), SDG 1(No Poverty) and SDG 9(Industry Innovation and Infrastructure) by fostering economic growth and job creation, particularly in sectors that contribute to the green economy. The financing of affordable housing and basic infrastructure projects aligns with SDG 11, aiming to make cities livable and societies more equitable.

Access to essential services such as education and healthcare through Green Sukuk investments directly affects SDG 4 (Quality Education) and SDG 3, ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all, alongside improving health outcomes. This approach not only addresses the immediate needs of communities but also lays the foundation for long-term socioeconomic development. Lastly, the socioeconomic advancement and empowerment initiatives funded by the Green Sukuk resonate with SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities), promoting gender equality and empowering all women and girls, and reducing inequalities within and among countries.

Apart from the SDGs, the impact of IsDB Green Sukuk can be mapped with ESG. The environment pillar is impacted through the financing and investment in renewable energy and energy-saving technologies leading to the reduction in greenhouse gas emissions and supports a transition to a more sustainable energy future. In addition, financing efforts in sustainable agriculture and conservation help preserve ecosystems and biodiversity. Regarding social pillar, numerous benefits

Project Category	Project description	SDGs Impact
Renewable Energy and energy efficiency	Improve energy access, promote renewable energy and enhance energy efficiency in generation and distribution. Enhance engagement of private sector. solar, wind, geothermal and hydro. Efficiency in generation and distribution.	
Pollution prevention and control	Financing and investing supporting the transition to a green economy, including reducing pollution and greenhouse gas emissions, minimizing waste and the inefficient use of natural resources, maintaining biodiversity and strengthening energy security.	
Environmentally sustainable management of natural living resources and land use	Invest in raising productivity of small farm agriculture, build resilience to climate change, improve access to markets, and strengthen capacity. Examples include interventions on climate smart agriculture, afforestation, Preservation, Soil remediation, biofuel, livestock with methane reduction	
Clean Transportation	Support economic infrastructure including sustainable transport for greater connectivity. Support Science, Technology and Innovation. Provide solutions for sustainable urban development.	
Sustainable water and wastewater management	Financing and investing in projects relating to flood prevention in the event of storms such as efficient water drainage systems in urban areas	
SME financing / employment generation	access to finance for micro, small and medium enterprises, and providing jobs for youth or underprivileged individuals in IsDB's MCs	
Affordable Housing	Affordable and improved housing projects for rural population in Africa and Latin America	
Access to essential services: Education & Healthcare	Financing projects that expand access to free/subsidized healthcare, education and training facilities	
Affordable basic infrastructure	Financing of growing rural and urban needs for water and sanitation. Improve water services, drainage and irrigation. Support sustainable infrastructure. Development of telecom, network and related infrastructure in underserved areas	
Socioeconomic advancement and empowerment	Support financing and investment in pro-poor growth, reduce inequality, promote human development, human dignity, financial inclusion, increase productivity and sustainable means of income generation. Projects that help improve the socio-economic status of women like enhancing the resilience of Women owned SMEs through the Women Entrepreneurs Finance Initiative. Projects that help improve the supporting education for refugees and strengthening community resilience such as the IsDB Syrian Education Support Program	

Table 11

Green Sukuk impact on SDGs*

* Compiled based on IsDB(2020). Annual Impact Report on IsDB Debut Green Sukuk (Dec 2020). IsDB. Accesssed on December 8, 2024 at https://www.isdb.org/publications/annual-impact-report-on-isdb-debut-green-sukuk-dec-2020 and IsDB 2019 "Sustainable Finance Framework". Accessed on December 6, 2024 at https://www.isdb.org/sites/default/files/media/documents/2019-11/IsDB%20Sustainable%20Finance%20Framework%20%28Nov%202019%29.pdf

re realised through facilitating the shift towards cleaner transportation options, which contributes to reducing air pollution and improving public health. Additionally, ensuring access to clean water and proper sanitation promotes public health and welfare. Supporting small and medium-sized enterprises stimulates job creation and drives economic growth, which can improve quality of life and reduce poverty. Table 10 below presents a summary of the impact of the Green Sukuk on SDGs and ESG.

V. Challenges Opportunities

The SFF broadly defines the projects that can be financed to include fossil fuel elements in nearly all project categories. There are concerns from some stakeholders that this may potentially lead to greenwashing as expressed by CICERO in their second party opinion on the Green Sukuk (CICERO, 2019).[113]

The SFF includes project categories that potentially could include controversial projects. This relates in particular to projects such as, e.g., energy efficiency related to fossil fuel elements, affordable housing with fossil fuel powered boilers or waste to energy in some instances.

IsDB response to this challenge is that the potentially controversial projects will undergo in-depth scrutiny to ensure positive climate impacts. This has been well received with the cognizance that that IsDB's MCs are developing countries, frontier markets and least developed countries and that social objectives in certain contexts may call for solutions that feature fossil fuel elements, such as petrol ambulances for hospitals. Concerns remain when it comes to transparency on the methodology that will be used by IsDB and hence it has been difficult to assess if actual reductions in GHG emissions for such projects will be achieved. In this regard, the IsDB robust governance structure will mitigate this potential risks.

4.4.3 Indonesia Green Sukuk

Indonesia holds the distinction of being the pioneer in sovereign Green Sukuk issuance, commencing in 2018.[114] Accumulating a total issuance of USD 6.9 billion in Green Sukuk, **Indonesia** stands as the foremost global issuer in this domain, spearheading the sovereign Green Sukuk market.[115] The funds raised through these sukuk have been channelled into various eco-friendly initiatives, including renewable energy, energy efficiency enhancements, sustainable transport systems, waste management solutions, and projects aimed at bolstering climate resilience. The **Indonesian** government has expressed a steadfast intention to continue issuing Green Sukuk going forward. These financial instruments are envisioned to aid **Indonesia** in diminishing its carbon footprint, fostering a greener economy, and shaping a more prosperous and sustainable future for **Indonesians** and the global community alike (Ministry of Finance, 2023). [116]

I. Indonesia **SFF**

Indonesia developed the Republic of **Indonesia** Green Bond and Green Sukuk Framework in 2017, detailing nine eligible sectors, project selection processes, management of proceeds, and reporting.[117] In 2021, this framework was updated to the Republic of **Indonesia** SDGs Government Securities Framework, aligning with the government's goals to issue Green and Blue Bonds and Sukuk, as well as Social and Sustainability Bonds and Sukuk.[118] Collectively known as "Green and SDGs Securities," these are intended to fund environmentally and socially beneficial projects that contribute to **Indonesia**'s sustainable development and climate agenda for 2030.[119] This updated framework broadened the eligible categories to include projects with green or blue emphasis that also offer social advantages, and vice versa.

113 CICERO 2019 "Islamic Development Bank (IsDB) External Review of 2019 Green Sukuk Reporting" https://www.isdb.org/sites/default/files/media/documents/2021-01/External%20Review%20by%20CICERO%20-%20IsDB%20Debut%20Green%20Sukuk%20Reporting%20%28Dec%202020%29.pdf

114 UNDP 2018 "Indonesia's green bond & sukuk Initiative" https://climatepromise.undp.org/research-and-reports/Indonesias-green-bond-sukuk-initiative#:~:text=In%20March%202018%2C%20the%20Government,conventional%2C%20Islamic%20and%20green%20investors.

115 Ministry of Finance Indonesia 2023 "Green Sukuk Allocation and Impact Report" https://ukifc.com/2024/01/23/ministry-of-finance-Indonesia-green-sukuk-allocation-and-impact-report-2023-market-report-the-knowledge-portal/

116 Ministry of Finance Indonesia 2023

117 Abubakar, Lastuti. Handayani, Tri. 2019 "Green Sukuk: Sustainable Financing Instruments for Infrastructure Development in Indonesia". Advances in Social Science, Education and Humanities Research, volume 436: 983-987.

118 Republic of Indonesia 2021 "SDGs Government Securities Framework" https://sdginvest.jointsdgfund.org/sites/default/files/2022-02/Indonesia%20SDG%20%20Bond%201%5B4%5D.pdf

119 Republic of Indonesia 2021

The selection of projects for Green Sukuk financing is governed by the Climate Budget Tagging mechanism. In 2014, the **Indonesian** government, supported by the United Nations Development Programme (UNDP), established a Climate Budget Tagging system to track and monitor state budget expenditures aimed at climate change mitigation and adaptation.[120] This system, integrated into the governments national budget systems (the ADIK system in 2016 and the KRISNA system in 2018), identifies expenditures and projects by ministries that support climate action in line with **Indonesia**'s climate goals. Projects eligible for Green Sukuk funding are chosen based on their alignment with the Green and Blue Focus of the SDGs Framework and their match with the Sukuk's tenure. Project impacts, both environmental and social, are evaluated by the ministries in charge, along with the Ministry of National Development Planning. The Ministry of Environment and Forestry then verifies these projects' consistency with **Indonesia**'s climate action plans and contributions. Verified projects' greenhouse gas (GHG) emissions reductions and resilience performance indicators are then registered in the National Registry System on Climate Change Control (SRN), using internationally recognized methodologies (Ministry of Finance, 2023).[121] The SFF received an external Second Party Opinion review process by CICERO and IISD, to ensure its adherence to globally recognized principles and standards and has been awarded "Medium Green" for the green aspects, and "Good" for the Framework's overall governance structure.[122]

SUKUK	1 Mar 2018, 3.75%, 5 yrs Senior
OBLIGOR	The Government of the Republic of **Indonesia**, represented by the Ministry of Finance
ISSUER	Perusahaan Penerbit SBSN **Indonesia** III
INSTRUMENT	USD Wakala Trust Certificate issuance ("Sukuk"), issued under a USD25 bn Trust Certificate Programme
TYPE	Senior unsecured
ISSUER RATING	Baa3 Moody's (Positive) / BBB- S&P (Stable) / BBB Fitch (Stable)
MATURITY	1-Mar-23
ISSUED AMONT	USD 1,250 mm
LISTING	SGX Singapore and NASDAQ Dubai

Table 12

Indonesia's First Green Sukuk*

* Ministry of Finance Republic of Indonesia "Indonesia's Green Bond & Green Sukuk Initiative" https://climatepromise.undp.org/sites/default/files/research_report_document/undp-ndcsp-green-sukuk-share.pdf

II. Green Sukuk Issuance

The **Indonesian** Green Sukuk applies Wakala (agency) structure. Under this Shariah-compliant structure, the Perusahaan Penerbit SBSN **Indonesia** III ("PPSI-III") acted as Wakil. The Green Sukuk structure and mechanism used by the Government of **Indonesia** are presented in figure 33.

III. Use of proceeds

Projects funded by 2018 Green Sukuk issuance fall into five of the nine eligible green sectors under the SFF: Sustainable Transport, Renewable Energy, Waste to Energy and Waste Management, Energy Efficiency and Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction. [123]

120 Boutron, Chloe. Postic, Sebastien. Kessler, Louise. Braga, Joao. Jellema, Jon. Khan, Farah. "Social and Climate Budget Tagging: Insights from Indonesia" https://www.i4ce.org/wp-content/uploads/2024/07/Social-and-Climate-Budget-Tagging-Insights-from-Indonesia_V2.pdf

121 Ministry of Finance Indonesia 2023 "Green Sukuk Allocation and Impact Report" https://ukifc.com/2024/01/23/ministry-of-finance-Indonesia-green-sukuk-allocation-and-impact-report-2023-market-report-the-knowledge-portal/

122 CICERO 2019 "Islamic Development Bank (IsDB) External Review of 2019 Green Sukuk Reporting" https://www.isdb.org/sites/default/files/media/documents/2021-01/External%20Review%20by%20CICERO%20-%20IsDB%20Debut%20Green%20Sukuk%20Reporting%20%28Dec%202020%29.pdf

123 Mujizat, Danar Anindito. 2021. "The Sovereign Green Sukuk: An Analysis of Its Process and Barriers to Funding Renewable Energy Projects in Indonesia" https://www.diva-portal.org/smash/get/diva2:1565307/FULLTEXT01.pdf

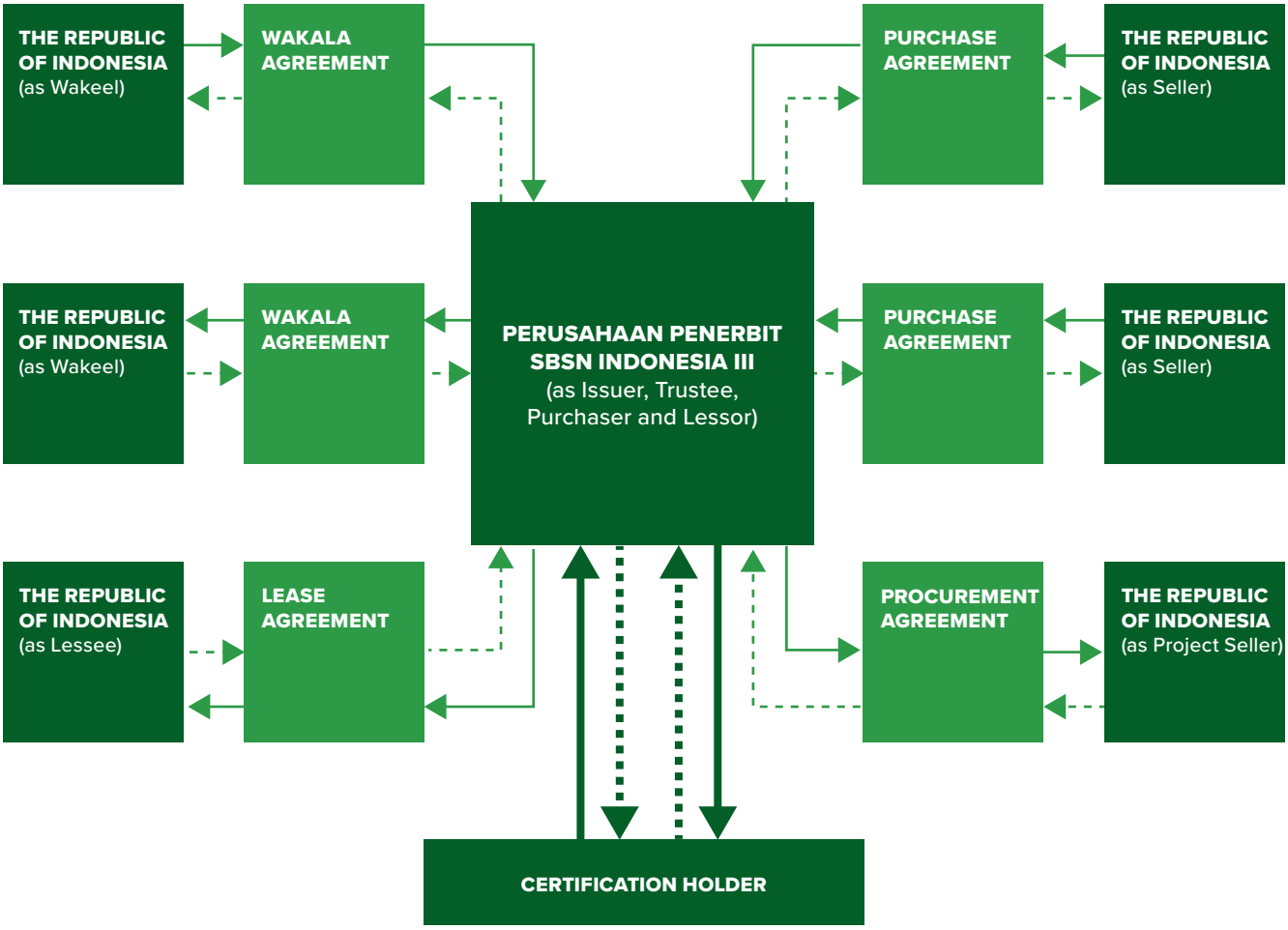


Figure 33

Indonesia First Green Sukuk Structure*

* Ministry of Finance (2019). Green Sukuk Issuance. Impact and Allocation Report. Ministry of Finance, Republic of Indonesia. Accessed on December 6, 2024 at https://api-djppr.kemenkeu.go.id/web/api/v1/media/056497A4-6385-4EA3-996B-A71DA03248FA

IV. Impact

The impact indicators used are in accordance to the Green Bond Harmonized Framework of Impact Reporting. The primary indicator for the mitigation projects is GHG emissions reduction. These are quantified according to internationally accepted methodologies adopted from the IPCC guidance (2016) and also using national emission factors published by the Ministry of Energy and Mineral Resources (2017).[124] The Green Sukuk proceeds may also have impacts beyond climate and environmental to include SDGs pertaining to the goals which are aimed to build resilient infrastructure and cities, to improve access to energy and to accelerate economic growth.

The projects financed through the 2018 Green Sukuk issuance made substantial contributions to multiple Sustainable Development Goals (SDGs) by addressing key environmental and social priorities across five of the nine eligible green sectors under the Sustainable Finance Framework (SFF). Investments in Sustainable Transport and Renewable Energy directly support SDG 7 (Affordable and Clean Energy) and SDG 11 (Sustainable Cities and Communities) by enhancing energy efficiency, reducing greenhouse gas emissions, and promoting environmentally friendly urban mobility systems.

The inclusion of Waste to Energy and Waste Management sectors aligns with SDG 12 (Responsible Consumption and Production) by fostering sustainable waste practices and resource optimization, while also contributing to SDG 13 (Climate Action) through the

124 Ministry of Energy and Mineral Resources Republic of Indonesia 2017 "Handbook of Energy & Economic Statistics" https://www.esdm.go.id/assets/media/content/content-handbook-of-energy-economic-statistics-of-Indonesia-2017--1.pdf

mitigation of environmental pollution and carbon emissions. Additionally, initiatives focused on Energy Efficiency improve resource utilization and align with SDG 9 (Industry, Innovation, and Infrastructure) by fostering the adoption of sustainable technologies.

Projects aimed at enhancing Resilience to Climate Change and Disaster Risk Reduction address the vulnerabilities of high-risk areas, significantly advancing SDG 13 (Climate Action) and SDG 1 (No Poverty) by protecting communities and livelihoods from climate-related disasters. Collectively, the projects funded by this Green Sukuk issuance exemplify an integrated approach to sustainability, demonstrating how strategic financial instruments can drive transformative progress across environmental, social, and economic dimensions, impacting the ESG domain.

CATEGORY	IMPACT OUTCOMES	OTHER SDGS
Renewable energy	3,913,133.47 CO_2e avoided	
Energy efficiency	355,394 CO_2e reduced	
Clean transport	1,711,615.93 CO_2e avoided	
Total	5,776,497.49 tons of CO_2 emissions reduced	

Table 13

Indonesia's First Green Sukuk proceeds and impact*

* Ministry of Finance (2019). Green Sukuk Issuance. Impact and Allocation Report. Ministry of Finance, Republic of Indonesia. Accessed on December 6, 2024 at https://api-dippr.kemenkeu.go.id/web/api/v1/media/056497A4-6385-4EA3-996B-A71DA03248FA

V. Challenges and Opportunities

The Green Sukuk issuance faces challenges due to the generally limited experience and understanding of ESG issues among Shariah scholars. Moreover, there's an absence of clear directives for these scholars to evaluate ESG factors within their duties. It is suggested that regulatory bodies, like the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), should spearhead the development of guidelines for Shariah scholars on these matters.

Also, when evaluating the frameworks for Green Sukuk, it's important to note the uniqueness of ijara structures. These structures allow the use of existing assets to raise capital for new projects. However, within a framework adhering strictly to the ICMA Green Bond Principles, the environmental credentials of the asset within the Special Purpose Vehicle are not assessed. The focus is solely on how the proceeds will be utilized, not on the green qualities of the asset itself. This could result in non-green assets, such as oil platforms, backing the sukuk.

4.4.4 Malaysia Green Sukuk

Malaysia has the most developed Islamic finance market with a framework that has been developing from the 1970s. The country is the ranked second in terms of cumulative Green Sukuk issuance (2017-2022), accounting for 20% of all issuance.[125] The first Green Sukuk, Tadau Energy worth USD 64 million, in 2017 was issued to finance a 50 MW solar power plant in **Malaysia**.[126] This was followed by Solar Sukuk Program – Quantum Solar Park (Semenanjung) Sdn Bhd Green Sukuk in the same year. With USD7.4 billion of outstanding Green Sukuk as at first quarter of 2023, it is anticipated that **Malaysia** will see a rise in the issuance of sustainable sukuk, with companies like UDA Holdings developing sustainable sukuk frameworks and others such as Global Vision launching sustainable sukuk programs, evidenced by its announcement of a MYR 1.5 billion ASEAN green SRI sukuk program.[127] The growing interest in sustainable financing in **Malaysia** is reflected by the overwhelming demand for KPJ Healthcare's issuance, which attracted bids ten times the amount offered.[128]

125 The Edge 2023 "Malaysia, Indonesia lead green and sustainability sukuk issuance, says Sustainable Fitch" https://theedgeMalaysia.com/node/661813

126 UNDP 2021 "Pre-Feasibility Study for Green Sukuk Issuance in the Republic of Uzbekistan" https://gifiip.org/wp-content/uploads/2022/06/Pre-Feasibility-Study-Green-Sukuk-Issuance-Uzbekistan.pdf

127 Bernama 2023 "Global Vision Logistics sets up RM1.5 bln ASEAN green SRI Sukuk Programme" https://www.bernama.com/en/news.php/?id=2170743

128 CGSCIMB 2023 "KPJ Healthcare Increased bed capacity with higher BOR" https://cdn1.i3investor.com/my/files/st88k/5878_KPJ/pt/CIMB/5878_KPJ_CIMB_2023-11-24_BUY_1.50_KPJHealthcareIncreasedBedCapacityWithHigherBOR_-91205566.pdf

I. Malaysia SFF

In 2014, the Securities Commission **Malaysia** (SC) established the Sustainable and Responsible Investment (SRI) Sukuk framework.[129] This framework was designed to foster an environment conducive to sustainable and responsible investing, catering to the needs of both SRI investors and issuers.

An Eligible SRI project refers to a project that seeks to achieve any one or a combination of the following objectives: (a) Preserving and protecting the environment and natural resources; (b) Conserving the use of energy; (c) Promoting the use of renewable energy; (d) Reducing greenhouse gas emission; (e) Addressing or mitigating a specific social issue or seeking to achieve positive social outcomes especially but not exclusively for a target population; or (f) Improving the quality of life of the society.

The Eligible SRI projects is categorized into green projects and social projects. Green projects relate to: (i) renewable energy; (ii) energy efficiency; (iii) pollution prevention and control; (iv) environmentally sustainable management of living natural resources and land use; (v) terrestrial and aquatic biodiversity conservation; (vi) clean transportation; (vii) sustainable water and wastewater management; (viii) climate change adaptation; (ix) eco-efficient and/ or circular economy adapted products, production technologies and processes; and (x) green buildings which meet regional, national or internationally recognized standards or certifications.

Social projects covered under the SFF are – (i) affordable basic infrastructure; (ii) access to essential services; (iii) affordable housing; (iv) employment generation including the potential effect of SME financing and microfinance; (v) food security; and (vi) socioeconomic advancement and empowerment.

The core components of the SRI Sukuk Framework are set out as follows: (a) Utilisation of proceeds; (b) Process for project evaluation and selection; (c) Management of proceeds; and (d) Reporting.

II. Solar Sukuk Program – Quantum Solar Park (Semenanjung) Sdn Bhd (QSPS)

QSPS, designed for a specific purpose vehicle, has floated the largest Green Sukuk linked to a solar project to date. This funding is earmarked for the construction of three sizable solar photovoltaic installations across the **Malaysian** states of Kedah, Melaka, and Terengganu, with an aggregate cost of RM1.25 billion.[130]

ISSUER	Quantum Solar Park (Semenanjung) Sdn Bhd
ISSUE SIZE	RM 1 billion
DATE OF ISSUANCE	October 2017
PURPOSE	To finance the development of three 50MW solar power plants in Malaysia
TENOR	1.5 to 17.5 years
PROFIT RATES	4.81% - 6.16%
PAYMENT	Semi - annual basis
CURRENCY	Malaysian ringgit
LEAD ARRANGER	CIMB Investment Bank and Maybank Investment Bank
GOVERNING LAW	Malaysia law
SOLICITOR	Adnan Sundra & Low, Zaid Ibrahim & Co.
RATING	'AA'
SHARIAH ADVISER	CIMB Islamic Bank
STRUCTURE	Murabahah structure (Tawarruq arrangement)

Table 14

QSPS Green Sukuk*

* IFN Sustainable 2017 "QSPM's green SRI Sukuk: Malaysia sets yet another benchmark" https://islamicsustainable.com/qspms-green-sri-sukuk-malaysia-sets-yet-another-benchmark/

III. Use of proceeds

The combined solar power plants are poised to produce approximately 282,000 MW of electricity each year for **Malaysia**'s main

129 Suruhanjaya Sekuriti 2019 "Sustainable and Responsible Investment Sukuk Framework An Overview" https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416#:~:text=The%20Securities%20Commission%20Malaysia%20(SC,for%20SRI%20investors%20and%20issuers.

130 CIMB Investment Bank Berhad 2017 "Quantum Solar Park (Semenanjung) Sdn Bhd Supplemental Information Memorandum" https://www.bixMalaysia.com/bixapi/search/DownloadDocument?DocID=11314&DocTypeID=1

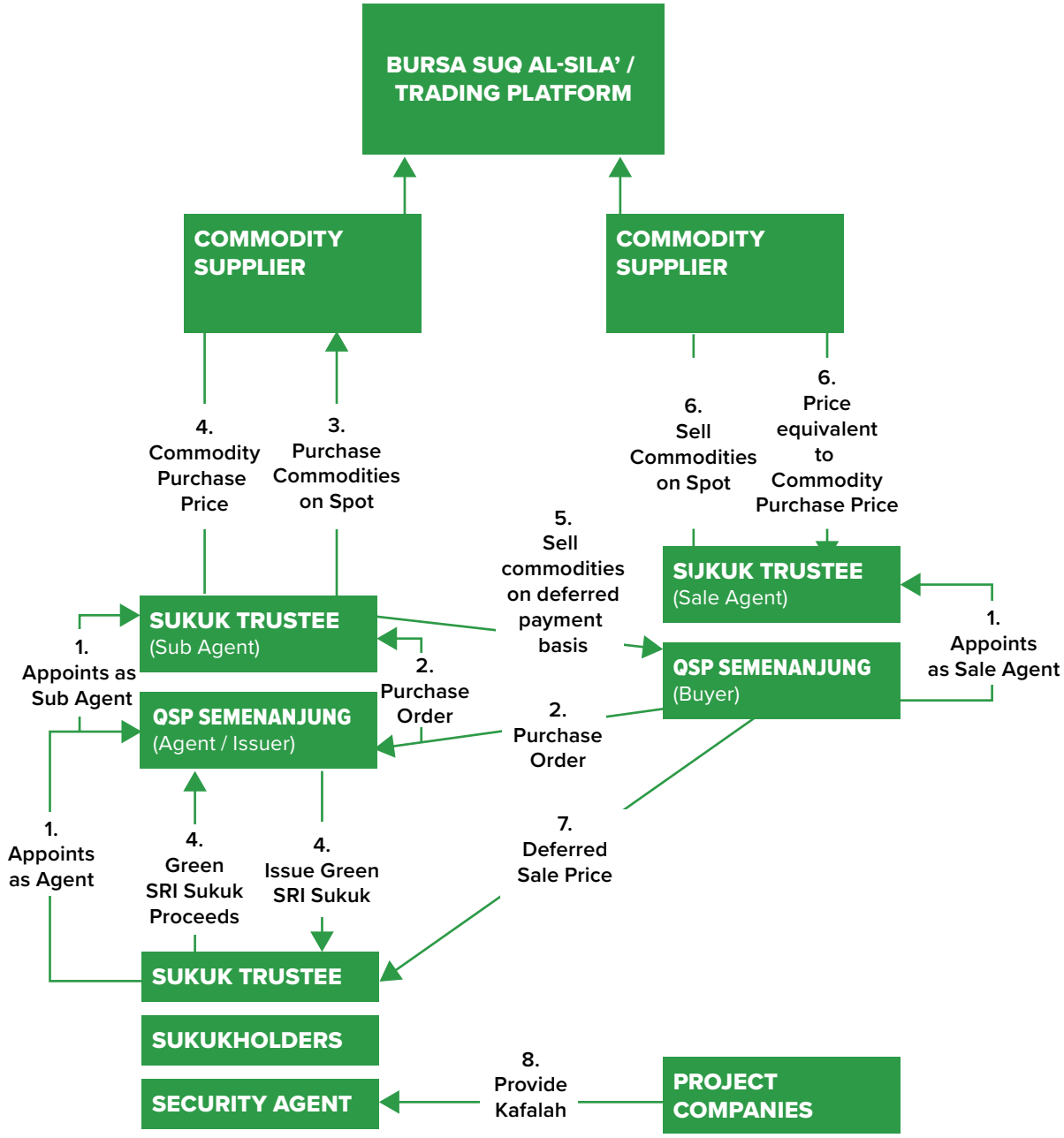


Figure 34

Quantum Solar Park (Semenanjung) Sdn Bhd Green Sukuk structure*

* Quantum Solar Park(2017). Information Memorandum. Accessed on December 5, 2024 at https://www.bixmalaysia.com/issuer-info-page?IssuerID=1148#bond-issuer-inner-tab3

electric utility, Tenaga Nasional, pursuant to their Power Purchase Agreement (PPA) over a 21-year span, covering 600 acres.[131]

IV. Impact

The ventures are projected to cut carbon emissions by 193,000 tonnes annually, which equates to the energy consumption of over 90,000 homes and will generate 3,000

131 J.S. Keshminder, Gurmit Kaur Bariam Singh, Zainora AB. Wahid, Mohammad Syafiq Abdullah (eds). "Green Sukuk: Malaysia Taking the Lead". Malaysian Journal of Consumer and Family Economics. https://majcafe.com/wp-content/uploads/2022/11/2019-Vol-22-S2-Article-1.pdf

job opportunities.[132] Itramas Corporation Sdn Bhd, the parent entity with 18 years of engagement in green initiatives, is committed to green practices as a core corporate ethos. The construction of these facilities was expedited due to their classification as a priority project by the government, highlighting the urgency for obtaining the necessary green certifications and completing social and environmental impact assessments.

The combined solar power plants project in **Malaysia** significantly advances multiple Sustainable Development Goals (SDGs) by addressing critical environmental, social, and economic challenges. Generating approximately 282,000 MW of renewable electricity annually for Tenaga Nasional under a 21-year Power Purchase Agreement (PPA) directly supports SDG 7 (Affordable and Clean Energy) by increasing the share of renewables in the energy mix and enhancing energy security. The reduction of 193,000 tonnes of carbon emissions annually, equivalent to the energy consumption of over 90,000 homes, underscores its contribution to SDG 13 (Climate Action) and SDG 11 (Sustainable Cities and Communities) by mitigating climate risks and fostering sustainable urban development. Additionally, the project's creation of 3,000 jobs bolsters SDG 8 (Decent Work and Economic Growth) by promoting sustainable economic development while indirectly contributing to SDG 1 (No Poverty) by improving livelihoods. The extensive engagement of Itramas Corporation in green initiatives aligns with SDG 12 (Responsible Consumption and Production), reflecting a commitment to sustainable production patterns. Finally, the innovative infrastructure established through this project advances SDG 9 (Industry, Innovation, and Infrastructure) by driving technological progress and supporting the transition to a green economy. These outcomes demonstrate a transformative impact, integrating environmental stewardship, social equity, and economic development to advance global sustainability objectives.

V. Challenges Opportunities and potential solutions

One of the challenges that emerged involved the structuring of the sukuk due to the project comprising three distinct solar plants, each with its separate Power Purchase Agreement (PPA). QSPS opted to consolidate the three projects under the umbrella of the holding and issuing company. The resulting long-term sukuk, spanning 36 tranches from one to eighteen years, is particularly well-suited for Independent Power Producer projects that typically have a payback period exceeding a decade. Given the relative novelty of solar projects in the nation, QSPS held numerous roadshows to inform potential investors. A further investor concern identified was the assurance of consistent cash flow.

132 SECURITIES COMMISSION Malaysia 2019 "Islamic Green Finance: Development, Ecosystem and Prospects" https://documents1.worldbank.org/curated/pt/591721554824346344/pdf/Islamic-Green-Finance-Development-Ecosystem-and-Prospects.pdf

CONCLUSIVE REMARKS AND STRATEGIC POLICY PATHWAYS

Photo UN Photo/Eva Fendiaspara

5. Conclusive Remarks and Strategic Policy Pathways

This report underscores the potential of Green Sukuk in bridging the gap between Islamic finance moral aspirations and the global sustainability imperatives. It explores the emergence, market dynamics, and regulatory frameworks of Green Sukuk, offering a comprehensive guide to leveraging this instrument as a pillar of sustainable finance. It demonstrates the potential of Green Sukuk as a catalyzing mechanism for mobilizing capital toward projects that promote climate resilience, a sustainable economy, and social equity. While unveiling the transformative shift in the sustainable finance industry driven by the emergence of Green Sukuk, particularly within Islamic financial frameworks aligning Islamic foundations and axioms within ESG considerations, this report exemplifies how Islamic finance, with its ethical and embedded moral foundations, can play a pivotal role in global efforts to achieve the SDGs and combat the climate emergency.

The primary focus of this report was to explore successful Green Sukuk frameworks and best practices from leading jurisdictions like **Malaysia** and **Indonesia** to inform global scalability. Additionally, it aimed to identify opportunities and challenges within the Green Sukuk market, including regulatory barriers, lack of standardization, high costs, and market incentives. The report also sought to provide actionable recommendations to enhance the enabling environment for Green Sukuk issuance, focusing on regulatory alignment, capacity building, and investor engagement.

To achieve these objectives, the report adopted a multidimensional methodology based on several key components. First, a Framework Analysis evaluates existing principles, regulatory standards, and frameworks, such as the ICMA Green Bond Principles, ASEAN GSS Bond Standards and Sustainability-linked Bond Standards, and domestic regulations, to identify existing gaps and potential areas of alignment. Next, an Ecosystem Analysis identifies critical barriers that hinder the mainstream adoption of Green Sukuk, such as the lack of standardized taxonomies, greenwashing risks, and limited market incentives. The report also includes Data Collection and Gap Analysis, analyzing global trends in sustainable sukuk issuances across regions using market data and survey insights to provide an evidence-based understanding of market dynamics and future orientations. Finally, Case Studies examine successful implementations, including **Malaysia**'s SRI Sukuk and **Indonesia**'s sovereign Green Sukuk, to extract actionable insights on scaling Green Sukuk.

5.1 Key Findings

This study uncovers important insights that are applicable to unveil a variety of aspects of the Green Sukuk future market dynamics. Despite their growing prominence with considerable opportunities in sight, the market faces challenges as well. Supportive efforts are needed to help address these barriers and leverage opportunities. This report capitalizes on rising demand to set a roadmap for pathways for optimizing the efforts based on best practices and experiences of established sukuk jurisdictions and markets.

The report highlights opportunities for scaling Green Sukuk, such as the growing investor demand for ESG-compliant instruments. There is a need for developing flexible structures to attract private sector issuers, as survey results and market data indicate Green Sukuk are often oversubscribed compared to traditional Sukuk, signaling a clear demand for thematic investments. Additionally, Green Sukuk has cost advantages, or "Greenium," as environmentally conscious investors may accept slightly lower returns for impact-driven investments. There is also expansion potential into new markets like Africa, the Middle East, and Southeast Asia, which can address energy access and climate adaptation challenges.

However, challenges and barriers hindering market growth include regulatory fragmentation due to the absence of a globally harmonized taxonomy, which complicates

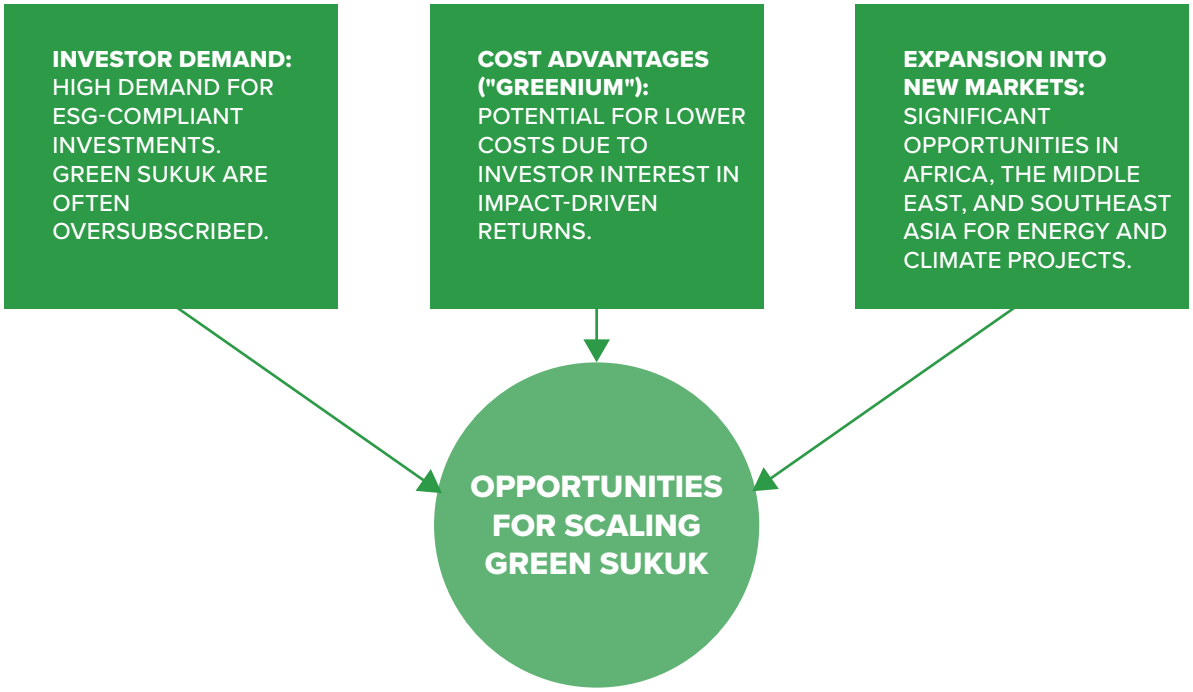


Figure 35

Opportunities for Scaling Green Sukuk

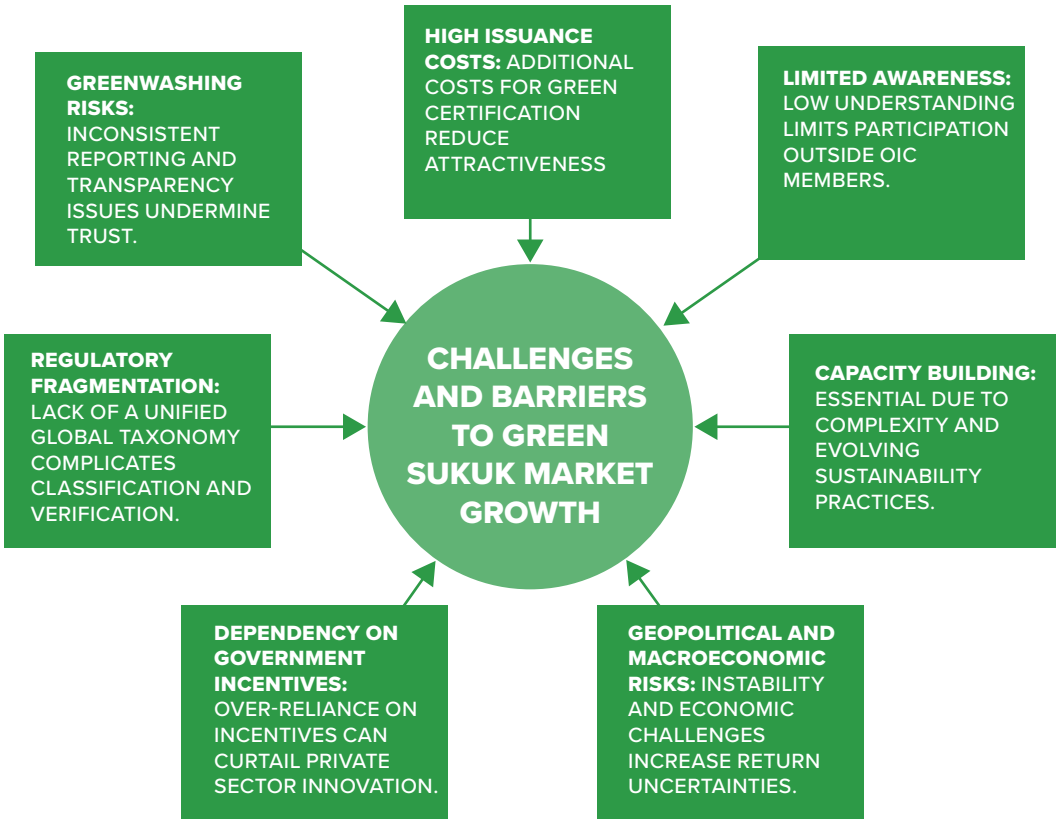


Figure 36

Challenges and Barriers to Green Sukuk Market Growth

the classification and verification of green projects. Greenwashing risks stem from limited transparency and inconsistencies in reporting, undermining investor trust. High issuance costs for labeling sukuk as "green" can make it less attractive compared to traditional sukuk. Limited awareness among potential issuers and investors reduces market participation, notably in non-OIC member markets. Suggestions for managing material climate-related risks and opportunities could create business value, enhancing efficiency and growth. Additionally, capacity building is crucial due to the complex nature of sustainability practices, and a just transition mechanism is needed.

Geopolitical and macroeconomic risks in many emerging markets, such as instability and currency fluctuations, deter issuers and investors, amplifying uncertainties and affecting the viability of Green Sukuk. Furthermore, reliance on government incentives like tax breaks can stifle private sector innovation, making a balanced approach with private sector leadership and government support essential.

5.2 Strategic Policy Pathways

The above findings form the foundation for strategic recommendations aimed at fostering a robust Green Sukuk ecosystem. To overcome the challenges impeding the growth of Green Sukuk, targeted policy interventions, capacity-building initiatives, and regulatory harmonization through collaborative efforts of governments, private and multilateral sectors should be designed and implemented. This can help build a supportive ecosystem that enhances credibility, accessibility, and investor confidence. This report concludes that the growth and scalability of Green Sukuk depend on creating a robust enabling environment that essentializes setting the regulatory establishments, making available sustainability-related data, incentivizing issuance from the supply side, and increasing demand through raising awareness. Below are key recommendations covering these levers:

5.2.1 Supply Side: Harmonizing Regulatory Settings and Incentivizing Issuance

To foster the growth of Green Sukuk and encourage issuers to participate actively, targeted supply-side policies and incentives are essential. These recommendations aim to reduce barriers to entry, enhance the attractiveness of Green Sukuk issuance, and align issuers' incentives with global sustainability goals.

I. Role of Governments

a. Establish a Clear and Globally Aligned Green Finance Taxonomy

It is highly recommended that establishing a uniform global taxonomy for Green Sukuk or formulating a regional taxonomy for OIC nations is crucial to standardize the criteria for what constitutes "green" under Shariah principles, thereby minimizing ambiguity and ensuring that Green Sukuk issuances conform to global sustainable finance standards. Establishing a globally recognized, Shariah-compliant green taxonomy for Islamic finance requires collaboration with international green finance authorities, such as the European Union and the International Capital Market Association (ICMA), to ensure alignment with recognized taxonomies like the EU Taxonomy and the ICMA Green Bond Principles. Concurrently, engaging international Islamic finance bodies including AAOIFI, the IIFM, and the IFSB is essential to integrate Shariah-compliant principles into these

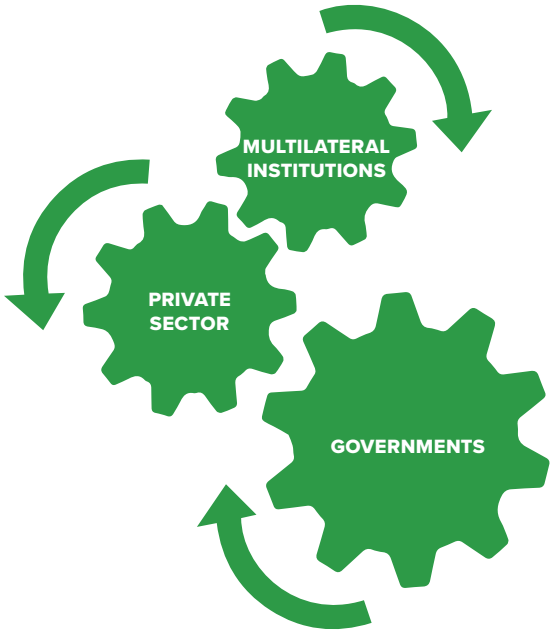


Figure 37

Entities shaping the enabling environment for scaling Green Sukuk

frameworks. Regulatory bodies in key Islamic finance hubs such as **Malaysia**, **Indonesia**, **Türkiye**, the **UAE**, and **Saudi Arabia** should be incentivized to adopt and implement these globally aligned guidelines, ensuring both issuers and investors can easily adhere to and benefit from standard definitions. This unified approach reduces greenwashing risks, enhances transparency, and increases comparability of Green Sukuk issuances across jurisdictions, thereby attracting a wider pool of investors. By fostering interoperability and ensuring that sustainable activities meet uniform standards, the taxonomy solidifies credibility in Islamic finance, mirroring successful collaborations like the EU-China "Common Ground Taxonomy."

b. Promote Regulatory Harmonization for Green Sukuk

It is observed that a uniform legislation across jurisdictions is essential to facilitate the international scalability of Green Sukuk, minimising obstacles for issuers and offering clarity for investors, particularly in cross-border situations. Institutions such as the Islamic Development Bank (IsDB), ICMA, and the London Stock Exchange Group (LSEG) have started collaborating on standard guidelines for Green Sukuk issuance, which should be promoted in major issuing markets like **Malaysia**, **Indonesia**, and the GCC. Governments in key regions can bolster regional forums to align and

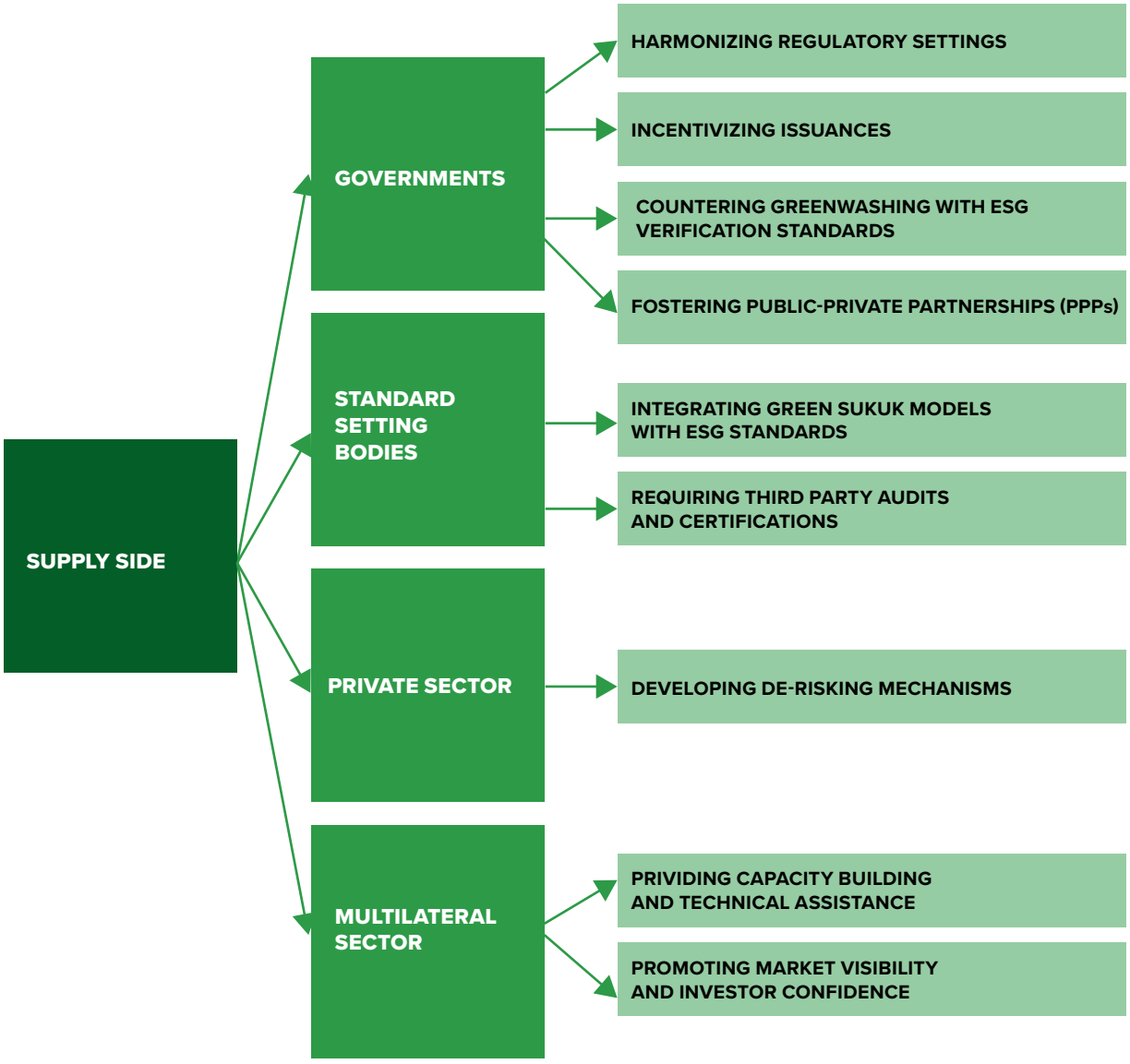


Figure 38

Supply Side: Harmonizing Regulatory Settings and Incentivizing Issuance

streamline regulations, following models like the ASEAN Green Bond Standards. Additionally, clear directives for cross-border issuances—covering sustainable finance taxonomies, tax treatments, ESG disclosure standards, and transparency in managing proceeds—would further attract regional and global liquidity. These measures simplify the issuance process, reduce compliance burdens, and boost investor participation by enhancing confidence in the reliability of Green Sukuk, ultimately deepening the market.

c. Strengthen Reporting and Transparency Requirements

For the purpose of establishing trust in Green Sukuk and demonstrating the actual environmental impact of the projects that they support, it is vital to have elevated standards of transparency and openness. This begins with mandated environmental impact reporting, requiring issuers to regularly disclose metrics such as greenhouse gas emissions avoided or renewable energy generated, thus ensuring accountability. Shariah compliance reporting further reinforces credibility by demonstrating adherence to both environmental standards and Islamic ethical guidelines. Adopting established reporting frameworks such as the ISSB Sustainability Disclosure Standards, GRI Standards, Task Force on Climate-related Financial Disclosures (TCFD), or ICMA's Green Bond Principles provide consistent and verifiable disclosures that strengthen investor confidence and reduce greenwashing risks. Collectively, these measures enhance comparability with other ESG investments, fostering greater transparency and accountability in the Green Sukuk market.

d. Counter Greenwashing with ESG Verification Standards

The implementation of rigorous ESG verification requirements would resolve greenwashing, thereby enhancing the credibility of Green Sukuk and preserving investor confidence in the market. This begins with climate targets aligned to the Paris Agreement, defining clear GHG reduction metrics in line with a 1.5-degree Celsius trajectory. Engaging reputable ESG rating agencies to independently verify Green Sukuk issuances further reduces greenwashing risks, while adopting EU-style green bond regulations ensures transparent assessments of projects' environmental benefits. Incentivizing compliance through lower fees or tax breaks encourages issuers to meet stringent ESG standards. Finally, educating investors about ESG verification fosters a discerning market that rewards high-standard issuances, thereby strengthening market integrity and increasing investor trust in the Islamic green finance sector.

With strict verification standards put in place, Green Sukuk issuances would be less vulnerable to greenwashing accusations, preserving the credibility of the market and ensuring that funds are directed toward genuinely impactful projects. Also, independent ESG verification would provide investors with assurance that Green Sukuk align with sustainability goals, thereby encouraging more capital into the market and expanding green finance initiatives in the Islamic finance sector

e. Reduce Issuance Costs

Issuers may be deterred from seeking green certification, external evaluations, and compliance owing to the elevated costs associated with these procedures, but several policy measures can alleviate these burdens. Governments and international organizations can offer subsidies or grants modeled after **Malaysia**'s Green Technology Financing Scheme (GTFS)—to cover expenses for external reviews and impact assessments. Tax incentives, as seen in **Indonesia**'s exemptions on capital gains and reduced transaction fees, further reduce issuance costs and stimulate market activity. Streamlined approval processes through dedicated "green finance desks" at regulatory bodies also lower barriers to entry. Collectively, these initiatives lessen upfront financial pressures, encourage more frequent and diverse issuances, and expand the participation of smaller issuers and those in emerging markets lacking the resources for high-cost certifications.

f. Foster Public-Private Partnerships (PPPs)

Fostering public-private partnerships (PPPs) strengthens the Green Sukuk ecosystem by combining government-led anchor issuances—exemplified by **Indonesia**'s sovereign Green Sukuk—with pipeline development involving private-sector developers and co-financing initiatives with multilateral institutions like the World Bank.

Such collaborations reduce financial burdens for issuers, demonstrate governmental commitment, and generate a steady flow of bankable green projects. As a result, issuer confidence increases, while broader private-sector participation leads to a more diversified and resilient Green Sukuk market.

g. Incentivize Innovation in Green Sukuk Issuance and Structures

Incentivizing innovation in Green Sukuk issuance and structures can expand financing options and attract diverse investors, particularly in technology and impact investment sectors. This includes sustainability-linked Sukuk that tie returns to meeting entity-level sustainability targets, as seen in **Chile**'s bond for renewable energy, and hybrid Sukuk that fund both environmental and social objectives, exemplified by **Indonesia**'s sovereign Sukuk. Adopting blockchain-enabled digital Sukuk, as trialed in **Russia**, further enhances transparency and reduces costs, while disaster risk reduction Sukuk mobilize funding for critical resilience projects, from flood defenses to Takaful-based insurance. Collectively, these innovations afford issuers greater flexibility, align with a range of sustainability goals, and ultimately deepen market interest in Green Sukuk.

II. Role of the Private Sector

a. Develop De-risking Mechanisms

Implementing de-risking mechanism can mitigate the perceived risks associated with Green Sukuk, particularly in emerging markets across the Middle East, North Africa, and Sub-Saharan Africa. For instance, partial guarantees and credit enhancements—like those used by the Islamic Development Bank—reduce credit risk, while blended finance models lower issuers' capital costs by combining public and private funds. Specialized insurance products protect issuers from unforeseen challenges, ensuring greater issuer confidence and encouraging more robust investor participation in these markets.

III. Role of Standard Setting Bodies

Standard-setting bodies play a pivotal role in integrating Islamic principles into global ESG frameworks, ensuring Green Sukuk align with recognized guidelines like the Green Bond Principles while also adhering to Shariah requirements. Achieving seamless global applicability requires ongoing collaboration among regulators, Islamic scholars, and sustainability experts. In addition, mandating third-party audits and certifications for Green Sukuk projects would further bolster transparency by providing independent assessments of environmental impact and adherence to established reporting standards.

IV. Role of Multilateral Institutions

a. Provide Capacity Building and Technical Assistance

Providing capacity building and technical assistance is essential to expand market readiness and promote well-structured Green Sukuk offerings. Training programs such as those conducted by **Indonesia**'s Green Finance Institute equip financial institutions, legal advisors, and issuers with the skills needed to structure Green Sukuk effectively. Advisory hubs, like those offered by the Climate Bonds Initiative, offer one-on-one guidance to further strengthen issuers' technical knowledge. Knowledge exchange platforms, where successful issuers (e.g., **Malaysia**'s Tadau Energy) share experiences, foster confidence and encourage new market entrants. Collectively, these initiatives boost technical expertise, particularly in regions with limited green finance exposure, leading to a higher volume of Green Sukuk aligned with best practices.

b. Promote Market Visibility and Investor Confidence

Promoting market visibility and investor confidence in Green Sukuk involves encouraging issuers to list on platforms like the London Stock Exchange's Green Bond Segment for greater global exposure, creating annual awards (e.g., **Malaysia**'s "Best Green Sukuk Initiative") to celebrate innovative issuances, and showcasing detailed impact reports from successful examples such as **Indonesia**'s sovereign Green Sukuk. These measures collectively boost awareness among global investors, reinforce credibility, and highlight Green Sukuk as a reliable and impactful investment instrument.

5.2.2 Demand Side: Expanding Market Awareness

The following recommendations aim to increase awareness, broaden the investor base, and solidify trust in Green Sukuk as a credible and impactful investment instrument.

I. A Synergizing Role of Public and Private Sector

a. Enhance Investor literacy on Green Sukuk Benefits

Enhancing investor literacy on Green Sukuk benefits can be achieved through targeted campaigns like the roadshows organized by **Indonesia**'s Ministry of Finance to highlight the financial, environmental, and social advantages of these instruments. ESG integration workshops, such as those facilitated by the Climate Bonds Initiative, further demonstrate how Green Sukuk fit into sustainable investment strategies. Additionally, information portals (e.g., resources provided by **Malaysia**'s Securities Commission) help new investors explore case studies, market performance, and FAQs. Collectively, these initiatives foster broader awareness among both institutional and retail investors, improve ESG literacy, and encourage greater inclusion of Green Sukuk in diverse investment portfolios.

b. Develop Incentives to Attract Institutional Investors

Developing incentives to attract institutional investors is essential for broadening participation in the Green Sukuk market and enhancing its liquidity. Collaborating with stock exchanges to include Green Sukuk in major sustainability indices, such as FTSE Russell's ESG Index (which uses a tilt methodology based on ESG scores), boosts visibility and appeals to ESG-focused portfolios. Mandating ESG allocations for public pension funds, as exemplified by Norway's sovereign wealth fund, further encourages institutional engagement. Offering tax benefits on income derived from Green Sukuk investments adds another layer of incentive, ultimately leading to increased participation from large investors and a more stable market overall.

c. Engage Retail Investors Through Accessible Green Sukuk Offerings

Engaging retail investors through accessible Green Sukuk offerings involves introducing lower-denomination Sukuk like **Indonesia**'s $100 minimum sovereign Green Sukuk, so everyday investors can participate. Developing mobile-based platforms, as seen in **Malaysia**, further simplifies buying, trading, and monitoring these instruments. Additionally, partnering with financial literacy programs and showcasing testimonials from existing investors can raise public awareness

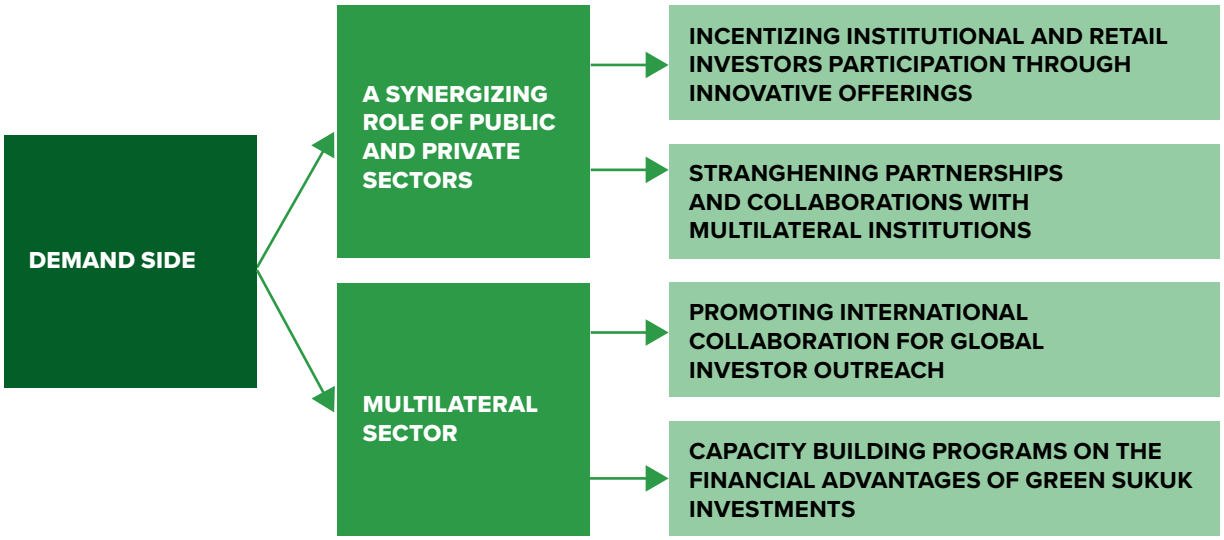


Figure 39

Demand Side: Expanding Market Awareness

of Green Sukuk's benefits. Collectively, these measures broaden the investor base, diversify demand, and foster greater grassroots support for sustainable finance initiatives.

d. Strengthen Partnerships with Multilateral Institutions

Partnering with institutions like the World Bank or the Asian Development Bank for co-investment in Green Sukuk boosts both credibility and visibility, while global awareness campaigns conducted through multilateral platforms reach broader audiences. Collaborative research and joint reports on Green Sukuk's role in achieving the Sustainable Development Goals further bolster legitimacy, attracting risk-averse investors and positioning Green Sukuk as a cornerstone of global sustainable finance initiatives.

- Multilateral backing enhances credibility and attracts risk-averse investors.
- Green Sukuk gain recognition as a key tool for global sustainable finance initiatives.

II. Role of Multilateral Institutions

a. Promote International Collaboration for Global Investor Outreach

Hosting joint roadshows with institutions like the IsDB can showcase Green Sukuk opportunities in emerging markets, while cross-listing these instruments on major international exchanges such as the London Stock Exchange or Nasdaq Dubai—broadens investor reach. Organizing sustainability forums, akin to the Green Bond Principles Annual General Meeting, allows issuers to present their Green Sukuk frameworks to global investors. Collectively, these efforts spark greater international interest from ESG-focused funds and facilitate increased cross-border capital flows into both Islamic finance and sustainable development projects.

b. Highlight the Financial Advantages of Green Sukuk Investments

Highlighting the financial advantages of Green Sukuk involves publishing data on the "greenium," or lower yields, which emphasize cost efficiency—evident in **Malaysia**'s Green Sukuk offerings that attract strong demand. Additionally, positioning Green Sukuk as a hedge against long-term risks, such as high-carbon penalties, underlines their resilience and alignment with sustainable finance goals. Surveys of institutional investors further reveal that Green Sukuk meets ESG mandates and appeals to diversified portfolios. Together, these factors increase interest from risk-averse investors and strengthen the case for Green Sukuk as a compelling alternative to conventional bonds or sukuk.

APPENDIX I:

Green Sukuk Expertise

Issuing Green Sukuk requires a diverse set of expertise and personnel to ensure both the financial viability and environmental integrity of the investment. Here are the key categories of expertise and personnel typically involved in the issuance process:

1. **Islamic Finance Experts:** Knowledgeable in Sharia law and its application to financial products, these experts ensure that the Green Sukuk structures comply with Islamic finance principles.
2. **Environmental Experts:** Specialists in assessing environmental impact, these individuals or teams are crucial for certifying that the projects financed by the Green Sukuk meet established green criteria and contribute to sustainable development goals.
3. **Financial Analysts and Advisors:** They perform financial due diligence, structure the sukuk, assess risk, and ensure the financial product is attractive to investors. Their expertise in market trends, pricing, and investor expectations is vital for a successful issuance.
4. **Legal Advisors:** With proficiency in both local and international finance law, including Islamic finance regulations, legal advisors draft and review contracts and ensure regulatory compliance. They also address any legal issues related to the green projects being financed.
5. **Sharia Board or Committee:** This board, consisting of Islamic scholars, reviews and certifies the compliance of the Green Sukuk with Islamic law. Their approval is essential for the credibility and market acceptance of the sukuk.
6. **Rating Agencies:** Involved in assessing the creditworthiness of the sukuk issuance, rating agencies provide investors with an independent evaluation of the financial risk associated with the sukuk.
7. **Project Management Professionals:** They oversee the projects being funded, ensuring that they are executed efficiently, within budget, and achieve the intended environmental benefits.
8. **Marketing and Sales Teams:** Skilled in communicating the value proposition of the Green Sukuk to potential investors, these teams play a critical role in the distribution and sale of the sukuk.
9. **Regulatory and Compliance Officers:** Ensuring that the issuance complies with all relevant regulations and standards, including those specific to green financing and Islamic finance, is crucial for the legality and success of the sukuk.
10. **Auditors and Independent Reviewers:** They provide ongoing oversight and verification that the funds raised are being used as intended, adhering to both green project criteria and financial reporting standards.

TERMINOLOGY

Annual Reporting: In the context of Green Sukuk, annual reporting involves disclosing detailed information to stakeholders on the allocation and impact of funds. This reporting is generally divided into two parts: the Allocation Report and the Impact Report, promoting transparency and accountability.

Certification: Certification is an optional, third-party verification process where an independent organization confirms that a Green Sukuk issuance meets specific environmental or sustainability standards.

Circular Economy: An economic system aimed at eliminating waste and promoting the continuous use of resources through sustainable production and consumption practices.

Climate Bonds Initiative: Founded in 2009, the Climate Bonds Initiative (CBI) is an international organization dedicated to promoting large-scale investments in low-carbon and climate-resilient projects.

ESG Integration: ESG integration is a process that uses ESG data to inform investment decisions and embed material ESG factors into corporate strategy.

EU Green Bond Standard (EuGBS): Introduced in 2023, the EU Green Bond Standard establishes specific requirements for green bonds issued within the European Union to align with sustainable finance goals.

Extended Producer Responsibility: An environmental policy approach that makes producers financially and/or operationally responsible for the entire lifecycle of their products, especially for the take-back, recycling, and safe disposal of post-consumer waste.

Green Bond Principles: Developed by the International Capital Market Association (ICMA), the Green Bond Principles (GBP) provide a voluntary framework to guide the issuance of green bonds, including Green Sukuk.

Green Sukuk: Shariah-compliant financial instruments issued to raise funds for environmentally sustainable projects, enabling issuers to meet both Islamic finance principles and environmental objectives.

Green Capital Expenditure: This refers to investments in physical assets, infrastructure, or projects that contribute to environmental sustainability by removing or reducing GHG emissions, consistent with the goals of the Paris Agreement. For Governments, it represents spending specifically directed toward achieving climate-related objectives including enhancing resilience to climate risks.

Greenium: Refers to the premium or cost advantage associated with Green Sukuk compared to conventional bonds, resulting in lower yields for Green Sukuk due to high investor demand.

Green Subsidy Race: These are efforts by policymakers and financial supervisors to incentivize the green transition by establishing "level-playing field" financial schemes on green financial instruments. The additional safeguards in voluntary process guidelines such as the ICMA Principles render green bond and Green Sukuk issuance more expensive. These "grant schemes" act to cancel out those additional costs, making the issuance competitive.

Guideline: Guidelines on Green Debt Instruments, Sustainable Debt Instruments, Green Lease Certificates and Sustainable Lease Certificates in Türkiye

IPCC: The Intergovernmental Panel on Climate Change is the United Nations body for assessing the science related to climate change.

Kyoto Protocol: The 1997 Kyoto Protocol operationalizes the UN Framework Convention on Climate Change by committing industrialized countries to limit and reduce greenhouse gas emissions.

Nationally Determined Contributions (NDCs): National climate action plans under the Paris Agreement, outlining how a country plans to reduce greenhouse gas emissions to meet global climate targets.

Paris Agreement: A landmark international accord under the UNFCCC that aims to limit global warming to below 2 degrees Celsius, emphasizing sustainable financing for climate action.

Second Party Opinion: In Green Sukuk issuances, an independent assessment is provided by a recognized ESG rating agency that evaluates alignment with sustainability standards.

Sustainable Finance Framework: A set of guiding principles that organizations, financial institutions, and governments use for directing capital toward projects that support environmental, social, and governance (ESG) objectives.

Taxonomy: A classification system categorizing economic activities based on environmental sustainability, such as the EU Taxonomy for identifying sustainable projects.

The Race to Net Zero: The "race to net zero" refers to global efforts by governments, businesses, and organizations to reduce GHG emissions to as close as zero as possible, with the remaining balance by carbon removal or offsetting measures. Key aspects include commitments to achieve net zero by the mid-century (2050) although some countries and businesses set more ambitious targets (before 2050), sector-level roadmaps to decarbonize (e.g., aviation, steel, construction, etc), and policy-driven green economic transition.

UN Global Compact: An UN-led initiative supporting companies committed to responsible business practices in human rights, labor, environment, and anti-corruption, guided by 10 principles.

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