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The Challenges of Green Sukuk Policy Implementation for Achieving Sustainable Environment

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ABSTRACT

In this decade, the entire world realized that a healthy environment is needed for mitigating catastrophic issues created by the nature. Thus, the green bond was introduced in 2007, and the green Sukuk was issued in 2017. Malaysia took the pioneering role for issuing green Sukuk and issued ten green Sukuk within 2020. Furthermore, Indonesia has taken initiative for issuing five green Sukuk in 2018. Besides that, Saudi Arabia issued two green Sukuk and the United Arab Emirates also issued two green Sukuk in 2019. As the green Sukuk was issued in various sectors which created a curiosity to know, what are the policies were created, how did they apply and how do they impact on the environment. Accordingly, the study aims to find out implemented policies to mitigate challenges for issuing all green Sukuk in four nations. So, this study was conducted through case studies on green Sukuk by analysing available data from the green Sukuk issuers, ministries, published literature and others. The study found that green Sukuk issuers were implemented the same policies that applied to issue green bonds and still remain a great challenge. It is because, every nation has a different geographical atmosphere, culture, religion and human behaviours. In addition, the study also found that all of the green Sukuk-issued projects were selected to reduce air pollution. Therefore, further research is needed on policy and project creation according to the nation for controlling other factors, such as; pollution (water, land, and sound), deforestation, and others.

Contribution/Originality: This study is one of the few that has investigated the challenges of Green Sukuk Policy in achieving sustainable environment. Furthermore, the study's main contribution is to provide important information to policy makers,

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administrators, and academicians on how to implement Green Sukuk through a quality environment.

1. Introduction

As responsible human beings, what policies have we implemented to overcome incidents that carried destructions and massive casualties? During this advanced era, people are living a more developed lifestyle than before. Many researchers found that to make the world with a refined technological lifestyle, most producers, inventors, thinkers, policymakers, leaders, contributors, researchers, and other stakeholders forgot the responsibilities towards the natural atmosphere. Everyone tried their way to gain profit for becoming the number one or best position holder, influential, ambassador, or example in the world (Ziemke et al, 2009). At this moment, the nation with high economic growth or strong financial power has gained access to take the control of the global economy. Now the question is how did they grab the position to control. For grabbing the position to control in the domestic as well as global *market*, most of the industry decision-maker has proven their creative activities through a series of cruelty to the natural atmosphere (Stevens et al, 2019). As innovation, entrepreneurship, and technology became the number one priority regardless of paying attention towards mother nature or the natural atmosphere surrounding them. It is all about continuously making money, controlling businesses, and gaining profit. There were a lot of policies implemented, issued, imposed, and monitored by many nations but it seems that the authority is always being silent or ignored. They did everything that was wholly unacceptable and devastating (Faye, 2015). The world has divided into many sections: Global South, Global North, Advanced nations, Emerging nations, developed nations, developing nations, and less developed nations. Although the United Nations-sanctioned many policies to save the environment and the world, many corporations, enterprises, and individuals are still free from prosecution (Williams, 1990). The study aims to analyze implemented policies and steps taken to mitigate challenges for issuing all green Sukuk in four nations.

2. Methodology

This study utilized the doctrinal research method with the content analysis. Both were applied in understanding concept, structures, issues and Shari'ah law. The case studies are conducted to the Green Sukuk Policies in Malaysia, Indonesia, Saudi Arabia and United Arab Emirates. The main approaches used include comparative, and analytical and critical approach. The method is based on the paper's objectives: to analyze implemented policies and steps taken to mitigate challenges for issuing all green Sukuk in four nations. Data collection from the library consisting primary and secondary sources such as statutes, books, articles, and internet sources.

3. Results and Findings

3.1. Vulnerable Environment Created by The Policy Makers

Policy manipulation created a vulnerable environment. It is undeniable that most developed nations gained financial strength through natural resources (Faye, 2015). It benefits them financially by using natural resources, such as; Gold, Oil, Gas, Diamond, Mineral, Tin, Iron, Coal, and others converted to the final goods. They implemented advanced technology to discover, modified to useable products and controlled the market

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price to gain the highest profits (Maoz, 1990). There are many ways that financially strong nations had created a vulnerable atmosphere, such as;

3.1.1. Policy Manipulation for own benefits

To maintain sustainable profits or earnings through natural resources, they continuously do their research, discover, dig, grab all the valuable resources, and gain financial benefits by trading them. In addition, they made policies and asked everyone to follow that, but they never followed them. They constantly manipulated policies to fit their benefits (Williams, 1990). For that reason, they are continuously doing their tasks restlessly and never really care about nature.

3.1.2. Create War to Hold the Supreme Power

The strong nation discovered valuable natural resources from the underdeveloped. To hold the market superiority, they start a war with them. For that reason, no one was able to fight them back. The vulnerabilities come when they create air pollution, water pollution by bombing, burning, using chemical weapons, deforestation, and others. It causes a significant effect on the environment, but no one really can say anything (Maddock, 2010). It is because they hold the supreme power where policies to dominate others.

3.1.3. Continuous Innovation to hold control of the market

The world has experienced many organizations playing a significant role in the market for enjoying the monopoly benefits. For that reason, they are continuously implementing innovative ideas for creating massive and valuable machinery (Maddock, 2010). If anyone enters the market newly, then they handshake with them through profit and risk-sharing activities. As a result, they became a syndicate and played a vital role in manipulating pricing, production, distribution, and innovation (Maoz, 1990). These activities help them achieve a free will to do things – that's why they do whatever they want. The policies are created by them – so, who dare to raise their voice?

3.1.4. Misusing financial power to dominate other nations

The classical trick is to gain power by exchanging money or financial benefits by misusing economic power to dominate other nations. One of the everyday matters is buying over the leader. In this typical world, money talks louder than anything. There are some essential techniques they implemented such as Tricky Dollar Peg method, Foreign Reserve, Maintain the value of Dollar to the gain strength of the local currency, Manipulation of the exchange rate to control other nations, Interest rate, Open market economy, and others. Applying the above tricks takes control over the less developed or underdeveloped countries (Faye, 2015).

The main intention behind this is that they will hold the financial power as long as they control other nations. As a result, a less developed country needed a longer time to stand up and never could resolve their issues - became poor forever. They used a financial destress called recession and financial crisis for a certain period to make financial control. So, no nation has ever implemented any policies to resolve environmental issues. Every country is busy gaining economic strength, which is completely brainwashing, showing off, and unnecessary.

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3.1.5. Neglecting the Environment

Nature by God for a reason and keeps the world in balance by sustaining the environment. Some areas are watery, and some areas are dry; some areas are mild cold, and some areas are too cold; some locations have bare land and some areas are fertile; some places have no trees, but some areas are forests; and, some areas are flat, and some areas are hill tracks. It is a given structure by the All-Mighty for maintaining it or keep it such a way for a sustainable healthy atmosphere. It is very unfortunate that the world is busy destroying natural beauty hunting for financial strength by destroying the GOD gift atmosphere (DeWitt, 1993). For that reason, we are experiencing Tsunami, land sliding, wildfire, dryland, too much rain or less rain, high temperature, and others.

The rich nations are becoming the world leaders and they are the policymakers. They can break anytime they want and they can impose to anyone or any nation - whenever they want. The presence of unbalancing jobs or wealth distribution in our daily life created a vulnerable society where corruption become the first crime (Newey, 2004). As a result, the wealthy nation can hold the power to enter any nation and exit from the nation anytime. The fact is that by using tricks including corruption, war, and using innovative ideas through the mechanism, heavy machinery, systems, and others – they convinced or forced the corrupted leaders for gaining access to the areas of the natural resources. This is true history that we all know.

4. A Catastrophic Impact - COVID19 Pandemic

The wealthy nations or high-tech companies usually comes to the targeted nations, research, discover and grabbed all the resources for a minimum price. After taking all the desired items, they flew to their land for creating utilities on the raw materials and trade to everywhere with a controlled price. To dominate the world, they have created a number of tools and techniques, such as; a syndicate team among big producers, published psycho advertising through ecommerce platform, creating fantasy lifestyle by creating and publishing movies, control experts, scientist, religious leaders, researchers through a controlled education system, maintaining sustainable economic condition by hiring experts from low-income nations with a lot of lucrative offers and others (Zara, 2021).

These are stress makes us divided and busy for the worldly life, payback debt, seeking for continuous modern lifestyle and others. Everyone is busy for making money. Just before the COVID19 Pandemic, the world experienced many wars, continuously nuclear tests on the land and in the sea, digging everywhere possible way to grab the natural resources, destroying mountains, blocking waters, changing waterflow, greenhouse effects, wild fire, tsunami, deforestation, continuously building skyscrapers, no place to through industrial waste and others. Due to COVID19, all of the activities were forcefully reduced. Now, everyone understands that there is a reason behind for having such pandemic (Luisetto et al., 2021). The Nature forced us to take care each other, without it we all lose our life. It is the time for every nation to cooperate and help each other to mitigate issues that we are facing.

5. Applied Preventive Measured Policies- Green Bond (GB)

According to the World Bank's Impact Report (World Bank, 2020b), there are total 58 active project were selected for eligibility for green bond financing where 53 projects

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were completed but 5 projects are on process to complete and 7 new projects will be added by the year 2020.

a) for SDG7, there are total 51,462 GWh electricity consumed by the Greece in 2018 equivalent to 7.9 million cars off the road for 1 year; 7,316 GWh energy produced from renewable resources which can be consumed by the 876,000 homes used electricity for a year; and 2,342 MW energy produced from renewable capacity from Solar, Wind and Hydro technologies which is equivalent to 202 million smart phones charged for a year. In addition, there are 560,000 people were used cleaner energy sources for schools and educational establishments, 206,800 additional passengers' trips added per day and travel time reduced for 23 minutes and 52,000 people were benefited from reduced travel time – easily access to the city center by the 100 new bus stops constructed.

b) For SDG15, 884,932 hectares selected for forests restored and reforested which is equivalent to 1.2 million Soccer Fields and 11.5 million tons of Carbon dioxide (Co2) reduced annually due to sustainable forest management activities which is equivalent to 2.3 million cars off the road for a year.

c) For the SDG6, there are 764,000 residents benefitting from secured water supply where 1.2 million hectares were implemented with new rehabilitated or restored irrigation services and 8.5 million people were provided with access to improved water resources.

There are 164 Green Bonds were issued for 22 currencies for US $14.4 billion since it started on 2008. By the year 2020, the new bonds were issue for 7 currencies worth US$ 1 billion. Since 2008, there are total 111 projects were initiated in 32 countries worth US $11.7 billion allocated for repayment within FY20 (Table 1).

Table 1: Detail Investment Scenario of Green Bond Projects

NO	US $ Billion				Outstanding
	Invested Sectors	**Mitigation**	**Adaptation**	**Total**	**US$ billion**
1	Renewable Energy & Energy Efficiency	6.1	0.1	6.2	4.6
2	Clean Transportation	4.4	0.2	4.6	3.5
3	Water & Wastewater	0.3	1.5	1.8	0.8
4	Solid Waste Management	0.1	0.0	0.1	0.1
5	Biodiversity	0.1	0.5	0.6	0.5
6	Agriculture, Land Use,Forests & Ecological Resources	0.6	1.9	2.5	1.1
7	Resilient Infrastructure, Built Environment & Other	0.5	0.8	1.3	1.2
Total		12.2	4.9	17.1	11.7
Percentage		71%	29%	100%	

Source: World Bank Impact Report (World Bank, 2020b)

6. Applied Policies: Processes of Green Bonds:

a) Use of Proceeds

i. Projects for low carbon and climate resilient growth in IBRD member countries

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ii. Low carbon and clean technology programs, such as; energy efficiency and renewable energy program related projects, and adaptation to climate change
iii. Mitigation projects, such as; rehabilitation of power plants and transmission facilities to reduce greenhouse gas (GHG) emissions
iv. Solar and wind turbine installation projects
v. New innovative technological Project related to reduction of GHG emissions
vi. Greater efficiency in transportation, such as; fuel switching and mass transport
vii. Waste management to reduce methane emission
viii. Construct Energy efficient building
ix. Enforce Reforestation and stop deforestation to stop flooding
x. Farming efficiency to the available secure foods

b) Process of Evaluation and Selection of Eligible Operations

i. Identify, sort and create policies towards an action to mitigate impacts
ii. Gain approval by the board of executive directors (BOED) – 25 member countries representatives
iii. Continuous monitoring and evaluations
iv. Finally, orld bank environmental specialist will screen to approve

c) Management of Proceeds

i. Follow the milestones
ii. Disbursement request must be aligned with the IBRD's policies
iii. Disbursement made over a period of time – can be quarterly basis.

d) Reporting

i. Yearly published – June 30
ii. Describe the operational status of the previous year
iii. Disclose the allocation of bond proceeds and measurable outcomes
iv. Highlight the major improvement for any single project

7. Initiative taken by the Islamic Finance Industry – Green Sukuk (GS)

With the intention of having a sustainable global healthy environment, a significant measure that has been taken into account by the Islamic Finance industry. They have developed and implemented a financial instrument called Green Sukuk (GS). This is a unique capital market instrument merging green and Islamic finance, started in 2017 (World bank, 2020a). The encouragement (inspiration and motives) behind this instrument is that the industry will have its own expansion by creating an alternative choice (Munir et al., 2020). As it is a similar concept to Circular Economy where it doesn't force or stop anything but given a choice for innovation to invest in an environment-friendly project (Baig & Jumat, 2020). For that reason, many nations have taken it very seriously, such as; Malaysia, Indonesia, United Arab Emirates, and others.

To support this idea, the Malaysian Islamic Finance Industry is continuously leading the industry by creating new ideas, verifying innovation techniques, continuously support industries and organized events for educating stakeholders (Cherif et al., 2021). By combining all these efforts, they had successfully created, issued, and implemented 16

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Sustainable and Responsible Investment (SRI) Sukuk to date (Capital Market Malaysia, 2021). Besides that, Indonesia successfully issued the world's first sovereign GS in 2018 that helped to raise US$ 2.75 billion from three annual issuances (UNDP, 2020).

This section is designed to critically analyze of steps taken to issue GS, through a series of case studies, such as;

i. Methodology applied to issue a selected GS,
ii. Number of key factors taken into account,
iii. Explanation of ideas – whether it is a new or transformation of existing ideas,
iv. The project details – to verify whether the project is environment friendly or not,
v. Overcoming key challenges – response from the stakeholders, and
vi. Significant benefits.

The description of the above-mentioned segments will be discussed in more detail by segregating the number of GS issued by the nation, the current status, and pre-measured outcomes of such investment.

7.1 Green Sukuk funds utilization techniques

For having a sustainable green environment, a nation can divide the entire Green Sukuk-based Projects into many segments. As an illustration; if a project is involved in the Energy sector or Renewable energy sector then it can be divided into four segments by segregating as many projects as needed, such as:

i. Useful, Usable & Renewable Energy – Creative method needed to apply to the projects.
ii. Energy Consumption Efficiency – Develop and apply a proven system that helps to maintain zero waste from the total energy consumption.
iii. Switch Traditional method to the Green Projects – Implement a set of approved techniques or methods to help the existing industries to switch or transform to the green-based industry.
iv. Energy reformation, Research & Storage – Develop Research & Development units to keep updating, maintenance, efficiency, expansions, and store.

Therefore, the industry will be benefited due to the supports given to raise funds and having facilities to expand the industry (Donato & Luigi, 2017). The newcomers with new ideas can be implemented as the entire industry is always syndicated by a few key players (controlled by a group of companies). This is a great opportunity for newcomers to raise funds and implement a new innovation technique, develop ideas, and expand the industry (Munir et al., 2020).

8. Implemented Policies in Four Nations:

The Green Bond Principles issued by the International Capital Market Association (ICMA) in June, 2018. It has applied policies assigned by the Security Commission Malaysia (SCM) (Table 2) for achieving Sustainable Development Goals (SDG) through eligible Sustainable and Responsible Investment (SRI) Projects, as;

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i. Use of proceeds: Proceeds raised from the issuance of the SRI sukuk are utilized only for the purpose of funding any activities or transactions relating to the eligible SRI projects.
ii. Process for Project Evaluation and Selection: Establish internal processes for evaluation and selection of the eligible SRI projects.
iii. Management of Proceeds: Proceeds allocated for the eligible SRI projects are credited into a designated account or otherwise tracked in an appropriate manner.
iv. Reporting: Annual reporting on the following: In addition; according to the Green Sustainable and Responsible Investment Sukuk Grant Scheme 2017;
   a) Objective of this policy: Extended to issuers to fund an external review cost relating to the green SRI sukuk issuance under the Framework.
   b) Claim:Issuer can claim for the Grant based on an issue or programme; should there be more than one issuance requiring a separate external review, the issuer is able to claim on that review cost incurred.
   c) Claim amount: 90% of the actual external review cost subject to a maximum of RM300,000.

Table 2: Lists of the Green Sukuk Policies Implemented by Four Nations

Country	Name of Authority	Policy Title	Date	Policy Description	Where it used
Malaysia	SCM	Sustainable and Responsible Investment Sukuk Framework	August 2014	Eligible projects are natural resources, renewable energy and energy efficiency, and community and economic development.	Renewable energy sector
		Green Sustainable and Responsible Investment Sukuk Grant Scheme	July 2017	Cost of external reviewer for issuing green bonds compliant with the SRI Sukuk Framework can be subsidized at 90% of the costs of independent review, but up to RM300,000.	
		Tax deduction	2017	Tax deductions on the issuance costs of SRI sukuk.	
		Income tax exemption	January 2018	Income tax exemptions for recipients of the Green SRI Sukuk Grant Scheme.	
Indonesia		Green Bond and Green Sukuk Framework	2017	Eligible projects are renewable energy, energy efficiency, resilience to climate change or disaster risk reduction, sustainable transport, waste to energy and waste management,	Renewable Energy Regional Resilience/Risk & Disaster Vulnerable sectors Sustainable Transportation

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				sustainable management of natural resources, green tourism, green buildings, and sustainable agriculture. Excluded projects are new fossil fuel-based electric power generation capacity, large-scale hydro plants, and nuclear and nuclear related assets	Waste Processing into Energy & others Sustainable Agriculture
		Sovereign Green Sukuk	March 2018	From March 2018 to October 2020, Perusahaan Penerbit SBSN Indonesia III has issued $5.5 billion (half of global green sukuk) of sovereign green sukuk.	
Saudi Arabia	International Capital Market Association (ICMA)		June 2018	1. Use of Proceeds 2. Process for Project Evaluation and Selection 3. Management of Proceeds 4. Reporting 5. External Review	Only in energy sector
	Islamic Development Bank	Sustainable Finance Framework	November 2019	This "Framework" 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. 1. Use of Proceeds 2. Process for project evaluation and selection 3. Management of proceeds 4. Reporting	1.Green Projects 2.Social Projects
UAE	Ministry of Climate Change and Environment	Sustainable Finance Framework	2016	This "framework" is intended to support the development of a strengthened enabling environment for diversified and innovative sustainable	

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			finance products, as well as the mobilization of private capital towards environmentally sustainable and climate-resilient investments.
Majid Al Futtaim collaboration the Ministry of Climate Change and Environment	Green Finance Framework	2018	This "Framework" which is in accordance with the four components of Green Bond Principles 2018: 1. Use of Proceeds 2. Process for project evaluation and selection 3. Management of proceeds 4. Reporting

8.1. Areas of investment covered by the Green Sukuk (GS)

There are some areas that the decision-makers (Government, Ministry of Finance, Central Bank, Shariah Board & Security Exchange Commission, and other stakeholders) significantly taken into account and successfully issued GS, started from 2017 (Karina, 2019). Mainly, four nations have taken such initiatives, such as; Malaysia, Indonesia, UAE, and S. Arabia. The following section will discuss the areas that they covered and the importance of raising such funds.

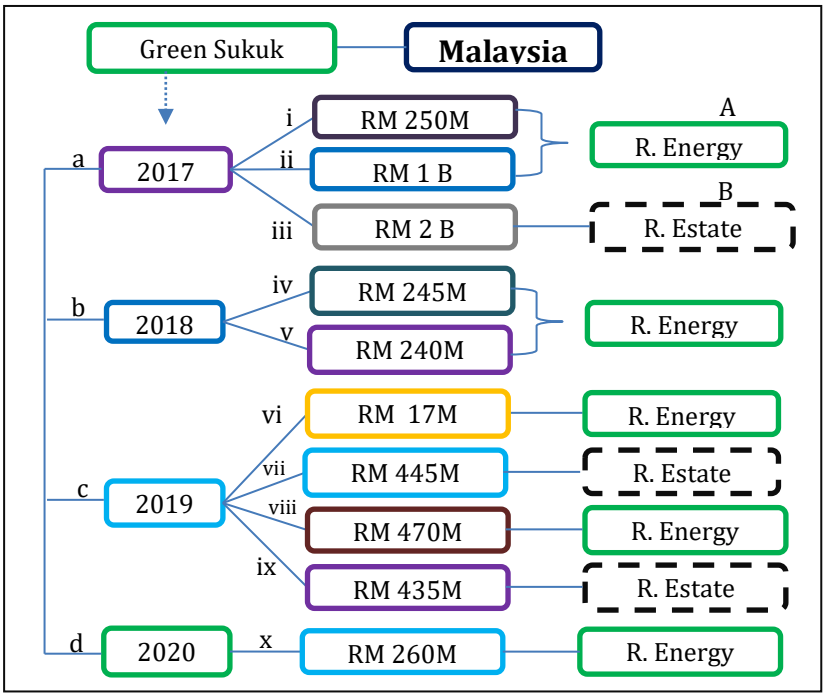
8.1.1. Green Sukuk Scenarios in Malaysia:

Malaysia has taken a significant initiative by issuing GS in the renewable energy sector (A) for RM 250 million and RM 1 billion in 2017 alone. Besides that, RM 2 billion was approved for the green real estate (B) concepts. It shows that renewable energy and green real estate initiatives were needed for having a green environment. Furthermore, in 2018, there were two GS issued for RM 245 million and RM 240 million for the Renewable energy sector again. There is a little difference between them that can be seen in Figure 1. In 2019, there were four GS were issued for two Renewable energy projects (RM 17 million & RM 470 million) and two Real estate projects (RM 445 million and RM 435 million).

In recent (2020) there was another issuance of new GS for the renewable energy sector (RM 260 million). It seems that Malaysia is having significant issues that occurred by these two sectors and for that reason, ten GS were issued to minimize factors that affect the Green Environment. So, it is raising a question that why Malaysia is only given importance on these two sectors and what about other sectors? Do they have any other plans for other sectors? As GS needs expansion and can be useful for another sector as well (World Bank, 2020a).

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Figure 1: Areas Covered by GS in Malaysia



It is very clearly indicated in Figure 1, which shows that 'A' is denoted as Renewable Energy projects and 'B' is denoted as Real Estate projects. The Malaysian government has given priority to renewable energy creation, applying new methods, and find alternatives to meet the long-term vision of achieving a low carbon and climate-resilient future (MIFC, 2020). By undergoing energy creation techniques that applied in the power plant needed to be changed (UNDP, 2020).

It is because it was marked as a dark green (Long term vision to be resolved) and approved by the CICERO (Center for International Climate and Environmental Research). For that reason, there are 4 important projects that were planned to construct to meet the demand of energy and carbon emission and fossil fuel-based power plant to the solar-based power plant (Aassouli et al., 2018). There are four GS that have gained the best performance; measured by the rating agencies (RAM Corporation Berhad and MARC – Malaysian Rating Corporation Berhad), those are briefly described below.

i. The Tadau Energy Sdn. Bhd. GS was issued for Construction for the 50 MW Photovoltaic Power Plant in Kudat, Sabah. The total fund was allocated for 250 million. The corporation already gained a rating of AA3 (RAM rating).
ii. The Quantam Solar Park Malaysia Sdn. Bhd. GS was issued for the construction of a 50 MW Photovoltaic Plant Project with a cost of RM 1 billion. The corporation gained a rating as AAA (MARC rating).
iii. The Sinar Kamiri Sdn. Bhd. GS was issued for the construction of a 49 MW Solar Photovoltaic Facility with a cost of 245 million. The corporation gained a rating as AA-IS (MARC rating). And
iv. The UiTM Solar Power Sdn. Bhd. GS was issued for the development and operation of a 50 MW utility of solar power plant. The corporation gained a rating as AA-IS (MARC rating)

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There were seven issuers invested in the Renewable Energy sector where five of them are invested in photovoltaic solar projects and the rest of them are invested in hydropower projects (World Bank, 2020a). The progress of most of the projects is showing good performance and therefore, they earned a good rating from the rating agencies (UNDP, 2020). It is a healthy practice where the investor will feel comfortable with their investment and hoping for a better return (Ministry of Finance, 2021).

The other GS financed-based projects are still undergoing process and some of the projects are facing difficulties to perform as planned. The covid19 wave had slow down the process of developing the assigned processes (Cherif et al., 2021). The ministry of finance, the security exchange commission, and other stakeholders are closely observing and monitoring all the activities of the allocated projects (Ramadhan & Wirdyanigsih, 2019). The Real Estate projects that issued green Sukuk are concerning with the development of a project with a green atmosphere including a healthy environment, waste management, water purifications, energy consumptions, the material used for the project, quality, sustainability, and others (Azhgaliyeva et al., 2020).

8.2. Missing Areas for issuing GS - Needed for Policy Implementation

Malaysia is having a continuous problem is called seasonal air pollution, that created by the farmers. It became a normal practice by the farmers to burn out leftover crops (after harvest) to clean the land and prepare for new seeding processes (Hod, 2016). Although, it is cheaper for farmers but it created very harmful issues. Firstly, it destroys the land's natural fertility and kills good bacteria or insects. Secondly, it causes air pollution and created a high temperature among the areas of farming lands. It seems that during the seasons, farmers from every state are doing it at the same time (Rosmiza et al., 2014). As a result, it created huge air pollution, high temperature and stayed for a certain period of time. The high temperature is obviously breaking off the cooling surface that needed to be controlled.

8.2.1. Green Sukuk Scenarios in Indonesia:

Indonesia has developed a wide range of implementing GS into many sectors compare to Malaysia. The first GS was issued in 2018 for $750 million which was the first sovereign GS in the world (Figure 2). In 2019, there were two GS issues for $1.25 billion and $103 million respectively. Both Sukuk were sovereign Sukuk as well. In 2020, another two sovereigns Sukuk were issued for $750 million and $381 million respectively. All of these five GS were the framework of sovereign Sukuk issued with the intention of supporting Renewable energy and established an alternative to reduce carbon emission and sustainable energy consumptions.

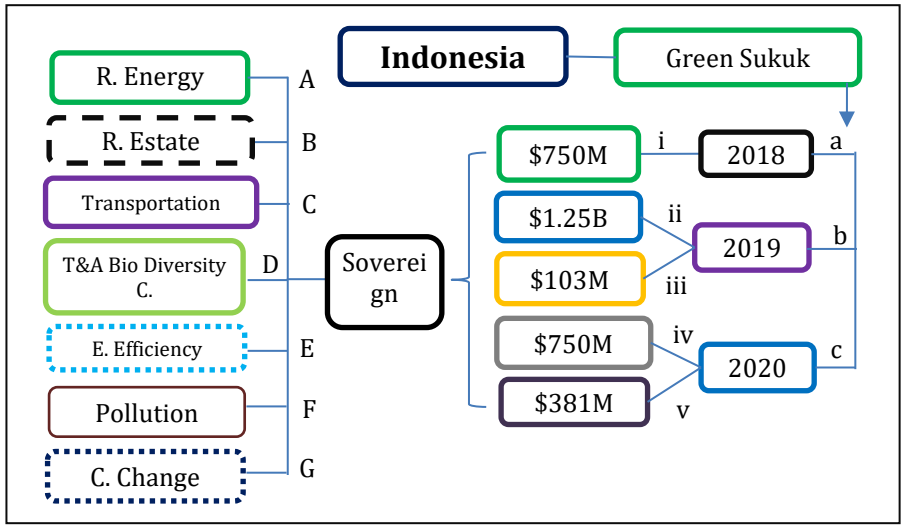
Indonesia has issued five sovereigns green Sukuk with the intention of mitigating issues from the five significant sectors including renewable energy, green real estate, transportation, energy efficiency, renewable energy, waste to energy and waste management, and resilience to climate change for disaster risk areas (Munir et al., 2020). Although they are facing some barriers to communicate with government bodies, local authorities, project stakeholders for smooth progress, the bigger side is that they are having a wide range of support through these funds raised from GS (Karina, 2019).

Indonesia has also given the emphasis on implementing this GS fund opportunity to renewable energy and energy consumption efficiency sectors. For that reason, the

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government of Indonesia has taken into a measure for reducing Green House Gas Emissions by 29% within the year 2030 and submitted a plan to UNFCCC (United Nations Framework Convention on Climate Change). To achieve that the ministry of Forest coming out with a plan for the crucial sectors that needed to be financed (UNDP, 2020).

Figure 2: Areas Covered by GS in Indonesia



There are five sectors that needed financial support by showing an utmost need and urgency in various sectors. As the government of Indonesia (combination of ministries of agriculture, environment, transportation, home, health, industry, and others) come out with various plans with a list of funds that they needed, such as;

i. Energy sector needed $236 billion,
ii. Forestry sector needed $5.6 billion,
iii. Waste management groups needed $2.9 billion,
iv. Agriculture sector needed $2.1 billion, and
v. Industrial processes and products in the various industries needed $379 million (Mujizat, 2021).

As the ministries have segregated activities and factors related to climate change, global warming, and a sustainable green environment; there are planning to solve many matters effectively through a strategic channel of working together. For that reason, they come out with such plans to prioritize. There is a significant difference can be found in the allocation of fund between the year 2018 and 2019 (Ministry of Finance, 2019), such as;

i. Year 2018: the sustainable transportation 62%, Energy Efficiency 6%, Renewable energy 8%, Waste to energy and waste management 7%, and Resilience to climate change 17%.
ii. Year 2019: the sustainable transportation 48%, Energy Efficiency 27%, Renewable energy 5%, Waste to energy and waste management 9%, and Resilience to climate change 11%.

The allocations towards transportation are definitely focused on reducing air pollution. The inefficiency in energy consumption costs a lot of money for the government to give subsidies. The other sector might be allocated through the funding availability. As the first priority given to the hydropower, solar, and bioenergy power plant; as it becomes the most prominent issue to be resolved (Ministry of Finance, 2020). It was a great initiative

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taken by the government of Indonesia to issue sovereign GS. The government will be able to handle the fund accordingly, on top of that investors are securing for getting back of their invested funds.

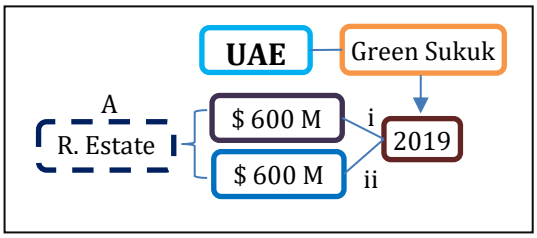
8.3. Missing Areas for issuing GS - Needed for Policy Implementation

Seasonal air pollution was created by the Indonesian farmers. This is one of the biggest issues carried on for a decade. Every year, there are some farmers burn out the trees, leftover corps, and clean forests for farming new corps that created huge air pollution among the region. The citizens of Malaysia, Singapore, and Indonesia faced this massive pollution and caused health issues in the respiratory systems of many victims (Hod, 2016). This matter needed to be solved and it's needed support from the ministry of agriculture by educating farmers through training and facilities. Besides that, Indonesia is having a huge population with many islands, forests, wildlife, marine life, and beautiful landscapes. The government needed to create job opportunities in the community. Green Sukuk can be useful for this matter but needed for creative ideas. So, it will help the community to take care of the forest, wild life, stop harmful stubble burning, and others.

8.3.1. Green Sukuk Scenario in UAE:

The United Arab Emirates has issued two GS for the investment in real estate projects. The first GS was issued on 14th May 2019 and 30th October 2019 was issued the second GS. Both were estimated at $600 million (Figure 3). The fund collected from both GS will be used for 2 hotels, 2 offices, and 10 shopping malls. To make it align with green strategies, they have planned for using these funds ($1.2 billion) for reducing factors related to destroying the environment, such as; level of certification by the property, energy efficiency, avoiding greenhouse gas emissions, annual energy savings, and annual saving water.

Figure 3: Areas Covered by GS in UAE



They have already declared of certain ranges will be benefited after installations of such techniques, equipment, construction of passages, safety, damages, and revaluation of other plans for successfully future achievements (Majid Al Futtaim, 2020). The importance of such investment is given into four categories, such as:

i. Green buildings: within this concept, they included impact reporting metrics by the level of certification by the property, energy efficiency will be gained by MWh or % vs. baseline, estimated avoided GHC emission (tCo2eq), annual energy savings will be (MWh pa) and an annual reduction in water consumptions.

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ii. Renewable Energy: within this concept, they included energy purchasing cost (MWh), capacity added (MWh pa), how much percentage of electricity consumption from renewable sources and, estimated avoided GHG emission (tCo2eq)
iii. Sustainable water management: within this concept, they identify the amount of water recycled (liters) and amount of water reused (liters)
iv. Energy efficiency: within this concept they included estimated GHG emission reduced (tCO2eq), expected energy saved (in MWh) and
v. Percentage of annual energy efficiency gain relative to an established baseline

Both of the GS were rated by S&P as BBB. It is because, the environmental impacts of the projects can be evaluated within five significant sections and can see the difference between them through the outcomes between 2018 and 2019, such as;

a) Green Building – 2018:
i. by the level of certification by a property – LEED: 9 Gold and 2 Platinum.
ii. energy efficiency will be gained by – 17,100 MWh,
iii. estimated avoided GHC emission – 7,313 tCo2e,
iv. annual energy savings – 10,856 MWh and
v. annual reduction in water consumption – 99,179m3.

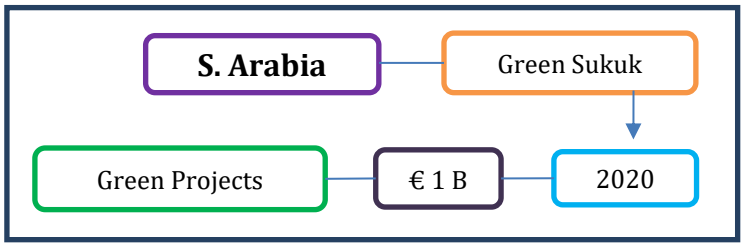
b) Green Building – 2019:
i. by the level of certification by a property – LEED: 11 Gold and 3 Platinum.
ii. energy efficiency will be gained by – 32,118 MWh,
iii. estimated avoided GHC emission – 10,544 tCo2e,
iv. annual energy savings – 15,018 MWh and
v. annual reduction in water consumption – 134,449m3.

As these investments were allocated to two hotels (aloft hotel, and Hilton garden inn), two offices (Majid Al Futtaim Tower 1 and 2), and ten shopping malls (City Centre Almaza, Beirut, Fujairah, Me'aisem, Mirdif, Suhar, Mall of Egypt, My City Centre Al Barsha, Al Dhait and Sur) (Majid Al Futtaim, 2020).

8.3.2. Green Sukuk Scenario in Saudi Arabia:

The government of Saudi Arabia wanted to use this fund for green projects by using energy efficiency methods and established renewable energy (Figure 4). As they are using fossil fuels for generating power where the maximum uses of energy for air-conditioning and water desalination. The sustainable development of such plants needs huge funds. So, the SA government aims to reduce emissions by the infrastructure development of renewable energy sources (Global Infrastructure Hub, 2021).

Figure 4: Areas Covered by GS in SA



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9. Recommendation for the enhancement of green Sukuk policies

Green Sukuk is referring to the investment certificate (Sukuk) which is created and issued to invest in certain projects which are creating utilities without harming the natural atmosphere. The entire environment or atmosphere is created by the all-mighty ALLAH Swt. to benefits all of the created things, including; humans, animals, insects, plants, trees, crops, rivers, soil, water, air, fire, and other seen or unseen creatures in the world (Aassouli et al, 2018). This financial instrument was introduced to enhance the utilities and enjoy benefits sustainably from certain natural-created things without harming another-created things. The common mistakes of the world are that to create a particular product or service, the manufacturer or innovator, or entrepreneur ignore certain responsibilities of the natural atmosphere (Ramadhan & Wirdyangigsih, 2019).

The above sections disclosed the no. of areas covered by the GS investment funds. There are some other important areas that have not been taken into account or needed to take into account - will be discussed in this section. Furthermore, to make it more justifiable, relevant, and authentic, the effort was used by taking instructions from the holy Quran and guidance from the Sunnah. The following section will be discussing environment as a whole and factor involved in environment indicated as a segment of environment.

10. Conclusion

As the natural atmosphere of the world has changed a lot due to the old activities done by the past generations. Day by day, there are so many things that are continuously changed, such as; behavior, attitude, and activities of human beings, businesses, institutions, and societies. Everyone takes initiative, performs, or applies measures according to the situations they were faced during that period of time. Though there were so many rules, regulations, policies, and instructions were created to maintain and monitor activities but due to ignorance, policy manipulation, corruption, illegal activities, war, random damping, and many other reasons – the present world is facing devastating and catastrophic uncontrolled events. This event impacted us through huge casualties and economic depressions.

There are so many unusual incidents experienced by the world in the 21 centuries. In the past, the world faced terrible earthquakes, such as; tornados, hurricanes, floods, tsunami, and others. The most recent unavoidable circumstance is Covid19 Pandemic (Felicia et al, 2021). The entire world is facing tremendous pathetic moments with a big number of human casualties. The question is who is responsible for that. Is it human or nature? If it is made by humans then there must be a solution for that. If it is created by the nature then there must be a reason for that. It is because this is the most advanced technological era that the world ever had in human history. The lifestyle of the world is now completely dependent on technology. For finding any solution, technology is supporting the world enormously. Although this is the best time for human beings with techno world to create this advanced techno world; the human being has shown many devastating cruelties to nature. As a result, it might be the outcome of the misusing of natural resources, destroying forests, polluting water-air-earth, killing environment needy insects or animals or living things, and others. So, nature is starting to respond according to the damage that the corporate world created.

For that reason, the entire world is started to think of sustainable development with a better world (Cherif et al, 2021). Islamic Green Sukuk (IGS) is one of the recent efforts that

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has been taken into account by the corporate world. This is a financial instrument available for the project related to innovation, creativity, and implementation of any environment-friendly product or service. At this point, the world leaders were decided to take initiative to face such events. Every government created and impose significant measures to follow. Green bond and green Sukuk are the most innovative measured that were created in 2007 and 2017.

As Green Bond was issued in 31 countries between 2008 to 2020. There was a total of 111 projects were created by issuing such bonds with a target of massive changes in the green environment for dealing with sudden climate change. As China was taking this green bond very seriously and invested in 34 projects, besides that India had implemented 11 projects and others are relatively lower than 10 projects, such as; Mexico implemented in 7 projects, Brazil and Morocco implement in 5 projects and others 26 nations were issued green bond between 1 to 3 projects. The practice of producers, innovators, entrepreneurs, policymakers, and other stakeholders in the commercial economy makes the world vulnerable and worsens day by day, such as; global warming, carbon emissions, misusing natural resources, destroying forests.

To support the environment, sustainable atmosphere, and a better life for living things; Islamic Finance is taking significant initiative (GS) with conservative measurement towards investment projects (Karina, 2019). The accumulated fund of these financial instruments will be utilized to the project related to creating energy for utilities, supporting economic agents, eliminating activities related to pollution, destroying, damaging, harm on the living thing and the environment for sustainable healthy earth with harmless better future. So, it has started its operations in 2017 in Malaysia to the rest of the world.

Green Sukuk has significant support by the Islamic Finance Industry for supporting most of the Muslim nation where they found a massive role to play in making the global green atmosphere successfully. Most challenges come when applying policies as it is a different instrument but the goal was set to make the atmosphere much beneficial for everyone. To make acceptable policies, regulations, monitoring systems and imposing policies according to obtain the main objective policy creation become the most significant challenge. The study gives emphasis on this particular matter where policy creation for green Sukuk must be different and make it tailor-made to fit with the respective nation. It is because every nation consists of a different atmosphere, climate, people, religion, practice, culture, people attitudes, and behaviors. The study also suggests that there are some areas that needed immediate action to deal with the pollution, such as; air, water, sound, marine, forest, and the higher surface of the earth.

Though it is very difficult to deal further research is needed for finding out the policy manipulation, policy creation according to the nation, and creating a structure for zero tolerance for preventing massive pollutions. Furthermore, it is needed to take control by human beings within their capacity. As it required honest effort. The world is devastating with a global temperature that is obviously created by humans and Nature. Humans play their role for their benefit by using or destroying nature. As the world is experiencing how Nature is continuously reacting towards the world. For that reason, this section is suggesting that there are some urgent matters needed to solve, such as; stop wildfire, protecting marine life, keeping forests, stopping smoky industry, proper waste recycling methods, saving wildlife, and fertilizer and chemical-free foods.

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