

THE ROLE OF GREEN SUKUK IN REALIZING THE SUSTAINABLE DEVELOPMENT GOALS 2030 AGENDA

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ABSTRACT

The purpose of this study is to investigate green sukuk and its influence on the implementation of the Sustainable Development Goals (SDGs), as well as to identify and analyze the factors that have an effect on those activities. This research is carrying out a systematic literature review in order to locate, examine, and analyze any and all relevant research that is currently available in order to provide answers to the research questions. In spite of the fact that it is such a great innovative investment instrument and that it is doing well with getting positive response from the market, green sukuk still face many challenges, and there is still room for improvement to bring up its potentials and maximize its social impact for the most recent SDGs agenda. Green sukuk have developed into Islamic financial instruments that are in demand by the public because of their ethical responsibility towards the environment. Green sukuk provides benefits not only for all stakeholders involved in it but also for the environment. The government, as a regulator, is expected to be able to provide support through various strategic policies to support green sukuk, such as by developing a more substantial legal basis and incentives in the form of tax reductions, as well as strengthening information and literacy to the public about green sukuk.

INTRODUCTION

Earth is in crisis and is on the verge of inevitable danger. One of the causes is climate change, which significantly impacts human life and the environment. Climate change has many impacts on the environmental damage caused by the exploitation of resources that are not realized by humans (Chandel et al., 2016; Harrison et al., 2016). For example, in the agricultural sector where climate change has an impact on decreasing agricultural production and providing changes in planting and harvesting periods that are longer (Aryal et al., 2020; Matiu et al., 2017). In the health aspect, the changes that occur in the spread of infectious diseases are related to respiratory disorders and malnutrition (Meo & Abd Karim, 2022; Rocque et al., 2021).

Meanwhile, broadly, climate change also has an impact on the economy, where many small companies originating from the informal sector find it difficult to get out of conditions of limited access to finance and resources (Gallego-Schmid et al., 2020; Norouzi et al., 2020; Timur & Herianingrum, 2022). In addition, issues of inclusivity, gender, problems of employment access to employee access to work, and groups are a concern. They are indirectly affected by the adverse effects of climate change (ILO, 2018, 2021). The global economic losses caused by disasters caused by climate change have been steadily increasing over the past few decades. Statista (2022) notes that since mid-2010 and 2019, there has been an economic loss of around US\$1.3 trillion. This value increased by more than US \$400 billion from the previous decade.

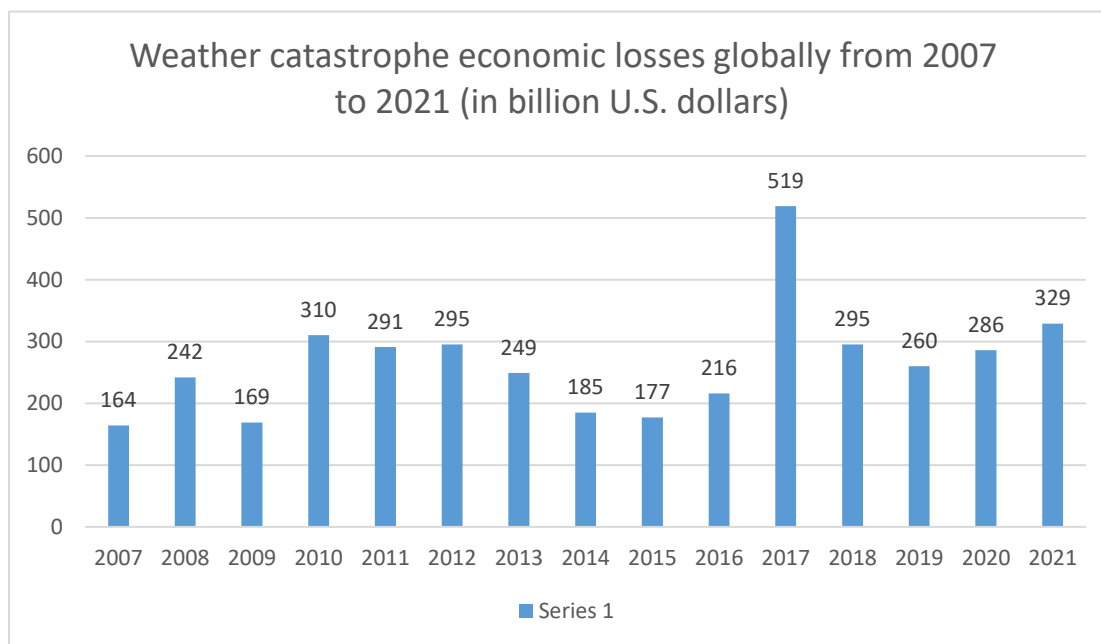


Figure 1. Weather Catastrophe Economic Losses Globally From 2007 to 2021 (in Billion U.S Dollars)
Source: (Statista, 2022b)

Some natural disasters or extraordinary events caused by climate change, for example, are storms, floods, heat waves, cold waves, droughts, and forest fires. Statista data states that climate change causes many disasters that ultimately cause global economic losses of 329 billion US dollars worldwide in 2021. Still, in the same report, the economic impact of climate change had touched its highest figure in 2017, namely 519 billion US dollars. This strategy aims to accelerate SDG progress (United Nations, 2020). One of the efforts that can be made to realize the agenda is to involve oneself in green projects by actively investing.

In Islamic economics, one alternative investment instrument based on sharia principles is the green sukuk (Suwanan et al., 2021). Besides being able to answer the need for financial instruments that follow Islamic values, green sukuk can realize the SDGs 2030 agenda by financing sustainable development programs and have

tremendous benefits and potential for the environment in the future (Budiarso, 2019). Although relatively new, several studies have shown that green sukuk are alternative instruments that have great value and promising prospects.

Green sukuk provides many benefits to all stakeholders involved. All stakeholders involved in the issuance of green sukuk are allowed to claim, promote and create an image for themselves or their organizations as institutions supporting environmental sustainability and climate change (Ghorchi & Kavianirad, 2019). In addition, green sukuk as green finance also contributes to increasing investment flows that focus on green projects (KLHK, 2020; Meo & Abd Karim, 2022; Rasoulinezhad & Taghizadeh-Hesary, 2022). Green sukuk also plays a significant role in realizing financial inclusivity as well as being socially responsible and helping Islamic countries, in particular, achieve their targeted SDGs (Keshminder et al., 2022).

On the other hand, from a practical point of view, the supply and application of green sukuk as an Islamic financial instrument are still experiencing various challenges. One of them is the small number of green sukuk issuers and investors, so there is still little data that can be used to measure the performance of green Sukuk ((Azhgaliyeva et al., 2020). Next is the low literacy or knowledge of the public as potential investors on the definition and benefits of green sukuk themselves (Aassouli et al., 2018; Abubakar & Handayani, 2020; Septiana & Dewi, 2008). In addition, there are still many assumptions that green sukuk as Islamic financial instruments are the same as other conventional financial instruments, so people's intentions to invest in green sukuk are still low (Tabassum & Diengdoh, 2019).

The global Muslim population was 1,84 billion people in 2022 (The Royal Islamic Strategic Studies Center, 2021), with excellent potential for developing green sukuk. It can be seen from the results of research by Suwanan et al. (2021), which predicts the issuance of green rates until 2029 worth 419 trillion rupiahs in Indonesia. This data is also supported by the trend of environmentally friendly lifestyles among millennials and young people, so it is predicted that the interest of young people to invest in this green sukuk instrument will increase (Septiana & Dewi, 2008).

However, despite the increasing number of studies discussing the use of sukuk as one of the Islamic financial instruments, the researcher considers that there still needs to be research that focuses on examining the role of green sukuk, especially in achieving SDG 2030 points. This paper discusses the vital role and benefits of green sukuk on several SDG points. Furthermore, it will also be discussed further the challenges and obstacles to the implementation and practicality of green sukuk and the opportunities for realizing Islamic values in saving the environment. This research, with a systematic literature review, is also expected to provide a more profound mapping and understanding of the importance of the role of green sukuk. Green tribes can not only provide benefits for the stakeholders in it but also for the environment so that businesses are run following Islamic ethical principles and are sustainable.

Therefore, this research will offer valuable insights and knowledge to benefit all parties, namely academics, practitioners, and related authorities. For academics, the results of this research can be a trigger and foundation for developing subsequent studies that take the theme of green investment and green finance. Furthermore, for green finance practitioners, this research can be used to determine the extent of the role of green sukuk for the community and the environment. Practitioners can also find out the community's response to green sukuk so that later practitioners can develop promotional strategies that attract public interest to invest in green sukuk.

LITERATURE REVIEW

Sukuk

According to two renowned Islamic economics scientists (Bacha & Mirakhor, 2018), most Islamic countries suffer from external debt to finance their development infrastructure. These countries need significant development infrastructure, but a lack of resources makes it impossible to raise funds domestically. As a result, these governments often borrow

from other countries and international financial institutions. Borrowing countries face many challenges, including 1) volatility of home currency when borrowing is in foreign currency, 2) as a result of such borrowing, national debt and economic fluctuations increase, and 3) exposure to fluctuations in commodity prices, as exports are heavily dependent on this sector. Recent developments in Islamic borrowing (sukuk), according to Bacha and Mirakhor (2018), can lessen the need for external financing while also lowering debt and protecting against economic shocks.

For instance, the government of Malaysia issued the very first Sovereign sukuk in 2001 in order to raise money for the nation's development infrastructure. Sukuk is an Islamic financial instrument with structural characteristics similar to bonds. However, given the higher ethical standards imposed by the Islamic act, including not engaging in sinful activities (alcohol, gambling, pornography, etc.), the sukuk issue may need to increase investor confidence. The inability to guarantee profit sharing (in some cases) and a constant rate of return further reduces the

attractiveness of the product (Ullah et al., 2018). Such ethical content and economic characteristics of sukuk have become a unique financial product for studying how social trust affects sukuk's activities.

Sukuk differs from bonds that it does not represent the lender-borrower relationship between the holder and the issuer. The issuer funds the asset with the proceeds of sukuk, while the owner owns the asset for a period of time. According to the contract, the issuer will share revenues from the assets with the owner of the sukuk based on a mutually agreed ratio. It means that the cash flow of the sukuk owner depends on the return on the underlying assets invested in the business

project. Therefore, sukuk market performance may also be inherently related to the profitability of the underlying asset (Afshar, 2013; Ahmed et al., 2015; Alqahtani, 2012; Önder, 2016; Safari et al., 2013). Therefore, ceteris paribus believes that the overall growth and productivity of the industry in which the sukuk-funded project began could affect the profitability of sukuk's underlying asset of each division of the industry.

Green Sukuk

As climate change awareness becomes more important, the commercial world has rapidly presented the concept of socially responsible investing and therefore financing options. Today we are talking about one of the financial options, such as the issuance of green bonds. Green bonds are a form of bond product, the proceeds of which are used solely to finance or refinance current and future green projects (ICMA, 2018). Green projects include projects aimed at solving environmental problems. Green bonds are improved to support projects that promote sustainable growth and preserve the environment.

What started as a market is also rapidly evolving into a supply-driven activity (Ross, 2015). This practice is part of socially responsible investing, in which money is invested for social as well as monetary gain. The green bond market faces several obstacles, including the underdeveloped domestic bond market, lack of bankable and standardized green projects, lack of generally accepted green standards and definitions, issuer's opinion on cost-benefit ratio, the general discrepancy between the size of projects, bonds, and institutional investors (OECD, 2015).

Issues related to market expansion include a lack of awareness of the benefits of green bonds and current international practices, lack of local guidelines for green bonds, transaction costs associated with meeting the basic requirements of the green bond market, lack of ratings for green bonds, indices and listings, international investors struggle to access local markets, and lack of domestic green investors (G20, 2016). As green bonds appeared as an environmental investment vehicle, sharia investment vehicles appeared in the same concentration as green bonds. The instrument is then called green sukuk.

A green sukuk is a sukuk that complies with the green principles, which a green bond complies with. As the green principles are independent of the underlying financing structure, a green sukuk is issued in a similar manner as a non-green sukuk would be issued, with the addition of the green framework that dictates the usage of the issuance proceeds, a second opinion report or green certification by an independent reviewer, and a post-issuance impact report that covers how the funds raised have been used and the environmental impact that has been achieved. It is virtually identical to the additional requirements added to a bond issuance to make it into a green bond issuance.

It has been acknowledged by Moghul and Safar-Aly (2015), Morea and Poggi (2017), Musari (2021), Ramadhan and Wirdyaningsih (2019), and Wahab and Naim (2020) that green sukuk as an investment instrument for sustainable development have become increasingly popular in the recent past as part of the socially responsible or impact investment strategies of countries and companies alike. Green sukuk is a type of Islamic bond. According to Kammer et al. (2015), sukuk could help close the funding deficit in the infrastructure sector. Sukuk is appropriate for funding infrastructure due to the fact that they involve risk sharing, which helps to address financial gaps in developing countries.

The primary distinction between a green sukuk and a green bond is the same as that between a sukuk and a bond; the underlying financing structure. Green sukuk is a significant development in the direction of reducing the chasm that has long existed between conventional and Islamic financing. It is a cutting-edge financial instrument with broad international applicability. A green sukuk's key benefit is that it attracts a wider range of investors than a non-green sukuk or a green bond would, in addition to meeting sustainability requirements and directing cash to ecologically friendly initiatives. Whereas a non-green sukuk appeals solely to non-green investors, and a green bond appeals only to conventional finance investors while excluding Islamic compliance investors, a green sukuk draws green investors and Islamic compliant investors as well as conventional finance investors.

Green sukuk is an Islamic-compliant bond because 100% of its proprietary proceeds are used to finance or refinance green projects that contribute to climate change mitigation, adaptation, and biodiversity conservation. Therefore, there are two criteria when issuing green sukuk: 1) green sukuk issuance must comply with Islamic and sustainable financing principles, and 2) a funded infrastructure project is a project that complies with the principles of sustainable development, i.e., a project that combines environmental, social and governance aspects (green infrastructure).

Sustainable Development Goals

The Brundtland Commission's short definition of sustainable development is "to make development sustainable, taking into account the limits of a better life, without compromising the ability of future generations to meet their needs. The ability to ensure that the needs of the present are met. In 2015, the UN General Assembly promoted the integration of the operation and sustainability of the organization, responded to the needs of current and future stakeholders, and, better of all. We have adopted 17 SDGs with the aim of ensuring a good and sustainable future, economic, social, and ecological development. SDGs represent a major deviation from MDGs. Not only the goals and the number of goals but also the actual goals and concepts and the political process that propelled the details. The MDGs were the North-South help agenda. Goals and goals, such as general primary

education, are mostly relevant only to developing countries and are sometimes referred to as the "Minimum Development Goals" (Harcourt, 2005). The MDGs, which are due to expire in 2015, has achieved notable results, including the goal of halving the number of people living on less than 1.25 US dollar a day, even though many goals have not been met.

In contrast, the SDGs are global on the agenda for sustainable development. These are universal goals that set goals for all countries, not just the poor, and are relevant to the United States as well as Liberia. They have emerged from the north and south countries of the world, especially middle-income countries such as Brazil and Colombia, since the 2012 Rio + 20 Conference promoted by the Minister of the Environment. Beyond the MDG, it was agreed that these goals are universal and should apply to all countries. The agreement emphasized that new goals should be logically built on the MDGs and that the target date will be 2030. The SDG process provides a unique opportunity to create a unified framework to promote human prosperity as evidence of increased global environmental risks increases.

RESEARCH METHODS

In this study, the Systematic Literature Review (SLR) method was chosen to summarize the various kinds of existing literature to produce a concise and ready-to-use finding for the benefit of a particular study. The systematic literature review identifies, assesses, and interprets all findings on a research topic by answering the research questions that have been designed previously. The research questions to find the data needed are 1) what are the benefits of green sukuk for sustainable development?; 2) what are the challenges in issuing green sukuk?; and 3) what are the potentials of green sukuk for sustainable development?

This study collects previous research papers as secondary data by seeking the collection of literature from the database sites www.scholar.google.com and www.scopus.com, using the keywords: green sukuk and sustainable development or SDG. The search process is also conducted by using the help of Publish or Perish software. The research paper must be published in 2016-2021 and can be fully accessed to make it feasible. And in the final stage, using all the relevant literature and research papers that meet the criteria, the author makes observations and analysis to explore the role of green sukuk in realizing the Sustainable Development Goals agenda.

RESULT AND ANALYSIS

A total of 140 research papers were found based on keywords, leaving 14 relevant papers. Papers are selected based on their relevance to the quality assessment that discusses the potentials, benefits, and challenges of green sukuk in realizing sustainable development goals.

Table 1
Results of Relevant Research Papers

No.	Journal Type	Year
1	Abdullah, M. S. & Keshminder, J. S.	2020
2	Abdullah, N. & Nayan, M. A.	2020
3	Alam, N., Duygun, M., & Ariss, R. T.	2016
4	Azhgaliyeva, D., Kapoor, A., & Liu, Y.	2019
5	Campisi, D., Gitto, S., & Morea, D.	2018
6	Hariyani, H. F., & Kusuma, H.	2020
7	Ibrahim, A. J. & Shirazi, N. S.	2020
8	Keshminder, J. S., et al.	2018
9	Liu, F. H. M., & Lai, K. P. Y.	2021
10	Morea, D., & Possi, L. A.	2017
11	Munir, S., et al.	2020
12	Nehal, S.	2021
13	Richardson, E.	2020
14	Santoso, I. R.	2020

Source: Processed by Author

The Benefits of Green Sukuk for Sustainable Development Agenda

It was found that 14 research papers described green sukuk has many benefits to realizing the SDG agenda. According to research by Ibrahim & Shirai (2020), green sukuk use compassionate contracts, equity-like investments, and risk-sharing finance strategies to assist circular firms driven by the comprehensive goal of maqasid sharia. Green sukuk also provides more diverse range of financing options for projects relevant to achieving the SDG (Hariyani & Kusuma, 2020; Liu & Lai, 2021; Morea & Poggi, 2017; Nehal, 2021), reduce waste through the implementation of environmental restoration projects (Campisi et al., 2018; Hariyani & Kusuma, 2020; Keshminder et al., 2022), enable members of the community to find employment through various empowerment programs (Hariyani & Kusuma, 2020), provide funding for green projects (Alam et al., 2016; Azhgaliyeva et al., 2020; Hariyani & Kusuma, 2020; Munir et al., 2020; Richardson, 2020), economic development for community and society (Abdullah & Nayan, 2020; Hariyani & Kusuma, 2020; Ibrahim & Shirazi, 2020), paves the way for the country to become a more developed nation and provides possibilities for future generations to preserve nature (Munir et al., 2020; Santoso, 2020), enhance the credibility of companies through the promotion of Corporate Social Responsibility (CSR) programs (Alam et al., 2016), represent a capital market product that may be bought, sold, and traded, offering the possibility of liquidity and portability (Alam et al., 2016), and refinancing previous loans from eligible green projects (Azhgaliyeva et al., 2020).

According to several previous studies, the benefits obtained from the issuance of economic sukuk are dominated by getting the opportunity to invest in green projects, being able to diversify finances, being able to reduce waste, and being able to develop community aspects in society. It means that the issuance of green sukuk

also supports SDGs points, especially points 6 (clean water and sanitation), 7 (affordable and clean energy), 11 (sustainable cities and communities), and 12 (responsible consumption and production), 13 (climate action), and 15 (life on land).

Following the purpose of issuing green sukuk, it means not only aiming to get maximum profit, but the purpose of financing must have protection and responsibility for the environment (Hudaefi, 2020; Munir et al., 2020; Nehal, 2021; Siswantoro & Surya, 2021) This is following the guidance of Allah, which is shown in Surah Shad verses 27-28: "*And We did not create the heavens and the earth and what is between them without wisdom. That is the opinion of the disbelievers, so woe to the disbelievers because they will go to hell. Should We regard those who believe and do righteous deeds the same as those who make mischief on earth? Should we (also) consider those who are pious to be the same as those who have sinned?*"

The achievement of SDG points is also one of the manifestations of maqashid sharia, the law in Islam that aims to protect life and wealth that exist throughout the earth (Hudaefi, 2020; Ibrahim & Shirazi, 2020). An example is the issuance of green sukuk in Indonesia, where the Indonesian government, represented by the Ministry of Finance, issues green sukuk for strategic projects that impact renewable energy. The impacts on the renewable energy sector include disaster risk reduction, sustainable transportation, agriculture, and waste-to-energy management (Munir et al., 2020; Suherman et al., 2019).

The Challenges in Issuing Green Sukuk for Sustainable Development Agenda

It was found that 12 research papers described green sukuk still have many challenges for realizing sustainable development goals agenda. A study conducted by Azhgaliyeva et al. (2020) and Hariyani and Kusuma (2020) shows that using green sukuk in environmentally sustainable projects entails substantial expenses for technology, management, and maintenance. Green sukuk is also a large state property that need to be taken care of properly, raise the financial burden of the State Budget (APBN), insufficient involvement and education of the public (M. S. Abdullah & Keshminder, 2022; Hariyani & Kusuma, 2020), absence of assistance from the regional government (Campisi et al., 2018; Hariyani & Kusuma, 2020; Munir et al., 2020), risk of unethical behavior and human error (Hariyani & Kusuma, 2020), require trustworthy and transparent information (Abdullah & Keshminder, 2022; Abdullah & Nayan, 2020; Alam et al., 2016; Keshminder et al., 2022; Nehal, 2021), requires a concise policy from the responsible authority (Alam et al., 2016; Azhgaliyeva et al., 2020; Ibrahim & Shirazi, 2020), must be supported by an extensive regulatory framework (Abdullah & Keshminder, 2022; Alam et al., 2016; Liu & Lai, 2021; Richardson, 2020; Santoso, 2020), feature dynamic interactions amongst the involved professionals (Abdullah & Keshminder, 2022; Alam et al., 2016; Ibrahim & Shirazi, 2020; Morea & Poggi, 2017; Nehal, 2021), and there is a pressing requirement for international cooperation among states to implement green sukuk

as a source of financing for the restoration and protection of the world's ecology (Ibrahim & Shirazi, 2020).

Based on the results of a systematic study conducted by the author, it was found that the most common problem encountered when issuing green Sukuk was the absence of regulations that regulate and support the objectives of the green Sukuk itself, both from the government and other stakeholders. Still related to the previous statement, the next challenge is that there still needs to be more support from the government to support the application of green Sukuk in this green project. In addition, many studies have also found that there is still a need for more projects whose operations use funds obtained from green Sukuk, causing the community to have still difficulty accessing information data about the green Sukuk.

As a solution and a new financial instrument, green Sukuk is still relatively new, so green Sukuk directly faces community groups as potential investors with different preferences and knowledge about green Sukuk (Liu & Lai, 2021). For this reason, support from the government as a regulator is needed so that various policies can be formulated, primarily to support the existence of the green Sukuk. This policy can promote and increase literacy by introducing green Sukuk as an Islamic financial instrument supporting green trends in the world (Keshminder et al., 2022; Liu & Lai, 2021). In addition, according to Campisi et al. (2018), the government's alignment can also be in the form of incentives that encourage issuers and the public to play an active role in the success of the green Sukuk issuance. For example, the policy of providing incentives in the form of lower tax deductions on purchasing green Sukuk compared to other investment instruments.

The Potentials of Green Sukuk for Sustainable Development Agenda

It was found that 13 research papers described green sukuk has many potentials to realize sustainable development goals agenda. According to research by Abdullah and Nayan (2020) and Hariyani and Kusuma (2020), green sukuk has the potential to create alternative energy through the procurement of sustainable projects. Furthermore, the use of green sukuk can potentially increase sukuk liquidity (Hariyani & Kusuma, 2020), enhance the role of Islamic finance (Campisi et al., 2018; Hariyani & Kusuma, 2020), address climate change through environmentally responsible conservation projects (Azhgaliyeva et al., 2020; Munir et al., 2020; Nehal, 2021), restoring environmental viability (Munir et al., 2020; Nehal, 2021; Richardson, 2020; Santoso, 2020), protecting natural resources through environmentally conscious and long-term projects (Munir et al., 2020; Santoso, 2020), achieve grid parity (Morea & Poggi, 2017). Moreover, green sukuk may be founded on a pool of portfolio projects, which makes it possible to diversify the investor's exposure to risk. Green sukuk will also provide a new avenue for governments and corporate entities to raise capital for a low carbon economy, allowing them to rely on renewable energy

sources, such as solar and wind, to meet local electricity demand (Alam et al., 2016). Furthermore, although green sukuk seems to have the ability to strengthen the framework for green bonds, certain links and knowledge domains persist and are incorporated into the new reporting requirements (Liu & Lai, 2021). A study by Keshminder et al. (2022) shows that due to rising interest in green financing and the necessity to access capital markets, the World Bank has experimented with green sukuk as a novel climate finance instrument that provides a cost-effective source of long-term funding. With so many sustainable green projects being implemented using funding from green sukuk, awareness of global warming will also increase, which will play a major role in luring morally-conscious investors (Azhgaliyeva et al., 2020; Ibrahim & Shirazi, 2020).

The results of systematic testing on literature studies show that the most significant potential for green Sukuk issuance is to improve the environment to make it more sustainable. Following the original purpose of issuing green Sukuk, the existence of green Sukuk serves to fulfill the achievement of the SDGs, especially the points directly related to environmental impacts and climate change (Ibrahim & Shirazi, 2020; Nehal, 2021; Risanti et al., 2020).

Statista data states that the value of losses caused by climate change worth US \$ 329 billion worldwide in 2021 will trigger a growing demand for public investment through green Sukuk. It is also supported by several facts by Septiana & Dewi (2008), which state that public awareness, especially among young people, currently tends to support various activities and projects that support environmental sustainability.

CONCLUSION

Based on the research results, the systematic method can analyze and provide comprehensive information about the performance of green Sukuk around the world. Several factors influence green Sukuk in realizing the sustainable development agenda, which are classified into three parts; namely benefits, challenges, and potential. Overall, the existence of green Sukuk positively impacts all stakeholders, including the environment. The environment for green Sukuk is a priority and the main goal because, following Allah's commandments in surah Al-Baqarah verse 30, which makes humans caliphs or leaders on this earth, we must maintain the sustainability and sustainability of all that exists in nature. Sukuk has extraordinary green potential because Muslims are the second largest in the world. In addition, public awareness of having investment instruments that are ethically responsible for the environment continues to increase. Along with this, support from the government is also needed through policies to support the sustainability of green Sukuk, such as a solid legal basis, incentives in the form of taxes, promotional assistance, and supporting public literacy about green Sukuk.

This study still needs to improve in the use of systematic literature, which has limitations in the use of keywords due to the limitations of the data needed. It is hoped that further research can use a broader range and combination of keywords and find research gaps that still need to be explored.

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