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GREEN SUKUK AS AN EFFORT TO FACE CLIMATE CHANGE IN INDONESIA

Umi Suswati Risnaeni
Institut Agama Islam Syarifuddin, Lumajang, Indonesia
**email Corresponding author: risnaeni@mail.com*

ABSTRACT
Climate change that is happening right now cannot be avoided by every country, including Indonesia. Indonesia is an archipelagic country with a tropical climate, so it is very vulnerable to the effects of climate change. Indonesia has a fairly high level of vulnerability to the impacts of climate change. This vulnerability can be seen from the increase in Indonesia's Global Climate Risk Index (CRI) ranking over the last two decades. In 2018, Indonesia began issuing a sharia financial instrument in the form of bonds that combined the sharia system and targeted companies that were implementing environmental principles. Green sukuk is here in Indonesia as a solution to address the problems of climate change in Indonesia. Green sukuk is a sharia green investment that has new innovations to support efforts to preserve the environment and achieve sustainable development in Indonesia. This study aims to analyze the potential of green sukuk in Indonesia in dealing with climate change. The research method used is a literature study. The results of the analysis in this study indicate that green sukuk have the potential to be developed in Indonesia. Green sukuk have a major role in realizing sustainable development and are able to realize projects that have resilience to climate change which is proven in the development of green projects for drought management and flood mitigation.

Keywords:
Green Sukuk; Climate Change; Sharia Green Investment

INTRODUCTION

Environmental problems are no longer a problem for certain countries or even several countries, but have become a responsibility of all countries in the world, both developed and developing countries. One of the global environmental problems is the increasing rate of global warming (*Global Warming*) which causes climate change (*Climate Change*). Global *warming* occurs as a result of the long-term accumulation of atmospheric pollution due to human activities, causing high concentrations of greenhouse gas (GHG) emissions into the atmosphere at a very high rate.[1]

Indonesia is a developing country with the nickname as an archipelagic country which is vulnerable to the impacts of climate change. Climate change has a major impact on extreme weather which can result in an increase in the frequency and intensity of hydrometeorological disasters. Rising temperatures and changing rain patterns can affect

[1]Henita Rahmayanti1 , Feryl Ilyasa, et al, Community Knowledge Empowerment Related to Climate Change, JURNAL PERDULI ESSN: 2962-2174 (Electronic), Vol. 3, No. 2, 2022, 76

dry and rainy season periods. Judging from its geographical location, Indonesia as an archipelagic country is located between the continents of Asia and Australia as well as the Indian and Pacific oceans, where besides being profitable, this position can also cause disadvantages, namely vulnerability to climate change.[2]

Climate change is a condition characterized by changes in world climate patterns which can result in a weather phenomenon that cannot be determined clearly. This condition is affected by changes in climate components, namely temperature, rainfall, humidity, wind, and clouds. Various human activities such as burning fossil fuels and changing land use, can increase the effect of greenhouse gases (CO2, CH4, CHL, N2O, SF6, HFCs which have an impact on increasing global temperatures, melting of ice sheets at both poles, rising sea levels and changes in rainfall.[3]

Reporting from the IPCC (Intergovernmental Panel on Climate Change) in 2022, the climate hazards that the world will face over the next two decades are caused by global warming of 1.5°C. In relation to climate change, Indonesia has announced a commitment to achieving independently reducing greenhouse gas effects by 26% (2020) and 29% (2030) and 41% with international support in 2030.[4]

In developing countries like Indonesia which are currently focusing on development in various sectors, excessive use of natural resources and minerals in infrastructure and economic development will have a negative impact on the environment. So it really needs awareness and efforts to improve the environment by implementing sustainable programs. The presence of Green Sukuk in Indonesia is potential and important so that development is in line with efforts to preserve the environment. Green sukuk is an innovative financial instrument to support Indonesia's commitment to reducing greenhouse gas emissions based on Islamic Law principles. This issuance is guided by Green Bond and the Green Sukuk framework, and reviewed by international independent reviewers CICERO (Center for International Climate Research). Until now, Indonesia is listed as the first green bond issuer in the Southeast Asian region and this transaction is the world's first sovereign green sukuk issuance by the state (the world's first sovereign green sukuk) through the issuance of Green Sukuk worth US$1.25 billion in March 2018.[5]

The concept of sustainable development is present as one of the ideas to be a solution to cases of climate change and environmental preservation. The concept of sustainable development is one of the strategies to achieve increased economic growth and development without neglecting environmental aspects. Sustainable development in its application pays attention to three dimensions simultaneously in its implementation, namely economic, social and environmental. So that environmental damage can be avoided and development efforts can be continued.

The sustainable development goals (SDGs) are a substitute for the Millennium Development Goals (MDGs) which were valid until 2015 and only target developing countries and countries. SDGs are global plans that are part of sustainable development efforts and are expected to be implemented by all countries, both developing and developed countries. The SDGs contain 17 development goals which include 169 targets by 2030 to

[2]Angrahita Grahesti, Dzul Fahma Nafii'ah, Elyana Pramuningtyas, Green Sukuk: Sharia-Based Green Investment in Creating Resilience to Climate Change in Indonesia, Scientific Journal of Islamic Economics, ISSN: 2477-6157; E-ISSN 2579-6534,8(03), 2022, 3375,DOI: http://dx.doi.org/10.29040/jiei.v8i3.6443 , 3374

[3]Henita Rahmayanti1 , Feryl Ilyasa, et al, Community Knowledge Empowerment, 7

[4]Noor, I., Manzilati, A., & Juhari, Identification of the Indonesian Green Sukuk Market Potential. 6(1), 2019, 17. https://core.ac.uk/download/pdf/266976232.pdf

[5]Luthfia Ayu Karina, Opportunities and challenges in developing green sukuk in Indonesia, Conference on Islamic Management, Accounting, and Economics (CIMAE) Proceedings. Vol. 2, 2019, 260

eliminate poverty (*end poverty*), reduce inequality (*reduced inequality*), and protect the environment (*environmental protectio*).[6]

SDGs or sustainable development goals are government policies that also apply to all countries because they are universal or comprehensive, consisting of: 1) *No poverty* ; 2) *Zero hunger* ; 3) *Good health and well-being* ; 4) *Quality education* ; 5) *Gender equality* ; 6) *Clean water and sanitation* ; 7) *Affordable and clean energy* ; 8) *Decent work and economic growth* ; 9) *Industry, innovation and infrastructure* ; 10) *Reduced inequalities* ; 11) *Sustainable cities and communities* ; 12) *Responsible consumption and production* ; 13) *Climate action* ; 14) *Life below water* ; 15) *Life on land* ; 16) *Peace, justice and strong institutions* ; and 17) *Partnerships for the goals* .[7]

Presence*Green sukuk* is very important to use in Indonesia considering that this country is one of the countries with a high level of vulnerability to disasters. Natural disasters that often occur in Indonesia are hydro- *meteorological disasters* which are increasing due to increased climate change due to continuous development that does not pay attention to the environment. When sustainable development that does not pay attention to the environment increases, it will affect climate change so that it will cause drought and flooding. And then it will impact the economy. Based on the background above, this study aims to explain Green Sukuk as an effort to deal with climate change in Indonesia.

METHOD

The method used by the author is qualitative with a review of the literature. Literature study (*library research*) is a way to find relevant references to problems that arise. The literature study represents theoretical analysis, scientific studies, and literature relating to community traditions, as well as the norms and values that emerge in the observed field conditions. In addition, library research (*library research*) can review various reference literature and previous studies that are aligned and useful in order to obtain a theoretical basis related to the problem under study.[8]

In this study the data used were secondary data, namely data based on previous references/references, which were contained in scientific papers, literature, encyclopedias, and other reference sources related to the problem under study. The method applied in this study is the assessment of various observed data sources so as to produce results that are appropriate to the subject of the research topic.

RESULT AND DISCUSSION

Green Sukuk

Sukuk is the plural of the word sakk (legal instrument, sign of ownership or check) is an Arabic term for a certificate of trust in sharia investment, in recent years sukuk has become popular in the capital market, since the heyday of Islam in the 13th century, sakk is called -referred to as the source of checks (checks) that developed in Europe, which represent a contract or the right to a debt.[9]

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[6]Ahmad Fawaiq Suwanan, Syahrul Munir, Santi Merlinda, Analysis of the Role and Challenges of Green Sukuk for Climate Change Resilience in Vulnerable Areas During the Covid-19 Pandemic, Al-Kharaj: Journal of Sharia Economics, Finance & Business Volume 4 No 4 (2022) 978-989 P-ISSN 2656-2871 E-ISSN 2656-4351 DOI: 10.47467/alkharaj.v4i4.767, 979

[7]Maurizka Alifia Risanti, Farouk Abdullah Alwyni, Prameswara Samofa Nadya , 2020 The Role of Green Sukuk in Realizing Sustainable Development , Journal Homepage: https://jurnal.umj.ac.id/index.php/KNEMA/ ISSN: 2776-1177 (Media Online) National Economic Management and Accounting Conference (KNEMA) 2020 Muhammadiyah University Jakarta 10-11 December , 2

[8]Latifah, The Role of State Sharia Securities Sukuk (SBSN) in the Growth of Indonesia's Economic Development. Scientific Journal of Islamic Economics, 6(3), 2020, 421 https://doi.org/10.29040/jiei.v6i3.1369

[9]Yulia Anggraini , The Role of Green Sukuk in Strengthening Indonesia's Position in the Global Islamic Financial Market , el Barka: Journal of Islamic Economics and Business , Volume 01, No. July 02 – December 2018 , 259-230

Based on *The Accounting and Auditing Organization for Islamic Financial Institutions* (AAOIFI) No. 17 concerning Investment Sukuk (Investment Sukuk). Sukuk is a certificate of equal value which is proof of ownership that is not shared over an asset, beneficial rights and services or ownership of a particular project or investment activity.[10]

Green sukuk is an instrument created by the government to fund projects that support the creation of a green environment and climate change resilience. It is proven that the government has built a *Budget Tagging for Climate Change* system since 2016, namely a budget tagging system for climate change. The issuance of this green sukuk was carried out as an effort to support policies, especially budget allocations that are more open and accountable.[11]

According to Tiza Yaniza et al, In Indonesia there are no specific regulations regarding green sukuk. At this time the legal umbrella for green sukuk refers to:[12]

1. Article 1 paragraph 1 Law Number 19 of 2008: Sukuk are securities issued by the government, both in rupiah and foreign currency, as proof of participation or cooperation in a sharia-based project.
2. Fatwa of the National Sharia Council Number 32/DSN-MUI /IX/2002 Concerning Sharia Bonds decides that;
   a. Bonds whose transactions are debt-receivable and require payment of interest are not allowed.
   b. Bonds whose transactions use sharia principles, the transaction is permitted.
   c. Islamic bonds are securities issued by issuers with the aim of obtaining long-term funds from investors, and their operations are based on sharia principles. Issuers are required to return investor funds when the collaboration ends along with fees, margins and profit sharing.

Financial Services Authority Regulation Number 60 /PJOK.04/2017 Concerning the issuance of Green Bonds set forth in article 1 paragraph 2 that, Green bonds are securities issued to refinance part of a project or the entire project that are environmentally based, and green bonds include debt-based securities. In article 1 paragraph 3 that KUBL (Environmentally Friendly Business Activities) is an activity that aims to maintain, improve and enhance environmental functions.

Climate Change

The problem of climate change is a phenomenon that is not easily identified and assessed accurately by ordinary people, let alone based on personal experience. Climate change that is happening has an impact on increasing temperature on earth which continues to increase every year. Human activities such as the use of fossil fuels, land conversion, waste, and so on cause an increase in greenhouse gas emissions so that the average temperature of the earth has increased. The greenhouse effect occurs due to the trapping of carbon dioxide gases and depletion of the ozone layer in the atmosphere. So that the sun's heat that should be reflected back by the earth's surface is trapped by gases in the atmosphere. This causes an increase in temperature on earth. The level of greenhouse gas emissions in 2019 is based on GHG inventory calculations of 1,866,552 Gg CO2e, which means an increase of 680,324 Gg CO2e from 2000 (MPV, 2020). According to the BMKG in March 2022 the concentration of CO2 gas in the atmosphere of 411.1 ppm tends to rise and

[10]Yadi Fahmi Arifudin , Analysis of Sukuk in the View of Maqashid Shariah , Journal of Al- Ilm Harsyi Central Lombok , Volume.4 Number.1, May 2022 p-ISSN 2685-175XI STIS e-ISSN 2797-3204

[11]Imroatus Sholiha , Green Sukuk as the Government's Efforts to Create a Green Environment , At-Tasharruf; Journal of Islamic Economics and Business Studies , Vol. 4 No. 1 April 2022 , P-ISSN: 2685-2802 E-ISSN: 2715-369X , 4

[12]Imroatus Sholiha , Green Sukuk as the Government's Efforts to Create a Green Environment , At-Tasharruf; Journal of Islamic Economics and Business Studies , Vol. 4 No. 1 April 2022 , P-ISSN: 2685-2802 E-ISSN: 2715-369X , 3

is close to the global average of 415.02 ppm. This can result in rising temperatures in Indonesia.[13]

Green Sukuk as an Effort to Face Climate Change

The Indonesian government continues to be committed to encouraging the development of State Sukuk as part of creative and *innovative financing* in state budget financing. Indonesia was recorded as a pioneer in the issuance of green bonds in the Southeast Asian region through the issuance of Green Sukuk worth US$ 1.25 billion in March 2018. This transaction is *the world's first sovereign green sukuk issuance in the world*.[14]

President Joko Widodo while speaking at the World Leaders Summit on Climate Change explained that with such great natural potential, Indonesia continues to contribute to the fight against climate change. Even though Indonesia has done a lot, with large areas of land that are green and have the potential to be reforested and the country has vast seas that have the potential to contribute carbon, it still needs support and contributions from developed countries. Indonesian President Joko Widodo will ensure that Indonesia will continue to mobilize climate finance and innovative financing such as blended financing, green bonds and green sukuk. Indonesia's commitment to climate control is contained in several documents, including the NDC which includes a climate reduction target by 2030, the 2019 Low Carbon Development Initiative which contains Indonesia's development strategy for low-carbon development up to 2050 and the 2020-2024 National Medium Term Development Plan which prioritizes environmental quality of disaster management and climate change, and low carbon development.[15]

Since 2013, State Sharia Securities have been issued specifically for financing infrastructure projects, namely *Project Financing Sukuk* . Total *Project Financing Sukuk* for the 2013-2020 period was Rp. 145.84 trillion with 3,447 projects in 34 provinces. Some of the projects that have been undertaken are as follows:[16]

1. Construction of 491 road and bridge projects worth Rp. 51.9 trillion, namely the Balang island bridge, the Mandai Simpang Underpass, the Youtefa bridge.
2. Development of 85 Transportation Sector projects worth Rp.45.2 trillion, namely the Cirebon-Kroya Double Track, Elevated Kualanamo-Medan, Manggarai-Bekasi Double-Double Track.
3. Construction of 589 water resources projects worth IDR 25.7 trillion, namely the construction of dams, irrigation, water supply and management.
4. Development of the agricultural sector with a total project value of IDR 9.2 billion.
5. Development of 762 projects in the education sector worth IDR 14.5 trillion between IPB, ITERA, ITEKA, UNSOED, and PTKI.
6. Development of 21 national parks worth Rp. 0.4 trillion including Aketajawe-Lolobata/Halmahera, Mount Gede Pangrango, Baluran Park, Beak Sanctuary, Bengkok and others.
7. Defense and Security with a total of 91 projects worth IDR 1.1 trillion.
8. Construction and rehabilitation of 1,388 religious projects worth IDR 4.7 trillion.
9. Construction and Development of 19 laboratories worth IDR 2.15 trillion including LIPI, BSN, LAPAN.

[13]Greenhouse Gas Information, BMKG, 2022
[14]Yulia Anggraini , The Role of Green Sukuk in Strengthening Indonesia's Position , 266
[15]Novika Perbina, Billy Jeremie, Rueben FM Pasaribu , The Role of Cop26 in Supporting the Achievement of the 13 Sdgs Goals in Indonesia, In the View of Greenpeance Selodang Mayang Journal, Vol. 8 No. 1, April 2022 , 37
[16]www.kemenkeu.go.id , accessed on Monday, 06 December 2022

Green Sukuk as a financial instrument that has many similarities to bonds (*green bonds*) can be used to support programs to reduce global warming and its impacts. Opportunities for green sukuk to continue to grow in the future are driven by a number of factors, as follows:[17]

1. Demand for increased energy supply;
   It is known that the need for clean energy and energy efficiency will increase in the future due to population growth. According to projections made by the United Nations (UN) by looking at Indonesia's absolute population in the future, Indonesia will have a population of more than 270 million people in 2025, more than 285 million people in 2035 and 290 million people in 2045 The expected population growth will lead to increased demand for energy, water, transportation, urban development and infrastructure.
2. Increasing demand for energy financing;
   This significant increase in population will eventually increase the demand for energy funding and investment to finance clean energy efficiency and energy projects to meet the population's future needs.
3. Investor awareness of *socially responsible investment* (SRI);
   This is reflected in how well investors welcome the presence of Green Sukuk in Indonesia. Green Sukuk will facilitate and enhance wider participation in the sukuk market by conventional investors seeking ethical and socially responsible investments.
4. Indonesia's Large Muslim Population;
   Green Sukuk is an innovative investment instrument that provides opportunities for Muslim and non-Muslim investors to invest in Indonesia. As a country with the largest Muslim population in the world, the Islamic finance industry has the potential to grow rapidly in Indonesia. Indonesia's large population of around 230 million people and around 85% are Muslim is a huge opportunity as an investor in sharia products in Indonesia. Indonesia's large population can also be used as an added value or more factor when viewed from an investor's perspective compared to conventional products. Sharia product investors may include conventional investors and Islamic investors, while conventional product investors may not necessarily include Islamic investors. 5.
5. Indonesia's Promising Economic Growth;
   Indonesia as a country with the largest Muslim population in the world certainly has very good prospects in the development of innovative Islamic bonds such as Green Sukuk. Indonesia is also considered by sharia economic practitioners as the prototype of the largest democratic Islamic country in the world with a very promising level of economic growth.
6. Support Infrastructure Development Program;
   Along with massive infrastructure development in Indonesia, the government currently has an integrated infrastructure development program contained in the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI). In order for this program to be in line with the carbon emission reduction program, it seems necessary to align the infrastructure development program in MP3EI with the concept of green infrastructure. Some potential projects that can be categorized as green infrastructure, for example: power generation with renewable energy such as wind, solar and geothermal power, as well as mass transportation in big cities. Infrastructure will be the main focus of Indonesia's national development strategy, which can work well with green sukuk schemes (Anugrahaeni, 2017). Infrastructure development in various sectors

[17] Luthfia Ayu Karina, Opportunities and challenges for the development of green sukuk in Indonesia, 263

that are being intensively carried out by the Government is a potential for developing Green Sukuk.

Issuance of green sukuk has various target sectors called 9 eligible sectors, which consist of:[18]

a. *Renewable energy* that belongs to the *dark green rating.*
b. *Resilience to climate change for highly vulnerable areas and sectors/disaster risk reduction* which are included in the *dark green rating.*
c. *Sustainable transport* which includes a *medium to dark rating.*
d. *Waste and waste to energy management* which includes a *medium to dark rating.*
e. *Green tourism* which is included in the *medium to dark rating.*
f. *Sustainable agriculture* which includes a *medium to dark rating.*
g. *Energy efficiency* which includes a *light to medium rating.*
h. *Sustainable management of natural resources* which includes a *light to medium rating.*
i. *Green buildings* that are included in the *light green rating.*

Investment through green sukuk also offers several advantages, including safety because it is guaranteed by law, issuance according to Islamic law and obtaining sharia opinions from the National Sharia Council, competitive yield rates, *floating rewards with the floor* adjusting the BI7DRR reference rate (BI- 7 Day Reverse Repo Rate). Apart from that, easy access to online system transactions, there is an early redemption facility, lower tax rates compared to deposits, and finally being able to participate in environmentally friendly development.

CONCLUSION

Based on the description above, it can be concluded that the government has made several efforts to create a green environment through green sukuk.This is an important point because the community is able to indirectly take part in maintaining sustainability and is also a form of efforts to deal with the climate change crisis that is occurring in Indonesia . Presence of green sukukis expected to be able to answer community problems in helping to create resilience to climate change in Indonesia. Green sukuk is also one of the government's efforts that hope that the people can help in implementing environmental sustainability,

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