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Review Article

Evaluation of sustainable finance implementation in emerging markets

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ABSTRACT: This paper provides a comprehensive review of the initiative and commitment of an emerging market, Indonesia, in implementing sustainable finance to achieve a low-carbon economy and sustainable development goals (SDGs). It explores trajectories, challenges, and opportunities of sustainable finance as well as recommendations for related stakeholders for the development of sustainable finance in Indonesia. Many believed that implementation of sustainable finance, which considered multiple aspects of economic, social, and environmental risks and returns, would enable finance companies to maximize their role as a catalyst for the creation of environmentally friendly investment and a fair economic social system to achieve sustainable development goals (SDGs) more effectively. Specifically, green finance implementation as an important element of sustainable finance would create acceleration in financing for environmental preservation and climate change adaptation. Data used for evaluation is derived from selected ten financial services companies' members of the Indonesia Sustainable Finance Initiative (ISFI) in the 2019–2022 period. It shows that despite the continuous growth in the amount of loan allocated to sustainable and green business activities, considering their loan capacity, the Indonesian financial services sector has done too little in sustainable finance, which in fact is dominated by microfinance, and very little in green finance. Regulators urgently need to formulate proper policies and incentives as well as to develop a favourable ecosystem together with related stakeholders to expedite the establishment of a well-developed and sophisticated sustainable and green finance system in Indonesia.

KEYWORDS: sustainable finance; green finance; climate finance; SDGs; Indonesia

1. Introduction

The massive development undertaken for centuries in many countries has brought tremendous global economic prosperity and population growth. However, it has also precipitated many social problems and environmental degradation. Sustainable development, introduced in 1987, is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs[1]. At the Millennium Summit of the United Nations in 2000, all UN members agreed to the eight international development goals called the Millennium Development Goals (MDGs) of 2000–2015. It was then continued by the adoption of the Sustainable Development Goals (SDGs) resolution on 25 September 2015, a set of 17 goals of comprehensive actions for people, planet, and prosperity.

Financial services companies have a pivotal role in the transition process to a low-carbon economy and achieving SDGs. They have the ability to create and allocate credit to economic sectors that have positive impacts on the environment and society and also have the capacity to exercise institutional pressures on companies to introduce sustainability criteria into their business models[2]. Only the financial sector has a unique potential to mobilize the 'trillions' required to finance a low-carbon transition[3].

Sustainable finance is comprehensive support from the financial service industry to achieve sustainable development resulted from a harmonious relationship between economic, social, and environmental interests[4]. It integrates environmental, social, and governance ("ESG") issues into financial decisions[5], therefore is in line with larger SDGs to promote social and environmental well-being for current and future generations[6]. Thus, it might be defined that sustainable finance is a financial system that takes into consideration all risks and returns from a balanced perspective of finance, economy, social, and environment that support the achievement of sustainable development goals[7].

Sustainable financing, low-carbon economies transition, and SDG achievement through financial institutions, i.e., banks and nonbank financial institutions, will be critical for a developing country like Indonesia. Until now, government funding, either through central or local government, has been the main source of funding in low-carbon development and SDGs. As the banking sector is still dominating the Indonesian financial system[8], banks have a key role in financing SDGs in Indonesia.

Many governments have introduced green credit guidelines and sustainable finance roadmaps, and the number of banks joining international sustainable finance initiatives has increased[2]. Indonesia has been one of the developing countries that takes a leadership role in advancing sustainable finance solutions. Aside from Brazil and South Africa, which have pioneered in sustainability-related listing requirements; Kenya, which took leadership in advancing digital approaches to financial inclusion; and China, which has issued green credit guidelines, Indonesia has delivered the world's first sustainable finance roadmap championed by its financial regulator[9].

The Roadmap for Sustainable Finance in Indonesia 2015–2019 was issued by the Indonesian Financial Service Authority (FSA) on 5 December 2014. The focus of this first phase roadmap was on awareness programs, the establishment of a green lending model, and capacity building. As an implementation regulation of the roadmap, the Indonesia FSA has also issued FSA Regulation Number 51 Year 2017 on 18 July 2017 about sustainable finance implementation for financial services institutions, issuers, and public companies. The FSA regulation required the Financial Services Sector (FSS) to implement sustainable finance principles, submit the Sustainable Finance Action Plan to FSA, and publicly publish a Sustainability Report. This regulation emphasized awareness of sustainable finance principles as well as a starting point for market exploration for sustainable project financing.

In the same year, FSA also released the FSA No. 04 Year 2017 on Green Bond. It was then followed by the issuance of the first Green Bond/Sukuk by the Government of Indonesia and financial institutions in 2018. Year 2018 was also marked by the issuance of technical guidelines for the implementation of FSK Regulation No. 51 Year 2017 (regulation about sustainable finance implementation for financial services institutions, issuers, and public companies) for banks. Also in that year, the Indonesia Sustainable Finance Initiative (ISFI) was formally established.

The first phase roadmap had achieved several milestones, such as building awareness of sustainable finance principles, identifying sustainable business criteria, developing an incentive scheme, and conducting capacity-building programs for the financial services industry. The FSA regulation introduced eleven business activities that were categorized as environmentally friendly business activities (EFBA), which is then in this paper called "green business activities". They include (1) renewable energy, (2) energy efficiency, (3) pollution prevention and control, (4) sustainable natural resources and land use, (5) terrestrial and aquatic biodiversity conservation, (6) sustainable transportation, (7) sustainable water and wastewater management, (8) climate change adaptation, (9) eco-efficient products, (10) green building, and (11) other environmentally friendly business activities. To meet one of the principles of sustainable finance, i.e., the inclusiveness principle, that FSA regulation also recognized one more category, i.e., the Micro, Small, and Medium Enterprises (MSME) activities that is called Sustainable Business Activities Category (SBAC), or in this paper simply called "sustainable business activities". Therefore, sustainable business activities consist of twelve business activity categories incorporating eleven sectors of green business activities and one MSME sector.

Nevertheless, before the issuance of FSA regulations that regulate sustainable finance implementation for financial services institutions in Indonesia, for years many companies in Indonesia generally have taken a part in the effort to achieve SDGs through various corporate social responsibility (CSR) activities. In 2007, the government and Parliament of Republic of Indonesia passed Law Number 40 of 2007 regarding corporations. Article 74 of the law says that all companies operating in and/or related to natural resources must follow social and environmental responsibilities. One step forward has been initiated by the National Center for Sustainability Reporting since 2005 to conduct the Indonesia Sustainability Reporting Award (ISRA) to give awards to companies that publish sustainability reporting. The Indonesian Capital Market and Financial Institutions Supervisory Board (now a division under the Indonesian Financial Service Authority/FSA) through the issuance of Regulation Number X.K.6 of 2006 states that all annual reports of listed companies have to describe activities and costs of CSR to societies and environment[10].

Moreover, Indonesian FSA went further by launching the Sustainable Finance Roadmap Phase II (2021–2025) on 19 January 2021, whose objectives were to accelerate the implementation of environmental, social, and governance (ESG) aspects in Indonesia. The second phase roadmap of sustainable finance focuses on creating a comprehensive sustainable finance ecosystem that involves all related parties and promotes cooperation at various levels. It involves both demand and supply sides. The demand-pull approach includes increasing demand for sustainable products, developing supporting industries for sustainable products, real programs/market development, and "green" certification for products and professions. Supporting infrastructures that are required from the demand side involves incentives for the industry (fiscal, subsidies, etc.) and a regulatory approach.

On the other hand, the supply-push approach from the financial services industry includes increasing resilience and competitiveness of financial institutions, increasing financial institutions' contribution to SDGs and climate change, enhancing financial institutions' capacity, and improving sustainable finance literacy. A favourable sustainable finance ecosystem also needs the availability of green taxonomy and public environmental and social data. Supporting infrastructures that are required from the supply side involve incentive schemes, investment/financing products, information and technology infrastructures, and capacity of financial institutions' human resources.

On 20 January 2022, the Indonesian FSA launched the Indonesia Green Taxonomy edition 1.0—2022, a classification of economic activities that supports environmental protection and management efforts, as well as mitigation and adaptation to climate change. It was aimed at ensuring that all financial services companies and stakeholders are using a common vocabulary regarding sustainable finance and as a contribution to other ongoing efforts within the financial sector industry in developing key terms and definitions in sustainable finance. Green taxonomy will help the periodic monitoring process in the implementation of credit/financing/investment into the green sector and prevent the potential reporting of green activities (greenwashing)[11].

Another advancement in sustainable finance practices in Indonesia was the introduction of climate risk integration in financial institution risk management. On 31 May 2023, the FSA released a guidance for initial bottom-up climate risk stress testing (CRST) to measure the vulnerability of financial institutions portfolios or the whole financial system against scenarios or risks related to climate change, among other economic shocks. This 1.0 version guidance was designed as a collaborative learning space for the FSA and banking industries to build both bank and FSA capacity in assessing impacts of climate and environmental change as well as identify any difficulties in CRST implementation in order to realize net zero emissions in 2060 commitment and to contribute to the low carbon economy. This initial guidance consisted of (1) financial risk priorities and analysed portfolio details; (2) stress testing methodology (scenario and time frame); and (3) further actions by the bank, e.g., impact analysis of climate risk to financial risk (including capital).

In the piloting phase, the biggest seventeen banks were involved in the climate risk stress test and reported the result on their 2023 sustainability reporting that was published in 2024. The 17 banks were Bank BRI, Bank Mandiri, Bank BNI, Bank BTN, Bank Danamon Indonesia, Bank Permata, Bank BCA, Bank Maybank Indonesia, Bank Panin, Bank CIMB Niaga, Bank UOB Indonesia, Bank OCB NISP, Bank HSBC Indonesia, Bank Mega, Bank Syariah Indonesia, Bank Mizuho Indonesia, and Bank BTPN. FSA planned to widen the test to all banks in 2026. In addition, since January 2024, FSA has started to work on improvement of the first guidance and would release Guidance of Climate Risk Management and Stress Test volume 2. The planned guidance for the development version will cover new topics such as climate risk governance, business strategy and risk management framework, CRST design and analysis, disclosure standards, and an implementation plan for climate risk management.

In spite of several regulations and policies issued by the Indonesian government and other initiatives from civil society organizations, a most updated and comprehensive review of the sustainable finance journey, the effectiveness of its implementation, as well as the opportunities and challenges of sustainable finance in Indonesia, is needed. This review explores the regulatory framework of sustainable finance in Indonesia, followed by market responses in implementing the regulations. It then examines the current implementation of the policies and regulations by the financial industry compared to the initial objective of sustainable finance and finally offers an insight conclusion and suggests recommendations to regulatory bodies and the financial services community.

2. Indonesia sustainable finance initiative (ISFI)

In the preparation stage before the Indonesian FSA issued formal regulation on sustainable finance implementation at national-wide scale, the FSA initiated the formation of the First Movers on Sustainable Banking in November 2015 as pioneers in the implementation of sustainable banking. It was voluntarily participated in by eight banks, i.e., Bank Mandiri, Bank BRI, Bank BNI, Bank BCA, Bank Muamalat Indonesia, Bank Artha Graha Internasional, Bank Jabar Banten, and Bank BRI Syariah. The eight banks represented 46% of national banking assets. On 31 May 2018, the group of eight banks formally set up an organization called the Indonesia Sustainable Finance Initiative (ISFI). ISFI is not an exclusive bankers club; therefore, any banks and non-bank financial services industry, issuers, and other relevant industrial sectors could join ISFI as a means for exchanging experiences and learning, as well as expanding information and applying sustainable finance principles among the members. There were new members of CIMB Niaga, Bank Syariah Mandiri, Bank OCBC NISP, Maybank Indonesia, and HSBC Indonesia in 2019 that represented 60% of national banking assets.

As per the end of 2020, there were fifteen corporate members of ISFI with additional members of Bank Panin and one infrastructure financing company, i.e., PT Sarana Multi Infrastruktur. The fifteen members of ISFI represented 90% of the total national banking assets. However, on 27 January 2021, two of these banks, i.e., Bank Syariah Mandiri and Bank BRI Syariah, merged to become Bank Syariah Indonesia, so that currently there are fourteen members of ISFI, i.e., (1) Bank Mandiri, (2) Bank BRI, (3) Bank BNI, (4) Bank BCA, (5) Bank Muamalat Indonesia, (6) Bank Artha Graha Internasional, (7) Bank Jabar Banten, (8) Bank CIMB Niaga, (9) Bank OCBC NISP, (10) Bank Maybank Indonesia, (11) Bank HSBC Indonesia, (12) Bank Panin, (13) PT Sarana Multi Infrastruktur, and (14) Bank Syariah Indonesia.

3. Methodology

The ten largest banks in Indonesia according to their assets in 2022 were (1) Bank Mandiri (1992 trillion rupiahs), (2) Bank BRI (1865.63 trillion rupiahs), (3) Bank BCA (1314.73 trillion rupiahs), (4) Bank BNI (1029.83 trillion rupiahs), (5) Bank BTN (402.14 trillion rupiahs), and (6) Bank CIMB Niaga (306.74 trillion rupiahs). (7) Bank Syariah Indonesia (305.72 trillion rupiahs), (8) Bank Permata (255.11 trillion rupiahs), (9) Bank OCBC NISP (238.49 trillion rupiahs), and finally Bank Panin with total assets of 212.43 trillion rupiahs[12]. The two largest banks, Bank Mandiri and Bank BRI, as well as Bank BNI, Bank BTN, and Bank Syariah Indonesia, are majority owned by the government. Bank BCA and Bank Panin are majority owned by Indonesian national private parties, while Bank CIMB Niaga, Bank Permata, and Bank OCBC NISP are majority owned by foreign institutions. All banks have been listed on the Indonesia Stock Exchange.

This paper adopts a descriptive method, mainly with quantitative analysis. It makes use of the latest data and information during the study process. It aims to reveal sustainable finance issues, i.e., information about who, what, when, where, or how much. This descriptive study might be used as the basis for future causal studies to reveal causal relationships between variables or concerns with learning why[13], for example, a study on banks' sustainability performance-financial performance relationships in Indonesia.

Data used for this research is derived from bank and non-bank financial institution members of IFSI who meet the following criteria: (1) The company disclosed required quantitative information related to eleven sectors of green business activities and twelve sectors of sustainable business activities in their respective company's sustainable reports and annual reports in the 2019–2022 period; (2) the company is not a result of a company merger process. Based on those selection criteria, firstly, Bank Syariah Indonesia is excluded as it is a merger bank of Bank Syariah Mandiri and Bank BRI Syariah in 2021. Secondly, Bank Artha Graha Internasional is excluded because the company did not publish its sustainability report in 2019. Thirdly, Bank Muamalat Indonesia and Bank HSBC Indonesia are also excluded as they only provided limited quantitative information about financing on green business and sustainable business activities. Therefore, there were ten banks and one non-bank financial institution selected, i.e., Bank Mandiri, Bank BRI, Bank BNI, Bank BCA, Bank Jabar Banten, Bank OCBC NISP, Bank CIMB Niaga, Maybank Indonesia, Bank Panin, and Sarana Multi Infrastruktur.

Secondary data is gathered from those ten bank and non-bank financial institutions for a four-year period (2019–2022) company's sustainability and annual report. Measurement of sustainable finance implementation by each company is conducted by employing content analysis of its sustainability and annual reports, with analyses focusing on:

1) the availability of quantitative information related to loans to eleven sectors of green business activities, i.e., (1) renewable energy, (2) energy efficiency, (3) pollution prevention and control, (4) sustainable natural resources and land use, (5) terrestrial and aquatic biodiversity conservation, (6) sustainable transportation, (7) sustainable water and wastewater management, (8) climate change adaptation, (9) eco-efficient products, (10) green building, and (11) other environmentally friendly business activities, and
2) the availability of quantitative information related to financing to twelve sectors of sustainable business activities, i.e., eleven sectors of green business activities plus the Micro, Small, and Medium Enterprises (MSMEs) sector.

Analysis is then conducted to show the development of financing to eleven sectors of green business as well as twelve sectors of sustainable business by all companies and by each individual company for the four consecutive years of 2019–2022. This is to understand which sustainable business activities category succeeded in attracting most and least financing from financial services companies. In addition, an analysis of the percentage of green and sustainable businesses compared to total loans provided by the company was also presented to understand how this sustainable finance issue was really prioritized by the companies.

4. Findings and discussions

As explained in the previous sections, there are eleven business activities that could be categorized as green business activities, and if they are added with MSME, then the twelve business activities are categorized as sustainable business activities. **Figure 1** shows the loan distribution from ten members of ISFI for sustainable and green business activities during the 2019–2022 period.

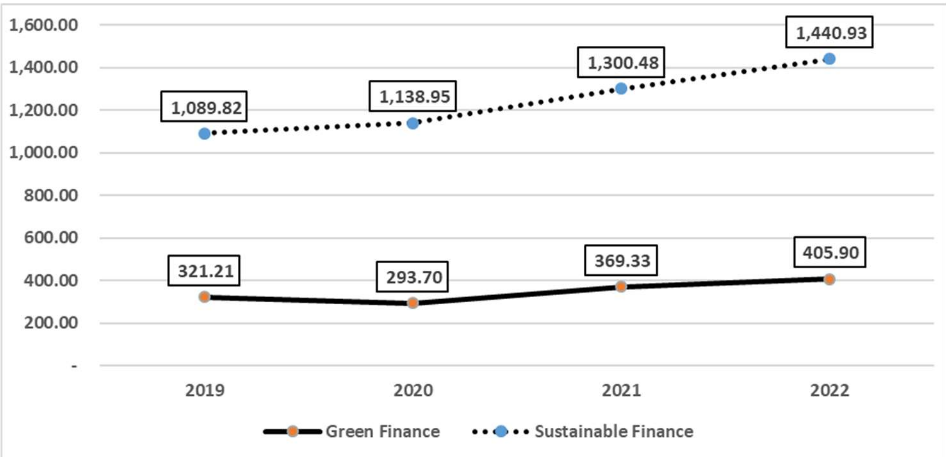

Figure 1. Green business and sustainable business financing during 2019–2022 period (in trillion rupiahs).

The graph shows a promising figure as the amount of credit directed both to sustainable and green business activities grew steadily. Green business financing and MSME financing that form sustainable business financing grew from 1089.82 trillion rupiahs in 2019 to 1440.93 trillion rupiahs in 2022. Green business financing itself, which consists of eleven sectors of environmentally friendly business activities, grew from 321.21 trillion rupiahs in 2019 to 405.90 trillion rupiahs in 2022.

However, **Figure 1** revealed a fact that eleven sectors of green business financing only constituted less than one third of sustainable business financing. The majority of sustainable business financing in Indonesia during the 2019–2022 period, on the contrary, was dominated by one sector of MSME financing. It also showed that the growth of MSME financing overtook the growth of all sectors of green business financing.

It was obvious that in implementing sustainable finance, which has been regulated by FSA, many banks in Indonesia preferred to choose the MSME sector rather than the eleven green business sectors. This is not surprising, as MSME segment financing has been a relatively familiar business, low-risk, widely available, and could potentially give a high return for many banks in Indonesia for years. Even Bank BRI has grown to be one of the largest banks in Indonesia due to its focus on financing the MSME sector. On the other hand, green financing is a new thing both in terms of terminology and practical operations for many Indonesian banks.

Figure 2 shows that during the four years of the 2019–2022 period, the ten financial services institutions distributed loans of 3600.23 trillion rupiahs to the single MSME financing and 1390.09 trillion rupiahs to eleven sectors of green business financing. It means that total sustainable business financing of 4970.17 trillion rupiahs for a four-year period was still dominated by microfinance (72%), and only a small portion of green business financing (28%). It might be said that sustainable business financing had been developing relatively well, while green business financing that might have more impact on environmental protection and climate change prevention was still underdeveloped.

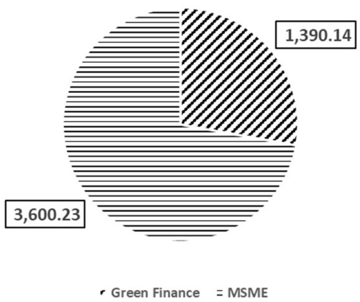

Figure 2. Comparison of green business financing vs MSME financing during 2019–2022 period (in trillion rupiahs).

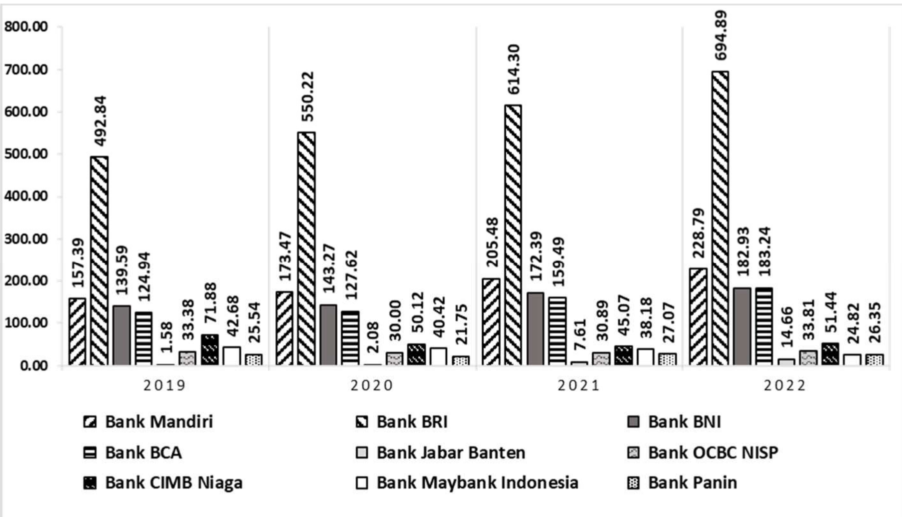

Figure 3. Sustainable business loans in 2019–2022 period (in trillion rupiahs).

Contribution by the ten members of ISFI in forming the development of sustainable business financing in Indonesia during the 2019–2022 period is shown in **Figure 3**.

Bank BRI was consistently in the top position as the provider of sustainable business financing and outnumbered its closest rival by around three times higher for each year. Bank Mandiri were continuously in second position in 2019–2022. Bank BNI (together with Bank BRI and Bank Mandiri, which are the government's owned large banks) was steadily in the top three during the 2019–2021 period and was only slightly overtaken by Bank BCA in 2022. So, it can be summarized that in terms of sustainable financing, the three large banks owned by the central government have played a more significant role compared to banks owned by other parties. Among the members of ISFI, Bank Jabar Banten (a regional bank owned by the Provincial Government of West Java and Banten—Indonesia) was in the bottom list of providers of sustainable business financing. Sarana Multi Infrastruktur, as a financing company that focuses on infrastructure, does not provide financing to the MSME sector.

A different pattern, on the contrary, is shown by the ten financial services companies in their distribution of green business loans during the 2019–2022 period, as shown in **Figure 4**.

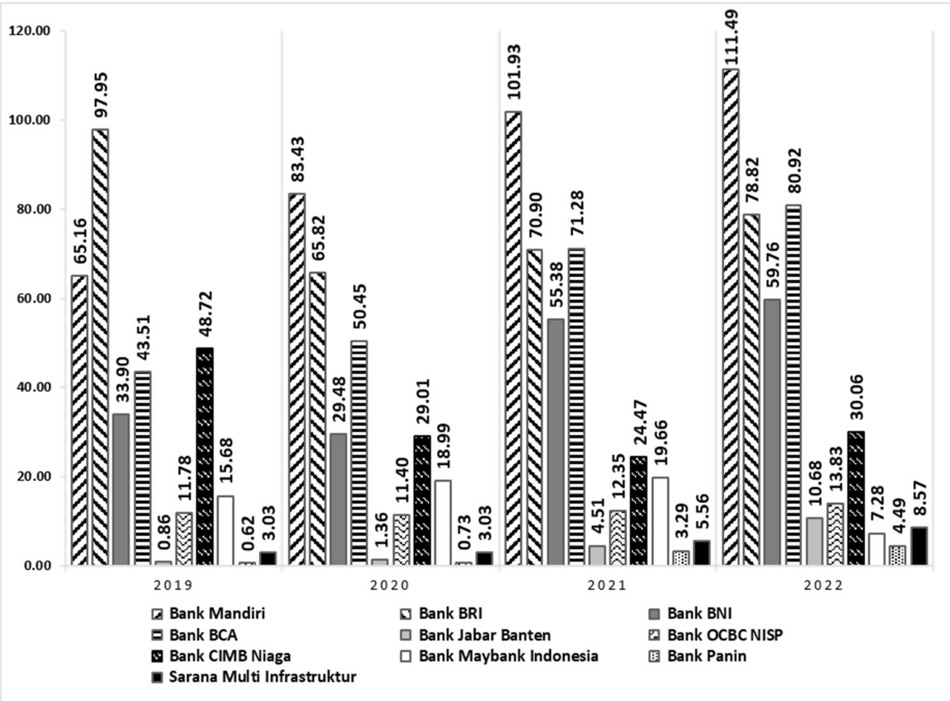

Figure 4. Green business loans in 2019–2022 period (in trillion rupiahs).

At first, in 2019, Bank BRI was the biggest loan provider to green business activities with total financing of IDR97.95 trillion rupiahs, leaving its competitors at a level far below. However, Bank BRI, as one of the largest banks in Indonesia, in fact continuously reduced its leading role in green financing, so it moved down one position to 2nd rank in 2020 and one position down more to be 3rd rank in 2021 and 2022. Considering that Bank BRI was on the top list of sustainable business loan providers during the 2019–2022 period, as shown in **Figure 3**, this revealed that Bank BRI preferred to increase its role and maintain its dominance in MSME finance rather than participate more in green business finance. The different role was shown by Bank Mandiri. As one of the largest banks that is only rivalled by Bank BRI, by increasing its green business financing by 28% from 65.16 trillion rupiahs in 2019 to 83.43 trillion rupiahs in 2020, Bank Mandiri became the market leader in green financing and maintained its position until 2022. It showed that along with the growth in sustainable business financing, Bank Mandiri had increased its commitment to take a leading role in green business financing.

Similar to Bank Mandiri, Bank BCA, as one of the largest Indonesian banks owned by national private companies, has taken a prominent role in green business financing by consistently increasing its loan to green business sectors. It gradually improved its position from the 4th rank in 2019 to the 3rd in 2020, then to the 2nd rank in 2021 and 2022. On the other hand, Bank CIMB Niaga, one of the Indonesian largest banks owned by foreign institutions, has taken a similar path as Bank BRI. With a 48.72 trillion rupiahs loan, it was the 3rd biggest loan provider to green business sectors in 2019. However, it reduced its green loan from the 2019 level, so it downgraded its position to be number five in 2020–2022.

Bank BNI that holds the top two—four position in sustainable business loan provider, in spite of its effort to continuously increase the amount of green business credit; in fact, it only improved its position from number five in 2019 to be number four in consecutive years of 2020–2022. **Figure 4** also revealed that Bank Panin consistently became the smallest loan provider for green business activities.

Figure 5 is the picture of how the ten financial services companies distributed loans across eleven sectors of green business activities.

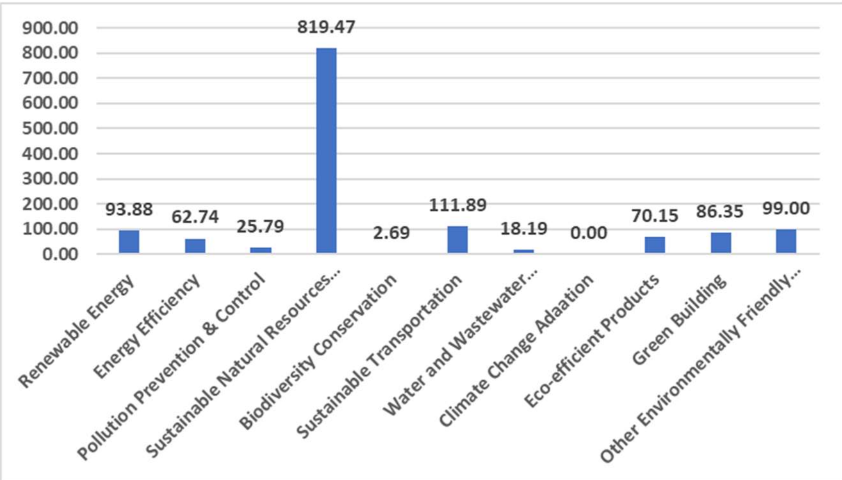

Figure 5. Distribution of green business loans sectors in 2019–2022 (in trillion rupiahs).

It can be shown that more than half of green business loans, i.e., 819.47 trillion rupiahs (58.95%), went to what is called the "sustainable natural resources and land use" category. Looking at the description of sustainability reporting of the ten financial services companies, typical projects included in this sustainable natural resources and land use category are mainly for palm oil plantations that have passed either RSPO (Roundtable on Sustainable Palm Oil) or ISPO (Indonesia Sustainable Palm Oil) certification. Credit to the palm oil sector is not new in Indonesia, as this has been traditionally one of the lucrative business sectors besides financing the coal mining sector.

On the other hand, financing to other ten green business sectors that might create break-through in environmental and climate finance was still low. After allocated to sustainable natural resources and land use financing, the biggest portion of less than half of green business loan went to sustainable transportation (among others were credit for electric car and motor cycle as well as light rail transportation-LRT project in greater Jakarta area) which constituted of only 111.89 trillion rupiahs (8.05% of total green business financing), followed by loan to other environmentally friendly business activities of 99.00 trillion rupiahs (7.12%), renewable energy (for instances hydro, solar, gas power plants as well as conversion from coal fired power plant to gas fired power plant) of 93.88 trillion rupiahs (6.75%) and to green building of 86.35 trillion rupiahs (6.21%).

A very small portion of green business financing went to eco-efficient products of 70.15 trillion rupiahs (5.05%), energy efficiency of 62.74 trillion rupiahs (4.51%), pollution prevention and control of 25.79 trillion rupiahs (1.85%), sustainable water and wastewater management of 18.19 trillion rupiahs (1.31%), and terrestrial and aquatic biodiversity conservation of 2.69 trillion rupiahs (0.19%). Unfortunately, there was no single rupiah of finance going to the climate change adaptation sector by the ten financial services institutions during the four-year period.

Except financing for palm oil plantations, which then adjusted to sustainable natural resources and land use, the majority of banks in Indonesia had limited knowledge and skills on the other ten green business activities. Most bankers still considered that financing the ten green projects has a higher risk. The limited availability of really feasible projects in these sectors was also another issue. Several renewable energy projects, such as solar power plants, proposed by textile and pharmaceutical companies were actually driven by the companies' customers, mostly in Europe, who demand the manufacturing company change their energy sources to renewable ones if they want to continue to supply to European markets. Indonesian banks opted to invest in coal power generation rather than in renewables because coal power plants were deemed more economically feasible and they perceive investing in renewable energy as high risk[3].

Furthermore, in spite of the growing amount of green business financing as shown above, the proportion of green business compared to total credits disbursed by ten financial services companies during the period was considered very low. For the 2019–2022 period, ten selected financial service companies had spent total financing of 15,510.21 trillion for various business activities both sustainably and not sustainably that can be detailed as follows.

Table 1 showed that the Indonesian financial services market was dominated by two first-layer banks, i.e., Bank Mandiri and Bank BRI, which had disbursed loans of more than 1000 trillion rupiahs each in 2022; two second-layer banks, i.e., Bank BCA and Bank BNI, which had portfolio loans of more than 600 trillion rupiahs each; and many third-layer banks that had channeled credits of less than 200 trillion rupiahs each. The following explanation will focus on the five biggest of the ten financial services companies above, considering the assumption that the bigger has more resources and more professional experience, as well as greater awareness and exposures to global trends.

Table 1. Total loan by ISFI members 2019–2022 (in trillion rupiahs).

No.	Companies name	2019	2020	2021	2022	Total
1	Bank Mandiri	885.84	942.07	1026.23	1172.60	4026.74
2	Bank BRI	903.20	938.37	943.70	1029.80	3815.07
3	Bank BCA	586.94	574.59	622.00	694.90	2478.43
4	Bank BNI	556.77	553.11	582.44	646.20	2338.52
5	Bank CIMB Niaga	194.30	174.75	181.61	196.61	747.27
6	Bank Panin	136.73	121.63	113.29	123.27	494.92
7	Bank OCBC NISP	119.00	114.90	120.78	137.62	492.30
8	Bank Maybank Indonesia	122.58	105.27	101.77	107.82	437.44
9	Bank Jabar Banten	81.90	88.60	95.44	107.88	373.82
10	Sarana Multi Infrastruktur	60.39	70.60	80.76	93.95	305.70

Taking only the top five of the ten financial services companies and comparing the number in **Figure 3** of sustainable business loans and in **Table 1** above results in **Figure 6** of the percentage of sustainable business loans over total loans of the top five companies in the 2019–2022 period:

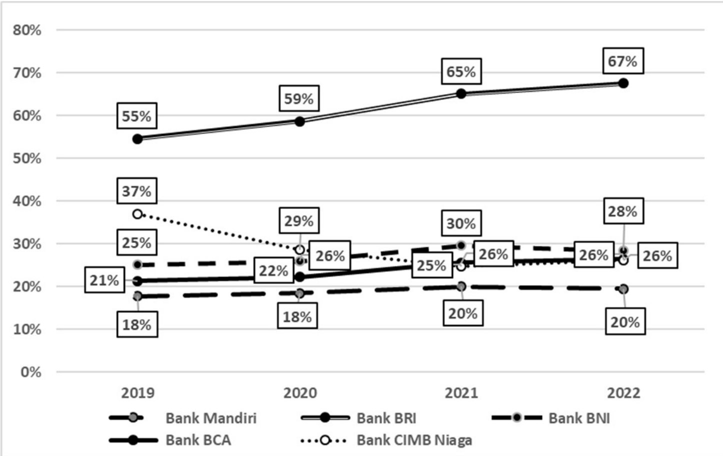

Figure 6. Percentage of sustainable business financing to total loans of top five banks in 2019–2022 (in trillion rupiahs).

Consistent with **Figure 3**, which shows that Bank BRI was the prominent leader in sustainable business financing, **Figure 6** confirms the leadership of Bank BRI in the area of sustainable business financing. The majority of Bank BRI loans directed to sustainable business loans, and the percentage of sustainable business loans steadily increased from 55% in 2019 to 67% in 2022. With MSME credit dominating the sustainable business loans, these figures are not surprising because Bank BRI has traditionally focused on MSME financing. On the other hand, Bank Mandiri, as one of the largest Indonesian banks, in spite of the effort to continually increase its sustainable finance, in fact the percentage of its sustainable loan had never achieved 25%. Did it mean that most of Bank Mandiri credit went to unsustainable business activities? Bank BNI, as a large bank owned by the government, moved up and down in its percentage of sustainable loans. Nevertheless, its sustainable loan proportion never exceeded more than 30% level. Likewise, even though the percentage of its sustainable loan is constantly increasing, Bank BCA, as a large bank owned by Indonesian private companies, has also never surpassed the number of 30%. As a large bank owned by foreign companies, Bank CIMB Niaga in fact experienced a decrease in percentage of its sustainable financing.

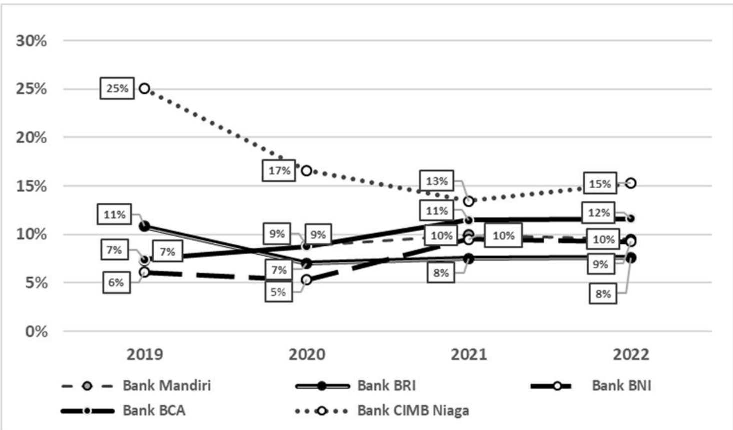

Figure 7. Percentage of green business loan to total loans of top five banks in 2019–2022 (in trillion rupiahs).

Likewise, taking only the top 5 list and comparing the numbers in **Figure 4** of green business financing and in **Table 1** above resulted in the percentage of green business loans over total loans of the top five companies, as shown in the following **Figure 7**.

In the midst of increasing its green loan amount, as shown in **Figure 4** above, the proportion of green loans at Bank Mandiri has truly generally increased, yet the percentage of green loans over total loans only moved around 10% level until 2022. With a large capacity of providing loans of 1172.60 trillion rupiahs in 2022, there is still big room for this one of the largest Indonesian banks to provide more green credit. Similarly, providing green credit of only 11% and then even decreasing to 7% of its total credit could be stated as too little for Bank BRI, as one of the largest Indonesian banks with a loan capacity of 1029.80 trillion rupiahs in 2022. Moreover, it seems ironic for Bank BNI, which claimed itself as "green banking pioneer"[14] to spend variably but not exceed more than 10% of its loan to green business sectors.

On the contrary, even though still considered low, the increasing proportion of Bank BCA in channeling its green loan could be appreciated as it constantly increasing its loan proportion to green business activities, i.e., from 7% in 2019 to 12% in 2022. Unfortunately, Bank CIMB Niaga, whose parent company CIMB Bank had a leading role in practicing green banking in Malaysia, continuously decreased its green loan proportion in Indonesia from 25% in 2019 to 15% in 2022, despite the fact that the 15% proportion is the highest among ten financial services institutions in 2022.

In short, the Indonesian large banks have done too little in sustainable financing and very little in green financing in spite of the great potency posed by those large financial services companies. As explained before, the three large banks owned by the government, i.e., Bank Mandiri, Bank BRI, and Bank BNI, showed their commitment to green financing only as little as a maximum of 11%. For example, Bank Mandiri that at first drastically increased its green loan but then its proportion became stagnant at 10% level in the latest 2021–2022 period. Bank BRI at first allocated 11% of its loan to green business financing, yet its green loan portfolio decreased in the following years and became as low as 8% in the last two-year period of 2021–2022. Bank BNI, which often claimed itself as a green banking pioneer, had a green credit portfolio of only 10% and 9% in 2021 and 2022. Several non-government-owned banks, on the contrary, could potentially become role models in sustainable and green financing. Bank BCA, for instance, had steadily increased its green loan portfolio from 7% in 2019 to 11% in 2021 and 12% in 2022. Likewise, Bank CIMB Niaga started with a high commitment of 25% of its loan to green finance, even though it then dropped to 13% in 2021 and increased slightly to 15% in 2022.

It seemed that until the end of 2022, a clear direction and policy on sustainable and green finance that much needed by financial services communities were still absent in Indonesia, so especially green finance moved in a random direction. Even a proper incentive scheme that should have been completed in sustainable road map phase 1 of 2015–2019 has not been well developed and implemented yet. The regulators really need to work more comprehensively as well as in a quicker and more effective way to enhance the implementation of green and sustainable finance, starting with large banks and continuing to smaller banks and other non-bank financial institutions. In addition, resource constraints at the financial service regulator were needed to be overcome as they could undermine its capability to provide regulatory oversight[3].

The government institutions need to develop a fast-track sustainable and green finance ecosystem involving all related stakeholders through both the demand and supply sides of sustainable and green finance. Correct incentive schemes, clear policies, and a conducive green and sustainable finance ecosystem are required to stimulate non-government-owned banks that operate their banking operations more on commercial motives to do a lot more in financing sustainable and green business sectors. In addition, for the government's owned bank that dominated the banking market in Indonesia, the government, through the Ministry of State's Owned Enterprises (MSOE), could impose special regulation and control to encourage the state's owned bank to participate more in sustainable and green banking. These are to prevent the movement of sustainable and green banking Indonesia not only too little but not too late as well.

Through a well-developed and sophisticated sustainable finance system, the financial services industry could maximize its contribution to achieving sustainable development goals (SDGs). The social pillar of sustainable finance, i.e., MSME financing, could be an effective channel for achieving SDGs, especially for achievement of no poverty (SDG number 1), zero hunger (SDG number 2), good health and well-being (SDG number 3), quality education (SDG number 4), gender equality (SDG number 5), decent work and economic growth (SDG 8), and reducing inequalities (SDG number 10).

However, the existence of a developed green financing sector will expedite the achievement of environmental and climate sides of SDGs such as clean water and sanitation (SDG number 6) through financing of green projects number 7—sustainable water and wastewater management; affordable and clean energy (SDG number 7) through financing of green projects number 1—renewable energy and number 2—energy efficiency; industry, innovation and infrastructure (SDG number 9) through financing of green projects number 4—sustainable natural resources and land use; sustainable cities and communities (SDG number 11), through financing of green projects number 6—sustainable transportation and number 10—green building; responsible consumption and production (SDG number 12) through financing of green financing of projects number 9—eco-efficient products; climate action (SDG number 13) through financing of green projects number 3—pollution prevention and control and number 8—climate change adaptation; and finally life below water (SDG number 14), and life on land (SDG number 15) through financing green projects number 5—terrestrial and aquatic biodiversity conservation.

5. Conclusions

This paper revealed that despite growing interest in green and sustainable financing, the financial services community in Indonesia still acts insubstantially in providing loans to green and sustainable business activities. Sustainable financing in Indonesia is still dominated by MSME financing and yet only leaves a little amount to green financing. The green financing sector in Indonesia is underdeveloped and far from achieving a sophisticated level. Most of the green loan is still circled around the traditional sector of palm oil plantations. A question still also remained whether the provision of credit to this sustainable natural resources and land use sector is really sustainable either in input, process, and output. The government and all related stakeholders need to act properly either in formulating regulation or developing ecosystems so that the great potency owned by large banks could be maximized in promoting and implementing sustainable and green finance in Indonesia.

Nonetheless, limitations in this study should be improved in future studies. Further research by involving perception and expectation surveys of key stakeholders on the current and future of sustainable finance implementation in Indonesia is required. The study on the impact of green financing and sustainable financing on SDG achievement and corporate financial and non-financial performance will be a positive contribution to the discourse of sustainable finance implementation in emerging countries. Likewise, studies on the influence of sustainable finance regulatory development on banks' specific internal management, such as their strategic plan, competitive position, business model, governance, risk management, innovation, and culture, will give more understanding on how banks transform their internal processes to adapt to these sustainability issues.

Conflict of interest

The authors declare no conflict of interest.

References

1. World Commission on Environment and Development. Our Common Future. Oxford University Press; 1987.
2. Kashi A, Shah ME. Bibliometric Review on Sustainable Finance. Sustainability. 2023; 15(9): 7119. doi: 10.3390/su15097119
3. Setyowati AB. Governing sustainable finance: insights from Indonesia. Climate Policy. 2020; 23(1): 108-121. doi: 10.1080/14693062.2020.1858741
4. Financial Services Authority of Indonesia. Roadmap for Sustainable Finance in Indonesia 2015-2019. Financial Services Authority of Indonesia; 2015.
5. Edmans A, Kacperczyk M. Sustainable Finance. Review of Finance. 2022; 26(6): 1309-1313. doi: 10.1093/rof/rfac069
6. Walker T, Kibsey SD, Crichton R, et al. Designing a Sustainable Financial System—Development Goals and Socio-Ecological Responsibility. Palgrave Macmillan; 2018.
7. Ridho TK. Sustainable Finance Implementation in Emerging Markets: Development and Challenges in Indonesia. In: Journal on GEEF—Global Engagement & Empowerment Forum Report. Yonsei University Press; 2019. pp. 135-136.
8. Setiawan S, Ismalina P, Nurhidajat R, et al. Green finance in Indonesia's low carbon sustainable development. International Journal of Energy Economics and Policy. 2021; 11(5): 191-203. doi: 10.32479/ijeep.11447
9. United Nations. UN Environment Inquiry: Design of a Sustainable Financial System. Making Waves—Aligning Financial System with Sustainable Development. United Nations; 2018.
10. Ridho TK. CSR in Indonesia: Company's Perception and Implementation. Journal on Global Socio-Economic Dynamics—EURASEANs. 2017; 3(4): 68-75.
11. Financial Services Authority of Indonesia. Indonesia Green Taxonomy. Edition 1.0. Financial Services Authority of Indonesia; 2022.
12. CNBC Indonesia. These are the Top 10 Banks with the Largest Assets in RI (Indonesian). Available online: https://www.cnbcindonesia.com/market/20230310092808-17-420529/ini-dia-top-10-bank-dengan-aset-terbesar-di-ri (accessed on 1 December 2023).
13. Cooper DR, Schindler PS. Business Research Method, 9 ed. McGraw-Hill Irwin; 2006.
14. BNI. Pioneer Green Banking, BNI Encourages Sustainable Business (Indonesian). Available online: https://www.bni.co.id/id-id/beranda/kabar-bni/berita/articleid/21850 (accessed on 1 December 2023).