


Finance Greenshift: Navigating the Path to Green Finance in Emerging Countries

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Citation: Ridho, T. K. (2025). Finance Greenshift: Navigating the Path to Green Finance in Emerging Countries, *Journal of Cultural Analysis and Social Change*, 10(2), 1706-1715. <https://doi.org/10.64753/jcasc.v10i2.1865>

Published: November 15, 2025

ABSTRACT

This paper sheds light major strategic actions to advance green finance in national financial system of an emerging country, Indonesia and discusses the opportunities and challenges that could be adopted to scale it up and align the ambitious policies with current business practices. Indonesia through active roles of its two regulators, i.e. the Central Bank of Indonesia (Bank Indonesia or BI) and the Financial Services Authority (Otoritas Jasa Keuangan or OJK) have had a leadership role in the implementation of green finance. It includes the introduction of sustainable finance roadmaps, green credit policies, climate risk stress testing initiative, sustainable taxonomies, green or sustainable bonds as well as sustainability oriented corporate reporting. This series of initiatives ideally will expedite the capital flows into green projects to support the sustainable development goals (SDGs) achievement. However, after looking at in details of the credit channeled to green projects, in fact Indonesian financial services sector has done too little in green finance. Apart from formulating policies and regulations to keep up with fast development of global green finance framework, an impact and effectiveness assessment of current policies and regulations are needed to mainstream green finance practice to Indonesian financial system. It should be followed by formulation of right incentive mechanism, massive awareness program, capacity and capability development program, and developing a favourable green finance ecosystem.

Keywords: green finance, sustainable finance, SDGs, Indonesia

INTRODUCTION AND LITERATURE REVIEW

Sustainable development introduced in 1987 was defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs ([World Commission on Environment and Development](#), 1987). The concept turned to be a global commitment with clear and measurable goals by the adoption of Sustainable Development Goals (SDGs) resolution on 25 September 2015 that consisted of 17 goals of comprehensive actions for people, planet, and prosperity. This global agenda called active participation of governments, businesses, civil societies and other elements in any nation to achieve the goals.

Climate change has also become a major global challenge as it might hinder the SDGs attainment such as in SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (good health and well being), and SDG 6 (clean water and sanitation). The Paris Agreement aimed to keep the earth's temperature rise well below 2°C, preferably limit it to 1.5°C compared to pre-industrial levels. The agreement requires countries, both developed and developing countries, to develop a Nationally Determined Contributions (NDCs). It has also encouraged business to apply environmental, social, and governance (ESG) criteria and shift their business operation towards a low carbon and circular economy. The huge financing needs for SDGs and climate action implies the needs of a major shift in the national finance system to be more responsible and sustainable.

Sustainable finance could be defined as a financial system that takes into consideration all risks and returns from balanced perspective of finance, economy, social, and environment that support the achievement of

sustainable development goals (Ridho, 2019). By omitting social criteria, green finance could be described as a financial system that take into consideration all risks and returns from balanced perspective of finance, economy, and environment to support the achievement of SDGs and climate action. Green finance mobilizes funds to environmentally oriented SDGs as well as climate change mitigation and adaption such as for renewable energy, energy efficiency, and resilient infrastructure and agriculture projects.

Indonesia is often cited as in the leadership position in green finance for instance because it delivered the world's first sustainable finance roadmap championed by its financial regulator (UN Environment Inquiry, 2018). According to the Global Progress Brief 2024 by Sustainable Banking and Finance Network (SBFN), an IFC of the World Bank-backed community to advancing sustainable finance within emerging markets and developing economies, that among 70 member countries Indonesia was placed in the top maturing level, the most developed sustainable finance progress together with only five other countries, i.e. Brazil, China, Columbia, Georgia, and Mexico. Based on three pillars of ESG integration, climate- and nature-related risk management, and financing sustainability criteria this maturing stage means that a comprehensive set of national framework align with international standards are in place with consistent and comparable data is available to measure implementation. (SBFN and IFC, 2024). The two Indonesian regulators, i.e. the Central Bank of Indonesia (*Bank Indonesia* or BI) and the Financial Services Authority (*Otoritas Jasa Keuangan* or OJK) in addition to its Ministry of Finance, played important roles to achieve this maturing stage.

Besides actively setting up regulatory frameworks, the two regulators also joining international networks for green finance advancement and engaging in research and collaboration with related stakeholders. OJK joined SBFN in 2012. Meanwhile, BI joined the NGFS (Network for Greening the Financial System) in 2019, the G20 Sustainable Finance Working Group in 2021, and the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) Interest Group on Sustainable Finance in 2022. BI supported the presence of the Asian Green Bond and conducted research on climate transition risk and its impact to the economy. Similarly, OJK conducted a pilot project for Indonesia Green Taxonomy Implementation involving all the country's banks.

Green Finance Roadmap and credit policies

OJK in collaboration with the Ministry of Environmental Affairs and Forestry of Indonesia launched the Roadmap for Sustainable Finance in Indonesia 2015-2019 on 5 December 2014. It focused on awareness program, establishment of green lending model, and capacity building. As an implementation guidance of the roadmap, OJK issued Regulation No. 51/ POJK.03/2017 on Implementation of Sustainable Finance for Financial Services Institution, Issuers, and Publicly Listed Companies in 2017 followed by its technical guidelines of POJK NO.51/POJK.03/2017 in 2018. This OJK regulation required Financial Services Sector (FSS) to implement sustainable finance principles, submit the Sustainable Finance Action Plan to OJK, as well as publicly published a Sustainability Report. This regulation emphasized awareness of sustainable finance principles, as well as a starting point for market exploration for sustainable project financing.

The first sustainable finance roadmap has resulted in several achievements such as the introduction of green finance principles, the classification of green business criteria, the development of incentives, and the implementation of awareness and capacity-building programs for the financial industry. Green finance (which in this POJK is called environmentally friendly business activities) spans eleven criteria, including (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.

OJK went further by publishing the Sustainable Finance Roadmap Phase II (2021- 2025) on 19 January 2021. Its objectives were to accelerate the implementation of environmental, social, and governance (ESG) aspects in Indonesia. It focused on creating a comprehensive sustainable finance ecosystem that involves all related parties and promoting cooperation at various levels, covering wide targets such as increasing demand of sustainable products, "green" certification for products and profession, structuring incentives for the industry, increasing resilience and competitiveness of financial institutions, enhancing financial institutions' capacity, improving sustainable finance literacy, issuing green taxonomy and enabling the availability of public environmental and social data.

In the context of regulatory framework, in 2021 OJK published Technical Guidelines for Securities Companies on the Implementation of POJK NO.51/POJK.03/2017. In 2023, the government and the parliament of Indonesia enacted new P2SK Law (Financial Sector Omnibus Law) which regulates the framework for Indonesia's sustainable financial development, such as the mandate to establish a sustainable finance committee and sustainable taxonomy. In the same year, the Ministry of Finance issued a Regulation No. 103/2023 on Fiscal Support for Financing System for Energy Transition on the Electricity Sector as a guideline for climate financing, especially on blended finance mechanism for coal early retirement, renewable energy development, and grid improvement projects. The ministry also issued a Decree No. 470/2023 on the Formation of Energy Transition Mechanism

Country Platform Steering Committee, to kickstart the implementation and management of the blended financing as mandated by MoF Regulation No. 103/2023 for energy transition projects.

The Indonesia Sustainable Finance Initiative (ISFI)

In November 2015, the OJK took the first step by forming the First Movers on Sustainable Banking. This group later became a pioneer in the implementation of sustainable banking principles. Eight banks voluntarily joined as initial members, namely Bank Mandiri, Bank BRI, Bank BNI, Bank BCA, Bank Muamalat Indonesia, Bank Artha Graha Internasional, Bank Jabar Banten, and Bank BRI Syariah. In 2017 these eight banks formally established the Indonesia Sustainable Finance Initiative (ISFI). Its purposes are to share experiences, knowledge, and develop the implementation of sustainable finance principles. In 2019, five new members joined ISFI, i.e Bank CIMB Niaga, Bank Syariah Mandiri, Bank OCBC NISP, Maybank Indonesia, and HSBC Indonesia, bringing the total number of ISFI members to thirteen and increased again to fifteen with the joining of Bank Panin and Sarana Multi Infrastruktur at the end of 2020. However, because of the merger between Bank Syariah Mandiri and Bank BRI Syariah into Bank Syariah Indonesia in early 2021, the number of ISFI members is currently fourteen, represented 90% of the total national banking assets, consisting of Bank Mandiri, Bank BRI, Bank BNI, Bank BCA, Bank Muamalat Indonesia, Bank Artha Graha Internasional, Bank Jabar Banten, Bank CIMB Niaga, Bank OCBC NISP, Maybank Indonesia, HSBC Indonesia, Bank Panin, Sarana Multi Infrastruktur, and Bank Syariah Indonesia.

Climate-Related Financial Risks

Another advancement in green finance practices in Indonesia was the introduction of climate risk integration in financial institution risk management. Started with the issuance of Consultative Paper: Principles for the effective management and supervision of climate-related financial risks in 2022, OJK released a guidance of initial bottom-up climate risk stress testing (CRST) in 2023. This was to measure vulnerability of financial institutions portfolio or the whole financial system against scenario or risk related to climate change beside other economic shocks. 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 bank, e.g. impact analysis of climate risk to financial risk (including capital). OJK also issued Regulation No. 17 of 2023 on the Implementation of Governance for Commercial Banks in 2023, in which banks were required to manage its climate-related risks.

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 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.

Furthermore, OJK published Climate Risk Management & Scenario Analysis Guidelines (CRMS) in 2024. The new guidance covered new topics such as climate risk governance, business strategy and risk management framework, CRST design and analysis, disclosures standard, and implementation plan of climate risk management. OJK required large banks to submit CRMS results by July 2024, and followed by set up the policies recommendation based on the industry consultation process between 2024 and 2025. The policies will be targeted to be implemented in 2026 for all banks.

Green and Sustainable Taxonomies

On 20 January 2022, OJK launched the Indonesia Green Taxonomy edition 1.0 - 2022, a classification of economic activities which supports environmental protection and management efforts, as well as mitigation and adaptation to climate change. Its objective was to enable the periodic monitoring process in the implementation of credit/financing/investment into the green sector and prevent the potential reporting of green activities (greenwashing). Two years later on 20 February 2024, OJK officially launched the Indonesia Sustainable Finance Taxonomy (TKBI), which earmarks as the world-first taxonomy that regulates the treatment of critical minerals in order to support clean energy technology and transition towards Net Zero Emissions. It was expected that this new taxonomy is able to prevent greenwashing, social washing, and impact washing practices.

Green or Sustainable Bonds and Loans

OJK released Regulation Number 60/POJK.04/2017 on Green Bond in 2017. This regulation has stimulated both the government and financial institutions to issue various green or sustainable credit instruments. The first sovereign global green sukuk for US\$1.25 billion by the Government of Indonesia, a US\$150 million green

medium-term note by Bank OCBC NISP, and a US\$200 million green bonds by Sarana Multi Infrastruktur (SMI) in 2018 were the first manifestations of this enthusiasm. They were then followed by the issuance of the first US\$500 million global sustainability bonds by Bank Rakyat Indonesia (BRI) and second sovereign global green sukuk of US\$750 million by Indonesian government in 2019, the launch of SME Green Loan by BTPN in 2020, the Bank Mandiri first US dollar sustainability bond of \$300 million in 2021. In 2023 OJK issued Regulation No. 18/POJK.04/2023 on the Issuance and Terms of Debt Securities and Sustainability-Based Sukuk, which amended Regulation No. 60/POJK.04/2017.

Carbon Trading

Indonesia has had a regulation on carbon trading through OJK Regulation No. 14 of 2023 on the Carbon Trading through Carbon Exchange which explained in more detail by OJK Circular Letter No. 12/SEOJK.04/2023 on the Procedures for Organizing Carbon Trading through Carbon Exchanges. The Indonesia Carbon Exchange (IDXCARBON) was launched on 26 September 2023. The IDXCARBON itself as the Carbon Exchange Operator was intended to provide a transparent, orderly, fair and efficient trading system. Apart from providing transparency in prices, IDXCARBON trading also provides an easy and simple transaction mechanism. There are currently four IDXCARBON trading mechanisms in place, namely Auction Market, Regular Market, Negotiated Market, and Marketplace.

Sustainability Corporate Reporting

Before the issuance of OJK regulation on sustainable finance implementation in Indonesia, for years many companies in Indonesia have generally taken part in the effort to achieve sustainable development goals through various corporate social responsibilities (CSR) activities. In 2007 the government and parliament of Republic of Indonesia passed Law Number 40 year 2007 on Corporation. Article 74 of the Law said that all companies operate in and/or related to natural resources have to follow social and environmental responsibilities. One step forward had been also initiated by National Center for Sustainability Reporting (NCSR) since 2005 to conduct the Indonesia Sustainability Reporting Award (ISRA) to give award to companies that has published sustainability reporting. The Indonesian Capital Market and Financial Institutions Supervisory Board (now a division under Indonesian Financial Service Authority/FSA) through the issuance of the regulation Number X.K.6 year 2006 stated that all annual report of listed companies have to describe activities and cost related to corporate social responsibilities to societies and environment.

The issuance of OJK Regulation No. 51/POJK.03/2017 on Implementation of Sustainable Finance for Financial Services Institution, Issuers, and Publicly Listed Companies in 2017 made sustainability reporting publication prevalent especially among financial institutions, publicly listed companies, and state's owned enterprises. In 2021, OJK issued OJK Circular Letter No. 16/SEOJK.04/2021 regulating the forms and contents of the annual report of issuers and publicly listed companies. Majority companies in Indonesia use the GRI standards for reporting their sustainability performances. A report by PwC and NUS Business School (2023) stated that 80% of the Indonesian companies studied use the GRI-based sustainability reporting. The study also reported that the adoption of the TCFD framework for sustainability reporting in Indonesia was still low even though there was a significant increase from 4% in 2021 to 10% in 2022.

The launch of IFRS Sustainability Disclosure Standards (ISSB) on 26 June 2023 intended to provide a truly global standards for sustainability and climate related risks and opportunities disclosures that ensure companies to provide a clear, comparable, and reliable information to investors resulted in better capital market decision and more sustainable and responsible global economy. This IFRS Sustainability Disclosure Standards consisted of IFRS S1 on general requirements for disclosure of sustainability-related financial information and IFRS S2 on climate-related disclosures with primarily covers disclosure related to governance, strategy, risk management, and metrics and targets.

The gap in corporate reporting requirements between the current above OJK regulations and the new IFRS standards is substantial. The transition from GRI-based sustainability reporting to a new more comprehensive IFRS Sustainability-based corporate reporting, whether by full replacement or complementing the current GRI standards report with new IFRS standards will need extensive awareness programs and adaptation efforts.

This paper intends to overview the strategic measures taken by an authority in emerging countries, Indonesia along with related stakeholders in advancing green finance transition and examine whether those movements have been successful in mainstreaming green finance in the national financial system.

METHODOLOGY

This study uses data from banks and non-bank financial institutions that are members of the Indonesia Sustainable Finance Initiative (ISFI) with the provision of certain criteria. The selection of ISFI members as they control most of the nation banking assets. The first criterion is that companies must disclose relevant and clear quantitative information related to eleven green business sectors in their annual and sustainability reports within the 2019-2023 timeframe. Second, the company does not come from a merger.

By applying these criteria, several entities were excluded from the research subject, i.e Bank Syariah Indonesia because it was the result of a merger between Bank Syariah Mandiri and Bank BRI Syariah in 2021, Bank Artha Graha Internasional because it did not publish a sustainability report in 2019, and Bank Muamalat Indonesia and Bank HSBC Indonesia because they only provided limited quantitative information on green business financing and sustainability activities. From the selection results, ten banks and one non-bank financial institution were selected that met the criteria, i.e Bank Mandiri, Bank BRI, Bank BNI, Bank BCA, Bank Jabar Banten, Bank OCBC NISP, Bank CIMB Niaga, Maybank Indonesia, Bank Panin and PT Sarana Multi Infrastruktur.

After the research subject was obtained, the researcher searched for research data taken from the annual reports and sustainability reports of ten banks and one non-bank financial institution for five years 2019-2023. The implementation of green finance was measured through content analysis of these reports, with a primary focus on the availability of quantitative information related to lending to eleven green business activity sectors, 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.

Finally, the analysis was conducted to identify financing trends in these sectors as a whole and per company over the 2019-2023 period. This aims to understand which sectors received the highest and lowest financing. In addition, the proportion of green business financing compared to total corporate loans was also analyzed to assess the extent to which finance issues are prioritized by financial services companies.

FINDINGS AND DISCUSSIONS

As been explained in the previous sections, there are eleven business activities that could be categorized as green business activities. The following figure shows the trend of green finance by ten members of the Indonesia Sustainable Finance Initiative (ISFI) during the 2019-2023 period.

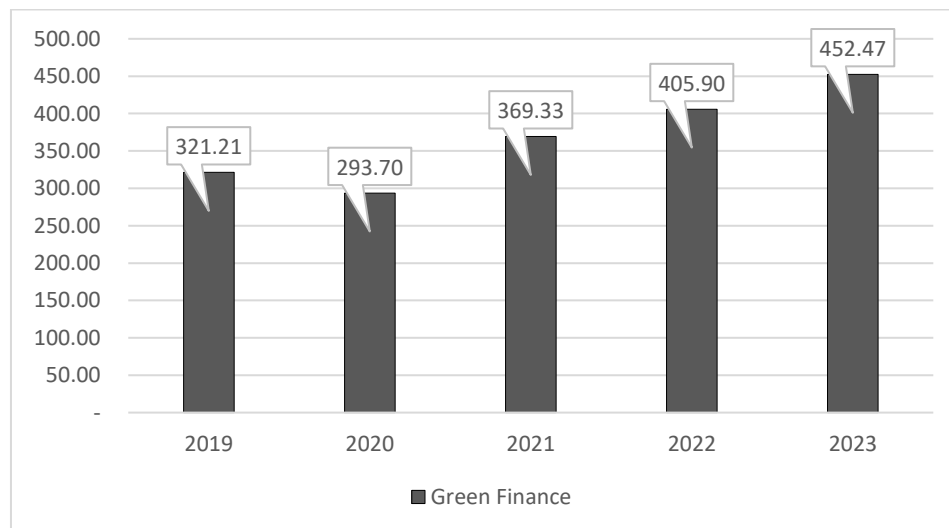


Figure 1: Green Finance in 2019-2023 Period (in trillion rupiahs)

The graph shows a promising figure as the amount of credit directed to green business activities grew steadily. Green finance that consists of eleven sectors of environmentally friendly business activities grew from 321.21 trillion rupiahs in 2019 to 452.47 trillion rupiahs in 2023. As illustrated in the figure 1, despite a decrease from the previous 321.21 trillion rupiahs in 2019 to 293.70 trillion rupiahs in 2020 due to business disruptions in the financial sector due to the COVID-19 pandemic, ISFI members were able to increase its green financing portfolio in 2021 of 369.33 trillion rupiahs, exceeding the achievements of the previous two years. Likewise for the following years,

which increased significantly, namely 405.90 trillion rupiahs in 2022 and then 452.47 trillion rupiahs in 2023. This reflects the strong commitment of ISFI members in financing the green business activities.

The following is the picture on how the ten financial services companies distributed loans across eleven sectors of green business activities.

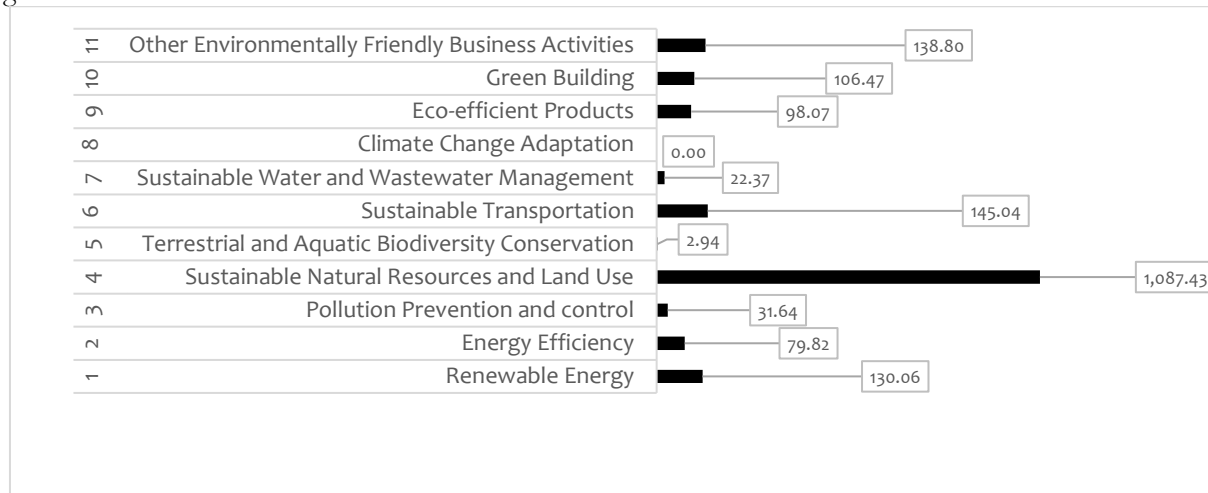


Figure 2. Distribution of Green Finance Sectors from 2019-2023 (in trillion Rupiahs)

It can be shown that during the 2019-2023 period, green financing mostly went to the sustainable natural resources and land use sector with total with total financing of 1,087.45 trillion rupiahs. Typical projects included in the sustainable natural resources and land use category were the low-carbon agriculture sector, organic agriculture, and the palm oil industry that has obtained Indonesian Sustainable Palm Oil (ISPO) or Roundtable on Sustainable Palm Oil (RSPO) certification. Prioritizing financing to palm oil business is old business for banking industry in Indonesia beside credit to coal mining industry as the two are proven to be the most lucrative business in Indonesia. Globally, this also explained the importance of this natural resources sector in supporting sustainable development. Good sustainability management of living natural resources and sustainable land not only contributes to the reduction of greenhouse gas emissions, but also supports the improvement of local communities' welfare through environmentally friendly and efficient agricultural practices (Neufeldt et al., 2013). In addition, the growing global demand for products with sustainability certifications such as ISPO and RSPO is pushing this sector to be a top priority in the allocation of green finance. (Pirker et al., 2016).

The rest of green financing with less than half of total green finance was then distributed to other sectors, firstly to sustainable transportation for 145.03 trillion rupiahs. This green finance category was to support the electric vehicle ecosystem development project, battery-based electric car and motor cycle loans, low carbon emission vehicle (LCEV) ownership, and electricity-based public transportation. It then followed by loan to other environmentally friendly business activities of 138.80 trillion rupiahs, renewable energy (for instances hydro, solar, gas power plants as well as conversion from coal fired power plant to gas fired power plant) of 130.06 trillion rupiahs, and to green building of 106.47 trillion rupiahs.

Very small portion of green business financing went to eco-efficient product, energy efficiency, pollution prevention and control, sustainable water and wastewater management, and terrestrial and aquatic biodiversity conservation. Ironically, the climate change adaptation sector got the smallest amount of green finance with amount of only one billions rupiahs. This small financing investment figure was due to the fact that there is only one Bank Panin that channeled financing to this sector in 2023.

More details on green finance portfolios from each bank is shown in the following figure:

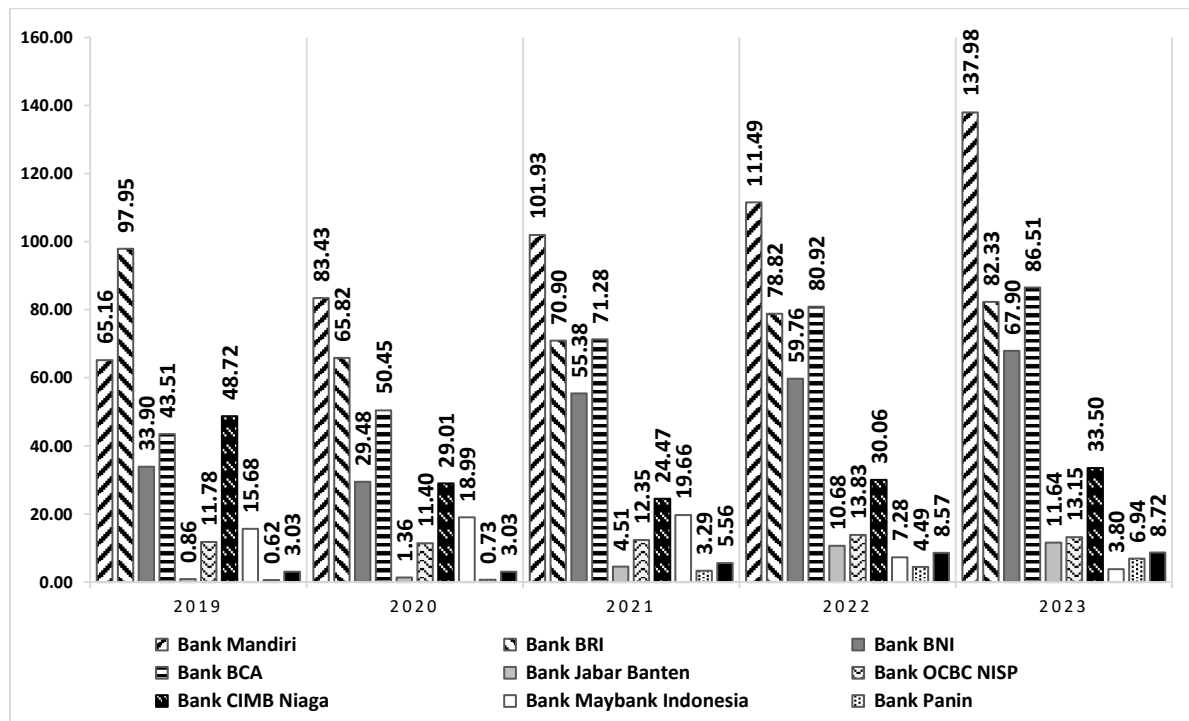


Figure 3: Green Finance Loans in 2019-2023 Period (in trillion rupiahs)

In 2019, Bank BRI was the largest provider for green finance, with total financing reaching 97.95 trillion rupiahs, leaving its competitors far behind. However, despite being one of the largest banks in Indonesia, Bank BRI began to reduce its role in green business financing, resulting in a decline to second place in 2020 and third place from 2021 to 2023. On the other hand, Bank Mandiri, one of Indonesia's largest banks and Bank BRI's closest competitor, successfully increased and maintained its dominant role in green business financing. With a 28% increase in financing from 65.16 trillion rupiahs in 2019 to 83.43 trillion rupiahs in 2020, Bank Mandiri emerged as the market leader in green business financing and continued to hold its leading position through 2023. This reflects Bank Mandiri's growing commitment to taking a leading role in green business financing, aligning with the increasing demand for green business financing.

Bank BCA, as one of the largest banks owned by a national private company, has also demonstrated a significant role in green business financing. Gradually, the bank improved its position from fourth place in 2019 to third place in 2020 and further secured the second position from 2021 to 2023. Meanwhile, Bank CIMB Niaga, owned by a foreign institution, displayed a fluctuating trend in green business financing each year. Its financing initially declined to 29.01 trillion rupiahs in 2020 and further decreased to 24.47 trillion rupiahs in 2021 before increasing to 30.06 trillion rupiahs in 2022 and 33.50 trillion rupiahs in 2023. On the other hand, Bank BNI, which previously ranked second to fourth in providing loans, made efforts to increase green business financing. However, it achieved only a slight improvement, moving from fifth position in 2019 to fourth place consistently from 2020 to 2023. Lastly, the chart also reveals that Bank Panin consistently ranked as the smallest provider of loans for green business activities among other ISFI members.

Furthermore/However, despite the increase in financing for green businesses as previously mentioned, the proportion of green business financing to the total credit disbursed by the ten financial institutions during this period remains relatively low. Between 2019 and 2023, the ten selected financial institutions allocated a total loans of 17,833.08 trillion rupiahs for various types of business activities with the following breakdown:

Table 1: Total loans distributed by ISFI Members 2019 – 2023 (in trillion rupiahs)

No	Companies Name	2019	2020	2021	2022	2023	Total
1	Bank Mandiri	885.84	942.07	1,026.23	1,172.60	1,359.83	5,386.57
2	Bank BRI	903.20	938.37	943.70	1,029.80	1,146.08	4,961.15
3	Bank BCA	586.94	574.59	622.00	694.90	810.39	3,288.82
4	Bank BNI	556.77	553.11	582.44	646.20	695.10	3,033.62
5	Bank CIMB Niaga	194.30	174.75	181.61	196.61	213.37	960.64

6	Bank OCBC NISP	119.00	114.90	120.78	137.62	154.10	646.40
7	Bank Panin	136.73	121.63	113.29	123.27	131.50	626.42
8	Bank Maybank Indonesia	122.60	105.27	101.77	107.82	116.00	553.46
9	Bank Jabar Banten	81.90	88.60	95.44	107.88	116.14	489.96
10	Sarana Multi Infrastruktur	60.39	70.60	80.76	93.95	86.27	391.97
Total							17,833.08

The table above indicates that Indonesia's financial services market is dominated by two major banks, Bank Mandiri and Bank BRI, each disbursed over 1,000 trillion rupiahs in loans per year in 2022 and 2023. They are followed by the second-tier major banks, Bank BCA, Bank BNI, and Bank CIMB Niaga, and finally by other smaller banks and financial services company. The subsequent analysis will focus on the five largest financial services companies among the ten, based on the assumption that larger institutions possess greater resources, professional expertise, and heightened awareness and exposure to global trends.

By selecting the five largest financial institutions from the top ten and comparing the amount of loans allocated for green businesses, as illustrated in Figure 3 and Table 1, the percentage of green finance to total loans for the top five companies during the 2019–2023 period is as follows:

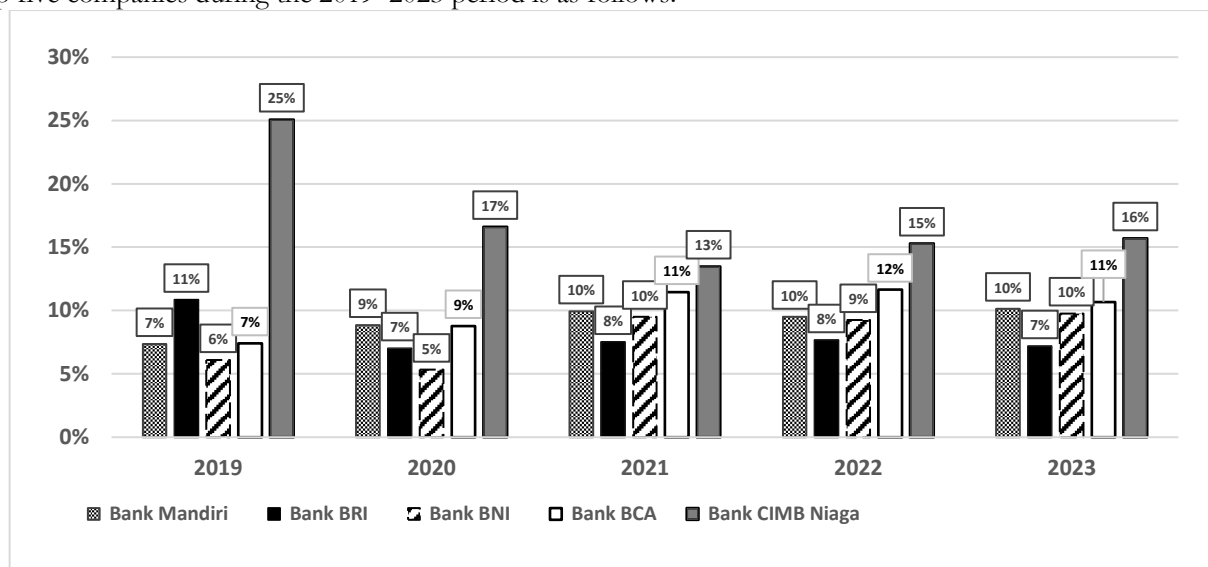


Figure 4: Percentage of Green Business Financing to Total Loans of Top Five Banks in 2019-2023 (in trillion rupiahs)

Although there was a significant increase in total loans as shown in Table 1, Figure 4 shows that Bank Mandiri's green finance portfolio did not show a significant increase from year to year. This is evident from the ratio of green finance to Bank Mandiri's total loans, which initially increased by 2% from 7% in 2019 to 9% in 2020 but then stagnated at 10% portion from 2021 to 2023, beside the fact that Bank Mandiri as explained above is the market leader in green finance in Indonesia. A similar situation is observed at Bank BRI. Although the total loans of Bank BRI consistently increased, reaching its highest level of 1,146.08 trillion rupiahs in 2023, the proportion of green finance, on the contrary, dropped to 7% in the same year, marking the lowest proportion during the 2019–2023 period. Ironically, Bank BNI, which brands itself as a "pioneer of green banking" and claims a strong commitment to green financing (Bank BNI, 2022), allocated no more than 10% of its loans to the green business sector.

Appreciation should be credited to Bank BCA that committed to constantly increase its green finance proportion from 7% in 2019 to 12% in 2022, even though it was followed by a slight decrease to 11% in 2023. its total financing consistently grew through 2023, the proportion of green financing declined to 11% in 2023. Moreover, Bank CIMB Niaga, part of the CIMB Group known for its active role in green banking in Malaysia, also deserves recognition for having the biggest percentage of loans that go to green businesses. Despite experiencing a sharp decline in green business financing proportions from 25% in 2019 to 20% in 2020 and 17% in 2021, CIMB Niaga managed to reverse the trend, increasing the proportion to 15% in 2022 and 16% in 2023.

With the average proportion of green business financing at less than 15% of their total loans indicated that major banks in Indonesia have not maximize their green business financing and remain significantly underperforming in green business financing despite their vast potential. As previously explained, the three state-owned banks i.e Bank Mandiri, Bank BRI, and Bank BNI have shown limited commitment to green business financing, with a maximum allocation of only 11%. For example, while Bank Mandiri initially made strong efforts in green business financing, its proportion stagnated at 10% from 2021 to 2023. Similarly, Bank BRI, which initially

allocated 11% for green business financing, experienced a significant drop to 7% in 2023. Bank BNI, despite branding itself as a "pioneer of green banking," managed to allocate only 9%–10% to green business financing during the same period. In contrast, non-state-owned banks such as Bank BCA and CIMB Niaga have demonstrated stronger and more consistent commitments to green business financing.

Based on the findings of this study, it can be concluded that as of the end of 2023, clear policies regarding the regulation and direction of green business financing in the financial services sector are still needed. Regulators, particularly Indonesia's Financial Services Authority (OJK), need to act more comprehensively, swiftly, and effectively to promote the implementation of green finance, starting with major banks and subsequently involving smaller banks and non-bank financial institutions. In addition, for state-owned banks, which dominate a significant portion of Indonesia's banking market, the role of regulators, particularly the Ministry of State-Owned Enterprises (Kementerian BUMN), is crucial in implementing policies and controls that encourage these banks to engage more actively in green business financing.

One crucial step is to develop a green financial ecosystem by involving all relevant stakeholders on both the demand and supply sides of green financial products. This may include the creation of clear policies and appropriate incentive schemes to encourage non-state-owned banks to participate more in financing green sectors, which have so far tended to be commercially profit-oriented.

CONCLUSIONS

This paper revealed that in spite of many initiatives have been accomplished both by regulators and other stakeholders and the growing interest in this field is indisputable, green finance practices have not been mainstreaming with Indonesia national financial system. It is still in developing stages and from achieving a sophisticated level. Furthermore, it is still concentrated to traditional sector of palm oil plantation. The regulators and all related stake holders need to act properly to encourage green finance to more various sectors that support sustainability and climate adaptation and mitigation.

Further research that involving key stakeholder perception and expectation on green finance implementation is required. Recent development on IFRS corporate reporting standards with the impact on micro aspects of company's value and performance as well macro aspects of the country's economy should be included in the future study along with comparative benchmarking to other regions or to global context.

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