From Financial Inclusion to Green Financing: Linking Financial Dimensions with Environmental Sustainability

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Abstract :

This article explores the connection between financial inclusion and green financing to promote sustainable development. Financial inclusion fosters economic and social growth by increasing financial access for marginalized groups, whereas green financing channels investments into environmentally sustainable projects. Integrating these two areas can balance economic growth with sustainability by channeling financial resources into green initiatives. However, challenges such as low awareness, weak financial infrastructure, and high environmental project costs hinder progress. The article discusses strategies to address these issues, emphasizing policies and collaboration among governments, financial institutions, and the private sector. Ultimately, it highlights the need for a financial-environmental balance to achieve global sustainability goals.

***Key Words*:** Financial Inclusion; Green Financing; Sustainability Development; Financial Access.

JEL Classification: G21, Q56, G28

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Introduction:

In a world experiencing a rapid shift toward sustainable growth and facing escalating environmental challenges, it has become essential to reassess the role of financial tools in achieving economic and environmental goals. Financial inclusion and green financing are concepts gaining increasing importance in this context. Financial inclusion entails broadening access to financial services for all individuals, particularly marginalized and disadvantaged groups, whereas green financing prioritizes investments in projects that enhance environmental sustainability and mitigate the negative effects of human activities.

The main issue lies in how to combine these two concepts to achieve inclusive and sustainable development. While financial inclusion emphasizes enhancing access to financial services to promote economic growth and social equity, green financing aims to achieve environmental objectives by supporting

sustainable projects. Many question how to integrate these dimensions to strike a balance between economic development and environmental preservation, and how to ensure that financial tools are accessible to everyone while contributing to environmental development goals.

Problem Statement :The core issue is the effectiveness of linking financial inclusion with green financing to achieve sustainable development. Several key questions arise around this matter: **How can a balance be achieved between expanding access to financial services and enhancing financing for environmental projects?**

While financial inclusion aims to provide universal access to financial tools, how can these resources be effectively leveraged to support environmental projects? What challenges hinder the integration of financial inclusion with green financing? Despite its potential benefits, several challenges hinder this integration, including limited financial and environmental awareness, underdeveloped financial infrastructure, and the high upfront costs of green projects. How can these challenges be overcome? How can collaboration among different stakeholders be enhanced to support financial inclusion and green financing? Strengthening cooperation among governments, financial institutions, and private companies is crucial for achieving the goals of financial inclusion and green financing. What strategies can be adopted to promote this collaboration? What tools and policies can be used to stimulate investment in environmental projects while ensuring financial inclusion? Achieving the goals of financial inclusion and green financing requires suitable tools and policies. What tools and policies can effectively support this linkage?

Importance of the Study : Addressing this issue is not only crucial for achieving sustainable economic growth but also for ensuring that environmental benefits are distributed fairly. If we can effectively link financial inclusion with green financing, it will contribute to achieving both economic and environmental goals, enhancing individuals' and communities' ability to face environmental challenges and seize available economic opportunities.

I. Financial Inclusion and Green Financing: Foundations for Sustainable Development

1. Financial Inclusion: The Key to Economic and Social Development

Financial inclusion aims to ensure the provision of financial services to individuals and small and medium-sized enterprises that often struggle to access these services due to economic or social factors. Achieving financial inclusion means that people can benefit from bank accounts, loans, insurance, and digital payment systems, thereby enhancing their financial stability and economic opportunities.

In addition to its role in promoting economic well-being, financial inclusion contributes to poverty reduction and social equity. It enables marginalized individuals to actively participate in the economy, enhancing their ability to invest in education, healthcare, and improve their standard of living. Furthermore, financial inclusion is a critical component in achieving the Sustainable Development Goals set by the United Nations.

Numerous studies have focused on financial inclusion and its relationship with various economic variables, including:

A study titled « *Fintech, Financial Inclusion, and Income Inequality* » (Demir, A., & Pesqué-Cela, V, 2020) investigates the role of financial technology (FinTech) in reducing inequality by promoting financial inclusion. Using quantitative regression analysis, the study explores how FinTech can assist marginalized groups in accessing financial services, especially in emerging markets.

A study titled « *Financial Inclusion in China: An Overview* » (Chen, W., & Yuan, X., 2021) provides an overview of the progress and challenges in financial inclusion in China, focusing on the role of digital financial services in expanding access to finance for rural populations and small enterprises.

A study titled « *Impact of Financial Inclusion on Economic Growth: Review of Existing Literature and Directions for Future Research* » (Peterson , K., et al., 2023) demonstrates how financial inclusion contributes to economic growth, particularly in developing countries. By improving access to financial services, financial inclusion can enhance financial intermediation and stimulate economic growth. The article also discusses gaps in current research and suggests new avenues for future study.

2. Green Financing: Building a Sustainable Environmental Economy

Green financing focuses on channeling capital towards projects that achieve specific environmental objectives, such as reducing carbon emissions, promoting renewable energy usage, and improving natural resource management. This form of financing emerges in response to increasing pressures from climate change and

environmental degradation, aiming to shift the global economy towards a more sustainable model.

Green financing seeks to allocate resources to initiatives that promote environmental sustainability and reduce human-induced ecological harm. It focuses on funding initiatives that promote renewable energy, sustainable agriculture, and efficient resource management. By facilitating access to financial resources for green projects, green financing helps to foster a transition towards a low-carbon economy (Stojanovic, D., & Ilic, B., 2018).

As a key tool in achieving the "*Green Deal*" adopted by various governments and global institutions, green financing seeks to balance economic growth with environmental preservation. In addition to its environmental benefits, it contributes to economic growth by creating job opportunities in emerging sectors. Green financing is instrumental in advancing the United Nations' global sustainability objectives.

Many studies have explored the relationship between green financing and various economic factors, highlighting its importance in developing a sustainable economic framework. Instruments of green financing include green bonds, sustainable loans, environmental investment funds, green insurance, and green sukuk. These tools are utilized to attract investments in projects such as renewable energy, sustainable transportation, and green buildings, thereby fostering a transition towards sustainable development.

II. Integrating Financial Inclusion and Green Financing: Strategies, Challenges, and Opportunities

1. Linking Financial Inclusion with Green Financing

The connection between financial inclusion and green financing is vital for achieving sustainable economic development. Financial inclusion ensures that underserved and marginalized populations have access to essential financial services, enabling them to participate actively in the economy. Conversely, green financing directs capital towards environmentally beneficial projects, contributing to sustainability and climate resilience (Van Niekerk, A. J., 2024).

Integrating financial inclusion with green financing allows for the mobilization of resources to support green initiatives while simultaneously empowering individuals and communities. By ensuring that all segments of society can access financial products tailored for sustainable projects, we can promote investments in renewable energy, sustainable agriculture, and other environmentally friendly practices.

This linkage is particularly crucial for achieving broader economic and social goals. Financial inclusion can help reduce poverty and inequality, enabling disadvantaged groups to invest in sustainable practices that improve their

livelihoods. For instance, access to microloans for green projects can empower smallholder farmers to adopt sustainable agricultural techniques, thus enhancing food security and promoting environmental stewardship.

Moreover, fostering collaboration among governments, financial institutions, and private sectors can enhance the effectiveness of both financial inclusion and green financing initiatives. Policymakers can design strategies that encourage financial institutions to create green financial products aimed at underserved populations, thereby ensuring equitable access to sustainable financing options.

Despite the fact that financial inclusion and green financing may seem like independent concepts, linking them opens new avenues for achieving sustainable development goals. Green financial inclusion is a concept that combines empowering individuals to access financial services with enhancing funding directed toward environmentally sustainable projects. Through this connection, financial inclusion can serve as a tool for driving the green transition by supporting environmental initiatives at both grassroots and institutional levels (Hussain, S., et al., 2023).

When individuals are empowered to access financing, it becomes possible to direct these resources toward projects that support the green economy. For example, financial inclusion can enable farmers to invest in sustainable agricultural technologies that reduce water and energy consumption, or small and medium-sized enterprises to access funding that allows them to switch to clean energy sources or improve energy efficiency in their operations.

Numerous studies have explored the relationship between financial inclusion and green financing, which can be summarized as follows:

Study titled « *The Role of Greener Innovations in Promoting Financial Inclusion to Achieve Carbon Neutrality* » (2023) (Brahmi, M. et al., 2023). This study discusses how green innovations can contribute to financial inclusion and help achieve carbon neutrality. The article relies on a systematic review of the literature on this topic, aiming to understand how technological innovations facilitate financial inclusion and achieve sustainable development goals. Green innovations refer to new technologies that reduce environmental pollution and conserve resources, playing a crucial role in achieving sustainability. Green financial inclusion means accessing financial services in a sustainable and environmentally friendly manner, such as green fintech that reduces carbon emissions. Financial inclusion helps provide funding for marginalized groups and promotes investments in renewable energy and environmentally friendly projects.

Study titled « *How Financial Inclusion and Green Innovation Promote Green Economic Growth in Developing Countries* » (Abbas, S. et al., 2024). This article examines how financial inclusion and green innovation enhance green economic growth in developing countries. It studies the relationship between financial

inclusion, green innovation, and green economic growth in 12 developing nations, focusing on achieving the thirteenth goal of the Sustainable Development Goals (SDG 13) related to combating climate change. Key points include:

- Financial inclusion can facilitate access to environmentally friendly technologies and promote green investments.
- Green innovation, foreign direct investment, and trade openness positively impact green economic growth.
- However, financial inclusion may negatively affect green economic growth if not aligned with environmental quality.
- Principal Component Analysis (PCA) was used to construct a financial inclusion index.

Study titled « *Climate Change, Financial Inclusion and Inclusive Green Finance* » (Ali, A., 2020). This article discusses the connection between climate change issues and financial inclusion through inclusive green finance. It focuses on:

- The challenges faced by developing countries due to climate change and natural disasters.
- The importance of financial inclusion in enhancing the economic resilience of the most vulnerable populations.
- The role of central banks in leading the transition towards sustainable green financing.
- Gender-related challenges, as women are often excluded from the formal financial system.
- Fiji's efforts in providing green finance, such as issuing national green bonds and establishing a sustainable financing framework.

Study titled « *Financial Inclusion and Sustainable Development: An Empirical Association* » (2022). This article focuses on the relationship between financial inclusion and sustainable development using data from 23 OECD member countries from 2004 to 2017. It shows a positive correlation between financial inclusion, energy consumption, and carbon emissions. The article indicates that financial inclusion can support sustainable development by facilitating access to financing for environmental projects and enhancing resource efficiency (Ozili, P., 2022).

To achieve a balance between expanding access to financial services and enhancing financing for environmental projects, it is essential to integrate green financing tools into financial inclusion policies. This involves providing accessible financial products that target marginalized groups and direct them towards environmentally friendly investments. For example:

- *Micro Green Loans*: Banks and financial institutions can offer targeted loans to low-income individuals to finance small projects based on renewable energy or sustainable agriculture.
- *Integrated Financial Products*: Launching financial products that combine financial inclusion with green financing, such as savings accounts dedicated to investing in environmental projects.
- *Stimulating Innovation*: Supporting innovations in financial technology (Fintech) to develop payment solutions and financial services aimed at expanding financial inclusion, with a portion allocated for environmental projects.

1.1. Tools and Policies to Stimulate Investment in Environmental Projects While Ensuring Financial Inclusion

To effectively stimulate investment in environmental projects while ensuring financial inclusion, several tools and policies can be employed:

a. Green Bonds:

These are a key financing tool to attract capital toward sustainable projects, offered as investment products for middle- and low-income investors. Green bonds serve as a financing option for companies and governments aiming to support climate-related investments. Financial institutions and governments can issue these bonds to fund green projects at preferential interest rates. After obtaining financing, the raised funds are directed toward selected projects that support green initiatives.

The figure illustrates the dominance of green bonds in the green financing issuance market, particularly from 2015 to 2020. The decline in green bond issuance in 2016 negatively impacted the green financing market, leading to a direct reduction in its overall size. Generally, the volume of green bond issuance represents over 50% of the green financing market at its lowest level (Harrisson, C. et al., 2022).

Fig 1 : « Development of bond issuance volume compared to the evolution of green financing »



Source : Harrison, C., MacGeoch, M., & Michetti, C. (2022). Sustainable debt global state of the market 2021. Climate Bonds Initiative, 8-13.

b. Green Microloans:

Providing accessible loans for marginalized groups aimed at financing sustainable economic activities, such as using renewable energy in homes or organic farming.

c. Tax Exemptions:

Encouraging green investments by offering tax breaks to individuals and companies that invest in environmental projects.

d. Legislative Incentives:

Developing regulations that require banks and financial institutions to allocate a portion of their financing to environmental projects within the framework of financial inclusion.

e. Green Insurance:

This tool enhances environmental risk management by clarifying costs associated with pollution and understanding external negative factors. Green insurance can mitigate the high risks associated with environmental investments, offering incentives for risk management and ensuring quick responses to pollution events.

These measures create an ecosystem that supports environmental sustainability while promoting equitable access to financial resources for all societal segments. By combining these strategies, stakeholders can drive investment in green projects and facilitate financial inclusion effectively.

1.2. Sectors to Direct Financial Inclusion Towards Supporting Green Financing

To direct financial inclusion in support of green financing, several strategies can be implemented:

- *Financial Education*: Raise public awareness about the importance of environmental investments and guide them towards available green financial tools.
- *Green Financial Products*: Develop innovative financial products that combine financial inclusion with green financing, such as savings programs that allocate a portion to fund environmentally friendly projects.
- *Microfinancing*: Provide small financing solutions for low-income groups to invest in local environmental projects, such as renewable energy or recycling initiatives.
- *Government and Sector Support*: Support small and medium-sized enterprises (SMEs) that operate in environmentally sustainable sectors by offering low-interest loans or grant funding.

1.3. Enhancing Collaboration Among Various Stakeholders to Support Financial Inclusion and Green Financing

Collaboration among different stakeholders is crucial for the success of green financial inclusion. This collaboration involves:

- *Governments:* They should establish policies and provide tax incentives for financial institutions that offer green financing solutions.
- *Private Sector:* Large corporations and investment firms can direct capital towards green and financially inclusive initiatives, such as green bonds or investments in environmentally friendly projects.
- *International Financial Institutions:* Entities like the World Bank or International Monetary Fund can support green and inclusive financing programs, providing technical and financial assistance to developing countries.
- *Fintech:* Promoting the use of fintech solutions to enhance access to financial services while directing innovation towards funding environmental projects.

3. Challenges and Opportunities

3.1. Challenges Facing the Integration of Financial Inclusion with Green Financing

Several challenges hinder the effective integration of financial inclusion with green financing, including:

- *Lack of Awareness of Sustainable Practices*: Many individuals are unaware of the importance of environmental projects or do not know how to access green financial tools.
- *High Initial Costs of Green Projects*: Many environmental initiatives, such as solar energy or sustainable irrigation systems, require significant investments compared to traditional projects.
- *Weak Financial Infrastructure*: In some countries, banks and financial institutions lack the necessary systems or technology to support widespread green financing.
- *Data Deficiency*: The unavailability of sufficient data on the risks and returns associated with environmental projects causes investors to hesitate in funding them.

Additionally, insufficient political and institutional support in certain regions poses a barrier. However, these challenges can be addressed through supportive government policies, enhancing partnerships between the public and private sectors, and improving financial and environmental education.

3.2. Opportunities

On the other hand, this process presents significant opportunities for achieving sustainable economic growth. Investing in green technologies and improving resource efficiency can reduce costs in the long term and create new job opportunities in renewable energy, sustainable agriculture, and other green industries.

Additionally, green financial inclusion can help alleviate environmental poverty, as these policies empower individuals most affected by climate change by providing them with economic means to tackle these challenges.

Conclusion

The transition from financial inclusion to green financing represents a vital step toward achieving a more inclusive and sustainable global economy. By integrating financial services with environmental sustainability, we can unlock economic opportunities while addressing urgent ecological challenges. It is essential for governments and financial institutions to implement supportive policies and strategies that enhance this integration, maximizing both economic growth and environmental protection.

Through targeted awareness campaigns, innovative financial products, and collaborative efforts across sectors, we can foster a robust ecosystem that empowers marginalized communities and promotes sustainable practices. Ultimately, these efforts will pave the way for a more resilient and sustainable future.

Recommendations

Enhance Financial and Environmental Awareness: Launch awareness campaigns targeting communities about the importance of financial inclusion and green financing, including training programs and workshops to improve understanding of green financing concepts and their application in supporting sustainable projects.

- ***Develop Innovative Financial Products***: Encourage financial institutions to create products that combine financial inclusion with green financing, such as micro-green loans and savings accounts dedicated to environmental projects.
- ***Provide Government Incentives***: Establish policies that support green investments, such as tax exemptions for investors in environmental projects and financial support for institutions aiming to enhance financial inclusion.
- ***Strengthen Intersectoral Collaboration***: Promote partnerships between governments, the private sector, and international financial institutions to achieve shared goals in financial inclusion and green financing, including knowledge and experience sharing.
- ***Develop Financial Infrastructure***: Invest in improving financial and technological infrastructure to enhance access for marginalized groups to financial services, including user-friendly digital platforms that provide information on green financing.
- ***Provide Data and Research***: Support research studies that explore the relationship between financial inclusion and green financing, offering reliable data to inform investors and policymakers' decisions.

- ***Encourage Innovation in Financial Technology***: Foster the development of fintech solutions that facilitate access to green financing, such as digital payment applications that support environmental projects.
- ***Support Small and Medium Enterprises***: Provide financial and technical support to small and medium-sized enterprises engaged in environmental sectors, making it easier for them to access financing.
- ***Monitor and Evaluate Performance***: Establish mechanisms to monitor and evaluate the impact of integrating financial inclusion with green financing on sustainable development, adjusting policies and tools based on outcomes.
- ***Expand Global Financial Inclusion:*** Strengthen international cooperation to broaden the scope of financial inclusion and green financing, sharing successful experiences and models among countries to achieve sustainable development goals.
- These recommendations aim to strengthen the relationship between financial inclusion and green financing, contributing to sustainable development and addressing current environmental and economic challenges.

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