

Financing Sustainability: Assessing The Impact of Green Financial instruments on Development outcomes

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Abstract

The time when all organizations around the world operated solely for financial gain is long past. Natural resource preservation and environmental protection are becoming increasingly important in all spheres of life today. Continuous research has been done worldwide to identify novel approaches for achieving sustainability. In order to safeguard the environment, mitigate the effects of climate change, invest in renewable energy sources, increase the amount of green space, and support other sustainable development initiatives, financial aid is known as "green finance." The goal of green financing is to enhance the amount of money flowing to priorities for sustainable development from the public, private, and not-for-profit sectors (from banking, microcredit, insurance, and investment). An important aspect of this is to increase accountability, better manage social and environmental risks, and seize opportunities that will improve the environment and provide a respectable rate of return. For people, businesses, and governments eager to pay and participate in environmentally friendly or low-carbon activities, green finance is a recent concept that provides an alternative funding channel. The distribution of funds for environmental preservation, the flow of funds to sustainable trade and investment activities, low-risk financing, and the creation of green investment and financing instruments are some advantages of green finance. This article examines the components of green financing, including green banking, green insurance, and green bonds. With the aid of current literature, it also assesses the prospects and difficulties for green finance in developing nations like India and makes an effort to offer fresh perspectives on green finance as a useful tool for sustainability.

Keywords: green finance, green investment, climate change, sustainable finance, green bonds, green banks.

INTRODUCTION

By assisting the reduction of climate change risk and reducing the effects of unfavorable climate occurrences, the financial industry may contribute significantly to the battle against climate change. Because of growing issues like ozone layer depletion, global warming, rising pollution levels, fierce competition for finite non-renewable energy sources, and other environmental issues, the need for environmental protection and the preservation of natural resources is receiving more attention from all stakeholders. A balance between nature and economics is what green finance aims to achieve. Calls for divesting from fossil fuel operations and a shift to investing in low-carbon projects and activities that safeguard the environment in a sustainable way have been made in response to the need to limit the harm to the environment caused by

fossil fuel emissions. This call has both national and global implications. At the national level, numerous nations, including Canada, Japan, Mexico, and the United Kingdom, have released policy declarations to raise citizens' understanding of the hazards associated with climate change and the detrimental consequences of fossil fuel emissions on the environment. Internationally, nations have ratified the Paris Agreement, a legally binding agreement on reducing global warming.

The Paris Agreement aims to keep global warming to below 2 or 1.5 degrees Celsius. The participants of COP26, also known as the United Nations Conference of the Parties on Climate Change, have also pledged to cut greenhouse gas emissions. Green economy proponents have suggested "green finance" as a workable alternative to address the funding needs of people, businesses, and

governments engaged in initiatives and activities that sustainably maintain the environment.

REVIEW OF LITERATURE

According to Berensmann and Lindenberg (2019; Ozili, 2021), "green finance" is the acquisition and use of funds for projects that both safeguard the environment and provide a reasonable return to investors or lenders. For people, businesses, and governments eager to pay and participate in environmentally friendly or low-carbon activities, green finance is a recent concept that provides an alternative funding channel (Huang et al., 2019). It's critical to realize that sustainable finance is a broad category that includes green financing as only one component. Other options for sustainable financing exist besides green finance, including social finance, blue finance, and digital finance (Ozili, 2021). According to Lindenberg (2014), "green finance" refers to the funding of public policies that support the adoption of projects and initiatives that safeguard the environment or reduce environmental damage. Calls for divesting from fossil fuel operations and a shift to investing in low-carbon projects and activities that safeguard the environment in a sustainable way have been made in response to the need to limit the harm to the environment caused by fossil fuel emissions (Bergman, 2018; Cleveland and Reibstein, 2015). A "traditional" financial product, service, or instrument can become "green" if it is used to raise money for investments, projects, or activities that support the environment (Li et al., 2018). Banks, institutional investors, and international financial institutions are some of the key players driving the development of green finance, according to Dr. Karthrin Berensmann et al. (2016). The researchers came to the conclusion that how successfully the challenging climate and sustainability goals can be accomplished would primarily depend on how tenaciously the aforementioned actors advance the development of green finance. In 2013, Keerthi B.S. examined the prospects, difficulties, and current trends in green financing in India. The researcher

also talked about creating green jobs and came to the conclusion that it is important to support sustainable, equitable agriculture and rural prosperity. This can be done by using strategies like effective credit support, related services, institutional development, and other cutting-edge projects.

OBJECTIVES OF THE RESEARCH

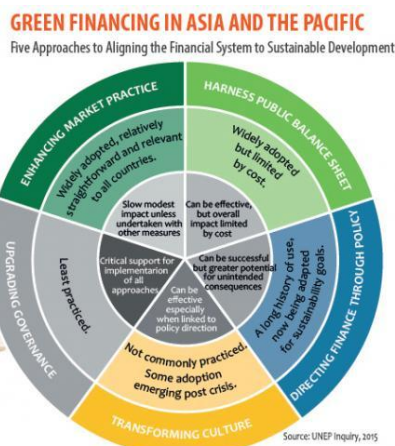
- To research the many facets of green finance that aid in achieving sustainability objectives.
- To recognize the various green funding options
- To evaluate the advantages and disadvantage of green finance.

METHODOLOGY

This paper studies the theoretical concepts of Green Financing. The nature of the research article is descriptive. The information is gathered from published secondary sources, including publications, journals, research articles, and websites.

CONCEPT OF GREEN FINANCING

Green financing, in its simplest form, is a loan or investment that supports environmentally friendly activities, such as the acquisition of eco-friendly products and services or the development of green infrastructure. Green finance is becoming more commonplace as the risks associated with ecologically harmful goods and services increase. Priorities for sustainable development are to get higher levels of financial flows (from banking, microcredit, insurance, and investment) from the governmental, private, and non-profit sectors. An important aspect of this is to increase accountability, better manage social and environmental risks, and seize opportunities that have a reasonable rate of return and improve the environment. An important aspect of this is to increase accountability, better manage social and environmental risks, and seize opportunities that will improve the environment and provide a respectable rate of return.



Changes to national regulatory frameworks, synchronized public financial incentives, increased green financing from various sectors, alignment of public sector financing decision-making with the environmental component of the Sustainable Development Goals, increased investment in clean and green technologies, financing for sustainable natural resource-based green economies and climate smart blue economies.

SUSTAINABLE DEVELOPMENT AND GREEN FINANCING

In order to connect financial systems with the 2030 Sustainable Development Agenda and to steer financial flows to promote the achievement of the Sustainable Development Goals, UN Environment has been working with nations, financial regulators, and the finance sector. Financial markets, through which banks and investors allocate cash to various sectors, are the backbone of today's globalized economy. Ecosystems, as well as the production and consumption patterns of tomorrow, will be shaped by the money allocated today.

The primary areas of current green financing work are:

- Assisting the government in building an enabling environment
- Encouraging public-private collaboration on financing techniques like green bonds
- Building community enterprise capacity for microcredit

UN Environment will provide countries with the service of reviewing their policy and regulatory environment for the financing system and developing sustainable finance roadmaps through its

resource efficiency program. It will also advise central banks and regulators on how to best improve the regulatory framework of domestic financial markets to shape the way and support multi-country policy initiatives at sub-regional, regional, and global level. In order to link to green economy projects, UN Environment will expand on existing initiatives like private climate finance and collaborate with decision-makers and leaders of the private sector. Additionally, UN Environment will inspire and inform both public and private investors with regard to policy decisions.

USING GREEN FINANCE AS A STRATEGY FOR SUSTAINABILITY

By supporting initiatives that support sustainable development, green financing aids in balancing the needs of the environment, money, and development. Thus, it aids in the preservation of natural resources, promotes the use of renewable energy sources, and makes an effort to lessen human exploitation of the environment. Consequently, it serves as a useful instrument for achieving sustainable development objectives.

Areas Served by Green Finance

Green Banking

Green banking is the process of promoting environmentally responsible behavior and lowering a bank's carbon footprint. It is comparable to a traditional bank in that it considers all social, environmental, and ecological issues with the intention of safeguarding and conserving the environment and natural resources.

The improvement of resource, habitat, and environmental conservation is the main objective of

this banking approach. What is the most effective course of action?

- Encourage consumers to switch from branch banking to online banking.
- Paying bills online.
- Using online banking to open money market and CD accounts rather than big multi-branch banks.

Positive aspects of green banking

- Green bank cards and green mortgages are products of ethical (green) banking, which generally eliminates as much paper as possible in favour of online and electronic transactions.
- Less paper means fewer trees will need to be cut down.
- Raising the level of environmental awareness among businesspeople so they can adopt ecologically friendly business operations.
- Green (ethical) banks adopt and put into practice environmental lending standards, which is advantageous to future generations.
- Since ethical banks place a larger priority on ecologically beneficial factors like ecological advantages, the interest rate on a mortgage is lower than it would be with a conventional bank.
- Green banks give more weight to factors that are good for the environment, like ecological gains, which lowers the interest rates on loans.
- Open "green accounts" from new customers will all result in cashback.

Green Banking in India

Indian banks have recently changed their operational strategies dramatically in response to the emerging trend. Numerous issues have plagued the Indian banking sector, such as alterations in consumer behaviour, technological improvements, changes in regulations, etc. It has faced numerous difficulties and has the ability to adjust to shifting conditions. The idea of being green is new to India, and Indian banks have embraced it in many different ways. The following are the several Indian banks that provide their customers with green banking services.

- SBI has started to put its green banking policy into practice. The first green bank in India, it

focuses on going green and supports renewable energy projects.

- The Punjab National Bank had taken a variety of steps to cut back on emissions and energy use.
- Bank of Baroda: They had made a variety of initiatives in green banking, including supporting a business project. Due to its role in obtaining carbon credits, BOB favours environmentally friendly green initiatives like solar, biomass, and wind power.
- As part of its green banking initiative, Canara Bank has included eco-friendly practices like mobile banking, online banking, telebanking, and solar-powered biometric procedures.

Green Insurance

A sort of insurance known as "green insurance" aids in environmental preservation and the fight against global warming. It is essentially a financial incentive to promote behavioural change and is sometimes referred to as eco-friendly insurance. People are choosing environmentally friendly habits as they become more aware of how their actions affect the environment. In order to promote sustainable practices and technologies, insurance companies are developing cutting-edge goods and services. Going green, or adopting environmentally safe habits, may also enable you to reduce your insurance expenses. Check out this selection of insurance advantages and products for those who are concerned about the environment, whether you're looking at a more environmentally friendly car, a more sustainable home, or "green" company methods.

Green insurance incentives for motor vehicles

Fossil fuels contribute to pollution and the depletion of our natural resources, but many insurance companies give discounts to drivers of fuel-efficient cars.

- Several auto insurance firms offer savings on hybrid vehicle premiums (and comparable discounts might potentially be available on boat insurance for hybrid-electric boats and yachts).
- Endorsements that permit hybrid replacement—that is, optional insurance that enables the insured to exchange their conventional car with a comparable hybrid vehicle following a total vehicle loss.

- Discounts on alternative fuel premiums are available if your car runs on ethanol, biodiesel, electricity, natural gas, or another alternative fuel.
- Pay as You Drive (PAYD) programs are those that need the installation of a device to monitor the number of kilometres your car travels. Drivers who, according to their sensor, travel fewer miles than the norm are eligible for policy discounts from the PAYD, which helps consumers save money while lowering traffic jams, air pollution, and accidents.

Green insurance for homes

By providing eco-friendly insurance to homeowners, insurers support the growth of sustainable construction techniques. These plans include possibilities like:

- Premium reductions for homes with LEED certification. The Leadership in Energy and Environmental Design Green Building Rating System is abbreviated as LEED. This system, created by the U.S. Green Building Council, has high efficiency and sustainability standards and is a recognized environmental standard in the building industry.
- Endorsements for eco-friendly replacement materials are available on some common homeowner insurance. These enable the insured to rebuild after a loss using more environmentally friendly materials, techniques, and goods. When replacing old, power-guzzling appliances with Energy Star models, which meet an energy-savings rating developed by a joint program of the U.S. Environmental Protection Agency and the Department of Energy, some companies will pay homeowners extra if they recycle waste rather than throwing away demolished materials.
- Widespread use of alternative energy sources. There are now policies that cover both the additional cost of temporarily purchasing electricity from another source and for the income lost during a power outage (as long as the outage is brought on by a covered peril) for homeowners who generate their own

geothermal, solar, or wind power and sell any surplus energy back to the neighbourhood power grid. The expense of getting back online, such as utility fees for inspection and reconnection, is also typically covered by policies.

Green insurance for businesses

Many green commercial property insurance plans and endorsements are targeted towards particular business communities, including manufacturers. These include, for instance, regulations that:

- After a loss, pay for replacing conventional building systems and materials with "green" alternatives. These eco-friendly substitutions would include water-saving plumbing, nontoxic, low-odor paints, and carpeting in addition to electrical appliances and interior lights that use less energy.
- In the event of a total loss, permit "green certified" rebuilding. This insurance may cover the building as well as engineering reviews of the HVAC and AC systems, building recertification fees, replacement of vegetative or plant-covered roofs, debris recycling, lost income, and expenses incurred when alternative energy generating equipment is damaged.

The 'Sustainable insurance' approach

Through the identification, management, and monitoring of risks and opportunities related to environmental, social, and governance issues, sustainable insurance is a strategic strategy that ensures all operations along the insurance value chain are carried out in an ethical and forward-looking manner.

Early-2000s insurance businesses that took action to combat climate change are now leading the industry in the transition to a low-carbon economy. On the other hand, businesses who are only now beginning to take a sustainable insurance approach risk damaging their reputation and will need to strictly adhere to environmental regulations. In comparison to the "leading era" in 2000, it is reasonable to conclude that insurers are now in the "lagging era" in 2022.

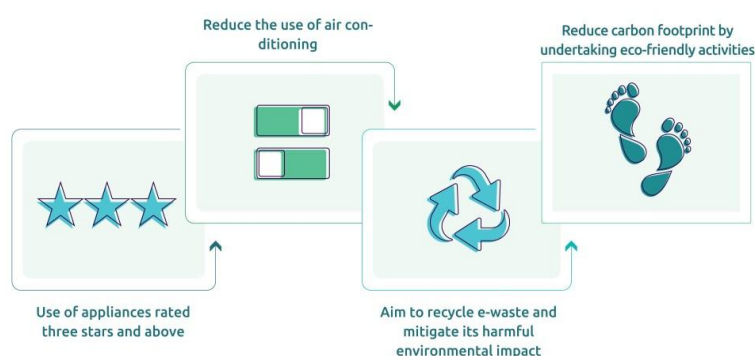


Source: How insurers are driving the Sustainability Agenda, Capgemini Invent PoV

Indian insurers towards Sustainability

In order to achieve sustainability in their operations, Indian insurers adhere to standard environmental,

social, and governance (ESG) frameworks. The following diagram illustrates these typical steps:



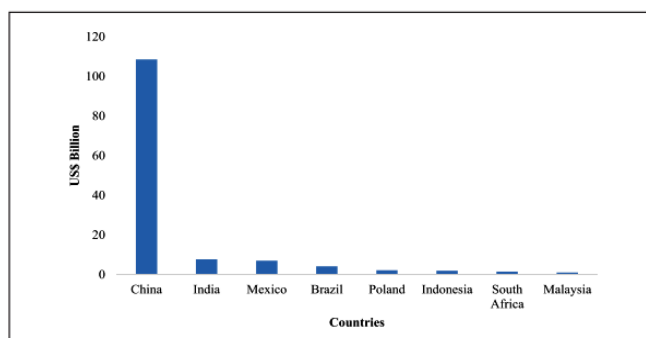
The United Nations' (UN) sustainable insurance project, the Principles for Sustainable Insurance (PSI), is supported by the General Insurance Council (GI Council), which represents 45 non-life insurance and reinsurance businesses in India. The GI Council voted to join the PSI project to raise awareness of sustainable insurance and ESG standards within the Indian general insurance business during a meeting of the Executive Committee. As a result, the adoption of sustainability in the Indian insurance sector is still in its early stages, and insurers there have not yet committed to taking concrete steps in that direction.

Green Bonds

A "green bond" is distinguished from a standard bond by its designation, which represents a promise

to only use the funds collected to finance or re-finance "green" initiatives, assets or commercial endeavors (ICMA, 2015). Although the OECD does not define what a green investment or green bond is, it has discussed in its work what "green infrastructure" and "green investments" are (OECD, 2013; Inderst et al., 2012) and has provided a general quantitative basis for determining to what extent infrastructure systems can be considered "low-carbon and climate-resilient (LCR)" (Kennedy and Corfee-Morlot, 2012). The IEA (2014) projected that the renewable energy, energy efficiency, and low-emissions vehicle sectors are consistent with a 2°C emissions path, and these sectors are the only ones considered in the OECD's upcoming bond modelling scenarios and yearly investment needs in this research.

Figure 1: Green Bond Issuance 2012-2018 (US Dollar Billion)



Various Green Bonds

All green bonds are a type of debt financing for environmental projects, but the precise features of each instrument might vary depending on the issuer, the purpose of the funds, and the bondholders' access to the issuer's assets in the event of a liquidation, among other things. Some of the several kinds of green bonds that might be on the market are described in the list below.

- The "Use of Proceeds" Bonds: This class of financial instrument is used to finance environmental initiatives, but in the event of a liquidation, the lenders may pursue collateralized debt obligations (CDAs) from the issuer. The issuer's other bonds and these instruments both have the same credit rating.
- The "Use of Proceeds" Revenue Bonds or Asset-Backed Securities (ABS): These securities can be used to refinance or finance green initiatives, but the debt's collateral is made up of the issuer's streams of income, including taxes or fees. When issuing green bonds, state and municipal bodies may choose to use this configuration.
- Project Bonds: Investors in this sort of bond only have access to the assets associated with the specific green project that the bond is backed by.
- Bondholders of these debt instruments, known as securitization bonds, have recourse to the assets that underlie the entire group of projects. Green mortgages and solar leasing initiatives are a couple of instances of green securitization bonds.
- Covered Bonds: This kind of financial instrument entails funding a collection of

environmentally friendly initiatives known as the "covered pool." Investors can seek redress from the issuer in this situation, but if the issuer is unable to fulfil debt payments, bondholders can seek redress from the covered pool.

- Green project loans can be either secured (backed by a piece of property) or unsecured. Lenders have complete recourse to the borrower's assets in the case of unsecured loans. For secured loans, the collateral and, occasionally, a portion of the borrower are the lenders' only options.

How does a green bond work?

Like any other corporate or governmental bond, green bonds function in the same way. These securities are being issued by borrowers to raise money for initiatives that will benefit the environment, like cleaning up the environment or restoring ecosystems. As the bonds mature, investors who buy them can anticipate a profit. Additionally, purchasing green bonds frequently has tax advantages.

Debt instruments called "green bonds" are used to fund ecologically friendly projects. Incentives for investing in sustainable projects may be offered by green bonds that are not available with other, comparable forms of bonds. Investors looking for investments that support their environmental principles should make sure to check the sustainability claims made by bond issuers.

INDIA'S APPROACH FOR GREEN BONDS

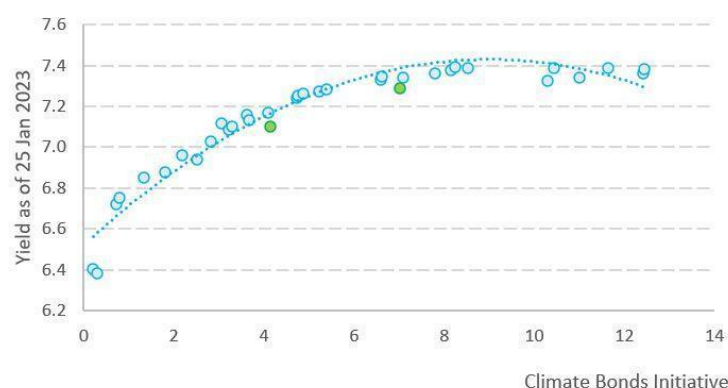
India is the sixth largest issuer of green, social, sustainable, sustainability related, and transition bonds (GSS+) in the Asia Pacific Region. By the end

of 2022, Climate Bonds had GSS+ bonds from 43 sovereigns totaling USD323.7 billion in volume.

On January 25, 2023, the Ministry of Finance priced an INR 80 billion (USD 1 billion) two-tranche sale split equally between five and 10 year tenors, bringing the Government of India into the Sovereign Green Bonds Club.

The sale received more than four times as much interest as it was offered, which allowed the main market spread to be compressed by two basis points on the 10-year tranche and three basis points on the 5-year tranche. Both tranches had prices that were within the yield curve, resulting in a greenium, or lower financing costs. According to the Reserve Bank of India, 57 investors received the 10-year bond, while 32 received the 5-year bond.

INDIA 2028 & 2033 - greenium



The ability of the private sector to use the sustainable financing market as a source of cash to help the transformation is made possible by the acquisition of a sovereign greenium in local currency, which shows high demand from domestic investors. India can broaden its appeal internationally and enhance local demand for sustainable investments with the correct policy and regulatory incentives.

INDIA'S FUTURE IN GREEN FINANCE

The Reserve Bank of India has published rules for banks and non-bank financial institutions (NBFCs) to take "green deposits" in light of the government's push for sustainable development and the growing need among businesses and investors to establish strong sustainability credentials. The goal is to guarantee that money is used for energy efficiency, clean transportation, climate change adaptation, sustainable water and waste management, green buildings, and the preservation of terrestrial and aquatic biodiversity. An ESG category of mutual funds was developed by the Securities and Exchange Board of India (SEBI). Asset management firms in India can now introduce many ESG funds, and as reporting on these factors becomes more rigorous and transparent, investor confidence will increase. It

is crucial for private sector organizations to adopt internal carbon pricing and encourage investment in green technologies and solutions while also anticipating government action on green financing, such as tax breaks for low-carbon technologies and policy pushes for green financing instruments, etc. Green finance and other investment methods will receive standardized definitions and measurement frameworks as processes develop. The comparison and choice of funds and businesses will be improved by transparency in performance and effect assessment. It will be possible to fine-tune and increase transparency in a company's green credentials with the help of tighter reporting standards, stronger governance, and the use of technology to track emissions. This will boost investor confidence and allay concerns about "greenwashing." Although green finance might not be the answer to solving environmental and social problems, it is crucial to encourage businesses to give these concerns top priority by promoting sustainable and responsible investment practices. Collaborations between the government, academia, and business are required, as are campaigning for new regulations and public-private partnerships. This will help accelerate the transition to a net zero economy by 2070.

BENEFITS OF GREEN FINANCE

Promotes the development of environmentally friendly infrastructure and the diffusion of technologies

Infrastructure is being built by governments in developing nations in order to enhance long-term resource management, boost national competitiveness, and direct private sector funding toward regional green markets.

Makes a comparative advantage possible

A low-carbon green development may unavoidably transition from a voluntary to an imperative strategy in response to rising threats from climate change and other environmental and economic difficulties. When environmental rules become more stringent, expanding green financing will provide you a competitive advantage.

Adds Business Value

By increasing (and publicizing) their engagement in green financing, businesses can raise the value of their portfolio. It gives their business a competitive edge in the green market, luring in more environmentally conscious investors and clients.

Expands Economic Opportunities

Governments that support green finance help to safeguard their society from resource shortages. In order to achieve this, they create and support regional markets for renewable energy as well as foray into untapped markets with significant job potential.

RECOMMENDATIONS

- Public education: Government, banks, financial institutions, and corporate organizations should take the initiative to inform the public about the value of environmental protection and the wide range of green investment options available. To create cutting-edge products that draw investors and at the same time support environmental development, technology and finance should be merged.
- Establishing an appropriate regulatory framework: To assess green finance projects and safeguard investors' interests, an appropriate regulatory framework is required. The governing bodies must make sure that each

project's funds are exclusively used for their intended purposes.

- Strict legislation must be implemented to punish those market participants who are unfairly taking advantage of the expanding demand for green projects. Separate laws must be passed to regulate the misuse of finances. The utilization of funds raised should be a focus of the law. If rules are broken, the appropriate measures must be taken.
- Supporting research: Measures should be taken to promote research in the area of green financing, which will integrate financial and technological developments and aid in the development of creative green investment products, successful green projects, and appropriate policy measures essential for full development and growth.

CONCLUSION

The current situation calls for sustainable development, and green financing, an efficient tool for sustainability, is acquiring more significance. Beyond risk and rewards, investors are increasingly considering their social responsibility. Numerous opportunities in the field of green finance have emerged as a result of increased funding for green initiatives and growing public awareness of the need of safeguarding the environment. To define green finance accurately, policymakers, academics, environmentalists, the government, investors, and financial institutions must collaborate. For the purpose of evaluating green projects and ensuring that investors are not duped by the term "green," an appropriate regulatory framework must be established. India should use green funding to focus on producing renewable energy, safeguarding natural resources, managing energy effectively, adopting a climate-friendly lifestyle, and other ecological challenges. Thus, it can be argued that green money will function as an efficient tool for sustainable development if it is managed appropriately.

SCOPE FOR FURTHER RESEARCH

The current study is secondary source based and did not assess investor perspective of green financing. Furthermore, as the study did not use primary data, future studies may take these concerns into account when conducting their research.

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