International Journal of Social Impact
ISSN: 2455-670X
Volume 10, Issue 4, DIP: 18.02.S19/20251004
DOI: 10.25215/2455/1004S19
www.ijsi.in |October-December, 2025

Research Paper

Green Finance: An Effective Tool for India's Sustainable Growth

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ABSTRACT

Rapid economic growth has come in a country after expenses of the environment. The protection of environment and preserving natural resources is more important for a country like India. Each country has used to various environmentally friendly technology for protecting and significantly improvement of their environment. Green finance has become an emerging concept in the area of finance. The idea behind green financing is to provide funding for projects that mitigate the effects of climate change, protect the environment, increase the amount of green space, invest in renewable energy sources, and support any other project linked to sustainable development. The importance of green finance in helping India transition to a net zero economy is becoming increasingly apparent as sustainability moves up the national, cross-sectoral, and policy agenda. The Reserve Bank of India (RBI) has implemented guidelines for banks and non-bank financial institutions (NBFCs) to take green deposits, in response to the government's push for sustainable development and the growing demand from businesses and investors to establish strong sustainability credentials. The goal is to guarantee that funds are allocated for clean mobility, energy efficiency, coping with climate change, sustainable water and waste management, green building, and the preservation of aquatic species. To attain net zero emissions by 2070, India will require an estimated expenditure of Rs 716 lakh crores and Rs 162.5 lakh crores till 2030.The paper examines the numerous green financing initiatives implemented by both public and private sector organizations. It also provides fresh perspectives on the efficacy of green finance as a sustainability strategy. This descriptive analysis draws upon secondary data from several government publications published by the Indian government, Indian banks, public and private sector organizations, and other entities.

Keywords: *Green Finance, Sustainable Development, Awareness, Environment*

These days, protecting the environment is one of our main goals for accelerating national development. The ecology in every country is seriously threatened by climate change. Every nation ought to safeguard the environment on a worldwide scale. The environment poses a threat to our society because of growing issues including global warming, fossil fuel depletion, ozone layer depletion, cutthroat rivalry for limited nonrenewable energy sources, rising pollution levels, and other environmental problems. Ecological financing needs to strike a balance between the two Green funding primarily refers to financial support for the development of various green projects, such as the construction of green buildings, effective energy management, waste management,

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Received: November 17, 2025; Revision Received: November 22, 2025; Accepted: November 26, 2025

preservation of biological diversity, and other related projects. Green finance, which finances individual investments in a range of green projects, aids in the achievement of sustainable growth in a nation. Targeted green finance policies have been formed in major nations, involving all parties involved in economic development, including corporations, governments, and central banks, in order to accomplish these goals. Banks, mostly foreign ones, have recently started to offer green loans with favorable terms for businesses that invest in sustainable presents. Institutional and other investors buy debt securities like green bonds that finance environmentally friendly projects. Venture capital firms and private equity investors actively fund start-up and early stage companies that focus on sustainability and reducing environmental and social impact.

With India aiming to attain net zero emissions by 2070, green finance has become a catchphrase. Up until 2030, the nation's green finance needs are predicted to represent at least 2.5% of GDP yearly. To reach the net zero targets by 2070 and develop into an advanced economy by 2047, India will need to make faster progress in lowering its output's energy intensity and modifying its energy mix to include more renewable energy sources. According to the RBI Study, "a pilot survey of key stakeholders in the financial system in India suggested that risk mitigation plans are largely at the discussion stage and yet to be widely implemented, notwithstanding rising awareness about climate risks and their potential impact on the financial health of entities." Regarding policy options to reduce climate risks, the report stated that a comprehensive decarburization strategy that includes all economic sectors that emit carbon and all available policy levels—fiscal, technological, regulatory, trade, and monetary—is necessary due to the enormity of the green transition challenge and the enormous cost of delaying policy action. By 2030, India's carbon emissions might rise to 3.9 Gigatons from 2.7 Gigatons in 2021 if no policy action is taken, according to estimates. However, a balanced policy intervention can reduce carbon emissions to 0.9 Gigatons by the same year. India is calling for the rich ration to fulfil its long-overdue pledge to provide vulnerable nations with $100 billion in annual climate finance. India has established itself as a voice for the global south on the international scene. On the path to meeting a national goal to cut emission to net zero by 2070, India has set short term target for 2030 including increasing clean power capacity to 500 gig watts (GW) up from about 170 G.W now and meeting half of its energy needs with renewable. This article aims to assess how green financing can be used as an effective instrument for sustainability, as well as the opportunities and obstacles that occur when merging environmental and financial approaches in India.

LITERATURE REVIEW

According to the climate bonds initiatives report **(2019),** institutional investors can have a significant impact on green financing by generating market liquidity through mobilization funds of mutual funds, pension funds, hedge funds, and other funds. **Ansari Kashif Md, Anand Yukta (2022)** They examined and concluded that A growing economy like India sorely needs green finance because of the country's growing population, increasing energy consumption, rising pollution, and other environmental challenges. The government had to adopt a strategic perspective and concentrate on the long-term goals of green financing in India. **Dikau S. & U. Volz (2018)** examined how green finance can be used to balance the needs of the economy and the environment, as well as the different green financial instruments that are available. It also discussed India's sustainable initiative and the potential for the country to provide the eco-friendly infrastructure needed for eco-friendly financing. **Dipika (2015)** examined the trend of business organizations and stakeholders placing a higher value on sustainable development and environmental preservation. The study came to the conclusion that green banking enhances economic growth and safeguards the environment. Thus, as part of sustainable development, green leadership ought to be prioritized. **Goel. P. (2016)**, demonstrated how the rise in green funds due to environmental concerns will drive up demand for green finance, including green bonds and green funds. **Jha Babita and Bakhshi Priti (2019),** Their study concluded that It is critical to take advantage of the untapped potential of green financing to fund environmentally friendly projects or initiatives in light of the alarming rise in pollution levels in India. In order to reduce the overall cost of capital for private capital investors, blended financing is necessary. With an eye on the long term of the economy, the Indian government should create a thorough plan for green investments. **Keetyhi B. S (2013)** examined the current developments, difficulties, and prospects in India's green financing sector. After talking about the creation of green jobs, the researcher came to the conclusion that policies like appropriate credit support, relevant services, institutional development, and other innovative projects are required to advance rural prosperity and sustainable, equitable agriculture. **Kharade Mahadev (2021),** Their study concluded that The Indian government ought to implement a well-defined policy for green investments that takes a long-term, comprehensive perspective of the economy. The regulatory framework should be more generous and open in order to promote investor confidence. India should priorities both inward and outside investment. A green finance product must to be made to appeal to both domestic and foreign investors. **Skolina.I, Hogg. C, Cochu.A (2016),** According to their research, money obtained through green bonds should only be used for low-carbon and climate-resilient projects, as well as other environmental projects falling within the relevant eligibility criteria. **Sushma B.S (2021)** An analysis of green finance as a useful tool for sustainability came to the conclusion that, as a developing nation, India should use green financing to support the adoption of climate change and other ecological issues while focusing on the production of renewable energy, safeguarding natural resources, and efficient energy management.

Objectives of the Study

On the basis of literature review, we have set following objectives

a) To investigate the several aspects of green finance that contributes to achieving sustainability objectives.
b) To analyze the trend of green financing in India.
c) To comprehend the numerous governmental and private green finance efforts.

METHODOLOGY OF THE STUDY

Our study is totally based on descriptive in nature. No statistical tools have been used for the study. Data are collected from various sources such as Govt reports, bank reports, journal and magazine etc.

Analysis and Explanation

Green finance helps to achieve sustainable goal for the country by implementing various green project like Green Banking, Green insurance and green bond.

Green Banking

The idea behind green banking is to conduct banking operations without utilizing paper. Thus, paperless banking is involved. It is one type of environmentally beneficial activity that supports the financial sector, the welfare of nature, and the protection of the environment. The bank is required to employ a number of technologies that contribute to environmental protection. In our nation, there are a plethora of banks offering green banking services like HSBC Bank, Canara Bank, Yes Bank, SBI, PNB, and BOB, among others.

Table-1 Green Banking Practices

SN	Area Covered	Explanation
1.	Online banking	Offering customers financial services on the internet. Promote transactions that are paperless and cashless.
2.	Green credit cards	A predetermined portion of the money is deducted each time a cardholder makes a payment and is put towards environmentally friendly programmers.
3.	Green car loan	When buying a car that doesn't have emissions, give a lower interest rate.
4.	Home office conversion loan	financing to set up a home office and start doing remote business
5.	Energy efficient loan	Loans for efficient management of energy
6.	Green mortgage	Either purchasing a green building or turning an existing structure into a green building was the intended application for the finance.
7.	Green home equity loan	The financing was given to install energy-saving equipment in the house.

Green Insurance

Since the insurance sector is a part of the green financial sector, it is crucial to achieving sustainability objectives.

Table-2 Green Insurance Practices

SN	Area covered	Explanation
1.	Green property rebuilding	Discounts on insurance premiums are occasionally provided to policyholders who are already environmentally conscious or who use more energy-efficient or environmentally friendly materials.
2.	Pay as you drive	Pay as you drive cars and insurance policies naturally encourage a person to drive less, which reduces pollution and may help to mitigate global warming.
3.	Insurance for green building	As part of this coverage, the insurance company assists clients in creating sustainable structures by assessing the design and specifications of new building and offering recommendations for how to guarantee excellent loss prevention and construction quality.
4.	Energy saving insurance	Energy service businesses' energy-saving guarantees may be supported by energy-saving insurance policies.
5.	Insurance for carbon capture & storage	Organizations that capture and store huge amounts of carbon dioxide and other greenhouse gases are given insurance goods and services. The majority of these emission reduction efforts take place before the gases can have a negative impact on the environment, usually at the point source, which are power plants.
6.	Energy saving insurance	Energy-saving assurances made by energy-saving businesses may be supported by energy-saving insurance policies. Over the course of the insurance, which is normally in the range of five to ten years, an insurer compensates any shortfall in energy savings below a pre-agreed baseline.
7.	Eco-friendly home insurance	Provides insurance protection, technological assistance, and maintenance support for installations of renewable energy power.

Green Bonds

An organization may issue green bonds as a means of funding or refinancing initiatives that have a favorable effect on the climate and/or environment. Another name for a green bond is a climate bond. Green bonds are specifically designed bonds meant to promote sustainability and to fund projects related to climate change or other unique environmental initiatives. Specifically, green bond efforts fund clean transportation, clean water, sustainable water management, clean agriculture, sustainable fisheries, and sustainable forestry, as well as the preservation of terrestrial and aquatic ecosystems. Additionally, they finance the advancement of environmentally friendly technology and the deceleration of global warming.

Table-3 Types of Green Bonds

SN	Bonds	Explanation
1.	Use of proceeds bonds	Although the purpose of these instruments is to finance green initiatives, the lenders may take recourse to the issuer's other assets in the event of liquidation. These securities have the same credit rating as other bonds issued by the issuer.
2.	Use of proceeds revenue bonds or asset backed securities (ABS)	These securities could be used to finance or refinance green projects, but the debt is secured by the revenue streams that the issues, such taxes or fees, generate. State and local governments might choose to use this kind of arrangement when issuing green bonds.
3.	Projects bonds	This type of bond's scope is limited to a certain underlying green project, therefore investors can only utilize assets associated to the project..
4.	Securities bonds	The assets supporting each project in the collection are accessible to the bond holder, and these financial instruments are made up of a number of projects aggregated into a single debt portfolio. Green securitization bonds include solar leasing initiatives and green mortgages.
5.	Covered bonds	These kinds of instruments also include funding the covered pool, a collection of environmentally friendly initiatives. In this scenario, bond holders have access to the covered pool if the issuer is unable to fulfill debt payments, giving investors recourse to the insurer.

Table-4 Green Bond Issuance since January1, 2018

Country	Amount invested (dollar in Crore)	No of bonds issued
China	663023	183
USA	35421	71
Euro Area	196854	594
Japan	11815	88
India	7992	22
South East Asia	7208	86
UK	5311	17

(Source: RBI)

Any sovereign organization, intergovernmental organization, coalition, or corporation may issue green bonds, with the intention of using the bond's revenues to fund ecologically beneficial projects. India began issuing green bonds in 2015, and as of February 12, 2020, the country had 16.3 billion dollar worth of outstanding green bonds. Since January 1, 2018, India has issued around 8 billion dollars worth of green bonds, or 0.7% of all bonds issued in the country's financial sector.

Currently Green Finance flowing in India (In Table-4)

1. In 2007, the RBI issued a notification on Corporate Social Responsibility.
2. The climate change financing unit was established by the government in 2011 and is housed inside the ministry of finance.
3. Banks are required to devote 40% of their lending to essential sectors, with the RBI incorporating drinking water facilities and small renewable energy projects in its priority sector lending target in April 2015.
4. With just 20 green issues made thus far, the Indian green bond market is still quite young.
5. A total of 7.15 billion green bonds have been issued between November 2015 and November 2018. (2018 Care Rating Report)
6. International and multinational organizations are also utilizing green funding. India just received 43 million from the UNDP to improve coastal climate resilience.
7. The 2019/2020 tracked green finance came from the public sector at 43% (INR 133 Thousand crore), while private actors accounted for 57% (INR 175 Thousand crores). Companies and commercial financial institutions combined contributed nearly 69% of the total government budgetary expenditure, or nearly 19% (INR 57 Thousand crores) of the total green finance.
8. The CPI followed green financing flows in the 2020 fiscal year, and they came to just dollar 44 billion annually—roughly 25% of what the Indians predicted.
9. In 2020, 83% of money came from domestic sources, with the remaining 13% coming from outside sources.
10. Four main aspects of climate change are included in the RBI report on currency and finance (RCF) for 2022–2023, which evaluates potential obstacles to India's continued high and sustainable growth.
11. The RBI issued bonds of Rs. 16,000 crores on January 25, 2023, to finance green initiatives.

(Above data collected from various News Papers and Government Reports)

Table-5 Estimates of Indians Green Finance needs

Finance requirement (Dollar)	**Climate**	**organization**
Dollar 170 billion per year to 2030	To 2030 for national climate plan	Climate policy initiative,2022
Dollar 160 billion per year	To reach net zero emission by 2070 between now and 2030	International energy agency,2022
Dollar 202 billion per year	To achieve net zero carbon emission by 2070	Council on energy, environment and water,2021
Dollar 44 billion per year, increased by 3.5% by 2030 and 10 % by 2040	Net zero emission by 2070	Mckinsey, 2022

(Green Finance Synthesis Report, Govt of India)

From the statistics mentioned above, it is evident that in order to guarantee that India meets the Panchamrit target, the government must increase its green financing estimates. India will require about Rs. 162.5 lakh Crores for NCDs until 2030 and Rs. 716 lakh Crores to reach net zero emissions by 2070.

Road Map for Green Finance

1. **Involvement of Private Sector:** Public funding has played a major role in the growth of green finance flows, but more private sector involvement is required. Public finance needs to mobilize private money more and more in order to achieve this. In addition, to actively support India's green transition and to mobilize private capital, there is an increased need for international money through DEFs, charity, and other channels.
2. **Less concentration of Finances:** Furthermore, even while the overall amount of capital flowing to mitigation sectors has increased, most of this funding is still focused on a limited number of well-developed market sectors. Increased investment and government support are required to mobilize earlier maturity areas such as electric vehicles and decentralized energy sources.
3. **Coordinate effort across data collection, reporting and Access:** Accurate data is necessary to increase green investment. To reduce information asymmetry, this could be achieved by tightening data accessibility and disclosure laws. Improving the amount and accessibility of green finance data will make it easier to find potential clients and attract capital meant for eco-friendly ventures.
4. **Initiating a Strong policy by the Government:** If budgetary tools like interest or capita subsidies can be used to incentivize green infrastructure investments, they will genuinely function as a double engine for the economy.

CONCLUSION

Green finance, an efficient instrument for sustainability, is becoming increasingly conscientious of society, making sustainable development imperative. Numerous opportunities in the field of green finance have been made possible by increasing funding for green initiatives and bringing attention to the need of protecting the environment. A coherent definition of "green finance" requires collaboration between policy makers, researchers, environmentalists, governments, investors, and financial institutions. In order to evaluate green initiatives and ensure that investors are not misled by the term "green," a suitable regulatory framework needs to be put in place. With the aid of green financing, India, a developing nation, should focus on producing renewable energy, safeguarding natural resources, effective energy management, adopting a more environmentally friendly lifestyle and addressing other ecological issues. The Indian government should put into effect a clear policy for green investments that considers the economy from all angles and over an extended period of time. The regulatory policy must be more flexible and open in order to promote investor confidence. India should priorities both inward and outside investment. The regulatory policy must be more flexible and open in order to promote investor confidence. India should priorities both inward and outside investment.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Biswas, D. (2025). Green Finance: An Effective Tool for India's Sustainable Growth. *International Journal of Social Impact*, *10*(4), 196-203. DIP: 18.02.S19/20251004, DOI: 10.25215/2455/1004S19