

**PRACTICE OF GREEN FINANCE IN INDIA:  
PRESENT POSITIONS AND TASKS AHEAD**

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**Abstract**

Globally, the paradigm of economic growth and development is undergoing a fundamental shift, and the reason is to make economic activities more environmentally sustainable. In order to go ahead with attaining the 2030 Sustainable Development Goals (SDGs), there is a major push required for green projects and boosted funding for environment-friendly investments through instruments like green bonds, green banks, carbon credits and community based green funds etc., collectively called 'Green Finance'. To find out the present status of green financing in India, it is observed that India has been actively advancing its green finance initiatives to meet ambitious climate goals, including achieving net-zero emissions by 2070. The tracked green finance for mitigation sectors in 2021-22, as per conservative estimates, increased to ₹ 3,712 billion per annum from ₹3,094 billion in 2019-20. This is a significant step up from 2019-20, especially in the context of the economic disruption due to the COVID-19 pandemic.

**Keywords:** Green Finance, Sustainable Development Goals, Green Bonds, Green Banking, Carbon Credit.

**Introduction**

In this era where humans are struggling with their environment in the context of pollution and other atmospheric disorders, business organizations must have the responsibilities towards the turbulences aroused by human activities both commercial and personal. Humans are impounding all types of resources for business expansion and technological advancement which in return hampering the environmental properties. It is time to wake up and think about the solutions and measures to counter the negative outcomes of these advancements (Mohd Saleem, 2013). In this context, environmentalists and educationists emphasize the concepts of financing which promote environmental protection and ensure sustainable development. Further, there is a need to cut finance availability to such projects which may be harmful to

sustainability. Environmental disorders and sustainability have got comprehensive attention globally and as a result, world leaders have an accord on it. Financial development has been an important determining factor for further advancement and it must be decided based on global environmental issues.

In recent years, the focus on sustainability has grown significantly across multiple fields, including economic policy, corporate strategy, and individual decision-making. Green finance, a key driver of sustainability, has emerged as a powerful tool, linking financial mechanisms with environmental objectives. As India faces pressing environmental challenges, rapid urban growth and a strong desire for economic advancement, the demand for sustainable solutions continues to rise. Green finance plays a critical role in India's transition toward a low-carbon economy, the expansion of renewable energy and overall environmental stewardship. It encompasses financial products and services designed to promote environmental sustainability. It covers a wide range of activities, including financing renewable energy projects, improving energy efficiency, supporting sustainable agriculture, minimizing pollution, managing water resources, conserving biodiversity, and contributing to climate adaptation and mitigation initiatives.

In India, banks play a significant role in promoting green finance and supporting the country's sustainable development goals. So, bank financing, if at least a portion of it is used in green projects, would contribute to environmental up-gradation and global climate change mitigation. In India both public and private sector banks have increasingly adopted this concept and have significantly altered their operational processes to support and funded projects like renewable energy projects like windmills, biomass project and generation of solar electricity.

### **Objectives of the Study**

The main objectives of the study are designed as follows:

1. To examine the position of India with respect to Green Finance globally.
2. To investigate the source and flow of Green Finance in India.
3. To examine various challenges in the area of green financing in India.

### **Methodology**

Utilizing a descriptive methodology, the present write-up is purely based on the secondary data that are collected from various sources such as official website of the banks, annual reports,

sustainability reports, articles, RBI reports, government publications along with insights from books and various internet sites.

### **Review of Literature**

Indian financial sector does not fully agree with any organized support to improve green, lending and investment. It can happen only through sustainable, market-led collaborative actions. It will improve the green capital flows. Tracking and diverting the financial flow to the green sector will require clear policies, regulations and institutional mechanisms which will initiate and increase the public and private investment in the green sector. Accelerating green finance in requires a strong roadmap. It will identify the ways to improve the recovery of the Indian financial system towards eliminating charge risk and mobilising resources for green finance. To do this, there is a need of comprised of experts from various fields who can advise the financial intermediates and regulatory can take in that direction.

Shivendra Nath Mishra (2021), research paper focused towards green bonds and sustainable financing. Financial resources also supports in attaining sustainable economy. Green finance will create an effectiveness that can improve the entire ecosystem. Wide awareness and more encouragement on green finances, provides more impact on humans and the world. Success of green financing is greatly be dependent on commitment of all players related to it directly or indirectly.

Isaac,David Deborah & Emmanuel (2021), the study analysed that green security, climate finance, green investments, carbon finance, green credit and green infrastructure are the key green finance products of banks, banking regulations also influenced by green finance in environment and climate change policies, interest rate , religious risk , social justice and social inclusion. The banks could strengthen in corporate sustainability, banking policy and can increase green finance and thereby sustainable development.

Dr. Mahadev Kharade (2021), in this research paper focused on green financing being a new concept in the area of finance. Financing in sustainable development can reduce the effect of climate change and it will have an impact on the private sector. Green financing is private financial capital and it represents financial support to sustainable development. Many Indian private companies not use green finance in green projects or investments. Different financial combinations can help in reducing the total cost of capital of private capital investors. In this regard, the government should focus on a policy on Green investments for long term. Green finance investments are to be focusing on local investors as well as foreign investors.

Sushma B S (2021), Green financing is a tool of sustainability development. The private and public investors are thinking more than risk and return and they are responsible towards society, a lot of awareness towards nature protection. Funding on green projects has opened extensive opportunities in the field of green finance. Societal stakeholders should work together to define the concepts of green finance to prevent the cheating of investors on green projects on a label of green. Proper management of green finance will be an effective tool for sustainable development.

Dr. Sanjay K. Solomon (2020), Green finance being a systematic approach has various stakeholders such as government, financial institutions and regulatory agencies as its parts. Lack of awareness on green financing is a big hurdle for companies, banks and investors who are looking into implementing green investing. Green financing in India is still in the growing stage it requires a planned effort, a connected approach and the interactive view of financial systems, regulators and also the policymakers. Collaborated approach with taxonomy, green guidelines, financial instruments and also enumerating the role of asset managers, bankers, public and public sector is needed. This approach would provide a way for green financial system which would also in turn support the sustainable growth of country.

Babita Jha, Priti Bakhshi (2019), in India blended finance is required to reduce the different costs of capital of investors. Government also play a big role in this green finance and should come up with new strategies on green investment that focuses on long-term economic view. There is a need for transparent regulatory policy and measures to boost confidence among investors. Indian green finance apart from focusing on Indian investors, should also focus on foreign investors. Indian government should design a green finance instrument in such way that it should attract investors both national and internationally.

### **Methods of Green Financing**

**Green Banks :** Green banks are those types of banks or financial institutions which normally operates in the same manner as any other traditional banks or financial institutions does , but the main difference is that green banks are those types of banks which normally goes on to prioritise in accepting those strategies which mainly helps in environmental preservations and normally goes on to channelize funds in those types of environmentally friendly projects which mainly deals with renewable energy or in implementation of clean energy technologies , which in the process actually goes on to help in combating the modern day's climate changes hazards

and reduce the bank's carbon footprint . Some of the activities which can be termed as green banking practices are as follows:

1. Conducting various types of financial transactions through online modes using various types of digital devices like mobile phones, computers, etc.
2. Disbursement of green loans in the society.
3. Use of green credit cards.

**Green Loans:** Green Loans are those types of loans which are used to finance various types of environmental friendly projects like electrical automobiles, household solar panels, and various other types of energy efficiency projects.

**Green Mortgages:** Green Mortgages are those types of mortgages which allows the lenders to provide better terms to the purchasers of those types of properties which have a high environmental sustainability rating or on the other hand if the buyer of those properties agrees to invest properly in increasing the environmental performance of those properties by installing environmental friendly items like green roof or solar panels, etc.

**Green Bonds:** Green bonds are those types of bonds where the funds obtained are specifically used to support those types of projects which are specifically related to various environmental related issues including climate change issues along with various other types of green initiatives like renewable energy projects, clean transportation projects, construction or development of eco- friendly buildings or projects which are related to conservations of biodiversity.

**Green Equity :** Green equity is basically granted to those types of corporates which has more than 50 % of their revenue and investments assessed as green and which basically goes on to attract those types of investors who not only has some green agenda but also wants to invest in companies or organisations which has some sustainable business models and specifically refers to those types of companies or organisations which specifically aims to reduce unnecessary wastages of resources along with promoting those types of products which can be recycled and reduce the use of non-renewable resources .

**Green Insurance :** Now-a-days the insurers throughout the world have understood that it is extremely needed to protect the world from various types of natural disasters like earthquakes, adverse climate changes , excessive floods , etc. , and therefore they are trying to develop some proper green insurance products which will not only provide environmental and socio-

economic benefits but will also go on to protect overall public health's of the persons living in modern societies throughout the world .

**Green Funds :** As the name suggests Green Funds are those types of investment funds which goes on to choose those types of companies or organisations which aims to support various types of adverse environmental issues along with specifically emphasising on reducing energy consumptions and normally goes on to take care of the environmental , social and governance (ESG) criteria .

**Green Microfinance :** Microfinance has been a financial instrument to provide the poor with various types of capitals to increase their standard of living while Green Microfinance goes on to increase the environmental , social and financial impacts in the society by providing finance to the low income groups of people of the society .

**Green Credit :** Green Credits are normally initiated by the governments of the various countries to recognise and reward those types of activities of the stakeholders which specifically goes on to help in stopping environmental degradation and enhance overall sustainable development .

**Green Credit Cards :** This type of eco-friendly payment cards actually goes on to support various types of green initiatives and are normally made from materials like recycled plastics or biodegradable materials , etc. , which actually goes on to minimise the environmental impact by incorporating biodegradable components , recycled materials along with energy-efficient production methods.

### **Position of India with respect to Green Finance Globally**

Different studies throughout the world has shown that in modern world China is leading the process of green financing through their modern day's business operations and United States of America comes second in the implementation of green financing mechanisms in their country . Thereafter comes the United Kingdom and Germany and it has also been observed that India with its huge population is still lagging behind in proper implementation of green financing mechanisms throughout the country.

### **Present Status of Green Financing in India:**

India with her ever increasing population and energy needs do recognise the emergency of having clean and renewable energy sources and has actually undergone a transformation in her

stance towards sustainability to combat the recent climate change issues. As observed the Indian government has been proactive in creating green financing opportunities in India and on 25<sup>th</sup> January 2023, India issued her first sovereign green bond. There after we see that today, in India we have an increase in the number of solar and wind energy projects which are actually supported by various domestic and international investments and also green finance in India has gone on to increase the establishment of modern day's recycling facilities to increase the overall capacity to process and manage various waste streams properly and reduce the burden of overflowing landfills. The present status of green financing in India shows that India has been actively advancing its green finance initiatives to meet ambitious climate goals, including achieving net-zero emissions by 2070. The tracked green finance for mitigation sectors in 2021-22, as per conservative estimates, increased to ₹ 3,712 billion per annum from ₹3,094 billion in 2019-20. This is a significant step up from 2019-20, especially in the context of the economic disruption due to the COVID-19 pandemic

### Tracking Green Finance in India

Green finance includes climate finance as well as other environmental objectives that are necessary to support sustainability in general, aspects such as biodiversity and resource conservation in particular. Sectors covered under Green Finance in India and their Subsectors are shown in Table-1. Here we have taken data for three sectors of Green Finance viz. clean energy, clean transportation, and energy efficiency for fiscal years 2019-20 and 2021-22. Let us examine the source and flow of Green finance in India for different sectors and subsectors.

**Table 1: Sectors covered under Green Finance in India, 2024**

Sectors	Subsector
Clean energy	<ul style="list-style-type: none"> <li>▪ Wind</li> <li>▪ Solar</li> <li>▪ Tidal</li> <li>▪ Geothermal</li> <li>▪ Biomass</li> <li>▪ Hydrogen</li> <li>▪ Renovation and modernization of thermal power technologies</li> <li>▪ Manufacturing of clean energy plant and energy-efficient equipment</li> <li>▪ Energy storage</li> </ul>
Clean transportation	<ul style="list-style-type: none"> <li>▪ Purchase of EVs</li> <li>▪ EV charging infrastructure</li> <li>▪ Public transportation</li> </ul>
Energy efficiency	<ul style="list-style-type: none"> <li>▪ Energy-efficient equipment</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Process efficiency</li> <li>▪ Bulk energy services</li> <li>▪ Green buildings</li> <li>▪ Green renovation of existing buildings</li> <li>▪ Green energy corridors</li> </ul>
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**Source:** Landscape of green finance in India for fiscal years 2021-22

Finance flows for mitigation sectors in India amounted to ₹ 3,712 billion per annum for 2021-22, representing an increase of 20% (₹ 3,093 billion) from 2019-20. Mitigation flows have grown from both domestic and international sources, likely due to an array of policy interventions, fiscal instruments, and market mechanisms put in place by the Indian government to promote green investment (PIB 2022c). Tracked green finance for mitigation from domestic and international sources increased in 2021-22 compared to 2019-20. Domestic finance increased by 17%, rising from ₹ 2,637 billion in 2019-20 to ₹ 3,093 billion per annum in 2021-22. International finance grew 36%, reaching ₹ 620 billion in 2021-22. It has been observed that the share of international finance increased, largely driven by a 110% increase in private finance, with substantial contributions from commercial FIs. Among tracked mitigation sectors, finance went primarily to clean energy in 2021-22 is 47% from 42% in 2019-20. Finance for energy efficiency accounted for 35%, and clean transportation received 18%.

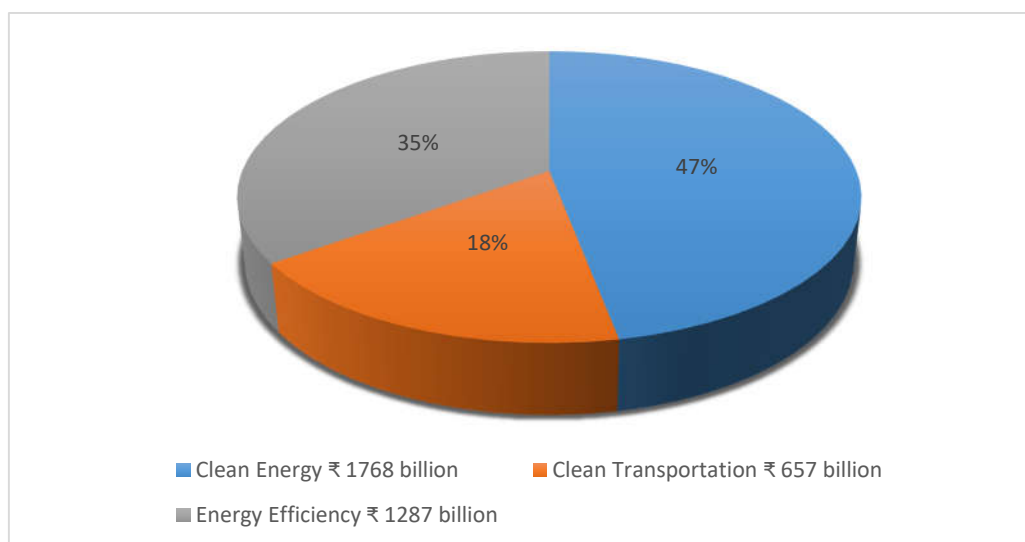
### 1. Domestic Sources of Finance

In Green Finance in India in 2021-22, domestic private sources constituted around 66% (₹ 2,048 billion) of the total domestic mitigation flows. Commercial FIs accounted for 39% of the domestic private finance flows for mitigation and mainly contributed to the energy efficiency sector (59%), followed by the clean energy sector (40%). Flows from residential, commercial, and institutional sources, on the other hand, went mainly to the energy efficiency sector (87%). Domestic public sources in 2021-22 accounted for 34% (₹ 1,045 billion) of total domestic finance for mitigation. Of this, government budgetary spending accounted for ₹ 596 billion (57%) in 2021-22, up from ₹ 574 billion in 2019-20. A significant proportion of government budgetary expenditure flowed to the clean transport sector (74%), followed by the clean energy sector (24%). Public Sector Undertakings (PSUs) contributed mainly to the clean energy sector (93%). While private sources dominated overall finance for mitigation sectors, accounting for around 97% of finance in energy efficiency and 57% in the clean energy sector, public sources continued to contribute the majority of flows to clean transportation.

## 2. International Sources of Finance

International green finance for mitigation in 2021-22 amounted to ₹ 620 billion, 36% higher than in 2019-20. This likely indicates greater confidence of international private players in specific sectors that are important for India to meet its NDC goals. It has been observed that finance from private sources overtook public sources in 2021-22, at approximately 63% and 37%, respectively. Of the total private international finance, commercial FIs constituted around 57%, followed by foreign direct investment at 28%. A major share of flows from commercial FIs went to clean energy, particularly for solar.

**Figure-1: Green finance flow to mitigation sectors in India (₹ in billion)**



Clean energy attracted the largest share of mitigation financing in 2021-22, accounting for 47% of total mitigation funds, followed by energy efficiency at 35% and clean transportation at 18%. Although clean transportation received the smallest share of funds, the sector experienced significant growth, with a 94% increase in financing from 2020-21 to 2021-22.

### Green Finance Initiatives in India

Both Government and private sectors in India have launched various green finance initiatives to support environmentally friendly projects. SBI was the first bank in India to install windmills to generate green energy. Some of the notable initiatives include:

1) Green Banking: Many Indian banks have adopted green banking practices, which involve reducing their environmental footprint and promoting sustainable banking practices.

2) Sustainable Finance: Indian banks have launched sustainable finance initiatives, which involve providing financial support to environmentally friendly projects.

3) Green Bonds: Indian banks have issued green bonds to raise funds for environmentally friendly projects.

4) Renewable Energy Financing: Indian banks have launched renewable energy financing initiatives to support the development of renewable energy projects in India.

### **Challenges in Green Financing In India**

- Indian green bond market is at an emerging stage and it has not been able to attract ample number of investors. Investors have a tendency to invest in highly rated bonds or low risk investment options. The bond market requires proper framework for making these bonds attractive to the investors.
- Due to high cost of debt capital the investment in green projects becomes very expensive. High cost of debt is attributed to the factors like high rate of interest, short maturity period and non-existence of non-recourse debt.
- The current market practices, regulations monitoring the market and financial incentives are becoming a great hurdle in the success of financial instruments.
- Several risks associated with the green finance in the form of technology related risk, currency risk, off taker risk becomes hurdle in the availability of financial resources.
- Lack of awareness amongst the investors about the innovative financial instruments also creates hurdle in green financing.
- Lack of efficient framework for project evaluation of a sustainable project mainly in case form early stage innovation becomes a challenge for channelizing funds towards green projects.

### **Suggestions**

In modern day's it is understood that Green Financing mechanisms not just go on to deal with environmental problems but if it is managed properly, it actually goes on to develop a better economic society for everyone living in these societies by gradually moving towards a low-carbon environment. The modern finance industries of the world play a very big role in achieving the global climate and biodiversity conservation targets or commitments. Implementing Nature Based Solutions (NBS) can be good solutions to confront biodiversity and climate crises while promoting proper sustainable development along with generating

proper returns on the investments. Therefore below mentioned methods can be accepted to increase the implementation and use of green financing among the modern societies.

- Proper efforts should be made to change the countries regulatory framework to make it suitable for implementing proper green financing mechanisms.
- Proper Government supports in the form of incentives, grants, subsidies, etc., should be available for green projects.
- Besides various government initiatives, various private sector institutions should also come forward to take up the specific work of promoting green financing throughout the world.

### **Conclusion**

The modern world with its ever increasing population and various types of developmental work throughout the world has actually gone on to cause an excessive increase in various types of environmental hazards like air pollution, water pollution, etc., which has adversely effected the ecosystem causing enormous problem for normal and healthy living of the living things living in this planet earth. Thereafter changes in the climate has also become a serious concern for almost all the governments of the current century which has gone on to trigger the needs of green financing towards projects or activities which has lower negative environmental impacts to protect the environment from further deterioration along with gradual transition towards low-carbon , sustainable economy . Therefore in conclusion we can say that Green Financing which specifically refers to those types of financing or investments which are more or less socially responsible and environmentally suitable to protect the current and future generations from facing various types of environmental problems are absolutely needed to protect our planet earth from further environmental degradations.

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