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# **ROLE OF GREEN FINANCING IN PROMOTING SUSTAINABLE DEVELOPMENT GOALS IN INDIA: ANALYSIS IN THE REFERENCE OF ESG**

AUTHORED BY - HARDIK CHHABRA  
LL.M (Master of Laws)

CO-AUTHOR - DR. ANJALI DIXIT  
Associate Professor  
Department of Law  
Faculty of Law, Srm University Delhi-NCR, Sonapat

## **ABSTRACT**

This study examines the rapidly evolving landscape of green finance in India, focusing on its growth, challenges, and potential impact on sustainable economic development. The research analyses key trends in various sectors of green finance, including the green bond market, ESG investments, renewable energy financing, and electric vehicle adoption.

Key findings reveal significant growth in India's green bond market, peaking at \$6.8 billion in 2021, with renewable energy dominating 62% of proceeds. ESG assets under management have more than tripled from 2020 to 2024, reaching INR 9,753 crore. The renewable energy sector has seen substantial expansion, with total capacity reaching 125.1 GW by 2023. Electric vehicle sales have grown exponentially, particularly in the two-wheeler segment.

The study highlights the increasing integration of ESG criteria in investment decisions, the growth of green loan markets, and the expansion of carbon credit trading. Challenges identified include the need for standardized reporting, enhanced risk assessment models, and more robust regulatory frameworks.

The research concludes that while green finance in India shows promising growth, there is significant potential for further expansion. Recommendations include developing comprehensive green finance strategies, enhancing ESG capabilities, and strengthening partnerships between

financial institutions and environmental experts.

## **1. INTRODUCTION**

### **1.1 BACKGROUND AND RATIONAL OF THE STUDY**

Green finance generally refers to financial activities that support environmentally sustainable projects such as renewable energy, clean technologies, climate adaptation efforts, and resource-efficient infrastructure. It not only addresses environmental sustainability but also intersects with social outcomes like job creation, inclusive growth, and equitable access to finance.

In the Indian context, green finance includes instruments such as green bonds, green credit lines, ESG investments, and climate-linked funds that align with national priorities like environmental protection and climate mitigation.

As green financing grows, its success relies more on the involvement and support of institutions. Institutions do more than move money; they also create rules, assess risks, and set up systems to make sure green finance has real impact. Research shows that institutions help green financing succeed by setting policies, monitoring progress, and making sure everyone is accountable.<sup>1</sup> These steps are key to turning sustainability goals into measurable financial results.

India has introduced sovereign green bonds and encouraged municipalities and financial institutions to raise capital for sustainable infrastructure. (E.g., green municipal bonds in local government settings — highlighting demand for finance in sustainable urban development.)

The Reserve Bank of India (RBI) has begun exploring frameworks for climate-related financial risks, while the Securities and Exchange Board of India (SEBI) mandates Business Responsibility and Sustainability Reporting by listed companies. India also ranks among the leading issuers of green bonds. India ranked as the fourth-largest emerging market source of aligned GSS+ debt globally following China, South Korea, and Chile with cumulative issuance worth USD 55.9 billion by December 2024, up by 186% from USD 21.4 billion in 2021.

Environmental, social, and governance (ESG) factors are increasingly incorporated into investment decision-making processes. Asset managers and investors are increasingly considering

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<sup>1</sup> [The role of institutional quality in the nexus between green financing and sustainable development - ScienceDirect](#)

environmental, social, and governance (ESG) factors as a regular part of their decision-making. More asset managers and investors are considering ESG standards when evaluating a company's long-term success and profitability. As a result, there are more investment funds focused on companies with strong social and environmental practices. Sustainability-linked loans, which reward businesses for good ESG performance, are also becoming more common. This trend shows that more people are investing in companies committed to sustainability.

ESG investing, also called sustainable investing, involves investing in companies that follow ethical principles while still generating profits. Public companies are judged on their environmental efforts, community impact, management quality, and corporate governance using ESG criteria. Investors who care about ESG factors avoid companies that do not meet certain environmental, social, or governance standards. For example, they might avoid businesses with poor labor practices or chemical companies that pollute heavily, such as investors choosing to avoid companies like BP due to the Deep water Horizon oil spill and its environmental impact. In recent years, more investment funds have begun incorporating ESG principles into their strategies, and this trend continues to grow.

The government's initiative to promote renewable energy has significantly influenced the development of green financing. The ambitious goals for renewable energy capacity, as detailed in the National Solar Mission and the National Wind Energy Mission, have drawn in investments and spurred financial innovations. The creation of the Green Climate Fund in 2010 and the ongoing funding for climate-related initiatives have further propelled green financing efforts in India. In 2022, green lending in India reached \$88 billion, with renewable energy accounting for the largest portion. By 2022, green bond issuance in India is expected to hit \$5.8 billion, showcasing a notable increase in recent years. With an estimated market potential of \$1.4 trillion by 2030, the Indian green financing sector presents attractive prospects for banks<sup>2</sup>.

However growing interest and efforts, green financing in India faces several challenges. High costs, limited awareness, lack of access to funds for smaller businesses, and gaps in regulatory frameworks are some of the major barriers.

<sup>2</sup> Reserve Bank of India. (2022, July). Report on Currency and financing 2022-23.

<https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Report%20on%20Currency%20and%20FINANCING>

## 1.2 Statement Of Problem

Although India has introduced several policies to promote green financing, the sector remains under-developed compared to global standards. There is limited awareness among investors, inconsistent regulatory frameworks, and inadequate monitoring of green- financing projects. Since the 1990s, India has seen strong economic growth. Now, the country faces the important challenge of balancing development with urgent environmental issues. This necessitates examining how financial strategies, such as green finance, can support sustainable development.

India deals with many environmental issues, including severe air and water pollution, deforestation, soil damage, loss of wildlife, and the growing impact of climate change. These problems have affected people's health and slowed economic growth for years. To address them, the government has launched initiatives like the National Action Plan on Climate Change (NAPCC), which promotes solar energy and energy efficiency, and the FAME India scheme, which encourages the use of electric vehicles. These efforts aim to cut carbon emissions and support sustainable development. Of all these efforts, promoting green finance is especially important because it addresses the main challenge to sustainable progress: insufficient funding for environmentally friendly projects. Still, growing green finance in India faces several obstacles. For example, it is hard to attract enough private investment because investors worry about profits, long payback periods, and unfamiliarity with the risks of green projects, which often seem less predictable than traditional investments. These concerns can make investors hesitant, especially in new areas like renewable energy and sustainable farming. Many financial institutions and investors also lack knowledge of environmental risks or of how to assess the returns of new technologies, which slows market growth. Unclear government policies and confusion about what counts as a 'green' project can also make investors cautious and complicate their decision-making. On top of that, there are no standard rules for judging projects, so reporting is inconsistent, and it is hard to compare financial products. This weakens trust and transparency in the market. Green finance is crucial because, without targeted funding, it is impossible to start or expand projects that cut pollution, support clean energy, and use resources more efficiently. To reach its full potential, these complex challenges must be solved. By making sure money is directed to green technologies and sustainable infrastructure through clearer market signals, better information, and steady regulations, green finance can help solve environmental problems and support economic growth.

So, overcoming these financial and institutional barriers—rooted in risk perception, market maturity, and policy consistency—is key to turning environmental goals into real action and lasting change in India. Green finance uses different financial tools, organizations, and markets to support projects that protect the environment.<sup>3</sup> In India, these projects focus on cutting greenhouse gas emissions, using energy more efficiently, promoting renewable energy, improving waste and water management, adapting to climate change, protecting wildlife, and encouraging sustainable land use. For example, the Securities and Exchange Board of India (SEBI) has set rules for green bonds, which the Indian Railways Finance Corporation has used to fund renewable energy and electrification. The State Bank of India has also created a green bond framework to support solar and wind energy. India participates in carbon market programs such as the Perform, Achieve and Trade (PAT) scheme, which rewards companies for using less energy. These examples show how green bonds, carbon market tools, and special green funds are being used in India to support environmentally friendly projects.

In summary, green finance is vital for tackling India's environmental problems and supporting sustainable development, but its full potential depends on solving current challenges. The main barriers include low public awareness, weak regulations, limited private-sector involvement, insufficient data, and a lack of standardized ways to measure progress. Policymakers need to set clearer rules, improve education and engagement, and create standard tools for measuring and reporting environmental impact. By taking these steps and using new financial tools, India can better match green finance with its environmental and economic goals. In the end, focused and coordinated efforts are needed for green finance to truly support lasting environmental sustainability and economic growth. Additionally, funding for climate mitigation and adaptation projects remains insufficient, creating a substantial gap between requirement and availability. A systematic analysis of India's green financing ecosystem is therefore necessary to understand existing barriers and potential solutions. The financial resources currently mobilized are inadequate to meet India's climate and sustainability goals.<sup>4</sup> This gap between policy intent and

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<sup>3</sup> [Challenges and Trends in Green Finance in the Context of Sustainable Development—A Bibliometric Analysis](#)

<sup>4</sup> [Legal Gaps In Green Financing In India: Bridging The Divide Between Ambition And Action - Environmental Law - India](#)

practical implementation highlights the need to critically examine the challenges, effectiveness, and future potential of green financing in India.<sup>5</sup>

### 1.3 Significance of the Study

The report is important since India's energy transformation, climate obligations, and sustainable growth depend on green financing. It aids in the understanding of current opportunities and difficulties in the green financing ecosystem by businesses, financial institutions, and governments. In India, green financing serves as both a source of funding and a means of achieving sustainable development. Comprehending the definition of green financing more easily and adopting its tenets. The UN reminds us that environmental security is the way of the future, and if we keep developing India's economy, we can position ourselves to be the first to reach it.<sup>6</sup> Sustainable development is now a top priority on a worldwide scale. Environmental deterioration has reached previously unheard-of levels due to rapid industrial expansion, population growth, urbanization, and increased consumption of natural resources. Climate change, global warming, increasing greenhouse gas emissions, water scarcity, biodiversity loss, and pollution are among the issues facing nations worldwide. Large-scale financial investments that promote environmentally benign and climate-resilient development are necessary to address these environmental issues.

Green financing (GFN) has become a strategic tool for allocating funds to initiatives that support environmental sustainability. The term "green financing" describes the distribution of fund for projects that benefit the environment, including renewable energy, green infrastructure, waste management, pollution control, electric vehicles, sustainable agriculture, and resource conservation.<sup>7</sup>

India, a nation that is developing quickly, presents particular economic and environmental difficulties. With more than 1.4 billion people on the planet and rising energy demands, it is

<sup>5</sup> [Green Finance: Supporting Net Zero Transition | EY - India](#)

<sup>6</sup> [Green Finance in India: Policy, Innovation & Sustainable Growth](#)

<sup>7</sup> [India Aims for 500 GW of Renewable Energy by 2030: Finance Minister Sitharaman, ETGovernment](#)

imperative to strike a balance between environmental preservation and economic growth. India is one of the world's biggest energy consumers and is mostly dependent on fossil fuels, particularly coal. High levels of air pollution and carbon emissions are a result of this dependence. Thus, a change to sustainable development and renewable energy is crucial.

India's climate commitments, shaped by international agreements such as the Paris Agreement (2015) and the UN Sustainable Development Goals, as well as its own net-zero target for 2070, rely heavily on green financing. The government aims to increase non-fossil fuel energy capacity, reduce the carbon intensity of GDP, and generate 500 GW of renewable energy by 2030.<sup>8</sup> Achieving these targets will require trillions of dollars in sustainable investments, so green financing will play a crucial role in India's progress.

Over the last decade, India's approach to green financing has changed significantly. This shift is driven by the country's stronger focus on climate change and the need for sustainable development. Rapid growth in renewable energy has also played a major role. More financial institutions in India now consider environmental factors in their decisions. Public and private banks, government agencies, capital markets, and international organizations all recognize this importance. For example, in 2021, India issued \$6.8 billion in green bonds. This made it one of the largest emerging markets for such financing. While these developments reflect strong progress toward India's ambitious climate goals, they also have broader implications for its future economic landscape. Increased green financing can help promote technological innovation. It can attract foreign investment and create new employment opportunities in the renewable sector. However, it also presents challenges, such as ensuring adequate regulatory frameworks. It also requires mitigating risks for private investors. India's ambitious climate goals include reaching 500 GW of renewable energy by 2030, cutting emissions intensity, and moving toward a low-carbon economy. These have played a big role in this transformation. As a result, green financing has become central to India's long-term economic and environmental plans. It now influences both policy direction and investment priorities. Over the past decade, India's green finance sector has witnessed substantial transformation. Credit for this progress goes to international organizations, financial institutions,

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<sup>8</sup> [Big promises, bigger gaps: Effective climate action demands a cohesive policy approach | Mint](#)

government agencies, and private investors, all of whom have shaped this sector in distinct ways. While international entities have provided technical assistance and funding to advance green finance and enhance capacity-building, financial institutions have developed green financial products and assessed environmental risks. Government agencies have established regulatory frameworks and introduced policy incentives to promote sustainable investment, whereas private investors have supplied capital and advocated for responsible investing. Notably, green bonds have been pivotal in financing environmentally friendly infrastructure, improved transportation, and renewable energy. In 2017, after the Securities and Exchange Board of India (SEBI) implemented guidelines for green bonds to align with international standards, India emerged as one of Asia's leading green bond issuers.<sup>9</sup> Major public sector organizations, such as the Power Finance Corporation (PFC) and the Indian Renewable Energy Development Agency (IREDA), subsequently issued green bonds to finance renewable energy projects.<sup>10</sup> Beyond green bonds, financial institutions now apply ESG criteria when making investment decisions. As ESG investments, which prioritize environmental sustainability, social responsibility, and sound corporate governance, become increasingly prevalent in India's financial markets, asset management companies and pension funds are incorporating ESG strategies to optimize long-term returns and minimize environmental risks.<sup>11</sup>

#### 1.4. Research Objectives

1. To Study the concept, idea and development of green financing in India.
2. To understand the key instruments and policies supporting green financing.
3. To evaluate how regulators, government agencies, and financial institutions support.
4. To determine the gaps, restrictions, and difficulties in India's green financing system.
5. To offer suggestions for bolstering green financing and advancing India's sustainable development goals.

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<sup>9</sup> [Microsoft Word - Board%20Memo-Agenda%20no%204-Disclosure%20requirements%20for%20issuance%20and%20listing%20of%20Green%20Bonds\[1](#)

<sup>10</sup> [SEBI](#)

<sup>11</sup> [Can Sustainable Investment Yield Better Financial Returns: A Comparative Study of ESG Indices and MSCI Indices](#)

## 1.5 Research Questions

1. What is the current statutory and mechanism of green financing in India?
2. What types of financial instruments are used to support green projects and encouraged by financial institutions, and capital markets in India?
3. What major challenges and barriers limit the growth of green financing in India?
4. What strategies can be adopted to strengthen and expand the green financing ecosystem in India?
5. What are the Institutional and judicial frameworks in support of the green financing?

## 1.6 Hypothesis

Hypothesis

The expansion of renewable and sustainable energy projects in India is greatly aided by green funding. Strong ESG practices are more likely to help India achieve the SDGs.

## 1.7 Research Methodology

Doctrinal research methodology will be used for the study. Focused on a qualitative, descriptive and analytical methods. It will mostly rely on secondary data from government publications, Books, academic journals, International papers (World Bank, IMF, UNEP), RBI and SEBI recommendations, and case studies of green financing initiatives. Policies and difficulties will be assessed through content analysis, and India's advancement will be compared to international standards through comparison analysis.

## 1.8 LITERATURE REVIEW

Green financing and investment in India: India's growing population, rapid urbanization, rich renewable energy resources, and supportive government policies make it appealing for sustainability-focused businesses. The country's need for sustainable infrastructure, renewable energy, and efficient transport matches its climate change goals. According to the Reserve Bank of India, there will be major investments in climate-friendly industries by 2030, while the International Financial Services Centers Authority notes that large investments are needed to reach net-zero emissions by 2070. This essay argues that green finance is vital for tackling India's

environmental challenges by directing capital toward sustainable development and moving the country to a low-carbon economy. Serious issues such as high urban air pollution are made harder to solve by limited affordable financing. Green finance tools like green bonds, green equity, and carbon markets help attract private and public investment for sustainable projects. For example, green bonds can fund clean transport or air quality projects, while green equity and carbon markets encourage companies to adopt cleaner technologies. Thus, green finance provides the tools and incentives needed to support sustainable growth, cut pollution, and shift India toward a low-carbon future.

Green finance refers to financial products and services that promote environmental sustainability and sustainable development. It involves investing in projects, businesses, and technologies that have positive environmental impacts and generate financial returns. Sustainable development, on the other hand, refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. Green finance plays a crucial role in supporting sustainable development by channeling capital towards projects that address climate change, promote renewable energy, enhance resource efficiency, and mitigate environmental risks. This intersection between green finance and sustainable development is essential for addressing global environmental challenges while also fostering economic growth and social progress.

Through instruments such as green bonds, loans, and other financial mechanisms, green finance encourages investment in sectors like renewable energy, energy efficiency, sustainable transport, and others that are environmentally friendly. This, in turn, contributes to addressing climate change, preserving biodiversity, and promoting responsible natural resource utilization. The relationship between these financial mechanisms and regulatory actions underscores the coordinated approach required to foster sustainable development. Additionally, regulatory bodies like the Securities and Exchange Board of India (SEBI) have introduced guidelines to encourage the integration of environmental, social, and governance (ESG) factors into investment decisions. A report by the Reserve Bank of India underscores that the country's green financing requirements are estimated to be at least 2.5% of Gross Domestic Product (GDP) annually until 2030. It also emphasises that the financial sector faces the dual challenge of adapting its operations and business strategies to support the transition to green finance while bolstering resilience against climate-

related vulnerabilities to ensure financial stability. The central bank notes that the financial system may need to mobilise substantial resources and reallocate existing ones to effectively contribute to India's net-zero target.

## **CHAPTER 2**

### **2.1 INTRODUCTION**

India's population growth, urbanization trends, abundant renewable energy resources, and supportive government regulations make it an attractive destination for environmentally conscious businesses. The increasing demand for sustainable infrastructure, renewable energy, and efficient transportation systems aligns with India's goals for climate change mitigation. Estimates from the Reserve Bank of India indicate significant investments in climate compliant industries by 2030, while predictions from the International Financial Services Centres Authority highlight that substantial investment is required to achieve net-zero emissions by 2070. These factors together create a conducive environment for businesses aiming to thrive in the climate-conscious market. India indeed confronts significant environmental challenges, including high levels of air pollution in its cities. The lack of accessible and affordable financing options further complicates efforts to address these issues. Implementing "green finance" mechanisms, such as green bonds, green equity, carbon markets, and trading, can play a crucial role in mobilizing both private and public capital for environmentally sustainable projects. Green finance refers to financial products and services that promote environmental sustainability and sustainable development. It involves investing in projects, businesses, and technologies that have positive environmental impacts while also generating financial returns. Sustainable development, on the other hand, refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. Green finance plays a crucial role in supporting sustainable development by channelling capital towards projects that address climate change, promote renewable energy, enhance resource efficiency, and mitigate environmental risks. This intersection between green finance and sustainable development is essential for addressing global environmental challenges while also fostering economic growth and social progress. Through instruments such as green bonds, loans, and other financial mechanisms, green finance encourages investment in sectors like renewable energy, energy efficiency, sustainable transport, and others that are environmentally friendly. This, in turn, contributes to addressing climate change, preserving biodiversity, and promoting

responsible natural resource utilization. Additionally, regulatory bodies like the Securities and Exchange Board of India (SEBI) have introduced guidelines to encourage the integration of environmental, social, and governance (ESG) factors into investment decisions. A report by the Reserve Bank of India underscores that the country's green financing requirements are estimated to be at least 2.5% of Gross domestic product (GDP) annually until 2030. It also emphasises that the financial sector faces the dual challenge of adapting its operations and business strategies to support the transition to green finance while bolstering resilience against climate-related vulnerabilities to ensure financial stability. The central bank notes that the financial system may need to mobilise substantial resources and reallocate existing ones to effectively contribute to India's net-zero target.

## **CHAPTER-3**

### **3.1 INTERNATIONAL PROSPECT OF GREEN FINANCING**

This study looks at how green technology innovation, green funding, and institutional quality help achieve environmental sustainability in developing countries. The results show that both green funding and green technology innovation have a positive effect on environmental sustainability (Green Financing, Energy Transformation, and the Moderating Effect of Digital Economy in Developing Countries, 2024). Researchers are also exploring whether green technology innovation can influence the link between sustainability and green financing (Shi & Shi, 2025). The paper offers evidence-based advice for lawmakers in poorer countries, suggesting that green funding and technology innovation should be key parts of environmental sustainability programs. The findings also highlight the importance of strong institutional frameworks for getting the most out of environmental initiatives (The role of institutional quality in the nexus between green financing and sustainable development, 2025).

### **3.2 INTRODUCTION**

The Paris Agreement (2015) and the UN Sustainable Development Goals (SDGs) are two examples of climate pledges that have accelerated green financing globally. Green bonds, carbon markets, and climate funds have expanded quickly in areas including Europe, China, and North America, according to studies by the World Bank (2019) and IMF (2020). According

to academics like Liu & Zhang (2021)<sup>12</sup>, China is a global leader in green bonds, and their expansion is fueled by government incentives and explicit taxonomy. However, because of legal obstacles and investor reluctance, green financing is still dispersed in developing nations like South Africa and Brazil.

**According to the United Nations Environment Programme (UNEP)**, green financing refers to increasing financial flows from sources such as banking, micro-credit, insurance, and investment across public, private, and non-profit sectors to support sustainable development. UNEP specifically defines green finance as “supporting sustainable development,” thus framing the concept within broader development objectives. A clearer understanding of green finance emerges when examining definitions provided by other leading organizations alongside UNEP. For instance, the G20 Green Finance Study Group describes green finance as the “financing of investments that provide environmental benefits in the broader context of environmentally sustainable development,” explicitly mentioning such benefits as “reductions in air, water, and land pollution, reductions in greenhouse gas (GHG) emissions, improved energy efficiency while

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<sup>12</sup> Green bonds, financing constraints, and green innovation – Science Direct

utilizing existing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits.” Similarly, the OECD characterizes green finance as finance for “achieving economic growth while reducing pollution and greenhouse gas emissions, minimizing waste and improving efficiency in the use of natural resources,” which highlights both economic and environmental priorities. In contrast, UNEP’s definition sets itself apart by also underscoring the importance of the management of environmental and social risks, the pursuit of financial returns in addition to environmental gains, and “the need for accountability.” Meanwhile, the People’s Bank of China defines green finance policy as “a series of policy and institutional arrangements to attract private capital investments into green industries such as environmental protection, energy conservation and clean energy through financial services – including lending, private equity funds, bonds, shares and insurance.” Although all these sources recognize the pivotal role financial mechanisms play in advancing sustainability, their definitions vary in the range and specificity of environmental objectives, approaches to risk management, modes of financial involvement, and the emphasis placed on accountability and private sector engagement. These differences in definition have significant consequences for policy design, implementation, and the measurement of outcomes. For instance, the respective focus on risk management or accountability can shape regulatory priorities and monitoring frameworks in different jurisdictions, while divergent scopes of environmental objectives may result in inconsistencies when assessing the global effectiveness of green finance. Consequently, the absence of a universally accepted definition complicates efforts toward international cooperation and standardization in the field.

The Faster Adoption and Manufacturing of Electric Vehicles (FAME) program and rising customer demand for EVs are driving the development of electric mobility (EV), another new sector of green financing. Dedicated EV loans with favorable interest rates are now available from banks and NBFCs. Investors interested in sustainable transportation are drawn to private fleets, ride-hailing services, and delivery businesses that are quickly electrifying their cars. Additionally, green financing promotes the advancement of battery production, hydrogen fuel technology, and EV charging infrastructure—all of which are predicted to experience significant future growth.

## **CHAPTER-4**

### **4.1 HISTORICAL DEVELOPMENT OF GREEN FINANCING IN INDIA**

Green financing in India has developed gradually since the early 2000s, driven by environmental concerns and renewable energy expansion. The Reserve Bank of India (RBI) estimates that in order to meet its energy and climate goals by 2030, India will require approximately USD 170–200 billion per year.

The market has expanded significantly since India issued its first green bond in 2015. In order to provide a regulatory framework for funding green initiatives, SEBI released rules for green bonds in 2017. According to studies by Bhattacharya & Stiglitz (2020)<sup>13</sup>, India's policy interventions, like the National Solar Mission and priority sector lending for renewable energy, have had a major impact on green Financing flows.

But despite advancements, scholars like Ghosh (2021) contend that India's green financing supply still falls short of demand, highlighting the pressing need to mainstream sustainable financing.

Green financing contributes to urban development while saving resources by funding energy-efficient transportation systems (such as metro rail projects), eco-friendly buildings, and smart cities.

India's focus on renewable energy targets, including a goal of 500 GW of capacity by 2030, is a key example of green financing driving sustainable progress. These funds advance hydroelectric, solar, and wind projects to reduce reliance on fossil fuels and cut carbon emissions.<sup>14</sup>

Green funding plays a central role in advancing India's sustainable development by facilitating investments in environmentally responsible projects that simultaneously support economic growth and environmental protection. This essay examines how various green financing mechanisms—such as green bonds, green loans, and emerging instruments like sustainability-linked loans and green mutual funds—contribute to progress in renewable energy, waste management,

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<sup>13</sup> Stiglitz, J. (2020) GDP Is the Wrong Tool for Measuring What Matters. Scientific American. - References - Scientific Research Publishing

<sup>14</sup> <https://solarquarter.com/2026/04/08/debt-finance-key-to-indias-500-gw-renewable-energy-target-by-2030-ieefa-report>

reforestation, and pollution control. Additionally, it explores the challenges to expanding green finance in India, including gaps in awareness, standardization, data availability, and policy consistency, and considers strategies to strengthen these financial tools and ensure long-term sustainability.

In conclusion, green funding remains integral to India's sustainable development by enabling investments in innovative and resilient technologies across key sectors. However, addressing persistent challenges such as limited awareness, lack of standardization, insufficient data availability, and inconsistent policy frameworks is essential for maximizing the impact of green finance. Adopting comprehensive strategies to overcome these obstacles will help strengthen green financing mechanisms and support India's transition toward long-term environmental and economic sustainability.

## **CHAPTER-5**

### **1.1 ISSUE AND CHALLENGES OF GREEN FINANCING IN INDIA**

India faces a number of obstacles in completely using green financing for sustainable growth, despite the fact that it offers numerous advantages. Some of the main problems are as follows: Green initiatives, like sustainable infrastructure or renewable energy, frequently need for substantial upfront costs. Despite the substantial long-term benefits, many firms and small organizations find it impossible to afford these hefty prices.

In 2024, global ESG assets exceeded \$30 trillion and are expected to reach \$40 trillion by 2030, accounting for more than a quarter of the projected \$140 trillion in assets under management, according to Bloomberg Intelligence. India is following global trends by using investment trusts and asset management firms to take part in ESG investing. The primary drivers behind this growth are multifaceted. Increasing regulatory alignment with international standards, such as the Securities and Exchange Board of India's introduction of mandatory business responsibility and sustainability reporting, has created a more structured environment that attracts both domestic and international investors. Heightened awareness of climate risks, particularly in a country vulnerable to their effects, has pressured businesses and investors to consider environmental sustainability in their decision-making. Shifting investor preferences reflect a broader recognition of the long-term value associated with responsible investing, as stakeholders increasingly demand adherence to ethical and sustainable practices beyond short-term profits. As part of the Paris Agreement, India

has pledged to invest \$2.5 trillion between 2015 and 2030 to meet its climate goals. The country is also working toward the Sustainable Development Goals, aiming for economic growth with less environmental harm. International investors are taking notice of India's ESG opportunities. The Global Sustainable Investment Alliance says 41 international ESG funds have allocated about 25% of their investments to Indian stocks, signaling growing trust in India's sustainable business sector. At home, companies like Quantum Asset Management have started ESG-focused funds. In 2019, Quantum launched India's first open-ended ESG fund, and Avendus soon introduced another. Since then, the number of ESG mutual funds has grown, and by 2025, there are 11 ESG mutual fund products available. Despite this progress, several challenges remain. These include the need for improved ESG disclosure standards, greater transparency from companies, and the development of a robust domestic ESG ratings framework. Additionally, uneven adoption of ESG principles across industries, and integrating sustainability into existing financial models, pose ongoing difficulties. Failure to address these barriers can limit the efficacy and impact of ESG investments, potentially deterring investor confidence. These changes show that India is becoming an important place for ESG investments. Bringing sustainability into the financial sector could bring both economic and environmental benefits for the country. India's changing ESG landscape shows a commitment to global sustainability standards and the chance for major economic growth. Keeping policy, investor interest, and industry innovation aligned will be key to maintaining this progress and making the most of ESG integration in India.

## **CHAPTER-6**

### **6.1 CONCLUSION AND SUGGESTIONS**

This paper examines the role of green funding in advancing environmental protection and facilitating the implementation of sustainable initiatives in India and other countries, with particular attention to how eco-friendly financial practices can drive both national and global progress in addressing climate change.

In India, green financing has become an essential tool for addressing climate change, advancing sustainable development, and assisting the nation's shift to a low-carbon economy. The Indian financial system, which includes public and private banks, government programs, capital markets, and foreign funding organizations, has embraced environmentally conscious investing more and more during the last ten years. While private banks and NBFCs have offered cutting-edge tools

like green bonds, sustainability-linked loans, and blended financing solutions to draw in both local and foreign capital, public sector banks have played a crucial role in funding large-scale renewable energy projects. By lowering investment risks, increasing the use of renewable energy, and supporting inclusive financing for smaller projects, government programs, legislative frameworks, and policy initiatives have further aided the expansion of green financing.

This study is motivated by changes in modern finance that highlight the need to understand ESG risks in banking. As ESG factors become increasingly important in investment decisions, it is crucial to evaluate the associated risks. Investors are now placing greater value on social and environmental responsibility. Including ESG factors in decision-making requires careful analysis of any challenges to aligning investments with ethical standards. ESG issues play a key role in shaping banks' financial outcomes, so understanding these risks is essential to ensuring their long-term sustainability and resilience.

Managing ESG risks is important for banks because they can affect operations, profits, and reputation. By including ESG factors in their business strategies, financial institutions can improve risk management, reduce losses, and support long-term growth. Legal requirements and stakeholder expectations also require banks to address ESG risks as part of their overall risk management. Practically, banks that proactively incorporate ESG risk assessments can better anticipate regulatory changes and respond to shifting stakeholder priorities, thereby gaining a competitive advantage in an evolving financial landscape.

International organizations have also supported national initiatives with technical help, concessional funding, and climate-risk mitigation strategies. Notwithstanding these encouraging advancements, India's green financing scene still faces a number of obstacles, such as low awareness among rural and small businesses, the lack of a standardized green taxonomy, high upfront costs, and a lack of private sector involvement in some cutting-edge fields like climate-resilient agriculture, green buildings, and electric mobility.

In conclusion, India's growing approach to sustainable investment is reflected in the variety of green financing options available there. These tools, which range from green bonds and loans to climate funds, carbon credits, and blended financing, have made it possible to raise significant

sums of money for energy efficiency, renewable energy, electric vehicles, and climate-resilient infrastructure. Even though the ecosystem is expanding quickly, issues including high initial expenses, ignorance among rural and small firms, and the lack of a defined green taxonomy continue to exist. However, these tools offer a strong basis for accomplishing India's climate and sustainable development objectives over the ensuing decades with legislative backing, international cooperation, and growing investment interest.

A number of actions can be taken to improve green financing in India. First, creating a thorough national green taxonomy and uniform reporting standards will increase openness, draw in more investors, and guarantee that funds are used appropriately. Second, raising awareness and implementing capacity-building initiatives for rural entrepreneurs and small and medium-sized businesses (SMEs) will guarantee inclusive growth and increase access to green funding. Third, the amount and variety of sustainable investments would rise if the private sector was encouraged to participate through risk-sharing arrangements, financial incentives, and public-private partnerships. Fourth, encouraging financial instrument innovation would make it easier to financing developing industries like electric cars, green buildings, and climate-resilient infrastructure. Examples of such innovations include sustainability-linked bonds, green insurance products, and blended financing models. Lastly, cooperation with foreign financial institutions and ongoing monitoring, assessment, and policy support from regulatory bodies would guarantee that green financing continues to be efficient, scalable, and in line with India's climate and sustainable development objectives. India can establish a strong and inclusive green financing ecosystem that can support a resilient and sustainable future by tackling these issues and putting specific policies into practice.

Green bonds have seen strong growth, with over \$500 billion issued in 2021, demonstrating a significant increase in investor interest in financing projects that address environmental concerns and mitigate climate change.<sup>15</sup> The surge in sovereign green bonds is particularly notable, as these instruments enable governments to mobilize capital for national projects aimed at reducing emissions or improving.<sup>16</sup>

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