



A Systematic Review of Green Finance in the Indian Banking Sector

Manish Kumar Rai ¹, Vinay K Srivastava ²

¹ Research Scholar, Dr. A.P.J. Abdul Kalam Technical University, Lucknow, Uttar Pradesh, India

² Associate Professor, Institute of Technology & Science, Ghaziabad, Uttar Pradesh, India

ABSTRACT

The global climate crisis has necessitated a paradigm shift from traditional profit-centric banking to a model that integrates environmental sustainability. In the context of India a nation balancing rapid industrialization with ambitious climate commitments under the Paris Agreement the financial sector plays a pivotal role. This systematic review investigates the evolution, adoption, and impact of green finance within the Indian banking sector. As the Indian government targets "Net Zero" by 2070, the banking sector is increasingly tasked with mobilizing capital for renewable energy, electric mobility, and sustainable infrastructure. This study aims to synthesize existing literature to identify trends, evaluate the effectiveness of current green financing frameworks, and highlight the barriers hindering widespread implementation. A comprehensive search was conducted across major academic databases, including Scopus, Web of Science, and Google Scholar, covering the period from 2010 to 2024. The selection criteria focused on peer-reviewed articles, policy reports from the Reserve Bank of India (RBI), GOI and sustainability disclosures from major public and private sector banks. Out of an initial pool of several hundred papers, a final selection was curated based on relevance to green lending practices, ESG (Environmental, Social, and Governance) integration, and the regulatory landscape in India.

The review reveals that while green finance in India is in a developing stage compared to developed economies, it has gained significant momentum over the last decade. Key findings indicate that the RBI's inclusion of renewable energy under "Priority Sector Lending" (PSL) has been a primary catalyst for green credit. Furthermore, the emergence of Green Bonds has provided a new avenue for banks to raise capital

specifically for eco-friendly projects. However, the synthesis highlights a "sectoral gap," where the majority of green finance is directed toward large-scale renewable energy projects, leaving sustainable agriculture and small-scale energy efficiency initiatives underfunded.

Keywords: Green finance, Indian banking sector, RBI, ESG, PSL, sustainability.

1. INTRODUCTION

a. Background

A crucial tool for coordinating economic expansion with environmental sustainability is green finance. In general, it refers to financial investments, tools, regulations, and institutional practices that promote ecologically sustainable development while still guaranteeing economic expansion and financial stability. Green banking, green bonds, climate finance, sustainable lending, ESG-based investments, and funding for renewable energy, energy efficiency, pollution control, and climate adaption projects are just a few of the many activities that fall under the broad category of "green finance." Green finance serves as a link between economic systems and environmental goals in the context of sustainable development by rerouting financial flows towards resource-efficient and low-carbon endeavours.

In response to growing environmental issues such resource depletion, biodiversity loss, and climate change, the idea of "green finance" gained traction on a global scale. The importance of the financial sector in mitigating climate risks has been highlighted by international frameworks as the Glasgow Climate Pact, the Paris Climate Agreement (2015), and the United Nations Sustainable Development Goals (SDGs). Through policy advocacy, technical aid, and financial instruments like green bonds and climate funds, multilateral organisations like the World Bank, International Monetary Fund (IMF), and International financing Corporation (IFC) have actively promoted green financing. Green finance has progressed over time from a specialised idea to a commonplace aspect of international financial systems, especially in wealthy nations.

The origins of green finance can be seen in the early 2000s, when ethical banking practices and socially responsible investing (SRI) started to gain traction. An important turning point was reached in 2003 when the Equator Principles were introduced, which encouraged banks to include environmental and social risk assessment in project funding. The foundation for climate-focused financial products was subsequently

established by the introduction of green bonds by the World Bank in 2008 and the European Investment Bank in 2007. Since then, green finance has grown significantly, including carbon markets, transition finance, loans connected to sustainability, and frameworks for disclosing climate risk like the Task Force on Climate-related Financial Disclosures (TCFD).

In order to mobilise financial resources for sustainable development, the Indian banking industry is essential. Banks have an impact on how capital is distributed around economic sectors since they are the main middlemen between savers and investors. Green banking practices, such as paperless banking, green lending policies, financing of renewable energy projects, and the issuance of green bonds, have been increasingly embraced by public, private, and foreign banks doing business in India. Through policies on green deposits, ESG disclosures, and climate risk management, regulatory bodies including the Reserve Bank of India (RBI) and Securities and Exchange Board of India (SEBI) have also taken steps to support sustainable finance.

In comparison to international standards, green finance practices in Indian banks are still in their infancy notwithstanding these advancements. Bank adoption rates differ greatly, and issues with institutional capacity, knowledge, standardisation, and regulatory clarity continue to exist. Therefore, to comprehend the existing situation, spot gaps, and offer ideas for practice and policy, a thorough and methodical examination of green finance practices in Indian banks is crucial.

b. Rationale for the Study

The demand for sustainable finance systems that can promote long-term economic resilience has increased due to the growing urgency of environmental concerns. Asset quality, credit risk, and financial stability are all impacted by the physical, transition, and liability risks that climate change presents to the banking industry. By supporting ecologically conscious investments and climate-resilient economic activity, green finance has evolved as a strategic solution to these concerns.

Studies already conducted, however, show that green financing strategies are dispersed and applied inconsistently in Indian institutions. A lack of a standardised green taxonomy, a lack of regulatory incentives, a lack of experience in environmental risk assessment, and worries about greenwashing are some of the obstacles that many banks face, even though some of the top banks have implemented proactive sustainability

initiatives. Furthermore, there is still a dearth of empirical data regarding the success and results of green financing programs in Indian banks.

For a number of reasons, a thorough systematic evaluation of green financing practices in Indian institutions is consequently required. First, it can provide a comprehensive picture of the current situation of green finance adoption by synthesising institutional and academic research. Second, it can help policymakers, regulators, and banking experts by identifying important drivers, obstacles, and best practices. Third, by combining findings from other studies and identifying research gaps for further study, the study might add to the body of scholarly literature.

By encouraging the creation of strong regulatory frameworks, green taxonomies, and incentive systems, the study's conclusions may have an impact on policy-making. The study can provide banking professionals with useful advice on how to balance sustainability and profitability while incorporating green financing into fundamental company objectives. The study's overall goal is to add to the larger conversation about sustainable finance and banks' involvement in accomplishing India's sustainable development objectives.

c. Objectives and Research Questions

- To examine and compile the body of research on green banking and green finance in the Indian banking industry.
- To list the main green finance tools, regulations, and programs that Indian banks have put in place.
- To examine the forces and incentives behind Indian banks' adoption of green financing strategies.
- To investigate the obstacles and difficulties banks have when putting green finance projects into practice

2. LITERATURE REVIEW

A systematic review of green finance within the Indian banking sector reveals a growing recognition of the importance of sustainable development and environmental management in financial practices. (Tara et. al., 2015) highlight the global sector's challenge to address environmental issues, emphasizing that sustainable development has become a crucial paradigm shift across all economic sectors, including banking [1]. This shift underscores the increasing concern for integrating environmental considerations into banking operations, which is fundamental to green finance initiatives.

(Kumar et. al., 2019) focus specifically on the Indian banking sector, developing a framework to assess the adoption of sustainable banking tools. Their study indicates that Indian banks are progressively incorporating sustainable practices, although the extent and effectiveness of these practices vary [2]. This suggests a transitional phase where green banking is gaining traction but still requires further integration and performance assessment.

Qualitative insights from (Sharma et. al., 2021) provide a detailed understanding of green banking initiatives in India. Their study, based on interviews with banking managers, identifies key green banking practices and their impacts, emphasizing the conceptual models that underpin these initiatives [3]. The research demonstrates that Indian banks are actively implementing green banking strategies, which are perceived to contribute positively to environmental management and operational efficiency.

The role of green bonds as a financial instrument in promoting environmental sustainability is explored by (Dash, 2021). The paper discusses the issuance of green bonds by Indian entities, such as the Indian Railways, to fund low-carbon transportation projects. It compares green bonds with traditional bonds, analyzing factors like process complexities, risk, and costs, thereby illustrating how green bonds serve as a vital tool for mobilizing funds towards sustainable projects in India [4].

Further, (Debrah et. al., 2022) provide a comprehensive bibliometric and qualitative review of green finance research, including trends and gaps relevant to the Indian context. Their analysis of nearly 1,000 publications indicates an increasing scholarly focus on green finance, with particular attention to green bonds, ESG ratings, and sustainable financial risks [5]. This trend reflects a broader academic interest in understanding and advancing green financial instruments and practices in India.

(Zairis et. al., 2024) identify four thematic areas in sustainable finance research, with green bonds and ESG performance being prominent. Their systematic review emphasizes the evolving nature of green finance, highlighting the importance of ESG ratings and the shift in value creation towards sustainability-oriented financial products [6]. Such insights are pertinent to the Indian banking sector's efforts to align with global sustainability standards.

While the literature predominantly focuses on broader aspects of green finance, the integration of financial technology (FinTech) and digital transformation also influences green banking practices. (Sharma et. al., 2024) and (Rahmani et. al., 2025) explore how technological innovations facilitate sustainable financial practices, including green finance, in India. They discuss the role of digital platforms, blockchain, and regulatory frameworks in enhancing transparency and efficiency in green financial transactions [7][8].

Historically, financial elites and societal structures have played pivotal roles in shaping financial systems, as evidenced by Cassis's exploration of European financial history, which underscores the influence of financial elites in societal development [9]. This historical perspective provides a foundational context for analyzing contemporary shifts towards sustainable finance in India.

The evolution of financial markets, particularly the deregulation and increasing complexity of financial sectors, has been a significant factor influencing modern financial practices. Peet highlights the contradictions inherent in finance capitalism, emphasizing how deregulation, such as the repeal of the Glass-Steagall Act, has led to a sector characterized by opacity and systemic risks [10]. These contradictions underscore the necessity for targeted reforms and innovative financial instruments, such as green bonds, to address environmental and social challenges.

In recent years, the Indian banking sector has increasingly integrated corporate social responsibility (CSR) initiatives, reflecting a shift towards more socially conscious banking practices. Kulkarni's analysis of CSR activities in Indian banks reveals a focus on social issues, strategic implementation, and sustainability, indicating a growing recognition of the social role of banks beyond mere financial intermediation [13]. This trend aligns with the broader movement towards embedding environmental considerations into banking operations.

The emergence of green finance instruments, particularly green bonds, has been a notable development in India's efforts to promote sustainable growth. Dash discusses the initiation of green bonds by the Indian Railways, emphasizing their role in funding low-carbon transportation projects and contributing to national green initiatives [18]. The study highlights the complexities involved in issuing green bonds, including process considerations, risk assessment, and bond economics, which are

crucial for their successful adoption and scaling within the Indian context.

Methodologically, systematic reviews in related fields have provided insights into the challenges and opportunities of financial innovations. Appiah et al. review prediction models for corporate failure, which can be instrumental in assessing the financial stability of banks engaging in green finance [14]. Similarly, Danese et al. categorize research issues into mature, intermediate, and nascent stages, offering a framework that could be applied to evaluate the development of green finance research in India [16].

Furthermore, the integration of ethical and religious considerations into financial practices, as explored by Nouman et al., underscores the importance of aligning green finance with broader ethical objectives, such as those articulated in *Maqasid al Shari'ah*. This alignment is particularly relevant in the Indian context, where diverse religious and ethical frameworks influence financial behavior [17].

Overall, the literature indicates a growing recognition of the importance of sustainable and socially responsible finance in India's banking sector. The development of green bonds, supported by strategic CSR activities and guided by methodological insights from related research, suggests a trajectory towards more environmentally and socially conscious banking practices. However, challenges related to regulatory frameworks, risk management, and stakeholder engagement remain critical areas for future research and policy intervention to fully realize the potential of green finance in India [11], [12], [15].

The literature on green finance within the Indian banking sector underscores a growing recognition of the sector's pivotal role in promoting sustainable development and environmental management. (Tara et. al., 2014) highlight that Indian banks have initiated various measures aimed at environmental protection, shifting their focus from solely profit-driven objectives to embracing the "triple bottom line" approach, which integrates economic, social, and environmental performance [19]. This paradigm shift reflects an increasing awareness of the importance of sustainable practices in banking operations.

Building on this, (Tara et. al., 2015) emphasize that the global financial sector faces significant challenges related to environmental issues, and the Indian banking sector is no exception. The authors note a rising concern for sustainable development, indicating a sector-wide shift

towards environmentally conscious practices, which is crucial for aligning banking activities with broader ecological goals [20].

Empirical studies further explore the adoption and impact of green banking practices. (Thapliyal et. al., 2025) find that the implementation of green banking practices (GBP) enhances banks' environmental performance, profitability, and employee performance, suggesting that green initiatives are beneficial not only for environmental sustainability but also for institutional performance [24]. Similarly, (Gidage et. al., 2025) examine how green banking practices, along with CSR and green finance, directly and indirectly influence the environmental sustainability performance (ESP) of Indian banks. Their findings indicate that sustainable banking practices significantly contribute to environmental outcomes, emphasizing the importance of integrated approaches [25].

The role of green finance instruments, such as green bonds, is also gaining prominence. (Dash, 2021) discusses the issuance of green bonds by Indian entities like the Indian Railways, aimed at funding low-carbon transportation projects. The study compares green bonds with traditional bonds, highlighting considerations such as process complexities, risk, and cost, which are vital for understanding the financial mechanisms supporting green initiatives in India [21].

Furthermore, recent research explores the intersection of green banking awareness and technological innovation. (Sharma et. al., 2024) investigate how awareness of green banking influences the adoption of green FinTech solutions, which can enhance ESG investments and promote sustainable banking practices. Their findings suggest that increasing awareness can lead to more profitable and sustainable financial practices [22]. Complementing this, (Rahmani et. al., 2025) provide a systematic review of digital transformation and FinTech adoption in Indian banking, emphasizing the integration of green finance and regulatory innovations as key drivers of sustainable development [23].

Finally, the emerging focus on ESG performance and its relation to green financing is evident in the work of (Mahfooz et. al., 2026), who analyze how ESG metrics influence green bond issuance among Indian financial institutions. Their research indicates that higher ESG performance positively moderates green bond issuance, reinforcing the link between sustainability performance and financial innovation [26].

3. TECHNIQUES

a. Method of Search

To guarantee an open, repeatable, and thorough synthesis of previous research, the study uses a systematic literature review (SLR) methodology. Several scholarly databases, including Scopus, Web of Science, Google Scholar, and EBSCO Business Source Premier, were searched thoroughly for relevant literature. To capture policy-oriented viewpoints, institutional sources like RBI publications, SEBI rules, Indian banks' sustainability reports, and reports from international organisations were also taken into consideration.

The study objectives guided the selection of keywords and search queries, which were then refined through initial searches. "Green finance," "green banking," "sustainable finance," "climate finance," "ESG banking," "green bonds," and "Indian banking sector" were among the top keywords. The search precision was improved by combining terms using boolean operators.

The following criteria were established for inclusion:

peer-reviewed journal articles and credible institutional reports;

(ii) English-language studies;

(iii) publications from 2018 to 2024; and

(iv) studies that were relevant to India or similar emerging economies and focused on green finance, green banking, or sustainable finance. Non-academic articles, editorials, opinion pieces, and studies unrelated to banking or finance were among the exclusion criteria.

a. Search Strategy

1. Rationale for Adopting a Systematic Literature Review Approach

The rigour, organisation, and reproducibility of a systematic literature review are different from those of a standard narrative review. An SLR adheres to predetermined procedures and standards for locating, screening, and choosing research, whereas narrative reviews may be

impacted by author subjectivity. This guarantees that there is no selection bias and that the review process is transparent.

In this investigation, the SLR technique was used for the following reasons:

- The necessity of combining dispersed research from several fields
- Determining prevailing themes, approaches, and theoretical frameworks
- An assessment of research patterns and changes throughout time
- Determining research gaps and prospects for future study
- The creation of a solid theoretical framework for the research

The SLR approach is thought to be the best methodology given the interdisciplinary nature of the study issue.

2. Databases and Sources Used for Literature Search

The literature was gathered from several globally renowned databases to guarantee thorough coverage and scholarly quality. These databases were chosen because of their standing, coverage, and applicability to study in economics, banking, management, finance, and sustainability.

The main databases that are utilised are:

1. Scopus

One of the biggest databases of peer-reviewed literature abstracts and citations is Scopus. It offers thorough coverage of journals in economics, management, finance, and sustainability studies. High-impact and frequently mentioned studies were found using Scopus.

2. The Web of Science (WoS)

Web of Science is renowned for indexing prestigious publications that adhere to strict peer-review guidelines. It was employed to guarantee that reputable and significant research publications were included.

3. Elsevier's ScienceDirect

Full-text publications published by Elsevier journals were accessed through ScienceDirect, especially in the fields of environmental economics, banking, and green finance.

4. SpringerLink

Scholarly articles, book chapters, and review papers pertinent to sustainable finance and banking practices were accessible through SpringerLink.

5. Emerald Perspective

Research publications with a management focus, especially those on banking strategies, ESG practices, and sustainability management, were found using Emerald Insight.

6. Online at Taylor & Francis

The multidisciplinary research that connect public policy, sustainability, and finance were found using this database.

7. Google Scholar

To find more pertinent research, working papers, and citations that weren't indexed in other databases, Google Scholar was utilised as an extra source.

Additional Sources

Apart from scholarly databases, the research also examined:

- Reports from global organisations like the Bank for International Settlements (BIS), OECD, World Bank, and International Monetary Fund (IMF)
- Circulars and policy documents published by regulatory bodies including the Securities and Exchange Board of India (SEBI) and Reserve Bank of India (RBI)
- ESG and sustainability reports released by financial organisations

These sources were added to improve the study's practical application and policy significance.

3. Techniques and Instruments for Data Extraction

A methodical data extraction procedure was started when the final selection of studies was chosen. To enable meaningful synthesis and organise information in an organised way, data extraction is crucial.

3.1 Framework for Data Extraction

The approach employed in the evaluated systematic research provided the basis for the development of a standardised data extraction template. From each study, the following data was taken:

- The year of publication and the author or authors
- The study's title
- The name and publisher of the journal
- The nation or area of study
- The goals of the research
- Methods of research
- Important conclusions
- Banking and sustainability implications
- The study's limitations
- Research ideas for the future.

5. ANALYSIS OF DATA

A systematic literature review's data analysis phase is essential because it establishes how the chosen research are analysed, evaluated, and combined to produce insightful findings. The data analysis procedure in this study is intended to be transparent, methodical, and in line with accepted procedures used in earlier systematic reviews on sustainability and green banking.

Data analysis aims to uncover prevalent themes, evaluate methodological trends, expose research gaps, and integrate findings in a coherent manner in addition to summarising previous studies.

The three main elements of the data analysis procedure are in line with the methodology used in the examined PDFs:

- (i) methodology for combining results;
- (ii) statistical techniques applied, when appropriate; and

(iii) software tools utilised

1. Method for Combining Results

1.1 Justification for Narrative Synthesis

The current study integrates findings from the chosen literature using a narrative synthesis approach. When the included papers in a systematic review are diverse in terms of research design, data sources, geographic coverage, and analytical methods, narrative synthesis is especially appropriate. According to the uploaded systematic review on green banking, A variety of empirical investigations, conceptual papers, policy-oriented assessments, and review pieces comprise earlier research in this field. Conducting a meta-analysis is neither practical nor methodologically adequate because of this variety.

1.2 Thematic Organisation of Research

According to the methodology used in the systematic reviews. Based on commonalities in research emphasis, objectives, and findings, the chosen literature was arranged into thematic categories. The results were logically synthesised and structured analysis was made easier by thematic grouping.

The following are the main themes found in the data analysis:

1. Green Banking Methods and Tools

Green financing, green loans, green bonds, paperless banking, and environmentally conscious banking practices are the main topics of study within this theme. Green banking activities assist banks lower environmental risks while enhancing institutional reputation and long-term viability, according to the studied literature.

2. Green banking's contribution to economic sustainability

Numerous studies examine how green banking promotes low-carbon development, renewable energy funding, and ecologically friendly initiatives, all of which help sustainable economic growth. The examined PDF emphasises how important green finance is to striking a balance between environmental preservation and economic expansion.

3. The Effects of Banking Activities on the Environment and Society

Studies looking at the social and environmental effects of bank financing choices fall under this area. Previous studies highlight how crucial it is to incorporate social and environmental risk assessment into credit appraisal procedures in order to guarantee sustainable results.

4. Sustainability Reporting and ESG Integration

ESG (Environmental, Social, and Governance) integration in banking operations and sustainability reporting procedures are the subject of several studies. Transparency and disclosure are important components in preventing greenwashing and building stakeholder trust, according to the examined literature.

5. Frameworks for Regulation and Policy

This theme includes research on how legislators and regulators support green banking practices. International frameworks, sustainability rules, and central bank directives are often cited as the main forces for the implementation of green banking.

6. Green Banking's Difficulties and Prospects

Numerous studies point to issues such as high upfront expenditures, implementation gaps, lack of standardisation, and worries about greenwashing. These difficulties are analysed thoroughly to identify areas in need of additional study and legislative action.

6. RESULTS/OUTCOMES

After the screening, quality evaluation, and data extraction procedures are finished, this section provides a summary of the studies that were part of the systematic literature review. To make the extent, character, and calibre of the evaluated literature clear, the results are presented in an organised fashion. In keeping with the reporting approach used in the systematic review on sustainability and green banking that was uploaded.

1. The quantity and kinds of included studies. A final selection of peer-reviewed studies was chosen for the review after a methodical search and multi-stage screening procedure. The final sample included works that

satisfied predetermined inclusion criteria pertaining to relevance, methodological rigour, and contribution to the subject of green banking and sustainability, as can be seen in the uploaded systematic review.

1.1 Total Count of Research. : A moderate but thorough number of studies were included in the final corpus of literature, which reflected the nascent but quickly expanding nature of research on sustainable finance and green banking. In order to guarantee contemporaneity and policy relevance, the reviewed PDF also provides a targeted selection of studies published between 2018 and 2024. There are enough included studies to:

- Gather a range of viewpoints regarding green banking methods,
- Showcase various institutional

1.2 Included Study Types: According to the classifications employed in the uploaded systematic review, the included studies can be roughly divided into the following categories.

1.2.1 Empirical Research: Empirical research using quantitative, qualitative, or mixed-method approaches make up a significant fraction of the included literature. These investigations look at:

- How sustainability performance is affected by green banking methods,

1.2.2 Theoretical and Conceptual Research: A number of the featured studies are conceptual in character and concentrate on: Explaining sustainable finance and green banking, Creating conceptual frameworks that connect banking procedures to sustainable results, Investigating theoretical stances such institutional theory, legitimacy theory, and stakeholder theory. As the reviewed PDF emphasises, these studies offer the theoretical basis for comprehending green banking methods.

1.2.3 Narrative and Systematic Review Research

Systematic reviews and narrative reviews make up a smaller but noteworthy fraction of the included literature. These studies highlight research needs, identify trends, and summarise the body of existing knowledge. This category is represented by the uploaded PDF, which also acts as a standard for methodological synthesis and rigour.

1.2.4 Regulatory and Policy-Oriented Research

Some studies concentrate on policy initiatives, central bank directives, and regulatory frameworks pertaining to sustainable finance and green banking. These studies examine how legislators and regulators may

encourage ecologically friendly banking practices, a topic that is extensively covered in the attached PDF.

Results

- **Green Finance Practices in Indian Banks:** According to the research of the chosen literature, green finance methods have progressively become more popular in the Indian banking industry as a result of regulatory actions, growing environmental concerns, and alignment with international sustainability objectives.
- **Kinds of Green Finance Projects Put in Place:** Several significant green financing projects carried out by Indian banks are identified in the studied literature. In response to India's developmental and environmental concerns, these programs incorporate both national and international best practices.
- **Green lending,** in which banks offer loans especially for environmentally sustainable projects, is one of the most well-known efforts. These include funding for renewable energy initiatives including minor hydro projects, solar power plants, wind energy installations, and biomass energy.

The issuance and investing of green bonds is another effort that is frequently mentioned. Indian banks have started to participate in the green bond markets, either as issuers or investors, although still being in their infancy in comparison to developed economies. These bonds are only used to raise money for environmentally beneficial projects, such as pollution control, sustainable infrastructure, and energy efficiency. According to the reviewed literature, green bonds are essential for raising substantial sums of money for environmentally friendly initiatives in developing nations like India.

Furthermore, as part of more comprehensive green banking strategy, Indian banks have implemented green operational practices. These include digital transactions, energy-efficient branches, paperless banking, and lower carbon footprints from using renewable energy in financial operations.

- **Green Finance Activities' Scale and Scope:** According to the reviewed literature, the extent and scope of green finance initiatives in Indian banks are still unequal and changing. Smaller banks and cooperative organisations participate in green financing to a lesser extent than the public sector banks and a small number of private sector banks. Scale-wise, green financing still makes up a

comparatively tiny share of all bank lending in India. Nonetheless, there is unmistakable proof of a slow growth, especially in funding for renewable energy. The examined studies highlight that while green finance volumes are rising, they are still insufficient to adequately support India's sustainable development goals and climate obligations.

Beyond energy projects, the range of green finance initiatives includes:

- Finance for sustainable agriculture
- Recycling and waste management initiatives
- Infrastructure for sanitation and water conservation
- Green architecture and energy-efficient houses

The majority of Indian banks still focus their green finance portfolios on a small number of industries, mostly renewable energy, despite this wide range, suggesting the need for additional diversification.

- **Adoption Trends of Green Finance over Time:** The literature assessment indicates a distinct increase in Indian banks' implementation of green financing techniques, especially after 2018. This trend is consistent with global advancements in sustainability finance and growing financial sector understanding of climate hazards. Among the main forces behind this tendency are: India's obligations under global climate accords, the central bank and financial authorities' promotion of regulations, and increasing demand for ESG-compliant financial.

The literature also points out that by enhancing the efficiency, transparency, and monitoring of green projects, technology developments like fin-tech and digital banking have aided in the growth of green finance. Adoption, however, is still gradual rather than revolutionary, indicating that green finance in India is still in its infancy rather than well established.

Obstacles and Difficulties

The studied literature highlights a number of important obstacles and difficulties that limit the expansion of green finance in Indian institutions, despite rising interest and adoption.

- **Regulatory and Policy-Related Challenges:** The absence of thorough and uniform regulatory frameworks for green financing is

one of the most often mentioned issues. Although there are policy rules, they are frequently disjointed and unenforceable. Ambiguity and a higher chance of greenwashing result from the lack of precise definitions and consistent criteria for what defines "green" finance. Furthermore, banks are deterred from substantially growing their green finance portfolios by the lack of risk-sharing and fiscal incentives. Banks' willingness to invest significant sums of money in green initiatives is also impacted by regulatory ambiguity over long-term policy support.

- **Operational and Institutional Difficulties:** Banks have limitations in terms of capacity and knowledge at the institutional level. The studied literature highlights the fact that many banks lack the expertise and qualified staff necessary to properly analyse green projects and assess environmental hazards.
- Among the operational difficulties are:
 - The high upfront expenses of green initiatives : Payback times that are longer than those of traditional investments,
 - Limited access to trustworthy environmental performance dataThese difficulties make green finance less appealing to banks using conventional risk-return models and raise perceived risk.
- **Market-Related Obstacles to the Development of Green Finance:** The growth of green finance is also severely constrained by market-related obstacles. Many borrowers lack the knowledge or technical ability to create bankable green projects, and demand for green finance solutions is still unequal across industries.

Effects and Results

The examined papers document a number of favourable effects and results of green financing initiatives carried out by Indian banks, despite these obstacles.

- **Green Finance Initiatives' Effects on the Environment:** Environmental performance is where green financing has the biggest immediate effect. Greenhouse gas emissions are decreased, resource efficiency is increased, and environmental degradation is lessened when renewable energy, energy efficiency, and pollution control initiatives are funded. The literature review highlights how important green banking practices are to achieving environmental sustainability and climate mitigation goals.
- **Financial Results for Borrowers and Banks:** From an economic standpoint, green finance provides banks and borrowers with long-term financial advantages. Because of increased market demand and governmental support, green initiatives frequently pose less long-

term risk to banks. Additional advantages mentioned in the examined research include access to international green finance and improved reputation.

- Stakeholder Perceptions and Social Impacts: Socially, green finance programs increase community well-being, create jobs, and improve public health, especially through investments in sustainable infrastructure and renewable energy. Improved stakeholder perceptions of banks involved in green financing are also noted in the reviewed literature, as these policies improve business reputation, legitimacy, and trust. Stakeholder understanding is still unequal, though, which suggests that more openness and communication about green financing projects are required

7. REFERENCE

- Aliyu Shinkafi, A., Ali, N. A., & Choudhury, M. (2017). Contemporary Islamic economic studies on Maqasid Shari'ah: A systematic literature review. *Humanomics*.
- Appiah, K. O., Chizema, A., & Arthur, J. (2015). Predicting corporate failure: A systematic literature review of methodological issues. *International Journal of Law and Management*.
- Cassis, Y. (1991). *Finance and financiers in European history, 1880–1960: Financial elites and society*. Cambridge University Press.
- Danese, P., Manfè, V., & Romano, P. (2018). A systematic literature review on recent lean research: State-of-the-art and future directions. *Global Business Issues eJournal*.
- Dash, A. (2021). IRFC – The beginning of a green era. *Emerald Emerging Markets Case Studies*.
- Debrah, C., Darko, A., & Chan, A. P. C. (2022). A bibliometric-qualitative literature review of green finance gap and future research directions. *Climate and Development*.
- Gidage, M., & Bhide, S. (2025). Exploring the impact of green finance, CSR and green banking on environmental sustainability performance in Indian banks. *International Journal of Productivity and Performance Management*.
- Kulkarni, A. (2014). *Corporate social responsibility in the Indian banking sector: A critical analysis*.
- Kishore Kumar, & Prakash, A. (2019). Developing a framework for assessing sustainable banking performance of the Indian banking sector. *Social Responsibility Journal*.
- Law, R., Leung, D., & Cheung, C. (2012). A systematic review, analysis, and evaluation of research articles in the *Cornell Hospitality Quarterly*. *Cornell Hospitality Quarterly*.
- Mahfooz, T., & Singh, P. (2026). ESG performance and green bond issuance in Indian financial institutions: The moderating role of profitability. *Journal of Public Affairs*.
- Nouman, M., Siddiqi, M., Ullah, K., & Jan, S. (2021). Nexus between higher ethical objectives (Maqasid al Shari'ah) and participatory finance. *Qualitative Research in Financial Markets*.
- Peet, R. (2011). Contradictions of finance capitalism. *Monthly Review*.
- Rahmani, M. S., & Azam, M. K. (2025). FinTech and digital transformation in the banking sector: A systematic literature review. *International Journal of Research in Finance and Management*.
- Sharma, A., Mohan, A., & Johri, A. (2024). Impact of financial technology (FinTech) on the restructuring of the agrarian economy: A comprehensive systematic review. In *Proceedings of the Sixth International Conference on Computational Intelligence and Communication Technologies*.

- Sharma, M., & Choubey, A. (2021). Green banking initiatives: A qualitative study on the Indian banking sector. *Environment, Development and Sustainability*.
- Tara, K., & Singh, S. (2014). Green banking: An approach towards environmental management. *Prabandhan: Indian Journal of Management*.
- Tara, K., Singh, S., & Kumar, R. (2015). Green banking for environmental management: A paradigm shift. *Current World Environment*.
- Thapliyal, K., Gupta, C., Jindal, P., & Mishra, A. K. (2025). Measuring the impact of green banking practices on banks' environmental performance and sources of green financing: A study on Indian banks. *Discover Sustainability*.
- Tsogas, G. (2013). Book review: *Cognitive capitalism* by Yann Moulier-Boutang. *Work, Employment and Society*.
- Vasishta, P., Sharma, R., & Singla, A. (2024). Impact of green banking awareness on green FinTech adoption: A way towards profitable and sustainable practices. *Managerial Finance*.
- Zairis, G., Liargovas, P., & Apostolopoulos, N. (2024). Sustainable finance and ESG importance: A systematic literature review and research agenda. *Sustainability*.