



Cover Page



DOI: http://ijmer.in.doi./2022/11.03.40

GREEN BANKING PRACTICES IN INDIA: NEED OF THE HOUR

¹Radha Bhola and ²Subhanjali Chopra

¹Assistant Professor and ²Associate Professor

^{1&2}Department of Commerce, Sri Aurobindo college, University of Delhi
New Delhi, India

Abstract

“Go Green” mantra has become popular in the environment friendly society. Now business activities not only focus on profits but also on people and planet. Organizations are showing great interest in identifying and implementing strategies that will help them to address environmental issues and pursue new opportunities. Banks play a major role in the economic development of a nation. Green banking serves the commercial objective of the bank as well as social responsibility in most developed countries, however, in India, the concept is still emerging. In the age of global warming and climate change, practicing of green banking concept is inevitable for the potential customers. The Reserve Bank of India (RBI) became a member of the Central Banks and Supervisors Network for Greening the Financial System (NGFS) on April 23, 2021 to contribute to the development of environment and climate risk management in the financial sector, while mobilizing mainstream finance to facilitate the transition towards a sustainable economy. This paper attempts to understand the concept of green banking and analyse the opportunities and challenges in India. The findings revealed that it is imperative to understand the need for green practices for banking and create consciousness about their significance in the society. The study can act as a reference point for researchers, policymakers, investors, and regulators in context of green banking practices.

Keywords: Green Banking, Environmental, Sustainability, Initiatives and Challenges

1. Introduction

“Earth provides enough to satisfy every man’s needs, but not every man’s greed.”

- Mahatma Gandhi

As defined by The Institute for Development and Research in Banking and Technology established by the RBI, “Green banking is an umbrella term referring to practices and guidelines that make banks sustainable in economic, environment, and social dimensions. It aims to make banking processes and the use of IT and physical infrastructure as efficient and effective as possible, with zero or minimal impact on the environment”. The concept of green banking emerged in 2009 with establishment of the first Green Bank based in Mt. Dora, Florida, United States (Ahuja, 2015). The initiative of inaugurating the first wind farm project in Coimbatore by SBI, India’s largest commercial bank with Shri O.P. Bhatt, chairman, SBI set high standards and completed the first step towards green banking (Jayabal and Soundarya, 2016).

Narendra Modi, Prime Minister of India, commented “Outcome of #ParisAgreement has no winners or losers. Climate justice has won, and we are all working towards a greener future” (Allen and Craig, 2016). Government agencies, investors and the public are demanding more disclosures from organizations regarding their carbon footprint and environmental initiatives. Banks must undertake some green initiatives for the creation of a strong low carbon economy (Deka, 2015). As Vijayvargiya (2021) mentioned, “the concept of sustainability has mainly arisen because of the fact of exhaustibility.” According to Bansal and Roth (2000), to distinguish itself as a green alternative, a firm can develop a strategic niche by combining interest in competitiveness and ecological responsibility.

According to Biswas (2011) some of the benefits of green banking in this dynamic environment are banking through internet, phone and ATM, free electronic bill payment services, e-statements, online account opening and cash backs for new customers for opening green accounts etc. Scholtens (2009) finds that the production of green financial products that aim at reduction of energy use and greenhouse gases is a means by which a bank can showcase its commitment towards sustainable development. The key green products of banks are found to be green securities and investments, carbon finance, green insurance, green credit, and green infrastructural bonds (Frimpong, et al., 2021).

Mishra (2013) found that green business is still in its infancy in India. Sahoo and Nayak (2007) concluded not many initiatives have been taken by the Indian banking sector in this area. The green banking practices of most of the banks in India were limited to internet banking, ATM, installation of solar panel, etc. (Biswas, 2011). Rajput et al. (2013) concluded that Indian banks are ill prepared for addressing green issues, and the banking sector has been slow in adopting sustainable banking practices. Policy



Cover Page



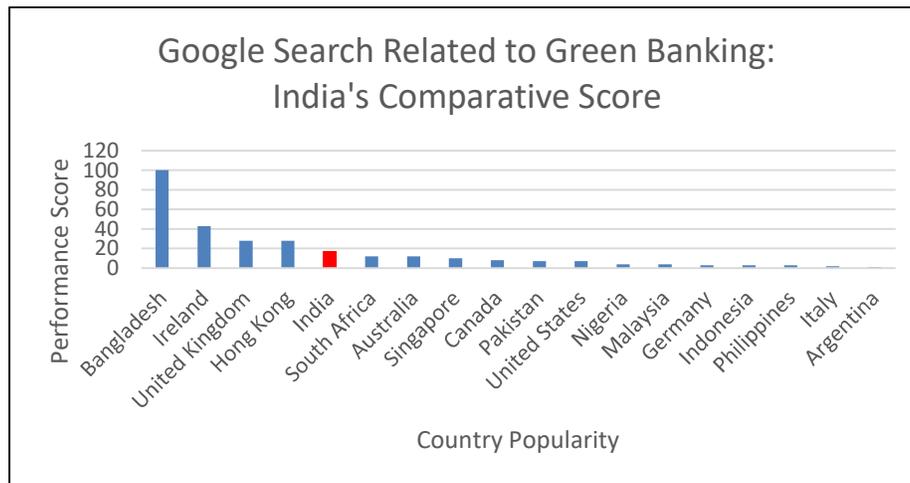
DOI: http://ijmer.in.doi./2022/11.03.40

recommendation from the RBI can play an instrumental role in promoting green banking in India. Studies in India related to sustainability largely focus on green banking strategies adopted by the banks in India (Bihari, 2015 and Bahl, 2012). Furthermore, there is a general lack of studies on how banks in India address the issues of going green. This study aims to address this research gap. The primary objective of this study is to develop a general framework for assessing green banking and examine the green banking initiatives and strategies in India. The present study also redresses the extant dearth of research in the field of green banking in the Indian context and make relevant suggestions.

Besides the present introductory section, the rest of the paper is organized as follows: Section 2 explains conceptual framework of the study. Section 3 reviews the existing literature on green banking. Section 4 presents green banking initiatives by Indian banks. Section 5 explains strategies to adopt green banking. Section 6 presents the opportunities and challenges of the study. The final section discusses the conclusion and suggestions for future research.

1.1 Objectives: The primary objective of the study is to understand the concept of green banking in India. The paper attempts to highlight the initiatives taken by Indian banks to make them green and discuss the relevant strategies implemented by them. The study also analyses the opportunities and challenges to banks in this area.

1.2 Research design and methodology: Secondary data has been collected from the journals and websites for the latest happenings and green initiatives taken by the banking sector in the Indian context. The study was restricted to publications available on Google Scholar search engine. The preliminary investigation involved downloading 65 research articles with key words as Green Banking in India. A total number of 41 articles was found relevant for general review on the topic. Appendix can be referred for the past studies related to green banking.



Source: Google Trend.

Fig. 1: Google Search Related to Green Banking

Figure 1 shows that India’s comparative score is at 5th rank. The term “Green Banking” is most popular in Bangladesh during 2005-2022. As mentioned above, Google Trends reports the normalised search intensities for the chosen keywords. The maximum value of the search intensity is set to 100. Then the search intensity for other countries is proportionately adjusted.

2. Conceptual Framework of Green Banking

Sustainable development means “development that meets the needs of the present without compromising the ability of future generation to meet their own needs (World Commission Environment and Development 1987). “Global warming is increasing; therefore, change is the law of nature” (Chitra and Gokilavani, 2020). With increased awareness about the adverse impact of global warming and implication of pollutants, green banking includes all those activities meant to satisfy human needs with little influence on the natural environment.

There is no commonly accepted definition of the term “green banking” (Zhelyazkova and Kitanov, 2015). Some broad aspects, related to the concept as posited by the scholars, are given as below in Table 1:

Author (s) (Year)	Concept of Green Banking
Miao, Fang, Sun and Luo (2017)	a simple bank, considering societal and conservational features for protection of natural resources.
Lalon (2015)	any form of banking from which the country and nation gets environmental benefits. A conventional bank becomes a green bank by directing its core operations toward the betterment of environment.
Bhardwaj and Malhotra (2014)	an effort by the banks to make the industries grow green and, in the process, restores the natural environment
Bahl (2012)	a kind of banking conducted in selected area and technique that helps in reduction of internal carbon footprint and external carbon emissions.

Table 1: Concept of Green Banking

Now a days business activities not only focus on profits but also on people and planet. Figure 2 presents a comprehensive understanding of the term green banking.

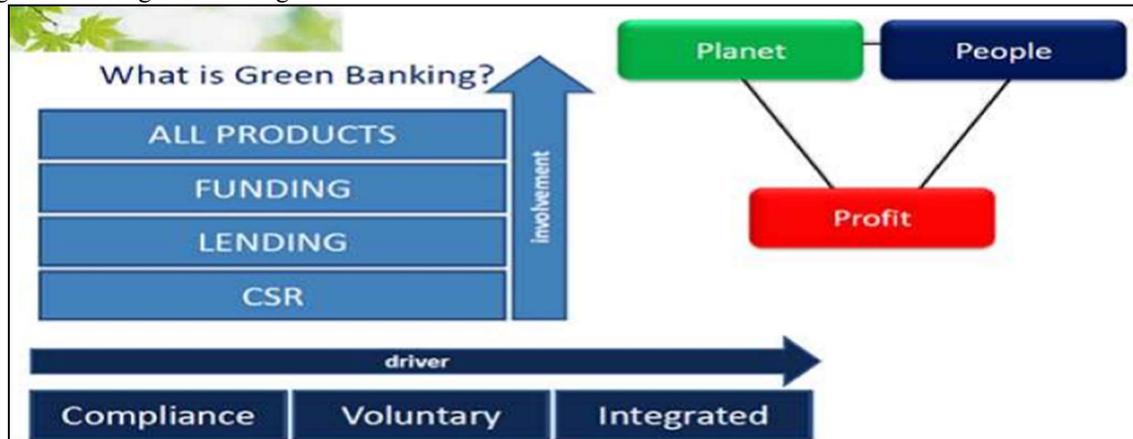


Fig. 2: Concept of Green Banking

Source: Mahfuzur Rahman and Barua, 2016

Table 2 clearly shows that 2003 and 2009 were landmark years in the evolution of green banking. By the end of 2012 almost all Indian banks have started working actively towards reducing carbon footprints and took green initiatives.

Green Banking Implementation Year	Names of the banks operating in India
1996	Union Bank of India
2003	Citi Group INC, HSBC, ING Vyasa, RBS, Royal Bank of Canada, Syndicate Bank, Standard Chartered
2005	Yes Bank, Corporation Bank
2006	Bank of America, JP Morgan
2007	ICICI, OBC, SBI
2008	Bank of Baroda, Karnataka Bank, Industrial Bank, Dena Bank
2009	HDFC, Indian Overseas, IndusInd Bank, PNB, ABN Amro, Karur Vyasa, Andhra Bank
2010	Axis Bank, Kotak Mahindra, South Indian Bank
2011	Canara Bank, IDBI, EXIM
2013	IDFC

Table 2: Publication dates of green banking adopted in Indian banks



Cover Page



3. Review of Literature

In the past, many researchers have studied different aspects of green banking in developed countries (Scholtens, 2009), but there is scant literature available on developing countries (Biswas, 2011). The various findings of past studies were of great help in the present work. This review also helped in finding out the differences between the past research and the current research on the topic.

Sahoo and Nayak (2007) study the significance of green banking and share international experience in this respect. They find that there have not been many initiatives by banks in India and therefore, policy measures are essential for promoting green banking in India. The researchers conclude that none of the Indian banks have adopted equator principle and none of them is signatory to UNEP financial initiative statement. Indian banks need to follow environmental criteria for funding projects. The study also suggested the possible policy measures and initiatives to promote green banking in India.

Nath, Nayak and Goel (2014) conduct a study on the green rating standard given by RBI, the World Bank's environmental and social norms and the initiative taken by bank in adopting green practices. They list strategies for adopting green banking as well. Green Rating Standard is known as Green Coin Rating. Under this bank are assessed based on carbon emissions and degree of recycling activities. The World Bank has formulated environmental and social norms for financial institution. These norms provide ways to reduce environmental impact. Banks are required to do Environmental Impact Assessment, Annual Reporting and adopt sustainable technology. The researchers used SWOC analysis and list the initiative taken in respect of environment by different banks in India. Indian banks need to act as good corporate citizens if they want to achieve some position in global economy.

Rajput, Kaur and Arora (2013) highlight how Indian banks respond to environmental changes and act in respect of green banking. They find that there is a small group of banks in India take care of environmental aspect. Response of Indian banks towards international initiatives for environment is sluggish. In the United Nation Environment Programme Finance Initiative there is no single Indian signatory. Using factor analysis, they summarize that risk of failure of business to peers and lack of RBI mandates are the roadblocks to moving towards sustainability. The consciousness on the environmental issues are the gaps in India. Carbon Disclosure Projects- India requires public disclosure of emissions. This disclosure project is active in India. But the response is very less as only 8 signatories are there. The researchers argue that current management system needs to be integrated with the environmental and sustainable issues.

Yadav and Pathak (2013) explore the green banking approaches opted by private and public banks for environment sustainability. Using case study approach, they find that Indian banks have understood the relevance of taking positive steps towards the environment sustainability. Moreover, results of the study conducted reveal that public sector banks have taken more initiatives as compared to private sector with exception of ICICI bank whose approach is a sustainable approach.

Bahl (2012) studies the means of creating awareness about green banking to ensure sustainable growth. Garrett's ranking technique is used to analyze the most effective strategies in respect of green banking. The goal to attain sustainable development can be achieved only through creating awareness and imparting education. Among the internal sub systems focus should be given to publications, newsletters to create awareness. A comprehensive formulated green policy guideline is essential for effective green banking. Further, the paper suggests RBI and Indian government should play a proactive and design green banking policy, guidelines and financial incentives for sound green banking.

Bihari and Pandey (2015) elucidated that green banking includes protecting the environment where banks consider before financing a project whether it is environment friendly and has any implications for the future. A company will be given a loan only when all the environmental safety standards are followed. Green banking can be efficiently implemented using technology and policy, he emphasized.

Sarma and Roy (2020) examined limited dimensions and keywords relating to the internal practices of banks in the context of green banking. Kumar and Prakash (2018) find that in order to improve sustainable banking performance, banks should adopt the international code of conduct on sustainability such as Global Reporting Initiative (GRI), UNEP FI, United Nation Global Compact (UNGC) principles, ISO 14001-26000 and Equator principles.

These could be used as guiding tools to incorporate sustainable banking. In the absence of any external regulatory policy on sustainable banking, it is imperative for the banks to impose self-regulation for adopting and promoting sustainable banking in Indian banking sector. Taking guidance from the top performing banks in India, other banks need to develop innovative sustainable products and services and undertake further standardization of nonfinancial performance. The banks should consider moving beyond from mere compliance of mandatory CSR requirements to the adoption of sustainability banking.

A number of studies find a positive association between green banking practices and financial performance (Hossain, et al. 2020). Narasimhan (2020) find positive relationship between green banking practices and bank's environmental performance. Approaches toward green banking policy interventions are different between developing and developed countries. Central banks in developing countries such as India and Bangladesh set specific lending quotas for green initiatives (Park and Kim, 2020; Islam and Das, 2013; Khairunnessa et al., 2021). The study by Bhardwaj and Malhotra (2014) studied the relationship between the



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

performance of bank and the green banking adoption. They found a positive relationship between adoption of green banking and bank profitability. On the other hand, similar study by **Rajput, Arora, and Khanna (2014)** found no relationship between green banking initiatives and bank's profitability. **Horvathova (2010)** found either a negative or a nonsignificant relationship between environmental, social, and governance (ESG) performance and financial performance. Sustainability in banking sector has generally two forms (**Lalon, 2015**). First, through adoption of environmental and social responsibility in bank's day to day operations like wise use of paper, energy conservation etc. and second, by including sustainability into banks' products and strategies like green lending, etc.

4. Green Banking Initiatives by Indian Banks

The following banks are supporting green projects to a greater extent:

State Bank of India, the largest bank in India with its association, became the first bank in the country to adopt green banking by generating green power through windmills for captive use in Tamil Nadu, Maharashtra and Gujarat. Some of its Green banking initiatives are: introducing Green Channel Counter (GCC) facility during 2010 at 57 select branches spread across the country, and the same was expanded to more than 14,981 branches in 2014. SBI has launched Green Housing or Green Home projects to support projects those will be environment friendly. In this scheme bank offer various concessions- reduced margins, lower rate of interest and zero processing fee. These loans are sanctioned for projects rated by Indian Green Building Council (IGBC). (Abraham, 2020; Prabhu, 2021)

Bank of Baroda provides financial assistance to many green projects, and preference was also given to them while extending loans. In order to protect the environment, it has constructed buildings at Varanasi and Jaipur as per green building norms.

Punjab National Bank started using energy efficient appliances and conducted electricity auditing of their offices.

Eco-Friendly Vehicle Finance - As an initiative towards a more environmentally friendly way of life, **ICICI Bank** offers a 50% waiver on Auto loan processing fees on fuel efficient car models. The bank has made tie up with Bombay Natural History Society to sensitize projects related with wildlife biodiversity, projects suiting environment.

HDFC Bank is using Social and Environmental Risk Management System (SEMS) that helps in screening projects' negative social and environmental impacts before approval.

Kotak Mahindra Bank encourages Paperless transactions and encouraging Customers to sign for E-statements, and they partnered with Grew-Tress.com to plant one sapling for each statement. **IndusInd Bank** installed ATMs using Solar Power in various cities for energy conservation and undertook green banking initiatives under the name "Hum Aur Hariyali". **YES, Bank** adopted clean technology and started "Planet Earth" project to create awareness in local communities surrounding their bank branches and **HSBC** has a separate data center to monitor energy consumption. **Union Bank of India** has decided to undertake an electrical energy audit annually. Bank has also installed solar water heaters at various facilities.

5. Green Banking Strategies

Green banking can be implemented by an optimum use of technology (Kapoor, Jaitly and Gupta, 2016; Katyal and Nagpal, 2014). The various ways in which banks have adopted the wave of change are:

- **Online banking:** Online Banking and mobile Banking is the easiest way to adopt green banking. Online Banking includes paying bills online, remote deposit, online fund transfers, and generating online statements. Online Banking and mobile Banking are highly effective ways to understand your financial operation and to avoid unnecessary late payment fees and save time by avoiding standing to queues to update the transaction.
- **Card-based transaction:** This will help many parties mutually. Using cards will reduce the burden of printing more money and reduce the cutting of trees to a larger extend. Customers, bankers, and traders need not deal with cash but a digital transaction. A variety of cards such as ATM, credit and debit cards, green remit cards, gift card, etc. are available for customers.
- **Paperless statement:** Sending out bank statement by mail is a big waste of paper which impacts the environment to a greater extent. E-statement is a great method of green banking. Receiving Statements electronically can benefit the customers in many ways, such as missing statements, cause of damage, or identity theft.
- **Save paper:** Banks should purchase recycled paper products with the highest post- customer waste content. Whenever possible, use vegetable-based inks instead of less environmentally friendly oil-based inks.
- **Use of Green credit cards:** Some of the banks introduced green credit card. The benefit of using a green credit card is that banks will donate funds to an environment-friendly non-profit organization from every rupee you spend on your credit card to a worthwhile cause of environmental protection.
- **Green finance:** Bank should finance environment development projects and products such as Renewable energy like solar panels, reprocessed furniture, vehicle finance for low carbon emissions vehicles, home finance for green buildings, etc. With

giving some concessions in processing fee and concessional rate of interest.

- **Green infrastructure:** Banks can move to renewable energy like solar, wind, etc. to effectively manage their offices and ATMs for going green. Banks can conduct energy audits in all their offices for effective energy management.

6. Opportunities available to Indian Banks

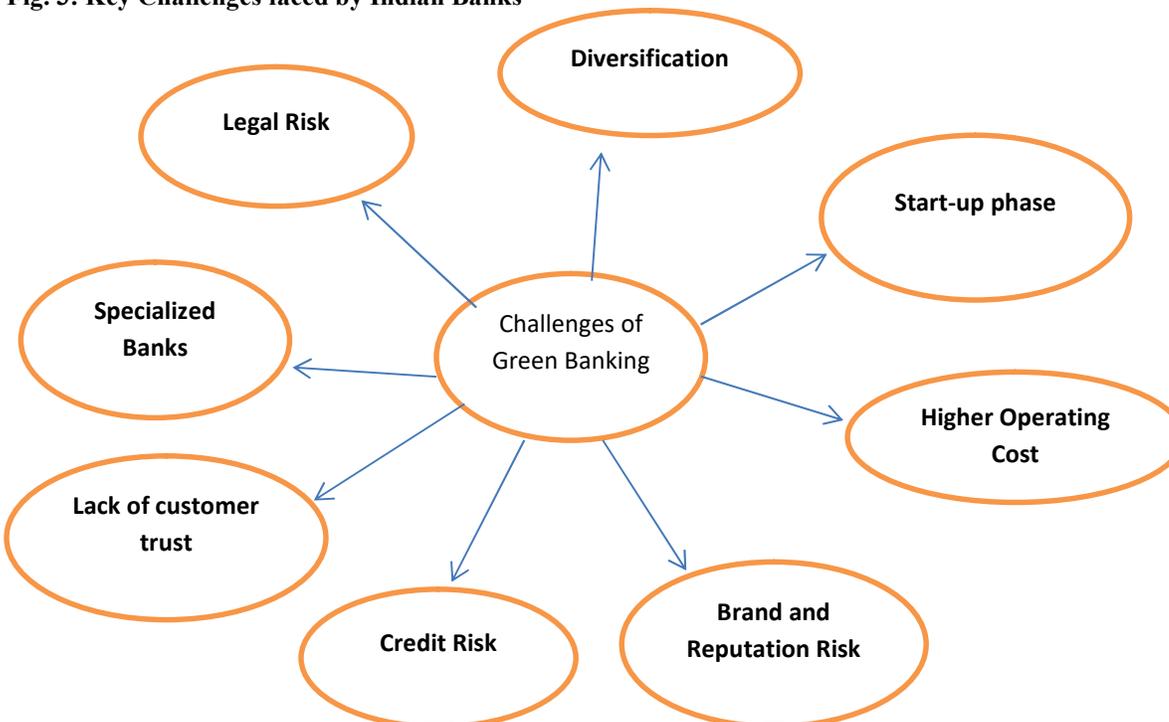
Green banking provides many opportunities to the banks. Banks may identify innovative financial solutions and re-design the existing ones in order to incorporate environmental perspectives (Katyal and Nagpal, 2014). Some areas of development could be:

- **Green financial products** - Loans with financial concessions to companies which undertake environment sensitive projects such as manufacturing of fuel-efficient automobiles, solar and wind equipment etc. Banks can also introduce “Green Fund” to provide climate conscious customers with the option of investing in environment friendly projects. Besides introducing specific green banking products, banks can incorporate an Environmental Impact Assessment (EIA) in their project appraisal to measure the nature and magnitude of environmental impact and further, suggest environmental risk mitigation measures.
- **Carbon credit business-** Indian banks can participate in carbon credit business, wherein they can provide all the services in the area of Clean Development Mechanisms (CDMs) and carbon credits including identification and funding of CDM projects, advisory services for registration of CDM projects and commercialization of CERs to meet the requirements of the customers, and other related banking services. As India has huge potential for carbon credit business, Indian banks can establish dedicated carbon credit cells to capture a major share of this carbon credit business.

7. Challenges in adopting Green Banking

Biswas (2011) emphasized on the confronting challenges of green banks. Green banks had higher operating expenses as banks, which are going green required specialized talent, skills, expertise due to the kind of customers they were servicing and also the reputation of the banks was impacted if they were involved in the projects which were viewed as socially and environmentally damaging.

Fig. 3: Key Challenges faced by Indian Banks



Implementing green banking poses a challenge to the management and employees in an organization. It is also researched that Indian banks are not so well equipped to implement green banking initiatives (Rajput et al., 2013), and they still have a long way to go (Kumar and Prakash, 2018). Despite the various advantages of green banking, several challenges persist in the modern-day



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

organizations (Maity, 2019). Below are some of the challenges of green banking. Figure 3 illustrates the key challenges faced by the Indian banks in going green:

- **Diversification:** Diversification is the major challenge to go for green banks which hamper their business transactions to those business bodies who qualify screening process done by green banks. With limited number of customers, green banks will have a smaller profit base to support them.
- **Start-up phase:** Several banks in green business are very new and are in start-up phase. It generally takes around 3 to 4 years for a bank to start minting money, thus it does not help banks during recession.
- **Higher operating cost:** green banks require skilled, talented and experienced staff to provide proper services to customers which leads to higher operating cost. Loan officers are required with additional experience in dealing with green businesses and customers.
- **Brand and reputation risk:** If banks get involved in big projects, which are viewed as ecologically and ethically questionable, it will result in loss of their brand reputation due to growing awareness about environment safety.
- **Credit risk:** It arises due to lending to those companies whose businesses are affected by changes in environmental regulations. It is higher due to probability of customer default as a result of uncalculated expenses for capital investment in production facilities, loss of market shares and third-party claims.
- **Specialized banks:** The focus area of a green bank is to aid those who takes care of the environment. Saving the environment does not necessarily equate to “making a profit”. Hopefully, this premise is proven wrong and green banks prove that they can survive, even as they face restrictive requirements for doing business.
- **Legal risk:** Banks face legal risk if they don’t comply with relevant environmental regulation. They’ll additionally face risk of direct loaner liability for cleanup prices or claims for damages just in case they really take possession of pollution inflicting assets.
- **Lack of customer trust:** Lower customer trust in green goods and services, customers’ reluctance to adopt new tools and technologies, lack of customers’ awareness on GB products and technology and lack of education can pose challenge to the organizations (Sharma and Choubey, 2022).

8. Conclusion and Suggestions

To conclude, the main gaps identified by the banks which require directives from the regulatory bodies are: First, training and development of relevant skills within bank employees so that they can use in core banking operations. Second, clear policies required to alter the present management systems to incorporate sustainability issues. Third, awareness and consciousness on sustainability issues, international guidelines and frameworks. Fourth, sustainability reporting - formal frameworks, lucid and clear policies applicable for banks operating in India. Fifth, normal information sharing, and dissemination platforms needs proper definition. Sixth, guidance / workshops / training programmes for banks are necessary on CSR focus areas. Finally, there could be an international strategic programme in terms of funding climate change programmes like IMF and Indian bank’s low-Cost Green Fund; this will help the developing countries counter the issue of sustainable development and making green economy. This will surely help the developing economies to fight the environmental challenges.

It is high time that Indian banking strongly adhere to **equator principle – guidelines** that use environment sensitive parameters, apart from financial parameters to fund projects. Indian banks need to be made fully aware of the environmental and social guidelines to which banks worldwide are agreeing to. It will be a huge financial burden for banks committing to environmental and social guidelines. However, if Indian banks are to penetrate western markets and participate more in the global economy, it is important that they recognize their responsibilities as global corporate citizens.

There are some suggestions for green banking practicing firms to face challenges (Rao, 2020; Giridhar and Sudhakar, 2015) and for successful implementation of green banking in financial sector:

- **Green banking requires lot of research:** In order to fully explore its potential and facilitate sustainable development in India, green banking still needs systematic research in financial sector.
- **Educate the customer:** Customer is generally not aware of the green related issues which the company product attempts to address. For this, the institutions should educate the customers on the issues which are related to green banking.
- **Greening of products is not enough:** Usually there are two important expectations from the customers: pocket friendly purchase and ecological impact on their lives. Thus, organizations should consider these two expectations while adopting green banking.
- **Consider affordability of consumer:** Environment friendly products are usually priced at high due to their inability to earn economies of scale and using high quality raw materials and components. For this the firms must consider the affordability of



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

consumers about the premium and they have to feel it's worth it.

- **Transparent business policies:** Banks should adopt transparent business policies and give adequate disclosures to comply with the government regulations.

References

1. Ahuja Neyati (2015) Green banking in India: A Review of Literature, International Journal for Research in Management and Pharmacy, Vol. 4, Issue 1, January.
2. Allen Myria W. and Craig Christopher A. (2016) Rethinking corporate social responsibility in the age of climate change: a communication perspective, Allen and Craig International Journal of Corporate Social Responsibility 1:1.
3. Bahl, S. (2012) Green banking-The new strategic imperative. Asian Journal of Research in Business Economics and Management, 2(2), 176-185
4. Bansal Pratima and Roth Kendall (2000) Why do companies go green: A model of ecological responsiveness, Academy of Management Journal, Vol. 43. No. 4, 717-736.
5. Bert Scholtens (2009) Corporate Social Responsibility in the International Banking Industry, Journal of Business Ethics, 86:159–175.
6. Bhardwaj Broto Rauth and Malhotra Aarushi (2013) Green Banking Strategies: Sustainability through Corporate Entrepreneurship, Greener Journal of Business and Management Studies, Vol. 3 (4), pp. 180-193, May.
7. Bihari Suresh Chandra and Pandey Bhavna (2015) Green banking in India, Journal of Economics and International Finance, Vol. 7(1), pp.1-17, January.
8. Biswas Nigamananda (2011) Sustainable Green Banking Approach: The Need of the Hour Business Spectrum, Vol. I, No.1, January-June.
9. Chitra, V., and R. Gokilavani. (2020) Green Banking Trends: Customer Knowledge and Awareness in India, Shanlax International Journal of Management, vol. 8, no. 1, pp. 54–60.
10. Deka Gobinda (2015) Green Banking Practices: A Study on Environmental Strategies of Banks with Special Reference to State Bank of India, Indian Journal of Commerce and Management Studies, Volume VI Issue 3.
11. Giridhar K.V. and K.G.Sudhakar (2017) Green Banking: Issues and Challenges in India, International Journal of Latest Technology in Engineering, Management and Applied Science (IJLTEMAS), Volume VI, Issue VI, June.
12. Horváthová Eva (2010) Does environmental performance affects financial performance? A meta-analysis, Ecological Economics 70 52–59.
13. Hossain Md. Azmir, Rahman Md. Mominur, Hossain Md. Sazzad, and Karim Md. Razaul (2020) The Effects of Green Banking Practices on Financial Performance of Listed Banking Companies in Bangladesh, Canadian Journal of Business and Information Studies, 2(6), 120-128.
14. Hyoungkun Park and Jong Dae Kim (2020) Transition towards green banking: role of financial regulators and financial institutions, Park and Kim Asian Journal of Sustainability and Social Responsibility 5:5
15. Islam Md. Shafiqul and Das Prahallad Chandra (2013) Green Banking practices in Bangladesh, IOSR Journal of Business and Management (IOSR-JBM), Vol. 8, Issue 3, Mar. – Apr, pp. 39-44.
16. Isaac Akomea-Frimpong, David Adeabah, Deborah Ofosu and Emmanuel Junior Tenakwah (2021) A review of studies on green finance of banks, research gaps and future directions, Journal of Sustainable Finance and Investment.
17. Jayabal G. and Soundarya M. (2016) Green Banking: As banks initiative for sustainable development, International Journal of Management (IJM), Vol. 7, Issue 7, November–December, pp.276–280.
18. Kapoor Neeru, Jaitly Meenu, and Gupta Rishi (2016) Green Banking: A step towards Sustainable Development, International Journal of Research in Management, Economics and Commerce, Volume 06, Issue 07, July 2016, pp. 69-72.
19. Katyal Shalu and Nagpal Shafali (2014) Role of Green Banking in Sustainable Development of India, International Journal of 360o Management Review, Vol. 02, Issue 01, April.
20. Khairunnessa, F., Vazquez-Brust, D.A., and Yakovleva, N.A (2021) Review of the Recent Developments of Green Banking in Bangladesh. Sustainability, 13, 1904.
21. Kumar Kishore and Prakash Ajai (2018) Developing a framework for assessing sustainable banking performance of the Indian banking sector, Social Responsibility Journal.
22. Maity Swarnadeep (2019) Green Banking: A New Strategic Initiative for Growth and Sustainable Development, International Journal of Scientific Development and Research, June, Vol. 4, Issue 6.
23. Mathew Abraham (2020) Go Green' Strategies of Indian Banks, GIS Business, Vol.15, Issue. 4, April.
24. Miao, C., Fang, D., Sun, L., and Luo, Q. (2017) Natural resources utilization efficiency under the influence of green technological innovation. Resources, Conservation and Recycling, 126, 153-161.



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

25. Mishra Dharmendra Kumar (2013) Green strategies: Response of Indian banks to climate change, International Quarterly Journal of Environmental Sciences, Vol. III: 345 – 348.
26. Narasimhan G.V. (2020) An Empirical study on Effectiveness of Green banking practices in SBI, Adalya Journal, Volume 9, Issue 6, June.
27. Nath Vikas, Nayak Nitin and Goel Ankit (2014) Green Banking Practices – A Review, International Journal of Research in Business Management, Vol. 2, Issue 4, April, pp. 45-62.
28. Prabhu G. Nandini (2021) Green Banking Practices – A Case Study on Indian Green Banking System, International Journal of Research Publication and Reviews, Vol. (2) Issue 3, pp. 487-493.
29. Raad Mozib Lalon (2015) Green Banking: Going Green, International Journal of Economics, Finance and Management Sciences, Vol. 3, No. 1, 2015, pp. 34-42.
30. Rahman S M Mahfuzur and Suborna Barua (2016) The design and adoption of green banking framework for environment protection: Lessons from Bangladesh, Australian Journal of Sustainable Business and Society, Vol. 2, No. 1, March.
31. Rajput Namita, Kaur Baljeet, and Arora Anu Priya (2012) Green Banking In India -Issues And Practices, International Journal of Management, IT and Engineering, Volume 2, Issue 12.
32. Rajput, N., S. Arora, and A. Khanna (2013) An Empirical Study of Impact of Environmental Performance on Financial Performance in Indian Banking Sector, International Journal of Business and Management Invention 2 (9): 19–24
33. Rao U.Srinivasa, N.Srimannarayana, M. Veeranjanyulu, and G.Balaji Prakash (2020) Indian Financial Services are ‘Going Green’, International Journal of Advanced Science and Technology, Vol. 29, No. 8, pp. 1198-1204.
34. Sahoo, P. and Nayak, B. (2007) Green Banking in India. Discussion Paper Series No. 125/2008. Retrieved on 20 January 2015 from: <http://admin.indiaenvironmentportal.org.in/files/green%20banking.pdf>.
35. Sahoo Bibhu Prasad, Singh Amandeep and Jain Neeraj (2016) Green banking in India: Problems and Prospects, International Journal of Research - Granthaalayah, Vol.4 (Iss.8): August.
36. Sarma, Prerana and Roy, Arup (2020) A Scientometric analysis of literature on Green Banking (1995-March 2019). Journal of Sustainable Finance and Investment, (), 1–20.
37. Sharma Meenakshi and Choubey Akanksha (2022) Green banking initiatives: a qualitative study on Indian banking sector, Environment, Development and Sustainability 24:293–319.
38. Vijayvargiya Sheetal (2021) Green Finance: A Sustainable Solution to the Umpteen Problems of the Nation, AIMA Journal of Management and Research, November, Volume 15 Issue 3/4.
39. Yadav Rambalak and Pathak Govind Swaroop (2013) Environmental sustainability through green banking: A study on private and public sector banks in India, OIDA International Journal of Sustainable Development 06: 08.
40. Yunwen Bai (2011) Financing a Green Future: An examination of China’s banking sector for green finance, IIIIEE Theses.
41. Zhelyazkova V. and Y. Kitanov (2015) Green Banking – Definition, Scope and Proposed Business Model, Journal of International Scientific Publications 9: 309–315.
42. https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=51496
43. <https://www.unepfi.org/>



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

Appendix:

Past Studies related to Green Banking

S. No.	Author	Country	Objectives	Findings	Journal
1	Sharma Meenakshi and Choubey Akanksha (2022)	India	to study Green banking initiatives and explore the impact of three Green banking initiatives	Results show that more than 60% respondents believed that Green banking initiatives have positive role in restoring customer trust through enhanced Green brand image.	Environment, Development and Sustainability
2	Mathew Abraham (2020)	India	to understand the level of awareness of customers on the green banking initiative of banks	Youngsters are more aware of the green banking initiatives of the banks. Finally, customers of private sector banks are more aware of green banking than those of public sector banks.	GIS Business
3	Chitra, V., and R. Gokilavani. (2020)	India	highlight initiatives, major benefits and confronting challenges of Green Banking. by various banks towards green banking in India.	there is a need to create awareness about green banking and its varied services.	Shanlax International Journal of Management
4	Sarma, Prerana, Roy, Arup (2020)	India	to highlight the status-quo of Green Banking research.	Results highlight that Green Banking is yet to be properly explored.	Journal of Sustainable Finance and Investment



Cover Page



DOI: http://ijmer.in.doi./2022/11.03.40

5	Maity Swarnadeep (2019)	India	to understand significance of Green Banking and study its importance	find various strategic initiative taken by Indian banks to become Green Banks	International Journal of Scientific Development and Research
6	Kumar Kishore and Prakash Ajai (2018)	India	to assess the current state of sustainable banking in India; and to rank and categorise all the PSBs and private sector banks operating in India on the basis of sustainable banking performance.	sustainability issues are directly related to their business operations and banks are more focussed on addressing social dimension of sustainability in banking rather than sustainable banking.	Social Responsibility Journal
7	Giridhar K.V. and K.G.Sudhakar (2017)	India	study approaches for going green and make relevant suggestions	adopting green banking in India is having many issues and challenges	International Journal of Latest Technology in Engineering, Management and Applied Science
8	Jayabal G. and Soundarya M. (2016)	India	role of banks initiative for sustainable development in green banking	For effective green banking, the RBI and the Indian government should play a pro-active role and formulate green policy guidelines and financial incentives.	International Journal of Management
9	Kapoor Neeru, Jaitly Meenu, and Gupta Rishi (2016)	India	to study the concept and need of green banking along with strategies of adopting green banking.	it is observed that banks in India are moving towards sustainability through social banking and innovative service operations and offerings.	International Journal of Research in Management, Economics and Commerce
10	Rahman S M Mahfuzur and Suborna Barua (2016)	India	to identify a number of reasons for the banks' poor performance and proposes corrective measures.	The state owned banks rank low in performance while the foreign banks have considerably better achievements.	Australian Journal of Sustainable Business and Society
11	Sahoo Bibhu Prasad, Singh Amandeep and Jain Neeraj (2016)	India	to explore the importance of Green Banking, sustainable banking and development in India.	More awareness is need to be created among the middle and senior age groups individuals.	International Journal of Research - Granthaalayah



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

12	Ahuja Neyati (2015)	India	study the green philosophy in banking	Public sector banks are keener in adopting green practices as compared to private banks.	International Journal for Research in Management and Pharmacy
13	Bihari Suresh Chandra and Pandey Bhavna (2015)	India	study various models of green banking practices adopted by Indian companies to grow.	the banks which are adopting the green banking practices influence the performance of the organization	Journal of Economics and International Finance
14	Nath Vikas, Nayak Nitin and Goel Ankit (2014)	India	to study the importance of green energy financing accessible and affordable for homeowners and people's view in India	recommended change in routine operations of banks by adoption of paperless banking, online banking, and mobile banking, and mass transportation system, green cards made up of recycled plastic.	International Journal of Research in Business Management
15	Katyal Shalu and Nagpal Shafali (2014)	India	study concept of Green Banking and various methods adopted by any bank for educating customers. Also highlight the steps taken by RBI to motivate banks to take initiative to contribute in sustainable development of country.	Green banking is the order of the day and it will definitely benefit the banks, the industries and the environment as a whole.	International Journal of 360° Management Review
16	Rajput, N., S. Arora, and A. Khanna (2013)	India	to empirically find the association of environmental performance and financial performance by using data panel regression method	The results show that relationship between the net income and profitability is significant but no significant relationship exists between the implementation of green banking and bank's profitability as is revealed in the study.	International Journal of Business and Management Invention.



Cover Page



DOI: <http://ijmer.in.doi./2022/11.03.40>

17	Yadav Rambalak and Pathak Govind Swaroop (2013)	India	to study the Green Banking approaches opted by private and public banks for environment sustainability.	result reveals that public sector banks have taken more initiatives as compared private sector with exception of ICICI bank	International Journal of Sustainable Development
18	Bhardwaj Broto Rauth and Malhotra Aarushi (2013)	India		The findings of the research study show that the banks which are adopting the green banking practices influence the performance of the organization.	Greener Journal of Business and Management Studies
19	Bahl (2012)	India	to highlight the green rating standards, the initiatives taken by public and private sector banks in India in the adoption of Green Banking practices and to enlist the significant strategies for adoption of Green Banking.	highlight the Indian initiatives by various banks adopting green banking and to enlist significant strategies for adopting green banking.	Asian Journal of Research in Business Economics and Management
20	Rajput Namita, Kaur Baljeet, and Arora Anu Priya (2012)	India	to understand how Indian banks respond to environmental changes and the action taken in respect of Green Banking.	find that there has not been much initiative by the banks and other financial institutions in India. Some possible policy measures and suggestions are given to promote green banking in India.	International Journal of Management, IT and Engineering
21	Biswas Nigamananda (2011)	India	highlight the major benefits, confronting challenges, strategic aspects of Green Banking	Banks have not taken much initiative in the area of Green Banking in India	Business Spectrum