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Exploring Climate Finance Initiatives: A Case Study of Indian Banks' Role in Climate Development

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Abstract

This study delves into the realm of climate finance initiatives, focusing particularly on the role of Indian banks in fostering Climate development. With climate change posing significant challenges globally, financial institutions have been increasingly pressured to align their strategies with Climate practices. Through a comprehensive analysis of Indian banks' approaches to climate finance, this research examines the extent to which these institutions are contributing to mitigating environmental risks and promoting Climate development goals. By employing a mixed-methods approach, including qualitative interviews and quantitative data analysis, the study provides insights into the strategies, challenges, and impacts of climate finance initiatives within the Indian banking sector. The findings underscore the importance of proactive engagement by banks in Climate finance practices to address climate change and support long-term economic and environmental sustainability.

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Introduction

Climate change has emerged as one of the most pressing challenges of the 21st century, with far-reaching implications for both the environment and the economy (IPCC, 2021). The increasing frequency and intensity of extreme weather events, rising sea levels, and disruptions to ecosystems underscore the urgent need for concerted global action to mitigate and adapt to these changes (UNEP, 2020). In response to these challenges, there has been a growing recognition of the role of financial institutions in driving Climate development agendas, particularly through climate finance initiatives (Bakker et al., 2019).

In recent years, banks have come under scrutiny for their role in financing activities that contribute to climate change, such as fossil fuel extraction and deforestation (Dombrowski et al., 2020). However, there is also a growing momentum within the banking sector to realign business strategies with environmental sustainability goals (Thistlethwaite et al., 2021). This shift is driven by various factors, including regulatory pressures, changing consumer preferences, and a recognition of the financial risks associated with climate change (Bauer et al., 2019).

India, as one of the world's largest and fastest-growing economies, faces unique challenges and opportunities concerning climate change and Climate

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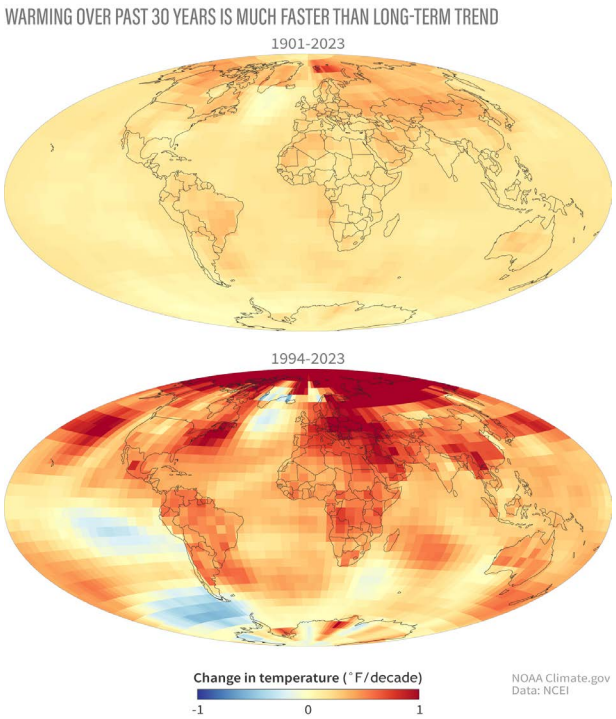


source : https://www.climate.gov/media/15841

Figure 1:

development (World Bank, 2021). The country is particularly vulnerable to the impacts of climate change, including extreme weather events, water scarcity, and agricultural disruptions (Mukherjee et al., 2018). At the same time, India has made significant commitments to reduce its greenhouse gas emissions and transition towards a low-carbon economy (Government of India, 2020).

Against this backdrop, Indian banks have a critical role to play in mobilizing finance for climate mitigation and adaptation efforts (RBI, 2020). However, there is limited research exploring the specific strategies and impacts of climate finance initiatives within the Indian banking sector. This study seeks to address this gap by examining the role of Indian banks in promoting Climate development through climate finance initiatives. By analyzing the strategies, challenges, and impacts of these initiatives, this research aims to provide valuable insights for policymakers, regulators, and practitioners seeking to accelerate the transition to a more Climate financial system in India and beyond.

Over the past century, the Earth's surface temperature has exhibited a significant upward trend, reflecting the impacts of anthropogenic greenhouse gas emissions and global climate change (IPCC, 2021). Analysis of temperature records from 1901 to 2023 reveals a consistent pattern of warming, with numerous studies indicating a rise in global mean surface temperature over this period (Hansen et al., 2010; NOAA, 2023). The Intergovernmental Panel on Climate Change (IPCC) reports that the average global surface temperature has increased by approximately 1.1 degrees Celsius compared to pre-industrial levels, with the rate of warming accelerating in recent decades (IPCC, 2021). This rise in temperature has led to various consequences, including melting polar ice caps, more frequent and intense heatwaves, changes in precipitation patterns, and disruptions to ecosystems and biodiversity (IPCC, 2021). The observed changes in surface temperature highlight the urgent need for concerted global efforts to mitigate greenhouse gas emissions and adapt to the impacts of climate change to safeguard the future of our planet.

LITREATURE REVIEW

Fatemi, A. M., & Fooladi, I. J. (2013) : In their research, shareholder wealth is no longer approach a Climate wealth , now days environmental and social aspect is now a valid aspect of organization value.

Weber, O., & Remer, S. (2011) : Their paper was based on the view of shareholders for suitainable finance and it overall effect of risk management with various models adopt by the small business houses for business management.

Richardsoni, B. J. (2005) : Paper is based on the voluntary participation on environmental responsibilities for project financeng and commercial financing. His article emphasis on the various activities done by European union for effective Climate finance.

Soppe, A. (2009): He worked on the various terminologies, which are using social and environment responsibilities like SRI and CSR. This paper also showed the core area of companies include social and environmental factor as its mission statements.

Jeucken, M. (2010) : He did systematic assessment a major banks. Use current banking practices for the Climate development.

Relano, F. (2008). : His paper has focused on the new banking and financial sector topology, which is ethics and ethical banking. Here ethics reflects social and environment growth with positive attitude to increase stakeholder's wealth.

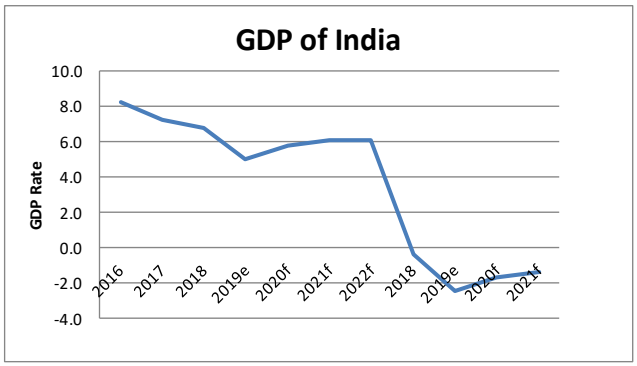
RESEARCH METHEDOLOGY

This research is based on descriptive analysis; all data are collected from various sources which are secondary in nature. The objective of this research is to study about the Climate financial activities doing by banking system in India at present. Graphs are used as a tool of data interpretation. Sample of study are 3 public sector bank and 3 private sector bank

Economics of India And Its Financial System

Since gaining independence in 1947, India has witnessed significant economic growth and development (Krueger, 2002). With a population of approximately 123 crores, India ranks as the second-largest country by population and seventh-largest by area (Balasubramanyum, 1984). The country embarked on a series of five-year plans starting from 1951, focusing initially on agriculture and subsequently expanding to industrial development, with a total of 12 five-year plans adopted until 2012. Despite facing challenges such as the Indo-Pakistani and Sino-Indian wars in 1965, India's literacy rate has steadily increased from 18.1% in 1961 to approximately 74.04% as per the 2012 census.

In response to the financial crisis of 1966, India underwent a currency devaluation to bolster exports. As a mixed economy, the Indian government has strived to strike a balance between capitalism and socialism through various development plans. Initially reliant on agricultural income, approximately 75% of the population was engaged in agriculture and related activities. Regional disparities in per capita income were evident, with states like Punjab, Haryana, and Gujarat enjoying higher income levels compared to states like Uttar Pradesh, Assam, and Bihar. By 1978, India comprised 12 states covering



Source: Worldbank.org

Figure 2:

65% of the rural population (Balasubramanyum, 1984).

The year 1988 marked a financial crisis for the country, attributed to deficits in the capital account and a drought. This year proved especially challenging for agriculture, prompting the Reserve Bank of India (RBI) to issue relief funds for farmers. However, this measure had unintended consequences, exacerbating the shortage of essential commodities and leading to an 80% increase in their prices (Ninan, 1988).

India accelerate its growth rate by 5% between 1974 to 1990. After that during the leadership of Late Shri P.V Narsimarao formal Prime Minister, and Dr. Manmohan Singh , Finance Minister, country ad was adopted the open economy. In this policy, government launched three things Liberalization, Globalization, and Privatization. With this initiative, Indian's global image came into existence, IMF and World Bank has more positive funding. During this WTO was also establish in 1995, and India became its member. Implementation and adaptation of LPG gave boost in economy, new companies were started investment under FDI and FII. SEBI established in 1992, to promote capital market in India, also to encourage customer for investment by ensuring them protection for any kind of fraud by financial institution.

There were various policies those were initiated after 1991 industrial policies. In this paper researcher has studied only banking and financial reforms. Financial reforms is refers to increase the adequacy of fund and circulation of fund in economy. It is related to provide more freedom to banking and

financial institution. Prior to 1991, economy was faced week financial reforms, due to high SLR and CRR bank were not able to disburse loan to every sector.

In 1995, scam (Harshad Mehta case), Nirav Modi Vs Punjab National bank 2billion dollar fraud , Vijay Malya case of fraud of Rs 9000 cr Vs 17 Indian bank broken the potential of banking system in India. Although, there are some reforms which are discussed.

- Change in SLR and CRR: Reserve bank of India did several majors to increase the lending to commercial bank. This is important to control of the inflation rate, growth of banking sector and developed the other sector by proper finance. At present SLR rate in 18.5% and CRR is 4% (RBI, 2020)
- More Liberalization Towards Interest Rate Policies: Initially, commercial banks were totally demand on the PLR (Prime Lending Rate) issue by Reserve Bank of India time to time. Interest rate are Bank Rate and SLR rate for which commercial bank have to deposited certain securities to RBI to get the fund. Now, it has changed, there is prescribed rate like for saving account it is 3.5% to 4% per annum but certain private banks are offering more to the customer under certain condition.
- More focus on Micro Finance: Micro finance is a new tool for financing to the lower section or rural section of society. This mode of finance is more popular in last 10 decades. SHG were formed under the guideline of NABARD, and funded by commercial banks(Private and Government Undertaken), Credit Corporative Societies, Corporative Banks.
- New Polices for lending Rural Infrastructure and for Climate Finance : From 1995-96-2012, approximately 462,229 project are were sectioned of total cost of 1,43,230 crores which includes road development, bridges etc. disbursement of fund also included the MNREGA schemes for the rural employment by the state and central government schemes.

Climate Finance is leading pathway by banking and financial institutional. The main object of Climate finance is to allocate and investment of fund which are useful for environment protection.

Leaps Towards Climate Finance

Need of climate finance

climate finance refers to flow of fund for the growth and development related to environment and environmental issues. This concept was inceptions to promote industries those are doing their manufacturing and services in environmental safety. India is developing country, and for the development, industrialization is pays important role.

Figure 4 shows the trend of manufacturing industry in contribution GDP of India from 1991 to 2018, we can see that after 1991 growth of manufacturing sector was increased, it was reached to maximum level in year 2005-2009, than it has moving down till 2018, cause of downfall is economics recession as per the economist .

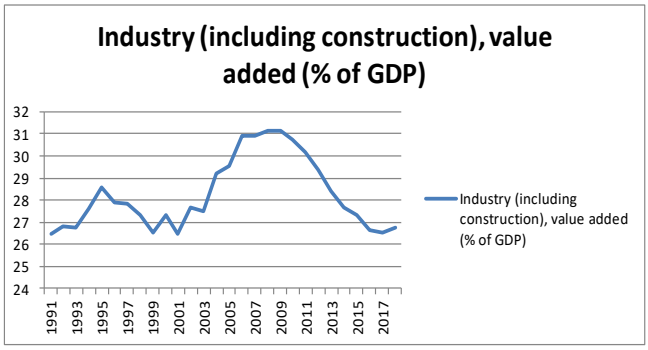
The above figure is indicates the value added by service sector in GDP. These data has been collected from data given by world bank from 1991 to 2018, it is clear from this graph that service sector contribution is GDP constantly grows over the year.

As a researcher, it is already discussed above that industrialization contribution is necessary for any economic development. But, it also bring some negative impact which is pollution. Pollution in any form is harmful for nature approx 1.14 tonnes per year (Panda 2009). Maximum carbon emission is from manufacturing industries, electricity, and heat production plants approx 40% to 60% respectively over the years.

Global warming, carbon emission are major agendas in WTO, UN, BRICS and other organization's conferences. Developing countries has forced to adopt measures to prevent carbon emission. In case of India, we have already taken major steps and prepared policies like established 100GW solar plant to 2025, Namami Gange project to control water pollution, approx investment of Rs 20000cr. There is major investment done with help of banking sector under Climate finance.

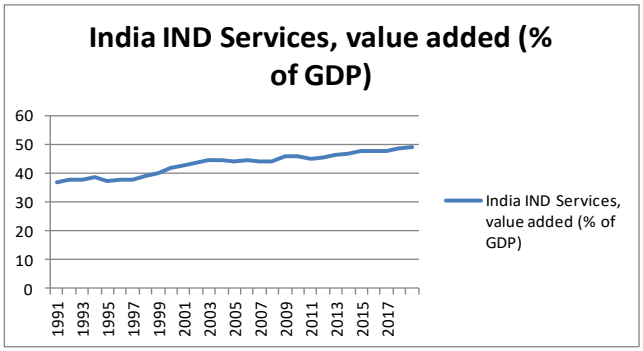
Climate finance initiatives

the integration of new elements within the financial sector stands as a significant driver of global economic growth and development, playing a crucial



Source: worldbank.org

Figure 3:



Source : Data from worldbank.org

Figure 4:

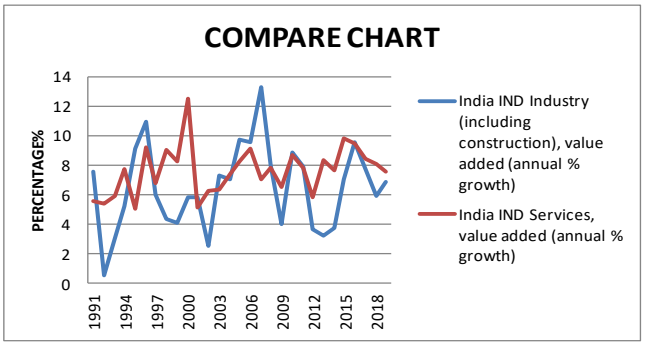


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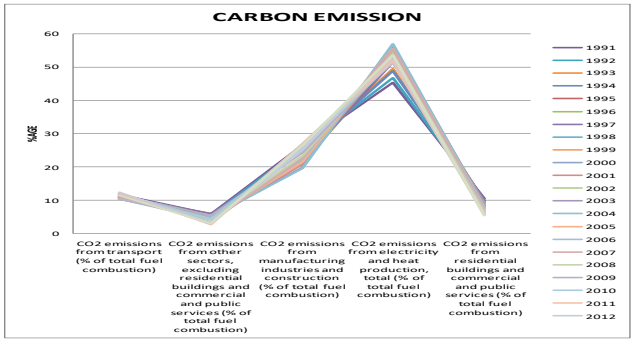
Figure 5:



Source : Data from worldbank.org

Figure 6:

role in poverty alleviation on a worldwide scale. It is anticipated that financial inclusion will continue to wield substantial influence on sustainability efforts, with projections extending until 2030. Recognizing the importance of this endeavor, the Reserve Bank of India has instituted the Financial Inclusion Advisory Committee (FIAC) to oversee and guide financial inclusion activities (Dayal, 2020). SIDBI has embarked on various schemes geared towards promoting environmentally friendly practices, including the implementation of solar panels, waste management systems, wind energy generation, and biomass power generation. Similarly, BNP Paribhas (India) has embraced initiatives pioneered by banks for climate finance, offering instruments such as Green Bonds, Climate Bonds, and Climate Equity Index, while also extending loans for infrastructure development in the field of climate development. Presently, commercial banks exercise heightened vigilance when processing financial transactions for industries, ensuring stringent adherence to environmental norms through meticulous documentation as outlined by Sudhalakshmi, K., & Chinnadorai, K. (2014).

Product / services offered by bank refers to climate finance

- green Saving Account: Its refers to donation by bank for the environmental friendly strategies. More saving more will be the donation by the bank.
- Green Mortgages: This is refers to incentives to borrowers in form of low interest rate or disburse him more amount of loan is client doing business related to environment.
- Green Finance : Bank offers loan for Solar panel setup, Wind energy setup, biomass plant setup.
- Green Cards : These are biodegradable in nature, which is cost friendly and non hazardous in nature.
- Online payment : We all know increase in online banking after November 2016, impact of demonetization. Different application like BHIM, Google Pay etc.

- Kiosk : Telephone sector, banking sector etc are using this for payment and receiving of bills.

State bank of india

hDFC Bank will conduct credit assessment and due diligence for projects and assets in alignment with its established procedural norms. Projects falling under the categories outlined in this Framework will undergo the bank's standard due diligence process, subject to approval by the relevant authority, before being considered for allocation under Green/Social/ Sustainable Project portfolios. The ESG Working Group, as defined below, will conduct an initial evaluation of projects against the criteria specified in the framework. Projects meeting the stipulated criteria will be proposed for allocation under Sustainable Finance and Transformation (SFT).

Punjab national bank

punjab National Bank (PNB) has taken several initiatives towards climate finance, demonstrating its commitment to sustainability and environmental stewardship. Some key initiatives undertaken by PNB in this regard include:

Green Banking: PNB has implemented green banking practices aimed at promoting environmental sustainability in its operations. This includes initiatives such as paperless banking, energy-efficient measures in branches and offices, and waste reduction and recycling programs.

Renewable Energy Financing: PNB provides financial support for renewable energy projects, including solar, wind, hydro, and biomass energy. By offering loans and financing options for renewable energy infrastructure, PNB contributes to the transition to a low-carbon economy.

Green Bonds: PNB has shown interest in issuing green bonds to raise funds for environmentally sustainable projects. These bonds are specifically designated for financing initiatives that have positive environmental impacts, such as renewable energy development, energy efficiency improvements, and sustainable infrastructure projects.

Climate Smart Agriculture: PNB supports climate-smart agricultural practices through financing programs aimed at promoting sustainable farming techniques, water conservation measures, and agroforestry initiatives. By providing financial assistance to farmers for adopting climate-resilient agricultural practices, PNB contributes to enhancing agricultural productivity while minimizing environmental impacts.

Sustainable Infrastructure Projects: PNB offers financing for sustainable infrastructure projects that promote environmental sustainability and climate resilience. These projects may include investments in green buildings, public transportation systems, and sustainable water and waste management infrastructure.

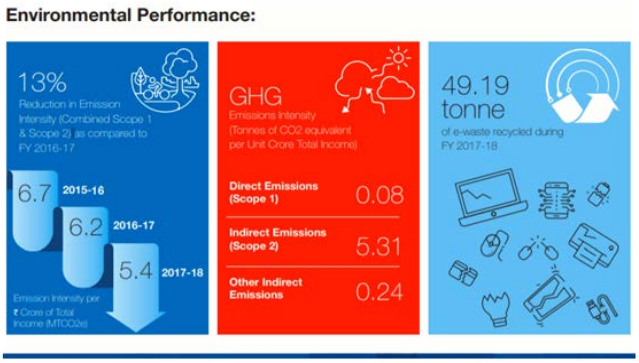
Awareness and Capacity Building: PNB engages in awareness-raising activities and capacity-building programs to educate stakeholders about climate change, environmental sustainability, and the importance of climate finance. By organizing workshops, seminars, and outreach programs, PNB aims to build awareness and foster a better understanding of climate-related issues among its staff, customers, and communities.

Bank of baroda

bank of Baroda in its CSR program towards environment support programmers/ projects those are related to protection and conservation of environment. It also encourages the use of biodegradable product by funding them to setup such kinds of infrastructure. Company motivate the stakeholder to reduce caron foot prints.

Icici bank ltd

between 2006 and 2011, the bank collaborated with the Indian Army to sponsor 25 initiatives aimed at resource conservation and biodiversity preservation. These endeavors encompassed various projects such as biogas plants, energy generation initiatives, solid waste management programs, and water conservation efforts. Additionally, in conjunction with a non-governmental organization (NGO), the bank facilitated the establishment of a solar plant in Maharashtra, spanning across seven villages in the tehsil, which significantly improved the lives of 190 households. Furthermore, the bank's proactive measures resulted in the preservation of 13,000 trees within a span of two years and a commendable 33% reduction in paper consumption



Source: HDFC Bank Sustainability Report

Figure 7:

within its operations. As part of its commitment to environmental sustainability, the bank allocated financial resources amounting to Rs 70 lakh for the plantation of 170,000 trees in Maharashtra and Chhattisgarh.

Hdfc bank ltd

HDFC Bank will conduct credit assessment and due diligence for projects and assets in alignment with its established procedural norms. Projects falling under the categories outlined in this Framework will undergo the bank's standard due diligence process, subject to approval by the relevant authority, before being considered for allocation under Green/Social/ Sustainable Project portfolios. The ESG Working Group, as defined below, will conduct an initial evaluation of projects against the criteria specified in the framework. Projects meeting the stipulated criteria will be proposed for allocation under Sustainable Finance and Transformation (SFT).

Axis bank ltd

axis Bank was included in the FTSE4Good Emerging Index in 2018, mirroring similar recognitions received by other public and private sector banks, demonstrating its commitment to addressing environmental concerns and reducing carbon emissions through digitalization initiatives. As part of this effort, the bank subjected 16 proposals, totaling over Rs 100 crore, to rigorous evaluation based on environmental and social parameters through its 'Climate Lending Policy & Procedures.' Notably, the bank's credit outstanding for 'Climate sectors' amounted to Rs 37.63 crore. Axis Bank further distinguished itself by launching India's inaugural certified 'Green Bonds' worth US$ 500 million in the international market, earmarked for financing or refinancing environment-friendly projects outlined in the Bank's 'Green Bond Framework.' Additionally, the bank achieved a remarkable 10.45% reduction in its carbon footprint with the active involvement of its employees. To bolster its environmental efforts, the bank installed a 2 MW solar energy capacity to power its own operations. Other notable achievements include realizing energy savings of 9,542 MWH through efficiency and retrofit measures, a 4.38% reduction in overall office-paper usage, the installation of water-saving faucet aerators at Axis House and NPCI, and the recycling of 125 tonnes of dry waste. Moreover, Axis Bank also implemented an organic waste composter at Axis House, further underscoring its commitment to sustainability and environmental stewardship.

CONCLUSION

This study examines the initiatives undertaken by both public and private banks in terms of financial sustainability. It asserts the crucial role of development in sustaining a country's economic conditions, traditionally measured by indicators such as GDP. The contribution of the industry and service sectors to the Indian economy had been balanced until recent years, when industrial performance declined, partly due to evolving policies. This decline is notable considering the correlation between industrial growth and carbon emissions. Notably, bank finance serves as a vital support mechanism for industries, and governmental monetary and industrial policies often hinge on the financial schemes offered by the banking sector. In this research, three public sector and three private sector banking schemes related to environmental or climate finance were scrutinized. The findings suggest that post the Paris Agreement on climate development, the banking sector has shifted towards promoting renewable energy sources. Presently, banks are actively supporting industries engaged in manufacturing and services that promote eco-friendly products. Moreover, the banking sector has implemented various policies internally to mitigate

carbon emissions, thereby achieving a dual benefit: contributing to environmental preservation while simultaneously reducing operational costs.

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