National Journal of Commerce and Management (NJCM)
Peer-Reviewed/Refereed Journal | ISSN 2394-6342 (O)
Volume 12, Issue 01, January-June 2025
http://njcm.pratibha-spandan.org

SYNERGIZING SUSTAINABILITY: WITHIN AND BEYOND: A COMPREHENSIVE ANALYSIS OF ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) FACTORS AT DOMESTIC SYSTEMICALLY IMPORTANT BANKS IN INDIA.

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ABSTRACT

Sustainability is a holistic approach that encompasses environmental, social, and economic dimensions while considering the impacts of today's actions and decisions. The United Nations' sustainability parameters are embodied in 17 Sustainable Development Goals (SDGS), adopted in 2015. "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" In the domestic economy, D-SIBs, due to their interconnections with the financial system, as well as their size, and complexity, are banks regarded as 'Too Big to Fail' (TBTF).

The study comprehensively evaluates environmental, social, and governance (ESG) factors influencing the operations of Indian Domestic Systemically Important Banks (D-SIBS), namely State Bank of India (SBI), ICICI Bank, and HDFC Bank. The purpose of analysis is to offer insights into the organisation's commitment to sustainable practices and their impact on the performance of the organisation, its stakeholders, and the wider community. Very few studies have highlighted the ESG dimensions and their association with D-SIBS, profitability, and bank performance. The study offers insights into forming an empirical understanding of these dimensions and their relationship with bank performance and profitability. Further, the study highlights the need to understand ESG dimensions.

The study begins by defining the concepts of sustainability and ESG dimensions within and beyond the organisation. It then outlines the relationship between ESG dimensions and sustainability parameters identified in the literature. This study's key findings indicate that sustainability improves resource availability, while ESG risks can negatively impact assets, financial performance, earnings, and a bank's reputation. National policies influence these factors, including conflicts, trade wars, technological advancements, polarisation, structural challenges, and institutional constraints. Additionally, urgent solutions are needed to address environmental issues ranging from extreme weather to pollution. India's dedication to its "Nationally Determined Contributions" (NDC) within the Paris Agreement highlights the significance of achieving sustainable development goals. By examining these critical elements, this research paper advocates for a deeper understanding of how responsible banking can induce significant change and yield enduring benefits for society, offering a hopeful vision for the future.

***Keywords**: BRSR, ESG, GRI Standards, IFRS, Sustainability, TCFD.*

INTRODUCTION

An international crisis that transcends national boundaries is climate change. International involvement and coordinated solutions at all levels are needed to address this issue. Since the middle of the 2010s, sustainability has been a top priority for local and international organisations and governing authorities. The Paris Climate Protection Agreement stipulates that 195 countries and territories transform their global economy in a climate-friendly manner, marking a significant turning point in international climate policy. The historic Paris Agreement was adopted in Paris on 12 December 2015 during the UN Climate Change Conference (COP21), and became an internationally enforceable climate change pact. It seeks to limit global warming to 1.5°Celsius above the pre-industrial level and below 2°Celsius.

India has made a substantial commitment to accomplishing the objectives of the Paris Agreement with its ambitious *"Nationally Determined Contributions" (NDC*). All primary key economic sectors are supported by low-carbon and environmentally sustainable efforts. India has made significant progress with its current NDC toward achieving '*net-zero*' emissions by 2070. In August 2022, India added the twin targets below to its updated NDC.

- To reduce its GDP Emissions Intensity by 45 % by 2030 compared to 2005.
- To attain around 50 % of installed electricity capacity from non-fossil fuel-based energy resources by 2030, with the help of technological transfer and inexpensive international funding from the Green Climate Fund (GCF).

ESG criteria and investing have been given much attention in recent years, partly due to three or more problems. *Firstly*, ESG investing may, in some circumstances, enhance risk management and yield returns comparable to conventional financial investments, according to current research from academic and business sectors. The intricacy of evaluating ESG performance is increasingly recognised, considering recent studies. *Secondly*, there is a greater chance that societal values will significantly impact consumer and investor choices and company performance due to growing public awareness of risks posed by climate change, profits of internationally acknowledged standards for moral business conduct, and the need for diversity on boards and in the workplace. *Thirdly*, financial institutions and companies are shifting away from short-term viewpoints of returns and risks to better reflect longer-term sustainability in investment performance. In this way, some investors aim to improve long-term returns' sustainability, while others want to include more formalized alignment with societal values. In any event, there is mounting evidence that to maximise profitability and long-term returns while lowering the likelihood of disputes that undermine the trust of stakeholders, the sustainability of finance must consider more significant external influences.

Sustainability report disclosures adhere to the Global Reporting Initiative's (GRI) global sustainability reporting guidelines—any organisation, whether big or small, public or private, may comprehend these principles. Standards are essential to many stakeholders, in addition to businesses. Global frameworks and standards, such as the Sustainability Accounting Standards Board (SASB), the United Nations Sustainable Development Goals (UN SDGS), Task Force on Climate-related Financial Disclosures (TCFD) recommendations, and the Integrated Reporting Framework (IFRS), serve as their guidelines. Our dedication to responsible business practices is exemplified by the Business Responsibility and Sustainability Report (BRSR), part of the organisation's yearly reports and closely connected with the nine National Guidelines on Responsible Business Conduct (NGRBC) principles. NGRBC principles exemplify our dedication to ethical business practices.

REVIEW OF LITERATURE

(Bolton, Després, da Silva, Samama, & Svartzman, 2020) Study looks at different approaches to addressing the increased risks while adhering to the financial stability mandates of central banks. Integrating climate-related risk analysis into financial stability monitoring is stimulating due to the high unpredictability of a dynamic, complex, social, and constantly evolving physical and economic phenomenon. Current climate-economic models and conventional, backwards-looking risk assessments fail to predict climate-related dangers adequately. ***"Green Swan"* risks: "*potentially extremely financially disruptive events that could be behind the next systemic financial crisis*."** To prevent such a situation, central banks should work to enhance their comprehension of climate-related risks by creating scenario-based analysis that looks forward. However, central banks cannot stop climate change on their own. Many stakeholders, including governments, civil society, the international community, and the commercial sector, must coordinate their efforts to address this intricate collective action issue. Thus, central banks are more responsible for coordinating efforts to mitigate climate change.

(R & Patalano, 2020) The paper offers a summary of ideas, evaluations, and quantitative analysis to highlight the advancements and difficulties in the field of ESG investment today. It draws attention to the vast range of measures and approaches. Although legitimate, these methods result in various ESG investment strategies that,

when integrated, form an industry consensus on the performance of high-ESG portfolios, which remains somewhat unclear.

(Financial Stability Board (FSB)-TCFD, 2021) The Task Force's suggestions are organised according to four main themes fundamental to an organisation's functions: *risk management, governance, strategy, and metrics and targets*. Key climate-related financial disclosures supplement these four primary guidelines, also called recommended disclosures, that provide insights for investors and others about how reporting companies evaluate climate-related matters.

(Ghosh, Kundu, & Dilip, Green Swans and Their Economic Impact on Indian Coastal States, 2021) The study examined how natural disasters in coastal Indian states affect output growth, agricultural productivity, inflation, tourism, fiscal factors, and borrowing costs. Many of these negative consequences often continue into later years. Because of their long history of dealing with extreme natural disasters, the eastern coastal states have shown a more substantial potential for learning and adapting. Improving disaster management capacities, encouraging sustainable initiatives, carrying out scenario analysis for efficient policy preparation, and supporting green finance to increase the resilience of individuals directly impacted.

(OECD, 2021) The report emphasises that "ESG investing" is gaining popularity, as investors seek long-term value that promotes sustainability and tackles climate-related goals. The article "*ESG Investing and Climate Transition"* emphasises significant findings from the latest OECD study on ESG ratings and investment practices. It proposes legislative changes to enhance ESG frameworks, foster global consistency and comparability, and align environmental metrics with the low-carbon transition. This paper supports the G20 Sustainable Finance Working Group and the broader collection of OECD projects focused on climate transition and sustainable finance.

(Schuller & Kosonen, 2022) According to the report, *Green Asset Ratio (GAR)* is expected to emerge as the primary measure of ESG performance. At the same time, *Banking Book Taxonomy Alignment Ratio (BTAR)* will provide investors with more detailed information about banks' adherence to taxonomy standards. By introducing a distinct BTAR alongside GAR disclosures, the *European Banking Authority (EBA*) aims to enable banks to extend taxonomy eligibility and alignment to smaller corporate exposures outside the Non-Financial Reporting Directive (NFRD) scope. However, given the challenges smaller businesses may face in providing banks with information about their taxonomy-eligible activities and alignment, data availability will continue to be a significant obstacle for banks in meeting the BTAR disclosure obligations.

(European Banking Authority, 2023) This paper discusses the significance of social and environmental threats within a prudential framework that governs credit institutions and investment firms. It recommends strengthening the Pillar One framework to better account for these risks and lays the groundwork for future mandates anticipated from the Capital Requirements Regulation (CRR3).

(Khanna & Jaspal, 2024) The report thoroughly explores the concepts of Transition Finance, Financing Transition, and Green Finance. *"Green finance"* refers to funding technologies that produce (near) zero emissions in alignment with the Paris Agreement. This includes investments in utility-scale or rooftop solar and wind energy projects. Conversely, "*Transition finance"* encourages efforts to minimise emissions in hard-to-abate sectors or technologies crucial in facilitating reductions in other areas. While these activities often do not meet the criteria for being classified as "green," they are essential due to the unavailability of suitable green alternatives. Unlike green finance, transition finance directs capital towards companies and initiatives that may not yet be considered "green" but are actively working towards becoming more sustainable or lowering their

emissions, thereby reducing their susceptibility to transition risks. This approach emphasises inclusivity and environmental integrity to prevent instances of greenwashing.

(World Economic Forum, 2025) Global Risks Perception Survey for 2024 to 2025 (GRPS) findings, which gather opinions from more than 900 experts globally, are presented in the Global Risks Report 2025. The report examines global risks across three distinct timeframes to assist decision-makers in balancing immediate crises with longer-term objectives. It investigates current or immediate-term risks projected for 2025, short- to medium-term risks anticipated through 2027, and long-term risks extending to 2035. Additionally, the report considers survey findings and the various implications, offering six comprehensive analyses of selected risk themes.

OBJECTIVE

- the objective is to determine the ESG parameters and assess how they influence the performance and profitability of D-SIB's banks.

HYPOTHESIS

- GHG emissions have no significant impact on the profitability of banks.
- The amount spent on Corporate Social Responsibility (CSR) does not significantly impact banks' profitability.
- The number of board meetings has no significant impact on banks' profitability.

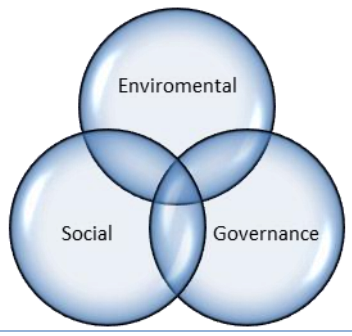
METHODOLOGY OF STUDY

This exploratory study employs secondary data covering the period from 2021-22 to 2023-24. The data is collected from annual reports of respective banks. Three banks were selected for this study based on the Reserve Bank of India's (RBI) classification. The Reserve Bank Designated State Bank of India, ICICI Bank Ltd., and HDFC Bank Ltd. as D-SIBS on 31 August 2015, 25 August 2016, and 4 September 2017, respectively. In the 2024 list, ICICI Bank, HDFC Bank, and SBI are still recognised as D-SIBS. These institutions are categorised as D-SIBS and are commonly called *"Too Big to Fail" (TBTF)*. The Extra Common Equity Tier-1 requirement, which is set at 0.20% for ICICI Bank, 0.80% for SBI, and 0.40% for HDFC Bank, must be maintained by them as a percentage of Risk Weighted Assets (RWAS). We used the Arithmetic Mean, Variance, and t-test: Two-Sample Assuming Unequal Variances for data analysis.

SUSTAINABILITY: ENVIRONMENTAL, SOCIAL, OR GOVERNANCE DIMENSIONS

Sustainability risks, often known as ESG hazards, are a new kind of risk that has appeared since the financial sector embraced the concept of sustainability. These concentrate on the possible impact that an organisation's stakeholders, such as clients, outsourced providers, staff, or the environment, may have and the potential influence of the organisation's operations on these stakeholders and the environment. Assets, finances, earnings, and a bank's reputation are all adversely impacted by ESG concerns. Tables below and Venn diagrams illustrate three dimensions of sustainability and their implications for interconnectedness.

ESG Dimensions	Parameters
E- Environmental	Greenhouse Gas (GHG) Emissions Scope 1, 2, and 3 (tco2e)
S- Social, i.e. Social and Relationship Capital	Amount Spent on CSR Activities
G- Governance	Number of Board Meetings



EVOLVING ESG-FOCUSED BANKING SECTOR IN INDIA

The evolving ESG integration landscape of the banking industry calls for a comprehensive approach incorporating environmental, governance, and social considerations into banking operations and investment decisions and ESG-aligned decision-making for internal operational practices, including external financing activities, to promote sustainable and responsible financial practices. Credit diligence has included evaluating social and environmental aspects, especially when project finance exceeds a certain threshold.

According to the ***Collevecchio Declaration,*** banks and other financial institutions can and should contribute to advancing social and environmental sustainability. This statement urges financial institutions to adopt six key tenets: *governance, accountability, transparency, sustainable markets, 'do not harm' responsibility, and sustainability*. This reflects civil society's expectations regarding the financial services sector's responsibilities to promote sustainability.

E- ENVIRONMENTAL DIMENSION

Businesses and organisations developing a GHG emissions inventory can use the criteria and recommendations provided by the *World Resources Institute's GHG Protocol* Corporate Standard. Kyoto Protocol covers six greenhouse gases: *perfluorocarbons (PFCS), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), hydrofluorocarbons (HFCS), and carbon dioxide (CO2),* which deal with accounting and reporting of these gases.

Three "scopes"—scopes 1, 2, and 3- are established for reporting purposes and GHG accounting to improve transparency, help differentiate between indirect and direct emission sources, and provide a framework for different organisational types, climate policies, and corporate objectives.

SCOPE 1: DIRECT GHG EMISSIONS

Direct greenhouse gas emissions arise from sources the company owns or manages, including emissions from combustion in owned or controlled boilers, furnaces, and vehicles and from chemical manufacturing in owned or controlled process equipment.

SCOPE 2: ELECTRICITY INDIRECT GHG EMISSIONS

Scope 2 includes greenhouse gas emissions from producing electricity that the company buys and uses. Electricity is characterised as acquired or otherwise introduced into the company's operational limits.

SCOPE 3: OTHER INDIRECT GHG EMISSIONS

Scope 3 is a voluntary reporting category that encompasses all other indirect emissions. Scope 3 emissions result from the company's actions but arise from sources the company does not own or manage. Examples of "scope" 3 activities include extracting and producing purchased materials, transporting procured fuels, and using sold products and services.

S-SOCIAL DIMENSION

India was among the first countries worldwide to implement CSR legislation and mandate that companies submit reports. These provisions are detailed in Section 135 of the Companies Act of 2013. The Ministry of Corporate Affairs report states that 29986.92 Crores was spent overall on CSR efforts in FY 2022–2023, with HDFC Bank ranking among the top banks. In India, the CSR concept has a long history. It has been imbibed as a way of life in the country for ages, underlining *Dharma and Seva*. It further emanates from Gandhian principles of trusteeship and *'giving back to society.'*

Business organisations may spend up to Rs 50 lakhs or 2% of their CSR expenditure budget, whichever is greater, in conducting an impact assessment of their CSR spending. Section 135 requires the Board to establish a Corporate Social Responsibility Committee for firms with a *net profit of at least Rs. 5 crores, a net worth of at least Rs. 500 crores, or turnover at least Rs. 1,000 crores in a previous financial year*. Subsection 9, which states that a firm is exempt from forming a CSR Committee if it must spend less than ~50 lakhs, has been introduced to Section 135 to lessen the compliance burden on companies. D-SIB actively participates in CSR

activities, including *education, health, safe drinking water, sanitation, environmental sustainability, solar energy, and women and child development*.

G- GOVERNANCE DIMENSION

Knowing that a sound governance structure plays a key role in adapting to a changing environment and minimising the overall impact of risk in business is essential. The present study finds that ESG parameters significantly impact domestically systemically important banks' performance and profitability. It explores what, why, and how these changes occurred. D-SIBS in India have begun disclosing information related to ESG challenges. Every department and division inside a bank, as well as the different components of the three lines of Defence model, such as cost and profit centres, can be impacted by ESG risks.

A healthy corporate governance culture is essential in the banking sector because maintaining public trust is still crucial. The board of directors is the fundamental pivot supporting corporate governance and management systems in this respect. To lower failure risks, bank regulation has concentrated chiefly on enforcing rules about capital structure, liquidity, and resolution procedures in the case of failure. Banks' failures during the financial crisis resulted from poor corporate governance and a lack of capital and liquidity.

SEBI, along with the Pension Fund Regulatory and Development Authority (PFRDA) and Insurance Regulatory and Development Authority of India (IRDAI), released guidelines for the stewardship code effective 1 April 2020. Stewardship obligations include monitoring and actively communicating with investee companies on various subjects, including strategy, capital structure, ESG opportunities or risks, corporate governance (including board structure, compensation, etc.), and more.

Institutional investors can actively fulfil their stewardship obligations by developing and publicly sharing a comprehensive policy, revising it frequently, and implementing a transparent structure for handling conflicts of interest. Continuous monitoring of their investee companies and a defined policy for intervention when necessary are essential. Collaboration with other investors is also encouraged to safeguard the interests of the ultimate investors. Additionally, they should implement a voting policy, disclose their voting activities, and periodically report on their stewardship efforts.

DATA ANALYSIS AND INTERPRETATION

Data has been gathered and tabulated from Sustainability Reports, ESG reports, and D-SIBS' Annual Reports about chosen parameters: GHG emissions, the amount spent on CSR, and the frequency of board meetings held between 2022 and 2024 to evaluate the hypothesis developed in this study. All three parameters' Mean values were determined (Tables 1, 2, 3, and 4) and then put through a and t-test: Two-Sample Assuming Unequal Variances with a significance level 0.05.

Table 1: Greenhouse Gas (GHG) Emissions by Scope 1, Scope 2, and Scope 3

Parameters	2021-22	2022-23	2023-24
State Bank of India	1285232	1006303	811410
HDFC Bank Ltd.	315241	385265	648984
ICICI Bank Ltd.	142000	168000	303250
Total Value	1742473	1559568	1763644
Mean Value	580824.33	519856.00	587881.33

(Data Source: Annual, ESG, Sustainability, and BRSR reports of banks for the years 2022, 2023, and 2024

Table 2: Net Profit (in crores)

Banks	2021-22	2022-23	2023-24
State Bank of India	31676	50232	61077
HDFC Bank Ltd.	36961	44109	60812
ICICI Bank Ltd.	23339	31896	40888
Total Value	91976	126237	162777
Mean Value	30658.67	42079.00	54259.00

(Data Source: Annual, ESG, Sustainability, and BRSR reports of banks for the years 2022, 2023, and 2024)

Table 3- Amount Spent on CSR Activities (in crores)

Banks	2021-22	2022-23	2023-24
State Bank of India	204.10	316.76	503.32
HDFC Bank Ltd.	736.01	803.15	945.31
ICICI Bank Ltd.	267	463	519
Total Value	1207.11	1582.91	1967.63
Mean Value	402.37	527.64	655.88

(Data Source: Annual, ESG, Sustainability, and BRSR reports of banks for the years 2022, 2023, and 2024)

Table 4- Number of Board Meetings

Banks	2021-22	2022-23	2023-24
State Bank of India	13	15	15
HDFC Bank Ltd.	14	15	14
ICICI Bank Ltd.	10	9	10
Total Value	37	39	39
Mean Value	12.33	13.00	13.00

(Data Source: Annual, ESG, Sustainability, and BRSR reports of banks for the years 2022, 2023, and 2024)

Table 5: Mean Values of ESG Parameters of D-SIB'S

Parameters	Greenhouse Gas (GHG) (in tco2e)	Net Profit (in crores)	Amount Spent on CSR Activities (in crores)	Number of Board Meetings
2021-22	580824.33	30658.67	402.37	12.33
2022-23	519856.00	42079.00	527.64	13.00
2023-24	587881.33	54259.00	655.88	13.00

(Data Source: Annual, ESG, Sustainability, and BRSR reports of banks for the years 2022, 2023, and 2024)

Table 6: T-Test: Two-Sample Assuming Unequal Variances

	Net Profit after Tax (in crores)	Greenhouse Gas (GHG) (in tco2e)
Mean	42332.22333	562853.8867
Variance	139291985.6	1399064006
Observations	3	3
Hypothesised Mean Difference	0	
D.f.	2	
t Stat	-22.98640279	
P(T<=t) one-tail	0.00094362	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.00188724	
t Critical two-tail	4.30265273	

INTERPRETATION

Table 6 illustrates the outcome of the test performed to examine Hypothesis (i). The findings indicate that the p-value is **0.00094362**, which is below 0.05, leading to the rejection of the null hypothesis. This suggests that GHG emissions have a significant effect on banks' profitability.

Table 7: T-Test: Two-Sample Assuming Unequal Variances

	Net Profit after Tax (in crores)	Amount Spent on CSR Activities (in crores)
Mean	42332.22333	528.63
Variance	139291985.6	16067.5651
Observations	3	3
Hypothesised Mean Difference	0	
D.f.	2	
t Stat	6.134598303	
P(T<=t) one-tail	0.012778957	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.025557914	
t Critical two-tail	4.30265273	

INTERPRETATION

Table 7 illustrates the test results performed to evaluate Hypothesis (ii). The test outcomes indicate that the value of ***0.012778957*** is below 0.05, leading to the rejection of the null hypothesis. This suggests that the amount spent on CSR during a year significantly impacts banks' profitability.

Table 8: T-Test: Two-Sample Assuming Unequal Variances

	Net Profit after Tax (in crores)	Number of Board Meetings
Mean	42332.22333	12.77666667
Variance	139291985.6	0.149633333
Observations	3	3
Hypothesised Mean Difference	0	
D.f.	2	
t Stat	6.210656976	
P(T<=t) one-tail	0.012479427	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.024958854	
t Critical two-tail	4.30265273	

INTERPRETATION

Table 8 illustrates the test results performed to evaluate Hypothesis (iii). The test outcomes indicate that the value of **0.012479427** is below 0.05, leading to the rejection of the null hypothesis. This suggests that the frequency of annual board meetings significantly affects bank profitability.

CONCLUSION

According to a study, a strong governance framework is essential for efficient risk management. Enhancing the roles and responsibilities of current units is vital, even though creating an active coordinating unit for ESG risks can be advantageous. Credit and trade business divisions are among the profit centres in the *first line of defence* impacted by ESG concerns. Product creation, pricing, and sales processes must consider ESG risk

considerations. This analysis should focus on how ESG risk factors affect financial and reputational issues. ESG risk management needs to be included in all relevant procedures. *The lending process, for example, needs to be based on precise decision-making standards and control mechanisms: ESG considerations need to be reviewed and evaluated during the loan process, much like reputational concerns are during the KYC (know-your-customer) procedure*. It implies that surveys of all corporate clients must be conducted regularly and used initially when making loan decisions.

Compliance, Business Continuity Management (BCM), and the Functions of Risk Control are all part of *the second line of defence*. Beginning with an updated risk inventory, risk control must create procedures, instruments, and methods for handling ESG risks and incorporate outcomes in risk reporting. Compliance should evaluate whether an organisation adheres to ESG criteria that are either voluntarily implemented or legally mandated. Ultimately, BCM should see ESG risks as sources of business challenges and ensure continuity. As the third line of defence, internal audit ensures that all relevant protocols are continuously followed and ESG risks are appropriately addressed. The company plan and the ESG risk strategy must be tightly matched, and the latter must be revised regularly. This research has substantial implications for future sustainable banking and the global financial system, making it a compelling read for academics, researchers, and professionals in finance and sustainability fields.

The key findings of this study suggest that sustainability improves resource availability, while ESG risks can negatively impact assets, financial performance, earnings, and a bank's reputation. National policies influence these factors, including conflicts, trade wars, technological advancements, polarisation, structural challenges, and institutional constraints. Additionally, urgent solutions are needed to address environmental issues ranging from extreme weather to pollution. India's commitment to its NDC under the Paris Agreement demonstrates the significance of achieving sustainable development goals. By examining these critical elements, this research paper advocates for a deeper understanding of how responsible banking can induce significant change and yield enduring benefits for society, offering a hopeful vision for the future.

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