Green Banking: A New Strategic Initiative for Growth and Sustainable Development

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***Abstract*: Sustainable development and preservation of atmosphere are currently recognized globally as dominant imperatives to safeguard our planet from the ravages inflicted on that by humans. World initiatives are taken to encounter the negative effects of development like warming and global climate change. A typical thread running across of these initiatives is that they are specializing in reducing the demand for fossil fuels by implementing the 3R's viz. Reduce, recycle and Recycle. Banks and money establishments will play a significant and decisive role in these world efforts to form our planet a more robust place to measure in. As suppliers of finance, banks will make sure that businesses adopt environment-friendly practices. Incentives by method of providing cheaper funds for adopting inexperienced technologies can have an extended term useful impact on the atmosphere. As major implementer of technology, banks themselves will adopt inexperienced practices and thereby lead the method during this world initiative. In experienced Banking is relatively a replacement development within the money world. It's a kind of banking taking under consideration the social and atmospherically impacts and its main motive is to safeguard and preserve environment. This paper attempts:**

- **To introduce the concepts & understanding of green banking**
- **To know the strategies & importance of green banking**
- **To know current scenario of green banking in India**
- **To know about the infrastructure of green banking**
- **To study the Strategic Initiative undertaken by Indian Banks (Public & Private) on Green Banking**

***Keywords*: Green Banking, Green Banking Infrastructure, Green Banking Strategies**

Introduction to Green Banking

Climate change is that the foremost knotty issue the world is facing. Across the planet there are unit continuous endeavors to measure and mitigate the prospect of natural process caused by act. Many countries the world over have created commitments necessary to mitigate natural process. India has committed to reduce the emission intensity of its gross domestic product (GDP) by 33 to 35 percent by 2030 against 2005 levels. As socially responsible company voters (SRCC), Indian banks have a big role and responsibility in supplementing government efforts towards substantial reduction in carbon emission. Although, banks area unit thought-about atmospherically friendly and do not impact on atmosphere greatly through their own internal operations, in terms of emission and pollution, the "external" impact on the atmosphere through their customers activities is substantial. Therefore, the banking sector can play degree communicator role between economic development and surrounding Sal protection, for promoting environmentally property and socially responsible investment, banking of this kind area unit usually termed as "**Green Banking**". In experienced Banking could also be a term touching on practices and tips that make banks property in economic, environment, and social dimensions. It aims to create banking processes and so the utilization of IT and physical infrastructure as economical and effective as potential, with zero or stripped impact on the atmosphere.

Objectives of Study

- To understand significance of Green Banking
- To understand importance of Green Banking Infrastructure
- To analyze strategic initiative taken by Indian banks to become Green Banks
- To analyze the growth and sustainability of Green Banks

<u>Literature review</u>

The literature review is a summary of previous research on a topic. The literature review contemplates scholarly articles, books, journals, research papers and other sources relevant to a particular area of research or interest. Within the review the researcher provides a description, summary and critical evaluation of each source, i.e. the strengths and weaknesses. The literature review may also identify gaps in the literature which leads to further research. The literature review provides the historical background for any particular research; identify problem statement, queries, theories, concepts and related research in the field; and shows how your research will extend to address these gaps.
In this study, total 5 reviews were collected, out of which two are reviews of International authors and three are of Indian authors. These reviews are mentioned below.

Review of Literature:

A report presented by **Alexander, Kern (2014)** has triggered a deeper reflection amongst financial policymakers and regulators concerning the relevance of systemic environmental risks to Banking sector stability. This report explored the evidence relating to the question of whether systemic environmental risks and Banking sector stability are linked. It examined how Basel III currently addresses systemic environmental risks. It also considered what other financial policy options are available outside of Basel III. This included an examination of the utility of certain other monetary policy measures and the use of innovative financial instruments – such as 'Green' asset-backed securities (ABS) – to enhance the flow of bank funds to environmentally sustainable economic activity. The report is based on research that involved interviews and written questionnaires for practitioners in the Banking industry, bank regulators from selected developed and emerging-market economies, officials from international organisations, and representatives from non-governmental organisations. On the basis of the analysis presented within the report, it can be stated that banking system and regulatory framework can undergo through lots of changes and improvements. Further bank supervisors faced lots of environmental risks.

Bai, Yunwen & Faure, Micheal & Liu, Jing (2014), in their research article "The role of China's Banking Sector in providing Green Finance", the authors have shed light on the policies of China's Green Banking system and analysis has been done to understand the practices of Chinese banks to make alignment between environmental principles and their financing activities. The role of Chinese banking industry in building a sustainable framework for banking and green finance has also been analysed in the paper. To get knowledge about the green financing in China and environmental preferences of China the authors have made efforts to work on a theoretical framework. At last, the purpose of the article also includes understanding the challenges and opportunities faced by Chinese banks in improving their financial performance.

The purpose of research study **"Green Banking: Nexus Bank's performance"**, conducted by **Hossain, Sharif & Kalince, Tanvir Ahmed (2014)**, was to find the impact of Green Banking on banks' performance using cross section data of 45 banks in the year 2012. For this study, six different variables namely; loans and advances (LOAN), deposits and other account (DEPO), paid-up capital (PAID), investments (INV), Green Banking (GB), and profit after tax (PAT) were considered. From analytical results, it was found that GB has a significant positive impact and INV has significant negative impact on banks' performance. The Granger F test resulted in VAR model indicated the bidirectional causalities between PAT and INV, between PAT and DEPO. Unidirectional causalities were found from LOAN, and PAID to PAT, from LOAN and DEPO to INV, and from LOAN to PAID. Thus it was concluded that Bangladesh banks should conduct Green Banking activities more to increase their profitability, which in turn, will create sustainable growth for them in the long run.

The research study **"Conceptual framework for carbon foot printing in the South African Banking Sector",** conducted by **Bimha, Alfred & Nhamo, Godwell (2013)**, embarked on conceptualising the efforts made my banks in South Africa to put phenomenal efforts to prevent climate change. The study revealed that how banks adopt such system that promotes Green banking and avoiding the carbon emissions. A conceptual carbon foot printing framework has been developed by using the activities like content analysis of the carbon footprint reports, sustainability reports and public literature on bank's activities. Two indexes, carbon disclosure performance index and carbon disclosure leadership index, were featured in the global 500 carbon disclosure project. These indexes were used to construct the carbon footprint benchmark case. The conceptualised benchmark model was used as a checklist to analyse the carbon footprint process models of South African banks. The findings of the study revealed that an internal carbon foot printing system is being improved among South African banks. The amount of carbon emission in their external systems like products, services, lending and investment portfolios were negligible. On the basis of these findings, it can be stated that the there is need of adopting the holistic approach by the national or international banks in order to measure the carbon emissions. Further the national, as well as international climate policies are also required to be taken into special consideration.

Annadurai, AR (2014), in their research study "Effectiveness of Green Banking Technology of thee Commercial Banks in India", highlighted the growth of Green Banking in Indian Banking sector. This paper also presented some options which banks can offer to their customers, as far as Green products and services are concerned and listed Green Banking initiatives by commercial banks in India. Lastly, the author concluded that Green Banking initiatives like Communication through Press, Bank environmental policy, Concession on energy savings, Solar ATMs, Green CDs are not familiar with Green initiatives by the bank as per the customers and the general public. The Government should formulate a Green Banking policy guidelines and financial incentives.

Ch, Sreesha (2014), in her research paper, identified Green Banking activities undertaken by the Banking sector in India. The aim of this paper was to study various models or channels which make the bank branches Green. Author has highlighted the regulatory measures taken by the RBI for promoting Green Banking. This study also gives consideration to the initiatives taken by Indian banks, both private and public, to ensure the environmental sustainability. For the purpose of gathering useful information, the banks like State Bank of India and Canara Bank has been selected. Meanwhile, from the private sector, ICICI and HDFC Bank were selected. The findings revealed that Indian banks are identified the importance of environmental protection and started taking various initiatives under its Green Banking activities. The findings also showed that public sector banks had taken more Green Banking initiatives as compared to private sector banks.

Reshmi, R & Johnson, B (2014), in their research paper, examined the buying behaviour of Green product among various income level groups. This study was attempted to understand consumers' Green purchasing intentions and compares the factors influencing the purchase decision of Green products and non-Green products. For this purpose, a sample survey was conducted on 90 respondents based in Calicut city. The respondents were divided into 3 categories, i.e., high income level group, middle-income level group and low-income level group. The primary data was collected with the help of an interview schedule. Results indicated that there is no significant difference between buying behaviours and income level and no significant difference between purchase decision and sector (government & private) employees. To the end, health was considered as the most important factor influencing Green products and cost as the most important factor influencing the purchase of non-Green products.

Challenges of Green Banking

Traditionally, banking sector's concern for environmentally degrading activities of shoppers is like busy bodied or meddling in their business affairs. However, currently it's being perceived that coping with atmosphere brings risks to their business. Because of strict environmental disciplines obligatory by the competent authorities across the countries, the industries would need to follow bound standards to run their business. Within the case of failure, it might cause closure of the industries, resulting in a chance of default to the bank. Through inexperienced Banking, banks will minimize the subsequent risks:

Credit Risk: Credit risk may also arise indirectly once banks lend to corporations whose businesses area unit adversely affected because of changes in environmental regulation.

Legal risk: Banks, like alternative business entities, face legal risk if they are doing not suits 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.

Reputation Risk: all told chance, because of growing awareness regarding atmosphere safety, banking establishments area unit a lot of vulnerable to lose their reputations if they're concerned in huge comes, that area unit viewed as socially and environmentally damaging. Name risks emerge from the finance of environmentally objectionable comes.

Sustainable development through green banking:

Sustainable development through green banking is concerned with the social and environmental impacts of banks investments and loans. To encourage sustainable development, banks need to encourage environment friendly investments. Banks have to give priority in terms of lending to those industries which have already turned green or are trying to go green and thereby help to restore the natural environment. The green banking is rewarding! It is not only beneficial for the banks and the economy but for the stakeholders of the banks. The green banking initiative is mutually beneficial to the banks, industries and the economy.
By creating awareness and imparting education green banking can help a lot in attaining sustainable development. Awareness among the people has to be created through proper communication. Identifying the target groups and means of communication would be the initial step. The whole system is divided into two subsystems: internal and external sub-system. For internal sub systems, to create awareness for this purpose, periodic environmental news on internet, clearing programmes, high level meetings, bank's newsletter, publication etc. will be initiated. And the target groups are the internal stakeholders. Websites, capacity building, road shows, event meetings, benchmarking, media etc. can be followed as effective means as far as the external subsystems are concerned. The external stakeholders (clients, subsidiaries and general public) are target groups.

Education can be imparted by the following means –

- E-learning Programs
- Internet Applications
- Participation in Conferences and Meetings
- Providing proper information Material
- Environmental Report
- Road shows

Green Banking Strategies

A. **Environmental Risk can be managed** through following means

- Engage with key stakeholders and build awareness of environmental problems and their impact on the economy, the atmosphere, and also the society.
- Conduct energy audits and review equipments purchases and disposal policies and practices.
- Set eco-friendly goals as the main aim is to reduce the carbon footprint along with timelines.
- Develop and implement a green policy that aims to realize higher utilization of systems whereas reducing fuel energy use and reducing their environmental impact.
- Periodically publish your environmental policy, action plans, and achievements.
- In case of environment-friendly projects such as projects employing solar power, hydro power, wind power equipment, manufacturers of fuel-efficient automobiles Banks may provide loans with concessions to corporates or individuals.
- Banks will involve themselves in carbon credit business, whereby they'll offer all the services within the space of fresh development mechanisms and carbon credit business.

▪ Banks can support projects ranging from community cleanups to national initiatives on climate change, water, air, biodiversity and more

B. **Innovative Environmental friendly** financial products such as

<u>Green mortgages</u>: Green mortgage also referred as an energy efficient mortgage (EEM) is a government sponsored mortgage that helps to control environmental footprint. Green mortgage allows borrowers to finance energy efficient improvement that reduces their monthly energy bill, and is available for all types of traditional homes, and commercial buildings which can be beneficial in many ways including, below market interest rate financing to upgrade traditional infrastructure by installing energy efficient features. Banks such as Citigroup Inc., Bank of America, JP Morgan Chase &Company of US and Thirty seven European banks such as ING, Barclays, BNP Paribas, Nordea Bank, Societe Generale are just a few of examples. They are offering special discounts on mortgages which are used to build commercial complex, buildings and traditional homes to be more environmental.

<u>Green loans</u>: Green Loan is a kind of loan which support individual to reduce carbon emission. This kind of loan actually allows borrower to spread the cost of borrowing over a period of 12-25 years. For the purpose of home remodeling, purchase and installation of solar panel, or green roofing, green loan can be used.

Apart from Green Mortgage and Green loan there are ***Green credit cards, Green savings accounts, Mobile Banking, Online banking, Remote deposit*** (Remote deposit is the digital scanning and processing of checks. Customer doesn't have to physically deliver each check to their bank to make a deposit. Remote deposit also allows banks to easily clear checks digitally).

C. Other Green Banking Measures

- Paperless Banking ,Green Building
- Install energy star appliances, freeze and tank less water heater.
- Sealing HVAC duct work
- Programmable thermostat should be installed
- Upgrade from CFL to LED light
- Install solar panel, along with residential storage batteries
- The building architecture should be planned in such a manner that day to day operation can be done in day light only.
- Bank's responsibility towards society- such as tree plantation camps, maintenance of parks, pollution check-up camps, etc.

<u>Greening Banking Infrastructure</u>

Going green is more than just a social incentive; it's the need of the hour. Infrastructure of the Bank (including physical and IT) and the services provided by the same has to be more ecofriendly which will reduce the carbon emission significantly.
Paper less transaction; use of Laptops, Desktop Computers, and Servers have to increase in today's environment, all banks are computerized. In the century of IT-enabled environment, banks should make use of IT resources in a very efficient manner. Some guidelines which can be followed by the banks in order to sustainable development are summed up as follows:

- Use of LED monitors in place of conventional computer monitors
- Use of green chargers which can detect whether a charger is connected to a notebook computer or any other device, and reduce the power consumption by 20-30%
- Green building with sufficient natural lighting and air
- Generate electricity for their own use by installing solar panel
- Waste recycling plants for recycle, their own waste.
- Green infrastructure: Self-service passbook printing machine, Kiosks, cash deposit machines and customer care center
- Solar powered UPS, GSL bulbs, rain water harvesting
- Solar powered ATMs etc.

<u>Green Banking process followed by different institution in the World:</u>

The Intergovernmental Panel on Climate Change's (IPCC's) fall 2018 report finds that to meet the goal of limiting global warming to no more than 1.5 degrees Celsius, investments in low-carbon energy technology and energy efficiency will need to increase by roughly a factor of five by 2050 compared with 2015 levels (**Green Bank Network- Green bank Around The Globe: 2018 year in review, 6th Annual Green bank congress, Nov 29, 2018, Editor- Roger Baneman**).

Initiative taken by different Banks all over the for sustainable development

***<u>Connecticut Green Bank</u>*:**

- In June 2018, Connecticut Bank announced a pilot program that made Commercial Property Assessed Clean Energy (C-PACE) financing available for new construction projects.

- New funding source for owners of electrical vehicles charging infrastructure
- Recipient of 2018 State Leadership In clean Energy Award for " Solar for All" initiative
- Use of solar energy and saving of fuel are their mission

Green Finance Organization (Japan):

- Invest in a small private sector hydroelectric power plant in Nishiawakua village
- It invests in a biogas project. This project will use pasture grass for fuel. It will avoid 1643 tonnes of carbon emission annually
- By the support of Ministry of the environment, Japan has been working on the promotion of the Green bonds

Green Investment Group (UK):

- Invested and arranged over 1.6 billion GBP into green projects
- They have launched new energy solutions and advisory activity
- GIG organized one of the world's longest and largest green power purchase agreement
- They have supported new ten green transaction
- GIG co-sponsored 650MW Markbygden ETT project- single site wind firm

NY Green Bank:

NYGB increases availability of capital for projects, deploying proven and commercially-viable technologies including: solar, wind, and other renewable energy generation technologies, energy efficiency measures, electricity load reduction, on-site generation and similar projects that support New York's clean energy objectives. NYGB works to realize these deployments through:

- Grasping private sector capital to support and enlarge clean energy financing markets;
- Continuous growing capital markets, reducing the need for government support; and
- Implementing faster and more extensive deployment of clean energy assets which contributes towards economic development, greater energy choices, reduced environmental impacts and more green energy advantages for every public dollar spent.

NYGB is a cost-effective and complementary addition to New York State's evolving portfolio of clean energy programs.

Green Banking in India

In todays' modern context majority of the Indian industry is concerned with the burning issue of controlling environmental impact of their business i.e. reducing pollution and carbon footprint. Though government has been trying to address the issue by framing environmental legislations and encouraging industry to follow environmental technologies and practices, public awareness and inability to derive competitive advantage by producing eco-friendly products is a major concern. India is the world's sixth largest and second fastest growing country in terms of producing green- house gases.

The major polluting industries in India are-
a. Metal industries
b. Paper & pulp Industry
c. Refinery
d. Fertilizers
e. Sugar
f. Textiles
g. Chemicals/Pharmaceuticals etc.

The Banks and financial institutions should invest in a project which takes care of environment. Invest and regulate polluting industries by lending green fund for the overall environmental improvement, the quality and Conversation of life, level of efficiency in using materials and energy, quality of services and Products. In this context, the role of banking sector as the major financing sources to the Industries has to take high importance.

Initiative taken by Indian Banks for sustainable development

State Bank of India (SBI):

SBI is the first Indian bank to venture into green initiatives by installing windmills for captive use. Various initiatives are taken by SBI in order to cut down on the Bank's carbon emission such as migrating to electric vehicles, installing solar panels on buildings and ATMs, and banning plastic in SBI office. SBI has announced installation of solar panels on250 buildings and 12000 ATMs within next two years. SBI also has plan on doing away with plastic such as bottles, folders and cutlery in the canteen and with the office premise to make SBI plastic free. The SBI group has taken the initiatives for the "**SBI Green Marathon**" in 15 cities across the country. Rainwater harvesting projects are also installed in number of bank building. In rural areas SBI installed solar lamps. As part of its green banking initiative SBI helped in installing 10 windmills with an aggregate capacity of 15 MW in Tamil Nadu, Maharashtra and Gujarat. SBI has planned to install an additional 20 MW capacity of windmills in Gujarat and touch 100 MW power generations through windmills within five years. Windmills are set up with a definite objective of reducing the dependence on thermal power. Near about 100 MW of power is used by SBI per year.

HSBC Group:

HSBC aspires to be a leader in financing, managing and shaping the transition to a low-carbon world. HSBC Bank has pledged to provide USD100 billion of sustainable financing and investment by 2025. They are working to reduce the environmental impact of the supply chains and to foster the sustainable growth of micro, small and medium-sized businesses. Also HSBC extended the programme for another three years (from 2017 to 2019) and provided a further $50 million of funding, bringing the total support over eight years to $150 million.

Commitment 1: Providing USD100 billion of financing and investments by 2025 to develop clean energy, lower-carbon technologies, and projects that contribute to the delivery of the Paris Climate agreement and the UN SDGs.

Commitment 2: Sourcing 100 per cent of our electricity from renewable sources by 2030, with an interim target of 90 per cent by 2025. This means sourcing 100 per cent renewable energy via direct investment or direct purchase agreements that in turn help the financing of new renewable energy projects.

Commitment 3: Adopting the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) report 2018. This will help us identify and disclose climate-related risks and opportunities across our businesses.

Bank of Baroda (BOB):

1. Bank has undertaken energy efficiency measures like up-gradation of AC, real time monitoring of temperature and pressure, energy efficient IT equipment selection, energy efficient CFL and LED lighting and solar powered UPS etc.

2. Bank requested to shareholders those having shares in physical form to register their e-mail ids for further communication such as to serve any document, notice and annual report.
Shareholder holding shares in Demat form are also requested to register their e-mail ids with respective depository for further communication purpose.

3. The Bank gives preferential treatment for eco-friendly green projects such as Wind Mills/Solar Power projects and earns carbon credits.

5. To create awareness with respect to environmental issues bank has undertaken debates, essay competitions, painting competitions etc. for bank staff, their children, and they promote various activities regarding environmental awareness to different school. Moreover bank also supports for clean environmental activities of few NGOs.

7. According to the guidelines of National Building Code 2005, Bank of Baroda lends money to real estate and promotes for harvesting of rain water, installing solar energy, using LED light in place of CFL lights.

8. The bank has implemented Lending Automation Processing System (LAPS) system for appraisal of Retail & SME loans, reducing the paper consumption.

9. As a part of green initiatives, Bank of Baroda has installed windows server virtualization, desktop virtualization (transformation to LED screen) and improves data centre operational efficiency, application up-gradation, Automatic Storage Management (ASM) & Real Application Clusters (RAC) Implementation, Bandwidth improvement, provision of backup link and use of new technology based on MPLS (Multi-Protocol Label Switching).

10. BOB is going to make its ATMs as Green ATMs.

11. BOB has installed kiosks, Passbook printing machine, Aadhaar updation centre, Money Deposit centre And customer feedback centre.

In India, all the public as well as private sectors Banks need to take extra care about the environmental aspects of their clients and products because-

- Future of product market is going to go through rigorous environmental scanning and due to that eco-friendly product will have better market.
- Production or manufacturing of pollution controls equipments will require more financial assistance from banks.

- Reserve Bank of India (RBI) may provide environmental guidelines for the banks.
- According to the announcement by the Government of India , use economic instruments for environmental control may include Banks and financial institutions in future.

Conclusion- As so much as green banking is concerned; Indian banks area unit so much behind their counterparts from developed countries. There has not been a lot of initiative in "green banking" by the banks and alternative money establishments in Asian country. It's time currently that Asian country ought to take some major steps to stick to environment-sensitive parameters, with the exception of incoming cash flow. Additionally to mitigating risks, Green banking release new markets and avenues for product differentiation. If Indian banks need to enter international markets, it's necessary that they acknowledge their environmental and social responsibilities. India's growth story and commitments to chop its carbon intensity by 20-25 p.c from 2005 levels by the year 2020 provides tremendous opportunities for Indian banks- from funding property, comes to providing innovative merchandise and services within the areas of Green banking. The survival of the banking system is reciprocally proportional to the extent of worldwide warming. Therefore, for sustaining growth and development, Indian banks ought to adopt Green banking as a business model with none any delay.

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