

Green Banking in India: A Study of Various Strategies Adopt by Banks for Sustainable Development

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Abstract: In this present scenario of globalization, as we pass through 21st century, one thing that we miss very badly is the depletion of greenery. As everybody in this society is becoming more and more concerned and worried about the natural environment, business organizations and corporations have started modifying their working in an attempt to increase greenery to the maximum possible. Green banking means combining operational improvements, technology and changing client habits in banking business. It means promoting environmental-friendly practices. This comes in many forms such as – using online banking instead of branch banking; paying bills online instead of mailing them; opening up CDs and money market accounts at online banks, instead of large multi-branch banks; or finding the local bank in the area that is taking the biggest steps to support local green initiatives. Main emphasis has been made on the concept and scope of green banking in India so as to make our environment human friendly and enrich our economic productivity. This study also covers the recent developments are made by Indian banks for sustainable development and challenges faced by banks in implementation. The research is based on the secondary data. Coming to the findings, there is utmost need to create awareness, implement and follow green banking as much as possible in today's business world of innovative technologies so as to make our environment human friendly and enrich the sustainability.

Key Words: Green banking, Sustainable Development, CD's, Green Mortgage, Green Loan

I. INTRODUCTION

Green Banking is a new phenomenon in the financial world. Banks as the financing agent of the economic and developmental activities have an important role in promoting overall sustainable development. Green banking is the term used by banks to make them much more responsible to the environment. The term green banking means developing inclusive banking strategies which will ensure sustainable economic development.

Green Banking entails banks to encourage environment friendly investments and give lending priority to those industries which have already turned green or are trying to go green and, thereby, help to restore the natural environment. Green banking means combining operational improvements, technology and changing client habits in banking business. It means promoting environmental-friendly practices. This comes in many forms such as –

using online banking instead of branch banking; paying bills online instead of mailing them; opening up CDs and money market accounts at online banks, instead of large multi-branch banks; or finding the local

bank in the area that is taking the biggest steps to support local green initiatives. Foreign banks are practicing green banking on a much serious note. The Indian banks are still taking baby steps into this form of banking. Still, many of them are keen to actively pursue this strategy.

For example, an investment in a factory that pollutes heavily (and passes on the costs to the society at large) will generally have a higher financial rate of return than a factory that invests in expensive pollution control technology, as a result showing a lower rate of return. How will banks assess the two and which one of the two will be considered first for lending, although everyone knows that the second case will clearly be a better investment option in the long run?

II. ENVIRONMENTAL SUSTAINABILITY

The concept of environmental sustainability started in 1969 with the establishment of the National Environmental Policy Act (NEPA, 1969) in the United States whose purpose is to promote the general welfare, to maintain productive harmony between man and nature and to fulfill the economic and social welfare of the present and future generations.

III. GREEN BANKING

Green Banking is like a normal bank, which considers all the social and environmental factors; it is also called as an ethical bank. Ethical banks have started with the aim of protecting the environment. These banks are like a normal bank which aims to protect the environment and it is controlled by same authorities as what a traditional bank do. There are many differences compared with normal banking, Green Banks give more weight to environmental factors, their aim is to provide good environmental and social business practice, they check all the factors before lending a loan, whether the project is environmental friendly and has any implications in the future, you will awarded a loan only when you follow all the environmental safety standards.

Defining green banking is relatively easy. Green Banking means promoting environmental – friendly practices and reducing your carbon footprint from your banking activities. This comes in many forms

1. Using online banking instead of branch banking.
2. Paying bills online instead of mailing them.
3. Opening up accounts at online banks, instead of large multi-branch banks
4. Finding the local bank in your area that is taking the biggest steps to support local green initiatives.

IV. GREEN BANKING PRODUCTS

Green Loans: means giving loans to a project or business that is considered environmentally sustainable.

Green Mortgages: refers to type of mortgage that provides you a money-saving discount or a bigger loan than normally permitted as a reward for making energy-efficient improvements or for buying a home that meets particular energy-efficiency standards.

Green Credit Cards: Be it in form of environmentally friendly rewards or using biodegradable credit card materials or promoting paperless banking, credit cards are going green.

Green Saving Accounts: In case of Green Saving Accounts, banks make donations on the basis of savings done by customer's. The more they save, the more the environment benefits in form of contributions or donations done by banks.

Mobile banking and online banking: These new age banking forms include less paperwork, less mail, and less travel to branch offices by bank customers, all of which has a positive impact on the environment.

V. THE EMERGING TREND OF "GREEN BANKING"

The term "Green Banking" is being heard more often today. According to Indian Banks Association (IBA, 2014) "Green Bank is like a normal bank, which considers all the social and environmental / ecological factors with an aim to protect the environment and conserve natural resources". It is also known as ethical bank or sustainable bank. Green banking can benefit the environment either by reducing the carbon footprint of consumers or banks. On-line banking is an example of an initiative of Green Banking.

Benefits of online banking include less paperwork, less mail and less driving to branch offices by bank customers, which all have a positive impact on the environment. Interestingly, online banking can also increase the efficiency and profitability of a bank. A bank can lower their own costs that result from paper overload and bulk mailing fees if more of their customers use online banking. Green banking also can reduce the need for expensive branch banks. Green banking is also gaining importance in recent times. Most of the banks are undergoing computerization, networking, and offering of online

banking to customers reduces the use of paper directly and indirectly resulting in pollution control.

Banks can also support eco-friendly groups, offer green lending and raise money for local environment initiatives. Banks that go to these significant lengths to be Eco-friendly are a little more difficult to find than the banks that claim to be green by merely offering online services. Banks that offer rate incentives on Certificates of Deposits, money market accounts, online savings accounts and checking accounts for online banking also help the green banking cause by rewarding online banking customers.

There has been a remarkable improvement in the working of banks in terms of cutting costs, increasing productivity, improving the profitability, controlling and management of the Non-Performing Assets (NPAs), face the risks, carry out the Asset Liability Management, manage the changes in interest rates, handle the foreign exchange rate fluctuations, comply with the regulator's requirements and finally improve the customer service to their best satisfaction. Hart & Ahuja (1996) studied a positive correlation between environmental performance and financial performance. Initially, banks were doing analysis of their financial performance only, but now it is a time to do analysis of social and environmental performance as well. Green Banking is not only a CSR activity of an organization, but also it is about making the society habitable without any considerable damage.

Internationally and domestically, several voluntary guidelines have been set up for the categorization, assessment and management of environmental and social risk in project financing like Equators Principles, National Environment Policy Act, World Bank E&S Norms, Carbon Disclosure Project, CERCLA, ISO 14000, BSE Greenex, etc.

The Financial Times and International Finance Corporation (IFC), a member of the World Bank Group had launched the Sustainable Finance Awards for the institutions that are integrating social, environmental and corporate governance considerations into their business operations.

The awards highlight the partnership between financial and non financial companies that are finding commercially viable and innovative solutions to sustainability challenges. The five categories of Sustainable Finance awards as per Financial Times (www.ft.com) are:-

- Sustainable Bank of the Year
- Technology in Sustainable Finance
- Sustainable Investment of the Year
- Sustainable Investor of the Year
- Achievement in Inclusive Business

Despite many initiatives taken in the field of Green Banking, it has been found to be at the nascent stage in India. There is only one Indian organization Infrastructure Development Finance Company (IDFC) Ltd, which has signed Equators Principles for determining, assessing and managing the environmental risks in the projects undertaken (Equator Principles Association, 2014). The

section of literature review gives a holistic picture of studies conducted in the field of Green Banking in India and abroad.

VI. REVIEW OF LITERATURE

According to RBI (IRDBT, 2014), green banking is to make internal bank processes, physical infrastructure and IT infrastructure as effective and efficient as possible, with zero or minimal impact on the environment. They had introduced green rating standards for Indian banks, which are termed as 'Green Coin Ratings'. Under this rating system, banks are judged on the basis of carbon emissions from their operations and on the amount of recycling, refurbishment and reuse material being used in their building furnishings and in the systems used by them like servers, computers, printers, networks, etc. They are also being judged on the amount of green projects finance by them and rewards or recognitions given to borrowers for turning their businesses greener.

Green banking services helps the banks towards the sustainable developments of the banks. In this context many authors expressed their opinions on the previous and recent developments and trends in the banking sector relating to the green banking.

Jeucken (2001) highlighted important differences between regions, countries and banks with regard to sustainable banking. Jeucken identified four stages: defensive, preventive, offensive and sustainable banking.

Chowdari Prasad (2002) has studied the Impact of Economic Reforms on Indian Banking and suggested how banking sector will face the changes and challenges.

Hopwood, 2005, highlighted the need for change it would be agreed that transformation in the usual model for the sustainable development is essential in order to understand the evolution of the banking sector towards sustainability.

McKinsey & Co. (2007) On the top of all these, there is certainly the aspect of profitability and productivity for all these banks to achieve.

Douglas (2008) found four key findings: (a) banks are increasingly discussing climate change business opportunities in their annual reports, (b) twenty eight of the forty banks have calculated and disclosed their greenhouse gas emissions from operations, (c) growing demand for climate friendly financial products and services is leading banks into new markets, and (d) investment banks have taken a leading role in supporting emissions trading mechanisms and introducing new risk management products.

Sudip Kar Purkayastha (2010) Such measures also yield the banks in offering top class service to attain Customer Satisfaction, particularly at a time there is stiff competition amongst the different types of banks, i.e., Public, Private, Foreign and others.

Mohmed Aminul Islam (2010) Green Banking is also gaining importance in recent times. While the banking

industry is undergoing computerization, networking and offering of on-line banking is naturally gaining momentum.

Ela Sen (2010) Besides several benefits of computerization like speed, accuracy, ambience, efficient handling of sizeable business, etc., there is a factor like paper-less business resulting in waste management, eco-friendliness and pollution control.

Goyal KA and Vijay Joshi (2011) One side bankers are expecting more business through customer satisfaction but on the other side, the technology effect makes the customers not coming to the bank but bank is going to the doorstep of the customers

Nigamanda Biwas (2011) interpreted Green Baking as combining operational improvements, technology and changing client habits in market place. Adoption of greener banking practices will not only be useful for environment but also benefit in greater operational efficiencies, a lower vulnerability to manual errors and fraud and cost reductions in banking activities. He stated that the concept of green baking will be mutually beneficial to the banks, industries and economy. Not only green banking will ensure the greening of the industries but it will also facilitate in improving the asset quality of the bank in future. He has listed several benefits of green banking.

Alice Mani (2011) indicated that as Socially Responsible Corporate Citizens (SRCC), banks have a major role and responsibility in supplementing governmental efforts towards substantial reduction in carbon emission. Bank's participation in sustainable development takes the form of Green Baking. The author examined and compared the green lending policies of banks in India in the light of their compliance and commitment to environment protection and environment friendly projects. It was opined that Banks in India can implement green lending.

(UNEP) Green Finance or Green Banking refers to diverse financial services and products provided by financial institutions for sustainable development (UNEP FI, 2007).

Green finance was firstly raised at the beginning of 1990's, when the United Nations Environment Program (UNEP) worked with industry to develop environmental management strategies that they were convinced that the financial industry maintaining their businesses might have a significant influence to the environment (UNEP FI, 2010). In fact, this concept has been mentioned for several years. But to date, it has not yet been normatively defined by any international bodies, as it depends on specific financial entity allocating capital to specific purpose with integrating environmental and sustainability factors. There are some major concerns about environmental issues. Therefore, organization needs to pay attention to their outputs whether they are violating environmental issues or not. At SBI Bank, it is believed that profit should not be earned at the expense of the world's most pressing environmental problems.

That is why they finance organizations from organic food and farming businesses and pioneering renewable energy enterprises, to recycling companies and nature conservation

projects. Citizens Bank of Canada has lowered its interest rate on loans for carbon emission cars. These kinds of efforts will surely motivate other banks to promote green banking and consequently in long run environmental issues can be resolved.

Jha & Bhome (2013) did the empirical study on the steps that can be taken for going green in the banking sector and to check the awareness among bank employees, associates and the general public about green banking concept. They did this study by collecting data from 12 bank managers, 50 bank employees and 50 general customers. The authors were of the opinion that online banking, green loans, power saving equipments, green credit card, use of solar and wind energy and mobile banking were some of the strategies that should be followed for going green. The results of the study were, banks should adopt environmental standards of lending, which results in improving the asset quality of banks. The rate of interest on loans given for green projects should comparatively less than the normal rate of interest. Companies can increase their profitability by reducing or recycling of waste generated and also by adopting sustainable measures to go green.

Dharwal & Agarwal (2013) studied that green banking is a key in mitigating the credit risk, legal risk and reputation risk. The author had suggested some green banking strategies like carbon credit business, green financial products, green mortgages, carbon footprint reduction (paperless banking, energy consciousness, mass transportation system, green building), and social responsibility services towards the society.

Malu, Agrawal, & Jajoo (2014) studied that banks can play an important role in reducing the carbon footprint in the society. Earlier economic development means reducing poverty, inequality and unemployment in the society, but the concept of Economic development had changed to Sustainable development which 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). The study suggested that sustainability in the banking sector can take two forms-

1. Banks can change their routine operations through recycling programs, paperless banking, using energy efficient resources, and support for community events for reducing pollution and so on.

2. They can adopt lending and investment strategies to promote environmentally responsible projects and can also develop green products to ensure the sustainability in their core business.

Vikas Nathi, Nitin Nayak & Ankit Goel (2014) concluded that India is running behind their counterparts from developed economies. They have started adopting green practices, but still their impact on the environment is increasing. Green banks are at start up mode in India. They should expand the use of environmental information in their business operations, credit extension and investment decisions. The endeavor will help them proactively

improve their environmental performance and creating long term values for their business.

T.Rajesh and A.S. Dileep (2014) concluded that Green Banking is an umbrella term referring to practices and guidelines that make banks sustainable in economic, environment, and social dimensions. Green banking can be an avenue to reduce pollution and save the environment aiding sustainable economic growth. Before making the decision to finance a project, banks must see its environmental risks and ensure the project players have environmental safety measures in their plans, including recycling facilities or smoke and gas arresting units. A framework of incentives for responsible banks and disincentives for pollutants is an essential element for the development of green banking.

VII. OBJECTIVES OF THE STUDY

- a) To understand how the green banking strategies are developed by Indian banks.
- b) To find out the challenges in implementation of green banking in India.
- c) To find out the necessary steps required for proper implementation of green banking in India.

VIII. METHODOLOGY

This is an exploratory research thus methodology was based on literature review and secondary data. The research took place in two phases: The first phase was an up-to-date literature review on Green Banking and sustainable development in the banking sector and particularly in green banking that identified results, and suggested future steps. The second phase included data collection about Indian banks through secondary published sources. Secondary published sources were the reports on Green Banking and other relative information published on the banks and other internet sites.

IX. SCOPE OF GREEN BANKING IN INDIA

There has been a remarkable improvement in the working of banks in terms of cutting costs, increasing productivity, improving the profitability, controlling and management of the Non-Performing Assets (NPAs), face the risks, carry out the Asset Liability Management, manage the changes in interest rates, handle the foreign exchange rate fluctuations, comply with the regulator's requirements and finally improve the customer service to their best satisfaction. Green banking avoids as much paper work as possible and rely on online/ electronic transactions for processing so that we get green credit cards and green mortgages. Less paperwork means less cutting of trees. It also involves creating awareness to banking business people about environmental and social responsibility enabling them to do an environmental friendly business practice.

Benefits towards the banks: Green banking is very important in mitigating the following risks involving the banking sector:

- a) Credit Risk: Due to climate change and global warming, there have been direct as well as indirect costs to banks. It has been observed that due to global warming, there have been extreme weather conditions which affect the economic assets financed by the banks, thus leading to high incidence of credit default. Credit risk can also arise indirectly when banks lead to companies whose businesses are adversely affected due to changes in environmental regulation.
- b) Legal risk: Banks, like other business entities, face legal risk if they do not comply with relevant environmental regulation. They may also face risk of direct lender liability for cleanup costs or claims for damages in case they actually take possession of pollution causing assets.
- c) Reputation Risk: Due to increasing environmental awareness, banks are more prone to reputation risk, if their direct or indirect actions are viewed as socially and environmentally damaging. Reputation risks emerge from the financing of environmentally objectionable projects.

Benefits of Green Banking in India

- a) Avoids Paper Work: Paperless banking almost all banks in India are computerized or operate on a core banking solution (CBS). Thus there is ample scope for the banks to adopt paperless or less paper for office correspondence, audit, reporting etc. these banks can switch over to electronic correspondence and reporting thereby controlling deforestation.
- b) Creating Awareness to Business People about Environment: Many NGOs and environmentalists are propagating environment consciousness among the public in general by arranging awareness programs and organizing seminars etc. Banks may associate themselves by sponsoring such programs. Besides, many corporate bodies are organizing similar program in their own line of business such as "free pollution check program" organized by a car manufacturer. Banks may tie with such corporate. These will help to brighten the image of the bank.
- c) Loans at Comparatively Lesser Rates: Banks can also introduce green bank loans with financial concessions for environment friendly products and projects such as fuel efficient vehicles, green building projects, housing and house furnishing loans to install solar energy system etc.
- d) Environmental Standards for Lending: Banks follow environmental standards for lending, is really a good idea and it will make business owners to change their business to environmental friendly which is good for our future generations.
- e) Creating Awareness to Business People about Environment; Many NGOs and environmentalists are propagating environment consciousness among the public in general by arranging awareness programs and organizing seminars etc. Banks may associate themselves by sponsoring such programs.
- f) Loans at Comparatively Lesser Rates : Banks can also introduce green bank loans with financial concessions for

environment friendly products and projects such as fuel efficient vehicles, green building projects, housing and house furnishing loans to install solar energy system etc.

Other Benefits:

- Improving the service standards
- Automation of manual tasks
- Attracting and retention of staff
- Increase in profitability & sales
- Reducing Cycle time
- Drive customer loyalty
- Reduce costs to serve and sell
- Reduce administrative burden

X. GREEN BANKING STRATEGIES ADOPTED BY INDIAN BANKS

Green Banking in India:

The Reserve Bank of India document titled 'Policy Environment' dated 8th November, 2010 includes on Pages No. 56 and 57 a reference to Green Banking and Green IT initiatives for banks in India. Like any other Corporates, banks in India too are adopting the principle of Corporate Social Responsibility (CSR) and are concerned about the protection of environment. Mainly, the computerized environment and facilities like on-line banking are helping the banks to promote the green banking concept [Shalini Mehta (2011)]. Paper work is being reduced consciously at all levels by bankers and customers. In addition to providing of on-site and off-site ATMs, some banks have gone ahead with innovative ideas like installing Bio-metric ATMs, Solar-based ATMs, White-labelled ATMs, Brown ATMs, SMS alerts, Mobile Banking etc. for the convenience of their customers [Ashok Singh (2010)]. Besides reducing any environmental pollution, these initiatives are helping the banks in reduction in their cost of operations and delays which results in increased customer satisfaction too [Devaprakash R. (2008)]. While offering several simple suggestions for practicing green banking arrangements, the specific initiatives taken by banks in India are - IndusInd Bank introducing solar powered ATMs, SBI adopting green banking policy and offering green home loans, Union Bank of India's energy efficiency measures, IDBI Bank's membership in National Action Plan on Climate Change, ICICI Bank's Corporate Environmental Stewardship initiatives and also Clean Technology Initiatives, YES Bank's community development initiatives, ABN Amro Bank's (now Royal Bank of Scotland) launching of Indian Sustainable Development Fund as also the Role played by RBI in its CSR initiatives. Green Banking goes a long way it serving its objectives. The incorporation of social and environmental strategies into the development goals of the banks helps them in arriving effective environmental management system. According to Krebsbach (2005), the banks, which adopted socially and environmentally responsible lending and investing strategies were altering their processes of bond underwriting, investment banking and corporate lending. These banks were enjoying a competitive advantage over others as society is aware about the environmental issues. But the author had

suggested that banks should adopt the green lending principles in such a way that a customer base will not be affected. The author said "Credibility comes from having high standards, but if you push the standards too high too quickly, it may stop some banks from lending and have a serious impact on companies that needs capital".

Environmental management in the banking sector is like risk management because it reduces the credit risk, improves the asset quality and increases the enterprise value. Biswas (2011) revealed some strategies for the adoption of environmental management in the banking sector:-

□□Banks should do Environmental Impact Assessment (EIA) in which they design the environmental system to evaluate the risk involved before investing in different projects;

□□They should adopt the Annual Reporting System (ARS) in which they prepare an annual report on environmental risk guidelines for every project they invest or finance;

□□They should adopt environmentally sustainable technologies which minimizes risk, saves cost and enhance the bank's reputation;

ATM services: John Shepherd-Barron devised what is hailed as the world's first automatic teller machine. First ATM in the world was installed by Barclays bank in London in 1967. First ATM in India was installed by HSBC in Kolkata in 1987. First PSB to install ATM in India is Indian bank.

Debit card: The first debit cards were introduced in the early 1980's to enable consumers to obtain cash from ATMs by debiting their bank account. Corporation Bank is the first Indian Bank to introduce debit card.

VISA & Master Card:

As credit card processing became more complicated, outside service companies began to sell processing services to Visa and MasterCard association members. This reduced the cost of programs for banks to issue cards, pay merchants and settle accounts with cardholders, thus allowing greater expansion of the payments industry.

Credit Card:

"The general-purpose credit card was born in 1966, when the Bank of America established the BankAmerica Service Corporation that franchised the Bank Americard brand (later to be known as Visa) to banks nationwide," Sienkiewicz writes. As the bank card industry grew, banks interested in issuing cards became members of either the Visa association or MasterCard association. Their members shared card program costs, making the bank card program available to even small financial institutions. Later, changes to the association bylaws allowed banks to belong to both associations and issue both types of cards to their customers.

Vishwa Yatra Card: State Bank Vishwa Yatra Foreign Travel Card' is a prepaid Foreign Currency Card which travelers going abroad are guaranteed to find useful. It is a Chip based Card which stores encrypted and confidential information. State Bank Vishwa Yatra Foreign Travel Card is available in Eight Foreign Currencies viz. US Dollars (USD), Pound Sterling (GBP), Euro (EUR), Japanese Yen (YEN), Canadian Dollar (CAD), Australian Dollar (AUD), Saudi Riyal (SAR) and Singapore Dollar (SGD).

Gift Card: Gift Card is also a prepaid Indian rupee VISA CARD –an excellent substitute of Gift Vouchers.

Green Channel Counter: The Bank had launched 'Green Channel Counter' (GCC) facility on State Bank Day (01.07.2010), at 57 select branches of the Bank spread across the country. This was an innovative step taken by the Bank towards changing the traditional way of paper based banking in a limited way, to card based 'Green Banking' focusing on reduction in paper usage as well as saving transaction time. This is a pioneering concept which would save both paper and time resources.

Online banking services: Online banking services are helped the customers to reduce the carbon foot prints indirectly and make the convenience to the customer almost most of the important banking services. Some of these services do not require any manual intervention.

- Fund Transfer to Self Accounts
- Third Party Fund Transfer
- Inter Bank Payee Fund Transfer
- PPF transfer
- Setting up Standing Instruction
- E-Tax Payment
- E-ticketing
- Bill Payments
- Visa Money Transfer
- Demat Enquiry
- Online Application for IPO.

Mobile Banking Services: Mobile banking also known as M-Banking. M-banking is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or Personal Digital Assistant (PDA). The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of the first primitive smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers.

XI. GREEN BANKING INITIATIVES BY VARIOUS INDIAN BANKS

SBI : (SBI) has become the first bank in the country to venture into generation of green power by installing

windmills for captive use. As part of its green banking initiative, has installed 10 windmills with an aggregate capacity of 15 MW in the states of Tamil Nadu, Maharashtra and Gujarat. . It has planned to install an additional 20 MW capacity of windmills in Gujarat soon and touch 100 MW power generation through windmills within five years, windmills are set up with a definite objective of reducing the dependence on the polluting thermal power and not on purely economic or business considerations. SBI had launched Green Channel Counter (GCC) facility at their branches in 2010 to change the traditional way of paper based banking (SBI, 2014). The bank had also collaborated with Suzlon Energy Ltd for the generation of wind power for selected branches by setting of windmills in Gujarat, Tamil Nadu and Maharashtra (Business Standard, 2014). It has become a signatory to the Carbon Disclosure Project in which they undertake various environmentally and socially sustainable initiatives through its branches spread across the length and breadth of the country (WWF-INDIA, 2014). Export Import Bank of India (EXIM) and SBI entered into an agreement to jointly provide long term loans up to 14 years to Spain based company Astonfield Renewable Resources and Grupo T-Solar Global SA for building solar plant in India (Yadav & Pathak, 2013).

□ Punjab National Bank (PNB) – According to Corporate Social Responsibility Report 2010-11 (PNB, 2011), they had taken various steps for reducing emission and energy consumption. PNB is conducting Electricity Audit of offices as an energy conversation initiative and maintained a separate audit sheet for assessing the impact of green initiatives taken by them. The bank had organized more than 290 Tree Plantation Drives. It started emphasizing on green building practices such as energy efficient lights, immediate repair of water leakage, printing on both sides of paper, mater sensors for lights, fans, etc. The organization had signed a 'Green Pledge' with Ministry of New and Renewable energy under which they had set up the butterfly park at the compound of Guruvayur temple which houses 18 types of medicinal plants. They had formulated guidelines to ensure that all the necessary approvals and permissions, including from Pollution Control Board has been obtained before disbursement of term loans and for the project loans, compliance with environment and social safeguards including rehabilitation and resettlement of project affected people is to be ensured as pre-disbursement condition. The bank is also considering stepping of sustainable development with particular reference to the Equators Principles on project finance. The organization had sanctioned nine wind energy projects with an aggregation limit of 185.81 crore and they were also awarded with a second prize for 'Best Wind Energy Power Financer' by wind power India 2011.

Bank of Baroda – According to the annual report of BOB (2013), they had taken various green banking initiatives such as: -While financing a commercial project, BOB is giving preference to environmentally friendly green projects such as windmills, biomass and solar power projects which help in earning the carbon credits. The

organization had made considerable changes in their lending policy, i.e. it is compulsory for industries to obtain 'No Objection Certificate' from the Pollution Control Board and also they are not extending any finance to environmental hazardous industries which are using ozone depletion substances. The bank had taken several technological initiatives such as compliance with e-business guidelines, use of internet banking, mobile banking to promote paperless banking and also increasing the installation of ATM's in most of uncovered areas to reduce the petrol or diesel consumption in travelling and helps in maintaining a clean environment. As a part of green initiative, they had made changes to desktop virtualization; backup consolidation and server virtualization improve data center operational efficiency. The bank is also promoting measures for pollution control and environmental conservation.

Canara Bank – According to Canara Bank (2013), the bank had taken many green initiatives such as: - As a part of green banking initiative, the bank had adopted environmental friendly measures such as mobile banking, internet banking, tele-banking, solar powered biometric operations etc. Canara bank had set up e-lounges for high-tech banking facilities like internet banking, pass book printing kiosk, ATM, online trading, tele-banking and cash/cheque acceptor's. The bank had implemented e-governance for HRM function and several other administration areas to reduce the paperwork. In terms of Lending policy, they are giving due preference and weightage to projects which can earn carbon credits like solar energy projects, windmills, etc. The bank is also not extending any finance to the units which are producing ozone depletion substances such as chlorofluoro carbon, carbon tetrachloride, aerosol products, solvents etc. While appraising any project, the organization insists the manufacturing units which are emitting toxic pollutants, to install water treatment projects to process such pollutants and they also ensure that the borrower to obtain No Objection Certificate (NOC) from central or state pollution control board.

ICICI Bank Ltd – ICICI bank had adopted 'Go Green' initiative, which involves activities such as Green products/offers, Green engagement and green communication with customers as per ICICI Bank (2014):- The bank is offering green products and services like (i) Instabanking: - It is a service which gives convenience to the customers to do banking anywhere and anytime through internet banking, mobile banking, IVR banking, etc. This reduces the carbon footprint of the customers as they do not require the physical statement or travel to the bank branches. They are offering 50% waiver on processing fee of auto loans on the car models which uses alternate sources of energy like the Civic Hybrid of Honda, Tata Indica CNG, Reva electric cars, Mahindra Logan CNG versions, Maruti's LPG version of Maruti 800, Omni and Versa and Hyundai's Santro Eco. The bank had reduced the processing fee for the customers who are purchasing homes in LEED certified buildings.

During Diwali 2013, the organization had conducted an environmental awareness program for employees and customers in which money plant was presented to all the people present there as a token of collective responsibility to protect the environment. It has also become partners with the Green theme CNBC – overdrive auto awards. The bank is celebrating World Environment Day every year on June 5. They perform various activities on that day like green pledge through signature campaigns, plantation and distribution of saplings etc. They are also celebrating Earth hour every year in March in which they switch off the lights of their premises, branches and ATM's between 8:30 pm to 9:30pm.

The bank always insists their customers for online bill payment, online funds transfer and subscription to e-statements which promote 'paperless' and 'commute free' modes of banking transactions. The organization is looking forward for partnerships with national and international green organizations and NGO's. They are partners with Green Governance awards set up by BHNS to appreciate the participant's organization effort beyond the statutory compliance for protection of the environment.

HDFC Bank Ltd – HDFC bank is taking up various measures in reducing their carbon footprints in the area of waste management, paper use and energy efficiencies as per HDFC Bank (2013):- The bank is encouraging their employees to prevent any wasteful use of natural resources and emission of Greenhouse gasses. They are reducing the use of paper through issuing e-transaction advices to their corporate customers, communicating through electronic media with their high net worth customers and encouraging e-statements to their retail customers. The bank is also promoting energy conservation by replacing conventional lighting with CFL, switching off all the lights after 11 pm at all the branches and establishing green data centers with state of the art technologies. The organization is exploring renewable energy by setting up of 20 solar ATMs with a pilot ATM set up in Bihar, and by replacing batteries in ATMs with Lithium-ion batteries. They are also managing their waste by tying up with vendors for recycling of paper and plastic. The bank is procuring green products which are compliant with the norms of the Central Pollution Control Board and which are rated by Energy Star.

Axis Bank Ltd – AXIS bank implementing several initiatives in green banking such as per Axis Bank (2013):- In august 2011, the bank had initiated the process of collecting all the dry waste generated from the corporate office and thirty four branch offices in Mumbai, and recycle it to notepads, notebooks and envelopes. Till date, more than 1, 00,000 kgs of paper has been recycled and converted to 12,000 notebooks, notepads and envelopes which are used at corporate office and branches of the bank; The corporate office of the bank, located in Mumbai, is designed and constructed as a Platinum LEED certified 'Green Building'; Car pooling has been initiated by a bank to reduce carbon footprint; They are also encouraging their customers to use e-statements and other electronic communications to reduce paper consumption; Annual reports are being sent through emails; the organization had

initiated Independent ATM Deployment (IAD) model in which ten solar based ATM has been set up in Coimbatore circle.

Kotak Mahindra Bank – Through the 'Think Green' initiative, the bank had taken several initiatives such as to reduce the paper consumption, the bank is encouraging their customers to sign for e-statements and also they have become partners with 'Grow-Trees.com' to plant one sapling for every e-statement on behalf of its customers. 16,623 saplings were planted FY 2012-13. The organization had established the 'Social, Environmental Management System Plan' (SEMSP) to evaluate the environmental and social risk of borrowers which is based on an IFC sustainable framework and performance standards. As per the guidelines of Ministry of Corporate Affairs (MCA), the bank had communicated to their shareholders to adopt electronic copies of annual report instead of physical copies.

In 2009, they had consolidated their data centers into a single facility to improve power usage efficiencies. The rain water harvesting tank has been installed in the premises and also used oil generated from a diesel generator is disposed off through vendors approved by Pollution Control Board. Bihari (2011) had also highlighted the green banking initiatives being taken by the Indus IND Bank, SBI, Union Bank of India, IDBI Bank, ICICI Bank, YES Bank and ABN Amro Bank.. According to the author, Mumbai, Delhi and Chennai are among the ten most polluted cities in the world and the major industries which cause pollution are fertilizers, paper and pulp, pesticides/insecticides, chemicals pharmaceuticals, metallurgical and textiles. SIDBI had made significant changes in their lending principles and implemented a precondition for sanctioning of credit. They had made it compulsory for a company to obtain 'No Objection Certificate' (NOC) from the state pollution control board before establishing the enterprise.

IndusInd: IndusInd Bank, India has initiated its Green Office Project under which it has installed solar powered ATMs in different cities targeting energy saving as well as reducing CO2 emissions.

YES Bank: Yes Bank India have projects portfolio in the areas of alternative energy and clean Technologies

HSBC Group: HSBC has separate targets for data centres, paper consumption and business air travel. The purposes of the targets are to drive efficiency, reduce its operational impact on the environment and generate cost savings.

IDBI: IDBI Bank is providing various services in the field of Clean Development Mechanisms (CDM) to its client.

Table 1: Publication dates of green banking adopted in Indian banks

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, Statndard Charted
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, Indusland Bank, PNB, ABN Amro , Karur Vyasa , Andhra bank
2010	Axis bank, Kotak Mahndra, South Indian Bank
2011	Canara Bank, IDBI, EXIM
2013	IDFC

XII. CHALLENGES

Key challenges faced by banks while implementing green banking strategies. Following are the challenges:

- a) Confronting Challenges to Going Green: Green banks support wonderful causes; they do face a lot of challenges as for-profit entities. Just like those socially conscious and environmental mutual funds, they are expected to encounter more obstacles than typical run-of-the-mill bank.
- b) Diversification matters: Green banks will be screening their customers and naturally, they'll be limiting and restricting their business to those entities that qualify. With a smaller pool of customers, they'll automatically have a smaller profit base to support them. If they focus their loans on certain industries, they open themselves up to being much more vulnerable to economic shifts.
- c) These banks are still startups: Apparently, it takes 3 to 4 years for a typical bank to start making money. Many green banks in business today are very new and are still in startup mode. It doesn't help that these banks are trying to get their footing during a recession.
- d) Banks are "specialized": Again, while the main goal of a green bank is to do good by supporting those who are taking care of the environment, the question here is — just how much money is there in these businesses and in the eco-friendly industry? Saving the environment does not necessarily equate to "making a profit". Hopefully though, this premise is proven wrong in this case and that green banks prove that they can survive, even as they face restrictive requirements for doing business.
- (iv) Operating expenses and costs are higher: Green banks require specialized talent, skills and expertise as well, due to the kind of customers they are servicing. Employees, such as loan officers, need to have additional background

and experience in dealing with green businesses and consumers. Plus, giving breaks to such clients via discounted loan rates can eat at their profit margins.

(v) Reputation Risk: In all likelihood, due to growing awareness about environment safety, banking institutions are more prone to loose their reputations if they are involved in big projects, which are viewed as socially and environmentally damaging. There are also few cases where environmental management system has resulted in cost savings, increase in bond value etc.(Heim, G et al, 2005). In few cases the environmental management system resulted in lower risk, greater environmental stewardship and increase in operating profit. Reputation risks involved in the financing of ecologically and ethically questionable projects.

(vi) Proper legislation is not yet framed: Government must design proper legislation of environmental rules for banks and ensure enforcement. The problems in India are the legislation is not yet framed and in few cases, things are not strictly enforced, but things can change overnight resulting in major compliance problems for the companies concerned and increased risk for the banks that have lent to them. There should be continuous dialogue relating to environmental matters with relevant audiences, including stakeholders, employees, customers, governments and the public.

(vii) Lack of environmental audits: Lack of environmental audits are required to determine the environmental status of a facility, property, and operation and to identify regulatory compliance status, past present problems and potential environmental risks and liabilities associated with the project. These should be done by an independent body or by any environment investigation team.

(viii) Less attention on environmental risk management: Less attention is given for the environmental risk management after the post transaction period.

(ix) Non automation of business process: Mostly banks are not adopting automation process Banks should conduct energy audits in all their offices for effective energy management using compact fluorescent lighting (CFL) can help banks save on energy consumption considerably.

x) Lack of clear policies: Clear policies are required to altering the present management systems to incorporate sustainability issues.

xi) Unavailability of skilled employees: Skilled employees are required to implement the strategies properly.

XIII. SUGGESTIONS

Following are some of the suggestions that can be adopted by the banks for proper implementation of green banking in India:

- a) Make customers more and more aware about green banking through their website .
- b) Promoting different forms of electronic banking .
- c) Creating customer's awareness through the media.

- d) Carbon footprint reduction by saving energy and paper.
- e) Providing environment friendly rewards to customers.
- f) By financing more and more environment-friendly projects
- g) Social Responsibility services done by banks.
- h) Clear policies are required to altering the present management systems to incorporate sustainability issues.
- i) Training and development of relevant skills within bank employees so that they can use

XIV. CONCLUSION

Green Banking has been boosting to improve the environment and promoting economic growth. Until a few years ago, most traditional banks did not practice green banking or actively seek investment opportunities in environmentally-friendly sectors or businesses. Indian banks are far behind their counterparts from developed countries. If Indian banks desire to enter global markets, it is important that they recognize their environmental and social responsibilities. Only recently have these strategies become more prevalent, not only among smaller alternative and cooperative banks, but also among diversified financial service providers, asset management firms and insurance companies.

Further, those industries which have already become green and those, which are making serious attempts to grow green, should be accorded priority to lending by the banks. This concept of "Green Banking" will be mutually beneficial to the banks, industries and the economy. Not only "Green Banking" will ensure the greening of the industries but it will also facilitate in improving the asset quality of the banks in future. There are lot of opportunities and challenges for Indian banks in adopting 'Green Banking' as profitable business. Green banking if implemented sincerely will act as an effective ex ante deterrent for the polluting industries that give a pass by to the other institutional regulatory mechanisms. Therefore, for sustainable banking, Indian banks should adopt green banking as a business model without any further delay.

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