Literature Review
CHAPTER: II
LITERATURE REVIEW

2. LITERATURE REVIEW

Researcher has made an effort to review all the studies available on Green Banking, few studies have been conducted on Green Banking at International and National level, no comprehensive study has so far been made, a few scattered efforts have also been made by individual scholars. The current chapter is divided into four segments viz:--

2.1) Relevant Studies in Indian Context

2.2) Relevant Studies in International Context

2.3) Key Observations

2.4) Research Gap

2.1. RELEVANT STUDIES IN INDIAN CONTEXT

Sahoo and Nayak (2008) explored the relevance of Green Banking and site international experience in this respect. The researchers found that there has not been much initiatives by banks in India and Thus, policy measures are needed to promote Green Banking in India. The researchers revealed that none of the Indian banks have adopted equator principle and none of them is signatory to UNEP financial initiative statement. Indian banks should use environmental criteria for funding projects.

In the study of Bahl (2012) the means of creating awareness about Green Banking to ensure sustainable growth have been highlighted. Garrett’s ranking technique is used to analyze the most significant strategies in respect of Green
Banking. If the goal is to attain sustainable development then this can be achieved only through creating awareness and imparting education. Among the internal sub systems emphasis should be given to publications, newsletters so as to create awareness and effective means for external sub systems are event meetings, media and websites. A proper formulated green policy guideline is needed for effective Green Banking.

Jha and Bhome (2013) conducted a similar survey to check and thereby, create consumer awareness on Green Banking. Conducting interviews and using specially structured questionnaires for survey they state certain steps needed in Green Banking. Online Banking, Green Checking Accounts (ATM, Special Touch Screens), Green loans (low rate to those who wish to buy solar equipments) for supporting environment friendly residential projects, power saving equipments, Green Credit Cards, Paper Saving Mobile Banking are among few steps suggested by them. Green Banking will ensure organization’s move towards sustainability.

The study conducted by Rajput, Kaur et al. (2013) targeted to understand how Indian banks respond to environmental changes and the action taken in respect of Green Banking. They found that there is a small group of banks in India that lead in environmental aspect. Response of Indian banks towards international initiative for environment is lethargic. In the United Nation's Environment Program Finance Initiative there is no single Indian participant. Using factor analysis they concluded that risk of failure of business to peers and lack of RBI mandates are the obstacles to moving towards sustainability. The gaps in India are the awareness and consciousness on the environmental issues. Carbon Disclosure Projects- India
requires public disclosure of emissions. This disclosure project is active in India. But the response is very less as only 8 signatories are there. The researchers feel that current management system needs to be integrated with the environmental and sustainable issues.

A research study undertaken by *Yadav and Pathak (2013)* stated that the Green Banking progress chosen by private and public bank for environment sustainability. Using case study approach, they find that Indian banks have understood the relevance of taking positive steps towards the environment. Moreover, results of the study conducted in private sector only ICICI bank’s approach is a feasible approach.

*A study conducted by Jha & Bhome (2013)* scrutinized the Green Banking initiatives and trends in India which are postulated by public sector bank of the nation to adopt the sustainable development by the way by green banking. The main objective of the paper is to know green banking sector and to check the awareness of employees, associates and the public about the green banking concept. Further, the study suggested that interest on loan should be less for green project then normal rate of interest and companies can increase their profitability by recycling of waste generated. They should stress upon green mortgage loan, green credit card and online banking.

According to the study by *Yadav Rambalak & Phatak Swroop (2013)* on the topic “Green Banking- an Avenue to Safe Environment” made an effort to establish that in a rapidly changing market economy where globalization of markets has intensified the competition, the industries and firms are vulnerable to stringent
public policies, severe law suits or consumer boycotts. This would affect the banks and financial institutions to recover their return from investment. Thus, the banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management and use of appropriate technologies and management systems.

Green Banking, if implemented sincerely, will act as an effective anti-deterrent for the polluting industries that give a pass by to the other institutional regulatory mechanisms. There has not been many initiatives in this regard by the banks and other financial institutions in India, though they play an active role in India’s emerging economy. The banking and financial sector should be made to work for sustainable development. As far as green banking is concerned, Indian banks and financial institutions are running behind time. None of our banks or financial institutions has adopted equator principle even for the sake of records. None of them are signatory to the UNEP Financial Initiative statement. It is time now that GALAXY India takes some major steps to gradually cling to the equator principles-guidelines that use environment-sensitive parameters, apart from financial, to fund projects.

Singhal, Singhal & Arya (June 2014) entitled Green Banking: An Overview studied, how bank can go greener. According to study banking industries and financial institution plays a very important role in the growth of an earth. Green banking saves the energy and environment both. Nowadays many banks are offering green product like ATM, Green credit cards, green CDs, electronic fund transfer, use
of solar and wind energy etc. but it is still not completed. We have to make more
efforts so we can save environment and green banking is one of the best way to start
this.

Khedekar (2014) in her research denominated banking with Technology
According to study bank should provide basic and premium internet banking
product such as opening bank account, Account as Demat holding, standing
instruction, investment etc. This Study suggests that bank should conduct seminars
and conferences to educate the public regarding the uses of internet banking as well
as security issue. She suggests “Virtual Banking” where customer can’t deal in cash
to those branches which are far from the main branch.

The study by Sreeshach (2014) focuses on environment sustainability
concept adopted by various private and public sector banks in India. According to
the study, bank is not taking interest in green banking completely. Public sector
banks are more interested in green banking as compare to private sector banks. For
maintaining sustainability, banks should expand the use of environmental
information in the banking operation, lending and investment decision. This will
help them to improve environment sustainability and create long term value for the
business.

Sahitya & Lalwani (2014) made an attempt to recognize and acknowledge
the importance of green banking initiative for the attainment of goal of sustainable
banking and determined the various attempt that have been made by the top public
and private sector bank in India. The study has revealed that the banking sector has
become extremely conscious of the need to go green. Both public and private sector banks are involved in this process. It can be possible by the paperless banking like ATM, mobile and internet banking. The adoption of green banking not only enhances the image of green banking but also contribute in the sustainable growth of economy.

According to the research study by Sharma, Gopal et al. (2014) the level of consumer awareness of Green Banking initiative in India with special reference to Mumbai is formalized. From the primary survey they concluded that surprisingly even those people who are using online facilities provided by their banks, nearly three fourth of them are unaware of the term Green Banking. They find that among those who are aware of Green Banking term consider it mainly related to online bill payment and cash deposit system. Other Green Banking aspects like Green CDs, solar powered ATM, bonds for environment protection are among few of which consumers are not aware of. They also attempt to analyze the gender based difference in awareness of green initiatives by bank specially E-Statements, Net Banking and Green loans. Using Chi-Square test for hypothesis testing they arrive at a result that both males and females have the same level of awareness with respect to Green Banking. The researcher stated that the major obstacle in Green Banking is the technical issues involved followed by lack of education.

Jaggi (2014) explored the initiative taken by SBI and ICICI on Green Banking. SBI has introduced a Green Channel Counter, no queue banking, enhanced commitment towards achieving carbon neutrality, online money transfer, wind farms etc. Green Products and Services initiative of ICICI Bank includes Insta banking
(anytime, anywhere), vehicle finance and home finance. Moreover, these banks have taken other steps for energy conservation like duplexing (two sided printing), recycling, CFLs, carpool etc.

**In the study by Nath, Nayak et al. (2014)** the green rating standard given by RBI, the World Bank’s environmental and social norms and the initiative taken by bank in adopting green practices are replenished. They also list strategies for adopting Green Banking. Green Rating Standard is known as Green Coin Rating. Under this banks are evaluated on the basis of carbon emissions and amount of recycling activities. World Bank has formed environmental and social norms for financial institution. These norms provide ways to reduce environmental impact. Banks are required to do Environmental Impact Assessment, Annual Reporting and adopt sustainable technology. The researchers study and list the initiatives taken in respectable of environment by different banks in India. If the Indian banks want to achieve some position in global economies then they have to act as good corporate citizens.

**Sudhalakshmi and Chinnadorai (2014)** presented in her study the status of Indian Banks in respect of Green Banking and state that though goes green mantra is essential for emerging economies like India but significant efforts have not been taken. Banks are required to include their green aspect in the lending principle. Every step taken today will mean a better global environment in future. So a policy measure to promote Green Banking is needed in India. Indian banks are running behind time in adoption of this green phenomenon. Serious steps are required to be taken in this regard.
According to research undertaken by Karunakaran. R. (2014) Green banking is a proactive way of future sustainability but banks in India are running behind their counterparts from developed economies. They have started adopting green practices, but their impact on the environment is still catching up. Number of banks had promised about investing in green businesses and dropping their greenhouse emissions, but growing business in the banking sector meant more employees working in the well-lit offices around the clock on more computers, demanding more electricity, which is often created by burning coal and more air travel which were the key sources of global warming. If Indian banks want to penetrate western markets or global economy, it is important for them to recognize their responsibilities as a global corporate citizen. Now it is a right time for banks to adopt following strategies:

The banks should change their routine operations through the adoption of paperless banking, online banking, and mobile banking, and mass transportation system, green cards made up of recycled plastic and efficient use of resources.

Concept of LEED certified green buildings should be adopted by banks, i.e. use of renewable energy generated through solar power plants, energy star-rated light fixtures, motion sensors, sewage treatment plant for re-using water waste, urinal and wash basin sensors, rainwater harvesting system, recycling of dry waste, etc. It will also improve the public relations and employee satisfaction and thereby, it reduces the attrition rate of employees.
In a study of Green Banking Review-

The banks should start investing in low carbon technologies and develop new sustainable products and services that will mitigate the risk of climate change. They should indulge themselves in carbon credit business or can invest in those projects which can earn carbon credits.

It is important to adopt environmental standards for the lending and financing principles so that borrowers could direct themselves towards reducing the carbon footprint by using the appropriate technologies. They can go for discounted loan rates for the hybrid products, adoption of Equators Principles, green mortgages, green loans, etc.

They should design the environmental system to evaluate the risk involved before investing in different projects that could be an Environmental Impact Assessment (EIA), Annual Reporting System (ARS), and Environmental Audit Management (EAM) etc.

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.

Ragupathi. M and Sujatha .S (2015) probed that Green Banking Initiatives of Commercial Banks in India, studied the way to go green through green banking. According to this paper, earlier banks were not aware about the concept green banking. But nowadays banks are playing very important role in environment
sustainability program. By the green banking practice people is getting more aware about the global warming and each business man is contributing in environment sustainability to make this earth a better place to live in. Green banking is not only greening the industries but it will also facilitate in improving the assets quality of the bank in future.

Rambalak Yadav and Govind Swroop Phatak (2015) in the research “Environmental sustainability through green banking: "A study on Private and Public Sector Bank in India” notice that banking sector in India has changed the way it used to operate in the past. The banking sector is getting modernized and new facilities such as net banking, mobile banking are being prioritized replacing traditional approaches. These new approaches adopted by the banks are beneficial to customers as well as banks themselves. Now the banks understood the importance and necessity of environment along with the economic progress of a nation. Learning from their western counterparts the banks in India are also adopting various environmental practices and initiatives in their day to day business operations for the environmental concern and playing an important role in maintaining the ecological balance. But the Indian banking sector is still at the initial stage of green banking initiatives. As most of the banks are adopting and focusing only on those green initiatives which provides win-win situation for the bank, that help to show the concern for the environment along with helping the bank in cost savings and improved operational efficiency. So the time demands a little focus on the initiatives such as creating awareness among society, and helping smaller firms to change their process so they can be more environment friendly in nature and that will also widespread the concept of environmental sustainability. Future research
may be conducted to study the impact of green practices on consumer willingness to purchase green products of various organizations in the Indian context.

**Various Researchers Analyzed the Current Scenario of Green Banking In India**

India being one of the fastest emerging economies of the world, has a vital role in ensuring that development and growth are sustainable in nature and any adverse impact of industry on ecology should be avoided. The country emits 6% of the total global CO$_2$ emission, with the metropolitan cities contributing the maximum to greenhouse emissions. The various polluting industries in India are primary metallurgical industries namely zinc, copper, steel etc., paper & pulp, pesticides/insecticides, fertilizers, tanneries, sugar, textiles, chemicals/pharmaceuticals etc. These industries rely heavily on banks for funding needs. Thus, the banking operations should ensure that financing is provided to the company’s managing environment and ecology to keep the nature in equilibrium. The Reserve Bank of India (RBI) issued a circular on Dec 2007, emphasizing the important role banks play in establishing institutional mechanisms to contain sustainability and so to act responsibly. One of the primary lenders to MSME sector, SIDBI, has committed itself to achieve sustainability by incorporating Environmental and Social (E&S) aspects in its core business. The Government of India has issued guidelines/instructions to banks on Green Initiatives. In order to implement the green initiatives of the government, all public sector banks and all regional rural were asked to:

- Increase use of Electronic Payment.
- Increase use of Core Banking Solution (CBS).
- Increase use of Video Conferencing.
• Offer centralized payment system through sub-membership route to all banks to facilitate direct Electronic Benefit Transfer (EBT)

Green Banking Initiatives are taken by Indian Banks include both public sector banks and private sector banks. Public sector banks are those where majority stake (more than 50%) is held by the government and public sector banks are those where majority stake is held by the private shareholders. Various green initiatives had been taken by public sector and private sector banks in India.

PUBLIC SECTOR BANKS

STATE BANK OF INDIA (SBI)

• 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 Aston field Renewable Resources and Group IT-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, motion 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 environmental 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 aggregate limit of 185.81 crores 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 such as halos-1211, 1301, 2402 used in foam products, chlorofluorocarbon CFC 11, 12, 113, solvents in cleaning and aerosol products.

- 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 helping in maintaining a clean environment.

- As a part of green initiative, they had made changes to desktop virtualization, backup consolidation and server virtualization to 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 kiosks, ATMs, online trading, tele-banking and cash / cheque acceptor.
- 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 chlorofluorocarbon, 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 has obtained No Objection Certificate (NOC) from central or state pollution control board.
PRIVATE SECTOR BANKS

ICICI BANK LTD

ICICI bank had adopted ‘Go Green’ initiative, which involves activities such as Green products/offerings, Green engagement and green communication with customers as per ICICI Bank (2014):

- **Green Products and Services**: The bank is offering green products and services like
  
  (i) **Insta banking**: 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.
  
  (ii) **Vehicle Finance**: They are offering 50% waiver on processing fee of auto loans on the car models which use 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. (iii) **Home Finance** – The bank had reduced the processing fee for the customers who are purchasing homes in LEED certified buildings.

- **Green Engagements**: (i) 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. (ii) It has also become partners with the Green theme CNBC – overdrive auto awards.
(iii) The bank is celebrating World Environment Day every year on June 5th. 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.

- **Green Communications**: 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.

- **Green Partners**: 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 areas 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 is implementing several initiatives in green banking, as per Axis Bank (2013):

• In August 2011, the bank had initiated the process of collecting all the dry waste generated from the corporate offices and thirty four branch offices in Mumbai had recycled 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 the 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 had been set up in Coimbatore circle.

KOTAK MAHINDRA BANK

Through the ‘Think Green’ initiative, the bank had taken several initiatives as per Kotak Mahindra Bank (2013):

• 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 in 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 reports 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 generator from a diesel generator, which is disposed off through vendors approved by Pollution Control Board.

A new study by PriceWaterhouseCoopers (PWC) commissioned by the Indian Banks Association and The Climate Group confirms that India’s leading banks are recognizing and seizing opportunities in an emerging low-carbon economy. Many banks are now successfully implementing green banking practices.

**IndusInd Bank** inaugurated Mumbai’s first solar-powered ATM as part of its “Green Office Project” campaign titled “Hum aur Hariyali”. With the solar-powered ATM, the bank expects to save around 1,980 Kilo-Watt of energy annually besides reducing carbon emissions by 1,942 kg. It also expects to save power bills of around Rs 20,000 per year in urban areas, where it replaces diesel generators with solar panels.

**State Bank of India** 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, SBI has installed 10 windmills with an aggregate capacity of 15 MW in the States of Tamil Nadu, Maharashtra and Gujarat. These windmills are set up with a definite objective of reducing the dependence on the polluting thermal power and not on purely business considerations. Further, the new Green Home Loan Scheme from SBI, for instance, will support environmentally-friendly residential projects and offer various concessions. These loans will be sanctioned for projects rated by the Indian Green Building Council and offer several financial
benefits, a 5% concession in margin, 0.25% concession in interest rate and processing fee waiver.

In coal technologies, ICICI Bank introduced innovative concepts like deep beneficiation of coal (coal washeries) and coal bed methane. It also assisted a company develop a product that provides an eco-friendly air-conditioning alternative to conventional air conditioners. ICICI Bank also initiated a programme to sensitize corporate bodies, institutions, banks and government agencies involved in project planning on issues like biodiversity, wildlife habitats and environmental laws.

Energy efficiency is another key focus of banks, with an estimated market worth more than $15 billion by 2015 in India. IDBI Bank, for instance, has an exclusive team working on clean development mechanism advisory services. It also implemented a refinance scheme for energy saving projects for micro, small and medium enterprises sector. Yes Bank, too, is incorporating community development initiatives such as clean and green drives, energy efficiency practices, workplace health and safety and the development of local disaster management plans through its “Yes Community” initiatives. ABN AMRO, the Royal Bank of Scotland, launched the Indian Sustainable Development Fund, opening up a new emerging market for socially-responsible investors, while the “Equator Principles” serve as a backbone for Citi’s broader Environmental and Social Risk Management policy, which extends beyond project finance.

ICICI Bank’s green initiatives aimed at customers are driven by the objective of collaborating with each of its customers and making ‘green’ a part of all lives. These initiatives range from green offerings, green engagement to green
communication to its customers. ICICI’s ‘Insta banking’ is the platform that brings together all its alternate channels under one umbrella and gives customers the convenience of banking anytime anywhere through Internet banking, i-Mobile banking, IVR Banking. This reduces the carbon footprint of the customers by ensuring they do not have to resort to physical statements or travel to their branches. ICICI’s Vehicle Finance initiative towards more environment friendly way of life, auto loans offers 50% waiver on processing fee on car models which uses alternate mode of energy. The models identified for the purpose are, Maruti's LPG version of Maruti 800, Omni and Versa, Hyundai’s Santro Eco, Civic Hybrid of Honda, Reva electric cars, Tata Indica CNG and Mahindra Logan CNG versions. ICICI Home Finance offers reduced processing fees to customers who purchase homes in ‘Leadership in Energy and Environmental Design’ certified buildings.

India's second largest private sector bank, HDFC Bank, is all set to launch ‘green banking’, for which it has constituted an Environment Management Committee to implement its green banking initiatives. The bank has rolled out gamut of initiatives on the environment front that promises to make it India’s only “green bank”. A high level three-member committee has been formed to drive the organization-wide campaign that will encompass organization and employee level initiatives. While the organization level initiatives would include working on areas like alternate energy sources and watershed management, at the employees level, these would include planting trees, and using car pool to commute. Green Clubs will be formed within the bank across regions, while environment managers will be appointed for every office, branch, and floor.
Bank of Baroda has adopted environment friendly systems and technologies in the design of the new Data Center (green initiative), which includes energy efficient electrical and HVAC design; environment friendly construction material; chiller based HVAC; temperature monitoring; intelligent building management software; and high efficiency precision air-conditioning units. The Bank’s ultimate objective is to reorient itself as a highly technology enabled bank and bank of first choice for its customers in order to emerge as a leader in the global market place on every single parameter including technology.

Now when our environment fights us back, we are forced to rethink and amend our ways of living to become more eco-friendly. A new trends, hence, was given birth in our endeavor to become eco-friendly which many define as ‘being green’. India has enrolled herself to join this new trend and pass out with the best result possible. **India already has many ongoing initiatives to talk about in the context of ‘being green’**. Another trend of being green for publicity has also been reported among many celebrities who support various green causes. **NDTV ‘Save the Environment’ campaign witness many celebrities like Abhishek Bachan, Abhinav Bindra, M. S. Dhoni, Priyanka Chopra, Rohit Bal, Shah Rukh Khan and many other joining the campaign to save the environment.** The banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems. As green bank has rapidly expanded its operations, the challenge for its leadership has been on managing this growth successfully and prudently.
2.2 RELEVANT STUDIES IN INTERNATIONAL CONTEXT

2.2.1 History of Green Banking

*Green Banking* is any form of banking from which the country and nation gets environmental benefits. An orthodox bank becomes a green bank by directing its core operations towards the betterment of environment. *The concept of green banking emerged in 2009 with coming of the first green bank based in Mt. Dora, Florida, United States.* The banking sector can play an intermediary role between economic development and environment protection by promoting environmentally sustainable and socially responsible investment. The concept of green banking was developed in the western countries. Green Banking was formally started in 2003 with a view to protect the environment. Then the Equator Principles (EPs) were launched and were initially adopted by some leading global banks, such as Citigroup Inc, The Royal Bank of Scotland, Westpac Banking Corporation. *In March 2009, Congressman Chris Van Hollen of USA introduced a Green Bank Act with the aim of establishing a green bank under the ownership of the US government.* *(Carifio, S and Perla, M, 2007).*

After introducing the Green Banking, initial decision was to minimize the paper use in banking works, because to make all kinds of papers needs to cut trees as raw materials (it minimizes the green forestation), and for this reason naturally is reduce the Oxygen and increases the carbon-dioxide in airspace / globe. *There are two ways of green banking practices. One is in-house green banking; another is practice by the bankers in their business area.* Creating clean and hygienic banking environment, green building, reforestation, online banking, waste management, installation of solar panel on the rooftop of the bank and using high mileage
vehicles, reducing sound pollution, using webcam for video conferencing instead of physical meetings, online statements, emailing documents are included in the in-house Green Banking. Financing the green projects like Biogas Plant, Solar/Renewable Energy Plant, Bio-fertilizer Plant, Effluent Treatment Plant (ETP), Projects having ETP etc, working on specific green projects, voluntary activities of banks are major practices by the bankers in their business areas. Green banking undertakes proactive measures to protect environment and to address climate change challenges while financing, along with efficient use of renewable, non-renewable, human and natural resources (*Chimi and Russell*, 2008).

**Features of Green Banking**

Some important features of green banking operations are as follows:-

- Banks can help environment through automation and online banking.
- Green banking focuses on social safety and security through changing the negative impacts of the society.
- In financing, it always gives priority to investments/loans which consider risk factors regarding environmental conditions.
- It always cares for sustainable and green growth in industrialization and for social purposes.
- It creates a congenial atmosphere inside and outside the bank.
- It considers the clients as its family members, and as such, guides and supervises the projects to reduce pollution, and Thus, implements scientific methods in the real sense by implementing environmental due diligence (EDD) checklist.
• It reduces cost and energy; Thus, saving money and increasing GDP of a country.

• It changes the mental faculties of the officials and customers, in line with green sensibilities.

• It helps institutions; men and the nation in general live with dignity.

International Policy Guidelines for Green Banking

Global warming is an issue that calls for a global response. The rapid change in climate will be too great to allow many eco-systems to suitably adapt, since the change has direct impact on biodiversity, agriculture, forestry, dry land, water resources and human health. Due to unusual weather patterns, rising greenhouse gases, declining air quality etc. society demands that business also take responsibility in safeguarding the planet. Green finance as a part of Green Banking makes great contribution to the transition to resource-efficient and low carbon industries, i.e. green industry and green economy in general. Green banking is a component of the global initiative by a group of stakeholders to save environment (Cho, Yoon and Joseph, Ha, 2008).

2.2.2 Green Banking Initiatives in Bangladesh:

To implement “Green Banking”, Bangladesh Bank has developed the regulations of Green banking in the year 2011. Bangladesh Bank is the World’s first central bank, which has in-depth and apparent knowledge on green banking. State Owned Banks, State Owned Commercial Banks, Private Commercial Banks and Foreign Commercial Banks etc., all banks are working diligently on Green Banking as instructed by Bangladesh Bank. As per Bangladesh Bank’s data
on “Green Banking” 2013, all scheduled banks have developed their own Green Banking Policy and Green Banking unit. After increasing environmental risks, banks have distributed 793,561.25 million Taka in 10,868 projects. In year 2012, banks have distributed 270,921.53 Million Taka as Green Financing. Banks have been encouraged to utilize the 258.89 Million Taka as CSR (Corporate Social Responsibility) in Green Banking Activities and Green Projects. They have concentrated on Green Marketing, Training and Development utilizing 90.42 million taka from their fund. Current situation of online banking is, 3445 branches among 8392 branches (41.05%) are completely technologically enriched. State Owned Banks and Specialized Development Banks have continued working on online internet and SMS banking initiative (Choudhury, Koushiki., 2007).

**Bangladesh Bank's Earlier Initiatives**

BB is well aware of the environmental degradation situation as mentioned above and has already given time to time directions to all scheduled banks. Commercial Banks are now required to ensure necessary measures to protect environmental pollution while financing a new project or providing working capital to the existing enterprises. Banks have been advised to facilitate their clients with utmost care in opening Letter of Credit (L/C) for installation of Effluent Treatment Plant (ETP) in the industrial units. Banks have been advised to finance in Solar Energy, Bio-gas, ETP and Hybrid Hoffman Kiln (HHK) in brick field under refinance program of BB. A comprehensive guidelines on Corporate Social Responsibility (CSR) has been issued, where banks have been asked to concentrate hard on linking CSR at their highest corporate level for ingraining environmentally and socially responsible practices and engaging with borrowers in scrutiny of the environmental and social impacts. Banks have been brought under the purview of E-
commerce with a view of providing the customers with online-banking facilities covering payments of utility bills, money transfer and transactions in local currency through internet as well. Considering the adverse effects of Climate Change, banks have been advised to be cautious about the adverse impact of natural calamities and encourage the farmers to cultivate salinity resistant crops in the salty areas, water resistant crops in the water locked and flood prone areas, drought resistant crops in the drought prone areas, using surface water instead of underground water for irrigation and also using organic fertilizers, insecticides by natural means instead of using chemical fertilizer and pesticides.

With a view of developing green banking practices in the country, an indicative Green Banking Policy and Strategy framework has been developed for the banks in the following manner (Claes, Johnson, Anderson, Cha and Bryant, 1996).

**Green Banking Policy needs to be covered through time frame work which will be segregated into 3 phases.**

**2.2.2.1 Phase I**

![Figure-2.1: First Phase of Implementing Green Banking](Source: Bangladesh Bank, BRPD circular no 02, 2011)
Features of This Phase in Bangladesh Green Banking Were:

- **Incorporation of Environmental Risk in CRM:** Banks shall comply with the instructions stipulated in the detailed guidelines on Environmental Risk Management (ERM) in consideration of a part of the Green Banking Policy. Bank shall incorporate Environmental and Climate Change Risk as part of the existing credit risk methodology prescribed to assess a prospective borrower. This will include integrating environmental risks in the checklists, audit guidelines and reporting formats. All of this will help incorporate mainstream Environmental Risk that covers possible sources of Environmental Risk such as Land use, Climate change related events (cyclone, drought). Animal diseases/pathogens such as avian influenza, solid waste including waste feed, animal waste, carcasses, sediments, wastewater discharges, hazardous materials, etc will be reviewed under Environmental Due Diligence (EDD) checklists.

- **Initiating In-house Environment Management:** Banks shall prepare an inventory of the consumption of water, paper, electricity, energy etc. by its offices and branches in different places. Then it should take measures to save electricity, water and paper consumption. A 'Green Office Guide' or at least a set of general instructions should be circulated to the employees for efficient use of electricity, water, paper and reuse of equipments. In place of relying on printed documents, online communication should be extensively used (where possible) for office management, and make sure that the printers are defaulted to duplex for double-side printing to save papers. Banks may apply Ecofont in printing to reduce use of ink, use scrap paper as notepads and
avoid disposable cups/glasses to become more eco-friendly. Installation of energy efficient electronic equipments and automatic shutdown of computers, fans, lights, air coolers etc. will help reducing electricity consumption. Energy saving bulbs should replace normal bulbs in branches/offices of the banks. Banks should make plan to use solar energy at their premises to save electricity. Banks should take steps to save energy from corporate business travel and encourage employees to purchase energy efficient cars that consume less fuel, and can reduce gas and petroleum consumption (Cockrill, Antje, Goode, Mark M. H. and Beetles, Andrea, 2009).

- **Introducing Green Finance:** Eco friendly business activities and energy efficient industries will be given preference in financing by banks. Environmental infrastructure such as renewable energy project, clean water supply project, waste water treatment plant, solid & hazardous waste disposal plant, bio-gas plant, bio-fertilizer plant should be encouraged and financed by banks. Consumer loan programs may be applied for promoting environmental practices among clients.

- **Creation of Climate Risk Fund:** Bank should finance the economic activities of the flood, cyclone and drought prone areas at the regular interest rate without charging additional risk premium. However, banks should assess their environmental risks for financing the sectors in different areas for creating a Climate Change Risk Fund. This will be used in case of emergency. The bank would ensure regular financing flows in these vulnerable areas and sectors. The fund could be created as part of banks’ CSR expenses.
- **Introducing Green Marketing:** Green marketing is the marketing of products that are presumed to be environmentally safe. Green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. It refers to the process of selling products and/or services based on their environmental benefits. Such a product or service may be environmentally friendly in it or produced and/or packaged in an environmentally friendly way. Banks should use environmental causes for marketing their services to consumers. Green marketing is expected to help awareness development among common people (Cronin J. Joseph, Jr. and Taylor, Steven A, 1994).

- **Online Banking:** Online banking is the practice of making bank transactions or paying bills via the Internet on a secure website of the respective bank that allows the customers to make deposits, withdrawals and pay bills. Banks should give more emphasis to make the easiest way to help environment by eliminating paper waste, saving gas and carbon emission, reducing printing costs and postage expenses. Supporting Employee Training, Consumer Awareness and Green Event Employee awareness development and training on environmental and social risk and the relevant issues should be a continuous process as part of the bank's Human Recourse Development. Awareness development among consumers and clients would be a continuous job of a bank under its public relation department.
• **Disclosure and Reporting of Green Banking Activities:** Banks shall report on the initiatives/practices to BB and disclose in their respective websites *(Cronin, J., Taylor, S.A, 1992).*

### 2.2.2.2 Phase II

**Figure-2.2: Second Phase of Implementing Green Banking**

(Source: Bangladesh Bank, BRPD circular no 02, 2011)

**Features of This Phase in Bangladesh Green Banking Were:**

- **Sector Specific Environmental Policies:** Banks need to formulate strategies to design specific policies for different environmental sensitive sectors such as Agriculture, Agri-business (Poultry & Dairy), Agro farming, Leather (Tannery), Fisheries, Textiles and Apparels, Renewable Energy, Pulp and Paper, Sugar and distilleries, Construction and Housing, Engineering and Basic Metals, Chemicals (Fertilizers, Pesticides and Pharmaceuticals), Rubber and Plastic Industries, Hospitals/Clinics, Chemical Trading, Brick Manufacturing, Ship breaking etc. *(Cronin, Joseph J. Jr. en Steven A. Taylor, 1994).*
• **Green Strategic Planning:** A bank should determine green targets to be attained through strategic planning. Bank should determine a set of achievable targets and strategies, and disclose these in their annual reports and websites for green financing and in-house environment management as well. For in-house environment management, the target areas should cover attaining energy efficiency in the form of the use of renewable energy, reduction of electricity, gas, and petrol consumption, reduction of Green House Gas (GHG) emissions, issuance of e-statements, electronic bill pay, saving papers, environment friendly office buildings etc. For Green Financing, the target areas should cover reducing loans for certain environmentally harmful activities, attaining a particular percentage of environmental loans as percentage of total, introducing eco-friendly financial products etc.

• **Setting up Green Branches:** Green Branch should be featured by the provision of the maximum use of natural light, use of renewable energy, use of energy saving bulbs and other equipments, reduced water and electricity use, use of recycled water etc. Such a branch of a bank would be specifically designated as a ‘Green Branch’. A Green Branch will be entitled to display a special logo approved by Bangladesh Bank. The criteria for certification of a ‘Green Branch’ will be circulated by Bangladesh Bank in due course of time *(Crouch, Mira & McKenzie, Heather., 2006).*

• **Improved In-House Environment Management:** Strategy of reuse, recycling of materials and equipments, and source reduction and waste minimization strategy should be part of in-house environmental management
in Phase-II. Banks should increasingly rely on virtual meeting through the use of video conferencing in lieu of physical travel which would help saving cost and energy.

**Formulation of Bank Specific Environmental Risk**

- **Management Plan and Guidelines**: A bank should develop and follow an environmental risk management manual or guidelines in their assessment and monitoring of project and working capital loans. In addition to the compliance of national regulation, the bank may set internationally accepted higher environmental standards. In this connection, Green initiatives by a group of banks will not only be effective, but will also offer competitive advantage. Bank alliances may prepare standards and guidelines for themselves for improving Green Banking practices.

- **Rigorous Programs to Educate Clients**: Clients and business houses should be encouraged and influenced to comply with the environmental regulations and undertake resource efficient and environmental activities. Banks should introduce rigorous programs to educate clients.

- **Disclosure and Reporting of Green Banking Activities**: Banks should start publishing independent Green Banking and Sustainability reports showing past performances, current activities, and future initiatives. Updated and detailed information about banks environmental activities and performances of major clients should be disclosed (Daniel, E., 1999).
2.2.2.3 Phase III

![Diagram: Third Phase of Implementing Green Banking]

*Figure-2.3: Third Phase of Implementing Green Banking*
(Source: Bangladesh Bank, BRPD circular no 02, 2011)

**Features of This Phase in Bangladesh green Banking were:**

- **Designing and Introducing Innovative Products:** Alongside avoiding negative impacts on environment through banking activities, banks are expected to introduce environment friendly, innovative green products to address the core environmental challenges of the country (David Ockert, 2005).

- **Reporting in Standard Format with External Verification:** Banks should publish independent Green Annual Report following internationally accepted format like Global Reporting Initiatives (GRI) targeting their stakeholders. There should be arrangement for verification of these publications by an independent agency or acceptable third party.

- **Reporting Green Banking Practices on Quarterly Basis:** Banks shall report their initiatives/activities under the said program to the Department of Off-site Supervision of Bangladesh Bank on quarterly basis. Banks submitted their first quarterly report on June 30, 2011 basis within July 15, 2011 and similarly they were required to continue to submit reports on the
subsequent quarters within the next 15 days of the respective quarter end. Banks shall keep their annual report and websites updated with the disclosures on green banking initiatives/activities.

The compliant banks practicing Green Banking will have the following preferential treatments:

(i) BB will award points to banks on Management component while computing CAMELS rating where there will ultimately be a positive impact on overall rating of a bank.

(ii) BB will declare the names of the Top Ten Banks for their overall performance in green banking activities in the BB websites.

(iii) BB will actively consider green banking activities/practices of a bank, while granting permission for opening new bank branch (Donne and Telleze., 2008).

Overall Status of Green Banking and its Initiates in Bangladesh are:-

Most of the PCBs and FCBS adopted the policy except SCBs and SDBs who have not taken such steps yet.

- Online banking and ATM facilities of SCBs and SDBs are very poor, BB need necessary steps for that regards.
- Shrink giving loans to environmentally harmful projects; Make sure the necessary environmental compliance factors before lending a loan/investment; Bangladesh Bank not only gives the policy, but also provides technical supports for GB adoption.
• GB motivates the banking that reduces use of paper, which Creates brand image; creates awareness amongst the stakeholders about the environment as well as environmental friendly business practices, i.e. solar equipment, ETP, Bio-gas Plant, Hybrid Hoffman Kiln (HHK) etc.

2.2.3 GREEN BANKING INITIATIVES AT INTERNATIONAL LEVEL

It is estimated that out of the US$50 trillion in banking assets in emerging markets (about a third of the global banking assets), less than 10% is currently directed to “green” loans or credits. In most emerging markets, the banking sector provides a significant proportion of the total capital available to industries, making it a powerful player in achieving sustainable economic development. A formal definition of sustainable or green banking is still evolving. Current understanding reflects a blend of risk management [screening and managing environmental & social (E&S) risks as part of banks’ decision making processes] and green loan origination (supporting businesses and industries with a positive impact on the environment and society). Thus, below mentioned green banking initiatives highlight an emerging positive dynamic of market-based actions and policy leaderships being adopted to increase the portion of sustainable businesses and industries in portfolios of emerging market banking institutions (Durkin, Mark and O'donnell, Aodheen, 2005)

SUSTAINABLE BANKING NETWORK

The Sustainable Banking Network (SBN) is an informal and exclusive group of banking regulators and associations that are interested in sustainable banking policies, guidelines and practices. Its main objective is to facilitate the collective learning of its members and to support them in policy development, to create drivers
for sustainable finance practices. The idea for the SBN arose during the Beijing Green Credit Forum in May 2012, where participants from 12 countries requested that the International Finance Corporation facilitate a knowledge network for banking regulators and associations. The Network was formally launched in September 2012.

Network Activities, the annual SBN meetings, implemented since 2012, are the principal space for dialogue, networking and knowledge generation. Past meetings have taken place in December 2012 in Washington DC, USA, in November 2013 in Tokyo, Japan, and in March 2014 in Lagos, Nigeria. These meetings provide SBN members with a platform to present national initiatives in the sustainable banking space, to discuss current issues and jointly develop new approaches to sustainable banking. Furthermore, regulators are invited to participate in IFC-hosted dialogue events and expert groups, such as the annual Performance Standards Community of Learning, a meeting for financial institutions that have adopted the Equator Principles. These events provide the opportunity for dialogue with leading commercial banks worldwide, which plays a crucial role in the development of regulatory guidance, Sustainable Banking Policies and Guidelines. To effectively shift to sustainable banking practices, banks require an enabling regulatory context that ensures a level playing field and provides the right economic incentives. With this in mind, a number of emerging market banking regulators have started to pioneer the development of such regulatory guidance, which focuses on more effective management of environmental and social risks in lending, and support for businesses that are greener, climate friendly and socially inclusive. The world map
on the following pages provides an overview of SBN countries that have issued or that are in the process of developing such guidelines for banks (*Daniel, E, 1999*).

**SBN Membership:** SBN members include banking regulatory bodies, environmental regulators and industry associations, such as banking associations. The Network is open to all officials or specialists working in these institutions, who have an interest in environmental and social sustainability issues, as well as in supporting the financial sector with guidance to manage environmental and social risks and opportunities.

**Current SBN members:**

- Bank of Bangladesh
- Central Bank of Brazil
- Central Bank of Morocco
- China Banking Regulatory Commission
- China Banking Association
- China Ministry of Environmental Protection
- Asobancaria, Banking Association of Colombia
- Otoritas Jasa Keuangan (Indonesia Financial Services Authority)
- Bank of Lao PDR
- Bank of Mongolia
- Mongolia Banking Association
- Mongolia Ministry of Environment and Green Development
- Nepal Rastra Bank
- Central Bank of Nigeria
Superintendence of Banks, Insurers, and Private Pension Funds of Peru

Bangko Sentralng Pilipinas

Thai Bankers Association

State Bank of Vietnam

Vietnam Ministry of Natural Resources & Environment

Five case studies are presented from SBN members who are also G20 member countries:

- **BRAZIL** has followed a path of combined voluntary and mandatory approaches to sustainable banking driven by the need for stronger efforts in environmental conservation and to foster sustainable development. Facilitated by the banking association, FEBRABAN, voluntary Green Protocols were first adopted by five Brazilian state-owned banks in 2008 and then by commercial banks in 2009. In 2014, the Central Bank of Brazil (BCB) published a mandatory Resolution 4,327 on Social and Environmental Responsibility for Financial Institutions. A 2013 study estimated that 11% of banks’ lending was directed to “new energy” and low-carbon agriculture (*David Ockert, 2005*).

- **CHINA**: China adopted a policy-based approach to sustainable banking to help tackle profound environmental problems and support the transition to a green, inclusive and resilient sustainable growth path. The People’s Bank of China (PBOC), China Banking Regulatory Commission (CBRC), and Ministry of Environmental Protection jointly issued the “Green Credit Policy” in 2007, followed by CBRC’s “Green Credit Guidelines” and a monitoring framework to guide the implementation. At the end, banking
assets show the majorities have adopted E&S risk management practices and Green Credit now makes up approximately 10% of these banks’ portfolios. Building on this experience of greening the banking system, the People’s Bank of China (PBOC) is leading in efforts to green the whole financial system in China beyond banking (*Donne and Telleze, 2008*).

- **INDONESIA**: Otoritas Jasa Keuangan (OJK), the Indonesia Financial Services Authority, launched a Sustainable Finance Roadmap in December 2014. The roadmap enlists the financial sector, including banking, capital market, and non-bank financial institutions (insurance, leasing and pension funds) to contribute to the national commitment to address climate change and support the transition to a competitive low carbon economy. An Umbrella Policy is now being designed to provide practical guidance on how to green the whole financial system in Indonesia (*Durkin, Mark and O'donnell, Aodheen, 2005*).

- **MEXICO**: The Mexican Banking Association (ABM) has led a voluntary industry approach through the development of a “Sustainability Protocol”, which was formally signed by Mexican banks in April 2016. Aligning with national priorities, such as the government climate change targets for the next 15 years, and endorsed by relevant Mexico government agencies, the protocol provides guidance on both risk management and sustainable lending, coupled with a plan to provide capacity building and tools for implementation (*Gibbons, J.D., & Chakraborti, S, 2005*).

- **TURKEY**: Turkish banks have followed a market-led route to sustainable banking, aligning with national goals as well as international principles and
good practices. In 2014, the Banks Association of Turkey (BAT) issued voluntary Sustainability Guidelines for the banking Sector. The Guidelines were prepared by a BAT working group on the Role of the Financial Sector in Sustainable Growth, with the participation of 18 banks (Godwin J. Udo, Kallol K. Bagchi, and Peeter J. Kirs, 2008).

Designing and implementing effective national frameworks for sustainable banking requires different strategies in different countries. SBN members point to consistent general barriers or challenges. The common barriers include:

- Defining and measuring sustainable banking
- Embedding sustainable banking in banks’ core business
- Creating business drivers for sustainable banking
- Promoting information flow to enable sustainable banking
- Building capacity among regulators and banks.

Commonalities in the different country experiences have emerged, which offer valuable lessons and success factors that others can apply. These include the following strategies implemented in various SBN member countries that address some of the barriers and challenges identified above.

- Blended strategy of policy-support and industry-led initiatives at different stages of sustainable banking development Incentives
- Multi-stakeholder consultation and awareness rising
- Inter-agency collaboration
- Capacity building and guidance for regulators and FIs
• Monitoring and assessing FI implementation, including key performance indicators (KPIs)
• Adopting a holistic approach to E&S aspects in sustainable/green banking definition
• Partnership with the International Community

**Looking across this emerging practice, four key indicators appear to be useful to track green banking:**

1. **Banking commitments**: the adoption and implementation of green finance principles, standards, and practices by banks.
2. **Financial flows**: the volume and distribution of bank assets to green investment priorities.
3. **Financial risk**: the impacts on the quality of financial assets from integrating environmental and social factors (e.g. non-performing loans)
4. **Environmental and social outcomes**: avoidance of negative E&S impacts and achievement of positive impacts in core financing activities.

Finally, it can be recommended that from options the G20 can consider to scale up sustainable banking, drawing on country experiences and leveraging the existing SBN platform. These could include-

• Advance common definitions and measurement of “sustainable banking”.
• Support the establishment of a global knowledge hub to scale up the information exchange and peer-learning, drawing on the experience of SBN.
• Accelerate country-driven work programs to deepen the technical knowledge base for implementation, including through regional prioritization and collaboration.

Sustainable banking spans two important aspects of banks’ business operations:

i) **Risk management** by integrating E&S risks in lending considerations in order to avoid or mitigate financial losses, reputational risk or harm to the environment and people caused by projects banks’ finance. Increasingly, a growing number of markets also recognize climate risk as a stand-alone factor impacting performance of lenders and borrowers.

ii) **Loan origination** by supporting lending to businesses that are environmentally friendly and socially responsible, which is rapidly increasing in line with the global commitment to increase funding for climate change solutions.

On the risk management side, there has been growing global convergence of E&S risk management standards among public and private financial institutions in the past decade.

Applied to all IFC investments, IFC’s Performance Standards have become globally recognized as a benchmark for E&S risk management in private sector operations. Together with the World Bank Group Environmental, Health and Safety (EHS) Guidelines, they are the basis of the Equator Principles.

The Equator Principles is a risk management framework, adopted by commercial financial institutions, defining roles and responsibilities of lenders and
borrowers in determining, assessing and managing E&S risk in project finance. As of August 2016, 84 financial institutions in 36 countries have officially adopted the Principles, representing over 70% of international project finance debt in emerging markets (Green and Carmone, 1970).

Multilateral development banks (MDBs), European Development Financial Institutions (EDFIs), and OECD export credit agencies (ECAs) through the OECD Common Approaches are increasingly drawing on similar and compatible standards as the IFC Performance Standards and Equator Principles for their private sector investment activities. A growing number of national sustainable banking frameworks also refer the IFC Performance Standards as good international industry practice. In effect, these joint efforts have created a sustainable banking landscape that is much more level and convergent than five to ten years ago.

By effectively managing E&S risks and identifying opportunities alongside these risks, banks are beginning to create long-term value for their business. Some banks are driven toward a sustainability path through their need to manage E&S risks, while others enter the path through their desire to offer innovative green products and differentiate themselves from their competitors. While the entry points will vary from bank to bank, it is our view that the optimal long-term value creation is only possible through a careful management of both risks and opportunities (Gronroos, C, 1984).

Adoption of voluntary frameworks like the Equator Principles and other voluntary commitments such as the UNEP Finance Initiative has increased significantly among leading international banks over the last decade. However,
adoption by banks in emerging markets has been slower, now about 30% of Equator Principles financial institutions and 50% of the 133 UNEP FI bank signatories. A 2011 Equator Principles strategic review found that implementation varies from bank to bank. Due to a lack of a reporting standard, reporting is often inadequate to provide information on how the EPs are being implemented. A recent IFC survey in the banking sector, conducted in 25 markets, also confirmed that implementation of sound E&S risk management practices and an offering of green banking products in emerging markets still lags behind in developed economies. This is despite the costly effects of environmental and social risk. For example, a comprehensive 2009 study by the Chinese Academy of Sciences estimated the annual cost of resource and environmental degradation to be equivalent to 13.5% of China’s GDP in 2005. This represents risk as well as lost opportunities for banks and economies. The following sections discuss some of the barriers and lessons learnt that can inform a global agenda to scale up green banking (Guest, Greg, Bunce Arwen and Johnson Laura, 2006).

SUSTAINABLE BANKING EXPERIENCES IN EMERGING MARKETS

The Sustainable Banking Network (SBN) captures a new trend of country-level sustainable banking initiatives across multiple emerging markets, where banking regulators and associations are acting as key market drivers. Established in 2012 by regulators from 10 countries, and facilitated by IFC, SBN now brings together 24 countries (see Annex 2), of which 12 – Bangladesh, Brazil, China, Colombia, Indonesia, Kenya, Mexico, Mongolia, Nigeria, Peru, Turkey and Vietnam – have launched national policies, guidelines, principles, or roadmaps focused on sustainable banking.
Each country has adopted a unique route in response to local context and priorities. In Bangladesh, China, Indonesia, Nigeria, Peru and Vietnam, financial or banking regulators have taken the lead through policy-based initiatives. In Colombia, Kenya, Mexico, Mongolia and Turkey, banking associations have coordinated voluntary, industry-led initiatives. In each country, the definition of sustainable banking may also vary in terms of how much weight is given to risk management versus green loan origination (Han and Beak, 2004).

On the risk management side, convergence of local and global E&S standards is helping to level the playing field for local banks and reinforce existing efforts by banks to harmonize their systems with international banks leading in this space. The IFC Performance Standards and voluntary Equator Principles are often a starting point or benchmark when designing country-specific green banking policies. This also makes more efficient use of regulators and market resources. While international standards are useful, SBN members confirm that implementation, compliance and enforcement mechanisms are significantly stronger when policies and principles reflect the country context, including existing specific laws and regulations.

On the loan origination side, different definitions of green loans/credit make it difficult to track and compare initiatives. Country-specific green lending categories tend to be selected based on national strategic priorities, economically important and high impact sectors, and local E&S challenges. Tracking and comparisons are crucial to measure progress in this space.
The following five G20 countries examples show how these different elements are blended in various ways, revealing an emerging positive dynamic of market based actions and policy support (Homburg, Christian, Nicole, Koschat, & Wayne D. Hoyer, 2005).

BRAZIL has followed a path of combined voluntary and mandatory approaches to sustainable banking driven by the need for stronger efforts in environmental conservation and to foster sustainable development. Voluntary Green Protocols were first adopted by five Brazilian state-owned banks in 2008 and then by commercial banks in 2009. This reinforced existing commitments by Brazilian banks to international good practice, such as the Equator Principles. In 2004, Banco Bradesco and Itau Unibanco were among the earliest banks to sign up to the Equator Principles, followed by Banco do Brasil and CAIXA. The Green Protocols gave a greater focus to the creation of internal bank systems that address national sustainable banking priorities (Hossain and Leo, 2009).

Facilitation and support by the Brazilian banking association, FEBRABAN, and the Ministry of Environment were critical in guiding the broad commercial banks to adopt the Green Protocol. Between 2008 and 2011, the Central Bank of Brazil (BCB) issued a series of industry-specific and thematic green banking regulations, including on the protection of the Amazon Biome, sugar cane investments and labor standards.

In 2011, when issuing the regulation (Circular 3,547) regarding the Internal Capital Adequacy and Assessment Process (ICAAP) set out in Pillar 2 of Basel III, the BCB required large banks to assess their individual exposures to E&S risks and
the potential impact on regulatory capital. This regulation also requires banks to
publicly disclose their E&S risks as part of the market discipline disclosure rules of
Pillar 3 of Basel III.

In 2014, BCB published a mandatory Resolution 4,327 on Social and
Environmental Responsibility for Financial Institutions. The Resolution strengthens
E&S risk management and introduces the concept of relevance and proportionality
of E&S risks. It requires banks to develop and execute a Social and Environmental
Responsibility Policy, aimed at managing E&S risks, preventing losses from both
environmental damages and social issues, and engaging with affected stakeholders
(Hossain, Mohammed and Leo, Shirley, 2009).

A 2014 study by the Center for Sustainability Studies established the first
baseline of green lending in Brazil as of the end of 2013. By classifying different
types of green lending, the study found that approximately 11% of banks’ lending is
directed to “new energy” (small-scale distributed solar energy generation) and low-
carbon agriculture.

In 2015, Resolution 4,427 was issued to address specific aspects of risk
management and credit monitoring. Banks are authorized to carry out inspections of
rural credit operations by remote technology through the analysis of images
produced by satellite or Unmanned Aerial Vehicle (UAV), commonly known as
drones. The use of images is expected to improve the monitoring process in order to
better evaluate the application of resources. Additionally, banks are required to
inform the BCB of the geodetic coordinates for all rural financed projects, including
crops financing, formation or recovery of pasture, as well as investment in permanent crops and forests (Howcroft J. B, 2016).

**CHINA:** China adopted a policy-based approach to sustainable banking to help tackle profound environmental problems and support the transition to a green, inclusive and resilient sustainable growth path. In 2006, China for the first time included quantitative energy efficiency and pollution reduction targets as mandatory targets in its over-arching five-year national economic development plan. Against this background, in 2007, the China Banking Regulatory Commission (CBRC), People’s Bank of China (PBOC), and the Ministry of Environmental Protection (MEP) jointly issued the Green Credit Policy, which called on banks to consider environmental impact and energy efficiency as part of lending decisions. CBRC issued credit guidance in the same year and started to lead on a series of awareness raising activities among banks as well as dialogues with multiple ministries to channel information and technical know-how to banks to enable green lending. In 2012, the CBRC Green Credit Guidelines were introduced, building on local experience and international good practices and providing clear operational guidance to implement green banking in three categories: E&S risk management, green lending products and services, and greening banks’ own operations. CBRC further introduced the Green Credit Key Performance Indicators (KPIs) in 2015 to strengthen monitoring and evaluation of green banking (Hu, L.T. & Bentler, P.M, 2015).

In terms of green loan origination, CBRC introduced the Green Credit Statistics System in 2014, which was the first among emerging market examples of regulatory guidance to define green loans. Green credit loans are classified into 12
categories with sub-categories, reflecting consensus within industries on what projects are considered green. A tool has also been developed for banks to calculate the environmental benefits from green credit lending, including reduction in carbon emissions, water pollution, chemical organic demand (COD), and savings on water use. With a standardized definition for green banking assets, it is easier for banks to issue green bonds or pilot other green banking products, such as asset-backed securitization. CBRC Green Credit Statistics also track data on loans with compliance issues on (i) environment, (ii) safety, (iii) deploying technologies mandated to be phased out, and (iv) occupational health.

Another good example is CBRC's 2015 Energy Efficiency Lending Guidance, a joint effort with the National Development and Reform Commission (NDRC), which regulates energy efficiency (EE) and emission reduction. This Guidance reflects combined results of (i) CBRC's efforts to address barriers on the banking industry side in scaling up EE finance, including lack of knowledge among banks about how to assess and finance an EE project, and (ii) good practices developed by a number of leading green banks over the years, including the China Energy Efficiency Financing program, a risk-sharing facility introduced by IFC, which has financed nearly US$1 billion investment to date and achieved mainstreaming of energy efficiency investments into the participating banks’ main business lines. CBRC is also actively tracking the development of carbon finance market development and in close dialogue with both responsible ministries and active banks in this space *Jabnoun Naceur, Khalifa, Azaddin, 2005*
China Green Credit Loan Classifications

1. Green Agriculture Development
2. Green Forestry Development
3. Industrial Energy Conservation, Water Conservation and Environmental Protection
4. Natural Preservation, Ecological Restoration and Disaster Prevention and Control
5. Resource Recycling
6. Waste Disposal, Pollution Prevention and Control
7. Renewable Energy and Clean Energy
   7.1. Solar Energy
   7.2. Wind Power
   7.3. Biomass Energy
   7.4. Hydropower
   7.5. Other Renewable Energy and Clean Energy
   7.6. Smart Grid
8. Rural and Urban Water Projects
   8.1. Rural Drinking Water Safety
   8.2. Small-Scale Farmland Water Conservancy Construction
   8.3. Urban Water Conservation
9. Building Energy Efficiency and Green Building
   9.1. Green Reconstruction Project for Existing Buildings
   9.2. Green Building Construction and Operational Maintenance
10. Green Transport
   10.1. Railway Transport
   10.2. Waterway Regulation and Ship Purchase
   10.3. Urban Public Transport
      10.3.1. Urban Bus or Trolley bus
      10.3.2. Urban Rail Transport
   10.4. Environmental Protection Projects in Transportation

11. Energy Conservation and Environmental Protection Services
   11.1. Energy Conservation
   11.2. Environmental Protection
   11.3. Water Conservation
   11.4. Circular Economy (Resource Recycling)

12. Overseas Projects Adopting International Practices and Standards

At the end of 2015, CBRC’s green credit statistics for the top 21 Chinese banks (accounting for around 80% of total banking assets) show that (i) on the risk management side, the majority of the top 21 banks have adopted E&S risk management practices at different levels; and (ii) on the green loan origination side, the loan balance towards green credit exceeded US$1 trillion, representing 16% growth year-on-year and 2% higher than the overall lending growth rate. Green credit now makes up approximately 10% of these banks’ portfolios.

Building on this experience of greening the banking system, the People’s Bank of China (PBOC) is leading efforts to green the whole financial system in China. With PBOC support, the China Green Finance Council was set up in April
Literature Review

2015 with a wide range of financial market players and stakeholders. It is mandated to deepen and promote green finance across banking, capital markets and the insurance industry. Leveraging the experience and knowledge from the Green Finance Council, PBOC is championing a series of specific green finance agenda items to be included in China’s five-year plan on “ecological civilization”, a national strategy to shift to green economy growth patterns. In December 2015, PBOC also issued the “Green Financial Bond” rules regarding green bond issuance by banks and other financial institutions (PBOC Decree No. 1 [2005]), in a bid to raise investment of some RMB 300 billion (US$45.3 billion) annually for environmentally friendly projects. As a response, in January 2016, the first green bonds were issued by the Shanghai Pudong Development Bank (SPD) and China Industrial Bank (CIB) respectively. The former issued RMB 20 billion (US$3.1 billion), while the latter issued RMB 10 billion (US$1.5 billion), with third party verification (Jamal and Naser, 2008).

INDONESIA: Placing Indonesia’s economy onto a green and sustainable development pathway, as envisaged in the National Long Term Development Plan, required a large mobilization of investment. Estimates of the annual investment needed are in the order of US$300-US$530 billion, with a large portion of this investment needed in critical infrastructure, as well as environmentally sensitive areas such as agriculture, forestry, energy, mining and waste. According to IFC research conducted in 2014, the majority of banks as well as non-bank financial institutions in Indonesia do not consider E&S factors in their lending or investment process as a main consideration. However, Indonesia’s financial markets have seen a
number of important design innovations over the past years aimed at encouraging green lending and investment.

Recognizing the need for an integrated and robust response from the financial sector, while at the same time improving the resilience and competitiveness of financial services institutions, Otoritas Jasa Keuangan (OJK), the Indonesia Financial Services Authority, launched a Sustainable Finance Roadmap in December 2014. The roadmap enlists the financial sector under OJK’s supervision, including banking, capital market, and non-bank financial institutions (such as insurance companies, leasing companies and pension funds) to contribute to the national commitment to address climate change, including mitigation, adaptation and the transition to a competitive low carbon economy.

OJK has established a goal to expand investment in green and inclusive industries, which will create a larger market and wider activities for FIs. This includes development of green financing products, schemes and lending guidelines. An Umbrella Policy is now being designed to provide practical guidance to the whole financial system in Indonesia. The Policy will cover definition, principles of sustainable finance, priority sectors, and an action plan for banking, capital markets and non-banking sectors. Future green finance initiatives are expected to include green insurance and green bonds. The Roadmap will constitute an integral part of OJK’s Master Plan for Indonesia’s financial sector. Despite being at an early stage, the Roadmap is unique internationally as a systematic plan grown out of a decade of development of sustainable finance in Indonesia (Jayawardhena, C., & Foley, P, 2000).
MEXICO: Mexico led efforts to establish “Inclusive Green Growth” as a priority area for the G20 development agenda under the Mexican G20 Presidency in 2012. This was taken forward by subsequent G20 presidencies and resulted in the launch of the Green Invest initiative in June 2015, supported by the German government. It will mobilize private capital, in particular from institutional investors, for inclusive green investments in emerging markets. Mexico’s green growth efforts are driven in particular by the government’s commitments, both in international agreements (such as COP 21) and new national legislation, to address climate change and transition to a low-carbon economy. Mexico already has a carbon tax in operation.

The banking sector has responded with a voluntary, market-led approach. The Mexican Banking Association (ABM) has led the development of a “Sustainability Protocol”, which was signed by Mexican banks and launched in April 2016. Similar to the initiatives in Brazil (2009) and Colombia (2012), the Protocol provides guidance on both risk management and sustainable lending, coupled with a plan to provide capacity building and tools for implementation (John E. Swan, I. Fredrick Trawick and Maxwell G. Carroll, 2013).

The Protocol has been designed, discussed and developed by the banking sector, framing most of the risk management and sustainable finance needs to align with national priorities, such as the government climate change targets for the next 15 years. The Secretary of Environment and Natural Resources (Semarnat) has addressed E&S risk management as well as sustainable finance.
With a view to successful implementation, ABM has defined key practical commitments for signatory FIs, including knowledge sharing, information disclosure, and participation in local and global sustainability initiatives, such as the Equator Principles.

**TURKEY:** Renewable energy development is a key environmental theme for Turkey, which is aligning its strategies with the European Union’s Renewable Energy Directive. Turkey produced its first National Renewable Energy Action Plan in 2014. Many of the country’s top 15 banks are participating in the sustainable energy financing facilities. However, responding to a 2015 IFC survey supported by the Banking Regulation and Supervision Agency of Turkey (BRSA), banks have expressed the need for legal and regulatory incentives as well as awareness rising to support the expansion of green investment programs. Harmonized green banking regulations do not yet exist.

In response, Turkish banks have followed a market-led route to sustainable banking, aligning with national goals as well as international principles and good practices. In 2014, the Banks Association of Turkey (BAT) issued voluntary Sustainability Guidelines for the banking Sector. The Guidelines were prepared by a BAT working group on the Role of the Financial Sector in Sustainable Growth, with the participation of 18 banks.

Social and environmental responsibility is also reflected in the Principles of Banking Ethics (article-3, paragraph-e) published by BAT, namely that banks should consider social benefits and respect the environment in all their operations. BAT has further developed an education module on Sustainable Banking and Environmental

**Barriers**

Experiences from G20 and non-G20 countries that are members of SBN point to consistent general barriers or challenges faced by banking regulators and banking associations, creating national enabling frameworks for sustainable banking. These insights are reinforced by an IFC survey in over 25 countries in the past 4 years and through IFC’s collaboration with over 800 client financial institutions over the past two decades, representing 10% (US$5 trillion) of emerging markets banking assets.

The common barriers include

I) Defining and measuring sustainable banking

II) Embedding sustainable banking in banks’ core business

III) Creating business drivers for sustainable banking

IV) Promoting information flow to enable sustainable banking

V) Building capacity among regulators and banks

**Defining and measuring sustainable banking:** Sustainable banking is an evolving concept. Definitions differ across communities of practice and according to local culture and context. The term is generally understood by SBN members to include three optional components, depending on local preferences: i) E&S risk management in investment and lending processes; ii) lending and investment to green industries/projects and seeking positive E&S impact; and iii) how banks manage their own E&S footprints, such as greening their facilities and undertaking
corporate social responsibility initiatives. The first two components are considered core, although weighted differently based on context and whether social dimensions are included. While the understanding of E&S risk management is now well defined, the definitions of lending with positive E&S impact, and the various models associated with this, can range widely from country to country. In addition, there is currently no systematic approach to measure and benchmark the progress and performance of sustainable banking at a global level. This is made more difficult by inconsistent definitions, data availability, and capacity and resource requirements associated with monitoring and evaluation (Jones, M. A., and Suh, J., 2000).

**Embedding sustainable banking in banks’ core business:** Banks surveyed by IFC in 25 emerging markets emphasize that senior management support is critical to ensuring company-wide buy-in and reinforcing structures for E&S risk management and sustainable banking. While there is growing interest to increase green lending portfolios, most banks are still struggling with instituting an E&S risk management culture and approach. There are also concerns about added costs of due diligence. SBN members have highlighted the importance of building awareness among banking executives about the value of sustainable banking to anticipate both transaction level and systemic E&S risks and business opportunities. Some SBN member countries are already linking E&S risk management to Basel requirements for managing material risks. DFIs are also helping to show the links with credit, market and operational risk, which can be addressed through enhanced due diligence and good corporate principles.
Creating business drivers for sustainable banking: The existence of a business case is critical to stimulate widespread adoption and innovation by banks. Being still a nascent practice, there have not been sufficient academic and empirical studies focused on the real costs and benefits of banks going green, although a growing body of research points to better risk profiles and profitability of sustainable businesses. SBN members confirm the need for in-depth research and systematic gathering of evidence on profitability and risk profiles of green portfolios at bank level. According to an IFC survey in 25 countries, since green lending practices do require more careful due diligence and stricter selection of clients and projects to finance, there are perceptions among banks that green lending could potentially cost them more in terms of doing business. The industry needs local champions who enter the green finance space and are willing to share their experiences and show the evidence of costs and returns. There are five common kinds of barriers that prevent banks from entering the sustainable banking space: motivation barriers, information barriers, technical barriers, financial barriers, and, last but not least, client awareness barriers. By creating sustainable banking policies and associated incentives, SBN members may well address motivation barriers, but all other barriers remain significant and need to be addressed as well (Kathryn Waite, 2006).

- Promoting information flow to enable sustainable banking: Regulators and banks often find they are not equipped with the necessary information to practice sustainable banking, both on the loan origination side and the risk management side. Banks have a desire to have access to databases that help classify and rate loans based on environmental information, maps, fines of
environment protection agencies, etc. E&S information is not presented in
easy ways for financial market players to understand and make decisions.
Most emerging markets countries have not started to track the level of green
lending, so no meaningful comparison can be made. As banks start to enter
the green bond space, there is a growing need for institutional capacity and
systematic approaches to expand the horizon of sustainable banking.

- **Building capacity among regulators and banks:** Lack of expertise and
capacity is frequently cited as a barrier to implementation, including a lack
of qualified service providers. This applies to banking regulators who must
engage with and supervise banks on this topic, as well as to banks tasked
with designing and running internal systems for sustainable banking. A lack
of qualified local service providers is also mentioned as an impediment faced
by banks when undertaking review and due diligence on prospective clients.
New green technologies evolve quickly and expertise is needed to assess
viability.

- **Brazil:** the Central Bank of Brazil (BCB) and Ministry for Environment
have supported voluntary initiatives by Brazilian state-owned and
BCB subsequently strengthened the policy signals for green banking through
thematic regulations on environmental and labor standards, via
implementation of the Internal Capital Adequacy and Assessment Process
(ICAAP) in 2011, and through the mandatory Resolution 4,327 on Social
• **Nigeria:** In 2012, the Nigerian Banker’s Committee, comprised of leading banks, launched the Nigeria Sustainable Banking Principles (NSBP). Throughout the process, Central Bank of Nigeria (CBN) was actively involved in shaping the agenda, appointing the advisory body to oversee implementation of the Principles, and taking on the supervision of implementation. As a result, the adoption of the Principles has become quasi-mandatory.

• **Incentives:** Market incentives have been introduced by a number of SBN members to drive banks to faster and more strategic implementation of sustainable finance. Incentives may focus on i) positive recognition for good performers, such as through preferential considerations and recognition during supervision, ii) increased lending to specific green sectors or market segments, such as through dedicated funds or credit lines, and iii) appropriate pricing of the currently externalized E&S costs of doing business, such as through taxes on carbon emissions. Fiscal subsidies are treated with caution, both to avoid subsidies for green industries that artificially create and, when withdrawn, destroy business cases, and to address subsidies that maintain incentives for non-renewable industries like fossil fuels.

• **Brazil:** BCB has issued resolutions on low-carbon agriculture (Resolution 3,896/2010) and climate change mitigation (Resolution 4,008/2011), which have led to establishing credit lines for climate-friendly lending backed by resources from the National Plan for Climate Change (FNMC). For instance, a Climate Fund was launched by Caixa Economic Federal to fund solar projects, energy efficiency, emissions reduction, and waste management
• **Bangladesh**: Bangladesh Bank (BB) has offered a BDT 2 billion (US$ 25.5 million) low-cost refinance window to provide liquidity support to lenders for green financing in 11 specified categories. A new US$ 200 million line of financing was approved by BB’s board of directors to support on lending by banks and FIs for green transitions in Bangladesh’s export-oriented apparels, textiles and leather manufacturing sectors. Macro-prudential support measures, such as lower equity margin requirements, are being employed to favor socially and environmentally beneficial initiatives and options. Good performers in green finance earn better BB supervisory (CAMELS) ratings, with attendant preferential considerations, such as permissions for business expansion.

**Multi-stakeholder consultation and awareness rising**: Extensive multi-stakeholder consultation has been an effective strategy in a number of countries to build a solid foundation of industry alignment and buy-in before launching national policies, guidelines or roadmaps on sustainable finance. It is also an important part of the implementation process to ensure sustained awareness and confirm regulator commitment to supervision and recognition of good performers.

• **Brazil**: In 2012, during the United Nations Conference on Sustainable Development (Rio+20), a public consultation was conducted by BCB to present the first regulatory proposals concerning the requirement of a social and environmental policy (PRSA) and social and environmental responsibility report, to be implemented by all banking and non-banking financial institutions. As a result of that debate, the Resolution No. 4327 of April 25, 2014, was edited, and provided the principles and guidelines for all
Brazilian financial institutions to adopt an E&S Responsibility Policy (PRSA).

- **Bangladesh**: Bangladesh Bank has led a sustained initiative to ingrain socially responsible, inclusive and environmentally sustainable financing in the institutional ethos of the country’s financial sector. Regular consultation has motivated all banks and FIs to increase financing for agriculture; micro, small and medium enterprises (MSMEs); and green businesses and industries.

**Inter-agency collaboration**: A characteristic approach of SBN members is to engage with other regulatory agencies and industry stakeholders in both the design and implementation of national green finance frameworks. Initially a way of overcoming pre-existing regulatory or industry barriers, inter-agency collaboration has proved a fruitful avenue for building capacity of banks, developing sector and thematic technical guidance, and designing market incentives.

- **China**: The 2007 Green Credit Policy was jointly developed by the People’s Bank of China (PBOC), China Banking Regulatory Commission (CBRC) and the Ministry of Environment (MEP), becoming first of its kind in inter-agency collaboration to develop green banking policy, signaling a strong political will to green the banking system. Since then, CBRC has taken the lead in implementing the policy through collaboration with various government agencies, such as the Ministry of Finance for Green Credit Guidelines development and Green Loan Classification across key industries.

- **Indonesia**: OJK, the Indonesia Financial Services Authority, is working with other ministries to develop incentives for sustainable finance, including risk
guarantee facilities and feed in tariffs for small scale renewable energy projects. OJK also partnered with the Ministry of Energy and Mineral Resources and the National Planning Agency on the publication of handbooks and provision of training for FIs on renewable energy and energy efficiency lending. OJK partnered with the Ministry of Fisheries to develop a sustainable financing plan for fisheries and a joint study on potential lending schemes for sustainable fishery businesses. In order to accelerate the roadmap implementation, OJK also partnered with several international organizations on research, strategic planning, capacity building and raising public awareness.

**Capacity building and guidance for regulators and FIs:** With sustainable banking being a new approach, capacity building efforts and the provision of technical guidance have been essential to assist banks to build internal know-how and systems. Support ranges from training and workshops to technical guidance and sector-specific guidelines and checklists.

- **Brazil:** BCB and IFC partnered to provide capacity building for Central Bank supervisors in order to strengthen knowledge of E&S risk management and support the implementation of the Resolution on E&S Responsibility for financial institutions.

- **China:** Following the launch of the Green Credit Guidelines in 2012, CBRC and the China Banking Association (CBA) have led efforts to disseminate best practices and sector-wide capacity building, including a Green Credit training book and trainings. CBRC has also led a series of awareness raising activities among banks, as well as dialogues with multiple ministries, to
channel information and technical know-how to banks to enable green lending.

- **Mongolia:** The Mongolian Bankers Association (MBA) representing all Mongolian banks, launched the Mongolia Sustainable Finance Principles and Sector Guidelines in December 2014, which took effect in January 2015. All participating banks have since developed internal E&S policies and procedures and have hired full-time E&S staff. The sector guidelines provide guidance to participating banks on how to assess potential E&S risks and opportunities in the agriculture, mining, manufacturing and construction sectors, and assess the ability of clients to manage E&S issues. They include guidance on E&S risk rating criteria for assessing and categorizing E&S risks, and encourage adoption of relevant industry international standards and best practices.

**Monitoring and assessing FI implementation, including key performance indicators (KPIs):** Monitoring and evaluation plays an increasingly critical role for SBN members as they move to establish ongoing supervision of banks’ implementation and to understand the state of green finance risks and business opportunities as they evolve. Consequently, early efforts have focused on establishing baseline data on E&S risks in banks’ portfolios and the extent of green lending. As banks mature in their internal data capture and external reporting, regulators are gaining an increasingly sophisticated picture of E&S risk management practices and pitfalls, as well as opportunities to further support green finance through market incentives.
- **China**: CBRC introduced a Green Credit Monitoring and Evaluation Mechanism in 2014 to track results of banks’ green credit performance and provide specific key performance indicators (KPIs) to ensure policy objectives are met. Banks are required to use the KPIs to conduct self-evaluation on a 12-month basis and file results with CBRC. CBRC uses the reports for off-site supervision and may also implement on-site supervision. CBRC has also developed a tool to capture the carbon emissions of projects.

- **Brazil**: BCB has required the establishment of a database to capture losses that result from environmental and social issues and also constituted a working group to discuss these issues. The Brazil banking association, FEBRABAN, is currently developing a framework of a database to capture indicators on environmental and social issues, and have made a guide available to local banks.

- **Nigeria**: Nigeria’s Central Bank introduced a Monitoring and Reporting Mechanism in 2013 to guide and monitor the implementation of the Nigerian Sustainable Banking Principles. Banks are required to provide preliminary once-off reports on policies and systems, as well as baseline data collection, followed by bi-annual reporting on indicators organized according to the 9 principles. At the end of 2015, Nigerian banks have now completed the submission of a first batch of reports, which CBN will assess to determine industry baselines and set benchmarks.

The term “green banking” is commonly approached from the environmental perspective. However, social conflicts linked to development projects are on the rise in many countries, driven by community concerns about land, livelihoods, benefit-
sharing and environmental damage. Social issues, Therefore, intersect with environmental issues and can have impacts on bank performance, such as through suspended projects, rising costs, construction delays, and threats to future investment. Human rights, labor standards and access to finance for marginalized groups are similarly social issues that represent risks as well as business opportunities for banks. Most country-level green banking initiatives Therefore, include both E&S dimensions in the definition of sustainable banking.

- **Turkey**: Turkey’s Sustainability Guidelines for the Banking Sector, issued by the Turkish Banking Association (BAT) in 2014, refer to management of both environmental and social risks, with particular reference to human rights and employee rights, and to stakeholder engagement and communication. Corporate governance is also mentioned, pointing to a further integration to form a combined concept of environmental, social and governance (ESG) performance of businesses.

- **Peru**: The Superintendence of Banking, Insurance and Private Pension Fund Administrators (SBS) of Peru launched the Regulation for Social and Environmental Risk Management in March 2015. SBS also released guidance on the Role of Enhanced Due Diligence in the Regulation of Socio-environmental Risk Management for Financial Firms to explain key features of the Regulation. These efforts have been particularly influenced by the high cost of delayed and cancelled projects in the real sector, such as mining, due to social and distributive factors.

**Partnership with the International Community**: One of the consistent themes across all SBN member countries is the fruitful collaboration with the
international community, including organizations from many G20 developed
countries. Either through engagement at global level, such as SBN knowledge
platform, or country-specific engagement on the development and implementation
of policies and principles, the international community is increasingly joining hands
to support SBN members as well as learn from their pioneering efforts. Examples of
collaboration include joint research, knowledge sharing, tool development, capacity
building, peer-to-peer (P2P) learning, funding, and harmonization of international
good practices with local requirements in a way that considers local context and
culture. SBN members have mentioned in interviews that many of the steps they
have taken were enabled by SBN platform and collaboration with peers and the
international community.

In conclusion, the country case studies, barriers, lessons learnt and common
success factors presented above provide an up-to-date snapshot of progress in key
emerging markets, among which G20 members are playing strong leadership roles.

**Options for the Green Finance Study Group**

The G20 is well placed to support the scaling up of sustainable banking
globally and mainstreaming in dialogue on the soundness and stability of the
financial sector. With this in mind, the following options are proposed:

(a) Advance common definition and measurement on sustainable banking: The
G20 could lead a global dialogue to bring consistency to sustainable banking
and develop common definitions and measurement strategies

(b) Support the establishment of a global knowledge hub to scale up the
information exchange and peer-learning, drawing on the experience of SBN.
(c) Accelerate country-driven work programs: G20 members can become more active drivers of specific work programs and regional collaboration to deepen the technical and knowledge tools for country-level implementation.

The degree of awareness regarding Green Banking or Sustainable Banking in India as well as in the whole world is insignificant. Only few researchers researched on Green Banking, so there are hardly any studies available on the aforesaid topic. Among the studies available, the researcher had disclosed all the studies accessible till April 2017. But unfortunately the number of studies done by the researchers is not adequate which makes it essential to do the current research in India.

2.3 KEY OBSERVATIONS

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. They are also called as sustainable banks. They are controlled by the same authority but with an additional agenda toward taking care of the Earth's environment and resource. Green Banking basically aims at reducing paper works and saving the energy for the betterment of society. Green Banking as a concept is a proactive and smart way of thinking with a vision for future sustainability of our Earth. In previous chapter of Literature Review, researcher had reviewed various national and international studies on concept and status of Green banking. Key observations are elucidated in table below:-
<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Key Observations</th>
</tr>
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| 2008 | Sahoo and Nayak | • Researcher revealed that there have not been many initiatives taken by Indian bank towards Green Banking.  
• Study also stated that none of the Indian banks have adopted equator principle. |
| 2012 | Bahl | • Bahl highlighted the importance of creating awareness towards Green Banking to ensure sustainable growth.  
• The author suggested that to attain sustainable growth imparting education through publications, newsletters and media are important. |
| 2013 | Jha and Bhome | • The researchers stated certain steps needed in green banking.  
• Online banking, Green checking accounts, Green Credit Cards were few steps suggested by them. |
| 2013 | Rajput, Kaur et al. | • The authors explained that there are only small group of banks in India that go ahead and takes initiatives in environmental aspect. |
| 2013 | Yadav and Pathak | • The authors research’s stated the initiatives taken by private and public bank for environment sustainability.  
• The results revealed that public sector banks have taken more initiatives as compare to private sector. |
<p>| 2013 | Rambalak &amp; Phatak Swroop | • The researchers made clear that the industries and firms are vulnerable to severe policies, severe laws of the country which affect the banks and financial institutions. |
| 2013 | Singhal, Singhal &amp; Arya | • The authors enlightened that Green banking saves the environment and helps to conserve the energy. They explained that bank should think far more than ATM, Green credit cards, green CDs. |
| 2014 | Khedekar | • According to the study of researcher the bank should provide internet banking such as Demat holding, investment to facilitate the public. |</p>
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<th>Year</th>
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<tr>
<td>2014</td>
<td>Sreeshach</td>
<td>• Also to educate the public, seminar and conference must be conducted.</td>
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| 2014 | Sahitya & Lalwani | • The researchers study revealed that public sector banks are more interested in green banking as compared to private sector banks.  
• The author suggested that to balance the situation imparting knowledge is important. |
| 2014 | Sharma, Gopal et al. | • The authors disclosed the awareness of banks towards Green banking.  
• Public and private sector banks made it possible through the use of ATM and internet banking. |
| 2014 | Nath, Nayak et al. | • The research unveiled that three fourth out of total public who make use of online facilities are unaware of the term Green Banking.  
• The major hindrance in India regarding Green Banking is the technical issues involved followed by lack of education. |
| 2014 | Sudhalakshmi and Chinnadorai | • The detailed study of these authors consist of green rating standards i.e. green rating points according to which the banks are appraised.  
• World Bank’s norms guide the banks to adopt sustainable technology. |
| 2014 | Karunakaran.R | • The researchers revealed that no efforts were made by the Indian banks towards Green Banking.  
• Indian banks were required to take in the green aspect in their lending rules. |
| 2014 | Ragupathi. M and Sujatha .S | • The author highlighted that if Indian banks want to enter the global economy, then they should be aware of their responsibilities as a global corporate citizen.  
• Use of renewable resources and paperless banking are some strategies to improve the situation. |
<p>| 2015 | | • According to the researchers prior bank was not aware about the concept green banking but now banks are conscious towards environment sustainability. |</p>
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<th>Year</th>
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<th>Key Observations</th>
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<tbody>
<tr>
<td>2015</td>
<td>Rambalak Yadav and Govind Swroop Phatak</td>
<td>• The researchers revealed that at present the banks are aware of Green Banking and has realized the importance of bank towards its environment.</td>
</tr>
<tr>
<td>2009</td>
<td>Chris Van Hollen (USA)</td>
<td>• He introduced the concept of Green Banking where his main motive was to reduce the use of paper work.</td>
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| 2011 | BANGLADESH | • It is the one and only central bank having the proper knowledge towards Green Banking.  
• The country also offered climate-friendly lending. |
| 2004-2015 | BRAZIL | • Brazil banks were among the earliest banks to sign up to the Equator Principles.  
• Brazilian bank association guided the banks to adopt Green Protocol.  
• Many rules and parameters were issued to safeguard the environment which was duly followed by the country. |
| 2006-2015 | CHINA | • In China, Green Credit Policy was introduced which kept in mind the environment while exercising the lending policies.  
• Public awareness was initiated and many projects related to Green Banking were launched. |
| 2014 | INDONESIA | • In Indonesia, huge amount of capital was required to carry out sustainable development which hindered the process but the financial market of the respected country always promoted Green Banking.  
• Due to the financial sector the authority launched a Sustainable Finance Roadmap which contributed to the national growth. |
| 2016 | MEXICO | • A “Sustainability Protocol” was officially signed by Mexican banks for the development of Green Banking in the country.  
• The Protocol provides direction to sustainable lending, together with a plan to implement further actions. |
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<tr>
<th>Year</th>
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<th>Key Observations</th>
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| 2014 | TURKEY | • Turkish banks had followed national goals as well as international principles for sustainable banking and it was duly practiced by the country.  
• Turkey bank also introduced sustainability guidelines for banking sector which showed a pleasant growth in Green Banking. |

India was far behind from other countries like China and Mexico in introducing and applying the concept of Green Banking. No initiatives were taken by the Indian banks to formulate the green concept in the society. The authors made clear that to attain sustainable development in the country imparting education and creating awareness was necessary. There are only small group of banks in India that lead in environment aspect. Some researchers researched on public as well as private sectors which reveal that public sector banks have taken more initiatives as compare to private sector. The studies also state the initiatives taken by Indian banks in respect of environment sustainability. Although not much initiatives has been taken by the banks other than SBI and ICICI.

In various researches, it was highlighted about the awareness of the employees and the public regarding the Green banking. Out of total people who were using online facilities, nearly three fourth were unaware of the term Green Banking. The researchers affirm that the main obstacle in Green Banking was lack of education among the public. Imparting knowledge and promoting day to day use of electronic payments can support the country to be environment friendly. Many guidelines as well as principles were issued by the government towards Green Banking but their implementation was sluggish in India.
On contrary other countries were quick enough to spread the concept of Green Banking. Several principles and regulations were issued by the banks towards sustainable environment which were implemented properly. Bangladesh, Brazil, China, Mexico and Turkey were some of the countries where Green Banking stretched rapidly.

Bangladesh Bank was the World’s first central bank, which had proper knowledge on Green banking. All respected banks in Bangladesh made their own set of rules and regulations to protect environment pollution and to lend money to those industries linked with renewable resources. Customers were provided with online-banking facilities covering money transfer and bills payment. Even the farmers were secured against any natural calamities. Green Banking in Bangladesh reduced the use of paper and promoted eco-friendly practices like solar energy etc.

Secondly, Brazil banks were among the earliest banks to sign up to the Equator Principles. They used voluntary banking standards distribution of funds for environment issues represent a social consideration into bank lending. According to the studies more than 11% banks want to lend the money to the “new energy”. Thirdly, in China the central government had created a national policy framework encouraging the adoption and expansion of green credit, a concept which encourages Chinese banks to consider environmental aspects like pollution, heath, safety of people into their lending practices. China’s effort to green its financial sector has already produced some of the most innovative green finance policies in the world in comparatively short amount of time.
Other countries, like Indonesia and Turkey, did a lot of investment to implement the Green Banking concept. Their green growth efforts were motivated by the government’s dedication. In conclusion, all international countries are attempting to design a green financial system to ensure the long-term sustainability of the country’s economic development.

2.4 RESEARCH GAP

Green banking is an environment friendly system that has the potential to increase customer satisfaction as well as performance of the banks. The review of literature reveals that various scholars at the national and international level have initiated different studies on different aspects of green banking. But at the national level there are very few studies initiated towards green banking. Although the past decade of rapid growth had brought many benefits to India, however, the environment had suffered. India plays an essential role in development and growth of nature in a sustainable manner, so any unpleasant contact must be avoided. After viewing the state of India in Green Banking it was clear that no appropriate measures were taken by the banks in respect to the Green Banking. After time many initiatives were taken by the banks towards sustainable development but their implementation was lethargic. Moreover, in Rajasthan there is hardly any study in this context. Many Indian banks like SBI, ICICI, HDFC and Axis have started to realize the importance and they are taking up various GREEN BANKING initiatives: like promoting E-banking activities, spreading awareness and educating people in the respective field. Banks, in India, has started various green banking initiatives. These initiatives bring easiness to the customers and also help the banks in reducing their cost of services. It is not possible to evaluate green banking
initiatives taken by all the banks in state of Rajasthan. Therefore, the current research study is focused to evaluate the perception and opinion of bank employees and customers of selected Public and Private Sector Banks and to comparatively study the issues and challenges regarding Green Banking in aforesaid banks.
REFERENCES


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