

Green Banking Practices by Financial Institutions: A Study on the Banking Industry of Bangladesh

A.K.M Mahfuj Ullah^{1*}

¹Assistant Professor, Department of Business Administration, School of Business, Rajshahi Science and Technology University (RSTU), Natore, Natore-6400, Natore, Bangladesh

Abstract: The concept of ‘green banking’ has a massive appeal to the global banking business. The paper depicts green banking practices in Bangladesh compiled on secondary data. Green Banking, also referred as ethical or sustainable banking, is characterized as a means to conduct operations, improve banking technology, and secure the earth through preserving environment and maintaining corporate social responsibility. The principle is to furnish the banking business by applying green policies in operations and encouraging assistance, collaboration, and feedback from four key groups- customers, management, employees, and shareholders. It is a step towards the pursuit of economic growth in an environmentally sustainable manner by reducing paperwork and relying on electronic exchanges for job processing. Although it is relatively a new concept in Bangladesh, advanced countries have already started it. However, in developing countries like Bangladesh, there is way promoting sustainable development, as evidenced by almost Tk. 25,957.83 crore investment in green projects by banks in 2019. Recently, Bangladesh Bank has found formulating policies and strategies and allotting funds to green initiatives accelerating the insignificant growth rate. By following some special customized packages while investing in green projects, the desired green banking position can be achieved easily. According to the study, SCBs and SDBs’ green banking activities are completely lacking compared to PCBs and FCBs’ position.

Keywords: *Green Banking, Bangladesh Bank, Sustainable Development, Environment, Green Financing.*

Introduction: Banks’ concerns about environmental sustainability have led to the idea of Green Banking. The “Green Banking” concept is simultaneously advantageous to the banks and ventures which in turn affect the country’s overall economy. It resembles typical banking alongside the thought of society just as environmental factors for securing the earth. It is a way of developing comprehensive banking strategies that will ensure substantial economic development and advance environmentally friendly practices.

The concept of green banking has been identified by Lalon (2015) [1] as “any form of banking from which the country and nation gets environmental benefits. A conventional bank becomes a green bank by directing its core operations toward the betterment of the environment.” Islam & Das (2013) [2] pointed out that green banking “indicates endorsing environment-friendly practices and reducing carbon footprint from banking activities.” Ullah (2013) [3] leveled green banking as a vital aspect of global drives to safeguard the environment and climate from being disrupted.

Green banking is defined by Yunwen (2011) [4] as comprising actions and accountabilities that lead to an environmentally friendly business operation. Moral banking, which mainly refers to environmentally and socially responsible banking practices (Goyal & Joshi, 2011) [5], is another identity for green banking. Green banking is also characterized by Amin (2014) [6] as eco-friendly banking practices that safeguard the environment and further enhance the livability of the earth. Ethical banking and green banking are almost the same, where the social responsibility of a bank to the environment is strictly maintained (Remus, 2007) [7]. By encouraging and stimulating higher investments in pro-environmental goods and services, green banking protects the environment from being spoiled (Linh & Anh, 2017) [8]. Green banking’s primary goal, however, is to push for accountability in how banks use their resources internally and externally and to place an elevated focus on assisting in the maintenance of sustainable ecological systems (Bahl, 2012) [9]. Commercial banks are required to integrate green finance practices into both internal and external operations as they operate under the guidance and regulations of Bangladesh Bank, the country’s Central Bank. All commercial banks receive ongoing guidance and recommendations from Bangladesh Bank to ensure the adoption of environmentally friendly practices (Khan, 2012) [10].

To ensure environmental sustainability, green banking essentially calls for the reform of traditional banking practices (Verma, 2012) [11].

Some remarkable features of green banking operations involve the following:

- ❖ By controlling and minimizing society’s negative impacts, green banking prioritizes social safety and security.
- ❖ Green banking involves automation and online as well as considers risk factors regarding climate changing issues which help environment from being polluted.

Article history:

Received 23 March 2023

Received in revised form 20 August 2023

Accepted 25 October 2023

Available online: 15 November 2023

Corresponding author details: A.K.M Mahfuj Ullah

E-mail address: akmmahfuj458@gmail.com

Tel: +8801717424082

Copyright © 2023 BAUET, all rights reserved

- ❖ It fosters well-suited surroundings inside and outside the bank, which inevitably encourages sustainable and green growth in the field of industrialization and social functions.
- ❖ It lowers cost and energy, thereby saving capital and invigorating the country's GDP & so forth.
- ❖ The essence of Green Banking (GB) ideas and campaigns is environmental concern. For the last 20 years and more, the mindfulness of environmental degradation and contamination has been gaining strength because of the gloomy impacts of these peculiarities.
- ❖ Bank financing mostly has a remarkable impact on investment and management decisions of businesses which later affect a nation's production, business, economic, and developmental activities that could have positive effects on the environment. Recently, a rising number of banks have been practicing green banking, offering progressive & eco-friendly items to help the day-to-day operations and not bloody to the surroundings.
- ❖ Bangladesh as a growing economy, is fronting to bring adjustments to its banking philosophy to align with the global green banking approaches. Bangladesh Bank (BB) has been supporting the government continuously in facilitating the practices of green banking by undertaking many initiatives including environmental regulations, refinancing facilities, etc. In 2012, Bangladesh Bank introduced a uniform reporting format for reporting green banking activities in a structured manner for banks. The recent circular (2013) on 'Policy Guidelines for Green Banking' is a noteworthy step on the way to promoting green banking in Bangladesh. Along with these, to significantly speed up the ongoing initiatives of banks and financial institutions to support the environment compatible with climate change risk, least target of direct green finance has been set (5%) out of the total loan disbursement/investment from January 2016 onwards for all banks and FIs.

It is evident from research performed in Bangladesh and outside that most banks are stepping up their attempts to obtain sustainable development by deploying green practices. All the above exertions indicate a responsible attitude towards everything that has to do with the safeguarding of our environment by Bangladesh Bank and also show the fame of green banking practices in Bangladesh. To stimulate green banking practices in Bangladesh, scheduled banks must follow the policy guidelines issued by the Bangladesh Bank.

Green banking mostly considers the overall eco-system and social obligations with a view to encouraging environmentally friendly business practices. It relies on online/electronic transactions for processing which helps avoid as much paperwork as possible. The more we go online, the more the chance to avoid paperwork and hence cutting trees which will facilitate the way to practice the 3 R's principles namely Reduce, Reuse, and Recycle.

The environment gets influenced by banks through the financing in different industries such as nuclear power, cement, fertilizers, steel, oil and gas, etc. which in turn affect the environment by stimulating the uses of natural resources like power, stationary, paper, lighting, cooling, electronic appliances, etc.

The importance of green banking practices is extensive for the economy entirely since it assuages different risks associated with the banking diligence such as (being exposed as a stimulator of Green Banking Theory):

- ❖ **Credit Risk:** It arises when banks advance to companies that are affected unfavorably by the changing climate and subsequently can put some companies out of business and leading to an expanded likelihood of loan default. Credit risk can be handled carefully as green banking deeply considers environmental issues.
- ❖ **Legal Risk:** According to Charlier (2000) [12], Banks are likely to face legal risk if they violate environmental regulation rules. They may likewise confront the risk of direct lender liability for cleanup costs or claims for damages if they claim contamination-causing resources. By ensuring an active environment management system, this risk can be significantly cut.
- ❖ **Reputational Risk:** Saleuddin (2014) [13] found that banks are prone to reputational damage if they indulge in environmentally damaging projects. Financing to the questionable projects is inevitably curtailed by stakeholders and usually compelled to keep the business operations closed which will cause credit risk as well.

Objectives of the Study: The main focus of the present paper is to inspect the current status of green banking practices and the performances of different banks operating in Bangladesh. The underneath sub-objectives are intended to grow the main objective:

- go through several particular areas of green banking initiatives undertaken by Bangladesh Bank.
- understand how the green banking strategies and policies are developed as well as examine the execution system of BB contrasted with the issued policies & guidelines.
- analyze the different types of green financing projects & performance of operating banks in Bangladesh and make a comparison among them.
- test the online and mobile banking proficiency.

- review the banking major in-house green activities.
- figure out & understand the challenges in the implementation of green banking and make recommendations accordingly.

Rationale of the Study: In times of global warming and climate change, it's not enough only to deliver the right services at the right time to clients rather practicing the concept of green banking is way more significant for eco-accommodating aspects. It'll facilitate the way to time-worthy application of green banking by taking all social, environmental & other financial precedencies into account with a view to protecting the environment along with sustainable economic development in a greener way. Even though Bangladesh is at the beginning phase of rehearsing green banking, the financial sector of Bangladesh has made strides in this sector that have stimulated the way after the issuance of green banking strategies & policy guidelines. Accordingly, the study reviews & explores the ongoing status of the implications & practices of green banking in Bangladesh.

Significance of the Study: This study centers on the accessible possibilities alongside the suggestions to recoup the constraints that seem to be achieved by regular green banking practices in Bangladesh. Although many third-world countries of the third world those economies are underdeveloped have just got benefits from green banking, Bangladesh is still in the starter phase. Despite being late only by stimulating green banking practices in Bangladesh, Bangladesh can ensure the eco-supportability of banking institutes that demoralize carbon dioxide emanation by ensuring paperless banking operations that will, at last, safeguard the earth. To implement green banking in Bangladesh, the banking industry along with other financial institutions should adhere to the policy guidelines formulated & advised by the Central Bank, BB.

Materials, Methods, and Methodology of the Study

Sample Selection

The sample size is comprised of State-Owned Commercial Bank (SCB), Private Commercial Banks (PCB), Foreign Commercial Banks (FCB), and Specialized Development Banks (SDB) being operated in Bangladesh.

Data and Study Period

A period of five years (2015-2019) has been considered for the study although mostly focused on the year of 2019. To analyze the collected data & write the present paper it took almost eleven months.

Data Sources

The paper has been compiled predominantly based on secondary data gathered from different credible sources like Bangladesh Bank and other commercial banks' annual reports, banking articles, company profiles, related newspapers, journals & articles, BB website, and several commercial banks with the practical experience of diverse banks as well as companies in Bangladesh.

Data Analysis Tools

The collected data are anatomized about the green banking practices, performances, and issues using the MS Excel program. To compile the published data, the author employed a concentrated desk research approach keeping in mind the viewpoint of tracing out the challenges & possibilities associated with the green banking initiatives. The author also made an effort to convey the perceived value of the banks of Bangladesh about green banking initiatives & boldly pointed out how they are furnishing the concept of green banking as well as why they are implementing it. The discoveries of the paper are essentially credible as the authentic data sources.

The study is mostly compiled on secondary data which is the significant downside of this article as well as the chosen data and information of limited periods are not significant enough to uphold the overall picture of green banking practices in a particular country like Bangladesh.

Review of Literature

Islam (2010) [14] said that the concept of green banking has gained significant attention in the present world. Today, since the banking sector mostly relies on networking systems & becomes more computerized, online banking services are picking up speed.

Schmidhciny et al., (1998) [15] viewed that commercial banks are emphasizing investment banking to a great extent over environmental risks, but this could play an identical role in their investment decisions soon.

Khan (2012) [16] pointed out that the green banking initiatives of all banks have ethical prospects of not trying to ruin human beings & destroy the eco-system. Besides, he argued that concerned persons ought to take the themes "think green" & "go green" into consideration.

Mani (2011) [17] pointed out that banks, as Socially Responsible Corporate Citizens (SRCC), have a crucial role and are also responsible for integrating government efforts to significantly reduce emissions. The involvement of banks in sustainable development takes the sort of Green Baking. He investigated, examined, and compared the policies of green lending by banks in

India in terms of their compliance and commitment to environmental protection and eco-projects.

Millat et al., (2013) [18] indicated that every bank being operated in Bangladesh has responded enthusiastically to the Central Bank BB's green banking policies & guidelines for green financing which are starting to make a notable impact on the environment in the real economy.

The Green Banking Policy of BASIC Bank Limited, Bangladesh (2011) was enacted in response to the growing awareness of climate change, environmental degradation, and the need for worthy actions for sustainable development by concerned stakeholders globally. The banking industry occupies such a crucial place in an economy which can influence the production processes of entities and other economic activities through their financing decisions which in turn can contribute to shielding the environment/climate from pollution. In addition, the efficient use of energy, water, and waste reduction can contribute significantly to the operating cost of banks of the country.

Jeucken & Bouma (2001) [19] cited that investments that are aware of the environmental side effects tend to have a lower return.

Rahman (2010) [20] focused on BB's current monetary and credit policy of Bangladesh Bank to achieve broader financial enclosure. BB is stimulating technology-driven, innovative, environment and low-cost banking approach; conveying a qualitative change in banking approaches, preparation of monetary policy, application of advanced banking technology, and use of Information and Communication Technology (ICT) to promote financial services at the doorstep of human being. For all, to assure access to financial services, various initiatives are being implemented such as trade finance; digitalization of the financial sector; channeling liquidity to productive sectors, SMEs, & CSR activities. All these initiatives lead to inclusive growth of the economy and thus lessen poverty which are required for pushing the country heading in the right direction to the targeted vision of digital Bangladesh.

In a conference paper, Shah et al., (2013) [21] pointed out that banks by nature hold an unavoidable unique position in an economic system that is supposed to affect the production process, warehousing, business, and other related economic activities through their diversified financing activities. Banks may contribute by saving energy resources in their operations and influence their clients to save energy resources without hampering the environmental balance. They tried to evaluate the relevance & importance of green banking practices for attaining energy sustainability in Dhaka city and concluded that banks can play critical roles in serving that purpose.

Shakil et al., (2014) [22] conducted a research that is analytical and theoretical based on secondary data to analyze the Green Banking practices among SCBs, SDBs, PCBs, and FCBs in Bangladesh. They found that due to a large initial cost some banks still didn't and some banks were in the primary phase of the policy guideline formulated by BB. It was also observed that there was a sharp increase in giving loans to environmentally friendly projects by the banks that were considered for the study.

Koiry et al., (2017) [23] carried out a research to pursue how bank customers were aware of and perceived the green banking practices of commercial banks in the Sylhet district. The study revealed that customer of different categories of banks significantly differed in their awareness level of green banking practices and showed that a higher level of awareness and positive perception regarding green banking practices was necessary to save the environment. They pointed out that organizing workshops and conferences, distribution of leaflets, and advertising about green banking in both print and electronic media could help to increase awareness and build a good perception of green banking among customers by bank branches or Bangladesh Bank.

The content of BB's annual reports, quarterly review report of green banking activities, and annual review report of CSR activities were analyzed by Zhixia et al., (2018) [24] and found that Bangladeshi banks were doing good in executing sustainable banking by adhering to BB's particular rules & guidelines. The achievement of this field was noteworthy and helped the banking industry draw attraction of the public, clients, and regulators while also giving them more credibility.

In the period from 2007 to 2014, Bose et al., (2017) [25] investigated & revealed how the regulatory guidance and other factors influence the green banking disclosure practices of Bangladeshi commercial banks. The study found that the level of green banking disclosure had been influenced positively after the issuance of green banking regulatory guidance by the Central Bank of Bangladesh in 2011.

Being a greater concern worldwide Hoque et al., (2019) [26] examined the status of green banking practices of some Bangladeshi non-bank financial institutions (NBFIs) and commercial banks. The study showed that different banks and NBFIs were practicing their own green banking policy guidelines. It was also found that state-owned specialized development banks and state-owned commercial banks were lagging behind the private & foreign commercial banks.

The current undertaking is a significant persuasive undertaken by the author to reveal the nature & prospects of green banking initiatives & performances accordingly. Different studies demonstrated the impact of green banking on the environment, investment & the economy as a whole. The paper keenly aims at illuminating a more patulous sagacity of the recent green banking impact on the socio-economic environment in which the banks are being operated. The present paper is a part of a broader research that is still open-ended.

Results and Discussion Thereon

Green Banking Practices- BB's Policy Guidelines

Global warming is termed as a warning to the growing world that badly requires a responsible as well as prompt global response. Being a responsible corporate citizen, the Banking Regulation and Policy Regulatory Department of the Bangladesh Bank (2011) [27] issued policy guidelines for Green Banking as a circular on 27 February 2011 for all scheduled banks simply stating "to adopt a comprehensive Green banking policy in a formal and structured manner in line with the global norms so as to protect environment degradation and ensure sustainable banking practices" (BB website). A "three-phase guides" diagram has been issued for green banking which has been followed by banks to formulate their green banking policies with a view to engrafting practices for the pick utilization of natural resources and also striving for environmental friendliness.

The three phases are:



Fig. 1: Green Banking Policy Guidelines by BB, 2011.

Source: UN Conference Presentation, Governor, BB

- ❖ **Phase I:** (1) Formulation and governance of green banking policy; (2) establishment of separate green banking cells (3) consideration of environmental risks into customer relationship management (CRM); (4) inaugurating & improving the in-house environment management; (5) presenting approaches for green finance and marketing; (6) establishing & promoting the Climate Risk Fund; (7) online banking services; (8) managing employee training, supporting consumer awareness and green event; and (9) disclosure and reporting on green banking activities.
- ❖ **Phase II:** (1) Specific sectorial environmental policies; (2) green & strategic planning; (3) introducing green branches; (4) improvement of in-house environment management; (5) formulation & implementation of an environmental risk management plan and guidelines; (6) intensive clients training programs to educate them; and (7) disclosure and reporting on green banking.
- ❖ **Phase III:** (1) planning eco-friendly strategies for business; (2) introducing eco-friendly modern innovative products and services; and (3) reporting in a prescribed format with external validation.

The deadline for compliance to ensure acceptance of the programs under phase I, II, and III were December 31, 2011, 2012, and 2013 respectively.

Green Banking Portfolios: The concerned authority of Bangladesh Bank considers the following major activities under the green banking practices:

Green banking unit and policy, Fund allotment to green banking as well as green financing, Mobile banking, Online banking, Internet banking, Environmental risk rating, Effluent Treatment Plant (ETP), ETP related project, Green accounts (ATM Service), Power savings equipment, Green debit & credit cards, Online fund transfers, e-statement, Automated clearing house etc.

Fund Allocation to Green Banking: As per the BB guidelines, scheduled banks must maintain a significant portion of the funds in their annual budgets for green banking. It is evident from the annual report (2019) [28] of BB that different banks have allocated Tk.2426281.90 million in the year 2019.

Table 1. Fund Allocation to Green Banking.

Source: BB Annual Report 2019

Allocation Areas	Amount in Million Tk. (2019)
Green Finance	98800
Climate Risk Fund	281.90
Environmental and Social Risk Management	2327200
Total	2426281.90

Review of Green Finance: The preview of sanction and disbursement of total finance alongside green finance by banks in the specified period of FY2019 (October-December) has been furnished here. The quarterly shift confirms a rising pattern in green finance by banks.

Table 2. Green Finance (Sanction & Disbursement).

Source: BB Sustainable Finance Department

Green Finance (Sanction & Disbursement)				
Bank Types	Total Finance		Green Finance	
	FY 2019 October-December (million Tk.)		FY 2019 October-December (million Tk.)	
	Sanctioned	Disbursement	Sanctioned	Disbursement
SCBs (6)	218,099.42	211,583.88	610.33	265.78
SDBs (3)	42,446.59	42,433.59	6.81	6.81
PCBs (41)	2,205,143.33	1,786,566.18	70,183.82	24,036.36
FCBs (9)	321,201.45	291,552.57	9,124.18	9,113.01
Total	2,786,890.80	2,332,136.23	79,925.13	33,421.96

Bangladesh Bank Renewable Energy/Products Refinancing Schemes: BB has increased the number of green products/initiatives eligible under the scheme from 6 to 51 by the Fiscal Year 2019. Under the scheme, participating banks are entitled to apply a maximum interest rate of between 8- 9% for financing green products/initiatives. Total disbursement in one fiscal year as per the BB's refinancing scheme was Tk.321.30 million in 2019.

Direct Green Finance in Fiscal Year 2019 (Million Taka)

Table 3. Direct Green Finance FY 2019.

Source: BB Sustainable Finance Department

Types of Bank	Amount
SCBs (6)	1219.44
SDBs (2)	3.56
PCBs (40)	78316.88
FCBs (9)	19213.16
Total (57)	98753.04

Product/Category-wise Green Finance (by Banks & FIs) FY2019: During the year, Banks & FIs have invested mostly (32.6%) in green establishment and waste management (25.9%) from the total investment in green financing to different products.

Table 4. Green Financing as Product/Category-wise.

Source: BB Sustainable Finance Department

Category	In Percentage
Renewable energy	3.3
Energy efficiency	3.8
Alternative energy	0.1
Waste Management	25.9
Recycling and Recyclable Products	10.7
Green brick manufacturing	17.7
Green establishment	32.6
Miscellaneous	5.9

Green Finance as % of Total Finance (October-December, 2019): During the last quarter of the year 2019 PCBs were in the top position for their total sanction toward green finance whereas FCBs were ahead of others for their disbursements.

Table 5. Green Finance (As % of Total Finance).

Source: BB Sustainable Finance Department

Bank Types	Total Sanction (as %)	Total Funded Loan Disbursement (as %)
SCBs (6)	0.28	0.13
SDBs (3)	0.02	0.02
PCBs (41)	3.18	1.35
FCBs (9)	2.84	3.13

Fund Disbursement to Green Products/Initiatives under BB Refinancing Scheme: In 2009, BB set up a revolving refinance scheme of Tk.2 billion from its fund to amplify the financing activities for green products like solar energy, bio-gas plants and effluent treatment plants, etc. The product line has been raised to 51 in 08 categories. From the beginning of its journey, a total investment of Tk.4,488.99 million has been allotted as a refinance facility from that fund till 31 December 2019. The following table shows that the total amount was increasing up to FY2017 and after that, the amount was significantly decreasing. The lowest disbursement found in FY2019 and it is Tk. 321.3 million.

The disbursement trend of this scheme is giving here (In Million Taka):

Table 6. Fund Disbursement to Green Products/Initiatives under BB Refinancing Scheme.

Source: BB Sustainable Finance Department

Products/Initiatives	FY2015	FY2016	FY2017	FY2018	FY2019
Biogas	83.3	84.8	46.6	10.5	4.6
Solar home system (SHS)	87.5	114.7	35.3	0.0	0.0
Solar irrigation pump	26.5	0.6	0.0	0.0	0.0
Solar assembly plant	148.1	16.3	0.0	0.0	0.0
Solar Mini-grid	0.0	10.0	0.0	0.0	0.0
Effluent treatment plant	0.0	58.0	179.6	60.0	108.4
HHK technology in a brick kiln	47.0	177.8	10.0	0.0	5.0
Vermicomposting	1.1	1.6	1.3	0.0	0.8
Green Industry	0.0	400.0	0.0	500.0	152.3
Safe Working Environment	0.0	35.7	55.3	82.0	40.0
Organic Manure from Slurry	0.0	0.2	0.1	0.0	0.0
Paper Waste Recycling	0.0	20.0	20.0	0.0	0.0
Energy Efficient Tech	0.0	0.0	0.6	13.0	10.0
Total	381.5	393.5	919.7	348.8	321.3

Green Transformation Fund (GTF): To promote sustainable growth in the export-oriented textile and leather industry complementary to the nation's transition to a green economy, a longer-term refinancing program with a USD 200 million titled Green Transformation Fund (GTF) was set off in January 2016 (FE Circular No. 02/2016). As part of this program, 19 banks have signed a participation agreement with BB, and accordingly USD 45.83 million has been disbursed from this fund till December 2019.

Financing status for the last quarter of 2019:

Table 7. Green Transformation Fund (GTF).

Source: BB Sustainable Finance Department

BB's Funding Scheme for Green Financing in October-December, 2019	Amount	No. of Project
Disbursement from BB Refinance Scheme for Environment Friendly Products/Initiatives (in million Taka)	339.87	6
Disbursement from ADB Supported Financing Brick Kiln Efficiency Improvement project (in million Taka)	1472.10	5
Disbursement from Refinance Scheme for Islamic Banks & Financial Institutions for Investment in Green Products/Initiatives (In million Taka) 15	15.21	1
Disbursement from Green Transformation Fund (GTF) (Million USD \$)	19.73	4

BB's In-house Green Activities: To stimulate in-house operational activities better environmentally friendly, energy efficient, and technologically flourished, BB has figured out several consistent steps.

- ❖ For energy efficiency, BB has installed solar panels on its rooftop & also chiller-based central air conditioning has been introduced which helps decarbonization.
- ❖ BB has begun measuring its carbon footprint.
- ❖ BB, using its intranet system, has introduced several new services such as e-recruitment, a real-time documentation management system, an online salary and financial statement, a personal filing system, online office orders, electronic passes for visitors, and plenty of others.
- ❖ BB head office and its 10 (ten) branch offices have already been connected all of its scattered departments to a single computer networking system & already more than 3500 PCs are connected.
- ❖ Bangladesh Bank has introduced an open data initiative for its dynamic website which gets updated in real time.

- ❖ Most of the regulatory reporting of banks and FIs is collected through web upload and enterprise data warehouse (EDW) system.
- ❖ Bangladesh Automated Cheque Processing System (BACPS), Bangladesh Electronic Fund Transfer Network (BEFTN), Credit Information Bureau, and Enterprise Resources Planning (ERP) have also started online operations.
- ❖ Bangladesh Bank also has started an e-procurement system & common use of table stationery rather than individual use.
- ❖ Entities have already started to print on both sides of the paper for their internal usage and use e-mail for sharing electronic files rather than paper memos as well as use of eco-friendly fonts for printing light impressions on both sides of the paper.
- ❖ In place of printed paper statements, e-statement has been offered to the stakeholders.
- ❖ Conversion of Bank vehicles to CNG and use of energy-efficient modern electronic equipment.
- ❖ A recent initiative has been taken to convert the 30-story building of Bangladesh Bank into a Green Building with trendy facilities for rainwater harvesting, recycling of wastewater, and motion sensor energy efficient bulbs supported by solar panels.
- ❖ Connected with NPSB and did live transactions.

In-house Environment Management during the Last Quarter of FY2019

Table 8. In-house Environment Management.
Source: BB Sustainable Finance Department

Environmental Conservation in Business Centers						
Bank Types	No. of Branches	No. of branches powered by Solar Energy	No. of ATM Booths	No. of ATM Booths powered by Solar Energy	Number of Agent Outlets	Number of Solar Powered Agent Outlets SCBs
SCBs (06)	3777	76	240	2	200	0
SDBs (03)	1421	5	6	0	0	0
PCBs (41)	5283	512	7046	63	26437	5
FCBs (09)	64	5	139	11	0	0
Total	10545	598	7431	76	26637	5

Online Banking: Online banking is an emerging concept in the growing business world which is expanding significantly in several bank branches having online coverage and accounts powered by online banking. Of course, it is environmentally friendly since it reduces the paperwork that the banks have to go through every month. Out of 59 banks, 56 had at least one online facilitated branch and 41 banks provided Internet banking facility as of December 2019. The rise of internet-based online branches has revealed a 90% automation towards green banking. It is evident from the following table that FCBs are providing 100% online banking facilities followed by PCBs (91.5%) whereas SDBs only offer 30.89% of their services. It is also noticed that only 90% of all branches of all types of banks are covered with online banking facilities. Green banking policies have led banks to establish solar-power branches & the number was 5472 at the end of FY2019.

Table 9. Automation toward Green Banking.
Source: BB Sustainable Finance Department

Automation toward Green Banking			
Type of Bank	No. of Branches	No. of Branches with Online Coverage	% of Branches Online Banking Facility
SCBs (06)	3777	3706	98.12
SDBs (03)	1421	439	30.89
PCBs (41)	5283	5282	99.98
FCBs (09)	64	64	100.00
Total	10545	9491	90.00

Mobile Banking: With the use of mobile networks, mobile financial services (MFSs) allow users to transfer or receive money from other accounts as well as make deposits & withdrawals of cash in real-time. As a new and growing technology in Bangladesh mobile banking has been in operation since 31st March 2011, initially being introduced by a private bank namely Dutch Bangla Bank Limited (DBBL) in Bangladesh followed by BRAC Bank Ltd. It is to be mentioned that the Central Bank (BB) previously authorized mobile financial services including inward foreign remittance, cash in/out using m-wallets, private to private (P2P), business to private (B2P), government to private (G2P) transactions, etc.

The amount of money flowing into Bangladesh's rural areas has been dramatically increased since its inception. In MFS, as of October 2019, 16 banks were involved. In Bangladesh, there are more than 7.73 crore mobile banking subscribers, among them only 37% are active & rest of the subscribers are totally inactive. Tk 218.15 crore were transacted per day. Currently, there are more than 9.54 lakh mobile banking agents. During the last fiscal year, MFS added 1.06 crore new clients to these financial services.

Findings of the Study: The principle of green banking is to engage largely in electronic transactions for processing of activities & also minimize the paperwork as reasonably be expected which will keep the friendly eco-system for the world. From the study, it is evident that

- BB is closely working to significantly boost the entire economy & ecosystem by implementing appropriate policy initiatives.
- Also, BB is pursuing banks to take more timely initiatives to remain proactive in securing green financing.
- In order to promote green banking initiatives, BB's refinance support is significant too.
- BB, as a Central Bank, also provides technical support for the adoption of the prospects of GB.
- Banks are to follow the lending policies developed by BB before approving loans to projects just to make sure the necessary environmental compliance factors.
- Except for SCBs and SDBs which haven't made remarkable efforts, the majority parts of the PCBs and FCBs have implemented the GB policies.
- Since the online banking services and ATM facilities of SCBs and SDBs, BB are below the mark, BB needs to take timely steps repeatedly to improve the situations.
- Green banking encourages reduced use of paper and sometimes paperless operations which can facilitate the way to create a strong brand image
- The rise in green financing by banks over the previous quarter was 74.94%, which is very positive etc.

Recommendations: Green banking practices of the banks must be strictly monitored by Bangladesh Bank regularly in a systematic way.

- ✓ The government should motivate and try to make people aware of green banking practices.
- ✓ Both the Government and Bangladesh Bank should try to fairly coordinate with all the concerned stakeholders at every level.
- ✓ Bangladesh Bank should encourage the borrowers to use the funds in an environmental way i.e. motivate them to go green.
- ✓ Green banking guidelines must be formulated as well as applied efficiently and effectively.
- ✓ It is significant enough to establish a culture within the organization considering the environmental governance aspects.
- ✓ It is also crucial to develop a database for technical assistance/issues with a view to sharing knowledge and technical know-how with peer groups.
- ✓ There should be a clear indication and concentration on sectorial lending policies and procedures to furnish green banking practices across the nation.
- ✓ Bangladesh Bank should concentrate on SCBs and SDBs to boost up the facilities for them to maintain balance among all banks.
- ✓ Banks should develop and implement sound environmental and social measures to be able to manage their green financial products in compliance with the prescribed guidelines.
- ✓ BB refinance support always plays an important role in incentivizing green banking activities.
- ✓ It is much needed to develop the parameters and standards for evaluating a bank's environmental & climate performance etc.

Conclusion: In recent years, green banking has gained huge popularity and received increased attention in the growing banking world. The idea of green banking isn't a concept only limited to awareness, it is all about practice. Banks must allocate funds for green finance, green events, or green initiatives that fall under CSR activities, green marketing, and capacity building as well as ensure the efficient utilization of allotted capital to stimulate the green banking practices in significant way. Although green banking plays a crucial role in global development and reaction to global warming, the green banking practices of Bangladeshi banks are not at satisfactory level. The study examines the ongoing green banking practices of banks of Bangladesh following the issuance of green banking guidelines. PCBs and FCBs have performed green banking activities impressively whereas the SCBs and SDBs have performed poorly and are far behind in implementing the green banking initiatives countrywide. The better

performances happened to PCBs and FCBs just because management made decisions quickly and was able to invest in projects that suited global standards for the environment, which SCBs and SDBs were unable to do.

Polymakers and regulators have progressively understood the significance of adopting green banking policy interventions to transform the financial sector which can contribute helping nations meet their climate targets and goals. To do the same, the role of BB and financial regulators is crucial as they hold power to alter and control the prevailing scenarios of the financial sectors. Green banking is a way of thinking towards future sustainability in which every bank must engage in and contribute to the green initiatives guided by a common motto of preserving the eco-system by reducing environmental pollution since banks believe that every small 'GREEN' step attempted today will help build a better global environment for greener future.

Table 10. Terms and Acronyms Used in the Study.

SCB –State-Owned Commercial Bank	CSR –Corporate Social Responsibility	ICT-Information and Communication Technology
PCB –Private Commercial Banks	HHK- Hybrid Hoffman Kiln	SRCC - Socially Responsible Corporate Citizens
FCB –Foreign Commercial Banks	SME- Small and Medium Enterprise	ETP - Effluent Treatment Plant
SDB –Specialized Development Banks	ATM - Automated Teller Machine	

References

- [1] R. M. Lalon, Green Banking: Going Green. *International Journal of Economics, Finance and Management Sciences*, 3(1) (2015) 34-42.
- [2] M. S. Islam & P. C. Das, "Green Banking Practices in Bangladesh", *Journal of Business and Management*, 8,3, (2013) 39-44.
- [3] M. M. Ullah, "Green Banking in Bangladesh- A Comparative Analysis", *World Review of Business Research*, 3(4) (2013) 74-83.
- [4] Y. Bai, Financing a Green Future (thesis), The International Institute for Industrial Environmental Economics, Lund, Sweden, (2011) 6-21.
- [5] K. A. Goyal, & V. Joshi, A study of social and ethical issues in banking industry, *International Journal of Economics and Research*, 2.(5) (2011) 49-57.
- [6] S. B. Amin, Sustainable green banking: The case of Bangladesh, *Janata Bank Journal of Money, Finance and Development*, 1(1) (2014) 91-98.
- [7] Marzio R., Green Banks, Ethical Banks, Seed Banks: too many eco something banks, *Covalence Analyst Papers*, Geneva, Covalence SA, (2007) 1-4.
- [8] D. H. Linh, & T. V. Anh, Impact of stakeholders on the performance of green banking products and services: The case of Vietnamese banks, *Economic Annals*, 165(5-6) (2017), 143-151.
- [9] S. Bahl, The role of green banking in sustainable growth, *International Journal of Marketing, Financial Services & Management Research*, 1(2) (2012) 27-35.
- [10] M. T. A. Khan, Green banking: Go green, think green, *The Daily Star. World Environment Day Special*, (2012), 1.
- [11] M. K. Verma, Green banking: A unique corporate social responsibility of Indian banks, *International Journal of Research in Commerce & Management*, 3(1) (2012) 110-114.
- [12] R. H. Charlier., From Green to Brown: Is Brownfields Use Risk Taking? *Environmental Management and Health*, 11(1) (2000) 20-26.
- [13] R. Saleuddin, Reputation risk management in financial firms: Protecting (some) small investors, *Journal of Financial Regulation and Compliance*, 22(4) (2014) 286-299.
- [14] M. A. Islam, Green banking: Future Important Issue for Banking Industry, *Financial Express*, 20(381) (2010).
- [15] S. Schmidheiny, & F. J. Zorraquin, *Financing Change: The Financial Community, Eco-Efficiency, and Sustainable Development*, MIT Press, (1998).
- [16] M. T. A. Khan, "Green Banking: go green, think green", (2012).
- [17] A. MANI, Green banking through green lending, *Institute of Business Management and Technology*, (2011), 1-12.
- [18] K. M. Millat, R. Chowdhury, & E. A. Singha, *Green Banking in Bangladesh: fostering environmentally sustainable inclusive growth process*, Department of Communications and Publications, Bangladesh Bank, (2013), 1-45.
- [19] M. Jeucken, & J. J. Bouma, The Changing Environment of Banks. *Greener Management International, Sustainable Banking*, (2001) 24-38.
- [20] A. Rahman, Financial services at people's doorstep, Governor, Bangladesh Bank, (2010).
- [21] P. Shah, & S. M. A. Habib, Green banking practices and sustainable energy in Dhaka City, *WIT Transactions on Ecology and the Environment, The Sustainable City VIII*, 179 (2013) 815-826.
- [22] M. H. Shakil, M. K. G. Azam, & M. S. H. Raju, An evaluation of green banking practices in Bangladesh, *European Journal of Business and Management*, 6.(31) (2014) 8-16.
- [23] S. Koiry, J. K. Saha, M. S. Farid, M. S. Sultana, & M. S. Haque, Awareness and perception of bank customers towards Green Banking in Sylhet District of Bangladesh, *Asian Journal of Economics, Business and Accounting*, 5(2) (2017) 1-12.
- [24] C. Zhixia, M. M. Hossen, S. S. Muzafary, & M. Begum, Green banking for Environmental Sustainability- present status and future agenda: Experience from Bangladesh, *Asian Economic and Financial Review*, 8(5) (2018) 571-585.
- [25] S. Bose, H. Z. Khan, A. Rashid, & S. Islam, What drives green banking disclosure? An institutional and corporate governance perspective, *Asia Pacific Journal of Management*, 35(2) (2017) 501-527.
- [26] N. Hoque, M. M. Mowla, M. S. Uddin, A. Mamun, & M. R. Uddin, Green banking practices in Bangladesh: A critical investigation, *International Journal of Economics and Finance*, 11(3) (2019) 58-68.
- [27] B. Bank, "Banking Regulation & Policy Department." Prudential Regulations for, (2011) 1-6.
- [28] B. Bank, "Annual report on green banking." *Green Banking Wing*, (2019) 1-14.