Green Financing by Banks in Bangladesh

Ph. D. Dissertation

A Dissertation submitted to the Department of Accounting & Information Systems, Faculty of Business Studies, University of Dhaka, as the partial fulfillment of the requirements for the Degree of

Doctor of Philosophy

Research Scholar

Subrota Kumar Bahadur

Re-Registration # 55/2017-18

Main Registration # 198/2011-12

Under the Supervision of

Professor Md. NazimUddinBhuiyan, FCMA

Department of Accounting & Information Systems,
University of Dhaka, Dhaka,
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Date: 18 March, 2024

DECLARATION

I do hereby declare that the dissertation titled on **'Green Financing by Banks in Bangladesh'** for the award of the degree of Ph. D. is my original works and it has not been submitted partly or fully to any other university or institutions for pursuing any degree or diploma or any other academic purpose and not submitted to similar title.

The entire work has been prepared, planned and carried out by me under the supervision of humble supervisor **Professor Md. Nazim Uddin Bhuiyan, FCMA.**

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CERTIFICATE OF SUPERVISOR

This is to certify that the dissertation titled on **'Green Financing by Banks in Bangladesh'** is an original research work accomplished by **Subrota Kumar Bahadur,** Ph. D. Research Scholar, Registration no. 198/2011-12 and Re-Registration no. 55; Session 2017-18, in the Department of Accounting & Information Systems, Faculty of Business Studies, University of Dhaka. The dissertation represents an independent and original work and personal achievement of the candidate. The findings and views expressed in the dissertation, originated from both primary and secondary data are entirely his contribution. He has prepared this dissertation under (Late) Professor Dr. Swapan Kumar Bala, and later, under my supervisions and guidance.

The dissertation has not been submitted to any other university or institution for pursuing Ph. D. Degree or any other academic purpose or on any other similar title.

The dissertation is, therefore, recommended and forwarded to the concerned authority to evaluate for awarding the Degree of **Doctor of Philosophy** in the Department of Accounting & Information Systems, University of Dhaka.

18/3/24
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Md. NazimUddinBhuiyan, FCMA
Professor & Supervisor

Dedicated

TO

Late Parents and Grand Parents

&

My Honorable Favorite Teachers

Late **Professor Dr. Swapan Kumar Bala**

Late **Professor Dr. Saroj Kumar Saha**

Department of Accounting & Information Systems

University of Dhaka.

And also

Sri Kanai LalMondal

My Respected School Teacher.

(1st Teacher of my Life)

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ABSTRACT

Environmental pollution is a severe challenge to human existence and comfortable living now a-days. It is a great concern globally from the last few decades. The western and some other developed countries had adopted green financing and green efforts as remedial measures to environmental degradation from a number of years before. The developing and least developed countries (LDCs) are yet to start the race with full impetus. Bangladesh stepped into the race by adopting green financing in the year 2011. The government of Bangladesh provided patronage to the initiative by reducing the interest rate of bank loan in a package titled ‘Green Financing’. The campaign has passed more than a decade from 2011 to till now. As implementation agent, the commercial banks of the country expanded loan facilities for green projects under the supervision of the central bank of the country.

Bangladesh Bank has adopted initiatives to impose the Green Banking for saving the people of the country. The Bangladesh Bank (BB), central bank of Bangladesh, has taken special programs to promote “green banking”, and issued policy guidelines and formulated 5-year strategic plan for 2010-2014 period to launch green banking in the country. Green Banking is an active agenda under this plan. Bangladesh Bank (BB) has emphasized that all commercial banks (Public and Private) should finance in the environmental projects and all should be disclosed in their annual reports. Green Banking has changed the way banks were rendering their services.

Commercial banks of the country have been successful in financing a number of green projects from effluent treatment plant (ETP) to green industry. The performance of the green financing efforts is appreciable, but not satisfactory. As the mission in green financing is environmental protection and long-term human welfare, it is

against banks' higher profitability and against borrowers' urgent necessity. So, the real picture of green finance taking and project implementations is below expectation.

The effect of green financing on some variables had been tried to find out. A correlation between green finance and net profit after tax was found out. There is low positive correlation (r = + 0.146) between green finance and net profit after tax. There exists low positive correlation between green finance and log of deposits (r = + 0.211). Multiple regression model shows there is significant impact of independent variables (green finance) on the dependent variables (RoA, Lod, CL, etc.). The Durbin-Watson statistic is 2.14 which show that there is positive autocorrelation between the variables. Green Finance is contributing positive impacts on economic and environmental aspects, ecosystems, social dimensions of Bangladesh. Under Sustainable Development Goals (SDGs), United Nations is emphasizing Environmental, Social and Governance Reporting (ESG Reporting). By the end of 2030, Bangladesh would achieve sustainable performance in the field of economic, social and environmental areas by green financing.

The study also focusses on the sustainable financial system. For ensuring sustainable financial system, we should focus on policy based financial institutions, fully digital banks, other digital financial institutions, green credit, green insurance, green bonds, green venture capital and green investments. Findings based on opinion survey, focus group discussion (FGD) and key informant interview (KII) were also attempted.

Through factor analysis, the researcher has found that there are eight factors that are influencing green finance significantly. Those factors are environmental, social, governance; Green bonds, Green Credits and other sustainable financial products, mismatch of time horizon and its impact on long-term decision-making; Governance of sustainable investment and green financing; Green products and its impacts on

Environment; Credit ratings' impact on Green Finance, Insurance companies' roles in green finance; and Insurance companies' role in enhancing green finance.

There are other six factors which the researcher has studied, but factor analysis showed that these are less significant for enhancing green finance in Bangladesh. Those are – mobilizing the private financing in green projects; Bangladesh Bank motivations and incentives for green financial projects; green finance's effect on the climate change and impacts, carbon emission, etc. Bangladesh Bank's regulatory framework has been proved to be very effective. Green Finance is contributing a lot for achieving SDGs in Bangladesh. Lastly, the selected 10 Banks are enhancing their earnings and corporate image by extending green credits for green products.

The incentives given by the government in green financing are reduction of interest rate and noble encouragement, which are not adequate to offset the loss or additional cost incurred by the banks or the borrowers. As a result, in spite of high optimism of environmental up-gradation by green financing, it is yet to achieve certain level even after a decade of launching green initiative. To achieve the target of green environment with possible up–gradation, government should provide more incentives, such as, interest free green financing, tax incentives, cash incentives, etc. for the banks and also cash or profit incentives for the borrowers for taking green projects, like, effluent treatment plant, solar panel for solar or renewable energy and other measures. Above all, the present trend of green financing should be continued for sustainable and environment-friendly development.

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LIST OF ABBREVIATIONS

ABBL	Arabia-Bangladesh Bank Limited
ACA	Associate Chartered Accountant
ACCA	Association of Chartered Certified Accountants
BASIC	Bank of Small Industries and Commerce
BB	Bangladesh Bank
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BEFTN	Bangladesh Electronic Fund Transfer Network
BELA	Bangladesh Environmental Lawyers' Association
B1BM	Bangladesh Institute of Bank Management
BRPD	Banking Regulation and Policy Department
CAB	Consumers' Association of Bangladesh
CAMELS	Capital Adequacy, Asset Quality, Management Quality, Earnings, Liquidity, Sensitivity to Market Risk
CCTF	Climate Change Trust Fund
CCVI	Climate Change Vulnerability Index
CCX	Climate Change Exchange
CDP	Carbon Disclosure Project
CRM	Credit Risk Management
CSR	Corporate Social Responsibility
CY	Calendar Year
DBBL	Dutch-Bangla Bank Limited
DBL	Dhaka Bank Limited
DFIs	Development Finance Institutions
DoE	Department of Environment
E&S	Environmental & Social
EBL	Eastern Bank Limited
EC	Executive Committee
ECA	Environmental Conservation Act

ECAs	Ecologically Critical Areas
ECR	Environment Conservation Rules
EDD	Environmental Due Diligence
EIA	Environmental Impact Assessment
EMS	Environmental Management Systems
EnvRR	Environmental Risk Rating
ER	Environmentally Responsible
ERB	Environmentally Responsible Bank
ERI	Energy and Resources Institute
ERM	Environmental Risk Management
ERR	Environmental Risk Rating
ESDD	Environmental & Social Due Diligence
ESG	Environmental and Social Governance
ESIA	Environmental & Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMS	Environmental & Social Management System
ESRM	Environmental and Social Risk Management
ESRR	Environmental and Social Risk Rating
ETP	Effluent Treatment Plant
FCBs	Foreign Commercial Banks
FIs	Financial Institutions
FSSP	Financial Sector Support Project
FY	Fiscal Year
GB	Green Banking
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GF	Green Financing
GHG	Green House Gas
GRI	Global Reporting Initiative
GTF	Green Transformation Fund
GTFS	Green Technology Financing Scheme
HHK	Hybrid Hoffman Kiln

IDA	International Development Association
IET	International Emission Trading
IFIs	International Financial Institutions
IIED	International Institute for Environment and Development
ILO	International Labor Organization
ISO	International Standard Organization
ISSP	Information System Strategy Paper
IUCN	International Union for Conservation of Nature
LC	Letter of Credit
LDC	Least Development Country
MoEF	Ministry of Environment and Forest
MoF	Ministry of Finance
MTBL	Mutual Trust Bank Limited
NBFI	Non-Banking Financial Institution
NBL	National Bank Limited
NEC	National Environment Council
NGO	Non-Government Organization
NSDS	National Sustainable Development Strategy
PCBs	Private Commercial Banks
PMIS	Personnel Management Information System
RBL	Rupali Bank Limited
ROE	Return on Equity
RTGS	Real Time Gross Settlement
SBN	Sustainable Banking Network
SCBs	State-Owned Commercial Banks (NCBs plus)
SDG	Sustainable Development Goal
SDGs	Sustainable Development Goals
SDR	Special Drawing Rights
SEBL	Southeast Bank Limited
SEMP	Sustainable Environment Management Program
SFC	Sustainable Finance Committee
SFC	Sustainable Finance Committee
SFU	Sustainable Finance Unit

SHS	Solar Home System
SME	Small & Medium Enterprises
SPCR	Strategic Programme for Climate Resilience
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WTO	World Trade Organization

CHAPTER ONE

INTRODUCTION

Introduction

The whole world has engaged in the race of development. The development process causes detriments to biodiversity, ecosystem, climate condition, environment, ecology, etc. Environment protecting projects to halt environmental pollution to be launched by financial investment is known as green financing. Banks and other financial institutions play a significant role in the socio-economic development of the country. So, bank financing, if at least a portion of it is used in green projects, would contribute to environmental up-gradation (Bangladesh Bank, 2020).

In line with world campaign, the government of Bangladesh advanced with green financing initiative through commercial banks under the monitoring and supervision of the Bangladesh Bank, central bank of the country. Banks can invest in ecological and environment-friendly projects which will save cost, minimize risk, and enhance banks' image termed as 'Green Banking', which would contribute to the common good of the stakeholders and enhancement of environmental sustainability. Ultimately, it will fulfill the commercial goal of banks and corporate social responsibility. (Bangladesh Bank, 2020).

Introduction of the Green Transformation Fund (GTF) in 2016 and guidance note on GTF in 2020; ESRM Guidelines in 2017; and recent guidelines on BB refinance scheme for 55 green products or projects belong to 9 green categories in 2020 and are some of BB's green initiatives over the time. These green initiatives and practices led to defining Sustainable Finance and introduction of Sustainable Finance Policy (Bangladesh Bank, 2020).

Sustainability has become one of the mainstream considerations in the financial sector. There is, however, a need for convergence on terminology among market participants and wider stakeholders. The objective of Sustainable Finance Policy is to ensure that all participants and stakeholders are using a common and transparent vocabulary of Sustainable Finance arena. It has also been designed as a contribution to other ongoing efforts in the financial industry to develop a consensus around key terms and definitions in sustainable finance (Bangladesh Bank, 2020).

Banks can play a proactive role to pursue environment friendly and ecologically congenial lending principle, which would force industries to go for investment to enhance environmental management, use of pro-environment technologies and management systems. It serves both the commercial objective of the bank as well as its corporate social responsibility.

Environment is most difficult issue the world is threatening. The world has seen much concentrate on financial development, the symptoms of this, has caused in environmental change and damage. An important role between economic growth and environmental protection is played by the banks. It means joining advancement and changing client inclinations in sparing saving banking business. Green keeping money practices will be helpful for environment as well as lead to cost reductions in managing an account exercises. To decrease the outer carbon discharges, bank ought to back green innovation and pollution sinking activities. To save environment Green banking is a part of green initiative taken by stakeholders (Farzana, et al, 2016).

1.2 Background of the Study

The world is heavily burdened with high carbon emission and environmental pollutions. The development process sometimes causes dangerous effect on bio-diversity, ecosystem, climate change, environmental position, etc. Environmental degradation is continuously harming ecology and environment. The government of Bangladesh has responded to this climate change effect actively and directly, and provided financial and non-financial incentives to distribute handsome portion of commercial banks' loan for green projects in the package of green finance (Habib, 2010). But the banking in Bangladesh is still at its infancy and in term of academic or applied research, there is no mentionable work done, especially yet at the doctorate level. Green banking tries to improve their own standard in doing business which will be socially responsible one (Halder, S. R., 2015).

Bangladesh faces increasing catastrophic impacts of climate change that could result in a 6.8% loss in GDP per year by 2030 if business as usual is pursued globally. For this reason, we need to build Bangladesh's resilience to make sure that the threat multiplier of climate change does not affect the country's prosperity. (https://moef.portal.gov.bd) Bangladesh will reduce its GHG emissions by 89.47 MtCO2e or 21.85% below BAU in 2030. The Government has recently adopted the Bangladesh Delta Plan 2100, a comprehensive 100-year strategic plan aimed at gradual, sustainable development through an adaptive delta management process. https://moef.portal.gov.bd).

The global leading banks are focusing on green financing, so that, conservation of energy would be enhanced. To protect the earth from pollution and save the people and the planet, banks are actively working to follow various guidelines to improve the environmental condition. Bank is normally supposed to be profit oriented, but banks must realize customers' perception regarding environmental degradation and alarming climate change.

Climate change and environmental-related natural disasters are associated with massive human losses, physical damages, and economic and fiscal losses, all affecting countries' ability to meet their development goals (World Bank, 2023).

A good number of banks are committed to work to save the earth by taking encouraging socially responsible business practices in the developed country. Green banking practices is yet to come in practice in the developing countries, as much as, it is present in the developed countries. For example, some banks of the USA and the EU are very active among the banks in the green initiative to protect the environment. The leading banks are extending their credits to the customers who have undertaken the green projects. The increasing public concern regarding environmental degradation is growing significantly for the last two decades (COP 15-28). This has been happening due to changing climate patterns due to rising greenhouse emission, resulting to increasing natural calamities, threatened bio-diversity balanced, land erosion, etc. A number of governments is committed to launch initiatives like green finance and green investments to save the environment by leading banks of the world.

1.3 Statement of the Problem

Environmental contamination is common problem in all countries or regions of the world.

Now Bangladesh is among vulnerable countries in the world which may face worst disastrous situation, if the adverse environmental changes occur. For an example, as estimated by the United Nations Environment Program (UNEP) in 1989, 1.5 meters sea level rise in Bangladesh’s coast by 2030 would affect 22,000 square kilometer (16% of total landmass) area with a population of 17 million (15% of total population) affected (vide Sarwar 2005: 12).

Hence, we have to go ahead as soon as possible to protect the environment. If we do not protect the environment from the pollution mostly created by human being, it will be worsening. The government as well as other key stakeholders need to play important roles for the implementation of ‘green banking' practices in Bangladesh covering environmental aspects as well as good governance. ‘Green idea’ in financial sector surely will act as a major catalyst in alleviating environmental sustainability of the country. This innovative idea and capacity building thereon in banking sector should have been launched earlier.

Bangladesh Bank has set initiatives to impose the green banking for saving the people and the planet. The central bank of Bangladesh already framed policy guideline and formulated 5-year strategic plan for 2010-2014 to establish the green banking. Green Banking is an active agenda under this plan. As mentioned by Rahman (2010), under green banking program, a refinance scheme for BDT 2,000 million has been taken for environment-friendly investments.

Bangladesh Bank (BB) has emphasized that all commercial banks (Public and Private) would finance in environmental project and it is to be shown in their annual reports. Bangladesh Bank (BB) has taken special programs to promote “green banking” as it aims to lead the campaign for saving the country’s fragile environment. Green Banking will change the way banks are rendering their services.

Bangladesh has faced many challenges to save the environment. In the midst of her socio-economic realities, like; overwhelming population pressure, poverty and malnutrition, narrow resource base, frequent natural disasters, lack of environmental awareness, poor enforcement of environmental laws, etc. she has been trying hard to manage its scare resources in a sustainable way. Perhaps, it will be worthwhile, if we could look at Bangladesh from its geographical perspective. Bangladesh is a live-delta and her soil is in formative stage. Her land and water ratio is roughly 60:40 and most of the time, a major part of the landmass remains under water, as 40% of land mass is less than one meter (3.3 ft) above sea level. More than 230 rivers and their tributaries flow cross the country like a cobweb. Some of them are dancing rivers and are constantly changing their courses. Bangladesh has 54 common rivers with India and 92 percent of their catchment area is outside the borders of Bangladesh. Considering the catchment areas, Bangladesh’s proportion is hardly 8%, while India 62%; China 18%; Nepal 08%; and Bhutan 04%. These rivers act as large drains for the Bay of Bengal. In a study, it is revealed that the rivers of Bangladesh annually transport 2.4 billion tons of silt to the sea, which is one-fifth of the world’s sediment load. Thus, Bangladesh, with a relatively small geographical area is a country endowed with an extremely diverse and rich natural resource base. Water pollution or environmental degradation should be taken into consideration and action with emphasis.

1.4 Research Questions

Based on research objective(s) the researcher tries to identify the following questions:

i) What is the present status of green financing in Bangladesh?

ii) What are the existing regulatory framework and the role of regulatory authority of green financing in Bangladesh?

iii) What are the depths and the spreads of green financing by banks in Bangladesh?

iv) What are the incentives and the disincentives in green financing by banks in Bangladesh?

v) What is the level of priority of green financing to environment and society by the banks in Bangladesh?

vi) What are the impacts of the green financing by banks in the banking sector and in the country?

vii) What is the level of implementation of green financing by banks as per the policy guidelines?

viii) What is the level of sustainability of green financing by the banks for the improvement of environment?

ix) What is the level of promotion of green financing and the progress of green investment by green financing in Bangladesh?

x) What is the level of public awareness about green finance and green investment by banks in Bangladesh?

1.5 Objectives of the Study

The core objectives of the study are to evaluate the nature, the depth and the spread of green financing by banks of Bangladesh and observe the specific sector covered by banks to the context of policy guideline of Bangladesh. Specifically, the objectives are as follows.

i) To find out the present status of green financing in Bangladesh.

ii) To mention the details of existing regulatory framework and the role of regulatory authority of green financing in Bangladesh.

iii) To find out the depth and the spread of green financing by the selected sample banks in Bangladesh.

iv) To identify the incentives and the disincentives in green financing by the selected sample banks (SCBs) in Bangladesh.

v) To evaluate the efficient use of our resources by avoiding wastages and giving priority to environment and society by green banking.

vi) To assess the impact of the green financing by the selected sample banks (SCBs) in the banking sector and in the country.

vii) To evaluate the contributions of banks in implementation of green finance as per the policy guidelines.

viii) To find out the sustainability of green financing by banks for the improvement of environment in Bangladesh.

ix) To look into the development of various financing tools to ensure the flow of funds in the Renewal Energy Sector and to assess the growth of green investment by green finance.

x) To make an assessment of the public awareness about green investment by green finance in Bangladesh.

1.6 Hypothesis development for the Study

The following hypotheses have been developed for the study.

(i) Ho_1: Regulatory framework and the role of Regulatory Authority for green financing in Bangladesh are inadequate.

(ii) Ho_2: Green financing has no impact on environment in Bangladesh.

(iii) Ho_3: Green financing by banks in Bangladesh has no sustainability.

(iv) Ho_4: Banks in Bangladesh do not use any tool for renewable energy.

(v) Ho_5: Public has no awareness for green financing in Bangladesh.

1.7 Rationale of the Study

Green Financing is the demand of the society to save the environment of the world. Green Banking is a recent issue all over the world to ensure green financing. The study will be of immense importance due to being a maiden study and hence, it would contribute to the existing literature. The findings will fill up the gaps in empirical research and expected to help the policymakers as the authority concerned in directing their initiatives in improving the green financing situation and this will ultimately help in achieving sustainable environment. To assess the real scenario between green financing and general financing, by the banks, the 'Green idea' in the finance sector surely will act as a major catalyst in alleviating environmental pollution of the country. This innovative idea and capacity building thereon in the banking sector should have been launched earlier. This study would contribute a lot for ensuring a sustainable environment for the common good of the people of the country and of the world.

1.8 Methodology of the Study

The research was a project for the requirement of Ph. D. degree. Data has been collected from published sources including annual reports, booklets, brochures, etc. of 10 different banks, and other institutions.

The study used both primary and secondary data. Secondary data have been collected from the annual reports of the sample banks for the period of 2010 to 2019. The annual reports of the sample banks were collected from the Bangladesh Bank (BB) Library, BBS, Dhaka University (DU) Library, DU E-Library of Faculty of Business Studies (FBS), Bangladesh Institute of Bank Management (BIBM) Library, Sustainable Development Department of Bangladesh Bank, Green Banking cell/unit of the sample banks, Ministry of Finance, Ministry of Education and Head-office of respective sample banks.

In choosing the sampling, taking all the banks in the population size, i.e., 57 banks (State-owned, Specialized, Private and Foreign Commercial Banks); 10 banks were selected in the sample (Public & Private Scheduled Commercial Banks).

Secondary data sources are: annual reports of selected 10 banks from the year 2013 to 2019 and also annual reports of Bangladesh Bank. Research covered sample banks' data for study period from 2013 to 2019. Random sampling method has been used.

For the purpose of opinion survey to determine awareness, primary data were collected by using three sets of structured interview questionnaire - one set for the top management (Head Office Executives) of the respective banks, one set for the divisional / branch officials and related personnel, environmentalists and concerned personnel, and the third one for loan-takers.

In data collection, opinion survey was used for qualitative data; questionnaire for interviews was used for quantitative data; green finance data was collected from the annual reports of selected 10 banks for published quantitative data; validity was ensured by pilot survey.

A pilot study was done by face-to-face interviews with audio records of 55 respondents to determine the appropriateness and relevance of the questions in the instruments. The feedback of the respondents resulted in some amendments and modifications in the questionnaire.

Most of the executives participated in the interview, done in a face-to-face mode with a structured questionnaire at the respondent's offices. The validity of the participant's responses was ensured by repeated assurance about the anonymity of the information collected. Attempts were also made to minimize the effects of all possible biases by careful design of the interviews.

For interview the respondents were divided into two groups: A and B (A: Officers of banks 30; and B: Borrowers & potential borrowers 30).

For analysis of data, descriptive statistics has been used, such as mean, median, mode, variance and standard deviation, etc. Other tools like correlation analysis and multiple regression analysis have also been used in the study.

In opinion survey qualitative data were analyzed through descriptive statistics, frequency distribution and t-test. Awareness has been tested by opinion survey and Likert scale- based analysis. Statistical tools of correlation and regression has been used in the analysis of impact. The researcher also used correlation analysis and one sample, t-test (as sample size was, n < 30). The t- test statistics results have been interpreted thoroughly in the analysis section. For multiple regression analyses, the researcher used one sample t-test. Impact was studied by variables, like, Green Finance to Total Finance ratio, used as depended variable and independent variables were Return on Assets (ROA), Log of Deposit and Classified Loans of selected 10 commercial scheduled banks. The significance level of t-test is 1%.

In addition to the above data analysis tools, I have used factor analysis to determine the importance of quantitative variables and qualitative variables. To identify the principal factors, I have used Initial Eigenvalues as criteria. For testing the sampling adequacy, I have used KMO test. (Kaiser-Meyer-Olkin Measure of Sampling Adequacy)

For analyzing correlation between Green Finance and Net profit after tax, Green Finance and Overall Finance and Green Finance and Log of Deposits, I have used Pearson Correlation Coefficient (r). The Durbin -Watson statistic was used for autocorrelation testing.

(a) Predictors : Log of Deposit.

(b) Dependent Variable : Green Finance

(c) D-W statistic=1.14.

1.9 Benefits of the Study

A. Benefits for the Bank & the Bankers:

(i) The more investment by green financing in the green products would create more positive image for the banks.

(ii) To save the environment and to make it sustainable green finance would contribute a lot.

(iii) By more investment in green products the profitability of the banks would increase and legitimacy would be enhanced.

(iv) To save the people and the planet all banks should invest in green products.

(v) There will be positive impacts on climate change through the green finance.

(vi) The study will help banks to formulate policies regarding green finance.

B. For the Governments:

(i) Bangladesh government would create positive image in the world.

(ii) If the government uses the findings of the research, it will be helpful to create positive image across the globe of that particularly Central banks and Government.

(ii) Green finance will create positive image in the eyes of WB, ADB and other development partners.

C. For the Academicians:

(i) The findings of the study will be a helpful menu for academic discussion among the teachers and students in the class room. Ultimately it will enhance their knowledge level.

D. Benefits for people:

(i) All people of Bangladesh will get a long life and sustainable environment. The people of the planet will be benefited.

1.10 Limitations of the Study:

(i) While collecting data, most of the banks did not provide data because they don't have or preserved relevant data. Most of the responsible officers in Green Banking unit, could not get positive thinking in this regard.

(ii) COVID-19 situation was creating constraints in timely data collection.

(iii) Bangladesh Bank has prepared smart policy and guidelines, but there is a lacking in implementation among the scheduled banks.

1.11 Future Opportunities

There are wider scopes for conducting research on the green finance areas:

A study focusing on legal framework.

Study regarding green finance based on population study (all banks).

Sustainable innovation and green finance, etc.

1.12 Operational Terminologies

There are a number of different terminologies, used in this dissertation. The operational terminologies are as below:

Environment: It means that 'surroundings in which an organizational operates'.

Green Banking: Green banking restricts on going environmental harm, conserve scarce economic resources, reduce carbon emission and promote environment friendly practices.

Green Financing: The Green Finance is that finance which focuses on ensuring sustainable growth and development for the world and for the future generations.

Environmental Aspect: Environmental aspect means any effect of the organization products and services that hampered the environment.

Bio-diversity: It represents the wealth of life on earth.

Ecosystem: The ecosystem is organisms interacting with each other, and with their environment. It also covers entire complex of organism living in harmony.

Environmental Impact Assessment (EIA): The process used to assess and predict the environmental consequences of an existing or proposed development project. EIA is a study to identify probable changes in different areas due to the project.

Credit Risk: Credit risk is the probability that a client is unwilling or may be unable to fulfill the contractual obligations associated with credit.

Environmental Performance: Environmental performance means the measurable results of the environmental management system which is related to environmental aspects, policies, objectives and targets.

Conceptual Framework: It means an intelligent and consistent system of inter related objectives and fundamentals.

Liquidity Risk: Liquidity risk is the risk arising from the problems associated with collateral. That means how easily and quickly a security can be converted into cash.

Consistency: It means application of same accounting treatment to similar events from period to period by an entity.

Enterprise Resource Planning (ERP): Enterprise resource planning system is a way in which all data and processes of an organization are integrated into one single system.

1.13 Chapter Design

The dissertation comprises nine chapter. The details of chapters' designs are as follows:

Chapter One represents introduction and world-wide environmental aspects of the green issue, background of the green banking and statement of the problem in details.

This chapter also provides the main objective of the study. In this chapter, the research questions were set forth on the basis of the objectives and the rationale the study. This chapter includes benefits of the parties in the green financing like Bank, Bankers, Government and Academicians and the people. And also incorporate the limitations of the study, future opportunities and operational terminologies of the research.

Chapter Two provides an overview of the prior studies on green banking or sustainable banking of the organizations with a view to identifying the knowledge gap, and to construct the conceptual and methodological basis of the study. This chapter specifically shows that there is a lack of longitudinal research to explore the nature and the extent of green financing by banks and the green investment practice in Bangladesh.

Chapter Three provides discussion on conceptual aspects coupled with regulatory frameworks of green banking as well as an overview of the theoretical frameworks in the global and the Bangladesh contexts. The initial discussion of this chapter focuses on conceptual aspects of green or sustainable financing by the banks. Legal foundation, environmental laws, relevant international environmental issues, environmental reporting, etc. were also discussed in this chapter. These were followed by a brief discussion on the theoretical perspectives of Green Banking conceptual aspect, Environmentally Responsible practice; Corporate Responses to Climate Change and Role of Economic Environmental Management. This chapter shows the conceptual framework of green development and green finance in Bangladesh. The justification of using these theories was also introduced. Especially Environmental and Social Risk Management (ESRM) policy guidelines were briefly discussed in this chapter.

Chapter Four introduces the details of research methodology employed in addressing the objectives of this study. The Chapter starts with the overview of the research. This is followed by a discussion on the study population, sample size and sampling techniques. A comprehensive discussion on the content analysis method is also introduced in this chapter. This is followed by selection of potential and appropriate participants and interviewed procedures for collecting primary data. This chapter shows the Sampling Method of the study, Population sizes - all commercial banks, sample size - 10 selected banks, data sources of both primary and secondary sources, etc. For primary sources an interview with respondents were taken. And secondary data sources by annual reports of selected 10 banks from 2013 to 2019 and annual reports of Bangladesh Bank, and of sample banks for study period: 2010 to 2019 and sampling method of purposive sampling have been used.

Chapter Five presents an analysis on the climate change and green financing like Regulatory Frameworks of Green Financing and their policy implications in details. Researcher tried to discuss in detail analysis of green banking and sustainable environmental issues in the context of local and global perspectives. This chapter indicates the cover of the effect of climate change in the world and its effect to the economy of Bangladesh and the climate change initiatives of the Banking Sector of Bangladesh. The inclusive and exclusive activities or an initiative of the banking sector of Bangladesh and five pillars of green banking approach was discussed in this chapter. The policy formulation and governance, green sustainability reporting and also the development of green banking practice were discussed in this chapter.

Chapter Six provides the analysis in the profile of selected banks and their financial involvements in detail through data analyses of Green Financing by banks in Bangladesh. Researcher tried to present in detail banks profile of selected banks. BB circulated the Green Banking Policy or ESRM Policy guideline of Bangladesh Bank for all the scheduled banks of Bangladesh. The annual reports of selected sample banks were analyzed for the study period of 2010 of 2019. Testing of Hypothesis of major observations as per the set objectives. This chapter focuses on the levels of understanding of different bankers, viewers, and observers regarding the concept and thinking of sustainable or green financing with perceptions of other stakeholders concerning the significance, regulatory framework and credibility of green financing. Chapter six also focuses on the challenges to green financing and the possible profitability in this sector. And finally, descriptive statistics has been used as the statistical techniques, such as mean, median, mode, standard deviation, etc.

Chapter Seven presented data analysis of green financing by banks and test of hypothesis of major observations as per the set objectives. This research also details discussion on 7 years annual report from 2013 to 2019 for Bangladesh Bank, SCBs, DFIs, PCBs, and FCBs. The random samples were selected for the 10 commercial banks, i.e., BASIC Bank, Dhaka Bank, Dutch-Bangla Bank, Eastern Bank, IFIC Bank, Janata Bank, National Bank, Prime Bank, Trust Bank and United Commercial Bank, etc. The research is based on the assumption that annual reports of Bangladesh Bank and all scheduled banks are the most commonly used tools for information of bank's performances. This chapter, therefore, presents analysis on the overall green financing, sector-wise green financing and finance in the annual reports of the sample banks by using descriptive statistics to address objectives of the study. The t- test statistics results have been interpreted thoroughly in the analysis section here. The average investment of selected 10 commercial scheduled banks in green finance is equal to the average investment of all 57 banks in green finance in Bangladesh. This hypothesis was tested by significance level of 1%.

Chapter Eight provides the concluding issues of the present study in light of the research findings and discussion on findings. The chapter begins with a summary of research in terms of works done, a discussion of research findings, used tools, results and contributions of the study to existing literature. Overall data presentation, data analysis, and various results were shown in this chapter. The chapter also provides findings, discussion on findings, i.e., findings in detail and academic contribution of the study; and comes to an end with potential directions for further studies in future within the area of research.

Chapter Nine provides the discussion and the conclusion of the present study in light of the research similarities and dissimilarities of the previous studies in comparison to the present study. The chapter ends with a summary of research in terms of works done and the concluding issues of the research. It then advanced with future discussion that addresses the conclusion and policy implications of the research.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

The focus of this chapter is to analyze an overview of the previous studies on green banking or sustainable green banking in global and Bangladesh contexts. These show the relevant prior studies that were analyzed with a view to realize the key findings and to identify the knowledge gap, and construct to the structured questioner, conceptual and methodological basis of the study.

Congressman Chris Van Hollen (2009) introduced a Green Bank Act with the mission of opening up a green bank under the ownership of the US government. The objective of establishing green bank was to enhance efficient energy usage, reduce carbon and reduce environmental pollution. The initial capital was of $ 10 billion. The maximum amount of bonds was $ 50 billion (US Treasury bonds). A few analysts criticized but good number investors, experts and manufacturers welcomed the proposal.

Kaeufer. 2011. Introduced five levels of green banking activities such as sponsoring green events, developing innovative products, addressing the core challenges of strategic eco-system and introducing green practices.

Rashid. 2010. Compared green banking with normal banking. Green banks should consider all environmental factors, social business practices before sanctioning a loan.

De Viflers and Van Staden. 2006. A study conducted by using annual report of 100 industrial companies and through content analysis, the results reveal that most of the companies increase the disclosure level regarding environmental issues in the annual report.

Sumiani et al. 2007. The study was conducted by using checklist and content analysis. The result reveals that the environmental reporting practices of the Malaysian companies was at low level. The study was conducted based on secondary data and covered only one year of period.

Rashid. 2010. The study stated that green banking is pursuing a business policy which is not hazardous to environment. The study also highlighted that on sustainability of mother planet and shifting the focus on profit or even people.

Weber. 2005. The Study stated that a socially responsible bank can also be financially successful. The study also focused on the simultaneous growth of the bank and the contribution towards environment.

Ceres. 2008. The study evaluated that 40 of the global leading banks (16 US, 15 European, 5 Asian, 1 Brazilian and 3 Canadian) are addressing climate change issues which encompasses greenhouse gas emissions, board oversight, management execution, public disclosure, etc.

Habib. 2012. Wrote an article entitled, “Environmental Reporting in Green Banking”. He evaluated that green reporting is one of the essential constituents on the activities of sustainable banking on the way to attain environmental goal of banks. It appears that banking industry as a whole is moving towards an atmosphere where banks have no alternative but to undertake green activities and disclose green information. Thus, in the changing business and regulatory environment, banks are required to formulate green reporting frameworks to disclose their responsible behavior. In line with the changing atmosphere, it can be said that like financial performance data, information on environmental performance should be routinely reported by banks. Green disclosure is receiving acceptance as material to the stakeholders in response to the mounting concern of the policy-makers and growing awareness among common people. With the changing circumstance, growing attention is being placed on mandatory disclosure from voluntary disclosure. Moreover, with the growing importance of environmental performance, notion of 'integrated reporting' is receiving prominence, whereby financial and sustainability reporting could be blended into one and might receive equal treatment from the regulatory authorities and other stakeholders.

Hohnen. 2012. The Study has identified five issues: increase in data transparency, improvement in organizational governance, expansion reporting universe, increase in stakeholder engagement and greater data comparability. The study also highlighted on benefits of sustainability reporting printed or communicated online.

World Economic Forum, 2012. Evaluated that generally green reporting remained among the voluntary activities of banks and business entities in developing economies. However, a few governments are playing roles in encouraging business entities. For example, in China, government has been the key driver behind encouraging the companies to report their corporate social responsibility (CSR) practices.

Mohiuddin, Kabir and Rezaul. 2012. Observed in their article, “Environmental Reporting in Bangladesh: Focused on Climate Changes” that Global climate change, one of the major problems facing by the world today, is a consequence of rapid industrialization. Bangladesh is one of the developing countries of the world which is most susceptible to the effect of climate change.

Khan. 2012. Conducted research on Green Banking. In his article entitled “3 phases of the green banking policy of environmental regulatory authority,” he mentioned that Government of Bangladesh is trying to mitigate the sufferings of the low lying areas people for the last 35 years. The study also highlighted on sustainable agriculture, fisheries and planned industrialization.

Haque, Salat, and Alam. 2015. Discussed in their article entitled, “Corporate Social Responsibility-An Opposite View” that the funds of CSR are being utilized for creating personal name and fame and loosing organization are conducting CSR at the cost of the funds of the shareholder. However, the researcher emphasized on the empirical test of misuse of CSR fund by using normative concepts.

Ambe. 2007. The study revealed that most of the companies have action plan for environmental issue and report on sustainability.

Millat. 2012. This study discussed that Bangladesh government responded positively to green financing and green banking which already have positive impacts on climate change and overall macro-economic condition.

Haque. 2011. There is a comprehensive study conducted on ‘Climate change related corporate governance disclosure practices in Australia’. The study result reveals that the disclosure level of climate changes related information in the annual report of Australian companies is at low level.

Sharfman and Fernando. 2008. Highlighted in their research titled “Environmental Risk Management and Cost of Capital” that there a positive association between firms green performance and overall economic performance.

Islam and Das. 2011. The study reported that green financing concept is originated in the developed countries and it is widely practiced in the whole world. The study also highlighted on environment friendly practices and sustainable green banking activities.

Atiur Rahman. 2010. This study focused on digitalization of the financial sector increasing investment in agriculture, SMEs, and green banking and inclusive banking and CSR activities. As a result, poverty will reduce and achieve the target on vision on Bangladesh by 2021.

Sahoo and Nayak. 2008. Highlighted that green banking is an important lesson for sustainable banking in India.

Suresh Chandra Bihari. 2011. This is a **s**tudy that focused on the improvement of CSR and the protection of environment.

Alice Mani. 2011. The researcher tried to examine and compare compliance and commitment to save environment and in eco-friendly projects in India.

Ullah. 2013. The research observed that Bangladesh is the worst sufferer of the world due to the environmental pollution through the industrialization of developed countries.

Thomber. 2011. Argued that environment plays a vital impact of bank's external activity though it is tough to estimate. Banking sector should encourage investments that are environmentally responsible and careful.

Rahman. 2010. Highlighted on green banking, eco-friendly financing which will have significant positive impact on environment.

Rahman and Zareen. 2014. This study emphasizes successful green banking asked for changing mind set and all stakeholders need to be proactive.

Sahoo and Nayak. 2008. Argued that the bank should use appropriate technologies and management systems for Green Banking that protects environment and ecology properly.

Hayder and Verma. 2012. Pointed that Indian banking needs a shift from profit to planet, people and profit. The researchers also highlighted that business and financial policy should be formulated so that efficient usage of resources can be ensured and wastage of resources avoided.

Richard Buckminster Fuller. 2012. Reported that the Green Banking is also called ethical banking, because it involves in social and environmental factors. Before giving loan, it evaluates all the factors of the project either it is environment friendly or not.

Ullah. 2010. Pointed out the green financing and the green banking as components of global initiatives to save the environment and the climate. But researcher concluded by concluding that commercial banks and social development banks are less concerned with the issue.

Jinwala. 2013. The study described that the Green Banking in India, from the environmental angle started to control state pollution. Green banking reduces paper work and mailing fees and other fees. It also mitigates credit, return and reputational risk.

Vikas Nitin Nayak & Ankil Goel. 2014. Described that climate change issue is a complicated issue for the world. People should give more priority on this issue. For survival and better live, environmental management should be in a sustainable manner.

Miah, Islam and Al-Amin. 2012. Assessed in his studies on "Environmental Reporting: Present Status and Some Suggestive Guidelines for Listed Manufacturing Companies in Bangladesh" that environmental reporting provides a significant tool for environmental communication. The study also highlighted the organization's accountability regard to environmental burden.

Rahman and Zareen. 2014. Mentioned that for successful green banking an isolated effort by banking community may not bring much. All stakeholders need to be proactive and change mindset for sustainable development.

Zeitberger. 2008. A study that evaluated the public concern regarding unusual weather pattern, rising greenhouse gases and declining air quality. Banks should take bold step through green financing that contribute a lot in production and business. Standards should be developed also affect socially responsible behavior of other businesses.

2.2 Research Gap and Findings from Literature Review

The researcher tried to review prior literature on green financing or sustainable finance by banks in Bangladesh. Over the past few decades, a good number of researches have been conducted on the issue, majority of which have been done in the context of EU, North America, Africa, Australia, Canada and in some Asian countries like Japan, China, India, Philippines, Malaysia, South Korea and Bangladesh by the renewed organizations and prominent researchers. But a few studies have been conducted in Bangladesh.

Habib. 2012, wrote an article titled "Environmental Reporting in Green Banking". He evaluated that green reporting is one of the essential constituents of the green banking activities on the way to attain environmental goal of the banks. It appears that banking industry as a whole is moving towards an atmosphere where banks have no alternative, but to undertake green activities and disclose green information.

Country experiences on different sustainable finance initiatives were gathered from the published information. Published data by Bangladesh Bank and BIBM studies were extensively used to examine sustainable finance activities and their implications in the context of Bangladesh.

A primary survey was conducted among the sustainable banking units of different banks of the country. A total number of 33 banks including 10 sample banks and NBFIs responded as part of the questionnaire survey of the study.

Based on the published literature, the aspects of sustainable finance by banks: (A) Economic Aspects, and (B) Social Aspects.

Economic Aspects: Access to Finance and Efficient Allocation of Financing Resources.

Social Aspects: Financing the disadvantaged group in the society.

Habib has also linked efficient financing and growth with financing stability.

Sustainable Banking Network, 2017. There are three dimensions of sustainable finance as identified by Sustainable Banking Network, 2017, which are as follows.

Integrating environmental issues in investment and lending decision – making. For having positive impact investment should be made in green projects. CSR initiatives including how banks manage their own environmental and social footprint.

Habib has identified a few barriers for sustainable finance in Bangladesh, such as lack of skilled product development program, lack of commitment / positive mind set, high initial cost of green projects, unavailable of low cost of fund of projects, lack of awareness of potential customers, lack of technical know-how, fake documentation preparation by clients, risk of fund diversion, risk of willful defaulters and non-cooperation of linkage arrangement, etc. are often barriers.

Researcher has used qualitative data for his study and interview-based questionnaire survey. In the current study, researcher tried to find out:

Present status of green financing in Bangladesh based on policy and guidelines by Bangladesh Bank. The impacts of Return on Assets (ROA), Classified Loan (CL) and

Log of Deposit (LoD) on the increase or decrease of the ratio of Green Finance to Total Finance. The correlation between net profit after tax (NPAT) and green finance (GP).

The opinion of 30 bankers and 30 beneficiaries of selected 10 banks in Bangladesh by using the 5 points Likert's scale. The opinion has been asked for 20 statements which was generated from literature review on green finance of this study.

2.3 The Gap in Policy Guidelines

The Researcher tried to review the prior research works by the renowned organization and prominent researchers on green banking or sustainable banking, majority of which have been done in the context of European Union, North America, Africa, Australia, Canada and in some Asian countries like Japan, China, India, Philippines, Malaysia, South Korea. But a few studies have been conducted in Bangladesh.

Other gaps identified, are as follows.

a. **Knowledge Gap:** 'Green Financing' is a new issue in Bangladesh since 2000. While this issue has already been proved vital and crucial to save the people and the planet, by this research, I am going to add new knowledge in this field in Bangladesh. New constructs, concepts and operational terminologies have been developed in the study.

b. **Practice Gap:** All banks were engaged in traditional investment projects' financing which did not focus on environmental concerns since 1970. But this study focused on the low carbon emission projects, like Green brick fields, green Factories, etc. and Green Financing Projects like Green Bonds, green credits, green and sustainable projects, etc. This research is going to introduce a new trend in Bangladesh.

c. **Methodological Gap**: In this study, I am using multiple regression. Correlation analysis, factor analysis, etc. These are the new methods or techniques used for analyzing data in the study. Previous studies did not use these types of data analysis techniques.

d. **Research Gap**: Since this field of study is new and emerging, a few studies were done in Bangladesh. So, this study is going to be a breakthrough study.

2.3 An Overview of Green Finance in Bangladesh

The review also revealed that standardized regulatory framework and policy guidelines are yet to be framed for the proper implementation by the banks in Bangladesh which is recognized globally. Green sustainability effort in Bangladesh is staying in the beginning stage, but policy formulation is going on by regulatory authority and they are trying to apply more at this stage.

It is also revealed that the concept of green banking is relatively recent issue in Bangladesh, but it would have been very positive impact to the environment. The studies carried out in this country were only in the banking sector in Bangladesh. Most of them were based on secondary data. Moreover, recent green banking literature emphasizes the importance of green banking. There is a lack of studies that about the green banking policy guideline and real practice shows the difference more. As per the close supervision of BB, all types of banks made huge finances to environment protection and products.

2.4 Chapter Summary

The world is changing constantly with increasingly flourishing development records. The negative impact of development on environment is also alarming. Green initiatives might be some of the remedial measures. In line with world efforts, the green finance initiative launched by the GoB is praiseworthy. It would contribute to sustainable development. Green finance might serve both the objectives of commercial banks in Bangladesh to profit maximization and attending the CSR of banks.

CHAPTER THREE

<u>PART: A</u>

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.1 Introduction

The objective of this chapter is to provide insight into the conceptual aspects coupled with regulatory frameworks of green banking as well theoretical frameworks commonly used in the voluntary environmental disclosure literature. It also introduced the theoretical perspectives to be utilized in this research. The initial discussion of this chapter focuses on concepts of green bank, green banking, banking ethics, banking performance indicators on the environment and responsibilities of environmental issues like sustainable reporting. Global climate change and resultant impacts and responses were also discussed in this chapter. Linking Economic Theory and Environmentally Responsible Banking Practices were attempted followed by a brief discussion on the theoretical perspectives of green financing by banks in Bangladesh.

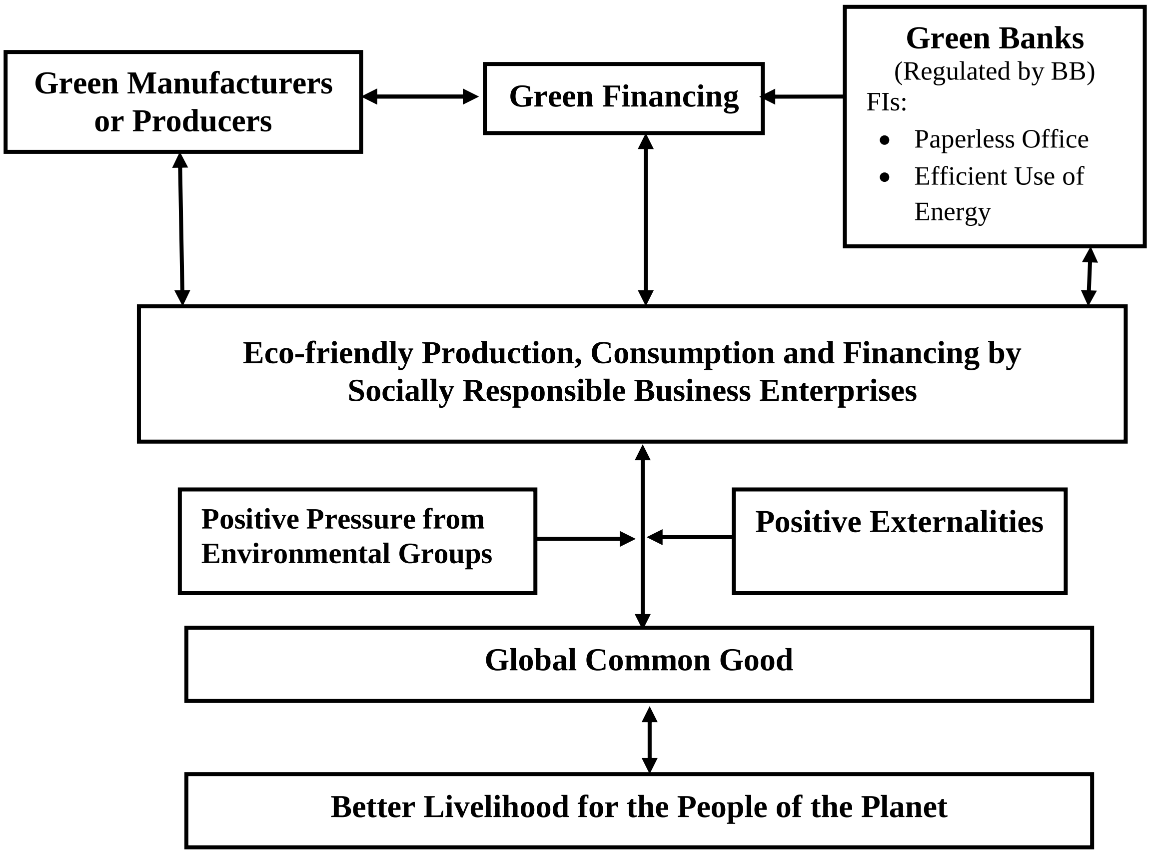
3.2 Sustainable Financing Model:

Discussion on Model:

Sustainable Financing Model highlights primarily effects of green financing on green producers or manufacturers and green banking (efficient use of energy, paperless office) regulated by Bangladesh Bank. All of these elements have to the way interactions among themselves. These resulted in eco-friendly production, consumption and financing by the socially responsible business enterprises.

Influenced by environmental groups and resulting in the global common good and better livelihood for the people of the planet. The researcher's own developed Sustainable Financing Model is given below, in figure: 3.1.

Figure 3.1: Sustainable Financing Model



Source: Researcher's developed model

The above model shows interrelations of different variables of environment and the provable benefits of green investment by green finance on pollution control, environmental developments and human livings.

3.3 Environmental Regulations

The environmental regulations are important to take decision to save the environment. There are certain provisions under law regarding conservation of environmental control of environment pollution and improvement of standards. In Bangladesh, we have environmental conservation act which is promulgated in 1995.

3.4 Climate Change and its Impact in Bangladesh

Bangladesh is the most vulnerable of the countries of the world due to global climate change. Rising sea-levels, increase in average temperatures, and natural disasters pose a lot of problems. The agricultural sector had also damaged for environmental changes. These calamities make it necessary for Bangladesh to prepare appropriate strategies to cope with disasters on a regular basis (Khan and Rashid, 2008). In the passage of time, Bangladesh needs necessary steps and initiatives to get finance for environmental products to save the earth.

3.5 Importance of Green Finance in Bangladesh

In case of Bangladesh, green finance possesses wider scope or coverage and benefits of Environmental Responsibility (ER) practices or green banking are by and large recognized. Green finance may have been emphasized for the society and environment. Green banking has strong positive effects on the environment. Green finance covers the financial services which are related to accelerating the green economy and green industry. Green finance is contributing a lot to resource efficiency and low carbon emission.

Climate changes possess the greatest environmental challenges for the whole world. The scientists have reached to consensus that the global awareness is rising continuously. Commercial banks' finance in many green projects are aimed at to minimize greenhouse gas emission, pollution, energy inefficiency and uses of carbon energy sources.

3.6 Green Finance: Global Perspective

Global warming is now the most vital issue and has significant impact on the planet. It has already made direct impact on bio-diversity, agriculture, forestry, dry field, water resources and human health. Now global warming calls for global responses. The factors that affect the environmental degradation cover air pollution, water pollution and scarcity, encroachment of rivers, improper disposal of industrial, medical and house-hold waste, deforestation, loss of open space, loss of biodiversity, etc. Banks finance projects such as utilities, bricks, power plant, car manufacturing, etc. that causes carbon emission.

3.7 Sustainable Management of Environment

To keep up the environment, we urgently need sustainable management of environment. The "Earth Summit" held in 1992 in Rio-De-Janirio, Brazil, out-lair course of action for the habitable planet. The summit laid down milestone in awarding the world a development process by focusing the environmental issues. A set of agreement between governments has been reached regarding significant advancement about intervention, cooperation and international development.

3.8 Regulatory Framework in Global Aspect

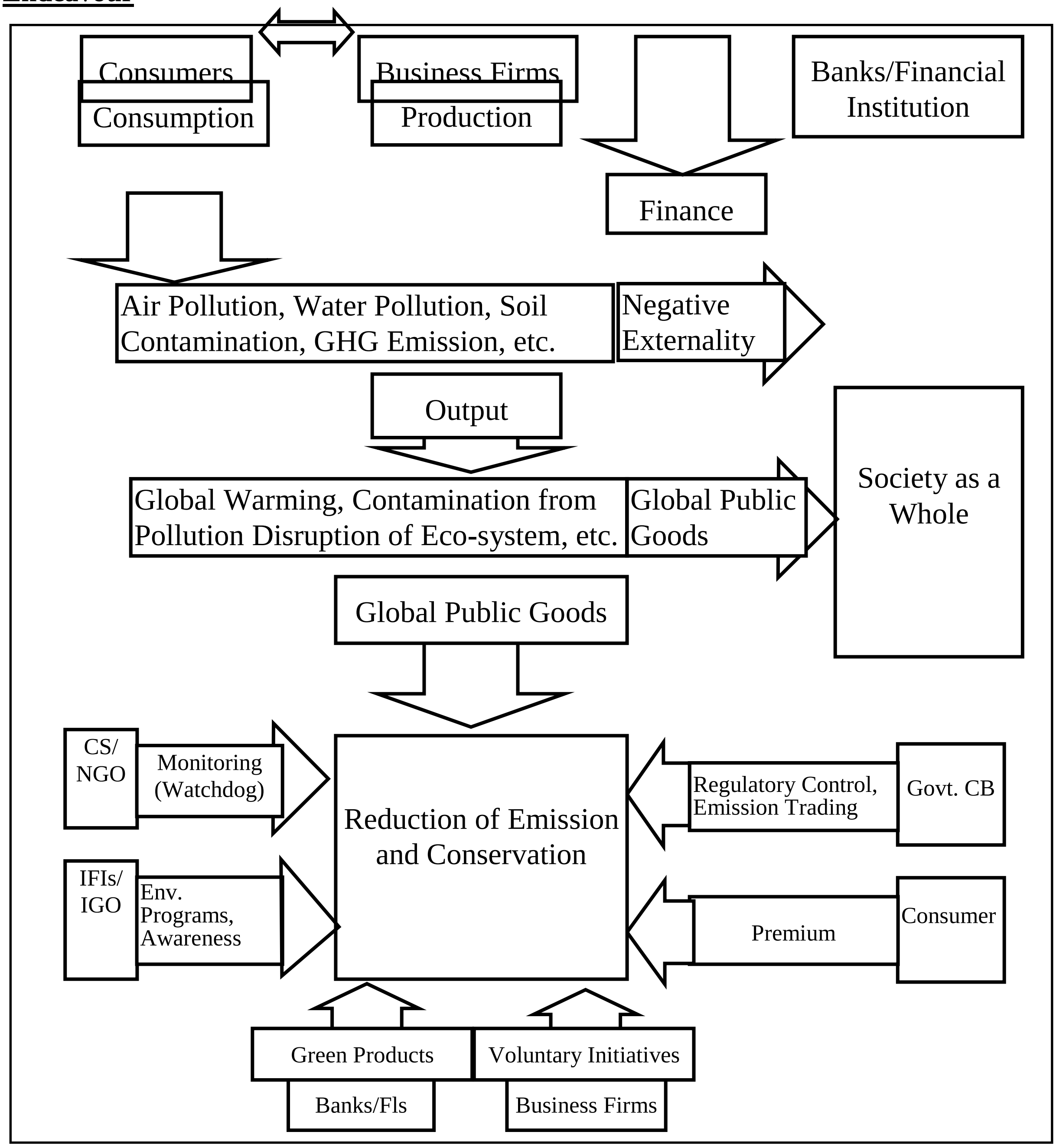
In global aspect, the regulatory framework and conceptual ideas are playing the vital role to save the environment. Governments of a good number of developed countries and of some developing countries, like the USA, the EU, China, etc. and their central banks have been remarkably active in offering regulatory and policy supports for the development of green banking in their respective banking sectors. The very recent

Durban Conference (November 28-December 09, 2011) could not offer much. Nevertheless, the positive point is that the countries have now agreed to work together towards a new binding agreement. Durban also saw the establishment of a Green Climate Fund (Habib and Zareen, 2013).

3.9 Theory and Environmentally Responsible Banking Practices

Now a day, environmentally responsible banking practice is important to the global banks/ financial institutions in the world. Framework of Environmental Degradation and Stakeholders Endeavor is shown in figure-3.2.

<u>Figure-3.2: **Framework of Environmental Degradation & Stakeholders' Endeavour**</u>



Source: Habib (2008)

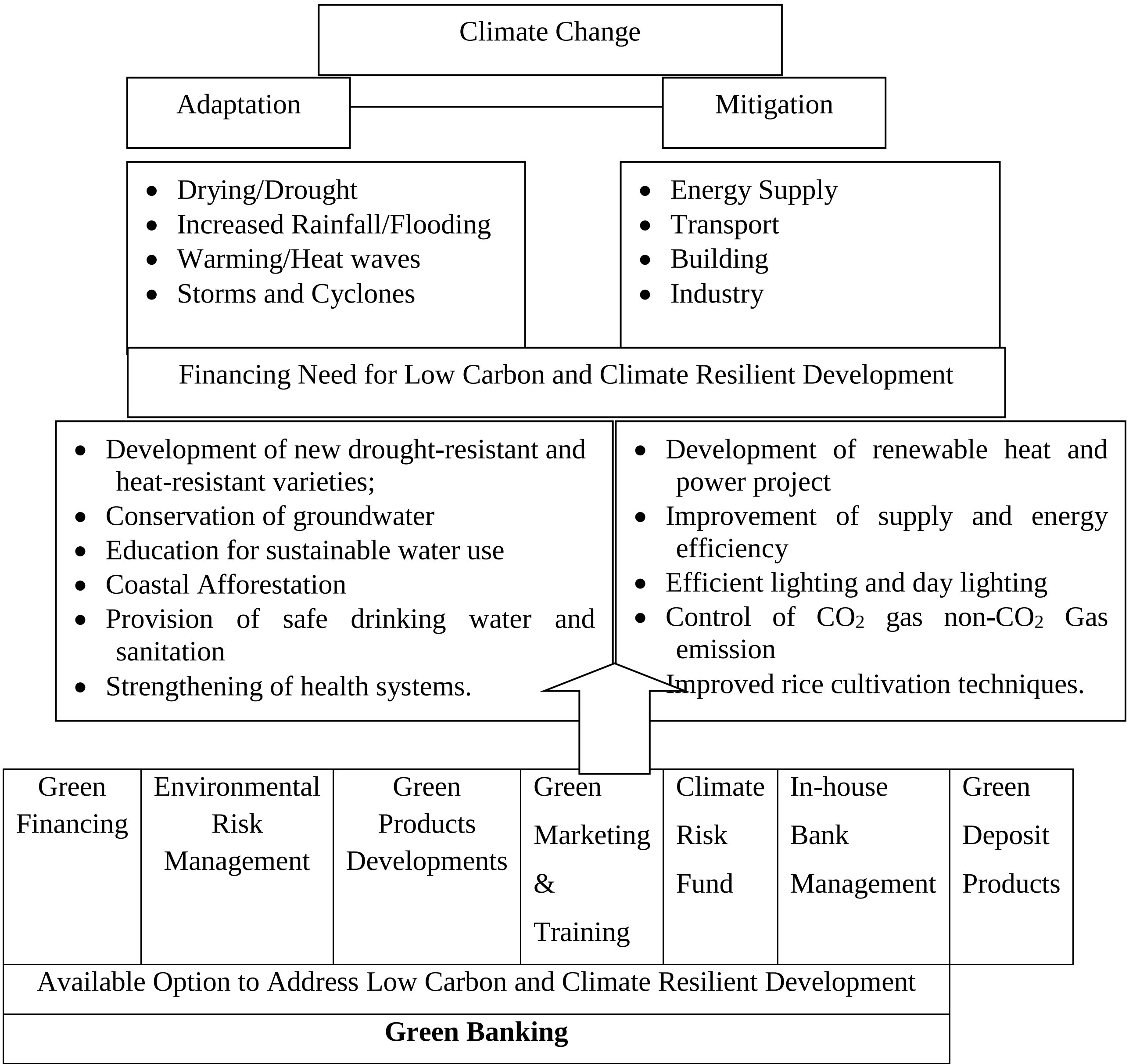
3.10 Global Climate Change- Impacts and Responses

The world environment has rapidly changed due to the climate changes. The impacts and responses of climate change differ from region to region that depend on weather, temperature, soil, and ecological systems, etc. The impacts of climate change and global warming affect differently one region from another.

Generally, with the increasing global temperature species and their habitats are decreasing due to rising water level, and ecosystems are getting disrupted. Climate change enhanced intensity and frequency of floods, draughts and cyclones in many global economies. Some studies (Stanny and Ely, 2008; IFC, 2009) reveal that global warming is also causing global dimming whereby less heat and energy reaches the earth (Habib and Zareen, 2013).

To save the earth, the governments have taken globally initiatives and finances for the environment. The green banking adopted the anti-climate change events, climate risk fund and well-equipped instruments to save the environment. Addressing ‘Low Carbon and Climate Resilient’ initiatives through Green Banking are shown in Figure-3.3.

Figure-3.3: Initiative of 'Low Carbon and Climate Resilient' Development through Green Banking



Source: From Different Publications (compiled by the researcher)

3.11 Corporate Response to Climate Change Issues

For controlling carbon emission both developed and developing countries should participate. Public disclosure has been particularly effective in developing countries, which will play an essential role in limiting global carbon emissions. Recent study conducted by Wheeler (2007) has found that public disclosure had a very significant impact on reducing pollution through improving the concern for compliance requirements. In Bangladesh, there are no such requirements or guidelines from the regulatory agencies on climate change reporting (Mohiuddin and Kabir, 2012), before 2011.

3.12 Green Banking Policy in Bangladesh

In Bangladesh, Bangladesh Bank (BB), the central bank of Bangladesh, framed the policy guidelines to establish green Banking in 2011. It is the high time for the bank to adopt green banking policy in structured manner. The time-lining for the actions to be taken under Phase-I should not exceed December 31, 2011. The synopsis of BB Policy Guidelines is given below.

Phase-I:

Policy formulation for green banking and good governance

Incorporation of environmental risk in Credit Risk Management (CRM)

Initiation of in-house environment management

Introduction of green finance

Creation of climate risk fund

Introduction of green marketing

Virtual Banking.

2. Phase-II:

2.1. Environmental policies based as sector specific

2.2 Strategic planning on green financing

2.3 Establishing green branches

2.4 Formulation of in-house environment management

2.5 Formulation of bank specific environmental risk management plan and guidelines

2.6 Comprehensive programs to educate clients

2.7 Disclosure and reporting of Green Banking activities.

3. Phase-III:

3.1 Designing and introducing innovative products

3.2 Reporting in standard format with external relevance

3.4. Reporting green banking practices quarterly

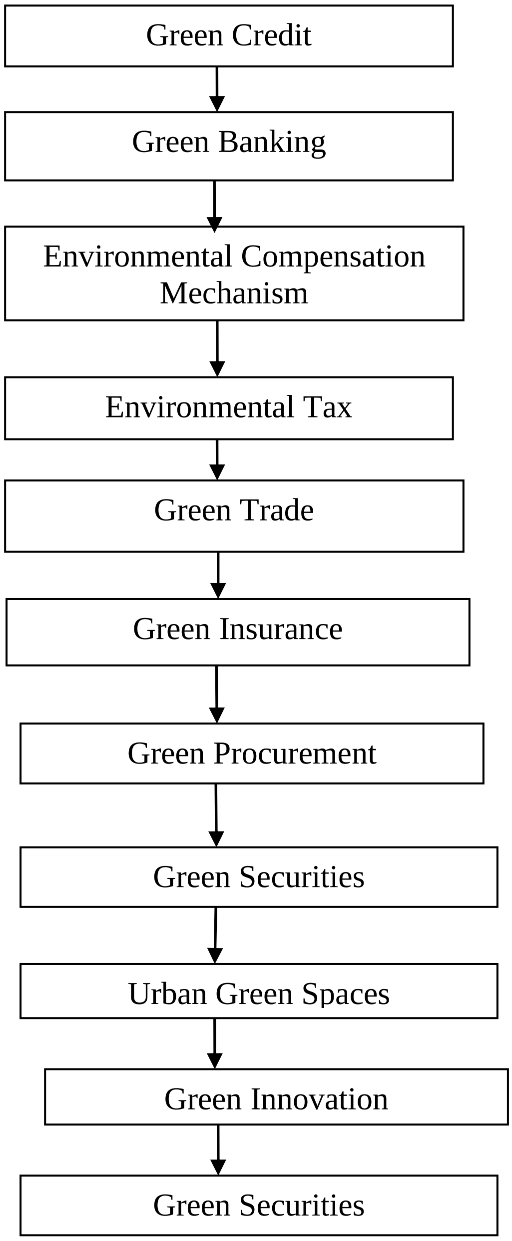
3.5. The compliant banks will have preferential treatments.

PART: B

3.13 CONCEPTUAL FRAMEWORK OF GREEN INITIATIVES

The initiatives for green development are green credit, green banking, environmental compensation mechanism, environmental tax, green trade, green procurement, green insurance and securities, urban green spaces, green innovation, etc., shown in figure 3.4.

Figure 3.4: Some mentionable initiatives for green development



Source: Habib et al. (2008)

Hu et al. (2018) emphasized on green development requiring efficient use of resource, green production process, and ensuring mutual benefits between nature and human. The main aspects of green development are optimum uses of space, building climate fund, establishing resource saving society and protecting natural eco-system.

Green credit: Green credit is a regulatory tool to provide credit to green projects based on preference. It has a high potential for the bank as a green financial instrument.

Green Banking: Green banking refers to sustainable banking which focus to environmental and social well-beings.

Environmental Tax: A tax imposed on pollution levels for different industries.

Green Trade: Green trade focused on environmental impact on production, domestic trade and exports.

Green insurance: Green insurance systems develop policy guidelines for the enterprises that produce transport and dispose hazardous chemicals for commercial purposes.

Green securities: A system that follows the compulsory requirement on environmental performance for pollution to offer initial public offers. Companies take environmental performance approval from the appropriate authorities. The listed companies must disclose the environmental performance activities.

Urban green space: Urban green space is a development of infrastructure in the urban area for affordability, environmental and financial welfare.

Green innovation: The green innovation addresses to reduction of carbon emission for macro-economic development. Government encourages green innovation for better environmental performance.

3.14 Functions of Green Wing (of BB)

(i) Sustainable Financing to Green Financing:

Bangladesh Bank has already made mandatory to distribute 2% sustainable financing to green financing.

The Central Bank issued a circular (rule) regarding mandatory distribution in green projects.

Under the rules, the scheduled banks are expected to give out 15% of their loans for sustainable financing including 2% for green financing.

Success of their achievement will be factored in by the bank during the preparation of its sustainability ratings and CAMEL ratings of the lenders.

(ii) Capacity Building on Sustainable Financing:

(A) Develop a detailed capacity building plan for Banks and FIs.

- Identify and incorporate local and international best practices in the field of environment friendly project management.

- Develop and implement detailed plan of methods to conduct workshops, seminars and training programs.

- Identify and maintain contact with important stakeholders and resource persons in order to fully materialize all the objectives.

- Provide additional advisory support to Sustainable Finance Department whenever required regarding training manual.

(B) Capacity Building on Financial Inclusion

- Develop a comprehensive training program plan with special focus on financial inclusion.
- Design and arrange workshops, meetings, training programs to assist banks and FIs in identifying and meeting financial inclusion objectives, such as, meaningful participation of women, third-genders, ethnic minorities, and marginalized population.
- Consultant firms should be locally enlisted.
- Government, Semi-Government, and Autonomous institutions/centers may apply relevant rules and regulations. In such case, necessary documents validating institution's autonomy have to be submitted.
- The firm should establish credible credentials, expertise, and track record in undertaking and conducting comprehensive training programs on financial sector.
- The firm should demonstrate established relationships with key local and foreign relevant stakeholders.
- The firm's effort employing experts with credible experience and knowledge of sustainable project management in the project is encouraged.
- The experts should demonstrate in-depth knowledge in Bangladesh's financial landscape.
- The experts must have strong communication and report-writing skills in English language.
- Knowledge and understanding of international best practices in the relevant sectors will be regarded as extra-advantage.

Table 3.1: Position of green finance for the FY 2014-15

Types of banks	FY 2014-15			
	Direct green finance	**Indirect green finance**	**Total green finance**	**Sector-wise contribution**
SCBs	30.70	0.90	4.00	0.854
SDBs	0.10	0.30	0.30	0.075
PCBs	20.10	346.10	366.20	78.610
FCBs	3.30	68.20	71.50	15.350
NBFIs	8.30	15.50	23.80	5.111
Total	34.80	431.00	465.90	100.000

Source: Annual Report of Bangladesh Bank and Sustainable Finance Department, 2015.

Table 3.2: Position of green finance for the FY 2015-16

Types of banks	2015-16			
	Direct green finance	**Indirect green finance**	**Total green finance**	**Sector-wise contribution**
SCBs	2.01	1.23	3.25	0.60
SDBs	0.03	0.00	0.03	0.01
PCBs	24.60	379.89	404.49	80.40
FCBs	0.77	77.55	78.32	15.60
NBFIs	5.95	11.19	17.14	3.40
Total	33.36	469.86	503.22	100.00

Source: Annual Report and Sustainable Finance Department, Bangladesh Bank, 2016.

Table 3.3: Utilization trend of BB refinances for green products

Sectors	Fiscal Year-12	Fiscal Year-13	Fiscal Year-14	Fiscal Year-15	Fiscal Year-16
Bio gas	133.2	113.6	212.8	83.3	84.8
Solar home system	10.5	40.2	32.2	87.5	114.8
Solar irrigation pump	8.4	0	17.9	26.5	0.6
Solar assembly plant	248.8	122.7	49.6	148.1	16.3
Solar mini-grid	0	0	0	0	10.0
Effluent treatment plant	22.2	57.4	10.0	0	58.0
HHK technology in brick kiln	55.0	172.2	59.0	47.0	177.8
Vermi compost	0	0	0	1.1	1.6
Green industry	0	0	0	0	400.0
Safe working environment for textile and garments industry workers	0	0	0	0	35.7
Organic manure from slurry	0	0	0	0	0.2
Paper waste recycling	0	0	0	0	20.0
Total	478.1	381.5	381.5	393.5	919.7

Source: Annual Report and Sustainable Finance Department, Bangladesh Bank, 2016

The government of Bangladesh has emphasized green development to curb the negative impacts of climate change. The government is also promoting pollution free development in the country. For these reasons government has established Bangladesh Climate Change Resilient Fund (BCCRF) in May, 2010.

PART: C

PENAL PROVISION

PROVISION OF ENVIRONMENTAL LAWS

3.15 ENVIRONMENTAL LAWS

3.15.1 Policy Interventions

To establish the green financing environmental laws are important for applying the penal provision. In order to address these issue of concern, a number of interventions cloud be taken locally. They are policy interventions; undertaking of programs/projects; drafting of legislations and their enforcement; institutional development; and awareness and advocacy.

3.15.2 Environmental Laws and Provisions

Environmental laws are essential to control environmental pollution. In Bangladesh, we have Environmental Conservation Act, 1995 in enforcement.

3.15.3 National Environment Policy, 1992

Bangladesh framed the National Policy for environment in 1992. The Ministry of Environment and Forests in 1989, strongly felt that the country should have an environment policy to deal with increasing environmental pollution and degradation. Civil society, activist groups and the NGOs were in the forefront to demand such a policy. Accordingly, the government drafted the National Environment Policy and Action Plan and approved the same in May, 1992. The policy suggested conducting

Environment Impact Assessment (EIA) for industries discharging effluents and to adopt mitigation measures. The policy discussed as many as 15 sectors of vital interest.

3.15.4 Environment Conservation Act (ECA), 1995

The Environment Conservation Act (ECA), 1995, is playing a significant role to conserve the environment of Bangladesh.

3.15.5 Environment Conservation Rules (ECR), 1997

These are the first rule promulgated under the Environment Conservation Act, 1997.

CHAPTER FOUR

CLIMATE CHANGE AND GREEN BANKING

Climate Change and Regulatory Framework of Green Banking and its Policy Implications

4.1 Introduction

Now a day, Green Banking is a vital phenomenon to the banking industry for the human life. Because man cannot live without a fresh and peaceful environment. To ensure the peaceful environment banks need to green finance beside the other finances. As a regulatory body, Bangladesh Bank has undertaken many steps to ensure the green financing. In the developed countries, there are many steps, rules and regulations to save the earth and the green environment.

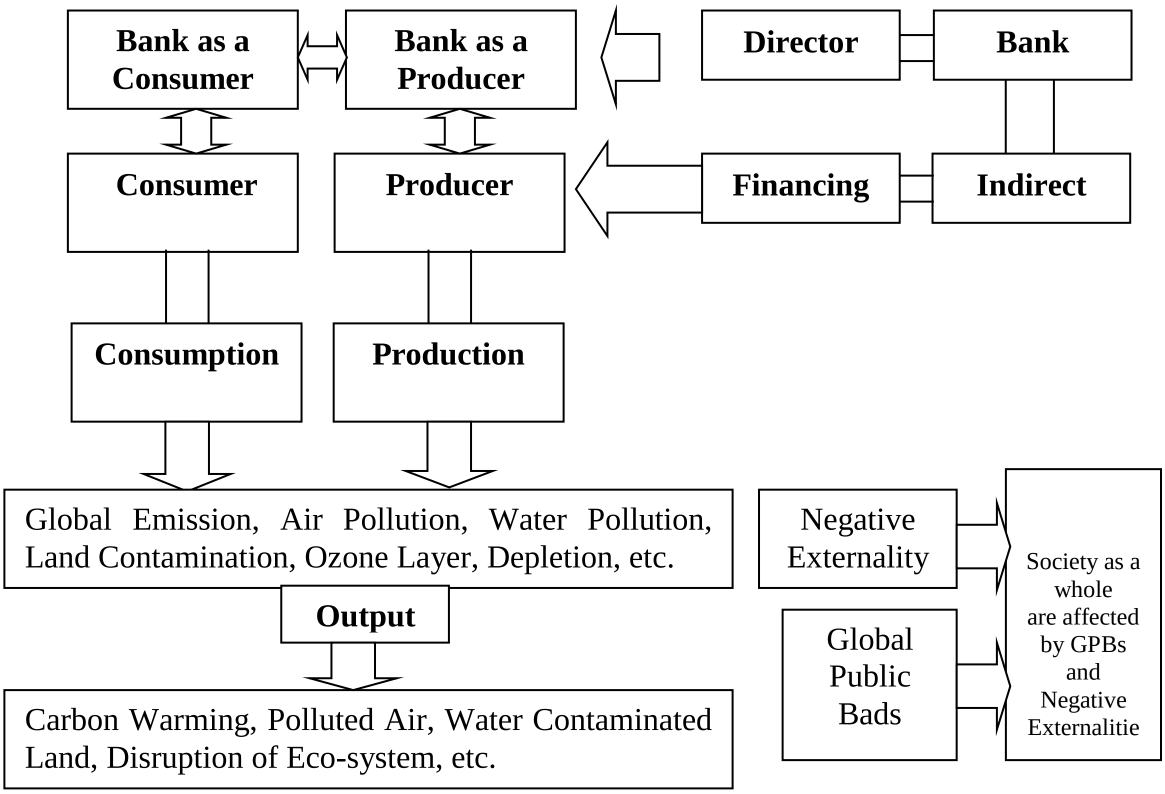
4.2 Green Bank and Green Banking

A Green Bank is a bank which is an ethical bank, a socially responsible bank and a sustainable bank. Green Banking is that form of banking which provides finance to green products and support activities that are not hazardous to the environment and helps conserve the environment.

4.3 Green Banking and Sustainable Environmental Issues

Global leading banks are supposed to be contributing for sustainable environmental matters. Banks have direct and indirect responsibility in damaging and improving environment by financing projects. The relationship of bank and environmental degradation are shown in figure-4.1.

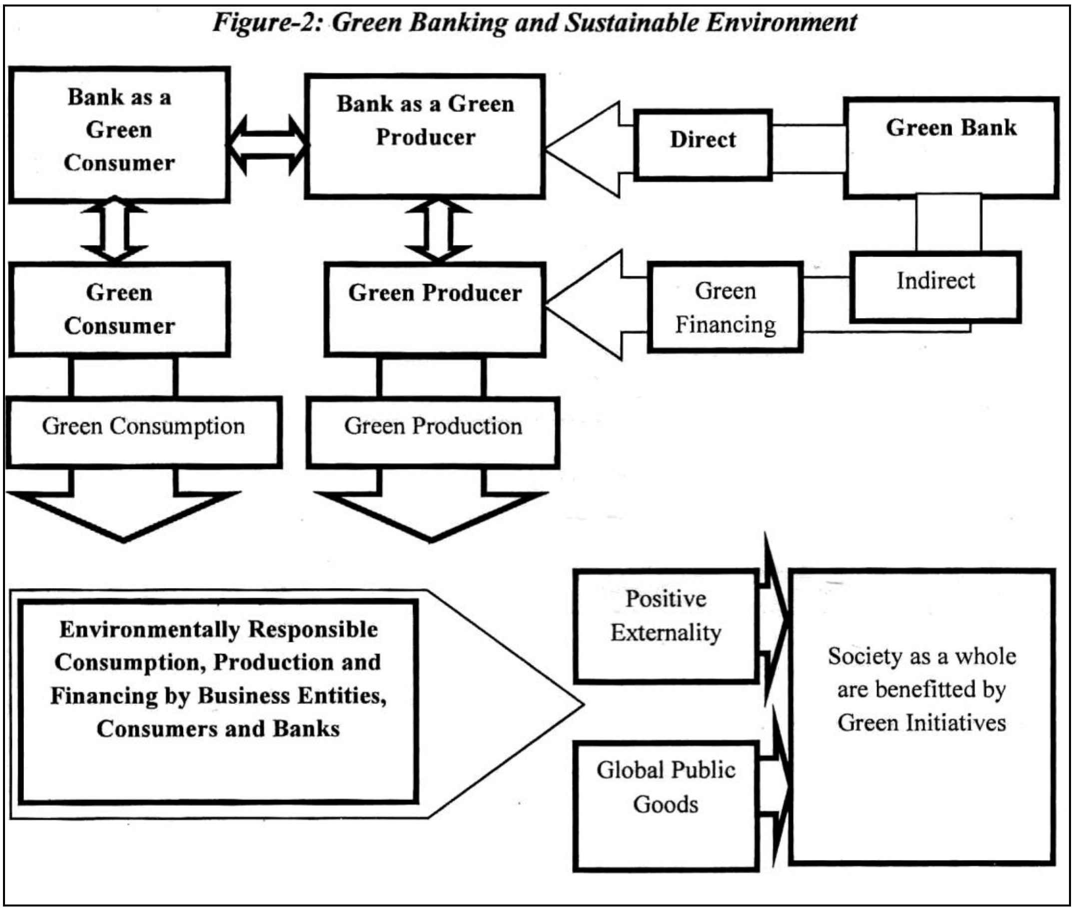
Figure-4.1 Bank and Environmental Degradation



Source: Habib et al., 2010

The relationship of Green Banking and Sustainable Environment is presented in figure-4.2.

Figure-4.2. Green Banking and Sustainable Development



Source: Habib et al., 2008

4.4 Green Banking Practice: Global Banking Industry

It has been observed that green banking practices is prevalent in the western countries which are responsible for actions not polluting the environment. By following their model of green banking practice, banks in the developing countries are adopting green financing side by side their traditional financing. In this way, green banking industry is developing day by day in Bangladesh.

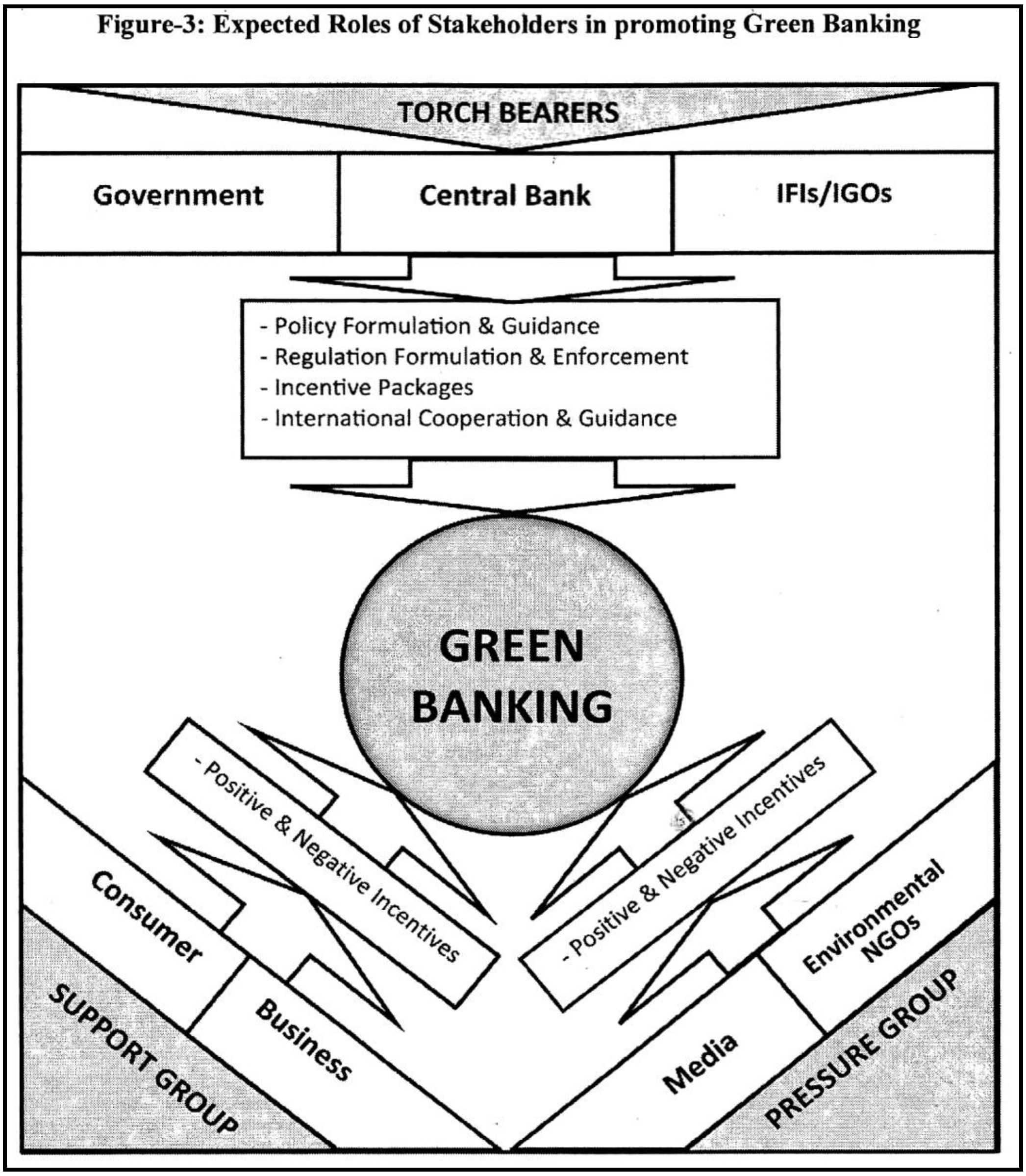
4.5 Climate Change in Bangladesh

Bangladesh is one of the least CFC emitting countries in the world. The per capita carbon -dioxide emission is estimated at 0.2 ton per year, while the average of developing countries is 1.6 ton per year. In the USA, the per capita emission is 20 ton per year. Bangladesh is one of the worst victims of global warming.

4.6 Green Banking and Consumer Awareness

Customer awareness and responses have already been improved over the years for saving the environment and the society. A study by Javelin Research (2009) observes that consumers have more interest in ‘thinking’ green than actually ‘acting’ green is shown in figure-4.3.

Figure-4.3. Expected Roles of Stakeholders in promoting Green Banking.

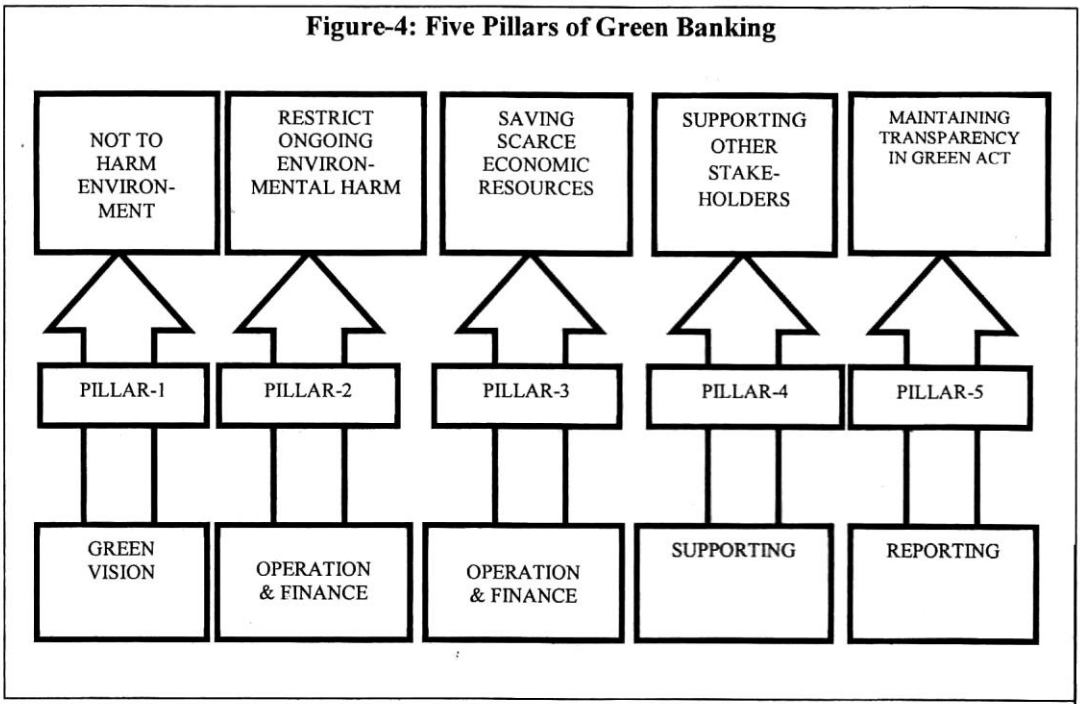


Source: Habib et al., 2008

4.7 Green Banking Approach: Five Pillars

Green banking approach is built on five pillars which constitute an integrated 'Green Banking Approach' by Banks. Five Pillars of Green Banking are shown below in figure-4.4.

Figure 4.4: Five Pillars of Green Banking

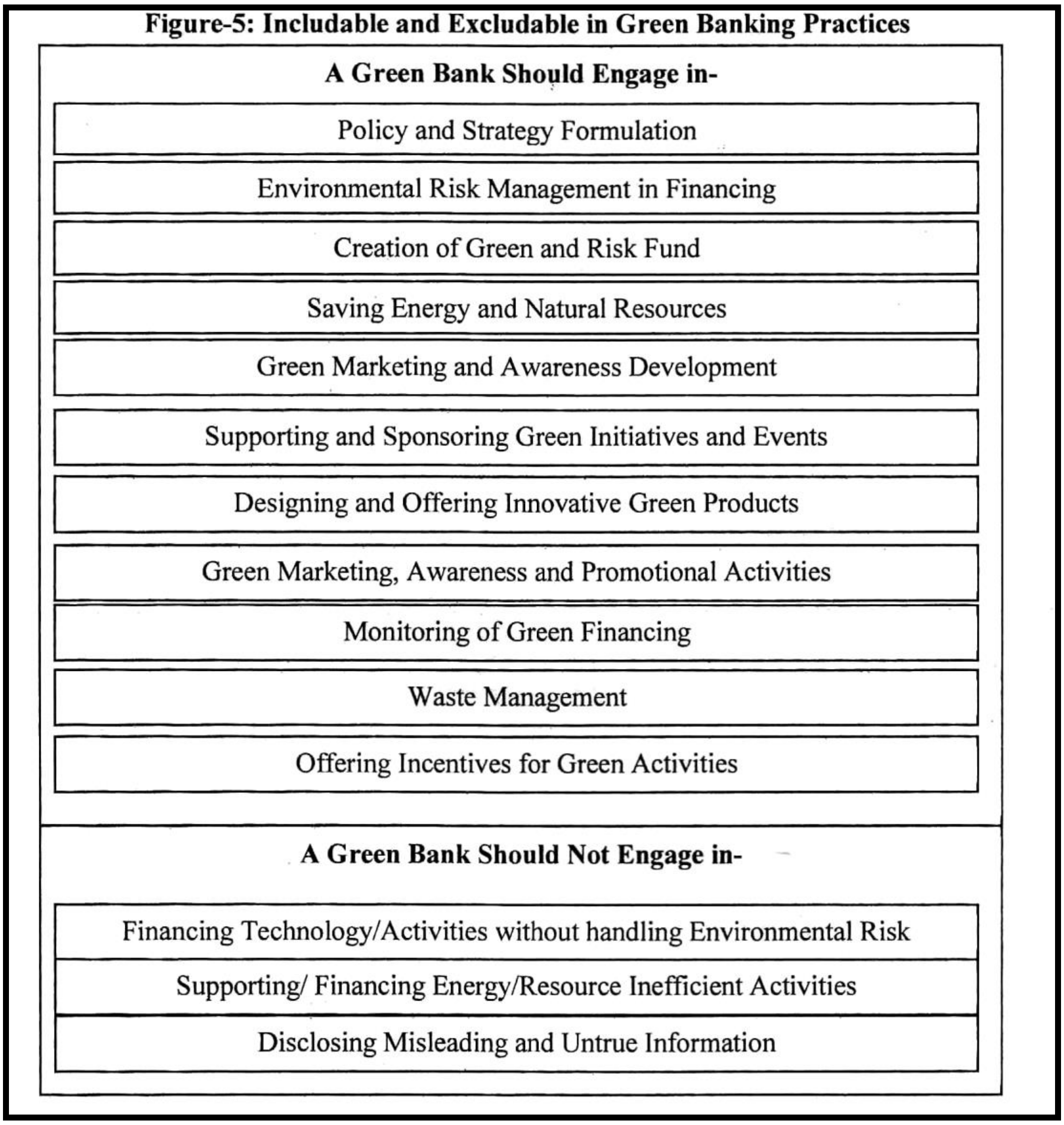


Source: Habib, 2008

4.8 Green Banking Activities

The Includable and Excludable in Green Banking Practice represented as Figure-4.5.

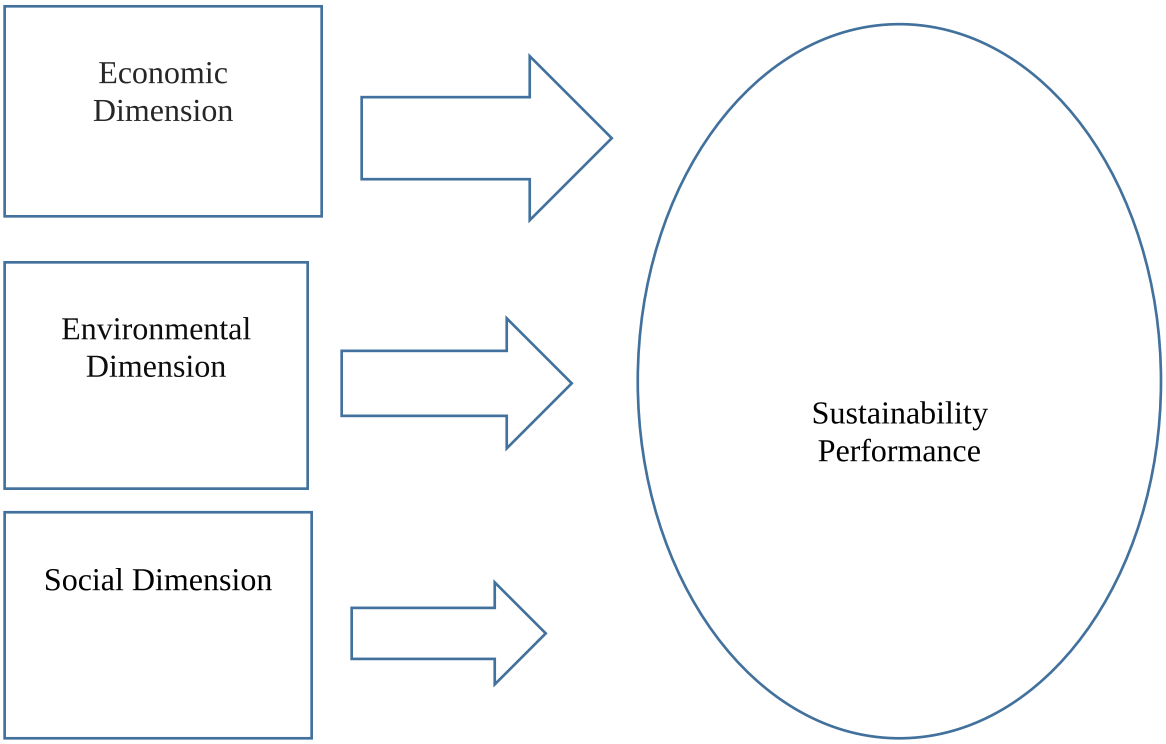
Figure-4.5: Includable and Excludable in Green Banking Practice



Source: Habib et al. 2010.

4.9 Conceptual Framework of Sustainability and Green Financing

Figure 4.6: Conceptual Framework of Sustainable and Green Financing for Sustainability Performance



Source: Researcher's own developed Conceptual Framework

Sustainable Performance is the harmonization of environmental and financial objectives in the delivery of core business activities to maximize value. The Ecological Footprint is an example of such a measure.

From a policymaking perspective, it is important to recognize the complex inter relationships between economic, environmental and social capital, and ensure policy is directed towards social optimal use.

(1) Economic Dimension

It refers to the capacity of public and private sectors to implement profitable practices from the economic point of view, without compromising the equilibrium with the social and environmental practices.

(2) Environmental Dimension

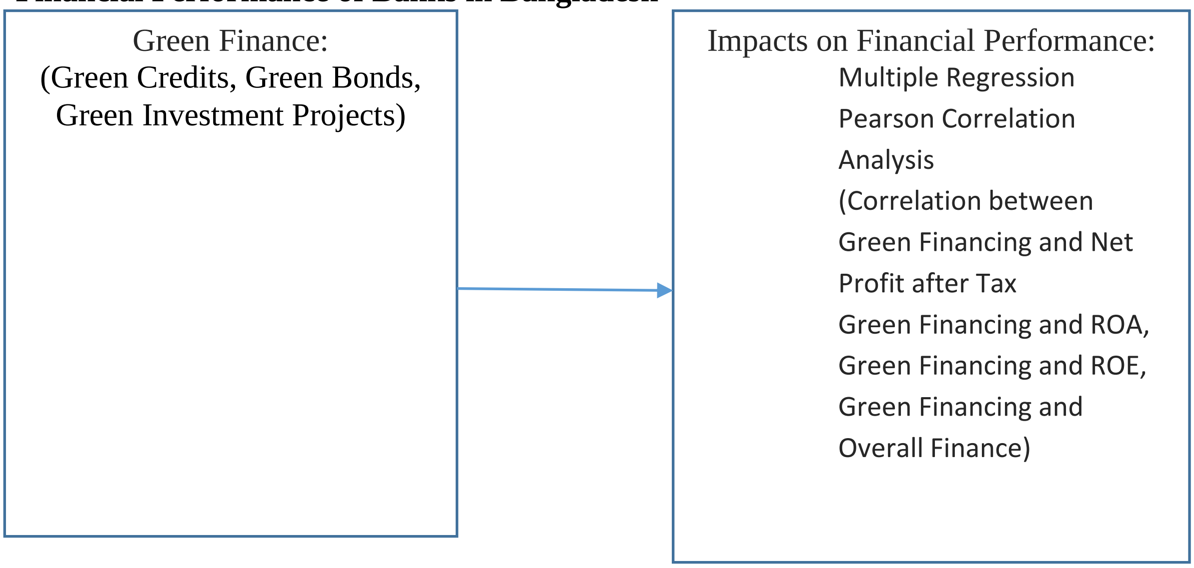
The environmental dimension deals with the fragility of ecological and biophysical systems, and their different functions, under a hazardous condition, to suffer damage and deterioration.

(3) Social Dimension

It consists of the capacity of the society to implement practices to ensure the respect to human rights, diversity, cultural traditions, and the rights of communities in order to decrease the gap between the rich and the poor and social justice.

4.10 Framework of Relationship of Green Financing and Performance of Banks

Figure 4.7- Conceptual Framework of Impacts of Green Financing on the Financial Performance of Banks in Bangladesh

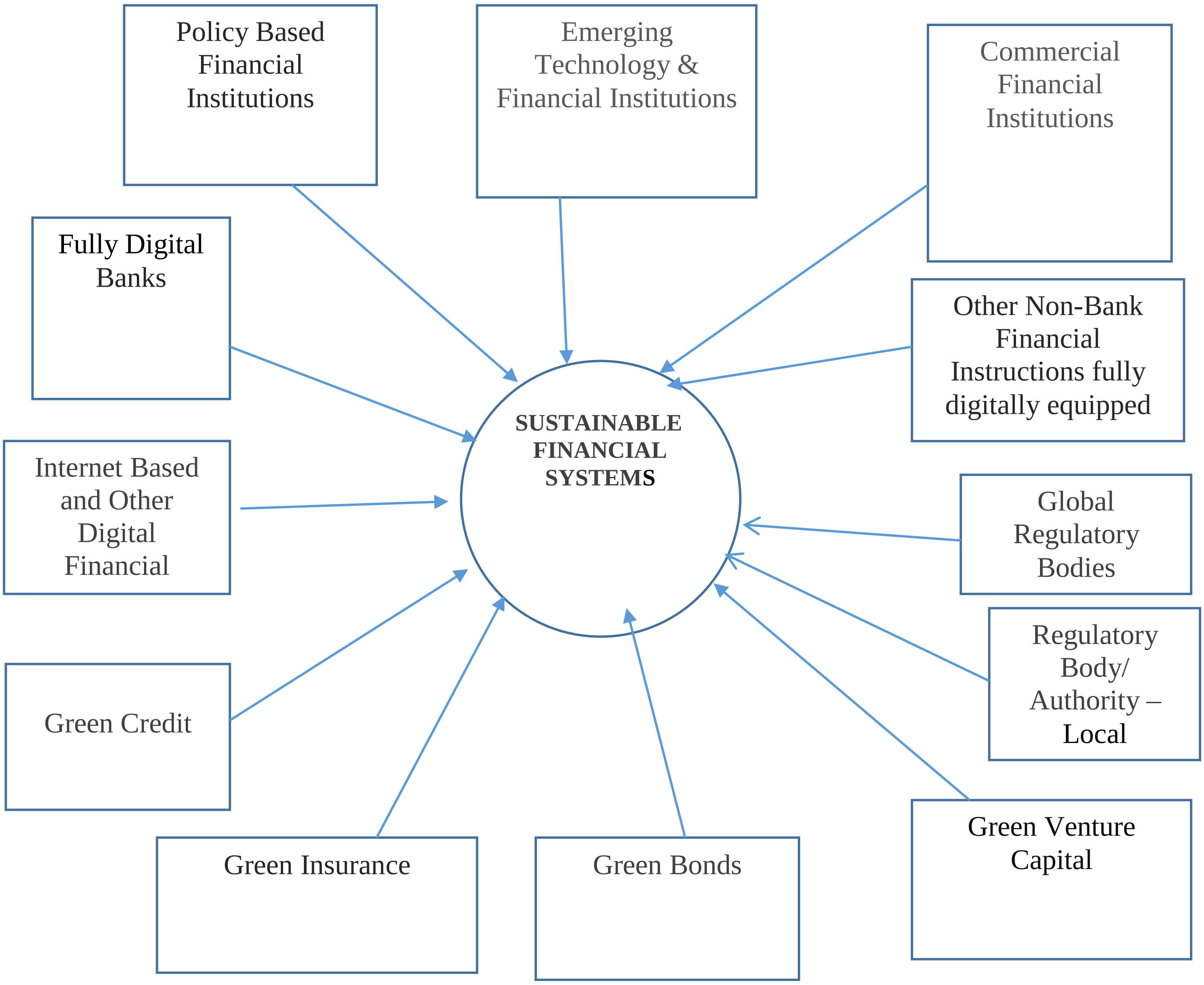


Source: Researcher's own Conceptual Framework of Impact of Green Financing

4.11 Framework for Green Financial System

Green Financial System may develop by interrelationship of different variables.

Figure 4.8- Framework for Green Financial System



Source: Researcher's own developed model of Green Financial System

CHAPTER FIVE

METHODOLOGY

5.1 Introduction

This chapter is concentrated to describe the research methods and procedures that were employed in addressing the objectives of this study. The chapter proceeds with the overview of the research methodology. Discussion with prominent and borrowers for green products has been done successfully with great emphasizes. Data validity and reliability of the instruments and data collection method has been done with SPSS. It also shows sampling of the study, nature and sources of data, preparation of data collection, Model, tools, pilot study, qualitative and quantitative analysis have been incorporated in this study.

5.2 Overview of the study

The research approach is descriptive in nature, and both primary and secondary data have been used in this study. The study used common size analysis methods to green financing by State Owned Commercial Banks and Private Commercial Banks of Bangladesh during 2013-2019 and details data analysis and presentation especially from 2013 to 2019. This study has incorporated the opinion, and advices of the renowned bankers, executives of the banks and related persons, etc. This study focuses on descriptive data analysis. It also focused on questionnaire survey and method for investigating the manifold perceptions of multiple stakeholder groups like, bankers, environmentalists, owners of the banks and related persons regarding various aspects of green financing by banks in Bangladesh.

5.3 Population and Sample of the Study

This research followed random sampling method. One of the basic criteria for including scheduled banks in this study, being the population the scheduled banks of the Bangladesh. Because it is assumed that scheduled banks would provide readily available information through their annual reports. I have selected randomly 10 banks from the available commercial banks which was directly controlled by the Bangladesh Bank. Therefore, the population of the study comprises all the banks under the green banking departments, cell or unit which are controlled by the Bangladesh Bank. The total number of 47 domestic scheduled banks' activities were observed in the guidelines of Bangladesh Bank. In addition, survey population of this research includes Sustainable Banking Department of Bangladesh Bank, all the scheduled banks' Heads of Green Banking department, Cell/Unit, Chief Financial Officer (CFO) of the banks, responsible bankers of the banks, members of the regulatory bodies, top or mid-level officers of Bangladesh Bank, Ministry of Forest and Environment Affair's, Dhaka Stock Exchange, National Board of Revenue and Environmental Activists, who are considered crucial to the green activities of the bank. The overall green finance is supervised by the sustainable finance department of Bangladesh Bank. The activities of General Managers of Sustainable Banking Department of BB are closely related in preparing the rules, regulations and guidelines and to impose those in all the scheduled banks. BB supervises and monitors all the scheduled banks in this regard. They appeared to be more knowledgeable regarding the environmental or sustainable banking. The Chief Financial Officer plays a vital role in the financial reporting of the banks and they are closely related to this work in this regard. The Heads of Sustainable Finance Cell /Unit/Division/Department play an important role to impose the rules and regulation of the bank. The main stream of such banking are implementation according to guidelines of Bangladesh Bank. On the other hand, Dhaka Stock Exchange and National Board of Revenue are indirectly and to some extent directly involved with the monitoring process of the environmental performance to the banks for imposing the taxes. Therefore, perceptions of the officials of these regulatory bodies are important in influencing the future prospect of sustainable banking. For the developed countries, various environmental activities (organizational or individual) have been emerging in Bangladesh as pressure groups. Pressure groups have an important active role to play in the improvement of corporate environmental conditions in Bangladesh (Islam, 2000). Therefore, perceptions of environmental activists are closely relevant for the development of environmental reporting practice in Bangladesh.

5.4 Sample Size and Sampling Techniques

5.4.1 Sample Size and Sampling Technique for Secondary Data

Following the random sampling method, 10 leading commercial banks of the country were chosen for this research.

5.4.2 Sample of the Study

This study has chosen a sample of 10 renowned commercial banks, out of 48 domestic banks, such as, BASIC Bank Ltd., Dhaka Bank Ltd., Dutch-Bangla Bank Ltd., Eastern Bank Ltd., IFIC Bank Ltd., Janata Bank Ltd., National Bank Ltd., Prime Bank Ltd., Trust Bank Ltd., and United Commercial Bank Ltd. (UCBL). The selected 10 banks have been primarily selected using simple random sampling from State-owned Commercial Banks (SCBs/NCBs), Private Commercial Banks (PCBs), Specialized Commercial Banks (SpCBs) and other large number of branches in eight divisions as shown in Table-5.1. A stratified random sampling on the basis of banks all over the country was used to select the sample of banks.

Table-5.1: Sample Banks and Their Branches (December, 2019)

Sl. No.	Name of the Banks	Year wise no. of branches							Total
		2019	2018	2017	2016	2015	2014	2013	
1	**BASIC Bank Ltd.**	72	68	68	68	68	68	68	**480**
2	**Dhaka Bank Ltd.**	103	101	104	94	87	81	74	**644**
3	**DBBL**	195	184	175	165	155	145	136	**1155**
4	**Eastern Bank Ltd.**	85	85	84	82	80	76	71	**563**
5	**IFIC Bank Ltd.**	140	135	135	125	125	120	120	**900**
6	**Janata Bank Ltd.**	914	913	912	910	908	914	913	**6384**
7	**National Bank Ltd.**	209	203	200	191	191	179	171	**1344**
8	**Prime Bank Ltd.**	146	146	146	145	145	117	122	**967**
9	**Trust Bank Ltd.**	106	104	104	102	101	91	82	106
10	**UCBL**	195	187	178	168	158	148	139	195
	Total	**2080**	**2041**	**2022**	**1968**	**1938**	**1863**	**1825**	**12738**

Source: Annual Reports of Respective Banks

Secondary sources data required for the study are collected from annual reports of the scheduled bank, Bangladesh Bank, Bangladesh Bank Sustainability Report, Resume of the Activities of the Financial Institutions in Bangladesh, various local and international newspapers, periodicals and dailies. Secondary data were also collected from published literature, research papers, and sustainability reports of different banks and environmental organizations. This research reviewed existing literature that enriched the theoretical foundation and backdrop of the study. In the study, the terms ‘Environmentally Responsible Banking/Bank’ and ‘Green Banking/Bank’ are used interchangeably.

5.4.3 Sampling of the Study

The study used both primary and secondary data. Primary data was collected from face-to-face conversation, interview and discussion with the officers of Bangladesh Bank, and opinion survey with the respective bank officers and concerned people of the bank. Data were also collected from the head office of sampled banks through a structured questionnaire, audio recording containing queries, etc.

For sampling purpose, Bangladesh has 57 banks in four categories and these banks have 9,955 branches throughout the country as at the end of December 2019 (see Table-5.2).

Table-5.2: Number of Banks and Their Branches (December, 2019)

	Type of Bank	No. of Banks	No. of Branches
1	State owned	6	3,721
2	Specialized	2	1,407
3	Private	40	4,758
4	Foreign	9	69
	Total	**57**	**9,955**

Source: Annual Report of BB

5.5 Procedures of Data Collection

5.5.1 Nature and Sources of Data

The study used on both primary and secondary data. For the purpose of this study, secondary data have been collected from the annual reports of the sample banks for the study period 2010 to 2017 and somewhere from 2013 to 2019. Consequently, annual reports of the sample banks for the study period 2013-2019 were considered as one of the two sources of data in this study. The annual reports of the sample banks were collected from the BB Library, DU Library, DU E-Library of Business Faculty, BIBM Library, Sustainable Department of Bangladesh Bank, green banking cell/unit of the sample banks, Ministry of Finance, Ministry of Education and Head office of respective sample banks.

5.5.2 Preparation of Data Collection Tools

The researcher prepared two set of structured interview schedules-one set for the Top Management (Head Office Executives) of the respective banks and other set for the Divisional/Branch Officials and related persons, environmentalists and concerned persons.

5.5.3 Pilot Survey

Prior to commencing the actual field survey, the survey instrument was piloted in face-to-face interviews by audio records with 55 respondents to determine the appropriateness and relevance of the questions in the instruments. The feedback from these respondents resulted in some amendments and modifications in the questionnaire. Pilot study was also done at the Head Office for finalizing the interview schedules.

5.5.4 Interview Procedures

Basically, interview procedures are difficult job to collect the information of the concerned institutions. Most of the executives participated in the interview. However, this study included the informative and important primary data. The data were collected by conducting face-to-face interviews with a structured questionnaire. Most of interviews were held at the respondent’s offices. All interviews commenced with a brief description of the project and an outline of the objectives of the interview was followed by specific questions revolving round the themes of the questionnaire. To enhance the validity of the participant's responses, the researchers gave repeated assurance about the confidentiality of the information collected. Besides, attempts were made to minimize the effects of all possible biases by careful design and conduct of the interviews.

5.6 Techniques of Data Presentation

Data collected from the selected annual reports of the selected banks and responses from the field survey were presented in tabular forms and at common size analysis. However, descriptive statistics were also used to depict the level of green banking of state-owned commercial banks, private commercial banks of the banking sector of Bangladesh. Moreover, findings of the study were presented in tables, charts, and diagrams to make those more meaningful and easily realizable to the readers.

5.7 Sampling Method

Population size: 57 (State-owned, Specialized, Private and Foreign Banks);

Selected Banks = 10 (Public & Private Scheduled Commercial Banks).

Data sources: Both primary and secondary sources have been used.

For primary sources: Interview with respondents was done. They are divided into two groups: Group A (officers of banks = 30), Group B (borrowers, present & potential = 30).

Secondary data sources: Annual reports of selected 10 banks from the year 2013 to 2019 and also annual reports of Bangladesh Bank for the same period.

Sample banks' study period, 2013 to 2019.

Sampling Method: Random sampling method has been used.

5.8 Tools of data collection

(i) Opinion survey (Qualitative data).

(ii) Questionnaire for Interviews (Quantitative data).

(iii) Green finance data from the annual reports of selected 10 banks (Quantitative data).

(iv) Pilot survey.

5.9 Data Analysis

For analysis of data, descriptive statistics has been used, such as mean, median, mode, standard deviation, etc. Other tools like correlation analysis and multiple regression analysis have been used and incorporated in the study. The researcher has also shown t-test use. In opinion survey qualitative data were analyzed through descriptive statistics, frequency distribution and t-test. The researcher has also used correlation analysis and one sample, t-test (since sample size was, $n<30$). The t- test statistics results have been interpreted thoroughly in the analysis section of this thesis.

In multiple regression analysis, the researcher has also done one sample t-test. Green finance to Total finance ratio was taken as depended variable and independent variables are Return on Assets (ROA), Log of Deposit and Classified Loans of selected 10 commercial scheduled banks. Here, the significant level of t-test is 1%.

Population Size is 6,000 green officers (N = 6,000), considering all officers involved with green fiancé in all banks in Bangladesh and sample size is 60, (n = 60). This sample size is determined by applying general rule (1% of population for qualitative studies). Through simple random sampling, I have selected 10 banks in my study. Then I have selected six officers from each bank who are closely involved with Green Finance.

Therefore, the total sample size is 60 for opinion survey. (6* 10 = 60). For qualitative research, opinion survey is used to have opinion of the respondents on 20 different statements on green finance in three different dimensions.

CHAPTER SIX

PROFILE OF SELECTED BANKS, GREEN FINANCE AND ANALYSIS OF GREEN FINANCE

6.1 Introduction

The rich profile of the institution is an index of the best institution. This chapter discussed briefly corporate profile of the 10 commercial banks, such as, 01 State-owned Commercial Bank, namely, Janata Bank Ltd.; 08 Private Commercial Banks, namely, Dhaka Bank Ltd., Dutch-Bangla Bank Ltd., Eastern Bank Ltd., IFIC Bank Ltd., United Commercial Bank Ltd., National Bank Ltd., Prime Bank Ltd., and Trust Bank Ltd.; and 01 Specialized Commercial Bank, namely, BASIC Bank Ltd.; selected out of 48 indigenous commercial banks and others. The sample commercial banks were selected randomly. The sections below present a brief bank's profile for each of the sample banks following the alphabetical order as included in the scheduled commercial banks of Bangladesh.

6.1.1 Green Finance by Selected Sample Banks

Green financing is a vital finance to upkeep the environment. Green finance is more important to save the people and the ecological balance. Green finance covers a wider range of financial institutions and asset management firms in both public and private finances. The extreme of this chapter is to provide analysis on manifold perceptions of the stakeholders of ten selected banks regarding the green financing in Bangladesh. In this research, the survey sample of 10 commercial banks (01 State-Owned Commercial Bank; 08 Private Commercial Banks; 01 Specialized Commercial Bank) out of 48 domestic banks of different generations of Bangladesh are chosen with some of their stakeholders. A opinion survey and analysis of the data was made by SPSS and also questionnaire survey of the bankers and beneficiaries for concerned various aspects in the sustainable financing.

In the research, both qualitative and quantitative analyses were made by various tools. Secondary data was collected from annual reports of Bangladesh Bank and other banks and from the sustainable Banking Department of BB. Chief Executives of the respective banks and bankers were interviewed by questionnaire, regarding the importance of the green financing in Bangladesh. Primary data were collected from opinion survey in two regions, namely, Dhaka Banking Zone and Barishal Banking Zone, by face-to-face conversation, etc. The discussion and primary data were analyzed by various tools like standard deviation, regression, correlation, t-test, etc.

6.2. BASIC Bank Ltd. (Bangladesh Small Industries and Commerce Bank Ltd.)

BASIC Bank Ltd. is 100 percent government owned and leading specialized commercial bank in Bangladesh. The operation of BASIC Bank Ltd. was started in 1989. Bangladesh Government took over 100 percent in June 4, 1992. Thus, it has got recognition as 100 percent state owned bank. BASIC Bank Ltd. is an environmentally responsible bank of the country. It is trying to enhance its own standard progressively and contributing a lot in socially responsible business and environment. Thus, it is recognized as a state-owned Bank.

6.2.1. Profile of BASIC Bank Ltd.

The Financial status for 7 years of the bank was shown as below, table no. 6.2.1.

Table-6.2.1: Profile of BASIC Bank Ltd.

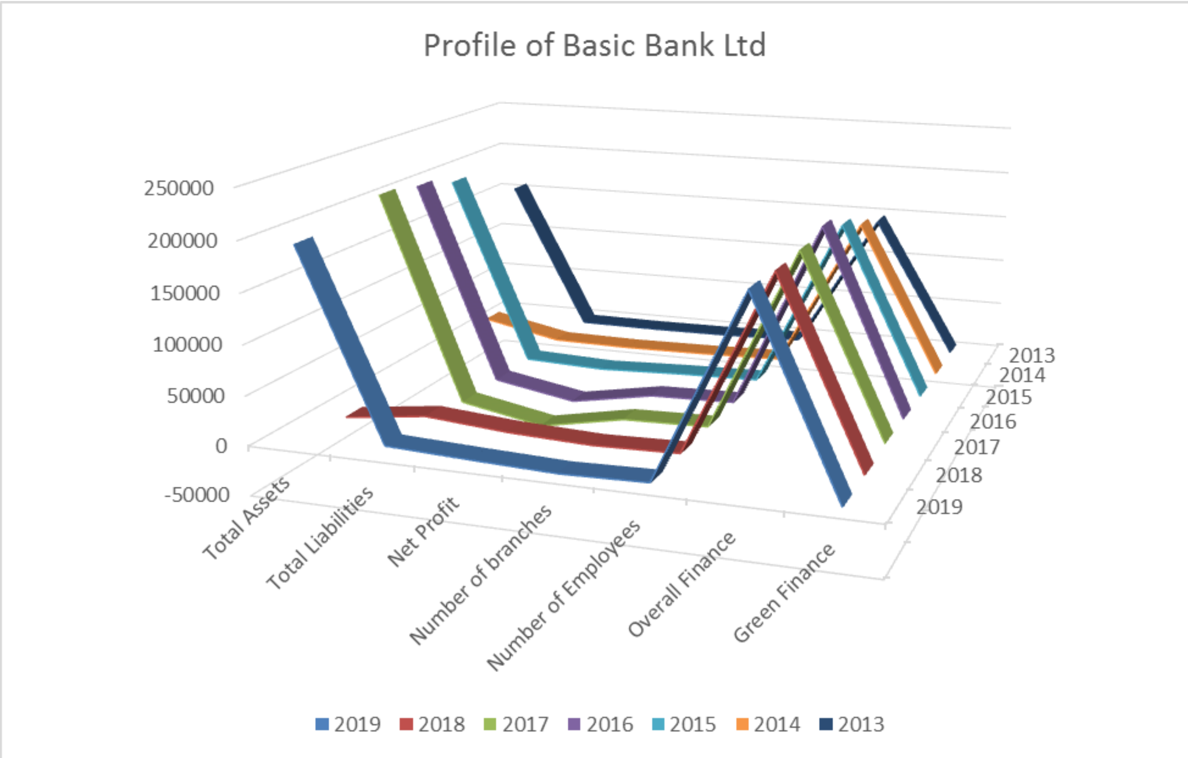
							BDT in million
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	194,915.97	191,560.41	210734.63	204734.63	194173.36	171118.53	157072.14
Total Liabilities	7007.14	10,381.32	86.66%	83.62%	84.32%	85.32%	78.31%
Net Profit/Loss	3,269.03	3,538.95	(15980.4)	(14930.40)	(3140.36)	(1100.16)	(531.53)
No. of Branch	72	68	68	68	68	68	68
No. of Employees	2097	2075	2132	2132	2163	2237	2145
Overall Finance							
Green Finance	620.91	1207.63	4390.55	2828.58	1633.07	1370.33	3307.29

Source: Annual Report, BASIC Bank Ltd. 2019

The above chart shows financial biography of the bank for 07 years. The bank's total assets in FY2013 are Tk. 157,072.14 million and in FY2019 are Tk. 194,915.97 million. So the total assets increased in 7 years Tk. 37,843.83 million. Subsequently, the number of branches and the number of employees also increased from year to year. But total liabilities and net loss are also shown in FY2013 to FY2017.

It is mentioned here that this bank signed the agreement for green bank initiatives in FY 2016 and the big amount of finance by the bank for green products is Tk. 3,971.70 million in FY 2017. No doubt, this bank financed the big amount of finance for this purpose in initial stage, but it is a very minimum finance for the environment.

Figure 6.2.1: Profile of BASIC Bank Ltd.



Source: BB and Annual Report of respective banks

6.2.2 Green Finances by BASIC Bank Ltd.

BASIC Bank is one of the most important state-owned nationalized specialized banks in Bangladesh. The bank plays vital roles in multipurpose areas for the people and for the nation. The bank has many great initiatives for the people and for the nation by corporate social responsibility. The bank contributes by its many green initiatives for social and environmental aspects Bangladesh faced as direct impact on agriculture, biodiversity, ecology, forestry, water and health. Due to such problem of the country, we need urgent responses to save the environment. The bank has financed for eco-friendly and environmentally sustainable projects like bio-gas plant, waste disposal plant, in-house green management and other environmental pollution-free plants. The bank has also introduced electro-automatic branches, online banking, green office guide, print less paper consumption, etc. The green finance in different products of the bank is shown in the following table, Table: 6.2.2.

Table-6.2.2: Green Finance in Different Products (BDT in million) of Basic Bank Ltd.

Green Products	BASIC Bank Ltd		Type of Bank: Private Commercial Bank (PCB)					
Financing category	2019	2018	2017	2016	2015	2014	2013	Total
1. Renewable energy							132.78	**132.78**
2. Energy efficiency								
3. Solid waste management								
4. Liquid waste management	566.59	1026.59	3670.63	2430.57	686.19	1251.74	3066.31	**12698.62**
5. Alternative Energy								
6. Fire burnt brick	25.89		321.15		779.16	6	47.89	**1180.09**
7. Non-fire block brick	12.58	89.9	102.84	99.34	167.72	112.51		**584.89**
8. Recycling & Recyclable product	15.5	85.56	281.85	234.56				**617.47**
9. Green Industry								
10. Safety and Security of factory								
11. Green Establishment		5.58	14.08	44.11		0.08	60.31	**124.16**
12. Others Green project /product								
Total	**620.56**	**1207.63**	**4390.55**	**2808.58**	**1633.07**	**1370.33**	**3307.29**	**15338.01**

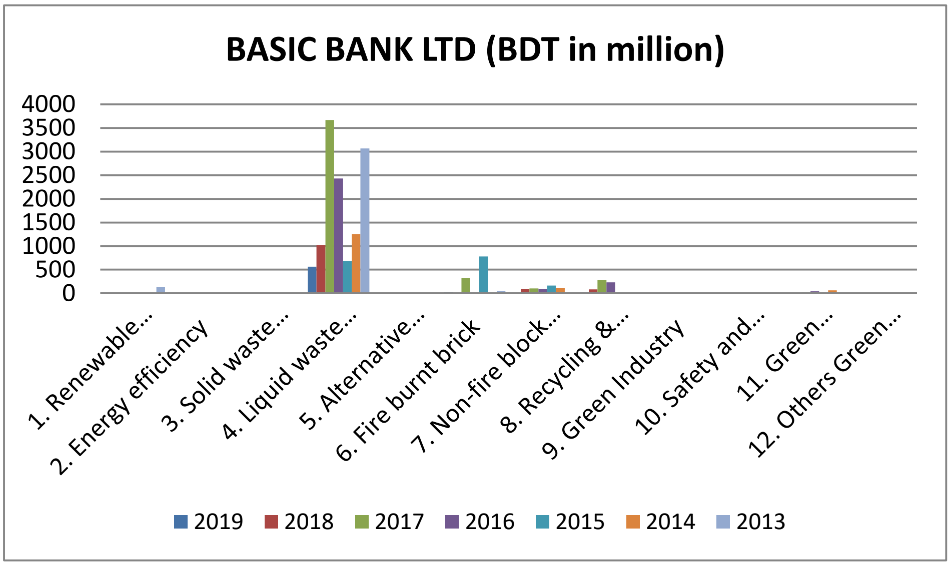
Source: BB and Annual Report of respective banks, 2019

The above table presented that the bank contributed big amount of money at the beginning time which is BDT 3,307.29 million in 2013 and disbursed BDT 620.56 million in 2019. The bank continuously disbursed money for the green products BDT 1,370.33 million, BDT 1,633.07 million, BDT 2,808.58 million in the year of 2014, 2015 and 2016 respectively. The highest disbursement of the bank for green investment is BDT 4,390.55 million in 2017.

On the other hand, the bank invested in specific green products like Liquid Waste Management is by biggest amount which is BDT 12,698.62 million and Fire burnt brick BDT 1,180.09 million for 7 years from 2013 to 2019. The bank also financed renewable energy by BDT 132.78 million; Non-fire block brick by BDT 584.89 million and Green Establishment by BDT 124.06 million for last 7 years.

As per the trend of finance of the bank, the bank financed for specific green products like Liquid Waste Management, Fire burnt brick, environmental-harm free block brick and also renewal energy and green establishment, etc. It has increased continuously investment for 7 years from 2013 to 2019.

Figure 6.2.2: Green Finance by BASIC Bank Ltd.

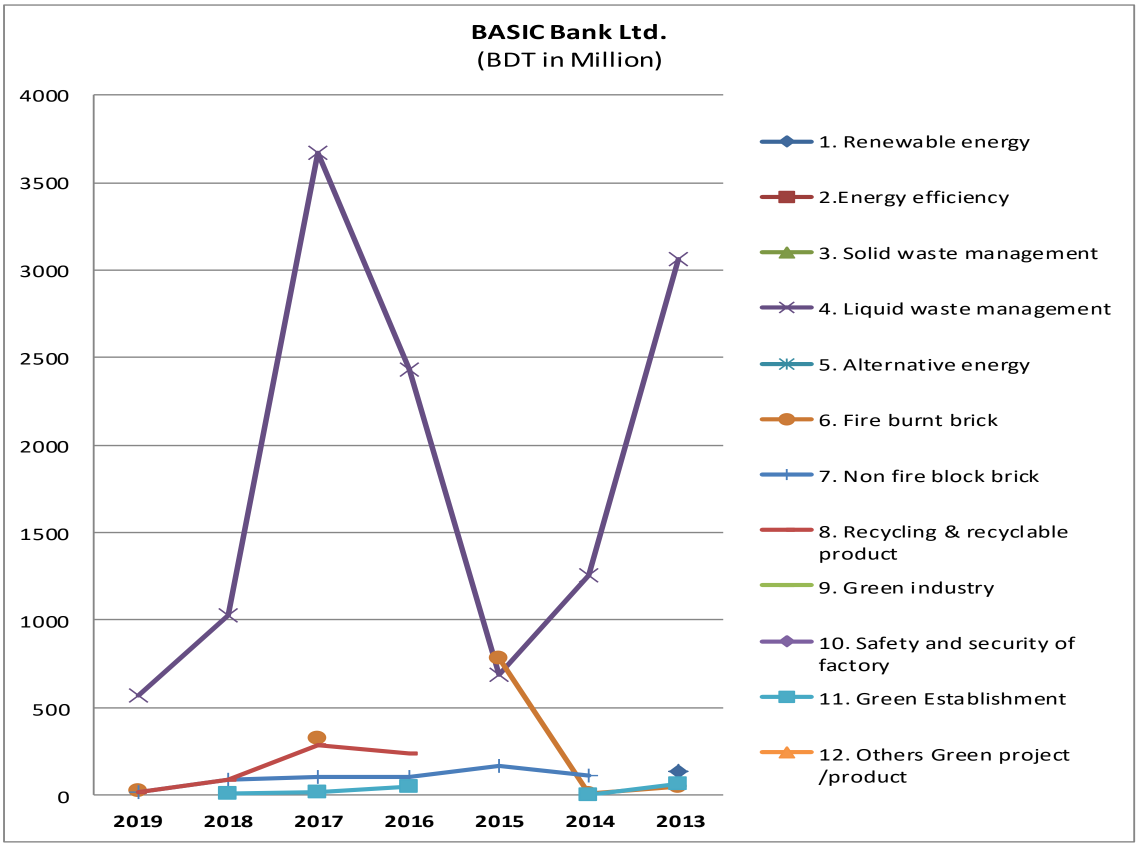


Source: BB and Annual Report of respective banks, 2019

The bank financed to specific green products in equal position over the last 7 years. The trend of finance of the bank, in green products in different areas for the years 2013 and 2017 are very high than that of other years. To keep the environment fresh, the bank financed better for green products.

The figure below, line graph, shows green finances in green products of BASIC Bank Ltd. over different years, i.e., for seven years from 2013 to 2019, the period green finance was launched in the country.

Figure 6.2.3: Green Products of BASIC Bank Ltd.

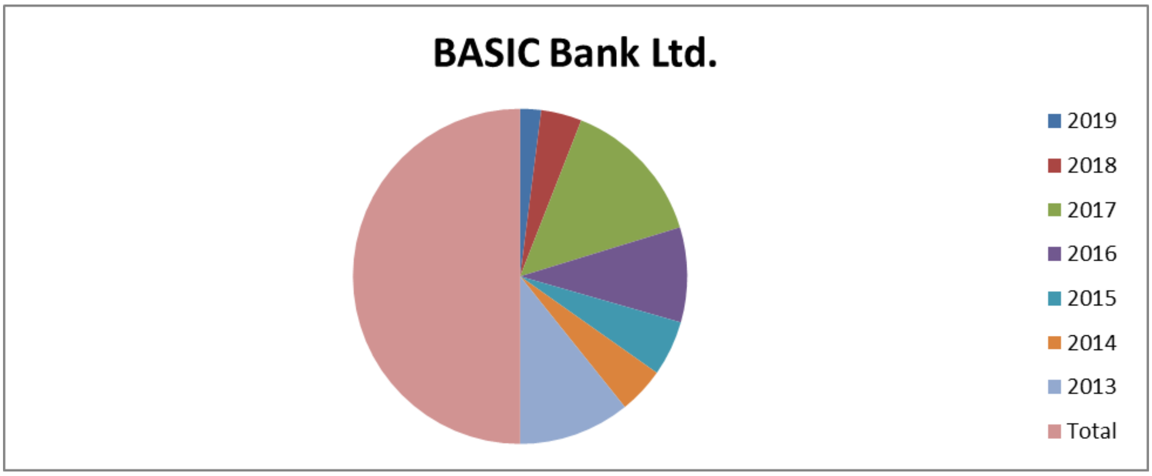


Source: BB and Annual Report of respective banks

The above graph represents the bank's finance's elasticity for various green products for last 7 years from 2013 to 2019. The trend of bank's investment is almost equal for specific sector from year to year. Therefore, the bank tried to give emphasis to carry out the finance for the relevant projects.

The figure, pie graph, below shows green finances in green products of BASIC Bank Ltd. over different years.

Figure 6.2.4: PIE Graph showing BASIC Bank's Green finance over the years



Source: BB and Annual Report of respective banks

6.2.3 Analysis of Green Finance by BASIC Bank Ltd.

As a specialized bank, the bank has many financial operations as well as green initiatives carried out for the Nation and for the people. The analyses of Green Finance of BASIC Bank are shown below, table no. 6.2.3.

Table -6.2.3 Analysis of Green Finance by BASIC Bank Ltd.

							BDT in Million
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.33189376	0.655026	2.368584698	1.477703	0.9280501	1.40375582	2.253017
Net profit as a % of Total Finance	1.747387962	1.919549	-8.62099985	-7.79992	-1.784621	-0.6903692	-0.36209
Net profits as a % of Green Finance	526.4901516	293.0492	-363.972623	-527.841	-192.2979	-49.180152	-16.0715
Correlation between Net Profit and Green Finance	-0.768352032						
R square	0.590364844						
Average Green Finance	2317.861429						
Standard Deviation	1298.94676						

6.2.4: Formula for Statistical Calculation

Average: $\overline{X} = \frac{x=7}{\sum \times i \frac{i=l}{7}} = \frac{\sum x}{n}$

Here, the green finance by BASIC Bank Ltd. was from 2013 to 2019. Therefore, the average green finance by BASIC Bank is 2,317.86143 million.

The Standard Deviation (SD)

SD $= \sqrt{\frac{(x-\overline{X})^2}{n-1}}$

BASIC Bank's Green Finance's SD is 1,298.94676 million.

The standard deviation of green finance by BASIC Bank is 1,298.94676 million which is high.

Correlation Analysis

The correlation between green finance and net profit is very high and positive, and the correlation value is 0.76835208.

Basic Interpretation

Positive Correlation:	**Negative Correlation**
0.00 - 0.25, Low +ve correlation	- 0.00 - 0.25, Low -ve correlation
0.25 - 0.5, Moderate +ve correlation	- 0.25 - 0.5, Moderate - ve correlation
0.5 - 0.75, High +ve correlation	- 0.5 - 0.75, High -ve correlation
0.75 - 1, Very high +ve correlation	- 0.75 -1, Very high -ve correlation
1.00, Absolute positive.	- 1.00, Absolute negative.

Correlative Co-efficient

$$\wp = \quad \eta = \sum \frac{(Xi-\overline{x})(y1-\overline{\overline{y}})}{\sqrt{\sum Xi-\overline{\overline{x}})^2 \sum \ (y1-\overline{\overline{y}})^2}}$$

$\eta^2 = \eta + \eta$. The reliability of the model of 0.5092.

6.3. Dhaka Bank Ltd. (DBL).

Dhaka Bank Ltd. is second generation modern commercial bank of the country. It had been established in the year 1995. The bank's motto is excellence in banking and mission is to be 'the best performing bank' in the country. A highest number of well-established branches have been operating throughout the country. Bank is delivering continuous services to customer through its 81 branches in the country. The bank has developed initiatives of financial products in the field of green initiatives for reducing the level of carbon emission.

6.3.1. Profile of Dhaka Bank Ltd.

The bank's 7 years financial status is shown below, Table-6.3.1

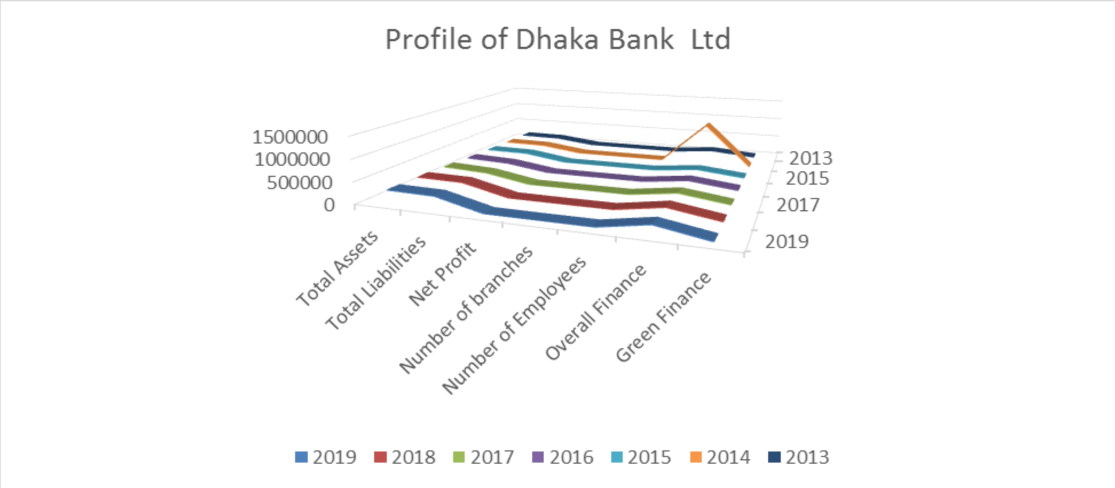
Table-6.3.1: Profile of Dhaka Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	285009	273976	240597	202192	176362	158748	144404
Total Liabilities	267799	257360	187746	157746	162974	146002	132521
Net Profit	4550	5577	1497	1466	1437	2029	1927
No. of Branch	103	101	104	94	87	81	74
No. of Employees	1960	1917	1768	1668	1524	1503	1450
Overall Finance	195635	180626	154017	134689	117840	103131	99596
Green Finance	1178.51	4982.27	6461.85	6783.90	4825.50	1178.54	8411.95

Source: Annual Report, Dhaka Bank Ltd.

The table shows that this bank's total assets, net profit, number of branches and number of employees increased year to year.

Figure 06.3.1: Profile of Dhaka Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

6.3.2 Green Finance by Dhaka Bank Limited (DBL)

Dhaka Bank is one of the prominent private commercial banks of Bangladesh. The bank has many necessary steps to keep the environment. To save the environment by green initiatives, the bank has taken various green projects, to some extent as part of, corporate social responsibility. DBL has lot of green projects, like ETP, Hybrid Hoffman Kiln (HHK), Zigzag, bio-gas plant, solar plant, environment friendly brick, etc.

The bank has also the introduced 'on-line banking', IP message systems, paper-less banking, etc. The bank through in-house green banking activities like low electricity, water, fuel and paper consumption, and by avoid of the use of disposable cups addressed for the environment. The green activities of the bank are presented in the following table, Table-6.3.2.

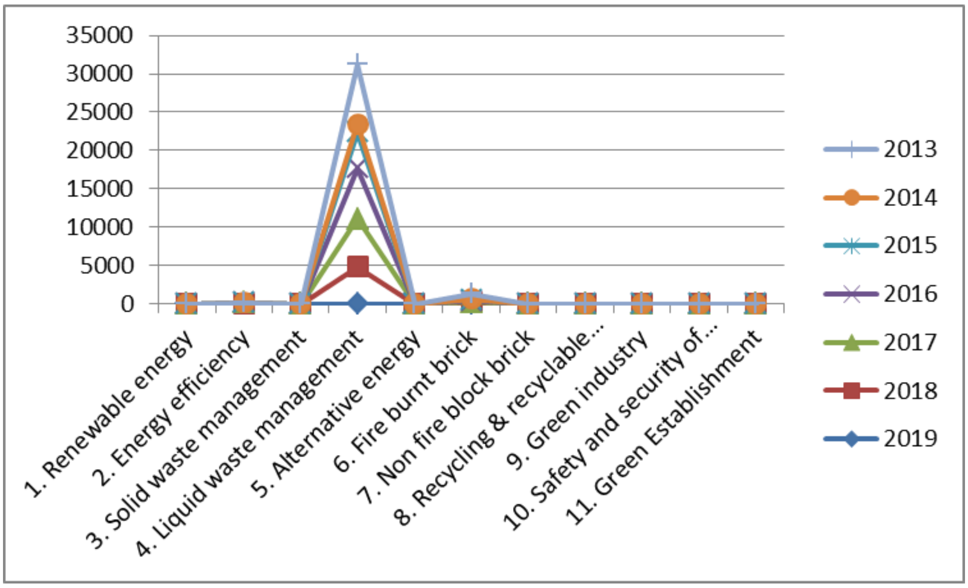
Table-6.3.2: Green Finance in Different Products (BDT in mill.) of Dhaka Bank Ltd.

Green Products	Dhaka Bank Ltd. (DBL)			Types of Bank: Private Commercial Bank (PCB)				Total
Financing category	2019	2018	2017	2016	2015	2014	2013	
1. Renewable energy	0.00						0.65	**0.65**
2. Energy efficiency	0.00		118		8.1			**126.10**
3. Solid waste management								
4. Liquid waste management	0.00	4,856.69	6,199.85	6,617.8	4,668.76	1,127.2	7,759.6	**31,229.90**
5. Alternative energy								
6. Fire burnt brick	0.00	125.58	144	166.1	148.64	51.34	651.7	**1,287.36**
7. Non fire block brick								
8. Recycling & recyclable product								
9. Green industry								
10. Safety and security of factory								
11. Green Establishment								
12. Others Green project /product								
Total	**0.00**	**4982.27**	**6461.85**	**6783.9**	**4825.5**	**1178.54**	**8411.95**	**32,644.01**

Source: BB and Annual Report of respective banks

The bank introduced green banking with a remarkable disbursement for last 7 years of BDT 8,411.95 million, BDT 6,783.9 million, BDT 6,461.85 million in 2013, 2016 and 2017 respectively and declined disbursements to BDT 4,982.27 million in 2018. In line of the finance, the bank has zero disbursement in 2019. The bank has disbursement of BDT 31,229.90 million lending to liquid waste management, renewable energy generation as well as effluent treatment plants and BDT 1,287.36 million for fire brunt brick and energy efficient kilns for manufacturing bricks. The banks has used the revolving refinancing fund in the area of irrigation pumps, solar home systems, biogas plants, effluent treatment plants, brick kiln, etc. to the protection of environment.

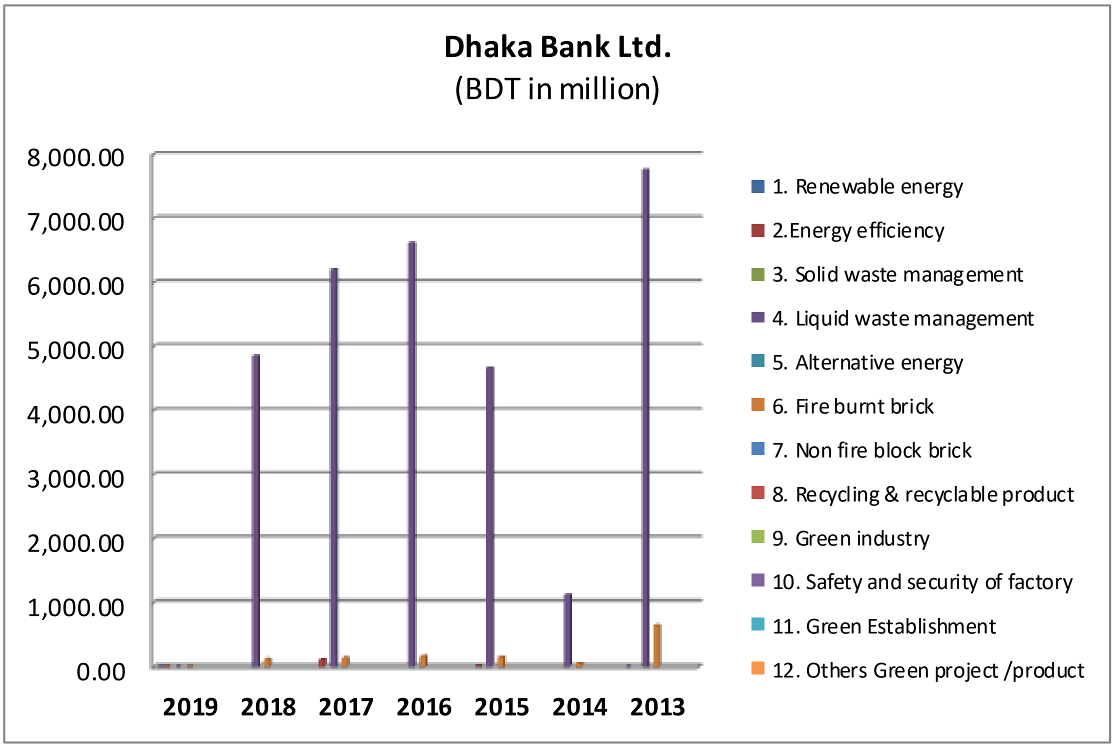
Figure 6.3.2: Green Finance by Dhaka Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

The bank also financed on a number of specific green products on the green sectors, reflected in the figure below.

Figure 6.3.3: Green Products of Dhaka Bank Ltd.

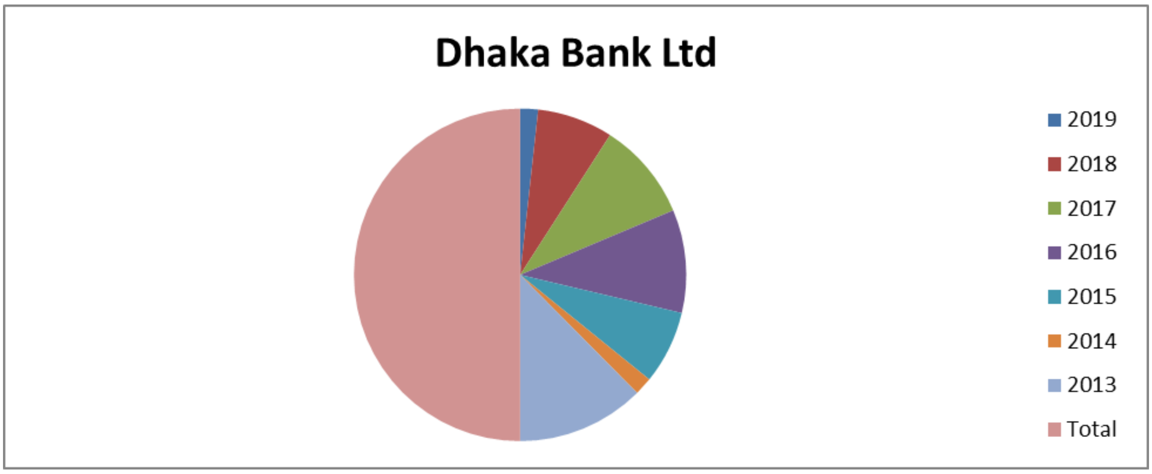


Source: BB and Annual Report of respective banks, 2019

As per the finance of the bank, Liquid Waste Management is of high volume disbursed in the years from 2013 to 2018 and Fire Burn Brick and others are very small investment in comparison to the other green products. The bank financed specific green sectors, but it is continuously carried out to the throwing projects.

In an evaluation of the green finance, the bank presented insignificant overall green finance disbursements, a smaller portfolio compared to other sample banks. The trend is depicted in the above graph which shows the dominant role for specific sector as compared with the overall green finance of the bank.

Figure 6.3.4: PIE Graph showing Dhaka Bank's Green finance over the years



Source: BB and Annual Report of respective banks

As well as the bank also financed to green products Tk. 6,784.90 million in 2016; Tk. 6,461.85 million in 2017 respectively. During 2019, the bank financed 25.60% in Renewable Energy; 34.10% in Energy Efficiency; 0.42% in Liquid Waste Management; 39.88% in Green Brick manufacturing on the basis of the whole finance of the bank.

The bank has established a green finance and climate risk fund and supervised closely its use. Dhaka Bank financed various green projects like ETP, Hybrid Hoffman Kiln (HHK), Zigzag or equivalent Technology in Brick Field, Bio-Gas Plant, Solar Power System, etc.

6.3.3 Analysis of Green Finance by Dhaka Bank Ltd.

The analysis of Green Finance of Dhaka Bank Ltd. is given below, Table -6.3.3.

Table -6.3.3: Analysis of Green Finance by Dhaka Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.602402433	2.758335	4.195543349	5.036714	4.0949593	0.11407459	8.446072
Net profit as a % of Total Finance	2.325759706	3.087595	0.971970627	1.088433	1.2194501	0.19639329	1.934817
Net profit as a % of Green Finance	386.0807291	111.9369	23.16674018	21.60999	29.779297	172.162167	22.90789
Correlation between Net Profit and Green Finance	-0.390200192						
R square	0.15225619						
Average Green Finance	4831.788571						
Standard Deviation	2768.897157						

Here, the green finance by Dhaka Bank Ltd. was from 2013 to 2019. Therefore, the average green finance is 4,831.78857 million and SD is 2,768.89716 million. The standard deviation of green finance is 2,768.89716 million which is very high. The correlation between green finance and net profit is moderate and of positive correlation. The correlation value is 0.39020019. The reliability coefficient of the model is 0.15225619.

6.4 Dutch-Bangla Bank Ltd. (DBBL).

Dutch-Bangla Bank Ltd. is the automated and high-tech private Commercial Bank in Bangladesh. The bank has taken initiatives for various innovative green projects, such as eco-friendly business, energy saving industries like renewable energy, clean water,

water treatment plant, waste treatment plant, water disposal plant, bio-fertilizer plant, etc. The bank has disbursed Tk. 56,474.1 million in 2019 and Tk. 55,259.90 million in 2018 respectively. These amounts increased in comparison with the previous Financial Year.

6.4.1: Profile of Dutch-Bangla Bank Ltd.

The profile of the bank is shown below, Table No. 6.4.1.

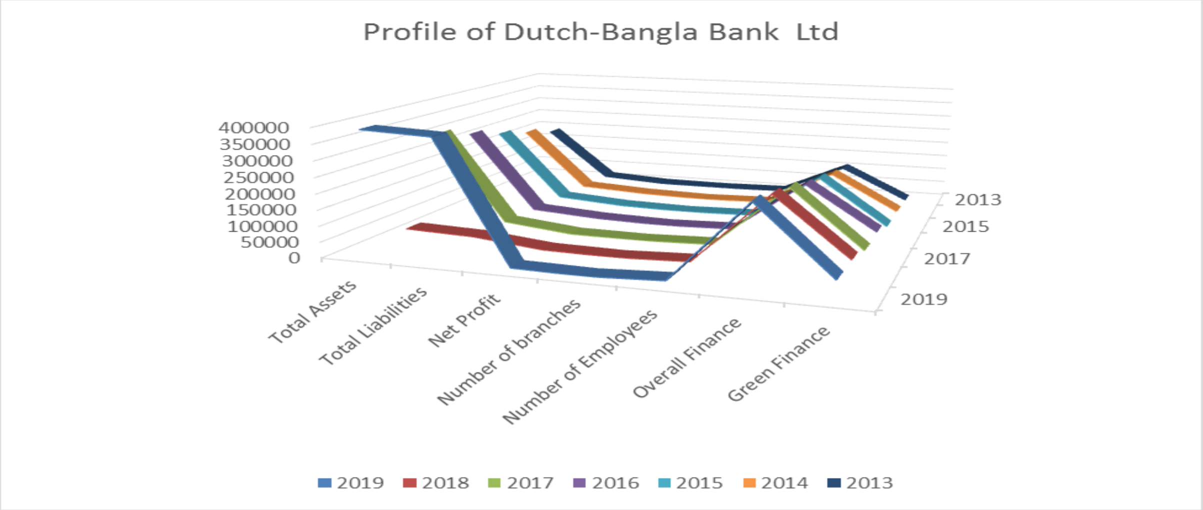
Table-6.4.1: Profile of Dutch-Bangla Bank Ltd.

	In Million BDT						
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	390,362.0	34,468.8	311906.8	276844.4	244057.6	215993.5	185537.4
Total Liabilities	380687.0	27207.90	26106.70	21249.4	21137.6	18077.9	15423.4
Net Profit	4341.4	4201.4	2455.2	6127	5201	5556	2000.8
No. of Branch	195	184	175	165	155	145	136
Overall Finance	256239.7	231553.9	207257.4	173397.8	152270.0	124423	106422.8
No. of Employees	9988	8195	6816	6127	5201	5556	4666
Green Finance	56,474.01	55,259.90	27140.24	32823.12	283.58	4292.05	100

Source: Annual Report, Dutch-Bangla Bank Ltd., 2019

The above table presented that, total assets, net profit and overall finance of the bank increased year to year. The amount of total asset is BDT 390,362.0 million in 2019 and BDT 215,993 million in 2013. The overall finance of the bank is BDT 256,239.7 million in 2019 and BDT 106,422.8 million in 2013.

Figure 6.4.1: Profile of Dutch-Bangla Ltd.



Source: BB and Annual Report of respective banks

6.4.2: Green Finances by Dutch-Bangla Bank Limited (DBBL)

DBBL contributed multiverse service as a popular bank to the people of Bangladesh. The bank has many green initiatives for the people to save the environment. As per the social responsibilities, the bank has financed directly many green projects, like installation of ETP, Environment and Social Management Systems, Hoffman Kiln, Automatic brick field, etc.

The bank has also contribution for awareness building for awareness development, online banking facilities, mobile banking, agent banking, Dutch-Bangla Bank Nexus pay, E-payment Gateway Facilities, etc. The bank's different green finances are represented in the table below, Table-6.4.2.

Table-6.4.2: Green Finance in Different Products (BDT in million) of DBBL.

Green Products	Dutch-Bangla Bank Ltd. (DBBL)			Type of Bank: Private Commercial Bank (PCB)				Total
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	
1. Renewable energy	1377.1			1700	20	20	1	**3118.1**
2. Energy efficiency								
3. Solid waste management								
4. Liquid waste management	52642.79	55083.4	26980.44	27114.7	263.58	263.58	16	**162364.49**
5. Alternative energy								
6. Fire burnt brick	2289.4			4000.97		4000.97	50	**10341.34**
7. Non fire block brick								
8. Recycling & recyclable product							25	**25**
9. Green industry								
10. Safety and security of factory								
11. Green Establishment								
12. Others Green project /product	164.72	176.5	159.8	7.5		7.5	8	**524.02**
Total	**56474.01**	**55259.9**	**27140.24**	**32823.17**	**283.58**	**4292.05**	**100**	**176372.95**

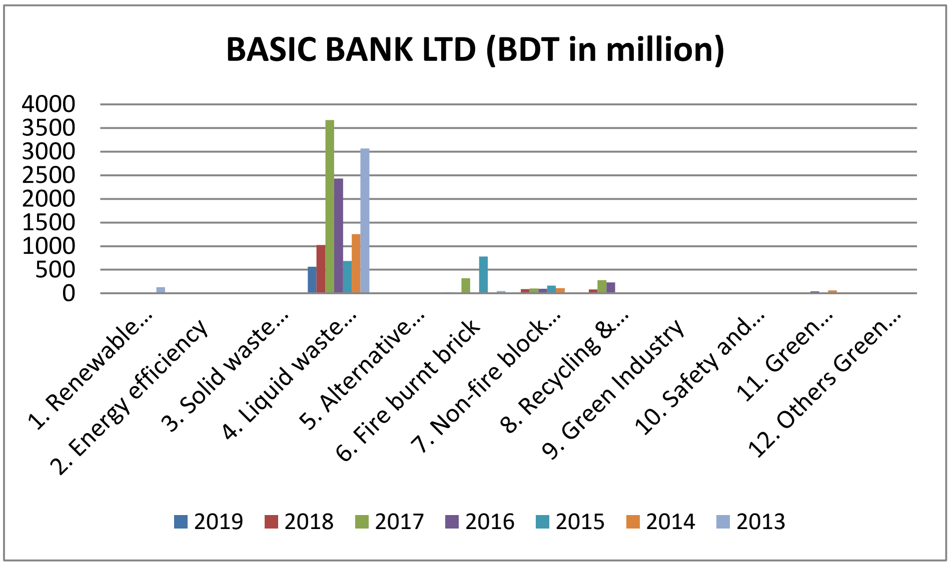
Source: BB and Annual Report of respective banks, 2019

The above table shows that the bank made big amount of green finance on Liquid Waste Management BDT 52,642.79 million in 2019, BDT 55,083.4 million in 2018, BDT 26,980.44 million in 2017 and BDT 27,114.70 million in 2016. The bank concentrated on only the specific sector among the different green products.

The bank financed for Liquid Waste Management BDT 162,364.49 million, for Fire burnt Brick BDT 10,341.34 million, for renewable energy BDT 3,118.1 million and for other green products, BDT 524.02 million over the last 7 years, from 2013 to 2019. Other sectors' finances are very poor.

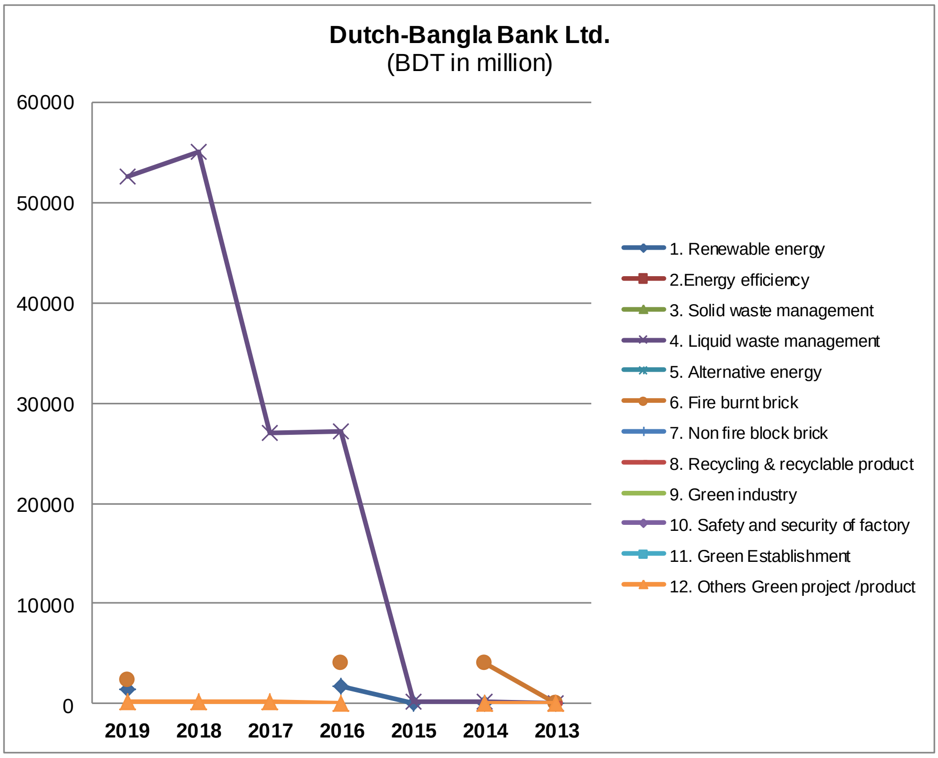
The above table shows that the bank financed big amount for Liquid Waste Management, Fire Burnt Brick and Renewable Energy. As per the graph, the bank finance for green products, like, Liquid Waste Management, is of upward trend in the year of 2018, then downward in 2019, and again then in 2016. Fire Burnt Brick trends are same for the years in 2014 & 2016 and then downward in 2019.

Figure 6.4.2: Green Finance by Dutch-Bangla Bank Ltd.



Source: BB and Annual Report of respective banks

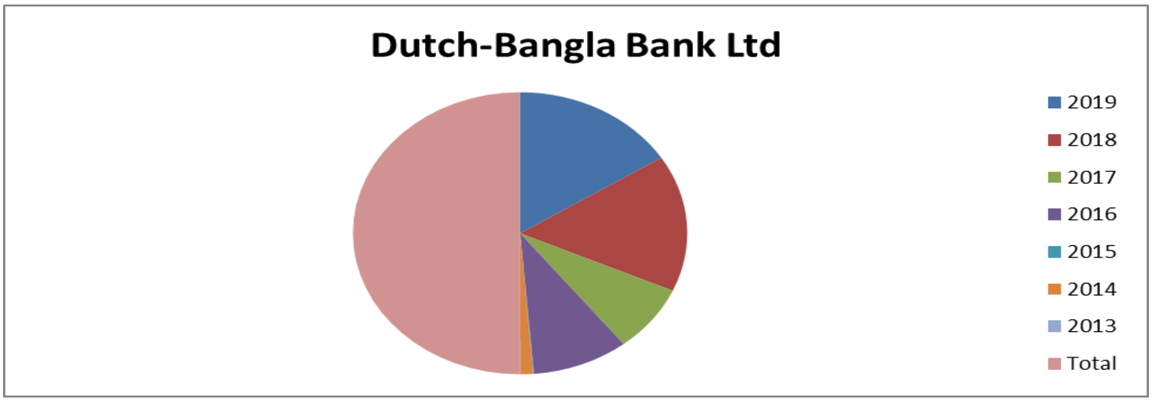
Figure 6.4.3: Green Products of Dutch-Bangla Bank Ltd.



Source: BB and Annual Report of respective banks

The bank shows an insignificant trend for overall green finance from 2013 to 2019. The bank shows price elasticity for various green products for last 7 years from 2013 to 2019. As per the depicted graph, the trend of green finance is much more differed from year to year. And the bank did not finance to the other green projects. Therefore, the bank's sequence of finance in various green products over the last 7 years is smooth.

Figure 6.4.4: PIE Graph showing Dutch-Bangla Bank's green finance over years



Source: Annual Report, Dutch-Bangla Bank Ltd., 2019

The bank has financially assisted the poor, but meritorious students who got scholarship from the bank.

6.4.3: Analysis of Green Finance by Dutch-Bangla Bank Ltd.

The financial analysis of Dutch-Bangla Bank is given below, table: 6.4.3.

Table-6.4.3: Analysis of Green Finance of Dutch-Bangla Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	22.03952393	23.86481	13.09494378	18.92938	0.186235	3.44956318	0.093965
Net Profit as a % of Total Finance	1.69427298	1.814437	1.184613915	3.533494	3.4156433	4.46541234	1.880048
Net Profit as a % of Green Finance	7.687430023	7.602982	9.046345942	18.66672	1834.0504	129.448632	2000.8
Correlation between Net Profit and Green Finance	0.077246864						
R square	0.005967078						
Average Green Finance	25196.12857						
Standard Deviation	24601.89028						

Source: Annual Report, Dutch-Bangla Bank Ltd., 2019

Here, the green finance by Dutch-Bangla Bank Ltd. was from 2013 to 2019. Therefore, the average green finance by Dutch-Bangla Bank Ltd. is Tk. 25,196.1286 million. Dutch-Bangla Bank's Green Finance's SD is Tk. 24,601.8903 million. The standard deviation of green finance by Dutch-Bangla Bank is Tk. 24,601.8903 million which is medium high. The correlation between green finance and net profit is low positive correlation. The correlation value is 0.07724686. The reliability coefficient of the model is 0.00596708.

6.5. Eastern Bank Ltd. (EBL)

Eastern Bank Limited (EBL) is the renowned first growing private commercial bank of the country. The bank has established itself as a leading commercial bank in corporate banking and consumer business. The bank offers a good number of depository services, loan and card services for the customer segments. The bank introduced 'GREEN' steps taking power, water and other resources consumption management towards a better global environment.

6.5.1: Profile of Eastern Bank Ltd.

The financial profile of Eastern Bank Ltd. is shown below, Table-06.5.1.

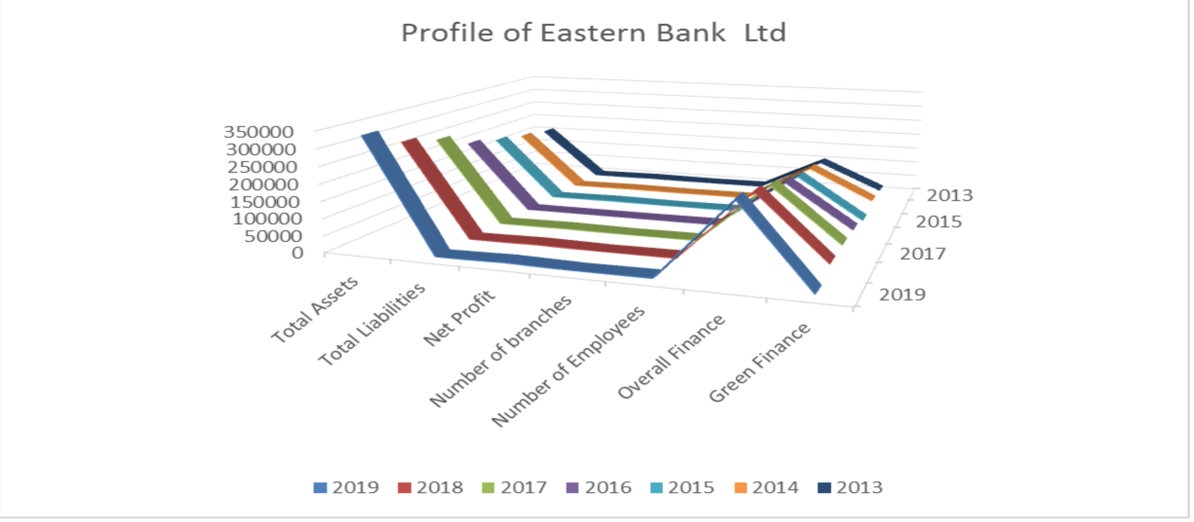
Table-6.5.1: Profile of Eastern Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	335,163	282,451	256365	211185	189563	172124	157882
Total Liabilities	12.11	11.30	10.74	9.27	8.25	7.57	7.56
Net Profit	4,008	3,081	2428	-	2221	2017	2568
No. of Branch	85	85	84	82	80	76	71
No. of Employees	1,892	1,715	1594	1584	1577	1559	1498
Overall Finance	232051	209306	184027	152084	130226	118291	102910
Green Finance	2356	25632.80	25633.0	20399.15	22148.2	22192	16497

Source: Annual Report, Eastern Bank Ltd., 2019

The above table presented that, total assets, net profit and overall finance of the bank increased year to year. The amount of total asset is BDT 335,163 million in 2019 and BDT 157,882 million in 2013. The overall finance of the bank is BDT 232,051 million in 2019 and BDT 102,910 million in 2013.

Figure 06.5.1: Profile of Eastern Bank Ltd.



Source: BB and Annual Report of respective banks

6.5.2: Green Finances by Eastern Bank Limited (EBL)

Eastern Bank is one of the renowned private modern commercial banks in Bangladesh. For the good governance and corporate social responsibility eastern bank is pioneer in the banking sector. The bank's investment has direct impact on biodiversity, agriculture, forestry, water resources, and human health, etc. The bank has financed many green projects like liquid waste management, Environment-pollution free burnt brick, non-renewable natural resources, hazard waste disposal, etc. and has also financing of projects to reduce GH gases (C_2O). Eastern Bank has many social initiatives to the people. The Social Obligations & Environmental and Social Initiatives for 2014 ended with a high note to the community the bank operate in, as were felicitated with ICSB National Award for Corporate Governance Excellence. As a responsible corporate body, this award reflects the commitment to ensure bank's CSR activities under corporate governance and recognition are anchored to the principle and the importance the bank attaches to the "Building Social Capital'. The green finances to different products is shown in the following table, Table no. 06.5.2.

Table-6.5.2: Green Finance in Different Products (BDT in million) by Eastern Bank Ltd.

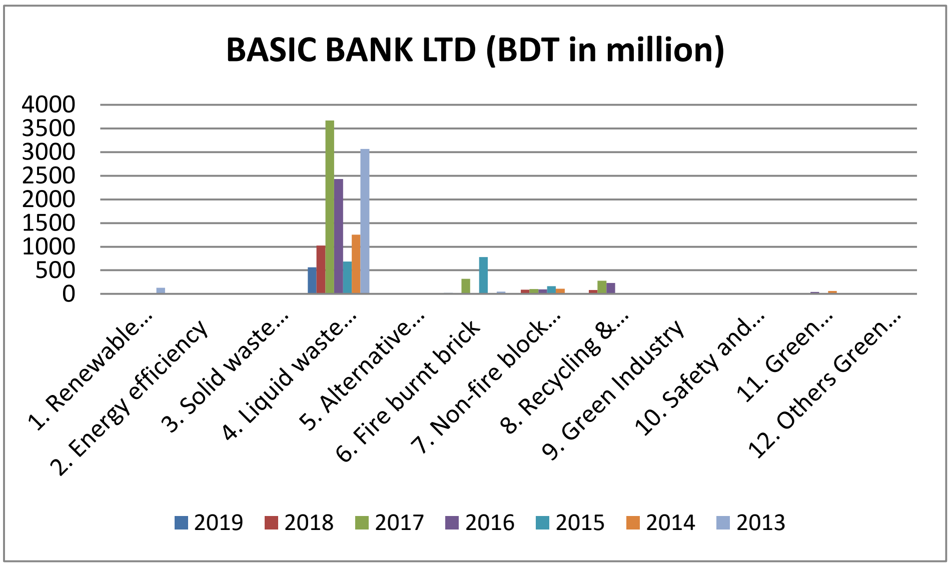
Green Products	Eastern Bank Ltd. (EBL)			Type of Bank: Private Commercial Bank (PCB)				Total
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	
1. Renewable energy				119.59				**119.59**
2.Energy efficiency								
3. Solid waste management				3.67				**3.67**
4. Liquid waste management	769	25501	25501	20247	22122	22119	16457	**132716**
5. Alternative energy				3.39				**3.39**
6. Fire burnt brick	129	122	122.2	21.2	26.2	53		**473.6**
7. Non fire block brick								
8. Recycling & recyclable product		9.8	9.8	4.3				**23.9**
9. Green industry								
10. Safety and security of factory								
11. Green Establishment								
12. Others Green project /product	1458					20	40	**1518**
Total	**2356**	**25632.8**	**25633**	**20399.15**	**22148.2**	**22192**	**16497**	**134858.15**

Source: BB and Annual Report of respective banks, 2019

EBL has financed in liquid waste management BDT 16,457 million in 2013, 22,119 million in 2014 and 769 million in 2019. The bank also financed fire-burnt brick BDT 53 million in 2013, 26.2 million in 2014 and 129 million in 2019. And the bank's big amount of the finances for other green project or products was BDT 1,458 million in 2019.

As per the finance trend of the bank, the bank financed for specific green products like Liquid Waste Management, Fire-burnt brick, Non-Fire Block Brick and also Renewal Energy, Green Establishment, etc. It made continuously investment for 7 years from 2013 to 2019. The bank financed to specific green products in equal proportion over the last 7 years

Figure 6.5.2: Green Finance by Eastern Bank Ltd.



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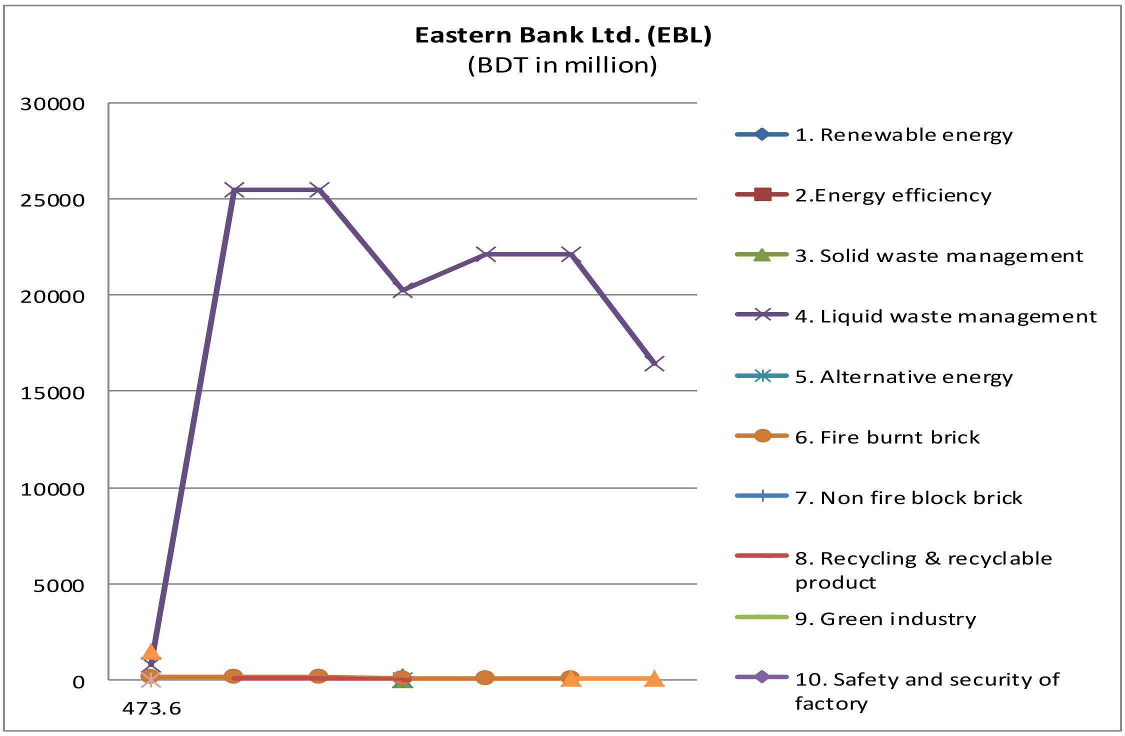
Source: Annual Report of BB and Annual Report of respective banks, 2019

The finance trend of the bank shows finances of green products in different areas in the year 2013 to 2017 are higher than that of the other years. To up-keep environment, the bank's overall finance is better for green products.

Figure 06.5.3: Green Products of Eastern Bank Ltd.

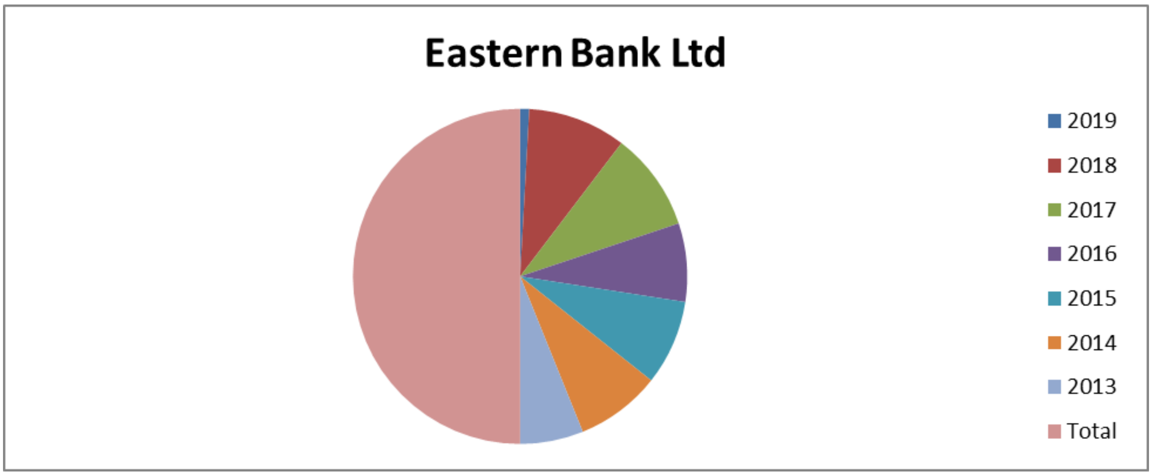


Source: Annual Report of BB and Annual Report of respective banks, 2019

As per the graphical presentation, the bank's ideal finance in green industry in the year 2018 is high, then the next high year 2017. The bank did finance of the green products, specially, Liquid Waste Management and Renewable Energy.

Other finance for Fire-burnt Brick, etc. and Safety and Security of factory is very minimum. The bank has financed specific products from 2014 to 2019.

Figure 6.5.4: PIE Graph showing Eastern Bank's Green finances over the years



Source: Annual Report of BB and Annual Report of respective banks, 2019

Therefore, the bank ensured green initiatives as per the guidelines of Bangladesh Bank.

6.5.3: Analysis of Green Finance by Eastern Bank Ltd.

The analysis of green finance is given in the table below, table-6.5.3.

Table -6.5.3: Analysis of Green Finance of Eastern Bank Ltd.

	In million BDT						
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	1.015294052	12.24657	13.928934	13.41308	1.7263834	18.7605143	16.03051
Net profit as a % of Total Finance	1.727206519	1.472007	1.3193716	0	1.7054966	1.70511704	2.495384
Net profit as a % of Green Finance	170.1188455	12.01976	9.4721647	0	98.790143	9.08886085	15.56647
Correlation between Net profit and Green Finance	-0.339555107						
R square	0.115297671						
Average Green Finance	16,422.59286						
Standard Deviation	10,145.16769						

Source: Annual Report of BB and Annual Report of respective banks, 2019

Here, the green finance by Eastern Bank Ltd. was for 10 years from 2013 to 2019. Therefore, the average green finance by Eastern Bank Ltd. is 16,422.5929 million. Eastern Bank's Green Finance's SD is 10,145.1677 million. The standard deviation of green finance by Eastern Bank is 10,145.1677 million which is of medium high. The correlation between green finance and net profit is moderate positive correlation. The correlation value is 0.33955511. The reliability coefficient of the model is 0.11529767.

6.6 IFIC Bank Ltd.

IFIC Bank is the first-generation commercial bank in Bangladesh. The bank was established in 1976 which became involved with foreign exchange business in 1980. The bank has established 120 branches and 2527 employees have been working in the bank. The bank is focusing on green projects such as bio-diversity plant, vermin compost and firefighting and safety equipment projects, etc. IFIC bank is a green bank which delays utmost effort for keeping its green initiatives.

06.6.1: Profile of IFIC Bank Ltd.

The overview of profile of IFIC Bank Ltd. for 7 years is presented in below, Table no.-6.6.1.

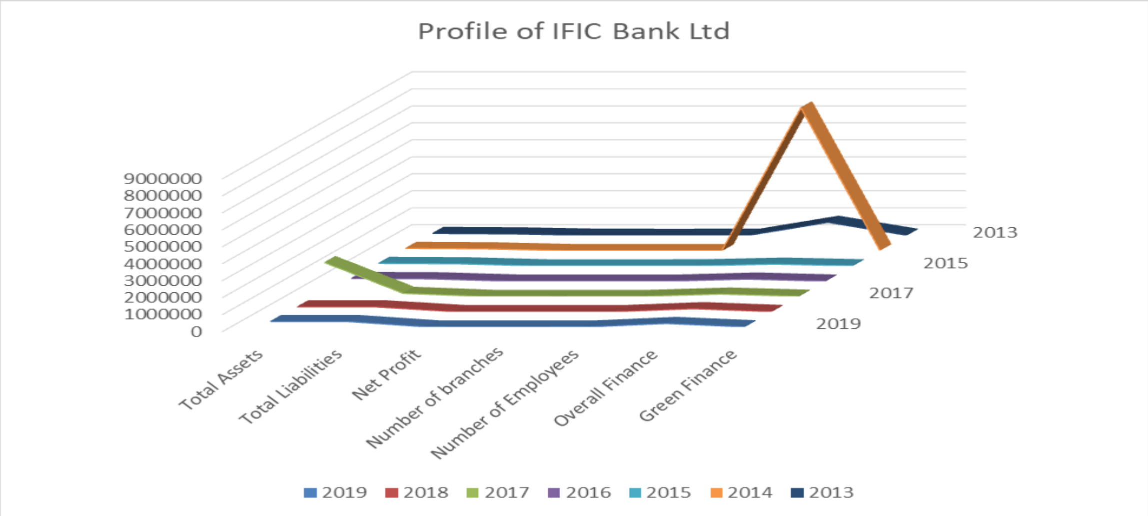
Table-6.6.1: Profile of IFIC Bank Ltd.

	In million BDT						
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	316,950	283,073	200206	160155	146820	129746	110464
Total Liabilities	316,950	283,073	179264	137118	123269	102282	84110
Net Profit	2,444	1,570	2068	1214	887	1545	1346
No. of Branch	140	135	135	125	125	120	120
No. of Employees	2835	2835	2790	2750	2650	2527	2520
Overall Finance	206930	179264	137118	123269	102282	8411039	769520
Green Finance	7681.82	7452.72	8024	709.66	2774.0	4565.96	1712.63

Source: Annual Report, IFIC Bank Ltd. 2019

The above chart shows 7 years' financial position from 2013 to 2019. The bank's total assets, net profit and overall finance have mark-ably increased from year to year. Green finance of the bank has also increased in FY 2019 than FY 2013.

Figure 6.6.1: Profile of IFIC Bank Ltd.



Source: Annual Report, IFIC Bank Ltd. 2019

6.6.2: Green Finances by IFIC Bank Limited

IFIC Bank Ltd. is one of the oldest private commercial banks of Bangladesh. The bank has taken many green steps to save the environment. The bank has many steps in in-house Environment Management towards supporting Green Economy. The bank has initiatives in different green events like domestic Bio-gas plant, Commercial bio-gas plant, Vermin compost, Finance for Brick Kiln Efficiency, etc.

The bank also introduced the improvement in projects, finance at Fire Fighting & Safety Equipment**,** incorporation of improved in-house management & green practices, green banking unit, etc. The green finances of different products are shown in the following table, Table no. 06.6.2.

Table-6.6.2: Green Finance in Different Products (BDT in million) by IFIC Bank Ltd.

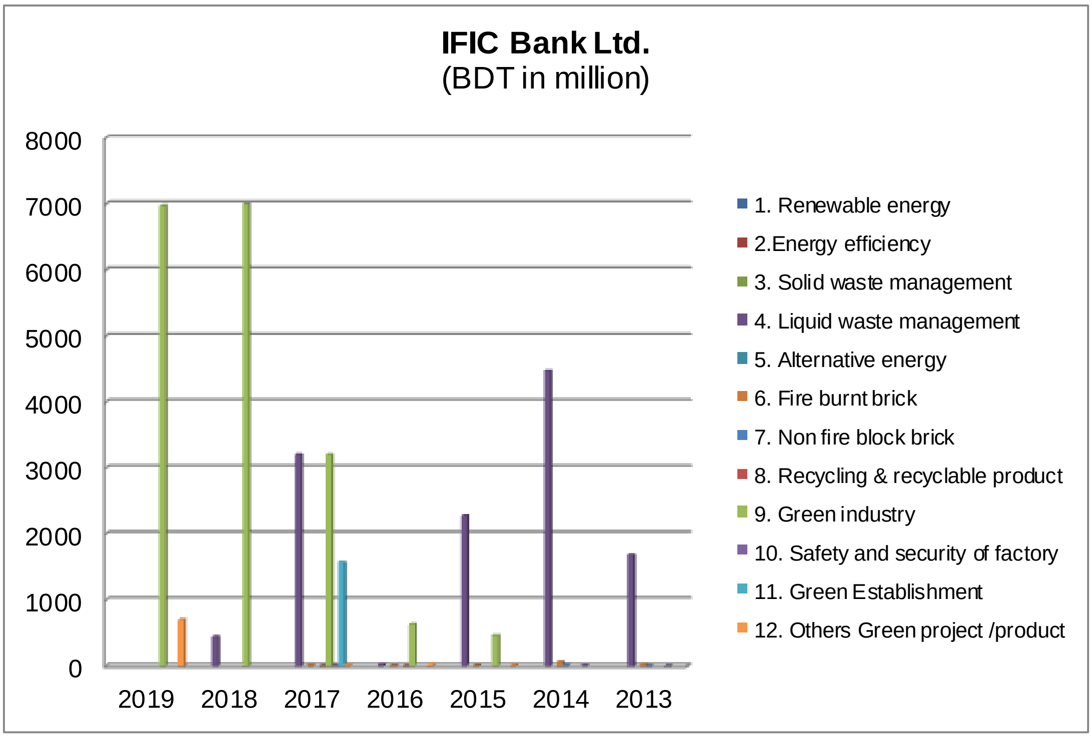
Green Products	IFIC Bank Ltd			Type of Bank: Private Commercial Bank (PCB)				
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**Total**
1. Renewable energy								
2.Energy efficiency								
3. Solid waste management								
4. Liquid waste management		447.16	3,203.52	29.28	2,284	4,470.89	1,687.38	**12,122.23**
5. Alternative energy								
6. Fire burnt brick			21.34	5	9	60	25.25	**120.59**
7. Non fire block brick						25.5	-	**25.5**
8. Recycling & recyclable product			0.5	0.5				**1**
9. Green industry	6,977.07	7,005.56	3,203.52	641.64	465			**18,292.79**
10. Safety and security of factory			3.61			9.57	-	**13.18**
11. Green Establishment			1,570.93					**1,570.93**
12. Others Green project /product	704.75		20.58	33.24	16			**774.57**
Total	**7,681.82**	**7,452.72**	**8024**	**709.66**	**2,774**	**4,565.96**	**1,712.63**	**32,920.79**

Source: BB and Annual Report of respective banks, 2019

IFIC Bank Ltd. is committed to promote sustainable growth in the economy. An amount of BDT 7,681.82 million was disbursed as Green Finance in 2019, BDT 7,452.72 million in 2018 and BDT 8024 million in 2017.

The bank financed in the green products for 7 years, like Liquid Waste Management was BDT 12,122.23 million, green industry was BDT 18,292.79 million and in green establishment BDT 1,570.93 million and other green finances are very minimum.

Figure 6.6.2: Green Products by IFIC Bank Ltd.



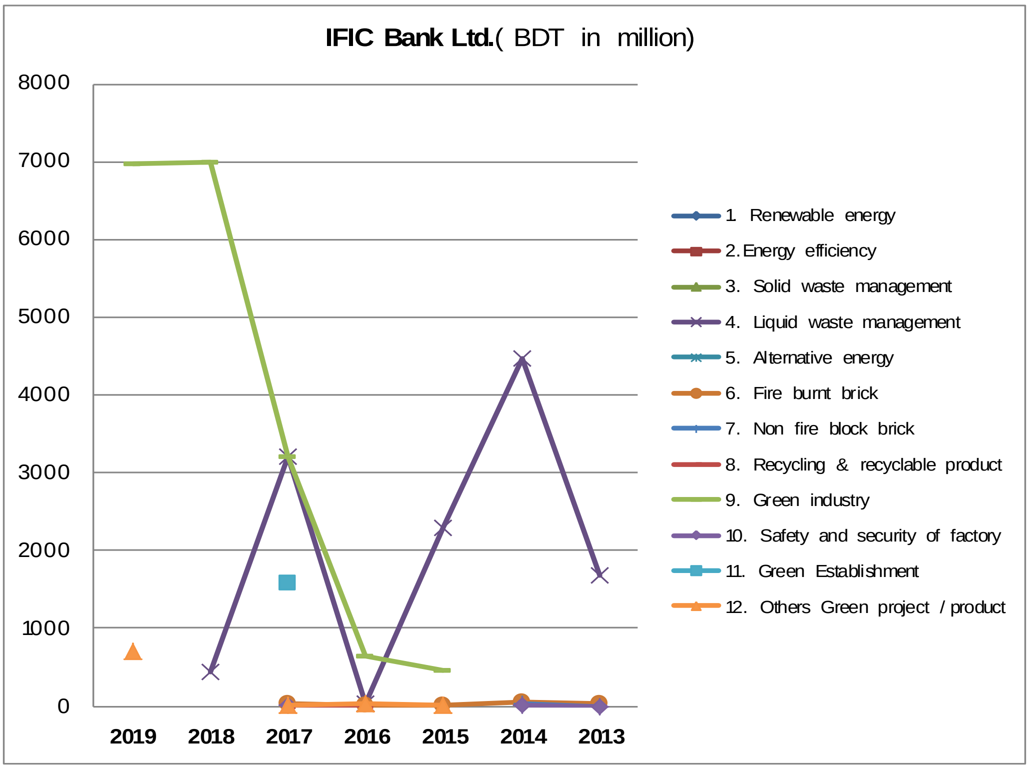
Source: BB Annual Reports and Annual Report of respective banks, 2019

The graph shows the differential trend in contribution of banks for green finance over the past 7 years.

As per the above graphical presentation, the bank emphasized the green products like Liquid Waste Management, and green industry with bigger finances in the last 7 years.

Other green products get down-flow of finance over the last 7 years and in this area, fund was not disbursed in year to year in the same way.

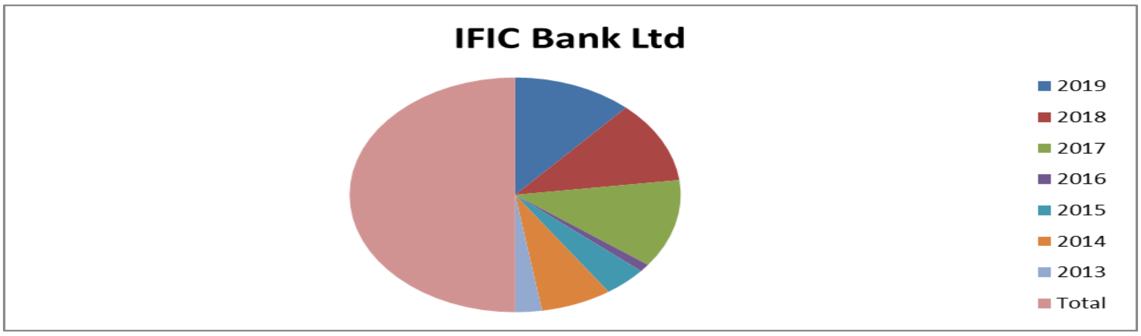
Figure 6.6.3: Green financing over different products by IFIC Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

The graphical picture demonstrates the bank's the trend in differential sequences in the above graph. The graph shows that the bank did not finance in line or in the same way. Only does specific finance to establish the green industry. Bank's disbursement over the years is fluctuating. In the graph below, it can be seen that, the contribution of IFIC Bank Ltd. is not significant in overall green finance disbursements in the specific products.

Figure 6.6.4: PIE Graph showing IFIC Bank's Green finance over the years



Source: BB and Annual Report of respective banks, 2019

The bank has many steps for Sustainable Financing like established green industry, green building project, etc.

6.6.3: Analysis of Green Finance by IFIC Bank Ltd.

The analysis of green finance is given below, table no. 6.6.3.

Table -6.6.3: Analysis of Green Finance of IFIC Bank

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	3.712279	4.157399	5.851893989	0.5757	2.7121097	0.05428533	0.092607
Net profit as a % of Total Finance	0.968443	0.875803	1.151562887	0.984838	0.8672103	0.01836872	0.174914
Net profit as a % of Green Finance	26.08756	21.06613	19.67846461	171.0678	31.975487	33.8373529	188.8778
Correlation between Net profit and Green Finance	0.71362679						
R square	0.509263195						
Average (Green Finance)	4560.112857						
SD (Green Finance)	3238.571974						

Source: Annual Report, IFIC Bank Ltd. 2019

Here, the green finance by IFIC Bank Ltd. was shown from 2013 to 2019. Therefore, the average green finance by IFIC Bank is 4,560.11 million. IFIC Bank’s Green Finance’s SD is 3,238.57197.

The standard deviation of green finance by IFIC Bank is 3,238.57 million which is very high. Correlation between green finance and net profit is of high positive correlation, and the value is 0.713626. Reliability coefficient of the model is 0.5092.

6.7 Janata Bank Ltd. (JBL).

The Janata Bank Ltd. is one of the largest banks in the public sector. The bank was established by merging United Bank Ltd. and Union Bank Ltd. through the

Bangladesh Bank Order, 1972. Janata bank is working for the government locally and internationally. JBL automated the banking across the country. The bank has invested Tk. 4,849.90 million for green finance in the year of 2019. JBL has invested in RMG, textile, steel and engineering, lather and leather goods, jute and jute products, paper industry, etc. At the present situation, the bank has fully digitized customer services and agent banking. The bank focuses customer's satisfaction and welfare for the fulfillment of the government priorities.

6.7.1: Profile of Janata Bank Ltd.

The profile of Janata Bank Ltd. is shown in the table below, table no. 6.7.1.

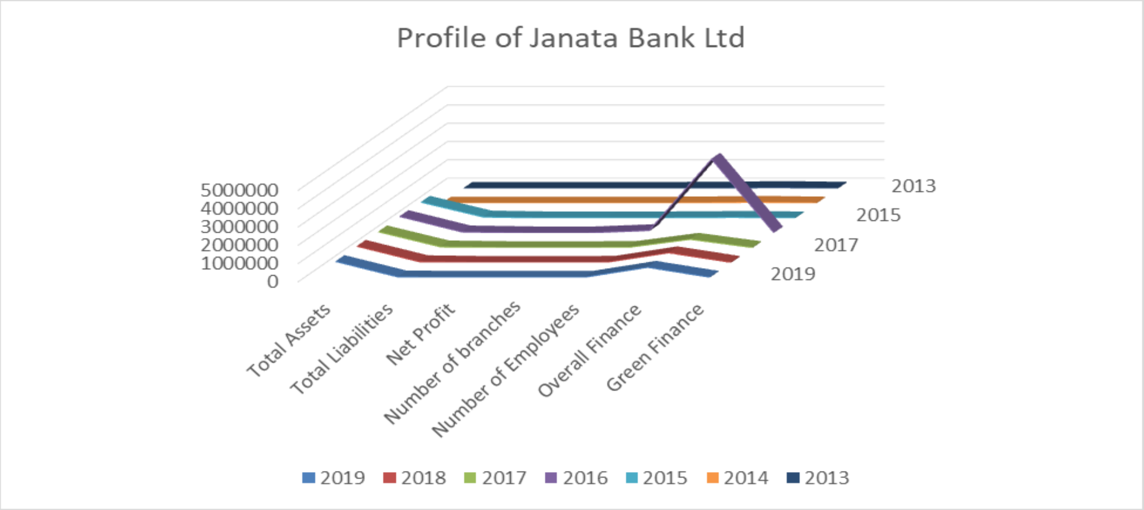
Table-6.7.1: Profile of Janata Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	866232.70	888921.80	868255.60	895387.10	866046.50	2081.70	1759.63
Total Liabilities	21142.40	43290.41	41673.40	50267.90	54556.40	1880.16	1569.08
Net Profit	246.44	248.97	2686.5	2605.48	4807.88	345.43	393.62
No. of Branch	914	913	912	910	908	905	903
No. of Employees	11851	11849	12391	13188	14151	14331	14250
Overall finance	548473.94	533707.16	459580.05	403037.42	349861.30	51472.0	50382.85
Green Finance	4849.90	4622.90	4652.90	5678	7962	8567	8263

Source: Annual Report, Janata Bank Ltd. 2019

The above table shows that, the bank's total assets, overall finance and net profit increased from 2013 to 2019. Total assets were BDT 866,232.70 million in 2019 and BDT 866,046.50 million in 2015. Janata Bank has achieved an operating profit of 709 crore taka in 2019. As a state, owned commercial bank, the bank is providing various services to customers as well as the government and maintains the customers to fulfill this goal of the government.

Figure 6.7.1: Profile of Janata Bank Ltd.



Source: Annual Report, IFIC Bank Ltd. 2019

6.7.2. Green Finances by Janata Bank Limited (JBL)

Janata Bank is one of the renowned nationalized commercial banks (NCBs) of Bangladesh. The bank has many activities for people and for the government. As a Nationalized Commercial Bank, the bank ensures a strong economic and sustainable banking to the nation. The bank has introduced many initiatives like Solar Energy, Bio-gas and Effluent Treatment Plant (ETP), etc. The bank also established Online Banking like online Core Banking, ATM booths and in-house environment management like 'Green Office Guide' to save electricity, water and paper consumption; reduce ink and paper use, applying eco-font in printing, ecofriendly lights in branches or offices of the bank. The green finances in different products are shown in the table, Table no. 6. 7.2.

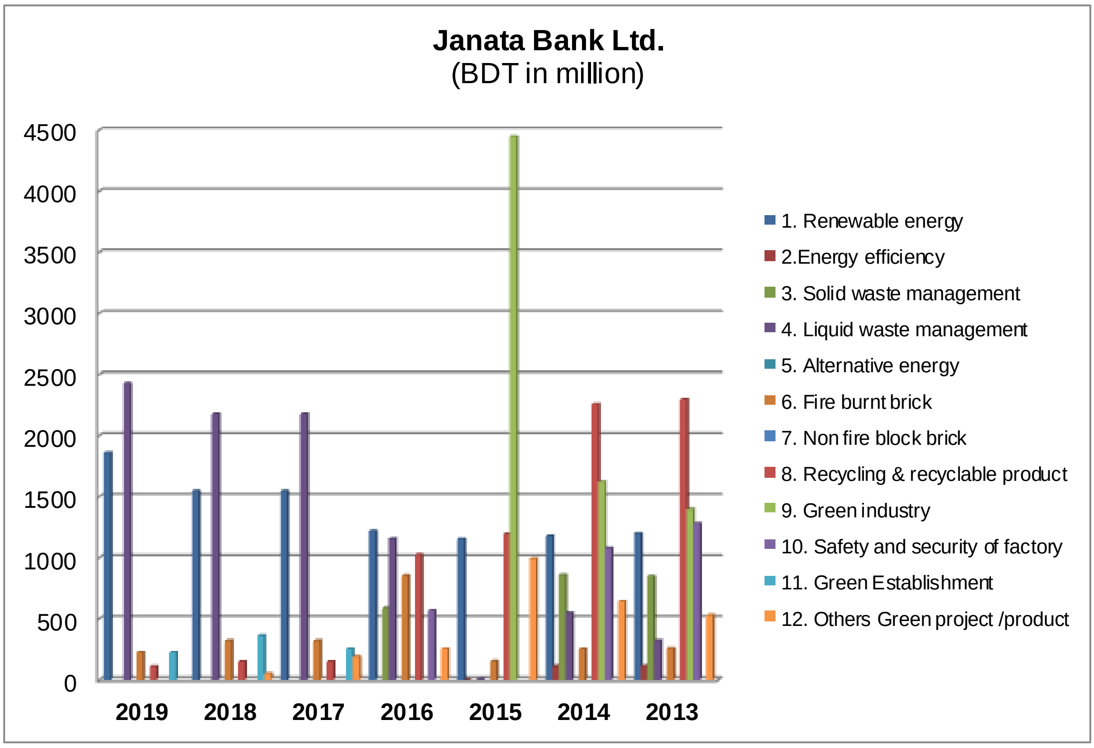
Table-6.7.2: Green Finance in Different Products (BDT in million) by Janata Bank Ltd.

Green Products Financing category	Janata Bank Ltd. (JBL)			Type of Bank: Nationalized Commercial Bank (NCB)				Total
	2019	2018	2017	2016	2015	2014	2013	
1. Renewable energy	1,860	1,550	1,550	1,220	1,155.83	1,180	1,200	**9,715.83**
2. Energy efficiency					0.64	112.85	115.95	**229.44**
3. Solid waste management				590		860.9	850	**2,300.9**
4. Liquid waste management	2,429	2,180	2,180	1,158	10.65	550.95	325	**8,833.6**
5. Alternative energy								
6. Fire burnt brick	225.5	322.9	322.9	855	154.58	255.84	260.85	**2,397.57**
7. Non fire block brick								
8. Recycling & recyclable product	110.4	151.8	151.8	1,028	1,195.73	2,259	2,300	**7,196.73**
9. Green industry					4,450	1,622.46	1,400	**7,472.46**
10. Safety and security of factory				569		1,080	1,280	**2,929**
11. Green Establishment	225	365	255					**845**
12. Others Green project /product		53.2	193.2	258	994.57	645	531.2	**2,675.17**
Total	**4,849.9**	**4,622.9**	**4,652.9**	**5,678**	**7,962**	**8,567**	**8,263**	**4,4595.7**

Source: BB and Annual Report of respective banks, 2019

The table presented that the different types of green products from 2019 to 2013 in terms of finance of the respective bank. The bank's huge amount of finance for 7 years in Green Industry is Tk. 9,715.83 million, Renewable Energy in BDT 7,472.46 million and for Recycling & Recyclable BDT 7,196.73 million. As per the social responsibility to the nation the bank invested the big amount for green establishment. The total amount of green finance disbursed in different categories like Liquid Waste Management, Green Industry, Fire-burnt Brick, Renewable Energy, etc. had the major uptake. The overall finance of the bank was BDT 4,849.9 million in 2019; BDT 4,622.9 million in 2018, BDT 4,652.9 million in 2018. The disbursement of the bank for green products was Tk. 8,263 million in 2013 and BDT 8,567.00 million in 2014. Therefore, the starting investment was higher than the present investment. The bank carried down green finance in the year 2013 to 2019 respectively. So, the bank's rational finances over the years and carried out the huge amount of finance for green project year to year.

Figure 6.7.2: Green finances over years by IFIC Bank Ltd.

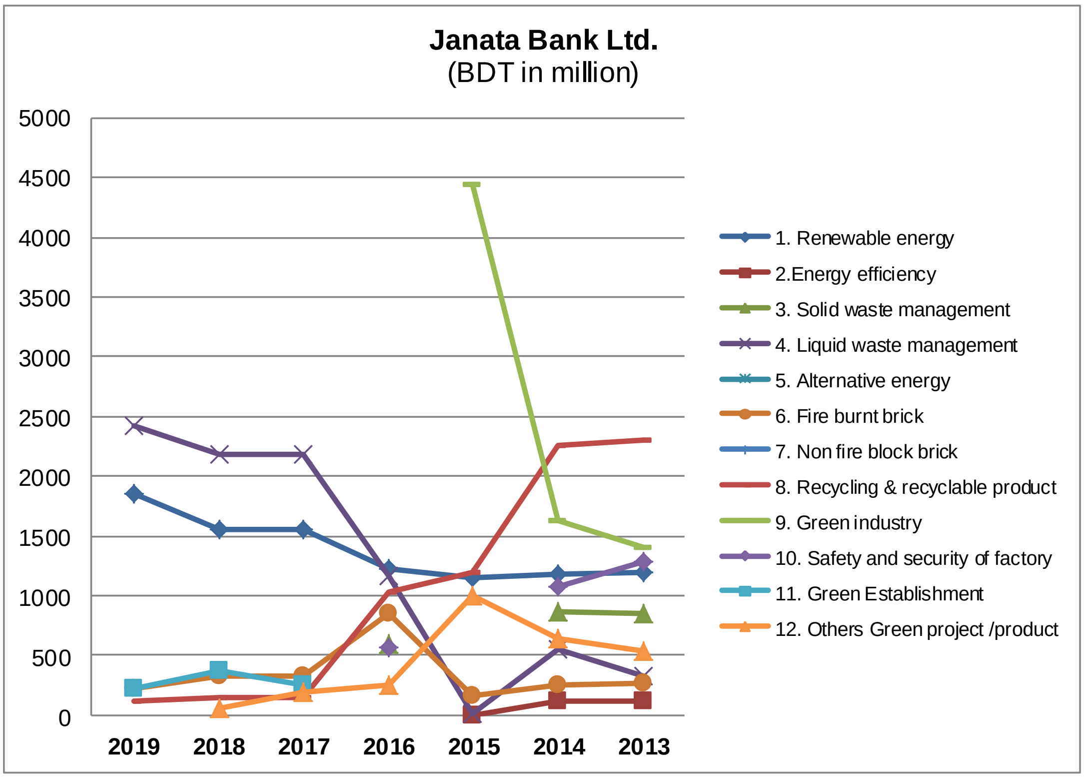


Source: BB and Annual Report of respective banks, 2019

As per the graph, the various green products, i.e., Green Industry, Renewable Energy and Liquid Waste Management are of upward trend for 7 years. The bank financed to all green products in equal proportion over the years. The investment Safety and Security purpose in the year 2019 to 2017 is remarkable.

On the other hand, the bank financed Green Industry in the year 2013 to 2015 and Renewable Energy in equal trend from 2013 to 2019. The bank's overall finance was better for green products to save the environment, as well as to protect the nation.

Figure 6.7.3: Green financing over different products by Janata Bank Ltd.

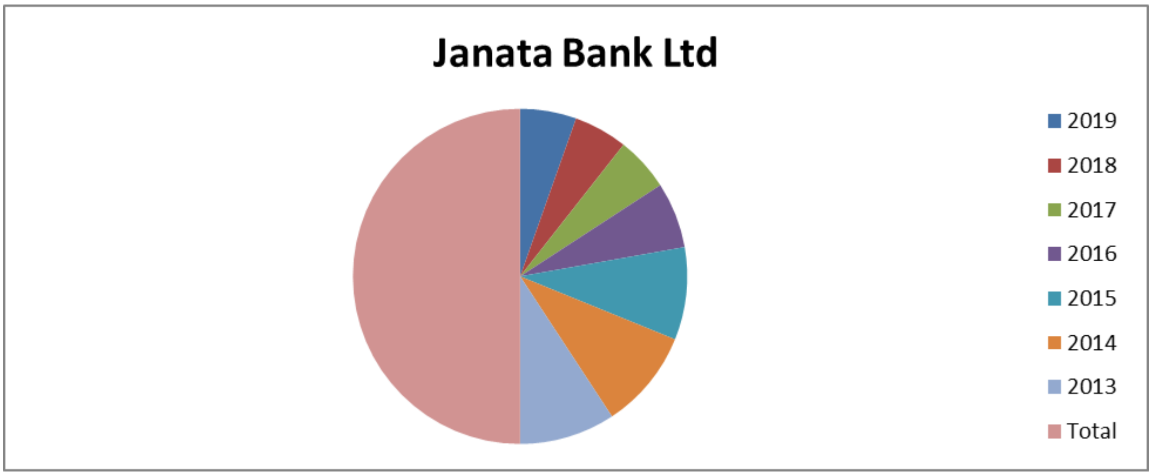


Source: BB and Annual Report of respective banks, 2019

The graphical view represents the green finance with a significant increase in the years 2013 to 2015 and then small decrease from 2016 to 2019. The bank has medium price elasticity for various green products for last 7 years from 2013 to 2019.

As is depicted graph, the trend of green finance was better from 2013 to 2019 and it is in ideal sequence in various green products.

Figure 6.7.4: PIE Graph showing Janata Bank's Green finance over the years



Source: BB and Annual Report of respective banks, 2019

The bank made much more finances for different green products or green projects.

6.7.3: Analysis of Green Finance by Janata Bank Ltd.

The analysis of green finance is given in the table below, table no. 6.7.3.

Table -6.7.3: Analysis of Green Finance of Janata Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.884253498	0.866187	1.012424277	0.140882	22.839079	16.6440006	16.40042
Net profit as a % of Total Finance	0.044931943	0.046649	0.5845554	0.064647	13.791454	0.67110274	0.781258
Net profits as a % of Green Finance	5.081341883	5.38558	57.73818479	45.88728	60.38533	4.03209992	4.763645
Correlation between Net profit and Green Finance	0.098895918						
R square	0.009780403						
Average Green Finance	6370.814286						
Standard Deviation (SD)	1813.609485						

Source: Annual Report, Janata Bank Ltd. 2019

Here, the green finance by Janata Bank Ltd. was shown from 2013 to 2019. The average green finance by Janata Bank is 6,370.81429 million. Janata Bank's Green Finance's SD is 1,813.60949 million.

The standard deviation of green finance by Janata Bank is 1,813.60949 million which is very high. The correlation between green finance and net profit is of low positive correlation with a value of 0.09889592. The reliability coefficient of the model is 0.0097804.

6.8 National Bank Ltd. (NBL)

The National Bank Limited (NBL) is the first-generation private commercial bank which was established in 1983. NBL uses latest modern technology to provide satisfactory services for the customer by the prominent banking software.

NBL has taken many green initiatives such as bio-diversity, house-hold waste, loss of open space, water resources and human health.

6.8.1: Profile of National Bank Ltd. (NBL)

The banks 7 years' performance is shown below, Table-6.8.1.

Table-06.8.1: Profile of National Bank Ltd.

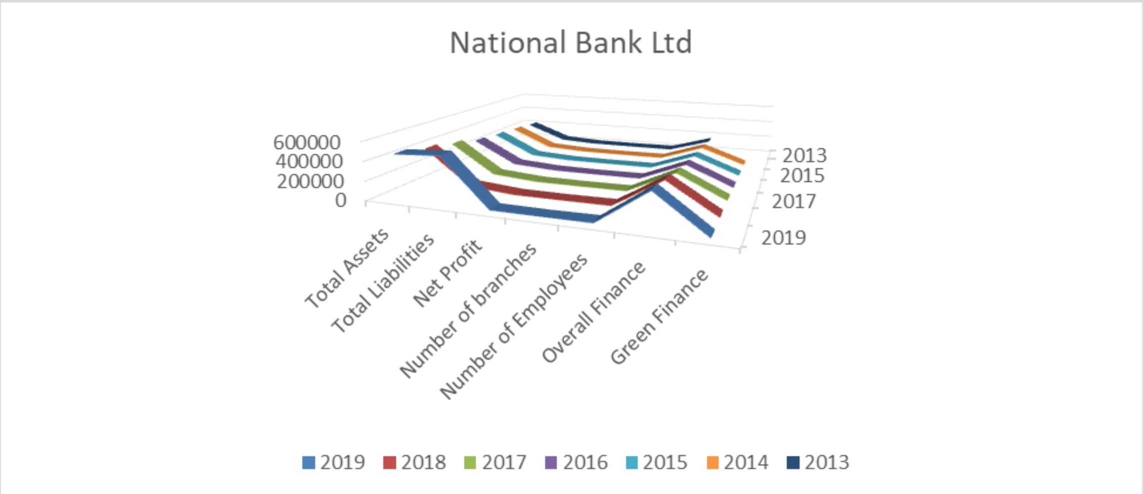
	In Million BDT						
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	463,574.78	407,227.40	35,0692.42	281,569.21	25,6537.46	235,173.80	205,207.33
Total Liabilities	49,037.56	44,809.35	42,173.86	37,422.33	312,64.33	29,217.56	27,705.47
Net Profit	4,164.78	4,100.31	4,696.01	5,567.87	3,854.03	2,660.29	2,116.59
No. of Branch	209	203	200	191	191	179	171
No. of Employees	4,740	4,657	4,602	4,617	4,266	4,236	4,126
Overall Finance	360,769.74	314,507.26	248,467.15	209,929.07	18,6179.45	172,964.72	15,1098.98
Green Finance	337.6	9,329.4	12,470.38	2,262.65	6,98.89	938.70	-

Source: Annual Reports, National Bank Ltd.

The above chart shows the financial viability of some respective sectors. Total assets and total liabilities of the bank increased year to year. The overall finance of the bank is BDT 360,769.74 million in FY 2019 and BDT 151,098.98 million in 2013. As per the guidelines of the Bangladesh Bank, the bank introduced a green banking unit to finance the green products and long-term green projects to save the environment.

The bank financed BDT 12,470.38 million in FY 2017, of which some projects were closed and introduced some new projects in FY 2019.

Figure 6.8.1: Profile of National Bank Ltd.



Source: Annual Reports, National Bank Ltd.

6.8.2 Green Finance by National Bank Limited

National Bank is one of the oldest private commercial banks of Bangladesh. The bank has many initiatives to establish the green products to save the environment. The bank has considered social and ecological factors to ensure the green environment. The bank has financing for many green industries and green establishments.

The bank has many electronic-banking like automated branch banking, SMS banking, introduction of debit card & internet banking, fast and reliable remittance services to upkeep the green environment. The following table presented 7 years' finances for the different green products, Table-6.8.2.

Table-6.8.2: Green Finance in different products (BDT in million) of National Bank Ltd.

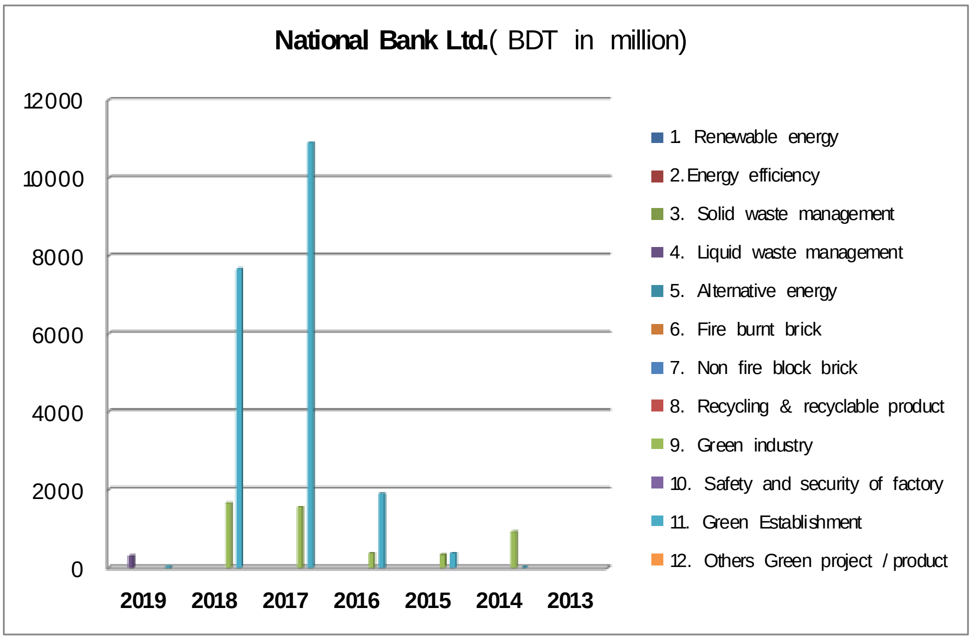
Green Products	**National Bank Ltd.**		**Type of Bank: Private Commercial Banks**					**Total**
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	
1. Renewable energy								
2. Energy efficiency								
3. Solid waste management								
4. Liquid waste management	302						0	**302**
5. Alternative energy								
6. Fire burnt brick								
7. Non fire block brick								
8. Recycling & recyclable product								
9. Green industry		1,658	1,559.08	365.6	333.2	923.4	0	**4,839.28**
10. Safety and security of factory								
11. Green Establishment	35.6	7,671.4	10,911.3	1,897.05	365.69	15.3	0	**20,896.34**
12. Others Green project /product								
Total	**337.6**	**9,329.4**	**12,470.38**	**2,262.65**	**698.89**	**938.7**	**0**	**26,037.62**

Source: BB and Annual Report of respective banks, 2019

The bank has introduced he projects finance having environment friendly products BDT 337.06 million in 2019; BDT 9,329.40 million in 2018 and BDT 12,470.38 million in 2017. The bank started green finance like environment friendly products in 2014 which amounted to BDT 938.7 million.

The bank expended huge amount in 7 years for green establishment and green industry which is BDT 20,896.34 million and BDT 4,839.28 million respectively. Liquid waste management is also disbursed in small amount, which is BDT 302 million. The bank did not make finance in more areas, but it made in specific segments.

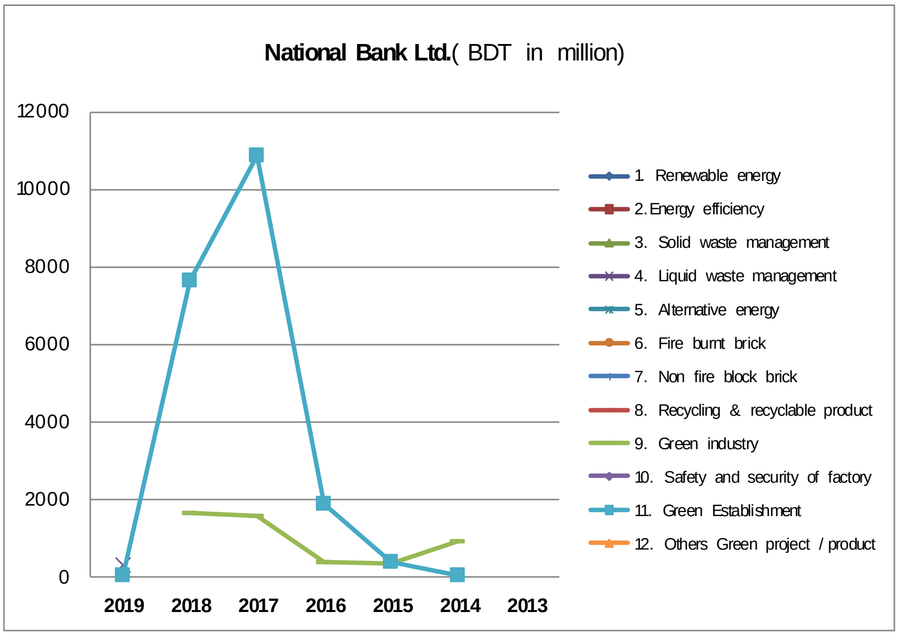
Figure 6.8.2: Green financing over the years by National Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

The bank's graphical presentation shows the bank financed for only Green Establishment in 2017 and 2018. Bank's finance in the year 2017 is higher, then in 2018 and in 2016. NBL has green initiative and assisted to implement the initiative for specific segment.

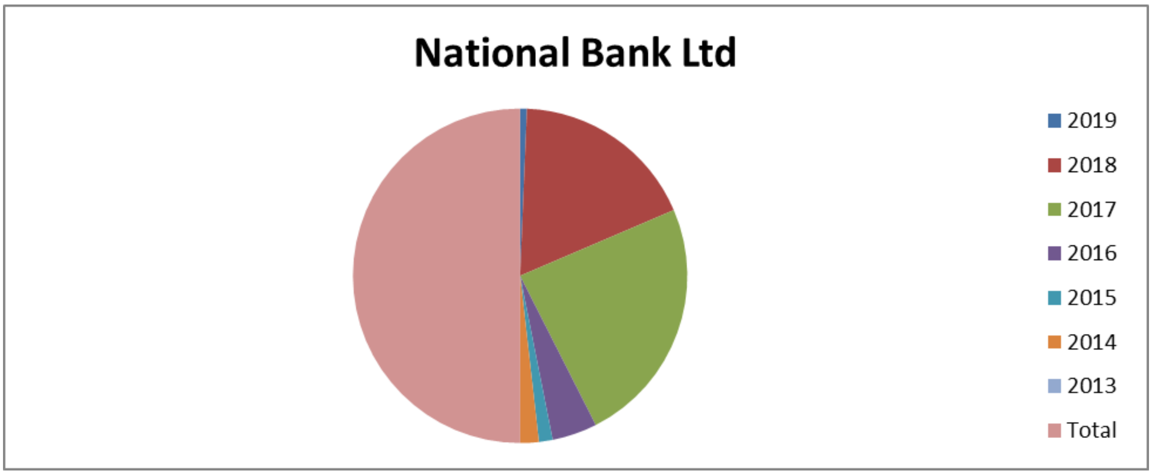
Figure 6.8.3: Green financing over different products by National Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

The graphical view demonstrates the bank's trend in equal sequences in the above graph. The bank shows an ideal graph for finance in selected green products. For the specific finance, the bank continuously disbursed the money year to year and all over the 7 years. From the graph, it can be seen that, the contribution of NBL is significant in overall green finances in the specific products.

Figure 6.8.4: PIE Graph showing National Bank's green finances over the years



Source: BB and Annual Report of respective banks, 2019

Therefore, the bank's different types financing on the green projects and green works are existent.

6.8.3: Analysis of Green Finance by National Bank Ltd.

The analysis of green finance of National Bank Ltd. are given below, Table-6.8.3.

Table -6.8.3: Analysis of Green Finance of National Bank Ltd.

	In million BDT						
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.093577693	2.966354	5.018925037	1.077816	0.3753851	0.54271183	0
Net profit as a % of Total Finance	1.154415002	1.303725	1.889992299	2.652262	2.070062	1.53805354	1.400797
Net profits as a % of Green Finance	1,233.643365	43.95041	37.65731277	246.0774	551.45016	283.401513	#DIV/0!
Correlation between Net profit and Green Finance	0.292483459						
R square	0.085546574						
Average Green Finance	4,339.603333						
Standard Deviation	5,218.39636						

Source: Annual Reports, National Bank Ltd.

Here, the green finance by National Bank Ltd. was shown from 2013 to 2019. Therefore, the average green finance by National Bank is 4,339.60333 million. National Bank's Green Finance's SD is 5,218.39636 million.

The standard deviation of green finance by Janata Bank is 5,218.39636 million which is very high. The correlation between green finance and net profit is of moderate positive correlation with a value of 0.29248346. The reliability coefficient of the model is 0.08554657.

6.9 Prime Bank Ltd. (PBL)

Prime Bank is one of the leading private commercial banks of the country. It is a top-tier second-generation bank in Bangladesh. The bank was established in 1995 for devoted and committed customer services fairly and inclusively. PBL has invested Tk. 2,086.2 million in 2019 and Tk. 440.7 million in 2013. Innovation and progress of the bank is for better customer services. PBL has served the customer with excellent services, quality and growth; and addressed the government's social service and accountability. PBL is committed for excellence, and reputed among regulators as distinctly 'compliant' bank.

6.9.1: Profile of Prime Bank Ltd.

The overall financing status is shown below, Table-6.9.1.

Table-6.9.1: Profile of Prime Bank Ltd.

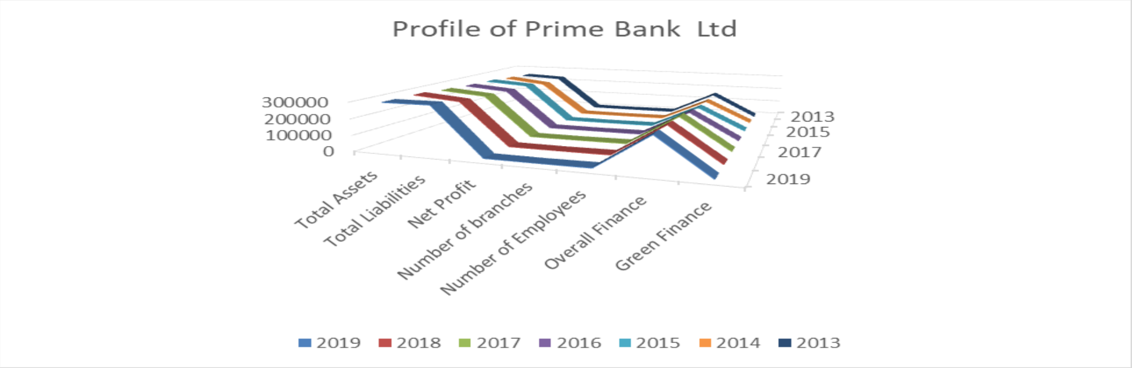
							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	293,901	293,901	281,275	272,224	267,322	254,912	243,869
Total Liabilities	295,637	267,720	256,567	246,939	246,939	220,839	230,451
Net Profit	2,004	2,188	1,059	2,195	2,139	2,393	1,829
No. of Branch	146	146	146	145	145	117	122
No. of Employees	3,124	3,212	3,499	2,961	2,934	2,867	2,710
Overall Finance	213,955	205,810	198,323	170,212	151,865	147,367	153,589
Green Finance	2,086.2	423.4	2,991.48	3,631.5	6,467.72	6,757.46	440.7

Source: Annual Reports, Prime Bank Ltd.

The above chart shows that the bank's total asset is BDT 293,901 million in FY 2019 and BDT 243,869 in FY 2013. Total asset of 2019 has increased than that of the FY 2013.

Bank has made BDT 2,013,955 million in FY 2019 and BDT 153,589 million in 2013.

Figure 6.9.1. Profile of Prime Bank Ltd.



Source: Annual Reports, National Bank Ltd.

6.9.2. Green Finance by Prime Bank Limited

Prime Bank is a renowned commercial private bank of Bangladesh. As per the policy guidelines of Bangladesh Bank, the bank has taken many steps to establish green environment and sustaining green growth. The bank has introduced 52 green products like renewable energy, solar power, biogas, liquid waste management, ETP and setting up of Hybrid Hoffman Kiln (HHK), Zigzag Brick, brick manufacturing industry and eco-friendly brick production, etc. The bank has also introduced the credit facility, energy efficiency, recycling, health & safety measures and other green initiatives. The green finance of different products are as follows, shown in the table, Table-6.9.2.

Table-6.9.2: Green Finances in different products (BDT in million) of Prime Bank Ltd.

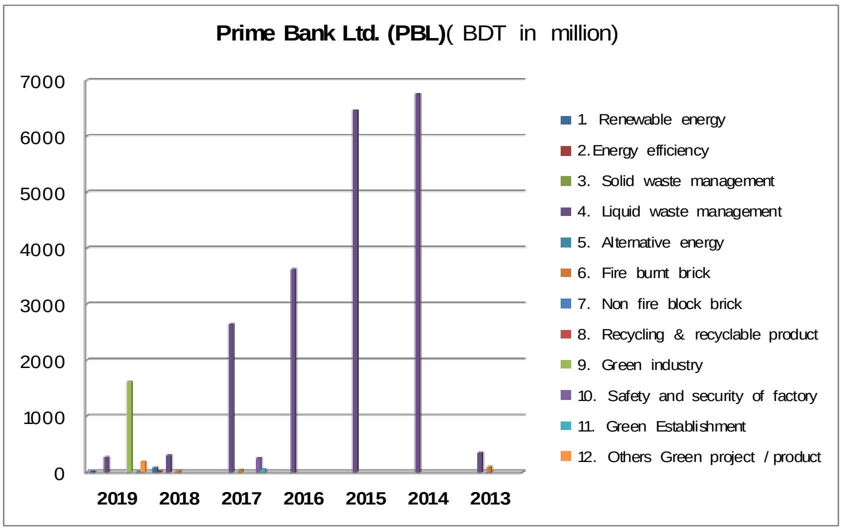
Green Products	Prime Bank Ltd. (PBL)			Type of Bank: Private Commercial Bank (PCB)				
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**Total**
1. Renewable energy	12.7	78.6						**91.3**
2.Energy efficiency		19.6						**19.6**
3. Solid waste management								
4. Liquid waste management	266.1	297.2	2646.08	3631.5	6467.72	6757.46	346.28	**20412.34**
5. Alternative energy								
6. Fire burnt brick		28	40				94.42	**162.42**
7. Non fire block brick								
8. Recycling & recyclable product								
9. Green industry	1611.4							**1611.4**
10. Safety and security of factory			253.85					**253.85**
11. Green Establishment	10		51.55					**61.55**
12. Others Green project /product	186							**186**
Total	**2086.2**	**423.4**	**2991.48**	**3631.5**	**6467.72**	**6757.46**	**440.7**	**22798.46**

Source: BB and Annual Reports of respective banks, 2019

The above table shows the comparison between different types of green products in terms of finance of the respective bank. Considering the total amount of green finance disbursed in different categories like Liquid Waste management, Green Industry, Fire Burnt Brick, Renewal Energy etc. had the major uptake.

On the other hand, the bank did not take big finance for other green products. The overall finance of the bank in 2019 was BDT 2086.2 million; BDT 2991.48 million in 2017’ BDT 6757.46 million in 2014. On the other hand, the bank carried down grade finance in the year 2018, 2016, and 2013 respectively. Therefore, the bank did not concentrate equal finance over the year and not carried out the green project finance year the year over last 7 years.

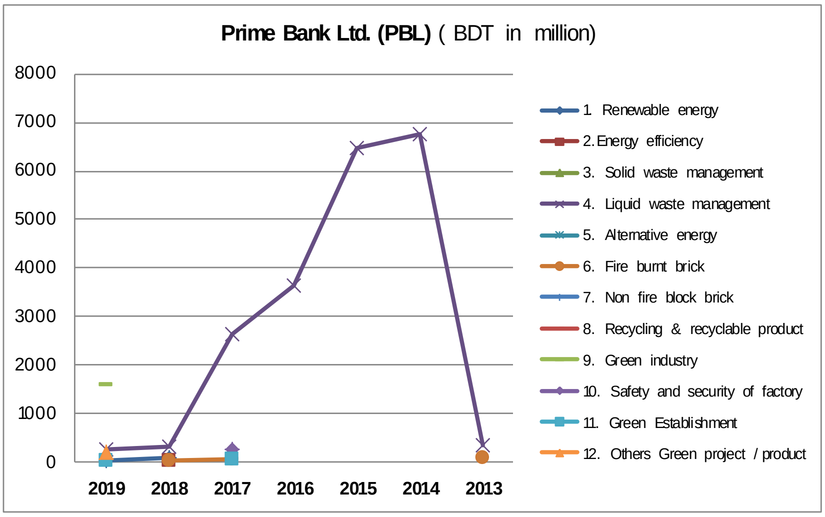
Figure 6.9.2: Green financing over the years by Prime Bank Ltd.



Source: BB and Annual Reports of respective banks, 2019

The graph demonstrates the trend in contribution of banks for green finance over the past 7 years. As per the above graphical presentation, the bank emphasized for only one green product like Liquid Waste Management, which is a big amount of finance in the last 7 years in BDT 20,412.34 million. Other green products like Green Industry, Recycle and Renewable Energy, Recyclable energy, Energy efficiency, Fire burnt brick, etc. showed a down-flow of finance over the last 7 years and not disbursed the money in year to year.

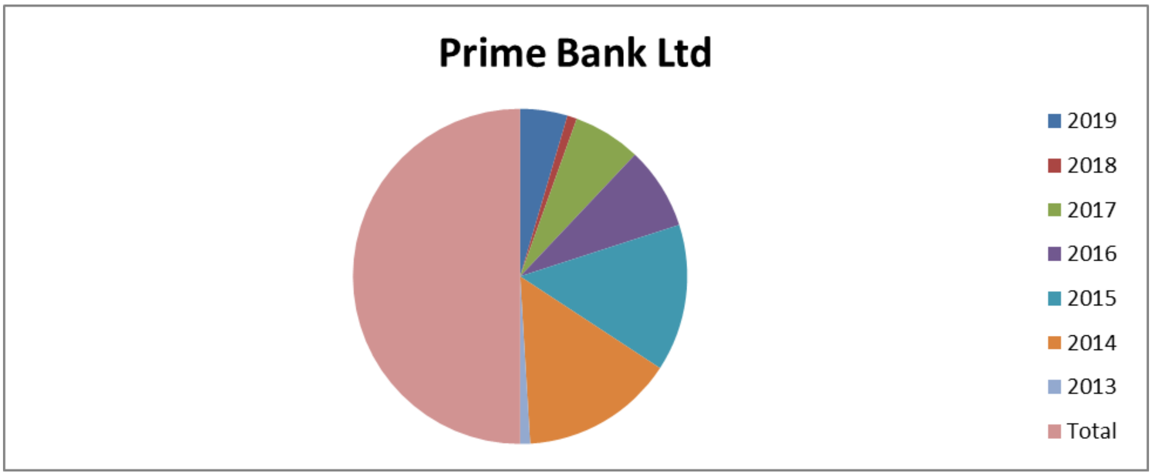
Figure 6.9.3: Green financing over different products by Prime Bank Ltd.



Source: BB and Annual Report of respective banks

The graphical picture represents the green finance of PBL as a significant increase in the year 2014 and then small decrease in 2015. The bank holds a low price-elasticity for various green products for last 7 years from 2019 to 2013. As per the presentation in the depicted graph, the trend of green finance was much more differed from year to year, as well as in sequences finance in various green products.

Figure 6.9.4: PIE Graph showing Prime Bank's green finance over the years



Source: BB and Annual Report of respective banks

The bank has given lots of finance in green products to protect the environment. The green finance is BDT 2,086.2 million in FY 2019 and BDT 440.70 million in FY 2013. It is mentioned that the bank disbursed the big amount of finance for green products in FY 2019 than that of the FY 2013. So, the bank's different types of good performances to ensure the guidelines of the sustainable finance according to Bangladesh Bank are appreciable.

6.9.3: Analysis of Green Finance by Prime Bank Ltd.

The analysis of green finance of Prime Bank Ltd. is presented in the table below, Table-6.9.3.

Table -6.9.3: Analysis of Green Finance of Prime Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.97506485	0.205724	1.508387832	2.133516	4.2588615	4.5854635	0.286935
Net profit as a % of Total Finance	0.93664555	1.063116	0.533977401	1.289568	1.4084878	1.62383709	1.19084
Net profits as a % of Green Finance	96.0598216	516.769	35.40053753	60.44334	33.071933	35.4127142	415.0216
Correlation between Net profit and Green Finance	0.306736105						
R square	0.094087038						
Average Green Finance	3,256.922857						
Standard Deviation (SD)	2,585.353022						

Source: Annual Reports, Prime Bank Ltd.

Here, the green finance by Prime Bank Ltd. is for 10 years from 2013 to 2019. Therefore, the average green finance by Prime Bank is Tk. 3,256.92286 million. The bank's Green Finance's SD is Tk. 2,585.35302 million. The standard deviation of green finance by Prime Bank is Tk. 2,585.35302 million, which is very high. The correlation between green finance and net profit is of moderate positive correlation with a value of 0.30673611. The reliability coefficient of the model is 0.09408704.

6.10 Trust Bank Ltd. (TBL)

Trust Bank Limited, the second generation leading commercial bank of the country was established in 1999 for providing inclusively affordable banking services. TBL has been evaluated as a leading, sound and stable commercial bank in Bangladesh. TBL has taken green initiatives such as ETP, HHK, Zigzag, renewable energy, recycling and recyclable products. TBL is actively looking for financing green projects and leading green industry.

6.10.1: Profile of Trust Bank Ltd. (TBL)

The performance of the bank is represented in the following table, Table-6.10.1

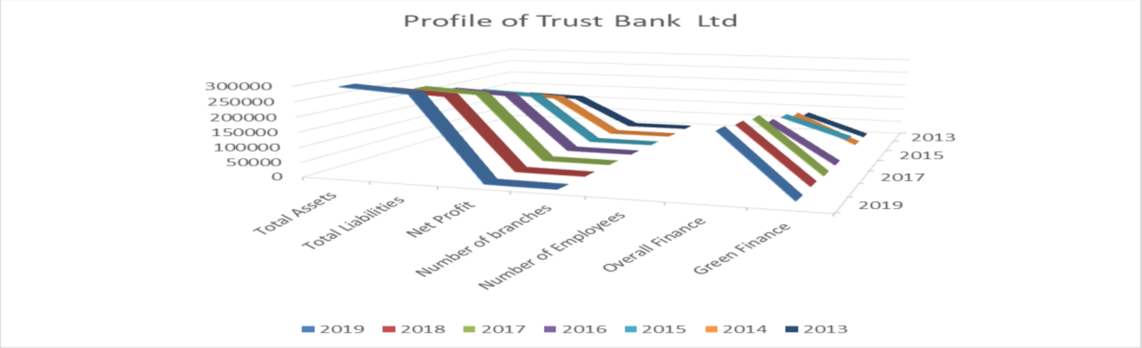
Table-6.10.1: Profile of Trust Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	294,892.13	259,638.37	239,770.63	210,241.52	180,229.57	145,346.12	116,739.57
Total Liabilities	279,952.43	246,750.76	227,658.45	199,066.35	170,717.52	137,217.43	109,873.79
Net Profit	2,031.56	1,892.58	1,729.61	2,008.84	1,534.33	1,299.20	3,24.43
No. of Branch	106	104	104	102	101	91	82
No. of Employees							
Overall Finance	210,766.74	197,128.06	184,910.70	141,987.43	130,614.65	106,886.08	79,279.58
Green Finance	**14,057.49**	**13,865.1**	**6,165.46**	**3,530.45**	**58,126.59**	**4,565.96**	**1,712.63**

Source: Annual Reports, Trust Bank Ltd. 2019

The table shows that TBL is such type of enriched bank of the country by investment in diverse activities, it is able contribute to build-up a nation. Every financial variable is rich like total asset, net profit and overall finance in the bank is very high.

Figure 6.10.1: Profile of Trust Bank Ltd.



Source: Annual Reports, Trust Bank Ltd.

6.10.2: Green Finance by Trust Bank Limited (TBL)

Trust Bank is a renowned private commercial bank of Bangladesh. The bank has many green initiatives to ensure the green environment. The bank's financed projects are renewable energy, ETP, Hybrid Hoffman Kiln (HHK), Zigzag, green brick field, recyclable items, etc. The bank has also introduced bio-gas plant, environment-pollution free secured factories for workers, electronics banking and SMS banking of all kind of services. The green finance in different products are presented in the following table, Table No. 6.10.2.

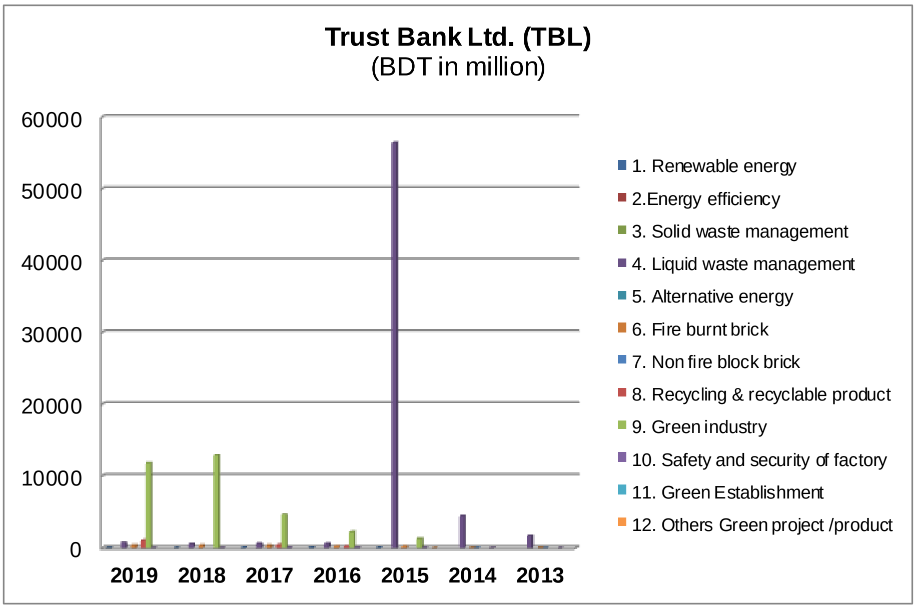
Table-6.10.2: Green Finance in Different Products (BDT in million) of Trust Bank Ltd.

Green Products	Trust Bank Ltd. (TBL)			Type of Bank: Private Commercial Bank (PCB)				
Financing category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**Total**
1. Renewable energy	25.69	25.5	109.2	93.51	76.82			**330.72**
Energy efficiency								
3. Solid waste management								
4. Liquid waste management	751.52	565.65	603.06	599.46	56,471.98	4,470.89	1,687.38	**65,149.94**
5. Alternative energy								
6. Fire burnt brick	372.47	370.45	361.77	284.54	263.05	60	25.25	**1,737.53**
7. Non-fire block brick						25.5	-	**25.5**
8. Recycling & recyclable product	1062.37		461.15	272.52				**1,796.04**
9. Green industry	11,841.94	12,900	4,604.59	2,254.73	1,273.96			**32,875.22**
10. Safety and security of factory	3.5	3.5	25.69	25.69	25.69	9.57	-	**93.64**
11. Green Establishment								
12. Others Green project /product					15.09			**15.09**
Total	**14,057.49**	**13,865.1**	**6,165.46**	**,3530.45**	**58,126.59**	**4,565.96**	**1,712.63**	**102,023.68**

Source: BB and Annual Reports of respective bank, 2019

The above table, as per the data presented, considers total amount of finances disbursed in different products for 7 years from 2019 to 2013, are Liquid Waste Management BDT 65,149.94 million; Green Industry BDT 32,875.22 million; Recycling & Recyclable and Renewable Energy BDT 1,796.04 million; Fire Burnt Brick BDT 1,737.53 million; Renewable Energy BDT 330.72 million. The green products in Liquid Waste Management is BDT 14,057.49 million in 2019; BDT 13,865.1 million in 2018; BDT 6,165.46 million in 2017. The bank also huge finances for last 7 years from 2019 to 2013 for Liquid Waste Management, Green industry, Recycling & Recyclable and Renewable Energy, Fire-burnt Brick, Renewable Energy, Safe and secured factory, etc. The banks refinancing schemes have been recorded at BDT 641.15 million against 2,934 bio-gas plants with gas, milk, slurry and organic fertilizer in different locations of the country. TBL extended finance for installation of 4,197 Solar-Energy Systems, and became equally concerned with carbon emission and waste management. Financing in ETPs and auto brick fields, and green industry, i.e., Total Green Finance to Total Finance is 25.69,0% 641.26,5% 110.26,1% 3.50,0% 372.47,3% 1,062.37,7%. Finances in ETP (new), factories' safety & security, solar power, biogas plants, brick kiln, recycling PET bottle plant, etc. are Tk. 11,841.94, or 84%.

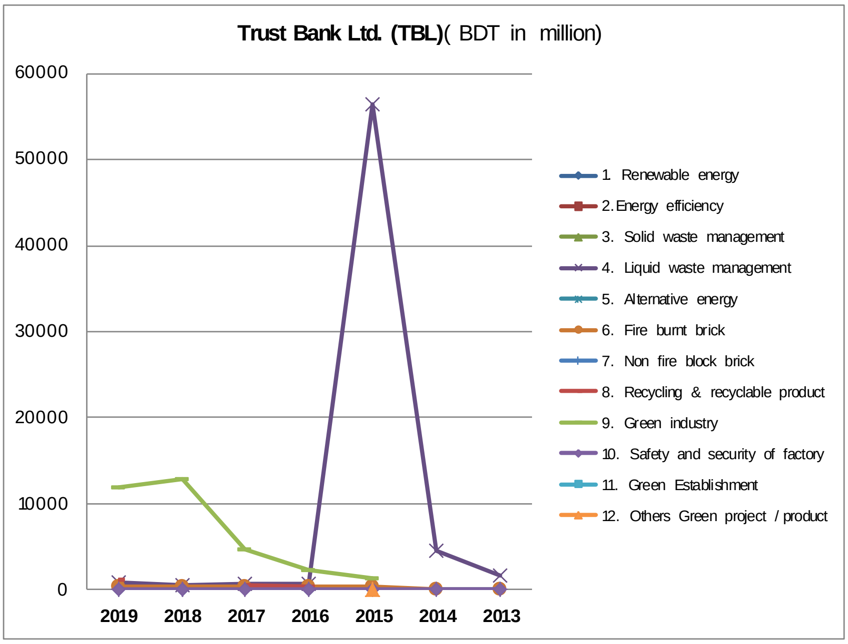
Figure 6.10.2: Green financing over the years by Trust Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

As per the above graphical chart, green products like Liquid waste management, green industry and recycle and renewable energy, etc. had the major uptake. The bank's big amount of finance is for the green products for last 7 years from 2019 to 2013. The green products' finances of 2019, 2018 and 2017 are very high, with a fall during 2016 to 2013.

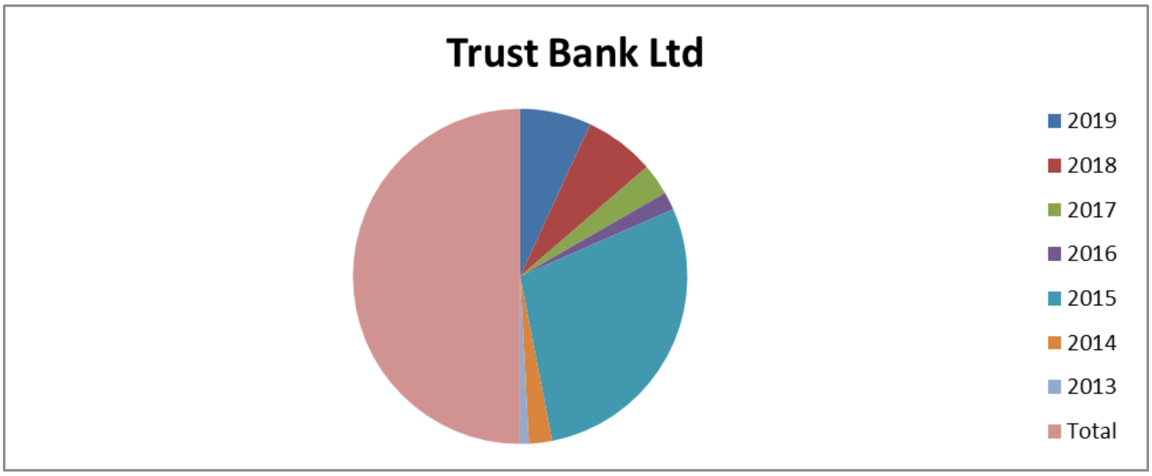
Figure 6.10.3: Green financing over different products by Trust Bank Ltd.



Source: BB and Annual Report of respective banks, 2019

The graph represents the higher price elasticity for various green products for last 7 years from 2019 to 2013. The trend of finance differs from year to year as is depicted in the above graph. So, the bank tried to set better concentration for green products' finances in comparison to that of other banks.

Figure 6.10.4: PIE Graph showing Trust Bank's Green finance over the years



Source: BB and Annual Report of respective banks, 2019

The bank has also green finance to different green projects to ensure the protection of environment.

The green finance is BDT 14,057.49 million in FY 2019 and BDT 1,712.63 million in FY 2013. The regulatory body of the bank has better initiatives for the green products.

06.10.3: Analysis of Green Finance by Trust Bank Ltd.

The analysis of green finance of Trust Bank Ltd. is given in the table below, Table-6.10.3.

Table -6.10.3: Analysis of Green Finance of Trust Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	6.669690863	7.03355	3.334290552	2.486452	44.502351	4.27180041	2.160241
Net profit as a % of Total Finance	0.963890223	0.960076	0.935375833	1.414801	1.1746998	1.21549972	0.409223
Net profits as a % of Green Finance	14.45179758	13.64996	28.05321906	56.9004	2.6396353	28.4540381	18.94338
Correlation between Net profit and Green Finance	0.14758764						
R square	0.021782111						
Average Green Finance	14,574.81143						
Standard deviation (SD)	19,815.13166						

Source: Annual Reports, National Bank Ltd.

Here, the green finance by Trust Bank Ltd. is presented for 10 years from 2013 to 2019. Therefore, the average green finance of Trust Bank is Tk. 14,574.8114 million. Trust Bank's Green Finance's SD is 19,815.1317 million. The standard deviation of green finance by Trust Bank is 19,815.1317 million which is high. The correlation between green finance and net profit is of moderate positive correlation, and the value is 0.14758764. The reliability coefficient of the model is 0.02178211.

6.11 United Commercial Bank Ltd. (UCBL)

UCBL is a second-generation renowned private commercial bank of the country. The bank played a vital role in nourishing the leading entrepreneurs in Bangladesh. UCBL has introduced many green projects for the green industry, such as, waste management, green brick manufacturing and ready-made garments. The bank also provides internet banking, U-cash, Pay-cash and SMS banking, etc.

6.11.1: Profile of United Commercial Bank Ltd. (UCBL)

The multiple financial activities of UCBL are shown in the Table-6.11.1.

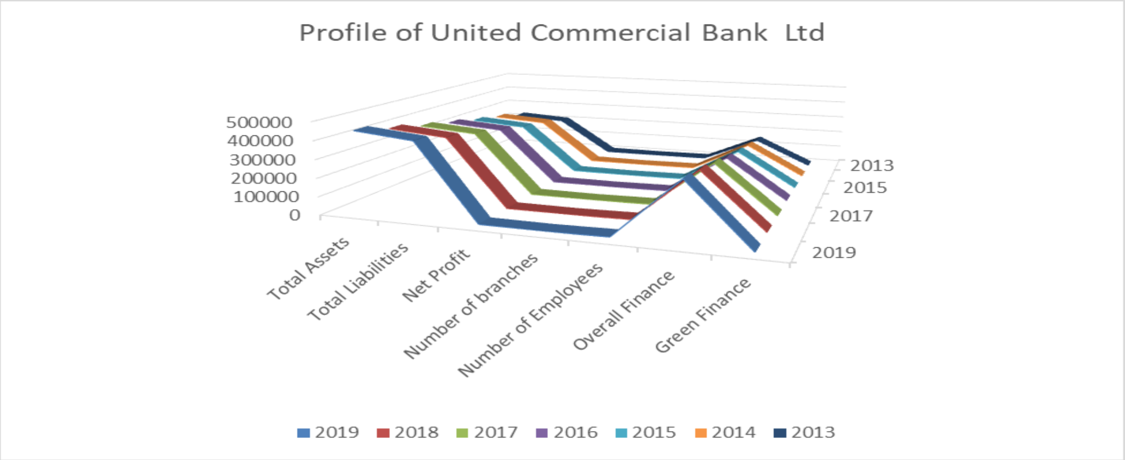
Table-6.11.1: Profile of United Commercial Bank Ltd.

							In million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Total Assets	446,760.12	402,749.10	363,314.80	329,720.78	293,847.23	266,100.74	226,333.13
Total Liabilities	413,977.10	372,848.85	336,804.54	303,964.46	268,258.41	243,609.20	205,828.17
Net Profit	2,772.04	2,368.95	2,433.91	2,628.63	3,977.34	3,668.73	3,065.41
No. of Branch	195	187	178	168	158	148	139
No. of Employees	4,988	4,982	4,459	4,152	3,837	3,679	3,445
Overall Finance	322,728.14	294,671.94	261,002.88	223,697.18	197,413.64	174,146.10	148,664.86
Green Finance	**590.59**	**2,574.85**	**419.98**	**1,826.5**	**953.16**	**538.91**	**-**

Source: Annual Report, United Commercial Bank Ltd. 2019.

The above chart shows that the bank’s financial position has been improving in years. The financial position variables, like total asset, overall finance and net profit also improved in years. Green finance is BDT 590.59 mill. in FY 2019 and BDT 538.91 mill. in FY 2013.

Figure 6.11.1: Profile of United Commercial Bank Ltd.



Source: Annual Report, UCBL

6.11.2: Green Finance by United Commercial Bank Limited (UCBL):

UCBL is leading private commercial bank of Bangladesh. The bank has many green initiatives to save the environment. The bank also refinances programs in green sector, like introducing Green Finance, incorporation of Environment & Social Risk in CRM, etc. As per the policy guidelines of Bangladesh Bank, the bank has many green initiatives which are Waste management, Brick manufacturing, Ready-made garments, Textile and Garments industry, green industries, etc. The bank has more initiatives for the worker's safety and security. The products are automatic teller machine, u-cash, pay-cash, SMS banking, on-line banking, UCB express and ATM services designed to decrease carbon emission. UCBL has green finance for 7 years in different products in the following table, Table-6.11.2.

Table-6.11.2: Green Finance in different products (BDT in million) of UCBL.

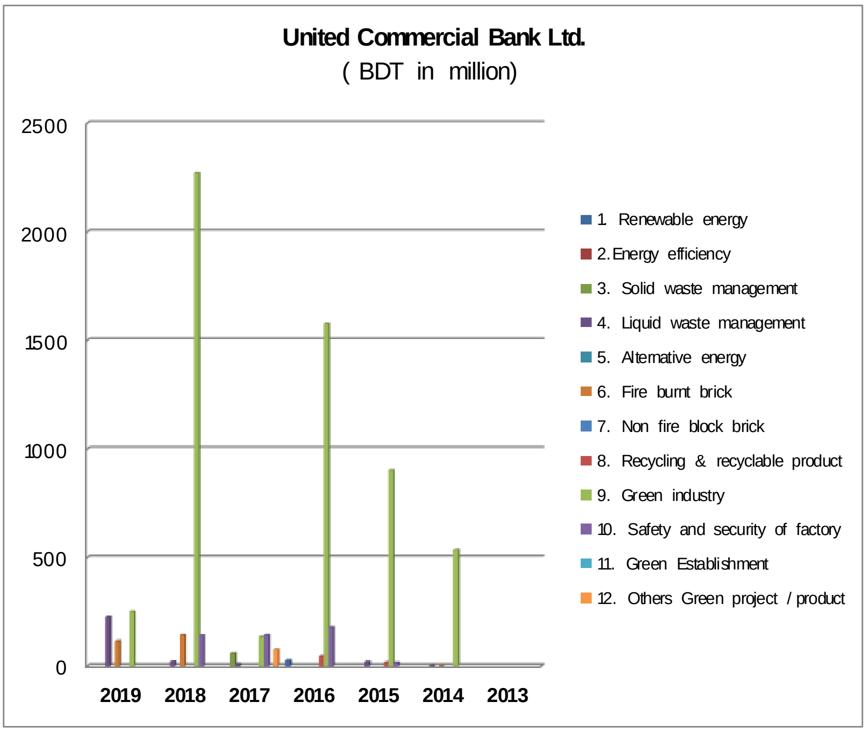
Green Products	United Commercial Bank Ltd. (UCBL)			Type of Bank: Private Commercial Bank (PCB)				
Financing Category	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**Total**
1. Renewable energy				25.6				**25.6**
2. Energy efficiency								
3. Solid waste management			57.7					**57.7**
4. Liquid waste management	225.5	20	10		18.76	2.62		**276.88**
5. Alternative energy								
6. Fire-burnt brick	115.5	142.04				1.52		**259.06**
7. Non-fire block brick								
8. Recycling & recyclable product				45.1	16.2			**61.3**
9. Green industry	249.59	2272.49	134.9	1576.8	902.67	534.77		**5671.22**
10. Safety and security of factory		140.32	142.08	179	15.53			**476.93**
11. Green Establishment								
12. Other Green project /product			75.3					**75.3**
Total	**590.59**	**2574.85**	**419.98**	**1826.5**	**953.16**	**538.91**	**0**	**6903.99**

Source: BB, Annual Reports of Respective Banks, 2019

The presenting table shows that the contribution of green finance is insignificant in the context of disbursements in different products. This finance is different in different years. The bank disbursed Tk. 590.59 million in 2019; Tk. 2,574.85 million in 2018; Tk. 419.98 million in 2017 and Tk. 1,826.5 million in 2016 and at starting time, Tk. 538.91 million in 2014. On the other hand, the bank has zero finance in the year 2013. It is noted that the bank's finance has declining trend from year to year. But in the year 2018, the bank has huge amount of finance, i.e., Tk. 2,574.85 million in various projects especially in green industry.

On the other hand, in the year 2017 and 2014 minimum investments was Tk. 419.98 million and Tk. 538.91 million respectively. So, the bank especially has big amount of investment in the years 2016 to 2018. The bank tried to establish green industry and concentrate on the disbursements of the money in every year.

Figure 6.11.2: Green financing over the years by UCBL

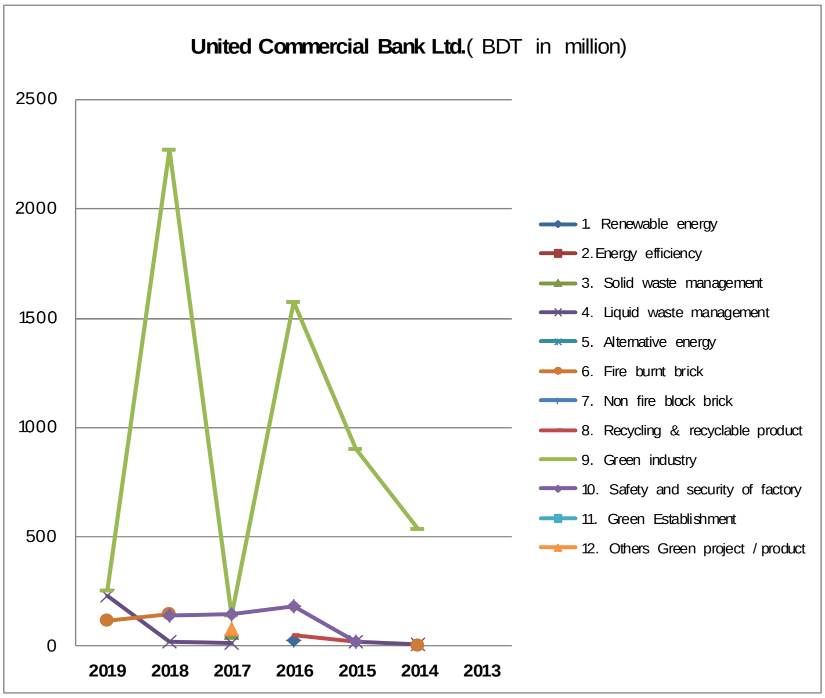


Source: BB and Annual Report of respective banks, 2019

As per the graphical presentation, the bank's finance in Green Industry in the year 2018 is high, and then the next high is in the year 2016. The other green products, i.e., Liquid Waste Management, Safety and Security of factory and fire-burn brick, etc. are financed in small amount in the years 2014 to 2019.

Graph of green finance's trend is as follows.

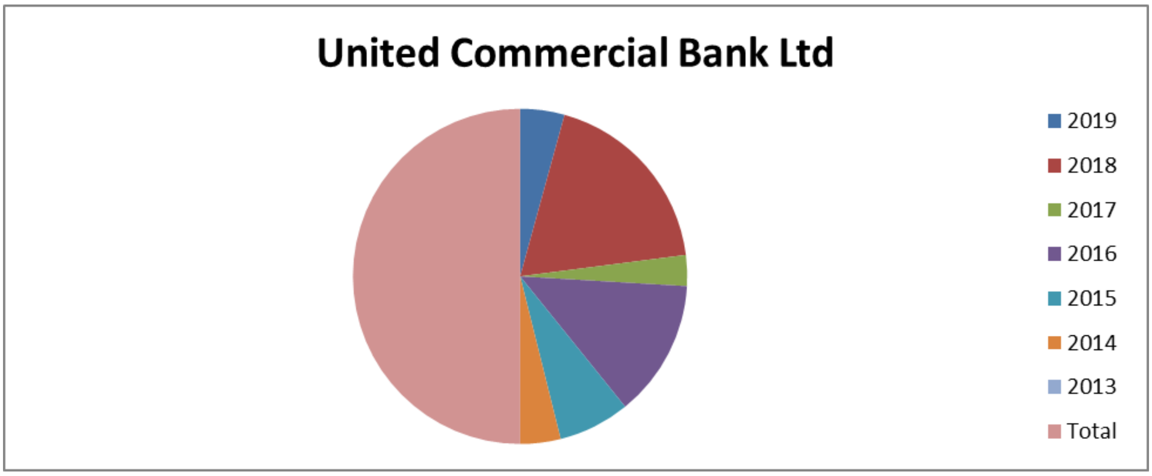
Figure 6.11.3: Green financing over different products by UCB Ltd.



Source: BB and Annual Report of respective banks, 2019

The graphical presentation above demonstrates the bank's trend as in Green Finance. No ideal presentation is shown in the graph. It means that the bank did not offer equal finances over all the green products.

Figure 6.11.4: PIE Graph of United Commercial Bank's green finance over the years



Source: BB and Annual Report of respective banks, 2019

The bank has very special focus on RMG, import-export, agriculture, etc. The bank has disbursed Tk. 590.59 million in different projects under various green initiative or products. The bank's green initiatives and works for green ways play important role.

6.11.3: Analysis of Green Finance by UCBL

The analysis of green finance of United Commercial Bank Ltd. is given below, Table-6.11.3.

Table -6.11.3: Analysis of Green Finance by UCBL

							In Million BDT
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Green Finance as a % of Total Finance	0.182999227	0.873802	0.160910102	0.816506	0.4828238	0.30945855	0
Net profit as a % of Total Finance	0.858939664	0.803928	0.932522277	1.175084	2.014724	2.10669662	2.06196
Net profits as a % of Green Finance	469.3679202	92.00342	579.5299776	143.9162	417.27937	680.768588	#DIV/0!
Correlation between Net profit and Green Finance	-0.386742826						
R square	0.149570013						
Average Green Finance	986.2842857						
Standard Deviation	901.9216197						

Source: Annual Report, UCBL

Here, in the above table, the green finance by United Commercial Bank Ltd. is presented for 10 years from 2013 to 2019. Therefore, the average green finance of United Commercial Bank is 986.284286 million. United Commercial Bank's Green Finance's SD is 901.92162 million.

The Standard Deviation of green finance by United Commercial Bank is 901.92162 million which is very low. The correlation between green finance and net profit is of moderate positive correlation. The correlation value is 0.38674283. The reliability coefficient of the model is 0.149570010.

6.12 Green Financing by Banks in Bangladesh

Bangladesh Bank has an important role to environmental finance. As per the policy guidelines of Bangladesh Bank, all scheduled commercial banks are mandatorily required to finance for the green projects and products. Bangladesh Bank directed all commercial banks and financial institutions to formulate strategic plan and guidelines for green financing. Commercial bank has constructed the high-power committee for establishing the green banking cell.

The committee will allocate adequate fund for green banking. Commercial banks have set-up an independent green banking unit. A senior executive of the bank is responsible for this unit and is required to report in due time to the high-powered committee. Green finance by banks in different products for SCBs, DFIs, PCBs and FCBs are presented in the table no. 6.12.1.

6.12.1 Green finance by group of banks in different products

In the figure below, Green finance by group of banks in different products is shown.

Table 6.12.1: Green finance by group of banks in different products

Category of Green Finance	SCBs					DFIs					PCBs					FCBs				
	2013	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
Renewable energy		262.36	107.4	44.4	47.9	-	0.84	5.8	4.2	4.3	-	1475.20	2284.2	1605	2202.5	-	624.69	554.5	182	330.1
Energy efficiency		4.64	92	10.1	0	-	2.14	0	0	2.1	-	400.79	1400.7	2394.3	3118.8	-	0	0	.6	0
Solid waste management		5.87	14.9	0	0	-	2	0	0	0	-	1205.63	2112.7	12.2	7.3	-	1193.43	0	0	0
Liquid waste management		2963.68	22	26.3	101.3	-	2466.09	0	0	0	-	266460.23	1755.5	4326.5	8678.2	-	75335.17	52.5	36.2	15.3
Alternative energy		0	17.3	160.0	0	-	0	0	0	0	-		0	164.8	132.7	-	0	0	0	0
Fire burnt brick		0	1797.3	1003.8	441.1	-	0	34	25.3	11.9	-		5292.3	5353.9	4646.6	-	0	0	0	0
Non fi re block brick		1403.09	0	0	1	-	23.08	0	0	0	-	3546.38	20.5	169.8	192.6	-	0	0	0	0
Recycling & recyclable product		0	0	99.1	283.2	-	0	8.9	0	0	-		2376.8	4179.6	5813	-	0	26.8	80	0
Green industry		13.28	420	380	481.8	-	0	0	0	0	-	1.68	831.1	4106.2	4212.2	-	0	2638.3	283.6	152.6
Safety and security of factory		0	0	0	40	-	0	0	0	0	-		236.4	1817.1	1438	-	0	1.5	34.8	53.3
Misc.		0	0	0	9.7	-	0	0	0	0.6	-		0	0	10.3	-	0	0	0	0
Others		46.50	596.3	290.1	1478.4	-	77.61	37.4	.6	0	-	16667.18	3788.4	467.9	126.3	-	0	0	151.7	0
Total		**4699.42**	**3067.2**	**2013.7**	**2884.4**	-	**2569.76**	**86.1**	**30.1**	**18.9**	-	**273089.91**	**20098.6**	**24597.4**	**30578.5**	-	**77153.29**	**32733.6**	**768.8**	**551.3**

Source: Sustainable Finance Department, BB

6.12.2 Overall Green Finance by the Sample Banks

The Nationalized Banks of Bangladesh and other scheduled banks have taken necessary steps to finance the green projects and products directed by the Central Bank. As per the above table, the green finance at a glance is shown that for scheduled commercial banks, direct financial institutions, private commercial banks, and foreign commercial banks in the years of 2013 to 2019. As per the policy guidelines of Bangladesh Bank, there are incorporated of 12 categories of green products to finance by all the scheduled commercial banks. It has been found that there was no finance in 12 categories green products in the year 2013 and the scheduled commercial banks financed amounting tk. 4,699.42 million in the year, 2014. Now, the year-wise overall green finance by the 10 sample banks is shown in the table below, Table-6.12.2.

Table-6.12.2: Year-wise Overall Green Finance by the Sample Banks

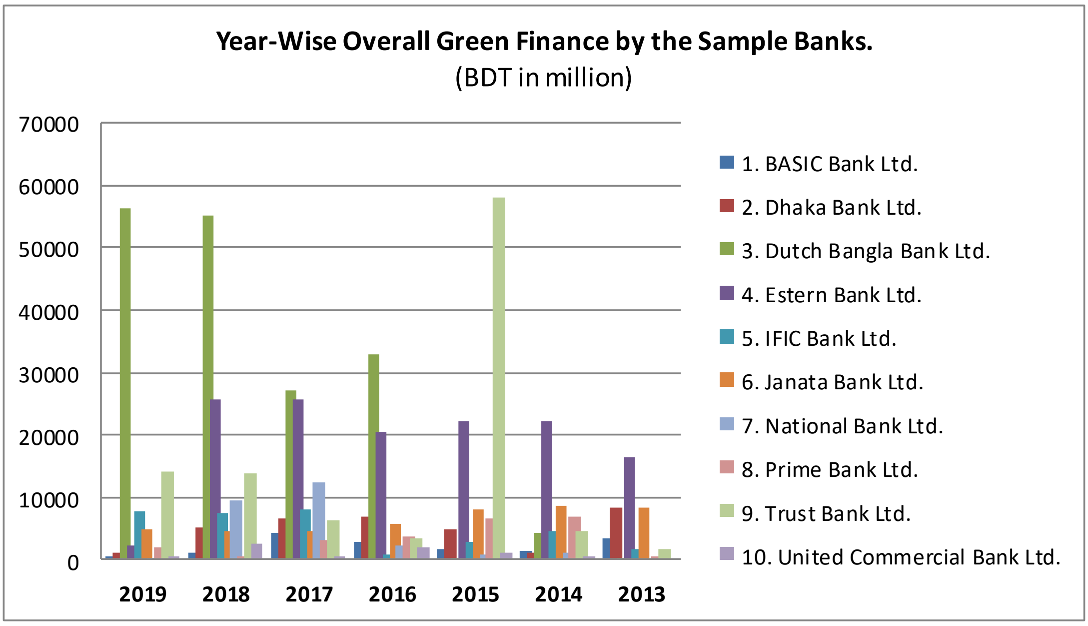
In million BDT

Name of the Bank	2019	2018	2017	2016	2015	2014	2013	Total
1. BASIC Bank Ltd.	620.91	1,207.63	4,390.55	2,808.58	1,633.07	1,370.33	3,307.29	**15,338.36**
2. Dhaka Bank Ltd.	1,178.51	4,982.27	6,461.85	6,783.9	4,825.5	1,178.54	8,411.95	**33,822.52**
3. DBBL	5,6474.01	55,259.9	27,140.24	32,823.12	283.58	4,292.05	100	**17,6372.9**
4. Eastern Bank Ltd.	2,356	25,632.8	25,633	20,399.15	22,148.2	22,192	16,497	**134,858.15**
5. IFIC Bank Ltd.	7,681.82	7,452.72	8,024	709.66	2,774	4,565.96	1,712.63	**32,920.79**
6. Janata Bank Ltd.	4,849.9	4,622.9	4,652.9	5,678	7,962	8,567	8,263	**44,595.7**
7. NBL	337.6	9,329.4	12,470.38	2,262.65	698.89	938.7	-	**26,037.62**
8. Prime Bank Ltd.	2,086.2	423.4	2,991.48	3,631.5	6,467.72	6,757.46	440.7	**22,798.46**
9. Trust Bank Ltd.	14,057.49	13,865.1	6,165.46	3,530.45	58,126.59	4,565.96	1,712.63	**102,023.68**
10. UCBL	590.59	2,574.85	409.98	1,826.5	953.16	538.91		**6,893.99**
Total	**90,233.03**	**125,350.97**	**98,339.84**	**80,453.51**	**105,872.71**	**54,966.91**	**40,445.2**	**595,662.17**

Source: BB and Annual Reports of respective banks, 2019.

As per the policy guidelines of Bangladesh Bank, all the scheduled banks have financed to various green products and disbursed the money from year to year. The table presented that the year-wise overall green finance in the 10 sample commercial banks in different types of green products for 7 years from 2013 to 2019. The highest finance is by the Trust Bank, amounting Tk. 102,023.68 million. Every bank has financed remarkable amount as per the instruction of Bangladesh Bank. The starting investment of 10 banks amounted to Tk. 40,445.20 million in 2013. The green finance in 7 years from 2013 to 2019 is the highest finance amounting Tk. 12,535.97 million in 2018; Tk. 105,872.71 million in 2015 and Tk. 98,339.84 million in 2017. Only for the social responsibility and social safety the bank has invested in the big amount for green establishment. The total amounts of green finance disbursed in different categories by the bank are invested in the green products like Liquid Waste Management, Green Industry, Fire Burnt Brick; Renewable Energy, etc. and are remarkable. Further, it may be mentioned that the bank has poor or no profit for the investment of the green establishment, and that is only for social responsibilities and social safety of the country.

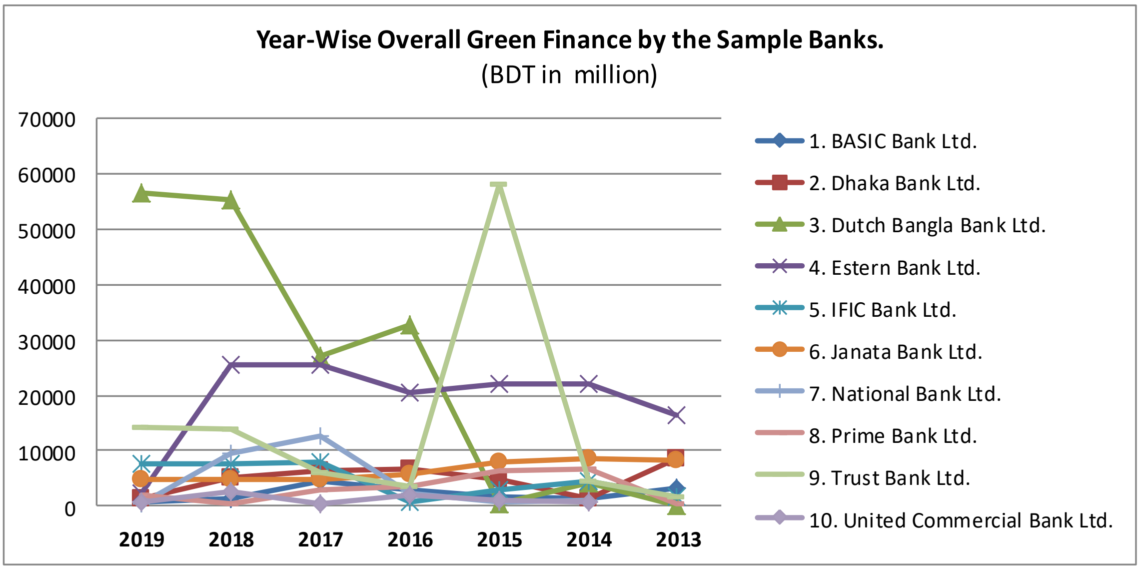
Figure 6.12.1: Year-Wise Overall Green Finance by the Sample Banks, bar chart



Source: BB and Annual Reports of respective banks

As per the graph, the highest amount, bank has financed in various green products, i.e., Green Industry, Renewable Energy and Liquid Waste Management is in the year 2015. The bank has not financed and disbursed the money in the equal way. As per the policy of respective bank, project money has been disbursed at the advantage time. Eastern Bank has big finance amounting Tk. 134,858.15 million and 2nd highest finance by Trust Bank amounting Tk. 102,023.68 million in the last 7 years. Every bank has financed remarkable amount at the instruction of Bangladesh Bank. The starting investment of 10 banks amounted to Tk. 40,445.20 million in 2013. The graph shows that to all green products there is no equal position over the years. The investment is also for Safety and Security purpose in the year 2019 to 2017. On the other hand, the bank financed Green Industry in year 2013 to 2015 and Renewable Energy in equal balance from 2013 to 2019. The banks' overall finances were better for green products to save the environment, as well as to protect the nation.

Figure 6.12.2: Year-Wise Overall Green Finance by the Sample Banks, Line graph



Source: Annual Report of respective banks and BB

As per the graphical representation, the green finance of the Trust Bank has ideal trend and this trend is rising up in year to year. The finance of Dutch-Bangla Bank also shows a upward trend, but in some years also decline.

The National Bank's finance trend shows equal trend from 2013 to 2019. According to the graphical trend, the sample banks' green finance shows the trend of green finance was differed from year to year, as well as the sequences of finances varies in green products.

6.13 Chapter Summary

This chapter shows the financial position of all sample banks. The information incorporates the bank's 7 years' position from 2013 to 2019. Every bank's total assets, total liabilities, net profit, number of the branches, number of the employees, overall finance, and green finance are also compiled for the dissertation.

CHAPTER SEVEN:

DATA ANALYSES OF GREEN FINANCING BY BANKS

Data analyses of Green Financing by banks and testing of hypothesis of major observations as per the set objectives is given below.

7.1 Hypothesis Testing

Hypotheses have been tested by using different statistical tools in the sections below.

7.1.1 One sample T-Test:

The t-test is tool for statistical hypothesis test in which the test statistic follows a t-distribution under the null hypothesis. A t-test is most commonly applied when the test statistic would follow a normal distribution of the value of a scaling term in the test statistic. For the statistical justification, we need to get t-test.

$$t = \frac{m - \mu}{s / \sqrt{n}}$$	Here, t = Students T test, m = mean, μ = Theoretical value, S = Standard deviation n = Variable set size

Here, we need population average of green finance.

Green Finance	
	BDT in million
Year	Amount
2020	1,11,215.34
2019	1,02,000.61
2018	67.00
2017	41.00
2016	38.00
Total	1,13,362.00
Source: Annual Report of BB, 2016-20	

Green Finance of all banks is BDT 1,13,362.00 million. Green Finance average of all banks for 5 years is Tk. 22,672.40 million. Therefore, the Population Average is BDT Tk. 22,672.40 million.

The 10 sample banks' green finances are shown in the table below.

Average Green Finance		
		BDT in million
1	BASIC Bank Ltd.	2,317.861429
2	Dhaka Bank Ltd.	4,831.788571
3	Dutch-Bangla Bank Ltd.	25,196.128570
4	Eastern Bank Ltd.	16,422.592860
5	IFIC Bank Ltd.	4,560.112857
6	Janata Bank Ltd.	6,370.814286
7	National Bank Ltd.	4,339.603333
8	Prime Bank Ltd.	3,256.922857
9	Trust Bank Ltd.	14,574.811430
10	United Commercial Bank Ltd.	986.284285
	Total	82,856.919900
Source: Annual Report of respective banks, 2019		

Here, the green finance of 7 years for 10 banks is Tk. 82,856.9199 million. Therefore, the sample average is Tk. 8,285.69199 million (= 82,856.9199 / 10).

The standard deviation of 10 banks is given below:

Standard Deviation (SD)		
		BDT in million
1	BASIC Bank Ltd.	1,298.946760
2	Dhaka Bank Ltd.	2,768.897157
3	Dutch-Bangla Bank Ltd.	24,601.890280
4	Eastern Bank Ltd.	10,145.167640
5	IFIC Bank Ltd.	3,238.571974
6	Janata Bank Ltd.	1,813.609485
7	National Bank Ltd.	5,218.396360
8	Prime Bank Ltd.	2,585.353022
9	Trust Bank Ltd.	19,815.131660
10	United Commercial Bank Ltd.	901.921619
	Total	72,387.885479
Source: Annual Report of respective banks, 2019		

Here, N = 10. So, calculation of t-test is given below:

Below 30 = T-Test, Over the 30 = Z Test, $t = \dfrac{m - \mu}{s / \sqrt{n}}$.

Here, M – Average green finance of sample banks, μ = Average green finance of all banks

S = SD of Green Finance of sample banks, n = 10.

One sample t- test is given below:

$$\frac{8285.69199-22672.4}{7238.78854797/\sqrt{10}}$$

$$=\frac{-14386.7080}{7{,}238.78/3.1622}$$

$$=\frac{14386.7080}{2317.62}$$

$$=6.2075$$

When, sample size = 10, Table value, Pr = 0.001 and df = 0.002. Here, the critical value is 4.144. Hence, the calculated value is 6.2075 million, which is greater than the critical value (6.2075 > 4.144). So null hypothesis should not be accepted. On the other hand, the average green finance of 10 sample banks is BDT 8,258.69 million, which is very much lower than the population average (average green finance of all banks in Bangladesh) in BDT 22,672.40 million (8,258.69 < 22,672.40). Therefore, null hypothesis is rejected.

7.2 Green Finance Perception of Stakeholders of Selected Sample Banks

Perception of stakeholders of selected sample banks about green financing of bankers and borrowers were analyzed by relevant tools.

7.2.1 Analysis of Opinion Survey (Bankers)

7.2.1.1 - A. Opinion survey of bankers involved with Green Finance

Opinion survey of bankers assigned with Green Finance in the commercial banks is done to determine awareness about and effect of Green Finance.

Questionnaire-Set 01: Respondents from bankers involved with Green Finance

7.2.1.1.1 Analysis of Frequency Distribution

Opinion survey of bankers data were summarized in the frequency distribution table to determine awareness about Green Finance.

Table 7.1 Analysis of Frequency(s) Distribution

Statistics-1

		"1"	"2"	"3"	"4"	"5"	"6"	"7"
N	Valid	20	20	20	20	20	20	20
	Missing	14	14	14	14	14	14	14

Statistics-2

		"8"	"9"	"10"	"11"	"12"	"13"	"14"
N	Valid	20	20	20	21	20	20	20
	Missing	14	14	14	13	14	14	14

Statistics-3

		"15"	"16"	"17"	"18"	"19"	"20"
N	Valid	20	20	20	20	20	20
	Missing	14	14	14	14	14	14

7.2.1.1.2 Impacts on Sustainability

Statement -01:

Sustainable finance being understood as improving the contribution of finance to long-term sustainable and inclusive growth.

"1"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	2.9	5.0	5.0
	Agree	12	35.3	60.0	65.0
	Strongly Agree	7	20.6	35.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 95% respondents have agreed and strongly agreed to the above statement. Sustainable finance is contributing to sustainable and inclusive growth to strengthening financial stability by considering material environmental, social and governance factors.

Statement-02:

Establishment of Bangladesh standard and label for green bonds and other sustainable assets.

"2"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	11.8	20.0	20.0
	Agree	10	29.4	50.0	70.0
	Strongly Agree	6	17.6	30.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Finding reveals that 80% respondents have agreed and strongly agreed to the statement.

2. There is strong standard for green bond and other sustainable assets.

Statement -03

Mismatched time horizons and short-termism versus long-term orientation are essential for sustainability.

"3"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	2.9	5.0	5.0
	Neutral	6	17.6	30.0	35.0
	Agree	5	14.7	25.0	60.0
	Strongly Agree	8	23.5	40.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Finding shows that 65% respondents have strongly agreed to the statement. It has also been found that 30% have shown their neutral position to the statement. Mismatched time horizons and short-termism versus long-term orientation, markets are influencing economic decision -making.

Statement -04:

Bangladesh could use to best align the investment and analyst community with long-term sustainability considerations in the real economy.

"4"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.9	5.0	5.0
	Neutral	2	5.9	10.0	15.0
	Agree	13	38.2	65.0	80.0
	Strongly Agree	4	11.8	20.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 85% respondents have agreed and strongly agreed to the above statement. Governance of the investment and analyst community should be aligned to ensure long-term sustainability considerations in the real economy.

7.2.1.1.3 Impacts on Environment

Statement -05:

Green Projects having positive impact on the environment.

"5"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	9	26.5	45.0	45.0
	Strongly Agree	11	32.4	55.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 100% respondents have agreed and strongly agreed to the above statement. Green Projects having positive impact on the environment. Paperless transactions and use of eco-friendly materials has increased. Green projects are reducing the electricity and water consumption. Overall green projects are impacting positively on our environment.

7.2.1.1.4 Role of Credit Rating Agencies

Statement -06.

Green credit ratings integrate sustainability and long term perspective.

"6"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	14.7	25.0	25.0
	Agree	9	26.5	45.0	70.0
	Strongly Agree	6	17.6	30.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 75% of respondents have agreed and strongly agreed to the above statement. Credit rating agencies should disclose relevant information by considering long-term risk factors.

7.2.1.1.5 Role of Banks for Enhancing Green Finance

Statement -07.

Bangladesh Bank has involved all scheduled commercial banks to invest in green projects for long term.

"7"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	2.9	5.0	5.0
	Agree	8	23.5	40.0	45.0
	Strongly Agree	11	32.4	55.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 95% respondents have agreed and strongly agreed to the above statement. Bangladesh Bank should involve all scheduled commercial banks more strongly on sustainability, particularly through long-term lending and project finance related to green finance or sustainable finance.

7.2.1.1.6 Role of Insurers

Statement -08.

Bangladesh Bank has involved insurance companies more strongly on sustainability.

"8"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	10	29.4	50.0	50.0
	Strongly Agree	10	29.4	50.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 100% respondents have agreed and strongly agreed to the above statement. Bangladesh Bank should involve insurers or insurance companies more strongly on sustainability, particularly through long-term investment. These investments should be insured by insurance companies. All investment in green projects is to be regulated by Bangladesh Bank.

Statement -09.

Society should be more aware on the contributions of financial institutions to Green Economy and Sustainable Climate Finance in Bangladesh.

"9"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	5.9	10.0	10.0
	Agree	12	35.3	60.0	70.0
	Strongly Agree	6	17.6	30.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 90% respondents have agreed and strongly agreed to the above statement. For mobilizing private capital for social dimensions of sustainable development. Society should be more aware on contributions of financial institutions to Green Economy and Sustainable Climate Finance in Bangladesh. Society should prefer green industries for long –term plan.

Statement -10.

Bangladesh Bank should provide a comprehensive solution for promoting the economic activities of green industries.

"10"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	11.8	20.0	20.0
	Agree	13	38.2	65.0	85.0
	Strongly Agree	3	8.8	15.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 80% of the respondents have agreed and strongly agreed to the statement.

Statement -11.

Bangladesh Bank should provide practical support for enabling businesses and entrepreneurs to take greening actions.

"11"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	5.9	9.5	9.5
	Agree	11	32.4	52.4	61.9
	Strongly Agree	8	23.5	38.1	100.0
	Total	21	61.8	100.0	
Missing	System	13	38.2		
Total		34	100.0		

It reveals that 90.50% respondents have agreed and strongly agreed to the above statement.

Statement- 12.

Green Financing is playing an important role in tackling climate change issues and environmental degradation in Bangladesh.

"12"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	5.9	10.0	10.0
	Agree	9	26.5	45.0	55.0
	Strongly Agree	9	26.5	45.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 90% respondents have agreed and strongly agreed to the above statement.

Statement- 13.

Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks. These policy guidelines are very effective for green financing of all scheduled commercial banks.

"13"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.9	5.0	5.0
	Neutral	2	5.9	10.0	15.0
	Agree	12	35.3	60.0	75.0
	Strongly Disagree	5	14.7	25.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 85% respondents have agreed to the above statement. Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks. These policy guidelines are very effective for green financing of all scheduled commercial banks.

Statement- 14.

The regulatory framework for green financing in Bangladesh is quite effective for inspiration, motivating, monitoring and controlling.

"14"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.9	5.0	5.0
	Disagree	6	17.6	30.0	35.0
	Neutral	1	2.9	5.0	40.0
	Agree	10	29.4	50.0	90.0
	Strongly Agree	2	5.9	10.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 60% respondents have agreed and strongly agreed to the above statement. But 30% respondents have shown their neutrality to the above statement. The regulatory framework for green financing in Bangladesh is quite effective for inspiration, motivating, monitoring and controlling. Therefore, regulatory framework should be strengthened further by Bangladesh Bank.

Statement- 15.

There is very high positive correlation between net profit and the investment in green financing in Bangladesh

"15"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	11.8	20.0	20.0
	Agree	10	29.4	50.0	70.0
	Strongly Agree	6	17.6	30.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 80% respondents have agreed and strongly agreed to the above statement. The future of green financing is very promising. Because it has already been proved that there is very high positive correlation between net profit and the investment in green financing in Bangladesh.

Statement- 16.

360 degrees angle supervision and monitoring are urgent for Green Financing required for sustainable investment. Green and clean technologies are needed.

"16"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	5.9	10.0	10.0
	Neutral	7	20.6	35.0	45.0
	Agree	8	23.5	40.0	85.0
	Strongly Agree	3	8.8	15.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It has been found that 75% respondents have agreed and strongly agreed to the above statement. 360-degree angle supervision and monitoring are urgent for Green Financing required for sustainable investment**.**

7.2.1.1.7 Overall Macroeconomic Impacts of Green Finance in Bangladesh

Statement- 17:

Green Agenda requires the investment of 1-2% of gross domestic product (GDP) in greening the economy for the next 15 years.

"17"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	8.8	15.0	15.0
	Agree	13	38.2	65.0	80.0
	Strongly Agree	4	11.8	20.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 85% respondents have agreed to the above statement.

7.2.1.1.8 Challenges for Green Finance by Banks in Bangladesh

Statement- 18:

Lack of policy enforcement, high risk and low return are among the most common challenges for green finance.

"18"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	5.9	10.0	10.0
	Neutral	3	8.8	15.0	25.0
	Agree	11	32.4	55.0	80.0
	Strongly Agree	4	11.8	20.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 75% respondents have agreed to the above statement.

Statement- 19.

Transition risk is the risk that can occur when a company is on a path to becoming carbon neutral, but is not yet there.

"19"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	7	20.6	35.0	35.0
	Agree	7	20.6	35.0	70.0
	Strongly Agree	6	17.6	30.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 65% respondents have agreed and strongly agreed to the above statement. Transition risk is the risk that can occur when a company is on a path to becoming carbon neutral, but is not yet there.

Statement- 20:
Implementation of green finance practices that save costs, increase revenue and increase share value.

"20"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	14.7	25.0	25.0
	Agree	8	23.5	40.0	65.0
	Strongly Agree	7	20.6	35.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

It reveals that 75% respondents have agreed and strongly agreed to the above statement.

7.2.1.2 Summary of Statements' Descriptive Analysis

Table 7.2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
"1"	20	3	5	4.30	0.571
"2"	20	3	5	4.10	0.718
"3"	20	2	5	4.00	0.973
"4"	20	1	5	3.95	0.887
"5"	20	4	5	4.55	0.510
"6"	20	3	5	4.05	0.759
"7"	20	3	5	4.50	0.607
"8"	20	4	5	4.50	0.513
"9"	20	3	5	4.20	0.616
"10"	20	3	5	3.95	0.605
"11"	21	3	5	4.29	0.644
"12"	20	3	5	4.35	0.671
"13"	20	1	5	4.00	0.918
"14"	20	1	5	3.30	1.174
"15"	20	3	5	4.10	0.718
"16"	20	2	5	3.60	0.883
"17"	20	3	5	4.05	0.605
"18"	20	2	5	3.85	0.875
"19"	20	3	5	3.95	0.826
"20"	20	3	5	4.10	0.788
Valid N (Listwise)	20				

```
T-TEST
  /TESTVAL=0
  /MISSING=ANALYSIS
  /VARIABLES=SFIG SFGB MTHDM GILTSC GFSPS ISLPCR BBLTPF BBICLTI
SACFIGE BBEEGS BBPSEBE GFTCCI BBCGMGF RFGFB FGFVP CBARGTT
DGARI LPEHRLR TRBCN GFPCS
  /CRITERIA=CI (.98).
```

7.2.1.3 Summary of Statistical Values and Descriptive Analysis

Table 7.3 Statistical Values and Descriptive Statistics

	N	Mean	Std. Deviation	Std. Error of Mean
"1"	20	4.30	0.571	0.128
"2"	20	4.10	0.718	0.161
"3"	20	4.00	0.973	0.218
"4"	20	3.95	0.887	0.198
"5"	20	4.55	0.510	0.114
"6"	20	4.05	0.759	0.170
"7"	20	4.50	0.607	0.136
"8"	20	4.50	0.513	0.115
"9"	20	4.20	0.616	0.138
"10"	20	3.95	0.605	0.135
"11"	21	4.29	0.644	0.140
"12"	20	4.35	0.671	0.150
"13"	20	4.00	0.918	0.205
"14"	20	3.30	1.174	0.263
"15"	20	4.10	0.718	0.161
"16"	20	3.60	0.883	0.197
"17"	20	4.05	0.605	0.135
"18"	20	3.85	0.875	0.196
"19"	20	3.95	0.826	0.185
"20"	20	4.10	0.788	0.176

Source: Values of twenty statements

7.2.1.4 T-Test : One-Sample Statistics at 98% Confidence Interval of the Difference

Table 7.4 One-Sample Test Values

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	98% Confidence Interval of the Difference	
					Lower	Upper
"1"	33.664	19	0.000	4.300	3.98	4.62
"2"	25.531	19	0.000	4.100	3.69	4.51
"3"	18.379	19	0.000	4.000	3.45	4.55
"4"	19.914	19	0.000	3.950	3.45	4.45
"5"	39.866	19	0.000	4.550	4.26	4.84
"6"	23.858	19	0.000	4.050	3.62	4.48
"7"	33.155	19	0.000	4.500	4.16	4.84
"8"	39.230	19	0.000	4.500	4.21	4.79
"9"	30.512	19	0.000	4.200	3.85	4.55
"10"	29.208	19	0.000	3.950	3.61	4.29
"11"	30.513	20	0.000	4.286	3.93	4.64
"12"	29.000	19	0.000	4.350	3.97	4.73
"13"	19.494	19	0.000	4.000	3.48	4.52
"14"	12.568	19	0.000	3.300	2.63	3.97
"15"	25.531	19	0.000	4.100	3.69	4.51
"16"	18.242	19	0.000	3.600	3.10	4.10
"17"	29.947	19	0.000	4.050	3.71	4.39
"18"	19.675	19	0.000	3.850	3.35	4.35
"19"	21.397	19	0.000	3.950	3.48	4.42
"20"	23.267	19	0.000	4.100	3.65	4.55

Source: Values of twenty statements

7.2.1.5 Analysis Twenty Statements with Statistics at 98% Confidence Interval

Statement -1: It has been observed that t value = 33.364; df = 19; Mean Difference = 4.300 and at 98% Confidence Interval of the Difference, Lower is 3.98 and Upper is 4.62.

Statement -2: It has been observed that t value = 25.531; df = 19; Mean Difference = 4.100 and at 98% Confidence Interval of the Difference, Lower is 3.69 and Upper is 4.51.

Statement -3: It has been observed that t value = 18.379; df = 19; Mean Difference = 4.000 and at 98% Confidence Interval of the Difference, Lower is 3.45 and Upper is 4.55.

Statement -4: It has been observed that t-value= 19.914; df=19; Mean Difference=3.950 and at 98% Confidence Interval of the Difference, Lower is 3.45 and Upper is 4.45.

Statement -5: It has been observed that t value = 39.866; df = 19; Mean Difference = 4.550 and at 98% Confidence Interval of the Difference, Lower is 4.26 and Upper is 4.84.

Statement -6: It has been observed that t value = 23.858; df = 19; Mean Difference = 4.050 and at 98% Confidence Interval of the Difference, Lower is 3.69 and Upper is 4.41.

Statement -7: It has been observed that t value = 33.155; df = 19; Mean Difference = 4.500 and at 98% Confidence Interval of the Difference, Lower is 4.22 and Upper is 4.78.

Statement -8: It has been observed that t value = 39.230; df = 19; Mean Difference = 4.500 and at 98% Confidence Interval of the Difference, Lower is 4.26 and Upper is 4.74.

Statement -9: It has been observed that t value = 30.512; df = 19; Mean Difference = 4.200 and at 98% Confidence Interval of the Difference, Lower is 3.91 and Upper is 4.49.

Statement -10: It has been observed that t value = 29.208; df = 19; Mean Difference = 3.950 and at 98% Confidence Interval of the Difference, Lower is 3.61 and Upper is 4.29.

Statement -11: It has been observed that t value = 30.513; df = 19; Mean Difference = 4.286 and at 98% Confidence Interval of the Difference, Lower is 3.99 and Upper is 4.58.

Statement -12: It has been observed that t value = 29.000; df = 19; Mean Difference = 4.350 and at 98% Confidence Interval of the Difference, Lower is 3.97 and Upper is 4.73.

Statement -13: It has been observed that t value = 19.494; df = 19; Mean Difference = 4.000 and at 98% Confidence Interval of the Difference, Lower is 3.57 and Upper is 4.43.

Statement -14: It has been observed that t value = 12.568; df = 19; Mean Difference = 3.300 and at 98% Confidence Interval of the Difference, Lower is 2.75 and Upper is 3.85.

Statement -15: It has been observed that t value = 25.531; df = 19; Mean Difference = 4.100 and at 98% Confidence Interval of the Difference, Lower is 3.76 and Upper is 4.44.

Statement -16: It has been observed that t-value= 18.242; df=19; Mean Difference=3.600 and at 98% Confidence Interval of the Difference, Lower is 3.19 and Upper is 4.01.

Statement -17: It has been observed that t value = 29.947; df = 19; Mean Difference = 4.050 and at 98% Confidence Interval of the Difference, Lower is 3.77 and Upper is 4.33.

Statement -18: It has been observed that t value = 19.675; df = 19; Mean Difference = 3.850 and at 98% Confidence Interval of the Difference, Lower is 3.35 and Upper is 4.35.

Statement -19: It has been observed that t value = 21.397; df = 19; Mean Difference = 3.950 and at 98% Confidence Interval of the Difference, Lower is 3.48 and Upper is 4.42.

Statement -20: It has been observed that t value = 23.267; df = 19; Mean Difference = 4.100 and at 98% Confidence Interval of the Difference, Lower is 3.65 and Upper is 4.55.

7.2.1.6 T-Test : One-Sample Statistics at 95% Confidence Interval of the Difference

Table 7.5 T-Test of One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error of Mean
"1"	20	4.30	0.571	0.128
"2"	20	4.10	0.718	0.161
"3"	20	4.00	0.973	0.218
"4"	20	3.95	0.887	0.198
"5"	20	4.55	0.510	0.114
"6"	20	4.05	0.759	0.170
"7"	20	4.50	0.607	0.136
"8"	20	4.50	0.513	0.115
"9"	20	4.20	0.616	0.138
"10"	20	3.95	0.605	0.135
"11"	20	4.29	0.644	0.140
"12"	20	4.35	0.671	0.150
"13"	20	4.00	0.918	0.205
"14"	20	3.30	1.174	0.263
"15"	20	4.10	0.718	0.161
"16"	20	3.60	0.883	0.197
"17"	20	4.05	0.605	0.135
"18"	20	3.85	0.875	0.196
"19"	20	3.95	0.826	0.185
"20"	20	4.10	0.788	0.176

Source: Statistical values of twenty statements

7.2.1.7 One-Sample T-Test Values at 95% Confidence Interval of the Difference

Table 7.6 One-Sample T-Test Values

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
"1"	33.664	19	0.000	4.300	4.03	4.57
"2"	25.531	19	0.000	4.100	3.76	4.44
"3"	18.379	19	0.000	4.000	3.54	4.46
"4"	19.914	19	0.000	3.950	3.53	4.37
"5"	39.866	19	0.000	4.550	4.31	4.79
"6"	23.858	19	0.000	4.050	3.69	4.41
"7"	33.155	19	0.000	4.500	4.22	4.78
"8"	39.230	19	0.000	4.500	4.26	4.74
"9"	30.512	19	0.000	4.200	3.91	4.49
"10"	29.208	19	0.000	3.950	3.67	4.23
"11"	30.513	20	0.000	4.286	3.99	4.58
"12"	29.000	19	0.000	4.350	4.04	4.66
"13"	19.494	19	0.000	4.000	3.57	4.43
"14"	12.568	19	0.000	3.300	2.75	3.85
"15"	25.531	19	0.000	4.100	3.76	4.44
"16"	18.242	19	0.000	3.600	3.19	4.01
"17"	29.947	19	0.000	4.050	3.77	4.33
"18"	19.675	19	0.000	3.850	3.44	4.26
"19"	21.397	19	0.000	3.950	3.56	4.34
"20"	23.267	19	0.000	4.100	3.73	4.47

```
RELIABILITY
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DGARI LPEHRLR TRBCN GFPCS
  /SCALE ('ALL VARIABLES') ALL
  /MODEL=ALPHA.
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7.2.1.8 Summary of All Variables and Reliability Statistics Difference

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	58.8
	Excluded[a]	14	41.2
	Total	34	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	No. of Items
0.739	20

7.2.2 Analysis of Opinion Survey of Beneficiaries

B. Beneficiaries-involved with Green Finance

Questionnaire-Set 02: (Respondents- Beneficiaries of Green Finance)

7.2.2 Analysis of Frequency Distribution:

Frequencies of responds of beneficiaries were summarized in the following tables.

Table 7.7 Analysis of Frequency(s) Distribution

Statistics-4

		"1"	"2"	"3"	"4"	"5"	"6"	"7"
N	Valid	20	20	20	20	20	20	20
	Missing	0	0	0	0	0	0	0

Statistics-5

		"8"	"9"	"10"	"11"	"12"	"13"	"14"
N	Valid	20	20	20	20	20	20	20
	Missing	0	0	0	0	0	0	0

Statistics-6

		"15"	"16"	"17"	"18"	"19"	"20"
N	Valid	20	20	20	20	20	20
	Missing	0	0	0	0	0	0

7.2.2.2 Answer Statements of Beneficiaries

Statement -01: I am well acquainted with the notion of green financing by banks in Bangladesh.

"1"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	3	15.0	15.0	20.0
	Agreed	13	65.0	65.0	85.0
	Strongly Agreed	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

It reveals that 80% respondents have agreed and strongly agreed to the above statement. They are well -oriented with green financing.

Statement -02: Green Financing by banks in Bangladesh has already contributed a lot for the sustainable development of Bangladesh.

"2"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	2	10.0	10.0	15.0
	Agree	13	65.0	65.0	80.0
	Strongly Agree	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

It reveals that 85% of the respondents have agreed to the above statement. Green Financing by banks in Bangladesh has already contributed a lot for the sustainable development of Bangladesh.

Statement -03. A strong Regulatory Framework is required for regulating the green financing in Bangladesh. Bangladesh Bank and Government should take immediate steps to frame an Act and enforce that in the shortest possible time.

"3"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	10.0	10.0	10.0
	Agree	8	40.0	40.0	50.0
	Strongly Agree	10	50.0	50.0	100.0
	Total	20	100.0	100.0	

It has been found that 90% respondents have agreed to the above statement. A strong Regulatory Framework is required for regulating the green financing in Bangladesh. Bangladesh Bank and Government should take immediate steps to issue an act and enforce in the shortest possible time.

Statement -04. Green Financing by the banks in Bangladesh has very high positive impacts in the economic development of Bangladesh.

"4"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	15.0	15.0	15.0
	Neutral	2	10.0	10.0	25.0
	Agree	10	50.0	50.0	75.0
	Strongly Agree	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

It reveals that 75% of the respondents have agreed and strongly agreed to the above statement. Green Financing by the banks in Bangladesh has very high positive impacts in the economic development of Bangladesh.

Statement -05: All banks (scheduled commercial banks) should increase the investment in green products immediately.

"5"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	5.0	5.0	5.0
	Agree	8	40.0	40.0	45.0
	Strongly Agree	11	55.0	55.0	100.0
	Total	20	100.0	100.0	

It has been found that 95% of respondents have agreed and strongly agreed to the above statement. All banks (scheduled commercial banks) should increase the investment in green products immediately.

Statement -06:

As a borrower you are taking loan on green products by your own initiatives or by the pressure from regulatory authority. Are you happy with the monitoring and controlling aspects of green financing by Bangladesh Bank?

"6"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	5	25.0	25.0	30.0
	Agree	11	55.0	55.0	85.0
	Strongly Agree	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

It reveals that 70% of respondents have agreed and strongly agreed to above statement. As a borrower one is taking loan on green products by his own initiatives or by the pressure from regulatory authority.

Statement -07:

Due to introduction of green financing the cost of borrowing has gone down, the scope of doing green business has widen in Bangladesh.

"7"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	9	45.0	45.0	50.0
	Agree	9	45.0	45.0	95.0
	Strongly Agree	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

It reveals that 50% respondents have agreed and strongly agreed and 45% are neutral to the above statement. The cost of borrowing has not gone down a lot and scope of doing green business has not widened.

Statement -08:

As a borrower of green financing, I am very much happy with the loan sanctioning process by the scheduled banks in Bangladesh.

"8"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	5.0	5.0	5.0
	Agree	9	45.0	45.0	50.0
	Strongly Agree	10	50.0	50.0	100.0
	Total	20	100.0	100.0	

It reveals that 95% respondents have agreed and strongly agreed and 5% are neutral to the above statement. The process of sanctioning loan is working well.

Statement -09.

Bangladesh Bank should provide practical support for enabling businesses and entrepreneurs to take greening actions.

"9"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	1	5.0	5.0	10.0
	Agree	11	55.0	55.0	65.0
	Strongly Agree	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

It reveals that 90% respondents have agreed and strongly agreed to the above statement. The practical support of Bangladesh Bank is necessary to stimulate financial sector to invest in green projects and businesses.

Statement -10.

Green Financing has vital role in facing climate change issues**.**

"10"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	5.0	5.0	5.0
	Agree	10	50.0	50.0	55.0
	Strongly Agree	9	45.0	45.0	100.0
	Total	20	100.0	100.0	

It has been found that 95% of respondents have agreed and strongly agreed to the above statement. Green financing can be used to quietly tackle climate change issues and environmental degradation in Bangladesh.

Statement -11.

Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks. These policy guidelines are very effective for green financing of all scheduled commercial banks.

"11"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	2	10.0	10.0	15.0
	Agree	9	45.0	45.0	60.0
	Strongly Agree	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

It reveals that 85% respondents have agreed and strongly agreed to the above statement. Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks.

Statement -12. The regulatory framework for green financing in Bangladesh is quite effective for inspiration, motivation, monitoring and controlling.

"12"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	10.0	10.0	10.0
	Disagree	2	10.0	10.0	20.0
	Agree	9	45.0	45.0	65.0
	Strongly Agree	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

It reveals that 80% respondents have agreed and strongly agreed to the above statement. The regulatory framework is quite effective.

Statement -13. The future of green financing is very promising. Because it has already been proved that there is very high positive correlation between net profit and the investment in green financing in Bangladesh.

"13"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	5.0	5.0	5.0
	Agree	13	65.0	65.0	70.0
	Strongly Agree	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

It has been found that 95% respondents have agreed and strongly agreed to the above statement. Green financing is promising because there is very high positive correlation between net profit and the investment in green financing in Bangladesh.

Statement -14. 360-degree angle assessment for green financing required for sustainable investment.

Green and clean technologies are needed to increase green investment and engage more institutions.

"14"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	15.0	15.0	15.0
	Agree	11	55.0	55.0	70.0
	Strongly Agree	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

It has been found that 85% respondents have agreed and strongly agreed to the above statement. 360-degree assessment is needed for ensuring Sustainable Investment.

7.2.2.2.1 Overall Macroeconomic Impacts of Green Finance in Bangladesh

Statement -15.

Green agenda requires 1-2% of GDP should be in green projects.

"15"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	2	10.0	10.0	15.0
	Agree	10	50.0	50.0	65.0
	Strongly Agree	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

It has been found that 85% respondents have agreed and strongly agreed to the above statement.

Statement -16.

Lack of policy enforcement, high risk and low return are the common challenges to introduce massive green finance.

"16"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	9	45.0	45.0	45.0
	Strongly Agree	11	55.0	55.0	100.0
	Total	20	100.0	100.0	

It has been found that 100% respondents have agreed and strongly agreed to the above statement. Low return but high risks are common barrier to green financing.

Statement -17.

Green projects have positive impact on environmental performance.

"17"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Agree	13	65.0	65.0	70.0
	Strongly Agree	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

It reveals that 95% respondents have agreed and strongly agreed to the above statement. Green projects have positive impact on the environment.

Statement -18.

Bangladesh bank has provided comprehensive solution for promoting green economic activities and green industries.

"18"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	10.0	10.0	10.0
	Neutral	1	5.0	5.0	15.0
	Agree	9	45.0	45.0	60.0
	Strongly	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

It reveals that 85% respondents have agreed and strongly agreed to the above statement. Green industries can shift the Bangladesh economy beyond hydrocarbon reactions.

Statement -19: Government will take necessary steps to initiate the Green finance. Government thinks it's enough recovery of the damaged environment of Bangladesh.

To what extent do you agree with this statement?

"19"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	10.0	10.0	10.0
	Neutral	2	10.0	10.0	20.0
	Agree	9	45.0	45.0	60.0
	Strongly	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

It reveals that 80% respondents have agreed and strongly agreed to the above statement. Green industries can shift the Bangladesh economy beyond hydrocarbon reactions.

7.2.2.2.2 Overall evaluation on green financing:

Statement -20.

Green Financing by banks is constantly ensuring sustainable environment for all of us. Green projects are contributing a lot for cleaner environment and to save the people and the planet.

"20"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	11	55.0	55.0	55.0
	Strongly Agree	9	45.0	45.0	100.0
	Total	20	100.0	100.0	

It reveals that 100% respondents have agreed and strongly agreed to the above statement. Green projects are contributing a lot for cleaner environment to save the people and the planet.

7.2.2.2.3 Summary of Statistics of the responses of beneficiaries

Table 7.8 Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
"1"	20	2	5	3.90	0.718
"2"	20	2	5	4.00	0.725
"3"	20	3	5	4.40	0.681
"4"	20	2	5	3.85	0.988
"5"	20	3	5	4.50	0.607
"6"	20	2	5	3.80	0.768
"7"	20	2	5	3.50	0.688
"8"	20	1	5	3.90	1.119
"9"	20	3	5	4.45	0.605
"10"	20	2	5	4.20	0.768
"11"	20	3	5	4.40	0.598
"12"	20	2	5	4.20	0.834
"13"	20	1	5	3.85	1.309
"14"	20	3	5	4.25	0.550
"15"	20	3	5	4.15	0.671
"16"	20	2	5	4.15	0.813
"17"	20	4	5	4.55	0.510
"18"	20	2	5	4.20	0.696
"19"	20	2	5	4.15	0.933
"20"	20	4	5	4.45	0.510
Valid N (list wise)	20				

7.2.2.2.4 Summary of One-Sample Statistics

Table 7.9 T-Test One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error of Mean
"1"	20	3.90	0.718	0.161
"2"	20	4.00	0.725	0.162
"3"	20	4.40	0.681	0.152
"4"	20	3.85	0.988	0.221
"5"	20	4.50	0.607	0.136
"6"	20	3.80	0.768	0.172
"7"	20	3.50	0.688	0.154
"8"	20	3.90	1.119	0.250
"9"	20	4.45	0.605	0.135
"10"	20	4.20	0.768	0.172
"11"	20	4.40	0.598	0.134
"12"	20	4.20	0.834	0.186
"13"	20	3.85	1.309	0.293
"14"	20	4.25	0.550	0.123
"15"	20	4.15	0.671	0.150
"16"	20	4.15	0.813	0.182
"17"	20	4.55	0.510	0.114
"18"	20	4.20	0.696	0.156
"19"	20	4.15	0.933	0.209
"20"	20	4.45	0.510	0.114

7.2.2.2.5 T-Test : One-Sample Statistics at 95% Confidence Interval of the Difference (beneficiaries)

Table 7.10 One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
"1"	24.285	19	0.000	3.900	3.56	4.24
"2"	24.658	19	0.000	4.000	3.66	4.34
"3"	28.914	19	0.000	4.400	4.08	4.72
"4"	17.425	19	0.000	3.850	3.39	4.31
"5"	33.155	19	0.000	4.500	4.22	4.78
"6"	22.134	19	0.000	3.800	3.44	4.16
"7"	22.743	19	0.000	3.500	3.18	3.82
"8"	15.584	19	0.000	3.900	3.38	4.42
"9"	32.905	19	0.000	4.450	4.17	4.73
"10"	24.464	19	0.000	4.200	3.84	4.56
"11"	32.892	19	0.000	4.400	4.12	4.68
"12"	22.535	19	0.000	4.200	3.81	4.59
"13"	13.155	19	0.000	3.850	3.24	4.46
"14"	34.550	19	0.000	4.250	3.99	4.51
"15"	27.667	19	0.000	4.150	3.84	4.46
"16"	22.836	19	0.000	4.150	3.77	4.53
"17"	39.866	19	0.000	4.550	4.31	4.79
"18"	26.993	19	0.000	4.200	3.87	4.53
"19"	19.886	19	0.000	4.150	3.71	4.59
"20"	38.990	19	0.000	4.450	4.21	4.69

7.2.2.2.6 Analysis of Statements

Statement -1: It has been observed that t value = 24.285; df = 19; Mean Difference = 3.900 and at 98% Confidence Interval of the Difference, Lower is 3.56 and Upper is 4.24.

Statement -2: It has been observed that t value = 24.658; df = 9; Mean Difference = 4.000 and at 98% Confidence Interval of the Difference, Lower is 4.08 and Upper is 4.72.

Statement -3: It has been observed that t value = 28.914; df = 19; Mean Difference = 4.400 and at 98% Confidence Interval of the Difference, Lower is 3.45 and Upper is 4.55.

Statement -4: It has been observed that t value = 17.425; df = 19; Mean Difference = 3.850 and at 98% Confidence Interval of the Difference, Lower is 3.39 and Upper is 4.31.

Statement -5: It has been observed that t value = 33.155; df = 19; Mean Difference = 4.500 and at 98% Confidence Interval of the Difference, Lower is 4.22 and Upper is 4.78.

Statement -6: It has been observed that t value = 23.858; df = 19; Mean Difference = 3.800 and at 98% Confidence Interval of the Difference, Lower is 3.44 and Upper is 4.16.

Statement -7: It has been observed that t value = 22.743 df = 19; Mean Difference = 3.500 and 98% Confidence Interval of the Difference, Lower is 3.18 and Upper is 3.82.

Statement -8: It has been observed that t value = 15.584; df = 19; Mean Difference = 3.900 and at 98% Confidence Interval of the Difference, Lower is 3.38 and Upper is 4.42.

Statement -9: It has been observed that t value = 32.905; df = 19; Mean Difference = 4.450 and at 98% Confidence Interval of the Difference, Lower is 4.17 and Upper is 4.73.

Statement -10: It has been observed that t value = 24.464; df = 19; Mean Difference = 4.200 and at 98% Confidence Interval of the Difference, Lower is 3.84 and Upper is 4.56.

Statement -11: It has been observed that t value = 32.892; df = 19; Mean Difference = 4.400 and at 98% Confidence Interval of the Difference, Lower is 4.12 and Upper is 4.68.

Statement -12: It has been observed that t value = 22.535; df = 19; Mean Difference = 4.200 and at 98% Confidence Interval of the Difference, Lower is 3.81 and Upper is 4.73.

Statement -13: It has been observed that t value = 13.155; df = 19; Mean Difference = 3.850 and at 98% Confidence Interval of the Difference, Lower is 3.24 and Upper is 4.46.

Statement -14: It has been observed that t value = 34.550; df = 19; Mean Difference = 4.250 and at 98% Confidence Interval of the Difference, Lower is 3.99 and Upper is 4.51.

Statement -15: It has been observed that t value = 27.667; df = 19; Mean Difference = 4.150 and 98% Confidence Interval of the Difference, Lower is 3.84 and Upper is 4.46.

Statement -16: It has been observed that t value = 22.836; df = 19; Mean Difference = 4.1500 and at 98% Confidence Interval of the Difference, Lower is 3.77 and Upper is 4.53.

Statement -17: It has been observed that t value = 39.866; df = 19; Mean Difference = 4.550 and at 98% Confidence Interval of the Difference, Lower is 4.31 and Upper is 4.79.

Statement -18: It has been observed that t value = 26.993; df = 19; Mean Difference = 4.200 and at 98% Confidence Interval of the Difference, Lower is 3.87 and Upper is 4.53.

Statement -19: It has been observed that t value = 19.886; df = 19; Mean Difference = 4.150 and at 98% Confidence Interval of the Difference, Lower is 3.71 and Upper is 4.59.

Statement -20: It has been observed that t value = 38.990; df = 19; Mean Difference = 4.450 and at 98% Confidence Interval of the Difference, Lower is 4.21 and Upper is 4.69.

Where,

N = 20, df = 19, Significance level = 5% and Critical value = 30.10.

Result:

Variables (Statement # 5, 9, 11, 14, 17, 20) are not supported as compared to the critical value.

Variables (Statement # 1,2,3,4,6,7,8,10,12,13,15,16,18,19) are supported in comparison to critical value.

7.2.3 Factor Analysis

7.2.3.1 Determination of Importance of Factors [DataSet0]

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.546
Bartlett's Test of Sphericity	Approx. Chi-Square	377.576
	df	190
	Sig.	.000

7.2.3.2 Communalities-1

	Initial	Extraction
Environmental, Social and Governance Factors' Impacts	1.000	.715
Green Bonds and Green Credits and other sustainable financial products	1.000	.691
Mismatch of time horizon and its impact on long-term decision making	1.000	.748
Governance of Sustainable Investment and Green Financing	1.000	.716
Green Projects and its Impacts on Environments	1.000	.831
Long-term Credit Ratings Impacts on Green Financing	1.000	.628
Bangladesh Bank Role in Enhancing Green Financing	1.000	.594
Insurance Companies Great Roles in Securing Green Financing	1.000	.668
Mobilizing the Private Financing for Enhancing Green Financing	1.000	.807

Bangladesh Bank Role in Promoting Green Industries in Bangladesh	1.000	.802
BB Encourages Green Industries and Sustainable Financing	1.000	.836
Green Financing Reduces the Impacts of Climate Change	1.000	.786

7.2.3.3 Communalities-2

Communalities-2

	Initial	Extraction
BB Should make Green Financing Mandatory for all Commercial Banks	1.000	.771
BB Regulatory framework is very effective for monitoring Green Financing	1.000	.716
Positive Correlation between Green Financing and Net Profit after tax	1.000	.689
Green Financing for Enhancing Green Technology and Overall Positive Impacts	1.000	.693
Contribution to GDP(1-2%) and Green Financing ensures Green Industries and Green Economy	1.000	.647
Lack of policies, SFDR, high risks(physical, transition and liability risk) but low rate of return	1.000	.680

Healthy Green Financing for sustainable development and sustainable green industries	1.000	.746
Commercial banks can enhance revenue by investing in green projects and green financing in BD	1.000	.768

Extraction Method: Principal Component Analy

7.2.3.4 Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.740	18.702	18.702	3.740	18.702	18.702
2	2.049	10.245	28.948	2.049	10.245	28.948
3	1.940	9.701	38.649	1.940	9.701	38.649
4	1.747	8.737	47.386	1.747	8.737	47.386
5	1.647	8.235	55.622	1.647	8.235	55.622
6	1.305	6.527	62.148	1.305	6.527	62.148
7	1.082	5.409	67.558	1.082	5.409	67.558
8	1.022	5.112	72.670	1.022	5.112	72.670
9	.858	4.288	76.958			
10	.790	3.952	80.910			
11	.702	3.511	84.421			
12	.637	3.187	87.607			
13	.605	3.025	90.633			
14	.400	2.001	92.634			
15	.369	1.844	94.478			
16	.340	1.700	96.177			
17	.240	1.198	97.376			
18	.221	1.106	98.482			
19	.189	.943	99.425			
20	.115	.575	100.000			

Extraction Method: Principal Component Analysis.

7.2.3.5 Component Matrix[a]

Component Matrix[a]

	Component					
	1	2	3	4	5	6
Environmental, Social and Governance Factors' Impacts	.135	.190	.070	-.178	-.237	-.042
Green Bonds and Green Credits and other sustainable financial products	.316	.027	-.002	-.369	.661	.121
Mismatch of time horizon and its impact on long-term decision making	-.169	.200	-.305	.137	.384	-.561
Governance of Sustainable Investment and Green Financing	.455	.012	.039	-.535	-.236	-.196
Green Projects and its Impacts on Environments	.537	-.119	.327	.205	-.335	-.040
Long-term Credit Ratings Impacts on Green Financing	.197	.463	.085	.524	-.038	.044
Bangladesh Bank Role in Enhancing Green Financing	.254	-.355	-.502	.132	.071	.077
Insurance Companies Great Roles in Securing Green Financing	.371	.561	-.077	.395	.010	.229
Mobilizing the Private Financing for Enhancing Green Financing	.675	.378	-.275	.113	.265	.220
Bangladesh Bank Role in Promoting Green Industries in Bangladesh	-.622	.271	-.298	-.422	.072	.197
BB Encourages Green Industries and Sustainable Financing	-.784	.333	.086	.130	.064	.099
Green Financing Reduces the Impacts of Climate Change	.595	-.256	-.486	.287	.007	.093

7.2.3.6 Component Matrix[a]

Component Matrix[a]

	Component	
	7	8
Environmental, Social and Governance Factors' Impacts	-.633	-.406
Green Bonds and Green Credits and other sustainable financial products	-.046	.033
Mismatch of time horizon and its impact on long-term decision making	-.159	.283
Governance of Sustainable Investment and Green Financing	.304	-.187
Green Projects and its Impacts on Environments	-.247	.453
Long-term Credit Ratings Impacts on Green Financing	.009	-.299
Bangladesh Bank Role in Enhancing Green Financing	.343	-.081
Insurance Companies Great Roles in Securing Green Financing	.037	.020
Mobilizing the Private Financing for Enhancing Green Financing	-.033	.030
Bangladesh Bank Role in Promoting Green Industries in Bangladesh	-.075	.158
BB Encourages Green Industries and Sustainable Financing	.257	.086
Green Financing Reduces the Impacts of Climate Change	-.200	.029

7.2.3.7 Component Matrix[a]

Component Matrix[a]

	Component					
	1	2	3	4	5	6
BB Should make Green Financing Mandatory for all Commercial Banks	.012	-.502	.514	-.015	.287	.145
BB Regulatory framework is very effective for monitoring Green Financing	.520	-.191	-.028	-.068	-.513	-.138
Positive Correlation between Green Financing and Net Profit after tax	.475	.401	-.154	-.424	.140	-.098
Green Financing for Enhancing Green Technology and Overall Positive Impacts	.318	.078	.547	-.230	.235	-.159
Contribution to GDP(1-2%) and Green Financing ensures Green Industries and Green Economy	-.344	.154	.342	.403	.006	-.385
Lack of policies, SFDR, high risks(physical, transition and liability risk) but low rate of return	-.388	-.582	-.315	.149	.101	.215
Healthy Green Financing for sustainable development and sustainable green industries	.179	.050	.486	.059	.130	.624
Commercial banks can enhance revenue by investing in green projects and green financing in BD	.385	-.301	.150	.264	.553	-.329

7.2.3.8 Component Matrix[a]

Component Matrix[a]

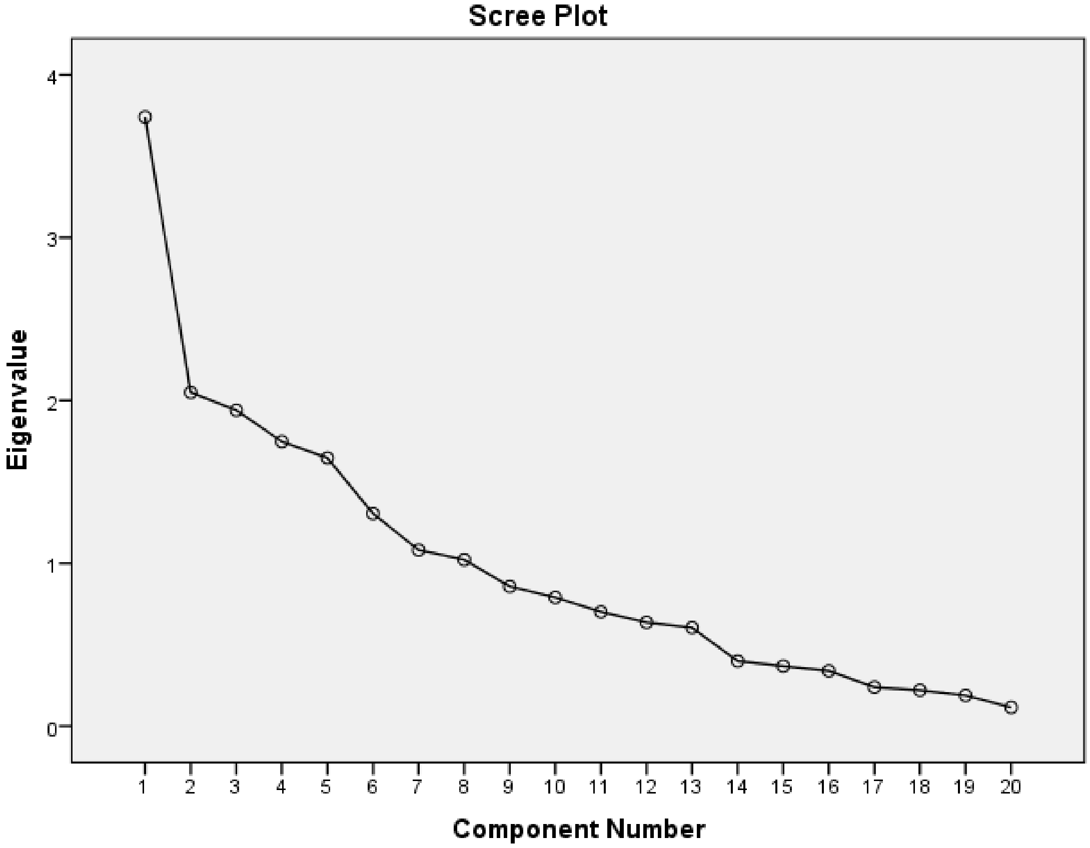
	Component	
	7	8
BB Should make Green Financing Mandatory for all Commercial Banks	-.073	-.383
BB Regulatory framework is very effective for monitoring Green Financing	.313	.155
Positive Correlation between Green Financing and Net Profit after tax	.205	-.168
Green Financing for Enhancing Green Technology and Overall Positive Impacts	-.098	.380
Contribution to GDP(1-2%) and Green Financing ensures Green Industries and Green Economy	.232	-.152
Lack of policies, SFDR, high risks(physical, transition and liability risk) but low rate of return	-.087	.068
Healthy Green Financing for sustainable development and sustainable green industries	.197	.161
Commercial banks can enhance revenue by investing in green projects and green financing in BD	.113	-.097

Extraction Method: Principal Component Analysis. [a]

a. 8 components extracted.

```
FACTOR
  /VARIABLES ESG GBGC MTH GOVSI GPAEI LTCRF BBRIGF INSCRINGF MPFFSF
BBFGI BBGIGISF GFICCI BBMGFCB BBRFGF PCORRGFNP GFGTPI CGDPGECO LPHRLR
HGFFSDTD CBIRGGF
  /MISSING LISTWISE
  /ANALYSIS ESG GBGC MTH GOVSI GPAEI LTCRF BBRIGF INSCRINGF MPFFSF
BBFGI BBGIGISF GFICCI BBMGFCB BBRFGF PCORRGFNP GFGTPI CGDPGECO LPHRLR
HGFFSDTD CBIRGGF
  /PRINT INITIAL KMO EXTRACTION
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

7.2.3.9 Figure of Eigenvalue



Explanation: Since the Initial Eigenvalues value of first 8 factors are greater than one (1), these factors are very significant in influencing green finance by the selected 10 banks in Bangladesh.

7.2.4 Regressions Analysis

7.2.4.1 Analysis of Multiple Regressions- First Model

The regression is shown among some important variables of the study, taking Ratio of Green Finance to Total Finance as dependent variable and Return on Assets (RoA), Log of Deposits (LoD), and Classified Loan (CL); as independent variables.

Multiple Regression Equation:

$Y = a_0 + ß_1X_1 + ß_2X_2 + ß_3X_3$

Where Y = Dependent Variable

= Ratio of Green Loan to Total Loan

a_0 = Constant

$ß_1$ = Slope of RoA

$ß_2$ = Slope of Classified Loan

$ß_3$ = Slope of Log of Deposit

X_1 = RoA

X_2 = Classified Loan

X_3 = Log of Deposit

Therefore, based on th**e** data analysis through SPSS, we can write down the multiple regression equation as follows:

$Y = 0.074 - 0.554X_1 + 0.784X_2 - 0.463X_3$

Variables Entered/ Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Log of Deposit , Return on Assets, Classified loan[b]	.	Enter

a. Dependent Variable: Green Loan to Total Loan Ratio

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.935[a]	0.874	0.799	0.0077263

a. Predictors: (Constant), Log of Deposit, Return on Assets, Classified loan.

7.2.4.2 Model Summary:

Predictors: ROA, Classified Loan and Log of Deposits;

Dependable Variable: Green Finance to Total Finance

R = 0.935, which means that 93.5% of variation can be explained by the three predictors.

R^2 (R Square) = 0.874. That means this multiple regression equation is 87.4% reliable. But the standard error of the Estimate is 0.0077263.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.002	3	0.001	11.602	0.011[b]
	Residual	0.000	5	0.000		
	Total	0.002	8			

a. Dependent Variable: Green Loan to Total Loan Ratio

b. Predictors: (Constant), Log of Deposit , Return on Assets, Classified loan

7.2.4.3 Explanation of ANOVA

Significance level = 0.011.

Residual value is zero (0). Mean Square value is 0.001. Slope of ROA ($ß_1$) is - 0.554 which means that if the ratio of green finance increased, then ROA decreased @ 0.554, $ß_2$ = Slope of classified loan is 0.784 which means that the ratio of green finance to total finance is increased, then the classified loan will go up by 0.784, and slope of Log of Deposit is -0.463, which means that if the ratio of green finance to total finance is increased, then log of deposits decreases at the rate of - 0.463. The constant value is 0.074 which means that none of the above three predictors have any influence. Standard error for the constant is 0.017. ROA - 0.205, CL - 0.000. All the above reveals that if green finance increases, ROA will decrease and deposits will decrease; classified loan will increase.

Significance level:

Constant =0.007

ROA= 0.022

CL= 0.018

Log of Deposit = 0.084.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.074	0.017		4.356	0.007
	Return on Assets	-0.668	0.205	-0.554	-3.266	0.022
	Classified loan	8.542E-005	0.000	0.784	3.465	0.018
	Log of Deposit	-0.001	0.000	-0.463	-2.151	0.084

a. Dependent Variable: Green Loan to Total Loan Ratio

7.2.4.4 Correlations:

Correlation and Multiple Regression Analysis

Table: 7.11 Descriptive Statistics

[DataSet0]

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean
Green Finance	68	58026.5900	100.0000	58126.5900	8453.277647
Net Profit after tax	68	22107.4000	-15980.4000	6127.0000	1869.506324
Overall Finance	68	8376177.7000	34861.3000	8411039.0000	387904.918529
Log of Deposits	68	2.4949	3.1956	5.6905	4.991204
Valid N (listwise)	68				

Descriptive Statistics

	Std. Deviation	Variance
Green Finance	12642.1534132	159824042.923
Net Profit after tax	3456.3989712	11946693.848
Overall Finance	1101501.0125247	1213304480592.957
Log of Deposits	.5491410	.302
Valid N (list wise)		

```
CORRELATIONS
  /VARIABLES=GF NPAT
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

7.2.4.4.1 Analysis of Descriptive Statistics

The average amount of green finance is BDT 8453.776 million; average overall finance is BDT 387904.918 million; average net profit after tax is BDT 1869.5063 million. The average of log of deposit is 4.99.

The standard deviation of Green finance is BDT 12642.15 million; the standard deviation of overall finance is BDT 1101501.0125 million, the standard deviation of net profit after tax is BDT 3456.39 million. The standard deviation of log of deposit is 0.549

Quantitative Data Analysis

Table -7.12 Correlations between Green Finance and Net Profit after Tax:

Correlations

Correlations

		Green Finance	Net Profit after tax
Green Finance	Pearson Correlation	1	.146
	Sig. (2-tailed)		.235
	N	68	68
Net Profit after tax	Pearson Correlation	.146	1
	Sig. (2-tailed)	.235	
	N	68	68

```
CORRELATIONS
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  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES XPROD
  /MISSING=PAIRWISE.
```

7.2.4.4.2 Interpretation of Correlation between Green Finance and Net Profit after Tax

Pearson Correlation Coefficient (r) = 0.146 (Between Green Finance and Net Profit After Tax)

Correlation Analysis is between green finance and net profit after tax:

Correlation analysis is between green finance and net profit after tax. Pearson correlation (r) = +00.146, which means that there is very low positive correlation exists between green finance and net profit after tax. The correlation between green finance and log of deposits is (r = +0.211) that means that there is low positive correlation.

[DataSet0]

Descriptive Statistics

	Mean	Std. Deviation	N
Green Finance	8453.277647	12642.1534132	68
Log of Deposits	4.991204	.5491410	68

Correlations

		Green Finance	Log of Deposits
Green Finance	Pearson Correlation	1	.011
	Sig. (2-tailed)		.931
	Sum of Squares and Cross-products	10708210875.845	4990.344
	Covariance	159824042.923	74.483
	N	68	68
Log of Deposits	Pearson Correlation	.011	1
	Sig. (2-tailed)	.931	
	Sum of Squares and Cross-products	4990.344	20.204
	Covariance	74.483	.302
	N	68	68

```
NONPAR CORR
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  /PRINT=SPEARMAN TWOTAIL NOSIG
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7.2.4.4.3 Interpretation of Correlation between Green Finance and Log of Deposits

Pearson Correlation Coefficient (r) = + 0.011(Between Green Finance and Log of Deposits).
The results show a very low positive correlation exists between Green Finance and Log of Deposits.

[DataSet0]

Correlations

			Green Finance	Log of Deposits
Spearman's rho	Green Finance	Correlation Coefficient	1.000	-.044
		Sig. (2-tailed)	.	.721
		N	68	68
	Log of Deposits	Correlation Coefficient	-.044	1.000
		Sig. (2-tailed)	.721	.
		N	68	68

CORRELATIONS

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Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
Green Finance	8453.277647	12642.1534132	68
Log of Deposits	4.991204	.5491410	68
Net Profit after tax	1869.506324	3456.3989712	68
Overall Finance	387904.918529	1101501.0125247	68

Correlations

		Green Finance	Log of Deposits	Net Profit after tax
Green Finance	Pearson Correlation	1	.011	.146
	Sig. (2-tailed)		.931	.235
	N	68	68	68
Log of Deposits	Pearson Correlation	.011	1	-.070
	Sig. (2-tailed)	.931		.568
	N	68	68	68
Net Profit after tax	Pearson Correlation	.146	-.070	1
	Sig. (2-tailed)	.235	.568	
	N	68	68	68
Overall Finance	Pearson Correlation	-.058	-.014	.002
	Sig. (2-tailed)	.640	.910	.987
	N	68	68	68

Correlations

		Overall Finance
Green Finance	Pearson Correlation	-.058
	Sig. (2-tailed)	.640
	N	68
Log of Deposits	Pearson Correlation	-.014
	Sig. (2-tailed)	.910
	N	68
Net Profit after tax	Pearson Correlation	.002
	Sig. (2-tailed)	.987
	N	68
Overall Finance	Pearson Correlation	1
	Sig. (2-tailed)	
	N	68

```
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7.2.4.4.4 Correlation Analysis is between Green finance and Overall Finance

Correlation analysis is between green finance and overall finance. Pearson correlation (r) =-0.070, which means that there is very low negative correlation exists between green finance and overall finance.

Regression

[DataSet0]

Descriptive Statistics

	Mean	Std. Deviation	N
Green Finance	8453.277647	12642.1534132	68
Net Profit after tax	1869.506324	3456.3989712	68
Overall Finance	387904.918529	1101501.0125247	68
Log of Deposits	4.991204	.5491410	68

Correlations

		Green Finance	Net Profit after tax	Overall Finance
Pearson Correlation	Green Finance	1.000	.146	-.058
	Net Profit after tax	.146	1.000	.002
	Overall Finance	-.058	.002	1.000
	Log of Deposits	.011	-.070	-.014
Sig. (1-tailed)	Green Finance	.	.118	.320
	Net Profit after tax	.118	.	.494
	Overall Finance	.320	.494	.
	Log of Deposits	.465	.284	.455
N	Green Finance	68	68	68
	Net Profit after tax	68	68	68
	Overall Finance	68	68	68
	Log of Deposits	68	68	68

Correlations

		Log of Deposits
Pearson Correlation	Green Finance	.011
	Net Profit after tax	-.070
	Overall Finance	-.014
	Log of Deposits	1.000
Sig. (1-tailed)	Green Finance	.465
	Net Profit after tax	.284
	Overall Finance	.455
	Log of Deposits	.
N	Green Finance	68
	Net Profit after tax	68
	Overall Finance	68
	Log of Deposits	68

Variables Entered/ Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Log of Deposits, Overall Finance, Net Profit after tax[b]	.	Enter

a. Dependent Variable: Green Finance
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.158[a]	.025	-.021	12771.8881812	1.190

a. Predictors: (Constant), Log of Deposits, Overall Finance, Net Profit after tax
b. Dependent Variable: Green Finance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	268458702.201	3	89486234.067	.549	.651[b]
	Residual	10439752173.644	64	163121127.713		
	Total	10708210875.845	67			

a. Dependent Variable: Green Finance
b. Predictors: (Constant), Log of Deposits, Overall Finance, Net Profit after tax

Table -7.12 Beta Coefficients and constant value

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5370.174	14404.763		.373	.711
	Net Profit after tax	.539	.453	.147	1.192	.238
	Overall Finance	-.001	.001	-.058	-.468	.641
	Log of Deposits	467.237	2848.749	.020	.164	.870

7.2.4.5 Multiple Regression Analysis

Multiple Regression Equation:

$Y = a_o+b_1*x_1+b_2*x_2+b_3*x_3+e_i$

$Y = 5,370.174 + 0.539*x_1 + 0.001x_2 + 467.237x_3+e_i$ (Value inserted from the above table

Log of Deposits, Overall Finance, Net Profit after tax are independent variables and green finance is dependent variable.

The Durbin -Watson statistic for auto correlation test:

(a) **Predictors Log of Deposit.**
(b) **Dependent Variable : Green Finance**
(c) **D-W statistic=1.14**

Interpretation:

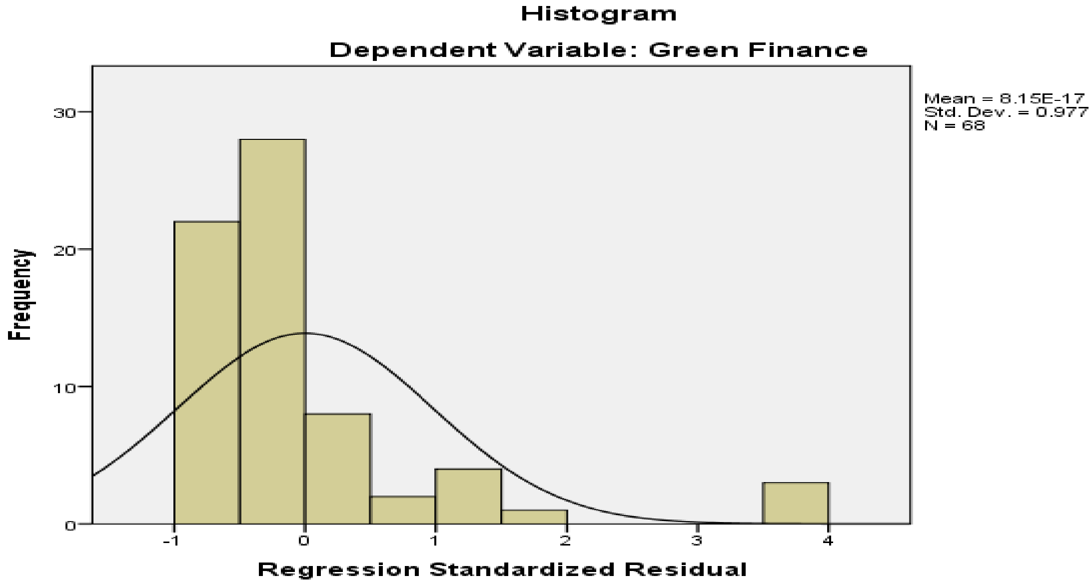
The Durbin -Watson statistic will always have a value of 2.00 indicating that there is no autocorrelation detected in the sample. Value from o to less that 2 point means that there is positive auto-correlation and value from 2 to 4 means negative autocorrelation. In our sample data we have positive autocorrelation between variables.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-914.517517	10786.181641	8453.277647	2001.7108436	68
Residual	-9811.4345703	49578.3984375	0E-7	12482.6758598	68
Std. Predicted Value	-4.680	1.165	.000	1.000	68
Std. Residual	-.768	3.882	.000	.977	68

a. Dependent Variable: Green Finance

Charts

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  /DEPENDENT NPAT
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  /RESIDUALS DURBIN HISTOGRAM(ZRESID)
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Descriptive Statistics

	Mean	Std. Deviation	N
Net Profit after tax	1869.506324	3456.3989712	68
Green Finance	8453.277647	12642.1534132	68
Overall Finance	387904.918529	1101501.0125247	68
Log of Deposits	4.991204	.5491410	68

Correlations

		Net Profit after tax	Green Finance	Overall Finance
Pearson Correlation	Net Profit after tax	1.000	.146	.002
	Green Finance	.146	1.000	-.058
	Overall Finance	.002	-.058	1.000
	Log of Deposits	-.070	.011	-.014
Sig. (1-tailed)	Net Profit after tax	.	.118	.494
	Green Finance	.118	.	.320
	Overall Finance	.494	.320	.
	Log of Deposits	.284	.465	.455
N	Net Profit after tax	68	68	68
	Green Finance	68	68	68
	Overall Finance	68	68	68
	Log of Deposits	68	68	68

Correlations

		Log of Deposits
Pearson Correlation	Net Profit after tax	-.070
	Green Finance	.011
	Overall Finance	-.014
	Log of Deposits	1.000
Sig. (1-tailed)	Net Profit after tax	.284
	Green Finance	.465
	Overall Finance	.455
	Log of Deposits	.
N	Net Profit after tax	68
	Green Finance	68
	Overall Finance	68
	Log of Deposits	68

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Log of Deposits, Green Finance, Overall Finance[b]	.	Enter

a. Dependent Variable: Net Profit after tax
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.163[a]	.027	-.019	3489.2079082	.027	.582	3

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	64[a]	.629	.889

a. Predictors: (Constant), Log of Deposits, Green Finance, Overall Finance
b. Dependent Variable: Net Profit after tax

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21255890.918	3	7085296.973	.582	.629[b]
	Residual	779172596.890	64	12174571.826		
	Total	800428487.809	67			

a. Dependent Variable: Net Profit after tax
b. Predictors: (Constant), Log of Deposits, Green Finance, Overall Finance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3774.109	3911.222		.965	.338
	Green Finance	.040	.034	.147	1.192	.238
	Overall Finance	2.978E-005	.000	.009	.077	.939
	Log of Deposits	-452.079	776.372	-.072	-.582	.562

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-4039.455	11587.673			
	Green Finance	-.027	.108	.146	.147	.147
	Overall Finance	-.001	.001	.002	.010	.009
	Log of Deposits	-2003.060	1098.902	-.070	-.073	-.072

a. Dependent Variable: Net Profit after tax

Coefficient Correlations[a]

Model			Log of Deposits	Green Finance	Overall Finance
1	Correlations	Log of Deposits	1.000	-.010	.013
		Green Finance	-.010	1.000	.058
		Overall Finance	.013	.058	1.000
	Covariances	Log of Deposits	602753.176	-.261	.004
		Green Finance	-.261	.001	7.546E-007
		Overall Finance	.004	7.546E-007	1.503E-007

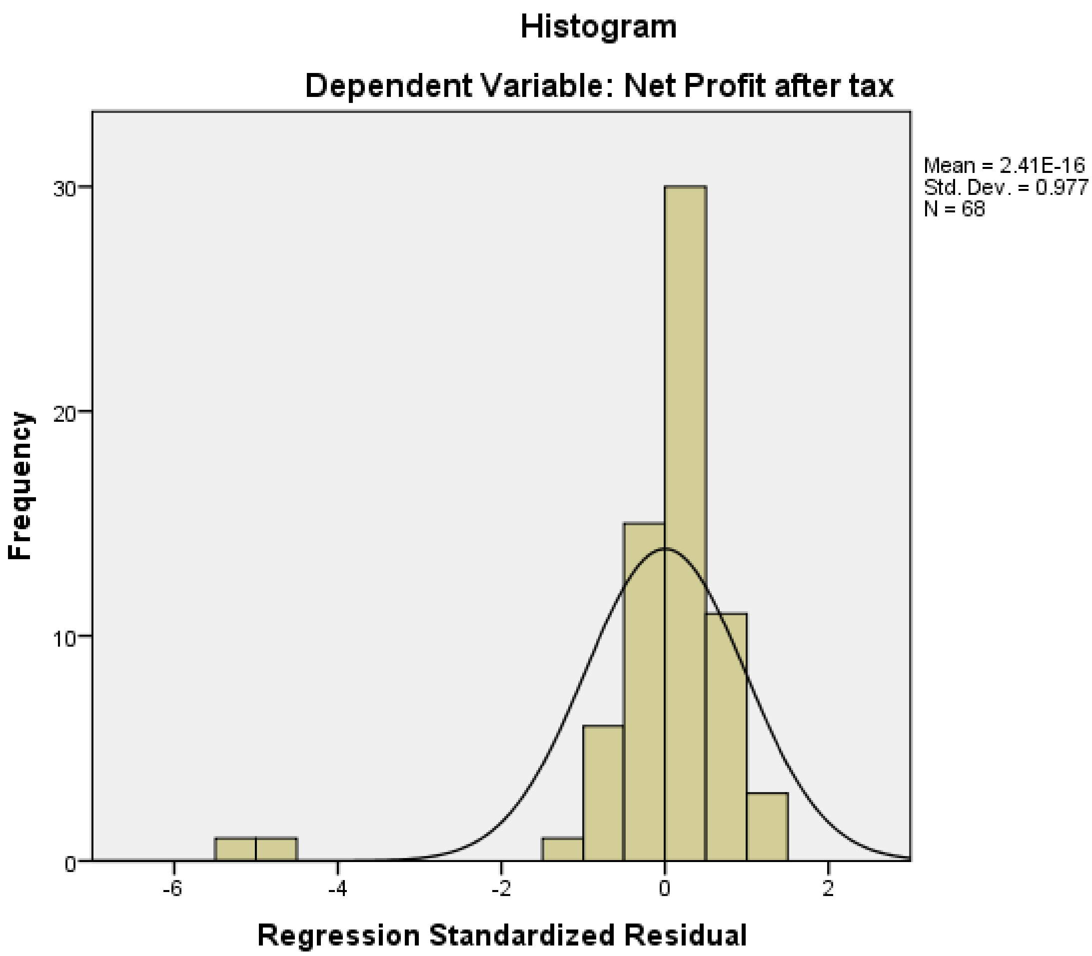
a. Dependent Variable: Net Profit after tax

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1225.885376	4000.560059	1869.506324	563.2513677	68
Residual	-17559.6367188	4042.9379883	0E-7	3410.1967311	68
Std. Predicted Value	-1.143	3.783	.000	1.000	68
Std. Residual	-5.033	1.159	.000	.977	68

a. Dependent Variable: Net Profit after tax

Charts



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  /DEPENDENT NPAT
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  /RESIDUALS DURBIN HISTOGRAM(ZRESID).
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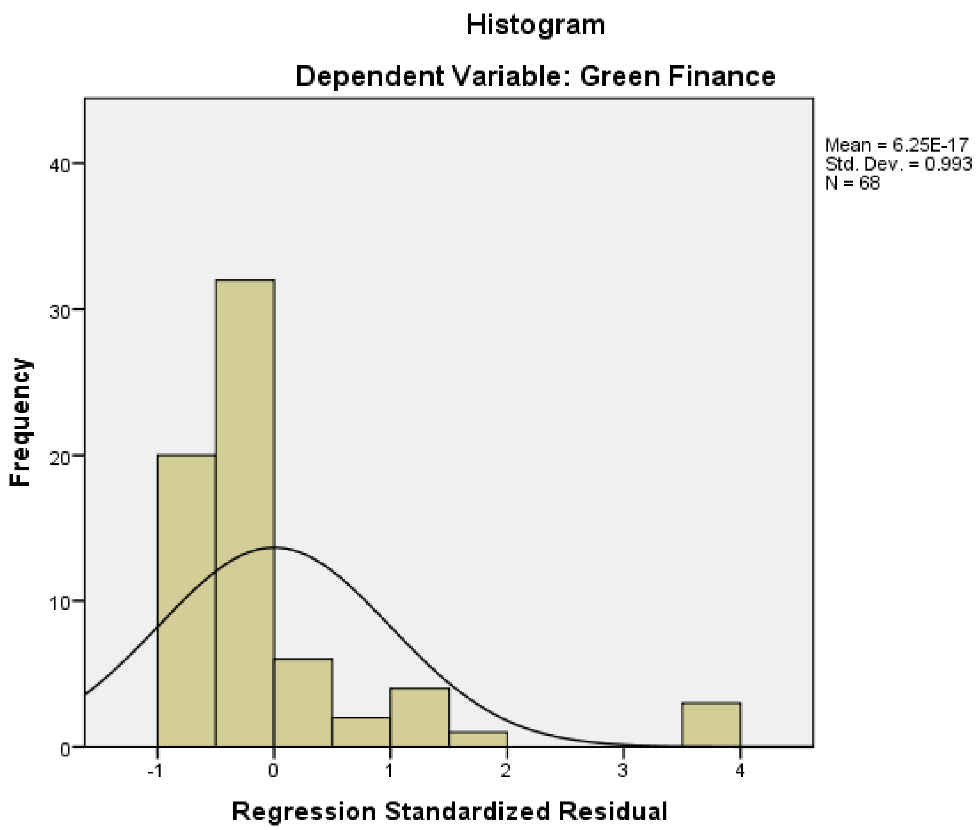
Charts

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7.8 Chapter Summary

In this chapter, the overall discussion on the green financing of the 10 sample banks is given. Green finance or Sustainable finance is more important than the other finance, if we want to save the earth and to ensure green environment. Many developed and developing countries had taken many steps for green perspective and imposed a number of rules and regulations on behalf of the highest authority to save the environment, but the effectiveness is very low. In the context of Bangladesh, as a regulatory body, Bangladesh Bank formulated policy and guidelines for green banking or sustainable banking for financing the green project or finance to the environment-pollution free products to be launched by the scheduled commercial banks of the country. This progress is slow and its effectiveness is poor, which cause loss of lives to many people. Effective and efficient implementation of green policies may ensure a progressive and peaceful earth.

CHAPTER EIGHT

FINDINGS, DISCUSSION ON FINDINGS

AND ACADEMIC CONTRIBUTION

8. Findings:

Research has revealed a number of findings that are presented below.

8.1 Discussion on Findings of Sample Banks

1. **BASIC Bank Ltd.**

The average green finance of the bank over the last 7 years is Tk. 2,317.86 million. The correlation between net profit and green finance is -0.7683, the value of is 0.590. The standard deviation of green finance over the last 7 years is 1,298.94 million.

2. **Dhaka Bank Ltd.**

The average green finance by Dhaka Bank Ltd. is Tk. 4,831.78857 million. Dhaka Bank's Green Finance's SD is Tk. 2,768.89716 million. The standard deviation of green finance by Dhaka Bank Ltd. is Tk. 2,768.89716 million which is very high. The correlation between green finance and net profit is of moderate positive correlation. The correlation value is 0.39020019. The reliability coefficient of the model is 0.15225619.

3. **Dutch-Bangla Bank Ltd.**

The average green finance of last 7 years by Dutch-Bangla Bank Ltd. is Tk. 25,196.1286 million. Dutch-Bangla Bank's Green Finance's SD is Tk. 24,601.8903 million. The standard deviation of green finance by Dutch-Bangla Bank Ltd. is Tk. 24,601.8903 million which is of medium high. The correlation between green finance and net profit is of low positive correlation. The correlation value is 0.07724686. The reliability coefficient of the model is 0.00596708.

4. **Eastern Bank Ltd.**

The green finance by Eastern Bank Ltd. was of duration of 10 years from 2013 to 2019. Therefore, the average green finance by Eastern Bank Ltd. is Tk. 16,422.5929 million. Eastern Bank's Green Finance's SD is Tk. 10,145.1677 million. The standard deviation of green finance by Eastern Bank Ltd. is Tk. 10,145.1677 million, which is of medium high. The correlation between green finance and net profit is of moderate positive correlation. The correlation value is 0.33955511. The reliability coefficient of the model is 0.11529767.

5. **IFIC Bank Ltd.**

The average green finance of 7 years by IFIC Bank Ltd. is Tk. 4,560.11 million. IFIC Bank's Green Finance's SD is Tk. 32,38.57197. The standard deviation of green finance by BASIC Bank Ltd. is Tk. 3,238.57 million, which is very high. The correlation between green finance and net profit is of high positive correlation, the correlation value is 0.713626. The reliability coefficient of the model is 0.5092.

6. **Janata Bank Ltd.**

The green finance by Janata Bank Ltd. was from 2013 to 2019. The average green finance by Janata Bank is Tk. 6,370.81429 million. Janata Bank's Green Finance's SD is Tk. 1,813.60949 million. The standard deviation of green finance by Janata Bank is Tk. 1,813.60949 million, which is very high. The correlation between green finance and net profit is low positive, the correlation value is 0.09889592. The reliability coefficient of the model is 0.0097804.

7. National Bank Ltd.

The green finance by National Bank Ltd. was for 7 years from 2013 to 2019. The average green finance by National Bank Ltd. is Tk. 4,339.60333 million. National Bank's Green Finance's SD is Tk. 5,218.39636 million. The standard deviation of green finance by National Bank Ltd. is Tk. 5,218.39636 million, which is very high. The correlation between green finance and net profit is moderate positive, the correlation value is 0.29248346. The reliability coefficient of the model is 0.08554657.

8. Prime Bank Ltd.

The green finance by Prime Bank Ltd. was for 7 years from 2013 to 2019. The average green finance by Prime Bank Ltd. is Tk. 3,256.92286 million. Prime Bank's Green Finance's SD is Tk. 2,585.35302 million. The standard deviation of green finance by Prime Bank is 2,585.35302 million which is very high. The correlation between green finance and net profit is moderate positive, the correlation value is 0.30673611. The reliability coefficient of the model is 0.09408704.

9. Trust Bank Ltd.

The average green finance of Trust Bank is Tk. 14,574.8114 million. Trust Bank's Green Finance's SD is Tk. 19,815.1317 million. The standard deviation of green finance by Trust Bank Ltd. is Tk. 19,815.1317 million which is high. The correlation between green finance and net profit is moderate positive. The correlation value is 0.14758764. The reliability coefficient of the model is 0.02178211.

10. United Commercial Bank Ltd. (UCBL)

The green finance was disbursed by United Commercial Bank Ltd. for 7 years from 2013 to 2019. The average green finance of United Commercial Bank is Tk. 986.284286 million. The Standard Deviation (SD) of green finance by United Commercial Bank Ltd. is Tk. 901.92162 million which is very low. The correlation between green finance and net profit is moderate positive. The correlation value is 0.38674283. The reliability coefficient of the model is 0.1495700.

8.2 Findings on T-test (One sample) Result:

The overall average amount of green finance is Tk. 8,504.88 million and overall average net profit after tax of sample banks is Tk. 2,889.00 million. Here, significance level is 0.05; t-value of green finance is 5.643; net profit is 9.306 and mean difference of green finance is 8,509.88 and net profit is 2,889.86. The standard deviation of green finance is Tk. 12,616.00 and net profit after tax is Tk. 2,598.17 million. The standard error of green finance is Tk. 1,508.22 million and net profit after tax is Tk. 310.54 million.

Based on the analysis of data collection from opinion survey, structured questionnaire and various tests, we can conclude that green financing contributed to long-term sustainable and inclusive growth as well as strengthen financial ability by considering material, environmental and social factor. We can also conclude that there is scope to issue green bond and other sustainable assets for green encouragement.

Through the data analysis and findings of the study, the researcher can conclude that green financing, as a new field of financing, is very promising for the planet and people. In this study, through regression analysis, I have found a great impact of green finance on ROA, Classified Loan and Deposits. The study also shows a low positive correlation between net profit after tax and green financing. The stakeholders also opined that the regulatory framework and policy guidelines should be strengthened.

Through the data analysis and findings of the study, I can conclude that green finance as a new field of financing is very promising for the country, planet and people for environmental protection. In this study, through regression analysis, I have found a great impact of green finance (GF) on return on assets (ROA), classified loan (CL) and log of deposits (LoD). The study also shows insignificant positive correlation between net profit after tax and green financing, as it was expected. Opinion survey of bankers and beneficiaries about green finance reveals that the respondents have shown their strong positive position of opinion on green financing. They also opined that the regulatory framework and policy guidelines should be strengthened. The regression result is given below in table no. 8.1.

Table 8.1: Regression Result on dependent variables like Green Loan to Total Loan (LR), of independent variables like ROA, Log of Deposit (LoD) and Classified Loan (CL):

Table 8.1: Regression Values

Variable	**Results**	**Results Beta**
Constant	t = 4.356	
Log of Deposit	t = 2.151	-0.463
ROA	t = 3.266	-0.554
Classified Loan	t = 3.465	0.784
R	R = 0.935	
R^2	R^2 = 0.874	
N = 70		

Source: Analysis by SPSS

The overall average amount of green finance is tk. 8,504.88 million and overall average net profit after tax of sample banks is BDT 2,889 million. The standard deviation of green finance is BDT 12,616 million and net profit after tax is BDT 2,598.17 million. The standard error of green finance is BDT 15,08.22 million, and net profit after tax is Tk. 310.54 million.

Findings are from quantitative data collected from selected 10 banks (public + private commercial) in Bangladesh. The total number of branches of selected 10 banks is 12,738. In two years 2019, the members of branches were 9,955 (source: BB Annual report). The green finance of 10 electives banks data analysis and findings are given below:

8.3 Discussion on Findings of Hypothesis Testing

(i) Ho_1: Regulatory framework and the role of Regulatory Authority for green financing in Bangladesh are inadequate.

The data regarding Regulatory Framework and the role of Regulatory Authority for green finance and green investment for the banking sector are in the sections 4.1 to 4.3 that shows framework and anticipated role of Regulatory Authority under Green Financing Rules, 2010. So hypothesis is rejected and alternative hypothesis of adequate Regulatory Framework and the role of Regulatory Authority for green financing is valid adequate records of financing and investment in the green area, which are sufficient proof of green financing. So hypothesis is rejected and alternative hypothesis of adequate green financing is valid and a statement may be given that records of green financing in the country is satisfactory.

(ii) Ho_2: Green financing has no impact on environment in Bangladesh.

To make a development of the environment, huge investment and initiatives are necessary. Some forced attempts may not improve remarkable improvement of the environment. Yet one may not say there is not any improvement. So hypothesis is rejected and alternative hypothesis of green financing has some impact on environment in Bangladesh is valid. Correlation test (chapter-7) also supports this.

(iii) Ho_3: Green financing by banks in Bangladesh has no sustainability.

The green financing by banks in Bangladesh has stainability as it is supervised and patronaged by the Bangladesh Bank, and hence by the government of Bangladesh. Government is also working under "Public and Private Partnership (PPP) for sustainability. So hypothesis is rejected and alternative hypothesis of green financing by banks is true and in Bangladesh it has sustainability.

(iv) Ho_4: Banks in Bangladesh use no tool for renewable energy.

There is record of financing and investment in solar panel in the tables 6.3 to 6.12 which is sufficient proof of renewable energy. So hypothesis is rejected and alternative hypothesis of banks have tool for renewable energy is valid.

(v) Ho_5: Public has no awareness for green financing in Bangladesh.

The opinion survey by the questionnaire, especially of the loan-taker or beneficiaries shows awareness about green finance and green investment in the section 6.2 to 6.12. This summary shows adequate proof of awareness about green financing and investment in the country. So hypothesis is rejected and alternative hypothesis of adequate awareness about green financing is valid.

8.4 Discussion on findings of Objectives

The selected 10 banks follow the rules and regulations, the policy and the order given by Bangladesh Bank which has the only authoritative power to formulate the policy, circulate ordinance, refinance the projects, regulate initiatives, and implement the given policy and supervise the implementation and execution of the policy formulated and executed by the regulatory authority of the bank. The banks should go green and play a proactive role for taking environmental protection measures as part of their lending principle. The following findings have been put forth from the research:

- (01) In line with objective one about position of green financing in Bangladesh, it is found from the private commercial banks' reporting about CSR unit or cell, that a number of banks generally have separate environmental or green banking cell. Green financing has also been analyzed according to their valuation and acceptability to the users, especially for the inhabitants who are badly affected by the natural calamities and disasters due to the pollution of environment. The discussion has been from the different points of view. At first, green policy, green financing, and green banking directed by Bangladesh Bank in the year 2010 have been taken into account and practices from 2013 to 2019 were observed. The selected 10 banks followed the rules and regulations, the policy and the order framed by the Bangladesh Bank Authority to formulate the policy.

  Green finance is expected to serve two objectives of commercial banks in Bangladesh, namely, profit maximization and implementation of CSR. In this study, the researcher found that an increasing number of banks in Bangladesh, in line with banks around the world, have provided green financing by innovative products that cover financial services to support the activities that are not hazardous to environment and help conserving the environment. A majority of banks in Bangladesh progressed toward green financing at an appreciable trend. The figures in the tables 6.2 to 6.12 reflected the position of green financing by banks in Bangladesh.

- (02) In line with objective two, as consciousness for Green Financing for environmental protection, Government of Bangladesh (GoB) has taken necessary steps to frame environmental regulations, and formulate such rules, as government has considered urgent on an emergency basis, first of which being Green Financing Rules, 2010. This and other rules are proof of green initiatives supporting regulations.

Bangladesh Bank, on behalf of the government, as the authority to implement the rules, had instructed the Scheduled Commercial Banks to frame guidelines following BB's rules and implement those. Scheduled commercial banks have already formulated and adopted green banking policy creating green banking units or cells based on Bangladesh Bank's guidelines and policy.

As the controlling body of the green banking units or cells, BB has been empowered to carry out green financing and maintain close supervision on the banks. Scheduled commercial banks are complying the instruction of Bangladesh Bank regarding green finance policy. Key Information Informant (KII) or vested persons are eager to implement green policies. Involvement of the top management or senior executives for green finance empowering all the related bodies of the bank became a reality.

- (03) In the third objective of development of green finance, significant improvement has been there in the green credit policy by the scheduled commercial banks and resulted financing. Figures 6.1 to 6.29 and data in the tables 6.1 to 6.20 hold information about varieties of green financing developments. Scheduled commercial banks have built up awareness and capacity on the green innovations and necessary green products. Banks have been motivated to act on government exposure on the enforcement and wide circulation of green products. Regression analysis in the table 8.1 shows the impact. All scheduled banks have invested more on pollution free production systems, so that, export earnings would be enhanced with environmental compliance.
- (04) In the area of fourth objective, to identify incentive in green financing, it is seen that government has provided tax incentives to those companies and industries which are engaged in pollution free production systems, a positive initiative in green operations. Government has increased tax on those industries which are not investing in pollution-free production systems, a penalty for non-green financing.

  Sustainable innovation and green investment have been brought under a legal framework to a great extent. Focus group discussion (FGD) also revealed timely action by the banking sector of Bangladesh.
- (05) In the area of fifth objective, to build up climate adaptive, environment friendly and resources saving industries, government is encouraging green finance. Government has focused on Public Private Partnership (PPP) projects on sustainable green finance and sustainable innovation.

- (06) In the sixth objective, enhancement of management of environmental performance of commercial banks and sharing environmental information disclosure between financial sector and environment related authority of the country enhanced environmental measures by government patronage.
- (07) In the seventh objective, the banks have undertaken long-term planning for green initiative and green industries to handle environmental issues.
- (08) In the eighth objective, green technology capacity building has already been undertaken in terms of manpower, logistics, and funds.
- (09) In line with the ninth objective, Bangladesh Bank or Government may issue perpetual green bonds or securities to refinance the innovative green products and renewable energy to ensure sustainability of green initiatives (table 8.1).
- (10) In the tenth objective, it is found that public awareness about green investment by green finance is positive. Summary of opinion survey reveals this. In 7.1.2 section, perception of bankers and beneficiaries involved with green finance under questionnaire- A and questionnaire-B were analyzed.

8.5 Academic Contributions

- **A comprehensive and inclusive model for green financing in Bangladesh:**

  A new Model has been developed in the study for Sustainable Financing highlights primarily on the involvement of Green Producers, Manufacturers and Micro Finance Institutions (MFIs) in green financing and green banking. The use of paperless office, and efficient use of energy, regulated by or under patronage of Bangladesh Bank have attracted attention of the major stakeholders. All of these elements and institutions have interactions among themselves, which have resulted in eco-friendly production, consumption and financing by the socially responsible business enterprises and supporting institutions. Influenced by environmental groups, these attempts contributed to the global common good and would result to the better livelihood for the people of the planet.

- **Creation of new knowledge area on green financing:**

Knowledge about the green finance has been compiled and its present position in Bangladesh has been summarized. The influences of Return on Assets (ROA), Classified Loan (CL) and Deposits on Green Finance have been studied. The overall impact of green finance on lending decision making, in addition to the total financing, is affected by the green finance initiative in banks in Bangladesh. The current study also contributes in assessing the perception of bankers and beneficiaries regarding green finance in Bangladesh. It also contributes toward assessing the effectiveness of green finance on environment, society and economy. Ultimately, the study advocates for ensuring a sustainable environment for the people of the planet.

- **Sustainable finance through green finance:**

Based on the analysis of data collection from opinion survey, structured questionnaire and various tests, we can conclude that green financing might contribute long-term sustainable and inclusive growth as well as strengthen financial ability by considering material, environmental and social factor. We can also conclude that there is standard for green bond and other sustainable assets.

- **Significant contribution to economic sustainability through green finance:**

Bangladesh Bank should involve all scheduled commercial banks more strongly on sustainability particularly through long-term lending and project finance related to green finance. Paperless transactions and use of eco-friendly materials has increased green projects by reducing the electricity and the water consumptions. Overall green projects are impacting positively to our environment.

- **Evaluation on perception of bankers and borrowers for green finance:**

The current study also contributes in assessing the perception of bankers and beneficiaries regarding green finance in Bangladesh. It also contributes toward assessing the effectiveness of green finance on environment, society and economy. Ultimately, the study contributes for ensuring a sustainable environment for the people of the planet.

CHAPTER NINE

Discussion and Conclusion

9.1 Concluding Discussion:

A semi-structured interview was conducted among the sustainable banking units of different banks of the country. For the study, 10 commercial banks out of 57 banks have been selected as sample and respondents from the stakeholders of those as part of questionnaire survey of the study.

Habib. 2012. Wrote an article titled “Environmental Reporting in Green Banking”. He evaluated that Green reporting is one of the essential constituents of the green banking activities on the way to attain environmental goal of the banks and governmental green initiatives. It appears that banking industry as a whole is moving towards an atmosphere where banks have no alternative but to undertake green activities and disclose green information in the reporting.

Based on the published literature, the aspects of sustainable finance by banks are:

(a) Economic Aspects: Access to finance and efficient allocation of financial resources.

(b) Social aspects: Promoting disadvantaged group through financing and associated services.

(c) Habib has also linked efficient financing and growth with financing stability.

Sustainable Banking Network (2017) identified three dimensions of sustainable finance.

(a) Integrating environmental, social and governance considerations in investment and lending decision – making.

(b) Lending and investment to green industries or projects for positive impact; and

(c) Corporate social responsibility initiatives including how banks manage their own environmental and social footprints.

Habib (2010) has identified a few barriers for sustainable finance in Bangladesh, such as, lack of skilled product development program, lack of commitment or positive mind set, high initial cost of green projects, unavailable of low cost fund of proper steps, lack of awareness of potential customers, lack of technical know-how, etc. Other barriers are fake documentation provided by the clients, risk of fund diversion, risk of willful defaults and non-corporate linkage arrangement, etc.

Researcher has used qualitative data for his study by questionnaire survey.

Current Study, researcher tried to find out:

i) Present status of green financing in Bangladesh based on policy and guidelines by Bangladesh Bank.

ii) The impacts of Return on Assets (ROA), Classified Loan (CL) and Log of Deposit on the increase or decrease of the ratio of Green finance to Total finance.

iii) Researcher has tried to find out the correlation between Net profit after tax (NPAT) and Green finance.

iv) Researcher also has tried to find out the opinion of 20 bankers and 20 beneficiaries of selected 10 banks in Bangladesh by using the 5 points Likert's scale. The opinion has been asked for 20 statements which were generated from literature review on green finance for this study.

v) Researcher has also tried to find out the gap in policy guidelines.

The Researcher tried to review the prior literature on green banking or sustainable banking by banks in Bangladesh. The review of relevant literature revealed that over the past few decades a number of studies have been conducted on this issue, majority of which have been done in the context of European Union, North America, Africa, Australia, Canada and in some Asian countries like Japan, China, India, Philippines, Malaysia, Korea by the renowned organization and prominent researcher. But a few studies have been conducted in Bangladesh.

The review also revealed that standardized regulatory framework and policy guidelines are yet to be framed for the proper implementation by the banks which is recognized globally. Green sustainability of Bangladesh is staying in the beginning stage, but policy formulation is going on by regulatory authority and the authority is trying to apply more at this stage.

Similar Studies:

Rashid (2010) quoted that green banking attaches more importance to environmental factors compared to normal banking. The objective is to provide better green business and social business practices. One would be awarded loan when one fulfill environmental safety standard.

Zeitberger (2008) evaluated that the public concern of the state of environment has been growing rapidly in the last few years, mostly, due to apparently unusual weather patterns, rising greenhouse gases, declaring air quality, etc. and society demands that business should also take responsibility in safeguarding the planet. Banks possess a strong unique position, by which it can affect production, business and other economic activities through their financing activities. Environmentally responsible banks do not only improve their own standards, but also affect socially responsible behavior of other businesses. In green banking, there might be negative association between green banking strategy and profitability. All the time there should be positive association between profitability and green financing that may not be the case.

Weber (2005) suggested that banks can also be financially successful and have growth rate similar to the business, but banks cannot avoid social responsibility. Green financing has multitude areas, of those a bank being environment-friendly should seek how and where to invest their money.

Millat (2012) reported that banks in Bangladesh have enthusiastically be respondent to Bangladesh Bank’s guidance about green finance and green banking. Environmentally responsible financing is having significant impacts on environmental practices in the real economy.

Dissimilar Studies:

Jeueken (2001) surveyed banks and found that 60 percent of the banks world-wide have an environmental policy statement. He looked at the regional differentiation that is present to 67 percent of the European Banks, 50 percent of North American Banks and 25 percent of the banks in Oceania.

Banks have started getting arrangements on the risks of environment since the beginning of the 1990s and 56 percent of banks are paying attention to environmental aspects when establishing financial contracts by 2000.

Ceres (2008) evaluated that 40 of the world’s largest banks (16 US, 15 European, 5 Asian and 04 Brazilian) are addressing climate change through board oversight execution of management, public disclosure, greenhouse gas emission, etc. The study observes that most leading banks are addressing climate change as a risk management issue. These leading 40 banks do lend credit on green products for enhancing the reputation and image of the bank. European banks are considering the environmental policies, risk management, and anti-pollution product development.

Current Studies:

In line with the race of development in the world, some side effect of global development is environmental pollution. But the development process causes a few detrimental effects to bio-diversity, ecosystems, climate condition, environment and ecology. Environment protection projects to halt environmental pollutions are of utmost necessity. Financial investments by socially responsible banks are urgent for the sustainable development process. Green financing is urgently needed to save the people of the planet and to protect environment.

Therefore, a portion of total finance if used in green projects, environmental up-gradation would be possible. Bangladesh entered into the race of green financing in the year 2011. Bangladesh Bank had undertaken initiative regarding green projects implemented by scheduled commercial banks in Bangladesh.

The researcher has selected randomly 10 banks out of 57 banks in Bangladesh, and found out:

- Present status of green financing in Bangladesh.
- Green financing initiatives by Bangladesh Bank are appreciable efforts for protecting environment, people and the planet.
- Bangladesh Bank needs to strengthen the supervision level and empower the green banking cell in every bank.
- Present trend should be continued and enhanced for sustainable and eco-friendly development of the country.

- The policy guidelines and regulations of Bangladesh Bank need to be more functional to ensure the achievement of objectives of green financing.
- All selected 10 banks have transparency and fully disclosed data on green finance and green investment in their annual report. This disclosure is mandatory by Bangladesh Bank.
- A Comprehensive Conceptual Framework has been developed focusing on the sustainable goals and sustainable financial performance of Green Finance incorporating three dimensions – Environmental, Economic and Social.
- Current study also tried to develop a model of sustainable financial systems by focusing on different and diverse sustainable financial areas.
- Current study claims that there low positive correlation between Green Finance and Net Profit after Tax. (r=+0.146)
- This study also found that there is low positive correlation between Green Finance and Log of Deposit (r=+ 0.2110).
- Current study also found that Green Finance is affected significantly by the independent variables.
- Qualitative approach helps us to find out the significant factors that are influencing sustainable financial performance. There are eight factors identified through factor analysis.
- Green Banks invest in innovation and research to develop new financial products and services such as "Impact Investing Funds"

- Green Banks are engaged with stakeholders, including customers, regulators, civil society organizations, and other financial organizations to promote sustainable practices and initiatives. Collaboration is key to driving systemic change and addressing sustainable changes effectively.

9.2 Conclusion

The world is overwhelmed with carbon emission and environmental pollution. Green financing might halt the speed of environmental degradation. In line with global concern, Bangladesh has also responded positively by introducing green financing in the last decade, i.e., since 2010.

Environmental degradation continuously harms biodiversity, ecosystem, and climate condition. As a remedial effort, the tool of Green Financing has been used and as an attempt to evaluate its performance, the present study conducted a practical observation of the scenario of green financing and attempted an appraisal of the opinion of stakeholders of the environment.

The study concentrated on green initiatives launched by Bangladesh Bank from the year 2011. The population of the study encompasses all 57 scheduled commercial banks of the country, from which 10 scheduled commercial banks were brought under the study to cope with the limited capability of the present research.

The Government of Bangladesh in an effort to save the environment provided financial and non-financial incentives in the name of a package titled 'green financing' to distribute a handsome portion of the commercial bank's loans for green projects, inspiring the banks by recognition and the borrowers by reduced rate of interest. A handsome number of borrowers responded to the efforts and had taken a number of loans under the green financing package in the activities like establishment of solar panel, a way of green and renewable energy; effluent treatment plant (ETP); solid waste management, green industry, etc.

The study was carried out in the midst of a number of limitations, time, effort, cost, data availability, etc. More attentive study would have yielded a comprehensive scenario.

The areas of environmental protection, green finance and green investment are new and nationally important issues. The present research might be maiden one. The effectiveness of green finance bears more significance as a future research area.

The real scenery of environmental up-gradation and pollution reduction has ameliorated, but yet to be satisfactory. As environmental up-gradation is objective and desire of the government of Bangladesh and the nation, but the associated costs and required finances are against the profit motive of the bank and the borrowers, it would take time to show satisfactory progress in this area. In spite of all the limitations, green financing is an appreciable effort of the government and all the concerned to save the environment and keep the earth livable, environment friendly and comfortable.

In the meantime, Bangladesh has already made a remarkable improvement in the environmental area, especially by the green finance initiative. In a recent report, it is held, ‘Currently, Bangladesh is home to 9 out of the 10 top “green” industrial units worldwide. Being the global champion in **LEED** (Leadership in Energy and Environmental Design) certified factories, Bangladesh has 73 platinum rated garment units while another 113 are gold rated, 10 are silver rated, four are just certified (Majumdar, 2023).

In another recent of Centre for Policy Dialogue (CPD) study reveals that RMG green practices is a self-motivated marketing strategy and it accelerated after the Tazreen Fashions fire and Rana Plaza building collapse to improve the country’s image. The study further revealed, “Bangladesh currently has 202 **LEED** certified garment and textile industries, of which 73 are of a platinum level, 115 gold, 10 silver and four green (CPD 2023).

We are hopeful to see more and rapid improvement.

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APPENDIX-A
Opinion Survey Questionnaire

Department of Accounting & Information Systems
Faculty of Business Studies –FBS
University of Dhaka
Dhaka-1000, Bangladesh.

Opinion Survey
(With bankers-involved with Green Finance); N=60

Title: Green Financing by Banks in Bangladesh

<u>Questionnaire -01</u>

Respondents' Information: Total Respondents=60 (30+30)

Head of credits=10, Managers =10, Officers =10 Total =30

General Information and guidelines for the respondents

(i) This is research on 'Green Financing by Banks in Bangladesh

(ii) Your responses will be anonymized

(iii) Your responses and information will be analyzed with due and high ethical care.

(iv) Your valuable, authentic and objective response may be very helpful for us to recommend it by policy makers in Bangladesh.

(v) To help develop an overarching, comprehensive Bangladesh strategy on Green Finance by giving operational, practical, and concrete recommendations.

(vi) Respondents are invited to provide evidence-based feedback, including specific and concise operational suggestions on measures that can be enhanced as well as complementary actions that can be taken, in order to deliver a sustainable financial system in Bangladesh.

(vii) Your efforts and cooperation will be highly appreciated.

Part-A: Basic Information about respondents/ Personal Profile

(i) Name: ....

(ii) Contact...

(iii) E-mail ID...

(iv) Age (in years)..

(v) Education Level………………………………….………………………

(vi) Years' of experiences: ....

(vii) Name of the Bank & the Position you are serving:

(vii) Location of Interview:

(a) Dhaka Zone…………………………………….……………….........

(b) Barishal Zone…………………………………………………

(viii) Likert's Scale:

1 to 5 points:
1= Strongly Disagree
2= Disagree
3=Neutral
4=Agree
5=Strongly Agree

(ix) Respondent(s) meet the inclusion criteria (i) Yes (ii) No

Part-B: Please answer the following questions:

Basic notion on Green financing for the respondents (Bankers)

In a world where the global population is approaching 9 billion, all of whom with basic needs to be met, where natural resources are rarefied, and where climate disruptions are mounting, "business as usual" is no longer sufficient. The world has changed, markets are changing faster and a new approach to finance is needed to adapt and to keep up with the pace of change. This change is constant. Banks, for example, are at a historic tipping point when continuing to grow, as a business has become closely interconnected with the fulfillment of broader goals such as social and environmental sustainability.

A new approach to finance is needed as business has become interconnected with the fulfilment of sustainability goals.

Since no universal definition of green or sustainable finance exists to date "any of the financial institution's practices supporting and facilitating sustainable development – whether it is for projects, businesses, industry, organizations, or general events and campaigns"

The actual identification of such practices was thus left to the respondents so as to understand and bridge gaps between government and the private sector in the efforts towards a green economy.

Benefits from green finance ″ Some institutions are already realizing substantial benefits from green finance through cost savings, additional revenues and increased share values. The most profitable cases reach as much as USD 20 million and 2% of total profits.

For many financial institutions, green finance makes business sense as cost savings, competitive advantage and the findings from the survey are summarized as follows: profitability – along with CSR and reputation – are raised as main reasons for adopting or planning to adopt green finance.″ An increasing number of institutions provide a range of Islamic finance products and services, while the views over the prospect for applying them to green finance are mixed.

Challenges and policies to overcome ″ Lack of adequate enforcement of policies and regulations was recognized as the most significant barriers to introducing green finance in Bangladesh. High risk level of green sectors, long payback period and lack of profitability are also among the challenges faced by financial institutions. ″ Practical, direct support such as guidelines and subsidies are the most sought-after support from government to promote green finance, followed by awareness raising and green funds. In contrast, fiscal policy, feed-in tariffs and tradable permits are less popular measures.

Risks of Inaction ¬ Loss of business opportunities through a failure to adapt to changing market realities ¬ Higher overall risk exposure through a failure to understand the materiality of environmental and social risks ¬ Potential pressure or disengagement of investors prioritizing sustainable investment choices ¬ Lack of preparedness for regulatory and policy adjustments ¬ Risks to reputation, credibility and image of the company through a failure to respond to stakeholder expectations.

New business opportunities arise from a new understanding of the market and changing world context. Stronger, more resilient institution thanks to proper understanding and management of sustainability issues better rated and valued company improved reputation, credibility and recognition of the brand.

Part-C (Your opinion)

Statement -1:

Sustainable finance being understood as improving the contribution of finance to long-term sustainable and inclusive growth, as well as strengthening financial stability by considering material environmental, social and governance factors.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement-02:

Establishment of Bangladesh standard and label for green bonds and other sustainable assets.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -3

Mismatched time horizons and short-termism versus long-term orientation, markets, represents a distraction from, or even obstacle to a long-term orientation in economic decision-making, including investments that are essential for sustainability.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -4:

Governance of the investment and analyst community -key levers you think Bangladesh could use to best align the investment and analyst community with long-term sustainability considerations in the real economy.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Impacts on Environment:

Statement -5:

Green Projects may have positive impact on the environment. Paperless transactions and use of eco-friendly materials has increased. Green projects are reducing the electricity and water consumption. Green projects are focusing on renewable energy and clean technologies. Green Financing is having a strong pipeline of sustainable projects for investment.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Role of Credit Rating Agencies

Statement -6.

Integrating sustainability and long-term perspectives into credit ratings: Long-term risk factors are encouraged and credit rating agencies are required to disclose relevant information.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Role of banks for enhancing green finance

Statement -7.

Bangladesh Bank should involve all scheduled commercial banks more strongly on sustainability, particularly through long-term lending and project finance related to green finance.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Role of insurers

Statement -8.

Bangladesh Bank should involve insurers/ insurance companies more strongly on sustainability, particularly through long-term investment. These Investments should be insured by Insurance companies. All investment in green projects is to be regulated by Bangladesh Bank. Then lending risk and other risks will be minimized.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Social dimensions

Statement -9.

Mobilizing private capital for social dimensions of sustainable development. Society should be more aware on contributions of financial institutions to Green Economy and Sustainable Climate Finance in Bangladesh. Society should prefer green industries for long –term plan.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -10.

Bangladesh Bank should provide a comprehensive solution for promoting the economic activities of "green industries" to help shift the Bangladesh economy beyond hydrocarbon resources. In combination with the National Green Innovation Program-new business models will be advanced. It would focus on market creation for the emerging environmental goods and services (EGS) sector, while increasing the green credentials of existing sectors by enhancing resource and energy efficiency.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -11.

Bangladesh Bank should provide practical support for enabling businesses and entrepreneurs to take greening actions and stimulate the financial sector to invest in green projects and businesses.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Policies for scaling up green finance

Statement- 12. Green Financing is playing an important role in tackling climate change issues and environmental degradation in Bangladesh. Do you agree?

1		**2**		**3**		**4**		**5**	

Statement- 13. Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks. These policy guidelines are very effective for green financing of all schedule commercial banks.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement- 14. The regulatory framework for green financing in Bangladesh is quite effective for inspiration, motivating, monitoring and controlling.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement- 15. The future of green financing is very promising. Because it has already been proved that there is very high positive correlation between net profit and the investment in green financing in Bangladesh.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -16. 360 degree angle for Green Financing required for sustainable investment

Green and clean technologies are needed in order to help advocate more impactful green investment and engage more institutions. Capacity building and awareness raising ϖ Guidelines, technical toolkits and communication materials may be developed to help disseminate the notion and practices of green finance.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -17:

Overall Macroeconomic Impacts of Green Finance in Bangladesh:

The macroeconomic scenarios examined in the development of the Green Agenda require the investment of 1-2% of gross domestic product (GDP) in greening the economy for the next 15 years. To raise a massive level of investment, attracting private-sector financing and investment is ultimately a decisive factor.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -18:

Challenges for Green Finance by Banks in Bangladesh

Lack of policy enforcement, high risk and low return are among the most common barriers to introducing green finance.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -19.

Transition risk is the risk that can occur when a company is on a path to becoming carbon neutral, but is not yet there.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -20:

Your bank has your institution benefitted from the implementation of green finance practices through cost savings, additional revenues, increased share values, etc. Please provide by a rough estimate of monetized values or a share in total profits and benefits.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Thank you very much for your contribution in filling this with patience and cooperation.

Signature with date……………………………………..

Official Seal:

	Department of Accounting & Information Systems **University of Dhaka** **Dhaka-1000, Bangladesh.**

Opinion Survey
(With the beneficiaries of Green Finance); N=60

Title: Green Financing by Banks in Bangladesh

<u>Questionnaire Set -02</u>

Respondents' Information: Total Respondents=60 (30+30)
(Banker=30 and Beneficiaries= 30)

Location of opinion Survey:

(a) Dhaka Zone: Banking Arena

(b) Barishal Zone : Banking Arena.

General Information and Guidelines for the respondents

(i) This research aims at on identifying the social impacts (positive and negative impacts) of green financing by 10 selected banks in Bangladesh.

(ii) Your identity will be kept confidential.

(iii) Your responses and information will be analyzed with due and high ethical care.

(iv) Your valuable, authentic and objective response (s) may be very helpful for us to recommend policy support for policy makers in Bangladesh.

(v) Your efforts and cooperation will be highly appreciated.

Part-A: Basic Information about respondents/ Personal Profile

(i) Name: ....

(ii) Contact...

(iii) E-mail ID: ....

(iv) Age (in years)...

(v) Years of experiences: ....

(vi) Location of works: (i) …………………………...…(ii)………………………………

(vii) Respondent(s) have training in relevant field:

Yes		No	

(viii) Respondent(s) meet the inclusion criteria (i) Yes
(ix) Likert's Scale:

1 to 5 points:
1= Strongly Disagree
2= Disagree
3=Neutral
4=Agree
5=Strongly Agree

Basic notion of Green financing for the respondents (Beneficiaries of Green Finance)

In a world where the global population is approaching 9 billion, all of whom with basic needs to be met, where natural resources are scarce, and where climate disruptions are mounting, “business as usual” is no longer sustaining. The world has changed, Markets are changing faster and a new approach to finance is needed to adapt and to keep face with the change. This change is continuing. Banks, for example, are at a historic tipping point when continuing to grow, and as a business has become closely interconnected with the fulfillment of broader goals such as social and environmental sustainability.

A new approach to finance is needed as business has become interconnected with the fulfillment of sustainability goal.

Since no universal definition of green or sustainable finance exists to date “any of the financial institution’s practices supporting and facilitating sustainable development – whether it is for projects, businesses, industry, organizations, or general events and campaigns”, may be termed as green financing.

The actual identification of such practices was thus left to the respondents so as to understand and bridge gaps between government and the private sector in the efforts towards a green economy.

Benefits from green finance ″ Some institutions are already realizing substantial benefits from green finance through cost savings, additional revenues and increased share values. The most profitable cases reach as much as USD 20 million and 2% of total profits.

For many financial institutions, green finance makes business sense as cost savings, competitive advantage and the findings from the survey are summarized as follows:

profitability – along with CSR and reputation – are raised as main reasons for adopting or planning to adopt green finance. ″ An increasing number of institutions provide a range of Islamic finance products and services, while the views over the prospect for applying them to green finance are mixed.

Challenges and policies to overcome ″ Lack of adequate enforcement of policies and regulations was recognized as the most significant barriers to introducing green finance in Bangladesh. High risk level of green sectors, long payback period and lack of profitability are also among the challenges faced by financial institutions. ″ Practical, direct support such as guidelines and subsidies is the most sought-after support from government to promote green finance, followed by awareness raising and green funds. In contrast, fiscal policy, feed-in tariffs and tradable permits are less popular measures.

Risks of Inaction ¬ Loss of business opportunities through a failure to adapt to changing market realities ¬ Higher overall risk exposure through a failure to understand the materiality of environmental and social risks ¬ Potential pressure or disengagement of investors prioritizing sustainable investment choices ¬ Lack of preparedness for regulatory and policy adjustments ¬ Risks to reputation, credibility and image of the company through a failure to respond to stakeholder expectations.

New business opportunities arise from a new understanding of the market and changing world context. Stronger, more resilient institution thanks to proper understanding and management of sustainability issues Better rated and valued company Improved reputation, credibility and recognition of the brand.

Please answer the following questions:

Statement-01: I am well acquainted with the notion of green financing by banks in Bangladesh.

To what extant do you agree with the above statement?

1		2		3		4		5	

Statement-02: Green Financing by Banks in Bangladesh has already contributed a lot for the Sustainable Development of Bangladesh.

To what extant do you agree with the above statement?

1		2		3		4		5	

Statement-03: A strong Regulatory Framework is required for regulating the green financing in Bangladesh. Bangladesh Bank and Government should take immediate steps to issue an Act and enforce in the shortest possible time.

What extent do you agree with the above statement?

1		2		3		4		5	

Statement-04: Green financing by the banks in Bangladesh has very high positive impacts in the economic development of Bangladesh.

To what extant do you agree with the above statement?

1		2		3		4		5	

Statement-05: All banks (Scheduled Commercial banks) should increase the investment in green products immediately.

To what extant do you agree with the above statement?

1		2		3		4		5	

Statement -6: As a borrower you are taking loan on green products by your own initiatives or by the pressure from regulatory authority. Are you happy with the monitoring and controlling aspects of green financing by Bangladesh Bank?

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -7: Due to introduction of green financing the cost of borrowing has gone down, the scope of doing green business has widen in Bangladesh.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -8: As a borrower of green financing, I am very much happy with the loan sanctioning process by the scheduled banks in Bangladesh.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement-9: Bangladesh Bank should provide practical support for enabling businesses and entrepreneurs to take greening actions and stimulate the financial sector to invest in green projects and businesses.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Policies for scaling up green finance.

Statement- 10: Green financing is playing an important role in tackling climate change issues and environmental degradation in Bangladesh.

To what extant do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement-11: Bangladesh Bank has already issued circulars and guidelines for mandatory green financing by all scheduled commercial banks. These policy guidelines are very effective for green financing of all schedule commercial banks.

To what extent do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement- 12: The regulatory framework for green financing in Bangladesh is quite effective for inspiration, motivating, monitoring and controlling.

To what extent do you agree?

1		**2**		**3**		**4**		**5**	

Statement- 13: The future of green financing is very promising. Because it has already been proved that there is very high positive correlation between net profit and the investment in green financing in Bangladesh.

To what extant do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -14: 360 Degree angle for Green Financing required for sustainable Investment

Green and clean technologies are needed in order to help advocate more impactful green investment and engage more institutions. They should have Capacity and awareness raising practices of green finance. Monitor progress, set a mechanism to estimate the green finance market and benefits and monitor financial sector initiatives by setting up databases.

To what extant do you agree with the above statement?

1		**2**		**3**		**4**		**5**	

Statement -15: Overall Macroeconomic Impacts of Green Finance in Bangladesh:

The macroeconomic scenarios examined in the development of the Green Agenda require the investment of 1-2% of gross domestic product (GDP) in greening the economy for the next 15 years. To raise a massive level of investment, attracting private-sector financing and investment is ultimately a decisive factor.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Challenges for Green Finance by Banks in Bangladesh

Statement -16: Lack of policy enforcement, high risk and low return are among the most common barriers to introducing green finance.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -17: Green Projects having positive impact on the environment. Paperless transactions and use of eco-friendly materials has increased. Green projects are reducing the electricity and water consumption. Green projects are focusing on renewable energy and clean technologies. Green Financing is having a strong pipeline of sustainable projects for investment.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -18: Bangladesh Bank should provide a comprehensive solution for promoting the economic activities of "green industries" to help shift the Bangladesh economy beyond hydrocarbon resources.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -19: Government will take necessary steps to initiatives the Green finance. Government thinks it's enough recovery the damaged environment of Bangladesh.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Statement -20.

Overall evaluation on green financing:

Green Financing by Banks is constantly ensuring sustainable environment for all of us. Green projects are contributing a lot for cleaner environment and save the people and planet.

To what extent do you agree with this statement?

1		**2**		**3**		**4**		**5**	

Thank you so much for your patience and cooperation

Signature of the respondent:……………………………………….

Date:

Official Seal:

QUESTIONNAIRE-1

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. Name of the Bank:

2. Designation:

3. Education and Experience

4. When did you start Green Financing?

5. What is the purpose of such financing?

6. How is the proposal for such financing evaluated?

7. What is the composition of such evaluation committee?

8. What are the basic terms and conditions for such financing?

9. Please state your sector- wise financing volume for the last five years?

10. State the sector wise time taken for … … of financing.

11. Sector wise experience in financing.

12. Which sector have the higher allocation?

13. What are the factors considered …..?

14. Did you evaluate the benefits of the projects?

15. What are the criteria of such benefits?

16. What is strength of your project financing?

17. What might be weakness there on?

18. What are the challenges as your tale?

19. What is your future plan for such financing?

20. Please show your budgeted amount for last five years?

21. What are the sources of such financing?

22. Did you have any foreign donation for such financing?

23. If yes, how did you collect?

24. What are the terms and conditions there on?

25. How did you satisfy your applicants for the projects?

26. What sorts of cooperation do you have from him?

27. What are your suggestions for effective green financing?

28. Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?

29. Has the bank be benefitted by applying green financing policy?

30. What are your suggestions for better recovery?

31. What are your suggestions for overall developing the system?

QUESTIONNAIRE--2

Title: Green Financing (GF) by Banks in Bangladesh

1. Green Financing ‡Kb Ges K‡e †_‡K ïiæ? e¨vs‡Ki ¯^D‡`¨v‡M bv †i¸‡iUwi e¨vs‡Ki Pv‡c?
2. evsjv‡`k e¨vs‡Ki Green Financing Guidelines ¸‡jv Phase-wise m¤úbœ n‡q‡Q wK-bv? KvR¸‡jvi mswÿß weeiY
3. BB gwbUwis †Kgb wQ‡jv? evsjv‡`k e¨vs‡Ki gwbUwis cÖwµqv wK wQj? BB cÖvq Avm‡Zv bv Zuv‡`i Guidelines ¸‡jv e¨vsK mg~n Pv‡c †g‡b Pj‡Zv? bv ¯^-D‡`¨v‡M wKQz Ki‡Zv?
4. GF Loan Section-G wK ai‡bi Pvc wQ‡jv? Loan Sactioning-Gi d‡j Business-G wK affect c‡o‡Q Ges wKfv‡e Zv Mitigate K‡i‡Q/ Kiv nq?
5. GF Gi Rb¨ Business Cost e„w× †c‡q‡Q wKbv?
6. GF Gi d‡j myweav cv‡”Q Kviv? wK myweav cv‡”Q?
7. GF Gi d‡j overall Amyweav wK n‡”Q ? e¨vsK¸‡jv wK Amyweav m¤§yLxb n‡”Q ?
8. GF Gi Rb¨ e¨vs‡Ki Reputation/B‡gR e„w× †c‡q‡Q wKbv ev e¨vswKs cÖfve wK n‡”Q?
9. GF me©‡ÿ‡Î Green Accountibility wbwðZ K‡i‡Q wKbv? Green Accountibility wbwðZKi‡Yi Rb¨ e¨vs‡Ki †Kvb D‡`¨vM i‡q‡Q wKbv?
10. GF G e¨vs‡Ki mvgwMÖK g~j¨vqb wK? GFGi d‡j e¨vs‡Ki wK jvf n‡q‡Q?

APPENDIX-B

CIRCULERS

BRPD Circular Letter No. 01
Date: January 30, 2011

Chief Executives
All Scheduled Banks in Bangladesh

Dear Sir

Guidelines on Environmental Risk Management (ERM)

You are aware that the state of environment in Bangladesh is deteriorating significantly. The key areas of deterioration include land degradation, water pollution and scarcity, air pollution, biodiversity resources and impacts of natural disasters. Rapid population growth, improper use of land, poor resource management and uncontrolled discharge of pollutants are the major causes. In addition, Bangladesh is one of the most climate change vulnerable countries and floods, tropical cyclones, storm surges, droughts are likely to become more frequent and severe in the coming years. Banks/FIs in Bangladesh need to protect their financing from the risks arising out of the deteriorating environmental scenario and climate change.

There are four parts to these Guidelines: (1) Introduction, (2) Organizational Requirements, (3) Technical Manual and (4) Technical Annexes. The first part provides the overall context, defines environmental and climate change risks, outlines the purpose, links with credit risk management and provides information about how these guidelines were developed and are to be used. The second part covers the organizational requirements that includes policies, roles, responsibilities and authorities and procedures. The third part is the technical manual that provides directions on conducting a preliminary review (with due diligence checklists) and also the detailed environmental review. The fourth and last part includes the technical annexure that includes General Environmental Due Diligence Checklist and the various Environmental Due Diligence Checklists covering 10 sectors [Agri-business (Poultry & Dairy), Cement, Chemicals (Fertilizers, Pesticides and Pharmaceuticals), Engineering and basic metal, Housing, Pulp & paper, Sugar & distilleries, Tannery, Textile and apparels, Ship breaking]. Banks/FIs may go for more Environmental Due Diligence Checklists for other sectors as and when required.
Now, for the awareness and preparedness for easy adoption and smooth compliance of ERM guidelines by June 30, 2011, a soft copy of ERM guidelines has been made available in the BB website: www.bangladesh-bank.org or www.bangladeshbank.org.bd.
Banks are advised to give suggestions if they face problem in the implementation of the guidelines by March 31, 2011. BB will continue its support and facilitate banks by conducting exclusive training programme, seminar or workshop upon the request from the banks for their capacity building on ERM issue.
Since development is a continuous process, there will always be scope for making adjustment to develop ERM guidelines. These Guidelines are dynamic documents, which will be revised as and when required and at least once in every three years. The structure of the guidelines provide the minimum that needs to be in place and are intended to make available a common platform from which individual banks and financial institutions can launch their own environmental risk assessment framework.
Please acknowledge receipt.

Yours sincerely

(K.M. Abdul Wadood)
General Manager
Phone: 7117825

BRPD Circular No.02
Date: February 27, 2011

Chief Executives
All Scheduled Banks in Bangladesh
Policy Guidelines for Green Banking

Introduction:

We are aware that 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 have direct impact on biodiversity, agriculture, forestry, dry land, water resources and human health. Due to unusual weather pattern, rising greenhouse gas, 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. The state of environment in Bangladesh is rapidly deteriorating. The key areas of environmental degradation cover air pollution, water pollution and scarcity, encroachment of rivers, improper disposal of industrial medical and house-hold waste, deforestation, loss of open space and loss of biodiversity. In addition, Bangladesh is one of the most climate change vulnerable countries. In line with global development and response to the environmental degradation, financial sector in Bangladesh should play important roles as one of the key stake holders.

In response to the above, urgent measures are required by stake holders for sustainable development and thereby save the planet. Banks hold a unique position in an economic system that can affect production, business and other economic activities through their financing activities and thus may contribute to pollute environment. Moreover, energy and water efficiency and waste reduction are of high concern for many big banks. Green banks or environmentally responsible banks do not only improve their own standards but also affect socially responsible behavior of other business.

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 programme 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 to 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 fertilizer, insecticides by natural means instead of using chemical fertilizer and pesticides.

Adopting Green Banking Policy:
Now it is the high time for the banks to adopt a comprehensive Green Banking Policy in a formal and structured manner in line with global norms so as to protect environmental degradation and ensure sustainable banking practices.
With a view to 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:
Green Banking Policy needs to be covered through time frame work which will be segregated into 3 phases.

1. Phase-I

Banks are to develop green banking policies and show general commitment on environment through in-house performance. The time lining for the actions to be taken under Phase-I should not exceed December 31, 2011.

1.1 Policy Formulation and Governance

Bank shall formulate and adopt broad environmental or Green Banking policy and strategy approved by their Board of Directors. A high powered Committee comprises of directors from the Board in case of scheduled Bangladeshi Banks and a high powered committee comprises Regional Chief of Global Office and members from the top management including CEO in case of Foreign Banks should be responsible for reviewing the banks environmental policies, strategies and program. Bank shall approve a considerable fund in their annual budget allocation for green banking.

Banks are required to establish a separate Green Banking Unit or Cell having the responsibility of designing, evaluating and administering related green banking issues of the bank. A senior executive should be assigned with the responsibility of heading the unit. The unit will report to the high powered committee time to time.

1.2 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 mainstream Environmental Risk that cover 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.

1.3 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 equipment. 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. 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. Bank should take steps to save energy from corporate business travel and encourage employees to purchase energy efficient cars (that consume less fuel) can reduce gas and petroleum consumption.

1.4 Introducing Green finance

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

1.5 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.

1.6 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 itself or produced and/or packaged in an environmentally friendly way. Banks should use environmental causes for marketing their services to consumer. Green marketing is expected to help awareness development among common people.

1.7 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.

1.8 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.

1.8 Disclosure and Reporting of Green Banking Activities

Banks shall report on the initiatives/practices to BB and disclose in their respective websites.

2. Phase-II

The time lining for the actions to be taken under Phase-II should not exceed December 31, 2012.

2.1 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, Textile and Apparels, Renewable Energy, Pulp and Paper, Sugar and distilleries, Construction and Housing, Engineering and Basic Metal, Chemicals (Fertilizers, Pesticides and Pharmaceuticals), Rubber and Plastic Industry, Hospital/Clinic, Chemical Trading, Brick Manufacturing, Ship breaking etc.

2.2 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.

2.3 Setting up Green Branches

A 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.

2.4 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.

2.5 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. Bank alliances may prepare standard and guidelines for themselves for improving Green Banking practices.

2.6 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.

2.7 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.

3. Phase-III:

A system of Environmental Management should be in place in a bank before the initiation of the activities of Phase-III. Banks are expected to address the whole eco-system through environment friendly initiatives and introducing innovative products. Standard environmental reporting with external verification should be part of the phase. The time lining for the actions to be taken under Phase-III should not exceed December 31, 2013.

3.1 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.

3.2 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.

4. 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 shall submit their first quarterly report on June 30, 2011 basis within July 15, 2011 and similarly they will be 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.

5. 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 according permission for opening new bank branch.

Please acknowledge receipt.

Yours sincerely
(K. M. Abdul Wadood)
General Manager

GBCSRD Circular No- 04
August 11, 2013

GBCSRD Circular No- 04

Date: August 11, 2013
Sraban 27, 1420
Website: www.bb.org.bd

Green Banking and CSR Department
Bangladesh Bank
Head Office
Dhaka

Managing Directors/Chief Executives
All Financial Institutions Licensed under Financial Institution Act, 1993.

Dear Sir,

Policy Guidelines for Green Banking

Introduction:
You are aware that 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 have direct impact on biodiversity, agriculture, forestry, dry land, water resources and human health. Due to unusual weather pattern, rising greenhouse gas, 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. The state of environment in Bangladesh is rapidly deteriorating. The key areas of environmental degradation cover air pollution, water pollution and scarcity, encroachment of rivers, improper disposal of industrial, medical and household waste, deforestation and loss of open space and loss of biodiversity. In addition, Bangladesh is one of the most climate change vulnerable countries. In line with global development and response to the environmental degradation, financial sector in Bangladesh should play important roles as one of the key stake holders.
In response to the above, urgent measures are required by stake holders for sustainable development and thereby save the planet. Financial Institutions (FIs) as financial intermediary hold a unique position in an economic system that can affect production, business and other economic activities through their financing activities and thus may contribute to pollute environment. Moreover, energy and water efficiency and waste reduction are of high concern for FIs. Green FIs or environmentally responsible FIs do not only improve their own standards but also affect socially responsible behavior of other business.

Adopting Green Banking Policy:
Now it is the high time for the FIs to adopt a comprehensive Green Banking Policy in a formal and structured manner in line with global norms so as to protect environmental degradation and ensure sustainable banking practices. With a view to developing green banking practices in the country, an indicative Green Banking Policy and Strategy framework has been developed for the FIs in the following manner: Green Banking Policy needs to be covered through time frame work which will be segregated into 3 phases.

1. Phase-I
FIs are to develop green banking policies and show general commitment on environment through in-house performance. The time lining for the actions to be taken under Phase-I should not exceed June 30, 2014.

1.1 Policy Formulation and Governance
FIs shall formulate and adopt broad environmental or Green Banking policy and strategy approved by their Board of Directors. A high powered Committee comprises of directors from the Board in should be responsible to review the FIs' environmental policies, strategies and program. FIs shall approve a considerable fund in their annual budget allocation for green banking. FIs are required to establish a separate Green Banking Unit or Cell having the responsibility of designing, evaluating and

administering related green banking issues of the FIs. A senior executive should be assigned with the responsibility of heading the unit. The unit will report to the high powered committee time to time.

1.2 Incorporation of Environmental Risk in CRM

FIs 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. FIs shall incorporate Environmental and Climate Change Risk as part of the existing overall credit risk methodology prescribed to assess a prospective borrower from both credit and environmental risk point of view. This will include integrating environmental risks in the checklists, audit guidelines and reporting formats. All of this will help to mainstream Environmental Risk that cover 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.

1.3 Initiating In-house Environment Management

FIs 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 equipment. 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. FIs may apply Eco-font 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 equipment 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 FIs. FIs should make plan to use solar energy at their premises to save electricity. FIs should take steps to save energy from corporate business travel and encourage employees to purchase energy efficient cars (that consume less fuel) can reduce gas and petroleum consumption. FIs 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.

1.4 Introducing Green finance

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

1.5 Creation of Climate Risk Fund

FIs should finance the economic activities of the flood, cyclone and drought prone areas at the regular interest rate without charging additional risk premium. However, FIs 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. FIs would ensure regular financing flows in these vulnerable areas and sectors. The fund could be created as part of FIs' CSR expenditures.

1.6 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 itself or produced and/or packaged in an environmentally friendly way. FIs should use environmental causes for marketing their services to consumer. Green marketing is expected to help awareness development among common people.

1.7 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 FIs' Human Recourse Development. Awareness development among consumers and clients would be a continuous job of a FI under its public relation department.

1.8 Disclosure and Reporting of Green Banking Activities

FIs shall report on the initiatives/practices to Green Banking and CSR Department of Bangladesh Bank in specified format (Annexure-A) on quarterly basis and disclose in their respective websites. FIs have to submit the report within the next 15 days of each quarter.

2. Phase-II

The time lining for the actions to be taken under Phase-II should not exceed December 31, 2014.

2.1 Sector Specific Environmental Policies

FIs need to formulate strategies to design specific policies for different environmental sensitive sectors such as Agriculture, Agri-business (Poultry and Dairy), Agro farming, Leather(Tannery), Fisheries, Textile and Apparels, Renewable Energy, Pulp and Paper, Sugar and distilleries, Construction and Housing, Engineering and Basic Metal, Chemicals (Fertilizers, Pesticides and Pharmaceuticals), Rubber and Plastic Industry, Hospital/Clinic, Chemical Trading, Brick Manufacturing, Ship breaking etc.

2.2 Green Strategic Planning

A FI should determine green targets to be attained through strategic planning. FIs 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.

2.3 Setting up Green Branches

A 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 equipment, reduced water and electricity use, use of recycled water etc. Such a branch of a FI 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.

2.4 Improved In-house Environment Management

Strategy of reuse, recycling of materials and equipment, and source reduction and waste minimization strategy should be part of in-house environmental management in Phase-II. FIs should increasingly rely on virtual meeting through the use of video conferencing in lieu of physical travel which would help saving cost and energy.

2.5 Formulation of FI Specific Environmental Risk Management Plan and Guidelines

A FI 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 FIs may set internationally accepted higher environmental standards. In this connection, Green initiatives by a group of FIs will not only be effective but will also offer competitive advantage. FIs' alliances may prepare standard and guidelines for themselves for improving Green Banking practices.

2.6 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. FIs should introduce rigorous programs to educate clients.

2.7 Disclosure and Reporting of Green Banking Activities

FIs should start publishing independent Green Banking and Sustainability reports showing past performances, current activities, and future initiatives. Updated and detailed information about FIs' environmental activities and performances of major clients should be disclosed.

3. Phase-III:

A system of Environmental Management should be in place in a FI before the initiation of the activities of Phase-III. FIs are expected to address the whole eco-system through environment friendly initiatives and introducing innovative products. Standard environmental reporting with external verification should be part of the phase. The time lining for the actions to be taken under Phase-III should not exceed June 30, 2015.

3.1 Designing and Introducing Innovative Products Alongside avoiding negative impacts on environment through banking activities,

FIs are expected to introduce environment friendly innovative green products to address the core environmental challenges of the country.

3.2 Reporting in Standard Format with External Verification

FIs 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.

4. Reporting Green Banking Practices on Quarterly Basis

FIs shall report their initiatives/activities under the said program to Green Banking and CSR Department of Bangladesh Bank in specified format (Annexure-A) on quarterly basis. FIs shall submit their first quarterly report on September 30, 2013 basis within October 15, 2013 and similarly they will be required to continue to submit reports on the subsequent quarters within the next 15 days of the respective quarter end.

FIs shall keep their annual report and websites updated with the disclosures on green banking initiatives/activities.

5. The compliant FIs practicing Green Banking will have the following preferential treatments:

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

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

(iii) BB will actively consider green banking activities/practices of a FI while according permission for opening new FI branch.

Please acknowledge receipt.

Yours sincerely,

(Khondkar Morshed Millat)
Deputy General Manager
Phone: 9530292
Fax: 9530327
E-mail: morshed.millat@bb.org.bd

BRPD Circular Letter No. 07

Date: July 22, 2012

Chief Executives
All Scheduled Banks in Bangladesh

Dear Sir

Reporting Green Banking activities under Phase II

Please refer to BRPD Circular No. 02 dated February 27, 2011 on Policy Guidelines for Green Banking.

Banks are required to report their green banking initiatives/activities to Department of Off-site Supervision (DOS) on quarterly basis as per clause 4 of the said circular. Accordingly banks are reporting since December 2011 quarter end basis under phase I and March 2012 quarter end basis under phase II in the structured format as provided by BRPD.

The existing format for reporting green banking activities has been reviewed to cover all the green banking activities under phase II and a new reporting format under phase II has been prepared (copy attached).

Now, it has been decided that banks shall report on June 30, 2012 basis in the new structured format to Green Banking Cell, BRPD instead of DOS by July 30, 2012. Banks will be required to continue to submit reports to Green Banking Cell, BRPD 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.

Please acknowledge receipt.

Yours sincerely

Enclo.: As above

SD/-

(Khondkar Morshed Millat)
Deputy General Manager
Phone: 9530010-29/Ext. 2528
Fax: 9530084

SFD Circular No. 02

Date: February 08, 2017

Managing Directors/Chief Executives
All 'Scheduled Banks' and 'Financial Institutions' in Bangladesh

Dear Sir,

Guidelines on Environmental & Social Risk Management (ESRM) for Banks and Financial Institutions in Bangladesh

In order to incorporate environmental risk in overall credit/investment management and to fortify the risk management process and structure of banks and Financial Institutions (FIs), Bangladesh Bank (BB) issued 'Guidelines on Environmental Risk Management (ERM) for Banks and Financial Institutions in Bangladesh' vide BRPD Circular No. 01/2011.

2. Guidelines on ERM has been a pioneering initiative from any central bank or financial sector regulatory body all over the globe in context of addressing environmental risk in the process of credit management in banks or financial institutions. Following the implementation of Guidelines on ERM, cognizance of environmental factors in assessing risks associated with credit has been the core of it. Resultantly, Guidelines on Credit Risk Management (CRM) for Banks issued vide BRPD Circular No. 04/2016 has incorporated the evaluation of Environmental and Social Risks in the process of Credit Risk Management. The implementation experience of Guidelines on ERM indicated to broaden the scope of Guidelines by incorporating the Social Risks, expanding the risk rating system and introducing requirement for Environmental and Social Management Systems. Comprehensive initiative was taken to materialize the recommendation. Through a long process of in-house study and research within BB, having technical support from IFC, three tier consultation (Mail/E-mail based consultation, web-based consultation and live consultation) with banks and FIs, consultation with development partners working on E&S issues in financial sector, Guidelines on Environmental & Social Risk Management (ESRM) for Banks and Financial Institutions in Bangladesh along with a Excel-based Risk Rating Model have been developed which are being issued vide this circular, will replace the Guidelines on ERM in all extent. Year 2017 will be treated as phase-in period for implementation of 'Guidelines on ESRM'. From January 01, 2018 'Guidelines on ESRM' will be enforceable under Bank

Company Act, 1991 and Financial Institutions Act, 1993. Whatever the source of fund would be for the banks and FIs, 'Guidelines on ESRM' will be the master framework for the banks and FIs in assessing E&S risks in their credit/investment proposals/accounts, managing E&S risks in their credit/investment portfolio and establishing Environmental and Social Management System within their organization.

3. This circular, the Guidelines on ESRM and the Risk Rating Model are being issued under the authority given through Section 45 of Bank Company Act, 1991 and Section 18 (Cha) of Financial Institutions Act, 1993.

Yours sincerely

(Manoj Kumar Biswas)
General Manager
Phone: 9530320
Fax: 9530327
E-mail: manoj.biswas@bb.org.bd

BRPD Circular No.02
Dated 27 February, 2011

Adopting Green Banking Policy by Bangladesh Bank BRPD Circular No.02, Dated 27 February, 2011 on Policy Guidelines for Green Banking
Green Banking Policy needs to be covered through time frame work which will be segregated into 3 phases.

Phase	Compliance Details	
1. Phase-I	Banks are to develop green banking policies and show general commitment on environment through in-house performance. The time lining for the actions to be taken under Phase-I should not exceed December 31, 2011. (This time has extended up to **June 30, 2014** as per the instruction to BRPD Circular No. 4 on 11/08/2013).	
1.1	**Policy Formulation and Governance**	
	Bank shall formulate and adopt broad environmental or Green Banking policy and strategy approved by their Board of Directors. A high powered Committee comprises of directors from the Board in case of scheduled Bangladeshi Banks and a high powered committee comprises Regional Chief of Global Office and members from the top management including CEO in case of Foreign Banks should be responsible for reviewing the banks environmental policies, strategies and program. Bank shall approve a considerable fund in their annual budget allocation for green banking. Banks are required to establish a separate Green Banking Unit or Cell having the responsibility of designing, evaluating and administering related green banking issues of the bank. A senior executive should be assigned with the responsibility of heading the unit. The unit will report to the high powered committee time to time.	
1.2	**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 mainstream Environmental Risk that cover 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.	
1.3	**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 equipment’s. 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 Eco font in printing to reduce use of ink, use scrap paper as note pad sand avoid disposable cups/glasses to become more eco- friendly. Installation of energy efficient electronic	

	equipment's 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. Bank should take steps to save energy from corporate business travel and encourage employees to purchase energy efficient cars (that consume less fuel) can reduce gas and petroleum consumption.	
1.4	**Introducing Green finance** Eco friendly business activities and energy efficient industries will be given preference in financing by bank. Environmental infrastructure such as renewable energy project, clean water supply project, wastewater treatment plant, solid & hazardous waste disposal plant, bio-gas plant, bio-fertilizer plant should be encouraged and financed by bank. Consumer loan programs may be applied for promoting environmental practices among clients.	
1.5	**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.	
1.6	**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 consumer. Green marketing is expected to help awareness development among common people.	
1.7	**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 laminating paper waste, saving gas and carbon emission, reducing printing costs and postage expenses.	
1.8	**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.	
1.9	**Disclosure and Reporting of Green Banking Activities**	
	Banks shall report on the initiatives/practices to BB and disclose in their respective websites.	
2. Phase-II	The time lining for the actions to be taken under Phase-II should not exceed December 31, 2012. (This time has extended up to **December 31, 2014** as per the instruction to BRPD Circular No. 4 on 11/08/2013).	

2.1	**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, Textile and Apparels, Renewable Energy, Pulp and Paper, Sugar and distilleries, Construction and Housing, Engineering and Basic Metal, Chemicals (Fertilizers, Pesticides and Pharmaceuticals), Rubber and Plastic Industry, Hospital/Clinic, Chemical Trading, Brick Manufacturing, Ship breaking, etc.	
2.2	**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 environment allows as percentage of total, introducing eco-friendly financial products etc.	
2.3	**Setting up Green Branches**	
	A 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 equipment's, 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.	
2.4	**Improved In-house Environment Management**	
	Strategy of reuse, recycling of materials and equipment's, 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.	
2.5	**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 standard and guidelines for themselves for improving Green Banking practices.	
2.6	**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.	
2.7	**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.	
3. Phase-III	A system of Environmental Management should be in place in a bank before the initiation of the activities of Phase-III. Banks are expected to address the whole eco-system through environment friendly initiatives and introducing innovative products. Standard environmental reporting with external verification should be part of the phase. The time lining for the actions to be taken under Phase-III should not exceed December 31, 2013. (This time has extended up to **June 30, 2015** as per the instruction to BRPD Circular No. 4 on 11/08/2013).	
3.1	**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.	
3.2	**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.	
4	**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 shall submit their first quarterly report on June 30, 2011 basis within July 15, 2011 and similarly they will be 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.	
5	**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 according permission for opening new bank branch. Please acknowledge receipt.	

APPENDIX-C

1. BASIC BANK LTD.

QUESTIONNAIRE-1

The Executives of Green Financing Division

Head Quarters

1. Name of the Bank: BASIC Bank Limited

2. Designation: General Manager

3. Education and Experience:

4. When did you start Green Financing?

Ans: Green Financing operation started in our Bank on year 2011.

5. What is the purpose of such financing?

Ans: Purpose of such financing is risk minimization that will help investors minimize risks of renewable energy or low carbon emission. This will help attract investors to invest in more environment friendly projects.

6. How is the proposal for such financing evaluated?

Ans: Proposal evaluated through SWOT (Strength, Weakness, and Opportunity& Threat) analysis

7. What is the composition of such evaluation committee?

Ans. Lower & Medium Risk financing proposals are evaluated through the management of the Bank & Higher Risk financing proposals are evaluated by the Board of Directors.

8. What are the basic terms and conditions for such financing?

Bank follows the policy Guidelines of Bangladesh Bank, its terms and conditions for such financing.

9. Please state your sector- wise financing volume for the last five years?

Sector wise Financing:

In 2017	**Sector**	**Amount in Million**	**In 2018**	**Sector**	**Amount in Milion**
	Bricks	2293.10		Bricks	1560.56
	Bio gas plant	5.79		Bio gas plant	4.33
	ETP	25.01		ETP	25.04
	Paper Recycled	1917.59		Paper Recycled	2106.55
	Polythene Recycle	65.79		Polythene Recycle	60.78
	Rebber Recycle	6.70		Solar Home System	0.05
	Solar Home System	0.10		Solar Panel Manufacturing Plant	278.16
	Solar Panel Manufacturing Plant	279.15		Vermi compost	6.18
	Vermicompost	7.02			
In 2019	Bricks	2434.62	In 2020	Bricks	2434.62
	Bio gas plant	3.49		Bio gas plant	3.49
	ETP	14.39		ETP	14.39
	Paper Recycled	2208.28		Paper Recycled	2208.28
	Polythene Recycle	53.29		Polythene Recycle	53.29
	Solar Home System			Solar Panel Manufacturing Plant	278.16
	Solar Panel Manufacturing Plant	278.16		Vermicompost	2.06
	Vermicompost	2.06		Pet Bottle Recycling Plant	29.69
	Pet Bottle Recycling Plant	29.69			

10. State the sector-wise time taken for … … of financing.

Mainly time taken for financing depends on the nature of projects, promoters experience and availability of required information for analyzing the projects.

11. Sector wise experience in financing.

Overall green financing experience is very much disappointment because money has been misused and not properly utilized as per the project financing terms & conditions. As a result 72% of our financing turned into bad loans.

12. Which sector has the higher allocation?

'Auto Brick' sector have the higher allocation.

13. What are the factors considered …..?

Main Factors considered for Auto Brick Financing is as follows:

- Clearance certificate from Dept. of environment,
- Certificate from DC office,
- Certificate from Union Parishad,

- Certificate fire & civil defense,

- Trade license, etc.

14. Did you evaluate the benefits of the projects?

The multiple benefits- expansion of green energy to provide energy security and meet climate and clean air goals, less pollution, reduction of greenhouse effect improved quality life and opportunity, etc.

15. What are the criteria of such benefits?

16. What is strength of your project financing?

Strength of our project financing: it is environment friendly provides Low interest rate & have scope of refinance.

17. What might be weakness there on?

Weakness:

- High Compliance issue,
- Less interest of borrowers,
- High initial cost but return comes steadily compared to the cost.

18. What are the challenges as your tale?

Risks associated with green projects have always been a big challenge for making green projects successful in our country. Though Bangladesh Bank has formulated green banking guidelines, the lack of capacities of bank & financial institutions, the lack of proper understanding of the importance of green financing, high risk factors associated with innovative green businesses and high cost of operation hamper the expected growth green projects.

19. What is your future plan for such financing?

To handle future Covid-19 related challenges, banking has to be environment friendly. The conversion might slow the rate of commercial profitability and growth. But of the Covid-19 crisis, green banking indicators need to be included at the core to estimate financial stability of our Bank.

20. Please show your budgeted amount for last five years?

Green Finance target is 5% of total Funded loan Disbursed.

21. What are the sources of such financing?

Bangladesh Bank & ADB

22. Did you have any foreign donation for such financing?

No

23. If yes, how did you collect?

N/A

24. What are the terms and conditions there on?

N/A

25. How did you satisfy your applicants for the projects?

We perform Need based analysis& satisfy clients by financing according to their need individually.

26. What sorts of cooperation do you have from him?

Client cooperate us by providing the documents needed for allowing such financing.

27. What are your suggestions for effective green financing?

a. Govt. should provide more subsidy for financing,

b. Refinance rules should be simple,

c. Flexible & well management between the Govt. departments,

d. Process of obtaining permission for the Borrower should be easier.

28. Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?

Yes

29. Has the bank be benefitted by applying green financing policy?

Yes

30. What are your suggestions for better recovery?

For better recovery suggestions are as follows:

- Formation of Special Asset Management Cell,
- Formation task force team for recovery,
- Formation of special monitoring cells for the most hazardous industries such as Brick making & dying industries.
- Strong enforcement to old industries to setup ETP.
- Ensuring supervision of projects by govt. personnel of corresponding sectors etc.

31. What are your suggestions for overall developing the system?

I think the capacity building of banks and financial institutions, the development of markets, a well co-ordinated policy oversight and main streaming to green finance are some of the key policy issues that needs to be address to promote green financing for achieving sustainable development.

BASIC BANK LTD.

QUESTIONNAIRE-2

Title: Green Financing (GF) by Banks in Bangladesh

1. GF ‡Kb Ges K‡e †_‡K ïiæ? e¨vs‡Ki ¯^-D‡`¨v‡M bv †i¸‡iUwi e¨vs‡Ki Pv‡c?
Ans: Green Finance is Environment Friendly. Its started in our Bank from 2012. It started from the regulatory pressure.

2. evsjv‡`k e¨vs‡Ki Green Financing Guidelines ¸‡jv Phase-wise m¤úbœ n‡q‡Q wK-bv? KvR ¸‡jvi mswÿß weeiY
Ans: Not yet completed

3. BB gwbUwis †Kgb wQ‡jv? evsjv‡`k e¨vs‡Ki gwbUwis cÖwµqv wK wQj? BB cÖvq Avm‡Zv bv Zuv‡`i Guidelines ¸‡jv e¨vsK mg~n Pv‡c †g‡b Pj‡Zv ? bv ¯^-D‡`¨v‡M wKQz Ki‡Zv?
Ans: evsjv‡`k e¨vsK AdmvBU I Ab mvBU mycviwekb Gi gva¨‡g e¨vsK ¸‡jv‡K gwbUwis K‡i|

4. GF Loan Section-G wK ai‡bi Pvc wQ‡jv ? Loan Sactioning -Gi d‡j Business-G wK affect c‡o‡Q Ges wKfv‡e Zv Mitigate K‡i‡Q/ Kiv nq?
Ans: There was no presure. Due to making green financing mandatory for all banks/FIs some positive impact are observing on overall environment.

5. GF Gi Rb¨ Business Cost e„w× †c‡q‡Q wKbv
Ans: e…w× ‡c‡q‡Q|

6. GF Gi d‡j myweav cv‡"Q Kviv? wK myweav cv‡"Q?
Ans: M«vnK Customers are getting loan at lower rate of interest. Besides, the society is getting rid of environment pollution and natural calamities.

7. GF Gi d‡j overall Amyweav wK n‡"Q ? e¨vsK ¸‡jv wK Amyweav m¤§yLxb n‡"Q ?
Ans: ‡Kvb Amyweav n‡"Q bv|

8. GF Gi Rb¨ e¨vs‡Ki Reputation/B‡gRe„w× †c‡q‡Q wKbv ev e¨vswKs cÖfve wK n‡"Q?
Ans: e¨vs‡Ki Reputation/B‡gRe„w× †c‡q‡Q

9. GF me©‡ÿ‡Î Green Accountibility wbwðZ K‡i‡Q wKbv? Green Accountibility wbwðZ Ki‡Yi Rb¨ e¨vs‡Ki †Kvb D‡`¨vM i‡q‡Q wKbv?
Ans: Green Accountibility wbwðZ Kiv nq|

10. GF G e¨vs‡Ki mvgwMÖK g~j¨vqb wK? G FY Gi d‡j e¨vs‡Ki wK jvf n‡q‡Q?
Ans: GF G e¨vs‡Ki mvgwMÖK g~j¨vqb †Zgb fvj bv| e¨vs‡Ki ‡Zgb ‡Kvb jvf nqwb| ïay mvgvwRK `vqeÏZv Ges cwi‡e‡ki K_v wPšÍv K‡i dvBb¨vÝ Kiv n‡q‡Q|

2. Dhaka Bank Ltd.

Questionnaire

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: Dhaka Bank Ltd.

2. **Designation:** Executives, Green Banking Unit

3. **Education and Experience:** Masters

4. **When did you start Green Financing?**

No official data is found in this regard.

5. **What is the purpose of such financing?**

- Pollution prevention and control
- Biodiversity conservation
- Sustainable use of natural resources and land

6. **How is the proposal for such financing evaluated?**

It is a matter of hope that the banks are heading towards green financing with a positive mindset and it will be reinforced very soon.

7. **What is the composition of such evaluation committee?**

Generally three or more high officials compose of such committee.

8. **What are the basic terms and conditions for such financing?**

(1) sector-specific environmental policies; (2) green strategic planning; (3) setting up green branches; (4) improved in-house environment management; (5) the formulation of bank-specific environmental risk management plan and guidelines; (6) rigorous programs to educate clients; and (7) the disclosure and reporting of green banking activities.

9. **Please stat e your sector- wise financing volume for the last five years.**

It is hard to state sector wise financing volume for the last five years as Green finance is still in primary stage and no official data is found in this regard.

10. **State the sector wise time taken for … … of financing.**

No official data is found in this regard.

11. **Sector wise experience in financing.**

It has have excellent achievements in developing the agriculture of Bangladesh as it provides loans to the farmers at a very low or no interest rate..

12. **Which sector have the higher allocation?**

Agriculture, solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc are generally having the higher allocation at present.

13. **What are the factors considered …..?**

The factors guided by Bangladesh Bank are generally considered for such financing.

14. **Did you evaluate the benefits of the projects?**

The time has come to embrace the concept of true long-term investing, which requires marshalling the capacity of institutionally mobilized capital to support investment opportunities that will secure a sustainable future for all.

15. **What are the criteria of such benefits?**

Creating employment, improving environmental condition are some main criteria.

16. **What is strength of your project financing?**

We are mainly eying on agricultural projects.

17. **What might be weakness there on?**

As such financing is still in primary stage in Bangladesh, there are lots of weakness. Funding is the first among them along with weak infrastructure and less possibility of return.

18. **What are the challenges as your tale?**

Though the green banking policy guidelines are in place, the poor capacity of banks and financial institutions to manage green projects has resulted in slow growth of green finance promotion.

19. **What is your future plan for such financing?**

It is likely that the banks that present a more environmentally responsible offering to their customers will also see an increase in the appetite for those products and services and we are looking deeply into it to grab the opportunity to expand green finance.

20. Please show your budgeted amount for last five years.

No official data is found in this regard.

21. **What are the sources of such financing?**

Grants as well as low-interest funding

22. **Did you have any foreign donation for such financing?**

Not yet.

23. **If yes, how did you collect?**

No comment.

24. **What are the terms and conditions there on?**

No comments.

25. **How did you satisfy your applicants for the projects?**

With logistic support and quick processing of such finances.

26. **What sorts of cooperation do you have from him?**

They come up with their projects and we try to help them materialize them.

27. **What are your suggestions for effective green financing?**

For Green Investment. In many countries, opportunities for green finance such as renewable energy, energy efficiency, agricultural development and Small and Medium-sized Enterprises (SMEs) productivity, as well as insurance markets, are potentially commercially viable,

28. **Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?**

Of course, our bank is promoting green banking including green financing in accordance with the framework guided by Bangladesh Bank.

29. **Has the bank be benefitted by applying green financing policy?**

Benefits are surely these but not enough to be mentioned.

30. **What are your suggestions for better recovery?**

Supervision, monitoring and timely assistance are three major aspects for better recovery.

31. **What are your suggestions for overall developing the system?**

1. Every bank and financial institution must develop a strong and separate department for green financing.
2. Bangladesh Bank should have a close supervision in this regard.

3. Dutch-Bangla Bank Ltd.

Questionnaire

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: Dutch- Bangla Bank Ltd

2. **Designation:** Senior Principal Officer

3. **Education and Experience:** Masters and Banking Diploma

4. **When did you start Green Financing?**

Green financing was started in our bank in late 2011.

5. **What is the purpose of such financing?**

Mainly investing in the ecofriendly projects is the goal of green financing.

6. **How is the proposal for such financing evaluated?**

Obliviously, with great importance.

7. **What is the composition of such evaluation committee?**

Branch manager, zonal head, departmental head and s o on.

8. **What are the basic terms and conditions for such financing?**

The projects should have sustainable development and should not do any damage to the environment.

9.**Please stat e your sector- wise financing volume for the last five years.**

No official data is found in this regard.

10. **State the sector wise time taken for … … of financing.**

No official data is found in this regard.

11. **Sector wise experience in financing.**

It is still in its primary stage.

12. **Which sector have the higher allocation?**

Agriculture, bio gas plant etc.

13. **What are the factors considered …..?**

The factors include conservation of environment, sustainable development, ecofriendly product and pollution free production.

14. **Did you evaluate the benefits of the projects?**

These projects are not many. Thus, it will take some time to evaluate properly,

15. **What are the criteria of such benefits?**

It must be ecofriendly, securing sustainability avoiding heavy consumption of energy and resource and reducing pollution.

16. **What is strength of your project financing?**

Paperless banking, Online banking, and ecofriendly investment is some of our strengths.

17. **What might be weakness there on?**

Lack of proper guideline and monitoring.

18. **What are the challenges as your tale?**

Challenges are many. Among them, creating public awareness and involving the industrialists to show interest in such financing are few main challenges.

19. **What is your future plan for such financing?**

To invest in any project that creates sustainable and ecofriendly development.

20. Please show your budgeted amount for last five years.

No official data is found in this regard.

21. **What are the sources of such financing?**

Bangladesh bank, government as well as few NGOs are some of the main sources.

22. **Did you have any foreign donation for such financing?**

Not yet.

23. **If yes, how did you collect?**

No comment.

24. **What are the terms and conditions there on?**

No comments.

25. **How did you satisfy your applicants for the projects?**

Generally we satisfy the applicants by quick processing of the proposal having least terms and conditions and other logistic support if needed.

26. **What sorts of cooperation do you have from him?**

Generally they come up with a project ready to materialize and we consider the project if it is viable securing the safe return. If we have any queries, they provide us with information and other supportive documents.

27. **What are your suggestions for effective green financing?**

Making a strong and effective guideline and providing logistic support from Bangladesh bank and government could help in such financing.

28. **Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?**

Though the guideline is not that strong, yet we try to maintain the guideline.

29. **Has the bank be benefitted by applying green financing policy?**

Still the return is very low but hoping for safe return in future.

30. **What are your suggestions for better recovery?**

Supervision, monitoring and timely assistance are three major aspects for better recovery.

31. **What are your suggestions for overall development of the system?**

(a) Raising a healthy fund for green finance
(b) Encouraging the entrepreneur for eco-friendly projects
(c) Proper training should be given to the bankers in this regards.

4. Eastern Bank Ltd.

<u>Questionnaire</u>

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: Eastern Bank Ltd

2. **Designation:** Executive Officer

3. **Education and Experience:** Bachelor Degree and Banking Diploma

4. **When did you start Green Financing?**

2012

5. **What is the purpose of such financing?**

Environmental safety and safe return.

6. **How is the proposal for such financing evaluated?**

With proper importance.

(d) **What is the composition of such evaluation committee?**
Generally three or more high officials compose of such committee.

(e) What are the basic terms and conditions for such financing?
Maintaining ecological balance and using renewable source of energy is the main terms and condition.

(f) **Please stat e your sector- wise financing volume for the last five years.**
It is hard to state sector wise financing volume for the last five years as Green finance is still in primary stage and no official data is found in this regard.

(g) **State the sector wise time taken for … … of financing.**
No official data is found in this regard.

(h) **Sector wise experience in financing.**
Agricultural sector has a wonderful experience regarding green financing. Solar energy and bio gas plants are also mentionable.

12. **Which sector have the higher allocation?**

Agriculture, solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc. are generally having the higher allocation at present.

13. **What are the factors considered …..?**

The projects that promote environmental stability and has the possibility of safe return are highly preferred.

14. **Did you evaluate the benefits of the projects?**

Generally the return is smooth in this type of financing.

15. **What are the criteria of such benefits?**

Creating employment, improving environmental condition are some main criteria's.

16. **What is strength of your project financing?**

Investment on agricultural projects.

17. **What might be weakness there on?**

Creating fund is the major problem.

18. **What are the challenges as your tale?**

Though the green banking policy guidelines are in place, the poor capacity of banks and financial institutions to manage green projects has resulted in slow growth of green finance promotion.

19. **What is your future plan for such financing?**

we are looking deeply into it to grab the opportunity to expand green finance.

20. Please show your budgeted amount for last five years.

No official data is found in this regard.

21. **What are the sources of such financing?**

Mainly Bangladesh bank and our internal funding.

22. **Did you have any foreign donation for such financing?**

Not yet.

23. **If yes, how did you collect?**

No comment.

24. **What are the terms and conditions there on?**

No comments.

25. **How did you satisfy your applicants for the projects?**

With logistic support and quick processing of such finances.

26. **What sorts of cooperation do you have from him?**

They come up with their projects and we try to help them materialize them.

27. **What are your suggestions for effective green financing?**

Raising fund, providing logistic support and monitoring.

28. **Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?**

We try to abide by the green financing policy.

29. **Has the bank be benefitted by applying green financing policy?**

Benefits are surely these but not enough to be mentioned.

30. **What are your suggestions for better recovery?**

Supervision, monitoring and timely assistance are three major aspects for better recovery.

31. **What are your suggestions for overall developing the system?**

(i) Every bank and financial institution must develop a strong and separate department for green financing.

(j) Bangladesh Bank should have a close supervision in this regard.

5. IFIC Bank Ltd.

Questionnaire

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: IFIC Bank Ltd

2. **Designation:** Assistant Vice- President

3. **Education and Experience:** Masters and Post Graduate Diploma

4. **When did you start Green Financing?**

Bangladesh Bank established a Green Banking Policy in 2011 and at the same time, our bank has also started green banking including green financing in accordance with the guideline.

5. **What is the purpose of such financing?**

To ensure a better environmental outcome. The purpose of green financing are as follows

- Circular economy initiatives
-
- Renewable energy and energy efficiency
- Pollution prevention and control

6. **How is the proposal for such financing evaluated?**

It is a matter of hope that the banks are heading towards green financing with a positive mindset and it will be reinforced very soon.

7. **What is the composition of such evaluation committee?**

Generally, such committee is headed by the branch manager along with other senior officials in the branch level and higher committees are consisted of Senior Vice President along with a AVP and AGM.

8. **What are the basic terms and conditions for such financing?**

As the central bank, the Bangladesh Bank remains the primary enabler and source of green finance in Bangladesh. It has devised green banking guidelines for banks and financial institutions to promote green financing. It devised the guidelines in 2011 for implementation in two phases. Phase one includes (1) policy formulation and governance; (2) the incorporation of environmental risk into credit risk management (CRM); (3) the initiation of in-house environment management; (4) the introduction of green finance; (5) the creation of the Climate Risk Fund; (6) the introduction of green marketing; (7) online banking; (8) supporting employee training, consumer awareness, and green events; and (9) the disclosure and reporting of green banking activities. In phase two, banks and FIs are required to formulate:(1) sector-specific environmental policies; (2) green strategic planning; (3) setting up green branches; (4) improved in-house environment management; (5) the formulation of bank-specific environmental risk management plan and guidelines; (6) rigorous programs to educate clients; and (7) the disclosure and reporting of green banking activities.

9. **Please stat e your sector- wise financing volume for the last five years.**

To ensure environment friendly activities like plant tree, finance in environment friendly projects, pay bill via online, be paperless etc. But it is hard to state sector wise financing volume for the last five years as Green finance is still in primary stage and no official data is found in this regard.

10. **State the sector wise time taken for … … of financing.**

No official data is found in this regard.

11. **Sector wise experience in financing.**

Rupali Bank Ltd. is developing a wing for Green financing that includes in house green banking activities like follow green architecture, use energy saving technologies, reduce dependency on grid power and green financing practices like providing green loan to promote solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc. It has also been excellent achievements in developing the agriculture of Bangladesh as it provides loans to the farmers at a very low or no interest rate. The bank also encourages the housewives to promote terrace gardening by providing loans at a very low interest rate.

12. **Which sector have the higher allocation?**

Green loan to promote solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc. are generally having the higher allocation at present.

13. **What are the factors considered …..?**

Though Bangladesh has not yet incorporated any inclusive green financing strategies, our bank has been promoting green financing through concessional refinancing schemes and credit quotas for FIs as well as formulating guidelines for green banking and donor-supported sector-specific transformational projects.

14. **Did you evaluate the benefits of the projects?**

In order to realize the large-scale benefits of green financing and avoid investments that aggravate cascading environmental crises, the finance industry will need to understand how SDGs will reshape the investment landscape. The time has come to embrace the concept of true long-term investing, which requires marshalling the capacity of institutionally mobilized capital to support investment opportunities that will secure a sustainable future for all.

15. **What are the criteria of such benefits?**

It must be ecofriendly, securing sustainability avoiding heavy consumption of energy and resource and reducing pollution.

16. **What is strength of your project financing?**

Our strength includes digitalization of banking, quick and hassle-free financial assistance, and skilled work force and so on.

17. **What might be weakness there on?**

As such financing is still in primary stage in Bangladesh, there are lots of weakness. Funding is the first among them along with weak infrastructure and less possibility of return.

18. **What are the challenges as your tale?**

Though the green banking policy guidelines are in place, the poor capacity of banks and financial institutions to manage green projects has resulted in slow growth of green finance promotion. Among the 50 sectors that the government identified as eligible for direct green finance until 2017, most do not have a well-established investment demand, and the few that are eligible do not usually require investment of more than 5 crore taka. In most cases, small-scale local green entrepreneurs find it difficult to prove their creditworthiness and thus to secure funding in the form of either equity or liability. Banks and financial institutions often receive applications for green funds from small-scale enterprises that do not have proper documents. Moreover, high transaction costs cast a shadow on the benefits of green projects. Therefore, despite having a policy guideline to disburse a minimum of 5% of the total loan portfolio to green projects, banks and FIs are unable to find enough green project proposals.

19. **What is your future plan for such financing?**

Businesses that have already made an effort to develop their green credentials are now seeing the benefits, with consumers already citing environmental impact as a key factor in their purchasing decisions today. Mortgages, savings, current accounts and loans are all starting to turn greener too and it is likely that the banks that present a more environmentally responsible offering to their customers will also see an increase in the appetite for those products and services and we are looking deeply into it to grab the opportunity to expand green finance.

20. Please show your budgeted amount for last five years.

No official data is found in this regard.

21. **What are the sources of such financing?**

It is important to look for various financing tools and methods both banking and non-banking solutions to secure the flow of funds and growth. Therefore, to encourage investment, improving regulations, such as establishing a formal feed-in tariff in addition to providing mini-grid investors with appropriate compensation after transmission expansion, are some of the key measures that our bank is taking to facilitate the scaling up the source. Grants as well as low-interest funding could make both grid and off-grid projects more viable.

22. **Did you have any foreign donation for such financing?**

Not yet.

23. **If yes, how did you collect?**

No comment.

24. **What are the terms and conditions there on?**

No comments.

25. **How did you satisfy your applicants for the projects?**

Generally we satisfy the applicants by quick processing of the proposal having least terms and conditions and other logistic support if needed.

26. **What sorts of cooperation do you have from him?**

Generally they come up with a project ready to materialize and we consider the project if it is viable securing the safe return. If we have any queries, they provide us with information and other supportive documents.

27. **What are your suggestions for effective green financing?**

- . Public finance and foreign direct investment can be particularly important as sources of long-term investment.
- Financial Development shapes the context for green finance. Different sources of capital and relevant in different countries.
- Financial systems in developing countries tend to be characterized by a dominant banking sector.

.28. **Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?**

Of course, our bank is promoting green banking including green financing in accordance with the framework guided by Bangladesh Bank.

29. **Has the bank be benefitted by applying green financing policy?**

The green finance projects are still in their initial stage and the benefits are yet to come. But we are hoping for a quick, safe and healthy return.

30. **What are your suggestions for better recovery?**

Supervision, monitoring and timely assistance are three major aspects for better recovery.

31.**What are your suggestions for overall developing the system?**

Though green finance in Bangladesh is still in its initial stage, the following suggestion could help in its fast growth-

(k) Raising a healthy fund for green finance.
(l) Encouraging the entrepreneur for eco-friendly projects.
(m) Proper training should be given to the bankers in this regards.
(n) Campaign can also be helpful.
(o) Every bank and financial institution must develop a strong and separate department for green financing.
(p) Bangladesh Bank should have a close supervision in this regard.

6. Janata Bank Ltd.

Questionnaire

Questionnaire for the Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: Janata Bank Ltd.

2. **Designation:** Assistant General Manager and Executive, Green Banking Cell

3. **Education and Experience:** Masters

4. **When did you start Green Financing?**

Bangladesh is one the most environmentally influenced country in the world; keeping this in mind, Bangladesh Bank established a Green Banking Policy in 2011 and at the same time, our bank has also started green banking including green financing in accordance with the guideline.

5. **What is the purpose of such financing?**

Green finance is any structured financial activity that's been created to ensure a better environmental outcome. The purpose of green financing are as follows

- Renewable energy and energy efficiency
- Pollution prevention and control
- Biodiversity conservation
- Circular economy initiatives
- Sustainable use of natural resources and land

6. **How is the proposal for such financing evaluated?**

Although Bangladesh Bank has enacted a policy regarding Green Banking, its infrastructure is still in primary level. Thus, the proposal for green financing is still not evaluated as it should be. However, it is a matter of hope that the banks are heading towards green financing with a positive mindset and it will be reinforced very soon.

7. **What is the composition of such evaluation committee?**

Generally such committee is headed by the branch manager along with other senior officials in the branch level and higher committees are consisted of General Manager along with a DGM and an AGM.

8. **What are the basic terms and conditions for such financing?**

As the central bank, the Bangladesh Bank remains the primary enabler and source of green finance in Bangladesh. It has devised green banking guidelines for banks and financial institutions to promote green financing. It devised the guidelines in 2011 for implementation in two phases. Phase one includes (1) policy formulation and governance; (2) the incorporation of environmental risk into credit risk management (CRM); (3) the initiation of in-house environment management; (4) the introduction of green finance; (5) the creation of the Climate Risk Fund; (6) the introduction of green marketing; (7) online banking; (8) supporting employee training, consumer awareness, and green events; and (9) the disclosure and reporting of green banking activities. In phase two, banks and FIs are required to formulate:(1) sector-specific environmental policies; (2) green strategic planning; (3) setting up green branches; (4) improved in-house environment management; (5) the formulation of bank-specific environmental risk management plan and guidelines; (6) rigorous programs to educate clients; and (7) the disclosure and reporting of green banking activities.

9. **Please stat e your sector- wise financing volume for the last five years.**

Janata Bank Limited performs several green banking activities like in house environment management, green financing like installation of EFT, Bio gas plant, establishment of solar panel etc. Janata Bank Limited also involves in green marketing activities to ensure environment friendly activities like plant tree, finance in environment friendly projects, pay bill via online, be paperless etc. But it is hard to state sector wise financing volume for the last five years as Green finance is still in primary stage and no official data is found in this regard.

10. **State the sector wise time taken for … … of financing.**

No official data is found in this regard.

11. **Sector wise experience in financing.**

Janata Bank Ltd is developing a wing for Green financing that includes in house green banking activities like follow green architecture, use energy saving technologies, reduce dependency on grid power and green financing practices like providing green loan to promote solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc. It has also had excellent achievements in developing the agriculture of Bangladesh as it provides loans to the farmers at a very low or no interest rate. The bank also encourages the housewives to promote terrace gardening by providing loans at a very low interest rate.

12. **Which sector have the higher allocation?**

Green loan to promote solar energy, bio gas plants, develop green banking products for clients, increase online and mobile banking etc. are generally having the higher allocation at present.

13. **What are the factors considered …..?**

Though Bangladesh has not yet incorporated any inclusive green financing strategies, our bank has been promoting green financing through concessional refinancing schemes and credit quotas for FIs as well as formulating guidelines for green banking and donor-supported sector-specific transformational projects.

14. **Did you evaluate the benefits of the projects?**

In order to realize the large-scale benefits of green financing and avoid investments that aggravate cascading environmental crises, the finance industry will need to understand how SDGs will reshape the investment landscape. The time has come to embrace the concept of true long-term investing, which requires marshaling the capacity of institutionally mobilized capital to support investment opportunities that will secure a sustainable future for all.

15. **What are the criteria of such benefits?**

It must be ecofriendly, securing sustainability avoiding heavy consumption of energy and resource and reducing pollution.

16. **What is strength of your project financing?**

Our strength includes digitalization of banking, quick and hassle-free financial assistance, and skilled work force and so on.

17. **What might be weakness there on?**

As such financing is still in primary stage in Bangladesh, there are lots of weakness. Funding is the first among them along with weak infrastructure and less possibility of return.

18. **What are the challenges as your tale?**

Though the green banking policy guidelines are in place, the poor capacity of banks and financial institutions to manage green projects has resulted in slow growth of green finance promotion. Among the 50 sectors that the government identified as eligible for direct green finance until 2017, most do not have a well-established investment demand, and the few that are eligible do not usually require investment of more than 5 crore taka. In most cases, small-scale local green entrepreneurs find it difficult to prove their creditworthiness and thus to secure funding in the form of either equity or liability. Banks and financial institutions often receive applications for green funds from small-scale enterprises that do not have proper documents. Moreover, high transaction costs cast a shadow on the benefits of green projects. Therefore, despite having a policy guideline to disburse a minimum of 5% of the total loan portfolio to green projects, banks and FIs are unable to find enough green project proposals.

19. **What is your future plan for such financing?**

Businesses that have already made an effort to develop their green credentials are now seeing the benefits, with consumers already citing environmental impact as a key factor in their purchasing decisions today. Mortgages, savings, current accounts and loans are all starting to turn greener too and it is likely that the banks that present a more environmentally responsible offering to their customers will also see an increase in the appetite for those products and services and we are looking deeply into it to grab the opportunity to expand green finance.

20. Please show your budgeted amount for last five years.

No official data is found in this regard.

21. **What are the sources of such financing?**

It is important to look for various financing tools and methods both banking and non-banking solutions to secure the flow of funds and growth. Therefore, to encourage investment, improving regulations, such as establishing a formal feed-in tariff in addition to providing mini-grid investors with appropriate compensation after transmission expansion, are some of the key measures that our bank is taking to facilitate the scaling up the source. Grants as well as low-interest funding could make both grid and off-grid projects more viable.

22. **Did you have any foreign donation for such financing?**

Not yet.

23. **If yes, how did you collect?**

No comment.

24. **What are the terms and conditions there on?**

No comments.

25. **How did you satisfy your applicants for the projects?**

Generally we satisfy the applicants by quick processing of the proposal having least terms and conditions and other logistic support if needed.

26. **What sorts of cooperation do you have from him?**

Generally they come up with a project ready to materialize and we consider the project if it is viable securing the safe return. If we have any queries, they provide us with information and other supportive documents.

27. **What are your suggestions for effective green financing?**

Developing countries, notably those with underdeveloped financial systems, face particular challenges in financing national development priorities. Financial Development shapes the context for green finance. Different sources of capital and financial institutions are particularly relevant in different countries. Financial systems in developing countries tend to be characterized by a dominant banking sector, and have large areas of the economy that remain unserved by the formal financial sector. Public finance and foreign direct investment can be particularly important as sources of long-term investment. Broadly, concern and action to align financing to sustainable development is concentrated in three areas: Preventing The Financing Of Illicit Practices Or Profiting From Weak Enforcement. Weak enforcement of environmental, economic and social policies and regulations can lead to social conflicts and market impacts resulting in losses to lenders and investors, and even macroeconomic stability risks unlocking Opportunities For Green Investment. In many countries, opportunities for green finance such as renewable energy, energy efficiency, agricultural development and Small and Medium-sized Enterprises (SMEs) productivity, as well as insurance markets, are potentially commercially viable, but inadequate owing to barriers in demand or supply. Exploring Solutions To Dilemmas And Trade-Offs. Many developing countries face a tension between the need to expand the electricity supply and reduce fossil fuel intensity. Similarly, SME finance is an area where regulators must be careful that lending requirements do not result in reduced overall lending or higher rates of non-performing loans and financial instability.

28. **Does your bank abide by the regulatory framework and policy scheduled by Bangladesh?**

Of course, our bank is promoting green banking including green financing in accordance with the framework guided by Bangladesh Bank.

29. **Has the bank be benefitted by applying green financing policy?**

The green finance projects are still in their initial stage and the benefits are yet to come. But we are hoping for a quick, safe and healthy return.

30. **What are your suggestions for better recovery?**

Supervision, monitoring and timely assistance are three major aspects for better recovery.

31. **What are your suggestions for overall developing the system?**

Though green finance in Bangladesh is still in its initial stage, the following suggestion could help in its fast growth-

(q) Raising a healthy fund for green finance
(r) Encouraging the entrepreneur for eco-friendly projects
(s) Proper training should be given to the bankers in this regards.
(t) Campaign can also be helpful.
(u) Every bank and financial institution must develop a strong and separate department for green financing.
(v) Bangladesh Bank should have a close supervision in this regard.

QUESTIONNAIRE OF RUPALI BANK LTD

Executives of Green Financing Division

Head Quarters

1. **Name of the Bank**: Rupali Bank Ltd.
2. **Designation:** Principal Officer
3. **Education and Experience:** Masters in English Literature and serving in the bank for last 7 years.
4. **When did you start Green Financing?**

Bangladesh is one the most environmentally influenced country in the world; keeping this in mind, Bangladesh Bank established a Green Banking Policy in 2011 and at the same time, our bank has also started green banking including green financing in accordance with the guideline.

5. **What is the purpose of such financing?**

Green finance is any structured financial activity that's been created to ensure a better environmental outcome. The purpose of green financing is as follows

- Renewable energy and energy efficiency
- Pollution prevention and control
- Biodiversity conservation
- Circular economy initiatives
- Sustainable use of natural resources and land

6. **How is the proposal for such financing evaluated?**

Although Bangladesh Bank has enacted a policy regarding Green Banking, its infrastructure is still in primary level. Thus, the proposal for green financing is still not evaluated as it should be. However, it is a matter of hope that the banks are heading towards green financing with a positive mindset and it will be reinforced very soon.

7. **What is the composition of such evaluation committee?**

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9. **Please stat e your sector- wise financing volume for the last five years.**

Rupali Bank Limited performs several green banking activities like in house environment management, green financing like installation of EFT, Bio gas plant, establishment of solar panel etc. Rupali Bank Limited also involves in green marketing activities to ensure environment friendly activities like plant tree, finance in environment friendly projects, pay bill via online, be paperless etc. But it is hard to state sector wise financing volume for the last five years as Green finance is still in primary stage and no official data is found in this regard.

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(b) Proper training should be given to the bankers in this regards.

(c) Campaign can also be helpful.

(d) Every bank and financial institution must develop a strong and separate department for green financing.

(e) Bangladesh Bank should have a close supervision in this regard.

……………………………………………………………

Date: 25.08.2018

To

General Manager/Chief Executive

Sub: Request to provide information about Green Banking for academic research.

Dear Sir

I am pleased to introduce Mr. Subrota Kumar Bahadur, who has been pursuing his Ph.D study on **"Green Financing by Banks in Bangladesh"** under my supervision in the Department of Accounting & Information Systems, University of Dhaka. For the purpose of his study, he needs some information about Green Financing by your esteemed bank. Such information will only be used for his research and not for any other purposes.

I request you to provide the information so that he can complete his study which is expected to have some significant policy implications for the banking sector of our economy.

Please fill free to contact me if you have any query in this regard,

Thanking you,

Sincerely yours,

25/08/2018

Professor Dr. Swapan Kumar Bala FCMA
PhD Supervisor
Department of Accounting & information Systems
University of Dhaka.
E-mail: skbala@du,ac,bd
Cell: 01714377811

২৫.০৮.২০১৮ খ্রিঃ

নির্বাহী পরিচালক

গ্রীন ব্যাংক ও সিএসআর বিভাগ

বাংলাদেশ ব্যাংক

হেড অফিস, ঢাকা।

বিষয়ঃ গ্রীন ব্যাংকিং সংক্রান্ত তথ্য প্রদান প্রসঙ্গে।

মহোদয়,

যথাযথ সম্মান পূর্বক জানানো যাচ্ছে যে, জনাব সুব্রত কুমার বাহাদুর পিএইচ. ডি গবেষক রেজিঃ ৫৫/২০১৭-২০১৮, আমার তত্ত্বাবধানে ঢাকা বিশ্ববিদ্যালয়ে একাউন্টিং এন্ড ইনফরমেশন সিস্টেম বিভাগে **"Green Finance by Banks in Bangladesh"** শিরোনামের উপর গবেষনা করছেন। তাঁর গবেষণা কাজের জন্য আপনার ব্যাংকের কিছু তথ্য প্রয়োজন। উক্ত তথ্য সমূহ শুধুমাত্র গবেষণা কাজে ব্যবহার করা হবে।

অতএব, আপনার ব্যাংকের গবেষকের প্রয়োজনীয় তথ্য প্রদানের জন্য সবিনয় অনুরোধ করছি।

25/08/2018

প্রফেসর ড. স্বপন কুমার বালা

একাউন্টিং এন্ড ইনফরমেশন সিস্টেম বিভাগ

ঢাকা বিশ্ববিদ্যালয়

ও

তত্ত্বাবধায়ক, পিএইচ. ডি প্রোগ্রাম

অতএব, আপনার ব্যাংকের গবেষকের প্রয়োজনীয় তথ্য প্রদানের জন্য সবিনয় অনুরোধ করছি।