Project Dissertation Report On

STUDY OF GREEN FINANCE ECOSYSTEM IN INDIA

Submitted by:

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CERTIFICATE

This is to certify that Mr. Aashish Sharan, bonafide student of Delhi School of Management, Delhi Technological University, has successfully completed the project work in the partial fulfilment of the requirement of Master of Business Administration (MBA) program for the academic year 2018-20. This work is his original work to the best of my knowledge & has not been submitted anywhere else. The project work is titled as, "Study Of Green Finance Ecosystem In India"

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Delhi School Of Management
Delhi Technological University

DECLARATION

I hereby declare that the project report entitled "Study Of Green Finance Ecosystem In India" submitted to Delhi School of Management, Delhi Technological University, in partial fulfilment of the requirements for the award of the degree of Master of Business Administration, is a record of original dissertation work done by me, under the guidance and supervision of
Prof. Archana Singh

Student Name: Aashish Sharan
Roll Number: 2K18/MBA/020
Place: New Delhi

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I extend my sincere gratitude and thanks to my friends and faculty for their help and assistance during my project, without whom it would not have been possible for the project to take its final shape.

Aashish Sharan

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EXECUTIVE SUMMARY

Green Finance is a new term but it is gaining importance with time. The reason behind its rising importance is because of rapid change in the climatic condition not just in one particular area but all over the world. The temperature of world is rising which is causing the ice around poles of earth to melt. The melted ice is raising the levels of sea. Along with that green house gases emitting from industries & plants is polluting the air, water & land. Chemicals & drain from these units is causing harm to local population. The harmful effect is not just felt by humans but animals have also became victim of that. Many species have been lost due to its & many more are on the verge of extinction.

Green finance in this situation is promoting investments which are environment friendly. All those units which are producing harmful downstream components if their funding part is made costly the profit margin will be less & at the same time if the cost of capital for green projects is less as well as easily available investors will shift to investing in those projects. As they are making good profits as well as saving the environment

Though Green finance seems to be a very noble idea there are many challenges to it. Otherwise it would have not been still in nascent stage. Fluctuating policies makes investors uncertain about the outcome of what he is investing so he refrains himself to get into such terrain. Although a lot has been done if we compare the situation from earlier times but still it is just the beginning.

OBJECTIVES OF STUDY

The objective of this study is;

1) To understand the various green financing steps taken by public and private sector organisations/banks in India.
2) To understand the future scope of Green finance in India.
3) To scrutinize various challenges which belong to Green finance in India.

1) INTRODUCTION

For generation of employment, reduction in poverty & rise in the standards of living, economic growth is a necessary thing. Without it we will be not able to achieve it. The traditional method which we are following exploits the natural environment. It brings in climate changes which will affect future generations.

The climate change phenomenon has led to a ruthless cycle of negative consequences. Our economy, social structure and environment are being affected by it. This global phenomenon of changing climate needs urgent attention. It is because the people of the world are today experiencing very high temperatures like never before. Along with these intense heat waves, wildfires, storms and floods are also becoming very frequent because of climate change.

Climate has become one of the top international issues at various platforms around the globe. It is because the countries have started giving attention to it. The Paris Agreement was signed in 2015 between 195 nations with an aim to limit the rise of world's temperature by less than 2ºC and as close as possible to 1.5ºC above preindustrial level, by the year 2100.

Also the Paris Agreement will add to the capacity of countries in dealing with the harmful effects of climate change. These goals are ambitious so financial inflow, technology & supportive framework should be put in place to support developing countries.

It's a global challenge to achieve sustainable development along with the traditional means by which we achieve economic growth. More &

more people are becoming concerned about environment. So the finance sector should also check its role & be concerned about these environment issues. IPCC (Intergovernmental Panel on Climate Change) says that amount of $ 4 Tn is needed approx. This much amount is required to be invested in systems related to energy to achieve our goals.

In the years to come role of financial sector is pivotal for the sustainable development of world. Whether it’s Asia or Europe funding is required to achieve these targets of 2030.

Our goal of achieving sustainable & environment friendly growth can be achieved with the help of green finance. The funding is done by green financial instruments like green bonds etc. These funds are further invested in those projects which are environment friendly & promotes sustainable development.

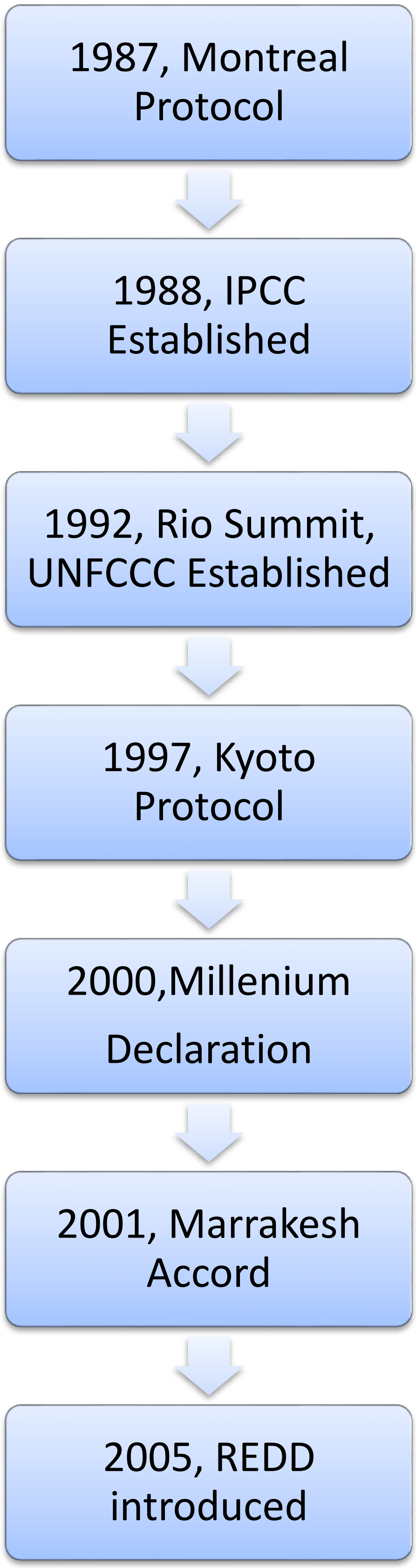
Innovations which are driven by market are driving the development of green finance. As per World Economic Forum (WEF) developing countries comprises majority of the funding which is to be done. Approx $5tn/Yr of funding is required till 2030 to reach the targets. India particularly needs $4.5tn by 2040 of funding. These funding will be used for green energy production, EVs & housing.

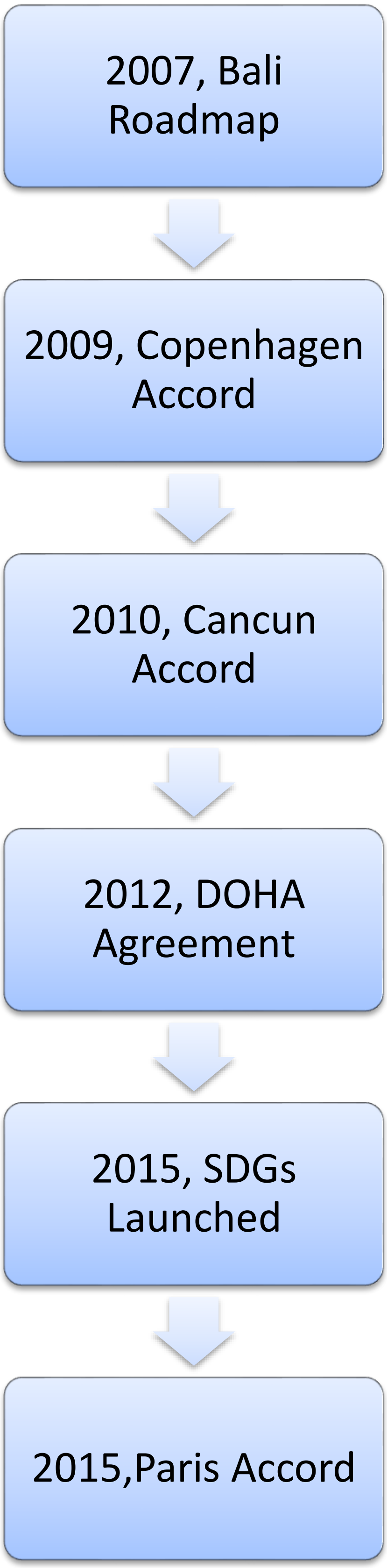
The Intended Nationally Determined contribution (INDC) has been submitted by India in Paris agreement which consists of 17 sustainable development goals. Large amount of investment is necessary to achieve those goals. Its estimated that funding of approx $ 2.5tn (2014-15 prices) will be required. This amount of funding will help to meet the targets of 2030.

Public financing is not so strong as India is a developing country & will not be able to finance it properly. Private financing is required to achieve the goals of Paris agreement & 17 SDGs. Green finance is something which is making financial sector to fund & invest in those projects which are not harmful to environment & helps in sustainable development. It includes both private & public sector.

People bank of china published a report “Establishing the China Green Financial System”. It said that approx 85% - 90% of funding required has to be from private sector. So the role of private sector becomes very important for green financing.

(1.1) TIMELINE OF GLOBAL SUSTAINABILITY INITIATIVES




2007, Bali Roadmap
2009, Copenhagen Accord
2010, Cancun Accord
2012, DOHA Agreement
2015, SDGs Launched
2015,Paris Accord

(1.2) GREEN FINANCE

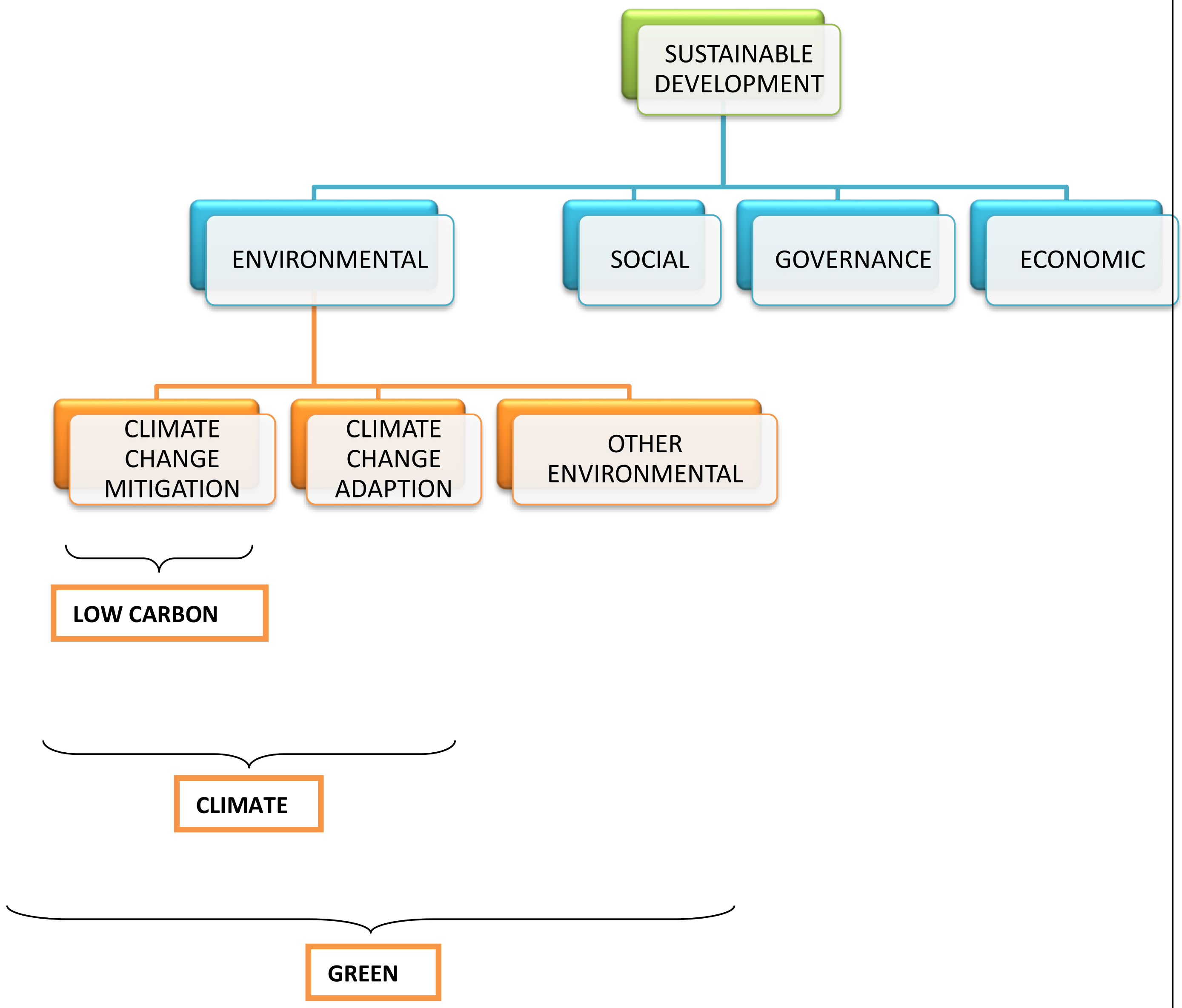
Green finance has not been defined in a precise & commonly accepted manner, the proposed definitions given by different entities vary significantly. Repeatedly the terms Sustainable Finance, Green finance, and Climate Finance are used as synonyms. Some times ESG (environmental, social, and governance) is additionally treated as green finance.

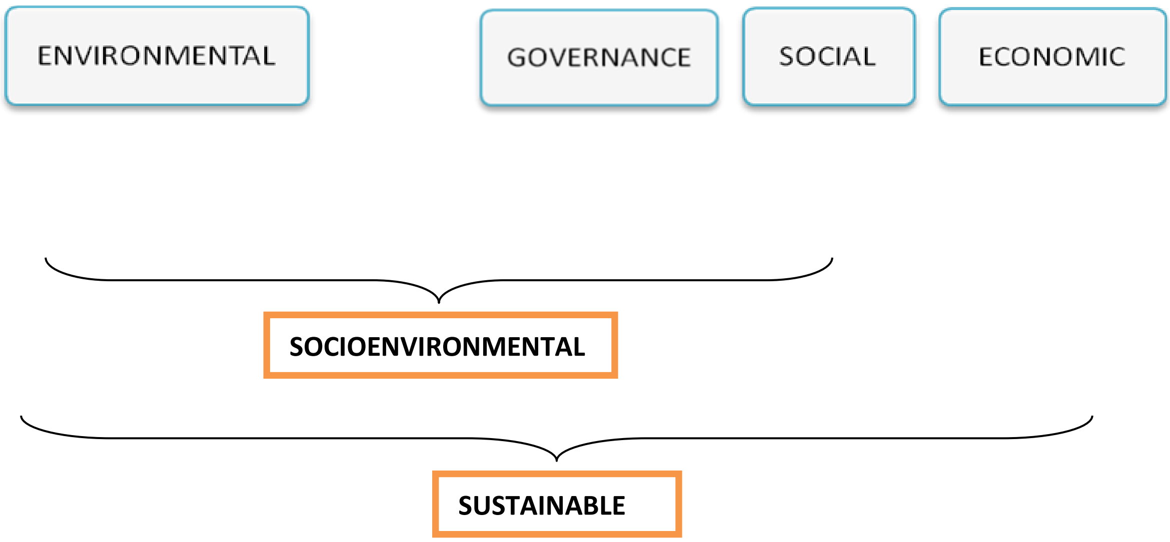
<u>Some of the Definitions are</u>;

Organisation for Economic Co-operation and Development (OECD):
Green Finance is finance for "achieving economic growth while reducing pollution and greenhouse emission, minimising waste and improving efficiency within the use of natural resources."

World Bank:
"Growth that's efficient in its use of natural resources, clean in this it minimizes pollution and environmental impacts, and resilient in this it accounts for natural hazards and therefore the role of managing environment and natural capital in prevention of disasters".

SOURCE: UNEP Inquiry


SUSTAINABLE DEVELOPMENT
ENVIRONMENTAL
SOCIAL
GOVERNANCE
ECONOMIC
CLIMATE CHANGE MITIGATION
CLIMATE CHANGE ADAPTION
OTHER ENVIRONMENTAL
LOW CARBON
CLIMATE
GREEN



SOURCE: UNEP Inquiry

Sustainable Finance covers a broader set of investments with the aim to build an inclusive, economically, socially, and environmentally sustainable world.

Green finance includes climate finance but also includes other environmental objectives necessary to support sustainability, particularly aspects such as biodiversity and resource conservation.

SOURCE: UNEP Inquiry

(1.3) ECOSYSTEM OF GREEN FINANCE

Objectives:

Sustainable growth

Environmental protection

Low-carbon transition

Climate adaptation & mitigation

Participants:

Development financial Institutions

Governments

Financiers

Project Developers

Benefits:

Reduction in pollution & GHG emissions

Sustainable use of natural resources (air, water, soil)

Build resilience

Mechanisms:

Financial

Regulatory

Policy

Market

Technology

2) LITERATURE REVIEW

Research Paper :

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

Author: Dipika (2015)

This paper is an attempt to understand how banks operating in India have come out with green banking strategies. It'll explore the challenges in implementing of green banking in India. It also attempts guide about the actions which should be taken for proper execution of green banking.

The working of Banks has undergone many improvements. Better management, Cost effective operations, Risk mitigation, Bad loan management, Profitable investments, Compliance with laws & regulations etc. All of these have improved the customer serviceability & satisfaction.

Green banking reduces the amount paper work as much as possible and uses online/ electronic mode for transaction processing. Less paperwork will create awareness among people & make them responsible about environment. Less paper work will save trees also.

Benefits:

Less Credit risk, Legal Risk & also Reputational risk, Avoids Paper work, Creates Awareness to business people about environment, loans at comparatively lesser rates, and Environmental standards for lending together with other benefits also.

Green Banking in India:

RBI’s document named ‘Policy Environment’ speaks about Green Banking & information technology initiatives for the banking sector in India & how the computer systems are helping banks to go for green banking & reduce paper works.

It’s reducing the paper work on all levels by bankers similarly customers which is reducing the value(cost) of operations saving time & increasing customer satisfaction.

Socially & environmentally responsible financing is making banks to have competitive advantage. It is because of the changing attitude of society towards environment.

Banking services like ATMs, VISA & Master Card, Credit Card, Gift card, Online Banking Services & Mobile Banking all belong to the steps of green banking.

Different banks in India have taken different initiatives within the field of green banking.

SBI: Funding of green power initiatives. It came up with Green channel Counter at their branches in place of paper based operation & services of banking. Will generate green power for its branches at certain locations during the JV.

It has also given its affirmation to fund those initiatives which are sustainable & environment friendly. It comes under “Carbon Disclosure Project”. They will implement this to various branches of the country.

Indus-Ind: It has come up with Green Office Project. In this the bank is able to save by installing solar powered ATMs. These ATMs are saving cost by reducing bills.

YES Bank: Funding of projects related to alternative energy

HSBC: Different targets has been formulated for data centres. It will inc. efficiency. It will also decreases operational impact on environment. Further it will reduce cost.

IDBI: Clean Development Mechanisms (CDM) is the field in which the bank is providing many services.

3) RESEARCH METHODOLOGY

The previous section was all about introducing the concept of green finance so that we have some background information before going any further.

This section is regarding how I have conducted the study has been discussed. Generally research is conducted by Quantitative means or Qualitative means. In qualitative type every argument is backed by analysis of data after performing some calculations. In case of qualitative method existing data is used & analysis is done on the basis of that no statistical calculation is done.

This study belongs to second type or can be said as descriptive in nature, which is based on secondary data.

The data regarding the study has been taken from various government reports, reports published by banks etc. Also for understanding the challenges of green finance I have taken references of various case studies, research papers, related news articles etc which helped me to understand it properly.

4) DATA ANALYSIS

This section talks about the present status with respect to the targets which we have to achieve. Based on this we can understand that we are far behind where we should be. Also this section shows the amount of fund committed by different groups for this purpose & how they are not enough.

India's INDC builds on its goal of installing 175GW of renewable energy by 2022. This new target will increase the share of renewable power capacity to forty percent by 2030.

Present Status	
Thermal	230701, 63%
Renewable	85908, 23%
Hydro Power	45399, 12%
Nuclear	6780, 2%

Achievement of these targets will be very difficult as per the data. Though India is not obligatory to it but it should try to achieve these targets because the climatic conditions are deteriorating. Public finance is the prime source of funding for these activities. But the government is functioning under large fiscal deficit. Due to it funds availability becomes an issue.

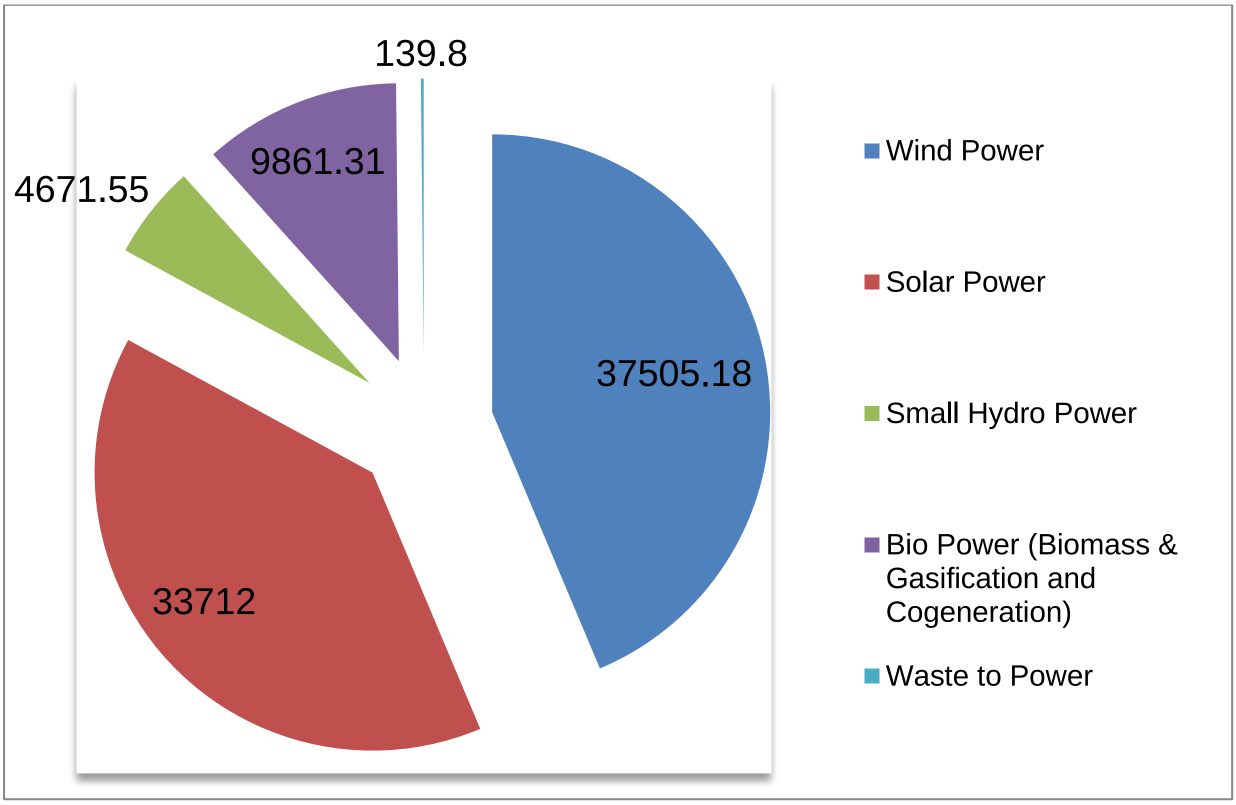
Development of green finance system in the country is very important because India is now under middle income group. This categorization is done by world bank, so now because of that flow of funds will be affected.

It has been estimated that amount of approx 450 Mn USD each year will be required. This expenditure has to be done for 10 Yrs to meet the targets.

The initial target of installing of solar power plants of 20 GW has been increased to 100GW.This target has to be achieved by the year 2022.

The INDC also commits to reduce India's GHG emissions intensity per unit GDP by 33 to 35 percent below 2005 levels by 2030. It also aims to create sink for carbon of amount approx 2.5/3bn tonnes of carbon dioxide by planting more no of trees.

Installed Grid Interactive Renewable Power Capacity (excluding large hydropower) in India (31.12.2019)



(4.1) Pledge By Different Financial Institutions for Renewable Energy

A fund of approx $2.57 bn has been committed by different financial institutions which includes private & public banks, non banking financial institutions etc.

Bank	**Share of Total Committed Amount (%)**
SBI	12.6
IREDA	10.9
Yes Bank	10.2
Indus bank	9.3
India Infra debt	8.2
PTC India Financial Services	5.4
Union Bank of India	5.3
Bank of Baroda	4.2
IDFC	20.2
L & T Finance Holdings	13.7

(4.2) Green Bonds Issuance in India

Green Bonds are fixed income debt instruments so that the fund issued from these instruments will be used for green projects, like wind & solar energy plants. Also those projects which are environment friendly & reduce greenhouse gas emissions.

Examples of green bonds issued,

5) KEY LEARNINGS

(5.1) CONSTRAINTS FOR GREEN FINANCING

Stable Policy and Regulatory Framework:

Investors belonging to private sector are not interested in investing there is instability regarding policies of Government. Unpredictable policy is risky for investors which look for certain returns from investments. There should be stability in the policies which layout instruction, assurance and encourages the prospective investors for long term investments.

An Environmental Performance Disclosure:

Disclosure and reporting about the environmental performance of the firms is essential for green financing. Investors who are responsible refrain from investing because they have less information about the compliance of firms to its environmental commitment.

Low Profitability of Green Industries:

Private sector is more inclined to make investment in traditional industries because of less cost and higher return in comparison to green industries. Also Green investments are generally of longer duration which makes it less attractive & more risky for investment purposes.

Viability Mechanism of Green Industries:

Green projects look less viable than commercial projects to investors who look for a positive NPV projects to invest in. A lack of proper mechanism which is able to measure the viability of project is keeping investors not interested towards green projects.

Less Awareness among Consumers for Green Products:

Private sector will produce green products only when there is sufficient market for that. Due to the lack of information to people that how much these products are important they don’t buy it.

Less Awareness among Investors about Green Finance:

Besides low profitability, a major issue is lack of importance & information about green finance among investor. Also investment in energy efficiency technology and solar energy etc. are considered as cost, not investment.

Less availability of products of green finance:

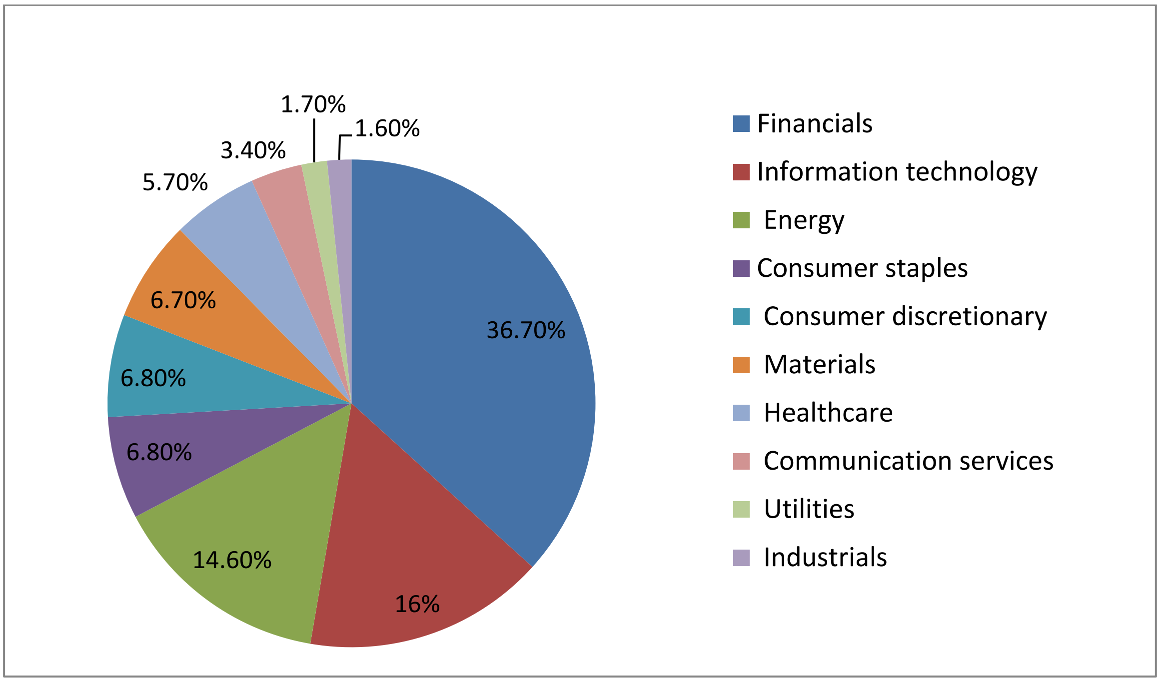
Limited number of green financial products is also a major obstacle for the development of green finance.

(5.2) STEPS TAKEN (BY INDIAN FINANCIAL SYSTEM)

1. ESG INDEX IN INDIA

S&P BSE 100 ESG Index

The index was launched in 2017. Presently it has 64 constituents. It has been formulated to measure the performance of stocks which have been compliant with the requirements of sustainable investing. Some of the firms are Reliance Industries, HDFC, Infosys, TCS, Bharti Airtel, SBI, Asian Paints etc.



S&P BSE CORBONEX-

It was launched in 2012. It measures the performance of the companies in the S&P BSE 100. The relative carbon performance of companies is the basis on which weights of the index is modified. It has 98 constituents as of now. Some of those are Axis Bank, Larsen & Toubro, ITC, ICICI etc.

S&P BSE GREENEX-

It was also launched in 2012.It measures the performance of 25 companies which are green. The companies are selected based on GHG emissions, Liquidity & market cap. It's a float-adjusted market cap type index. Some of them are Sun Pharmaceutical Industries, Dr Reddy's Laboratories, Maruti Suzuki, Titan Co, Kotak Mahindra Bank etc.

Nifty 100 ESG-

It reflects the performance of companies in nifty on the basis of ESG. The weight of each company in the index is based on ESG score of that company. The index revision is done on semi annual basis.

MSCI ESG India Index

MSCI consists of large cap & mid cap stocks of Indian market. It has 84 stocks which is approx 85% of equity market of India. The ESG index provides investors information about stocks which are complying with environment norms.

2. GREEN BOND MARKET IN INDIA

- Proceeds are used to finance the green projects for generating green energy & reduce emission.

- IREDA has launched loans and raised $91 million for renewable energy using bond issue in 2013. It has issued 150 Mn USD tax-free green bond.

- IREDA has launched India's first green bond to support renewable energy.

- First INR denominated green bond issued by YES bank

- New norms for listing & issuance of green bonds introduced by SEBI in 2016

- RBI introduced Corporate Bond measures in 2016

- India ranks 5th in G20 nations in terms of debt issued as green bonds with respect to total debt issued.

- Green bond share approx 1% of the total debt globally the same is 0.35% for India.

- Most of the fund has been moved towards renewable energy. Avenues like water, green transport, and energy efficiency has received meagre investments

3. OTHER INITIATIVES BY GOVERNMENT

- The coal cess has been raised from INR50 a ton in 2010 to INR100 in 2014, INR200 in 2015, finally INR 400 a ton in 2016. The cess collected is transferred to National Clean Energy and Environment Fund (NCEEF) which will fund research and innovative projects related to clean energy. Although most of the fund collected form cess has not been transferred to NCEEF & has been used to meet GST shortfall. The NCEEF fund is also under utilized & the money is kept ideal.

- The companies act 2013 mandates companies to spend 2% of their avg. 3 Yr annual net profit towards CSR activities in a given financial year. Though compliance has been an issue. Encouraging firms to spend in clean energy projects is a win-win situation for both the parties. It will reduce the cost of energy expenses for firms as well as it will help government to reach the target of 175GW production.

- Removal of priority lending limit for renewable energy sector. It will help large investors to easily raise more money for funding these projects. It will be a boost for green economy. It will also encourage manufacturing in renewable energy sector.

- National Environment Policy (NEP) 2006
- National Action Plan on Climate Change (NAPCC)
- State Action Plan on Climate Change (SAPCC)
- Energy Conservation Act
- National Electricity Policy (NEP) Integrated Energy Policy (IEP)

6) RECOMMENDATIONS

A stable policy framework should be brought up by the government for green finance. It will motivate & encourage investors belonging to private sector to finance projects of sustainable development.

More ESG (Environmental, social & corporate governance) index should be there which would represent environmental performance of companies.

Just like we have rating agencies for bonds & institutions, there must be agency which gives rating on the basis of green energy produces or consumed.

Intervention by government should be there to increase the profits of green projects. It can be done by decreasing the cost of green projects by providing tax benefits, subsidised tariff charges, cheaper loans. The government can meet the shortage of this revenue by charging higher taxes to polluting firms thus increasing their cost of investment.

A standard mechanism should be developed to evaluate the projects and business in terms of environmental, social and governance (ESG) risk with the objective to give more emphasis on environmental risk.

MSMEs (medium, small and micro enterprises) share 45% of the total manufacturing output which is approx 7-8 per cent of India’s GDP. By providing more funds & financial support to msme they can have access to energy efficient technologies. It will help to reduce pollution as well as their productivity.

There should be awareness campaigns about green finance & how it is vital for the sustainability of economy. Various marketing tools should be used to provide info about the energy efficient technologies, & why green products are essential. It will help in building responsibilities in people

We should use financial engineering to provide different types of green financial products to investors so that they can do investment easily.

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