

# Green Finance : A Study with Respect to Modern India

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**Abstract:** *In the modern world the ever increasing adverse climate changes has been a great concern for the governments of the various countries of the world which has caused them and various other organisations to specifically concentrate on reducing the greenhouse gas emissions .*

*Green Finance goes on to play an important role in promoting or financing those type of industries which are energy efficient and also has low carbon emissions which in turn can go on to develop the green economy of a country .*

*Therefore Green Finance can be described as those type of financial activities or services which are created and implemented to ensure a better environmental surroundings by financing in those types of projects which deals with industrial pollution control , biodiversity protection , energy efficiency , renewable energy , etc , etc .*

*In this paper we have tried to study the importance of introducing various green financing methods , techniques and mechanisms among various countries of the modern world with a reference to modern day India and the data needed for such research work has been basically collected through both primary and various other secondary methods of collections .*

**Keywords:** Green Finance, Green Bank, Green Loans, Green Mortgages, Green Bonds, Green Credit, Green Cards, Green Equity, Green Insurance, Green Funds.

## I. INTRODUCTION

In the modern times when the entire world is facing some serious environmental challenges it is extremely needed to promote or finance those types of ideas or projects which are beneficial for the entire ecosystem of our planet earth by reducing the current and future environmental degradations and hazards .

In this regard we see that Green Finance initiatives can be referred to as those types of financial initiatives which are not only environmentally friendly but also goes on to help in sustainable development of not only a particular region but also of the entire world as a whole .

Therefore we can also say that green financing methods actually goes on to direct the required capital flow towards those type of industries which actually have policies to prioritise energy efficiency , low carbon emissions , etc , and are actually environmentally friendly .

### **Green Finance:**

Green Finance refers to those types of financing where investments are done to those types of initiatives or projects which are actually environmentally friendly and in the process which goes on to help in overall sustainable development of not only a particular region but the entire world .

### **Sustainable Finance:**

Sustainable Finance refers to those types of financing policies or measures which actually goes on to satisfy both the environmental and social goals and goes on to incorporate environmental , social and governance ( ESG) factors while taking investment decisions to promote economic and social growth alongwith environmental sustainability throughout the modern world .

**Climate Finance :**

Climate Finance goes on to refer to those types of investments which are actually drawn from various types of sources like public , private or other sources and which actually goes on to take care of the climate change issues of the modern day world by encouraging those types of investments in projects which deals with clean energy , etc , which in turn goes on to protect the surrounding environment of our planet earth to make the planet earth a much more healthier place to live in for the current as well as future generations .

According to The United Nations Environment Programme ( UNEP ) , Green Finance , Climate Finance and Sustainable Finance , although they are actually different concepts but are more often used as synonyms . In this regard we see that climate finance can be regarded as one part of environmental finance which are investments which goes on to take care of the bad impacts of the climate changes . Then comes the term green finance which goes on to have a broader scope of operations as it also takes care of other environmental issues like biodiversity protection etc . Then we have the term sustainable finance which goes on to cover environmental , social and corporate governance ( ESG) factors which in turn goes on to contribute to the overall development .

**Mechanisms of Green Financing :**

**Green Banks :** Green banks are those types of banks or financial institutions which normally operates in the same manner as any other traditional banks or financial institutions does , but the main difference is that green banks are those types of banks which normally goes on to prioritise in accepting those strategies which mainly helps in environmental preservations and normally goes on to channelise funds in those types of environmentally friendly projects which mainly deals with renewable energy or in implementation of clean energy technologies , which in the process actually goes on to help in combating the modern day's climate changes hazards and reduce the bank's carbon footprint .

Some of the activities which can be termed as green banking practices are as follows :

- Conducting various types of financial transactions through online modes using various types of digital devices like mobile phones , computers , etc .
- Disbursement of green loans in the society .
- Use of green credit cards .

**Green Loans :** Green Loans are those types of loans which are used to finance various types of environmental friendly projects like electrical automobiles , household solar panels , and various other types of energy efficiency projects.

**Green Mortgages :** Green Mortgages are those types of mortgages which allows the lenders to provide better terms to the purchasers of those types of properties which have a high environmental sustainability rating or on the other hand if the buyer of those properties agrees to invest properly in increasing the environmental performance of those properties by installing environmental friendly items like green roof or solar panels , etc .

**Green Bonds :** Green bonds are those types of bonds where the funds obtained are specifically used to support those types of projects which are specifically related to various environmental related issues including climate change issues along with various other types of green initiatives like renewable energy projects , clean transportation projects , construction or development of eco- friendly buildings or projects which are related to conservations of biodiversity.

**Green Equity :** Green equity is basically granted to those types of corporates which has more than 50 % of their revenue and investments assessed as green and which basically goes on to attract those types of investors who not only has some green agenda but also wants to invest in companies or organisations which has some sustainable business models and specifically refers to those types of companies or organisations which specifically aims to reduce unnecessary wastages of resources alongwith promoting those types of products which can be recycled and reduce the use of non-renewable resources .

**Green Insurance :** Now-a-days the insurers throughout the world have understood that it is extremely needed to protect the world from various types of natural disasters like earthquakes , adverse climate changes , excessive floods , etc , and therefore they are trying to develop some proper green insurance products which will not only provide environmental and socio economic benefits but will also go on to protect overall public healths of the persons living in modern societies throughout the world .

**Green Funds :** As the name suggests Green Funds are those types of investment funds which goes on to choose those types of companies or organisations which aims to support various types of adverse environmental issues alongwith specifically emphasising on reducing energy consumptions and normally goes on to take care of the environmental , social and governance ( ESG ) criteria .

**Green Microfinance :** Microfinance has been a financial instrument to provide the poor with various types of capitals to increase their standard of living while Green Microfinance goes on to increase the environmental , social and financial impacts in the society by providing finance to the low income groups of people of the society .

**Green Credit :** Green Credits are normally initiated by the governments of the various countries to recognise and reward those types of activities of the stakeholders which specifically goes on to help in stopping environmental degradation and enhance overall sustainable development .

**Green Credit Cards :** This type of eco-friendly payment cards actually goes on to support various types of green initiatives and are normally made from materials like recycled plastics or biodegradable materials , etc , which actually goes on to minimise the environmental impact by incorporating biodegradable components , recycled materials alongwith energy-efficient production methods .

#### **Benefits of Green Finance :**

The basic benefits which will follow from implementing green financing mechanisms in the modern societies are as follows :

- The best benefit of green financing has been in showing the modern world how to combat climate changes and move towards a low-carbon economy for the betterment and development of the entire world and it's current and future generations .
- Adoption of Green Financing policies will go on to encourage the countries and the governments of the modern world to adopt those types of projects which will go on to involve adoption and development of environmentally friendly technologies and infrastructures .
- Helps the modern day's organisations to have a better competitive and comparable advantages over other types of organisations which does not have any green financing strategies to combat the modern day's climate change and other environmental degradation issues .
- Helps the modern day's governments of the countries to have better economic prospects and advantages than other countries which does not have any green financing policies by specifically encouraging energy efficiency or renewable energy policies to protect their countries from facing scarcity of resource situations .

#### **Drawbacks of Green Finance :**

Some of the drawbacks in proper implementations of green financing can be as follows :

- **Weak Financing Structure alongwith incapability of various types of financing institutions :** This barrier is prevailing throughout the world where specifically the underdeveloped and the developing countries are facing acute shortages of proper financing mechanisms .
- **Lack of proper standardisations :** The most important problem in proper green financing is that due to lack of proper standardisations or proper methods of measurements it is normally very difficult for the investors and the consumers to distinguish between organisations which actually wants to do or is doing proper green financing and organisations which are just doing green-washing to pull and increase their customer base .
- **Lack of proper data availability :** As observed green finance is actually a new form of financing mechanism which is till now creating a scarcity in availability of proper data to analyse and judge which organisation is actually doing a good work with the green financing system
- **Perceived as high risk and low return on investment :** The common conception prevailing in the modern world is that financing in green projects normally has a high risk and low return on investment because proper assessment or risk analysis is still difficult without proper standardisation and proper data availability .

- **Lack of Proper Policy measures** : As observed as green financing is relatively a new form of financing throughout the entire world , lack of proper governmental policies , laws and regulations has actually gone on to adversely affect the proper functioning of the green financing methods .

**Main Areas of Green Finance Operations:**

- First of all the public sector organisations are to be supported to create proper working environment throughout the societies .
- Initiating and promoting proper public-private partnerships for proper implementations of the various types of financing mechanisms throughout the modern societies .
- To promote development of capacity building within various types of organisations to make people much more adaptable to fast changing modern day world situations .

**Green Projects :**

Thereafter we see that in order to get the green status the projects should belong to or operate in the below mentioned areas or categories :

- Sustainable water management .
- Sustainable waste management practices like processing or recycling of wastes .
- Adoption of Clean transportation means .
- Adoption of renewal and sustainable energy .
- Conservation of Bio-diversity .
- Control of Industrial Pollutions
- Other projects dealing with protections from adverse climate changes .

**Impact of Green Finance on Carbon emission efficiency :**

It has been observed that during the last 50 ( fifty ) years our world has gone through the maximum amount of urbanisation alongwith industrialisation which has actually gone on to increase the use of fossil fuels which in turn has led to the increase of emissions of carbon dioxide into the environment leading to various types of climate change problems for the living beings of this planet earth .

In this regard various studies has shown that Green Finance mechanisms normally goes on to bring together all the factors of green financing like government policies , rules , regulations , financial infrastructures alongwith various financial instruments and technologies , to channelise the flow of capital towards those types of projects which has a low carbon emitting capacity , which in turn not only goes on to reduce the current amount of environmental pollutions but also helps the countries of the modern world in their transition to a low carbon and much more greener economy .

**Objective of the Study :**

The main objective of this study has been to find out the importance and needs for introducing Green Financing throughout the countries of the modern world to take care and stop various types of modern day's environmental hazards for the betterment of the current and the future generations as well as overall development of the entire world.

**II. LITERATURE REVIEW**

As more and more effects of adverse climate changes are affecting the modern human population throughout the world , everybody concerned are getting more and more aware of the situation which is actually leading to various types of research work in this areas , out of which some are given below .

Gauri Kelkar in her article , “ How does Green Finance Benefit Organisations and the world “ , stated that the modern day's climate changes has emerged as the defining political and economic problem of the current century and it is likely to stay so in the near future . Governments , investors , business and private individuals worldwide are beginning to take action in response to the climate issue , especially on decarbonisation techniques . Moving to a low-carbon or green economy would need extraordinarily levels of fresh capital investment notably in the form of green financing to

support activities that cut Green House Gas ( GHG) emissions and assist firms in combating the negative effects of climate changes.

Alina Florea and Nahan Morales in their article , “ Green Financing : A look at the history and the options available for developers “ , stated that the terms like “ Green Financing” , “ Responsible Investing “ and “ Sustainable Investing” are terms which actually goes on to refer to the incorporation of environmental (ESG ) considerations into investment decisions . Thereafter it is seen that today Green Financing has already become a large and fast growing sector of the capital markets with modern day investors always looking to incorporate ESG practices across the portfolios of assets to minimise their exposure to ESG risks and basically try and shift capital from more traditional assets to green assets .

Avishek Gupta in his article , “ Understanding Emerging Green Financing Opportunities in India “ stated that today India is standing at a crucial juncture where with her growing economy and population is facing a dual challenge of meeting her ever increasing energy and infrastructure needs on one hand as well as combatting the ever increasing environmental problems . Thereafter it is seen that today India’s government with her ever increasing focus of properly facing the environmental problem alongwith attaining the required sustainable development do offers great green financing opportunities for the modern day investors .

Md . Kashif Ansari & Yukta Anand in their Article “ Green Finance in India : Trend and Challenges “ , stated that climate change goes on to act as a great threat to the environment mainly because of the great usage of fossil fuels and also if the usage of fossil fuels continues to be at the existing level , the temperature of our planet earth is likely to increase to such a extent that it can prove very much detrimental to the normal human health , normal level of food production which can even go on to threaten the survival of some communities alongwith maintaining proper overall biodiversity . Therefore with these prevailing conditions of the modern world , governments of many countries have started taking Note of the situation and are agreeing to abide by following the path of Sustainable Development Goals ( SDGs) and the Paris Agreement .

Kyle Peterdy in his article , “ Green Washing “ , stated that , Green washing happens when the management teams of the organisations make some outright misleading statements or claims about the sustainability of a product or a service , or even about the business operations . Thereafter it is seen that sometimes green washing is unintentional which may happen due to ignorance on the part of the management or the owners of the organisations , but in most cases it may happen when the management wants to make some gains from false or misleading marketing efforts.

### III. RESEARCH METHODOLOGY

This study has been basically casual and exploratory in nature and the data needed for this research work has been collected by utilising both the direct and indirect methods of collection of primary and secondary data .

**Direct Method :** Primary data has been collected by applying two stage sampling technique where during the field visit personal interviews was conducted on the basis of a questionnaire which was specifically developed for this study purpose to collect information related to this study from some randomly selected respondents who are either students of various streams or office bearers of different types of industries like manufacturing , hospital , hotel or various types of service sectors including banks like Kolkata branches of State Bank of India or other financial institutions of the Kolkata City of West Bengal State of India .

**Questionnaire :** A suitable structured questionnaire was developed to collect information from various types of respondents who are either students of various colleges , universities , different professional courses , different types of professional institutes etc , or other types of office goers of different types of industries like manufacturing , hotel , hospital , etc or belongs to various financial institutions like Kolkata branches State Bank of India and various other financial institutions of Kolkata city of West Bengal state of India .

**Interview :** A personal face to face Interview was made on the respondents who currently stays in Kolkata for various purposes like education , jobs or other types of profession or businesses , etc , for collection of primary data needed for this study .

**Indirect Methods :**Secondary data was collected by consulting various types of published articles, books, newspapers, journals, magazines, blogs and websites .

#### IV. FINDINGS

The data collected from both the primary and secondary sources has been analysed thoroughly and the results are shown below .

##### History

Although the idea of green finance started during the 1970's but it actually gained importance from the year 2015 when the Sustainable Development Goals and the Paris Agreement was launched .

More than 190 countries of the modern world have committed themselves to fight against the adverse effects of climate changes by signing the Paris Agreement , to take proper and planned steps to reduce further environmental degradation . It is also understood that in order to reach the target of a maximum temperature increase of 2 degree centigrade we need to have huge amount of green investments each year in the key sectors of the global economy and besides public finance a large part of the finance should also come from the private sector .

##### Current Status of Green Financing in the world :

Different studies throughout the world has shown that in modern world China is leading the process of green financing through their modern day's business operations and United States of America comes second in the implementation of green financing mechanisms in their country . Thereafter comes the United Kingdom and Germany and it has also been observed that India with its huge population is still lagging behind in proper implementation of green financing mechanisms throughout the country .

##### International Platform on Sustainable Finance (IPSF) :

The International Platform on Sustainable Finance (IPSF) was launched on 18 October 2019 by the European Union and this platform will be basically used by the policy makers to develop regulatory measures for sustainable finance to help the investors find out the sustainable investment opportunities which will go on to contribute towards both the climate and the environmental goals of the modern day societies .

##### Green Finance in India :

India with her ever increasing population and energy needs do recognise the emergency of having clean and renewable energy sources and has actually undergone a transformation in her stance towards sustainability to combat the recent climate change issues .

As observed the Indian government has been proactive in creating green financing opportunities in India and on January 25 , 2023 , India issued her first sovereign green bond .

There after we see that today in India we have a increase in the number of solar and wind energy projects which are actually supported by various domestic and international investments and also green finance in India has gone on to increase the establishment of modern day's recycling facilities to increase the overall capacity to process and manage various waste streams properly and reduce the burden of overflowing landfills .

##### Problems of Green Financing in India :

Some of the problems faced for green financing in India are as follows :

- **Lack of Awareness :** This point goes on to emphasize that in modern India there are still many investors alongwith other financing institutions which still does not have proper knowledge or understanding of the concept of green financing and the actual benefits of implementing green finance mechanisms in the country .
- **High Risk :** There will always be some risks of the projects getting completed properly .
- **Weak Sector :** This sector of green financing still has some uncertainties which are affecting the growth of this sector . Lack of proper framework for proper operations of this green financing sector has created various types of problems and although we have various circulars , policies , agendas , etc in regard to sustainability , environment and renewable energy but these policies , circulars , etc , are not properly linked to each other .
- **Unavailability of Proper Data :** There is still a deficiency of some standardised green finance metrics which are posing some problems for taking proper business decisions in this sector.

- **High Cost of Debt :** Then comes the high cost of debt alongwith short tenure of the loans which actually goes on to make investments in various types of modern day's green projects a less attracting opportunity for the modern day investors.

#### **Future of Green Finance :**

##### **Future of Green Finance in India :**

The Reserve Bank of India has already issued guidelines and instructions to the banks as well as the non banking financial companies (NBFC) to accept green deposits which will go on to fund projects which will deal with clean transportation methods , proper waste management , introducing Green buildings in the society alongwith introducing proper water and waste management , maintaining overall biodiversity and accepting projects to maintain energy efficiency .

Then we see that there has been an increase in green financing in India which has actually gone on to increase the opportunities for all the stakeholders and so now-a-day's there has been an increase in various types of green financial instruments like green bonds , green mortgages , green loans , etc , etc .

In modern India the required parameters for proper functioning of green financing is still lacking the required standards because of the various problems like lack of awareness , lack of a proper regulatory framework , high cost of debts , high investment risks , short tenure of loans alongwith high technology risks , etc , etc .

Therefore we see that India needs a proper balanced mix of green projects alongwith investors and other needed frameworks to develop the green finance sector in India .

#### **Green Washing :**

One of the most important problem which persists in this sector is the problem of Green Washing which deals with making some misleading or wrongful claims about a particular project to gain some undue advantages on those projects .

It has also been observed that some type of green washing is unintentional and may occur due to ignorance or lack of proper knowledge on the part of the owners of the project or the management of the businesses but in most cases it happens when the owners of the projects or management teams of the businesses wants to make a deliberate false impressions to the society that they are engaged in proper analysis of the basic factors like environment , social , and governance (ESG ) factors .

Therefore in order to avoid the problems of green washing and move towards greater sustainability, various regulatory bodies , government agencies of various countries of the world and various stock exchanges of the world have initiated the need for ESG-related reporting which is known as ESG disclosure where the business owners or management teams of the organisations are required to disclose about their environmental , social and corporate governance practices .

### **V. SUGGESTIONS**

In modern day's it is understood that Green Financing mechanisms not just go on to deal with environmental problems but if it is managed properly it actually goes on to develop a better economic society for everyone living in these societies by gradually moving towards a low-carbon environment and so the modern finance industries of the world play a very big role in achieving the global climate and biodiversity conservation targets or commitments.

Implementing Nature Based Solutions ( Nbs ) can be good solutions to confront biodiversity and climate crises while promoting proper sustainable development alongwith generating proper returns on the investments .

Therefore below mentioned methods can be accepted to increase the implementation and use of green financing among the modern societies .

Proper efforts should be made to change the countries regulatory framework to make it suitable for implementing proper green financing mechanisms ,

Proper Government supports in the form of incentives , grants , subsidies , etc , should be available for green projects .

Besides various government initiatives , various private sector institutions should also come forward to take up the specific work of promoting green financing throughout the world .

Governments of various countries should try and increase the volume of investments in new, clean and green technologies which will definitely lead to a better sustainable future for everybody living in our planet earth.

It is always a better strategy for governments of various countries to develop some specific types of financial institutions which will only deal with green financing after considering all the relevant issues and factors for providing green finance to the markets.

## VI. CONCLUSION

The modern world with its ever increasing population and various types of developmental work throughout the world has actually gone on to cause an excessive increase in various types of environmental hazards like air pollution, water pollution, etc, which has adversely affected the ecosystem causing enormous problem for normal and healthy living of the living things living in this planet earth.

Thereafter changes in the climate has also become a serious concern for almost all the governments of the current century which has gone on to trigger the needs of green financing towards projects or activities which has lower negative environmental impacts to protect the environment from further deterioration alongwith gradual transition towards low-carbon, sustainable economy.

Therefore in conclusion we can say that Green Financing which specifically refers to those types of financing or investments which are more or less socially responsible and environmentally suitable to protect the current and future generations from facing various types of environmental problems are absolutely needed to protect our planet earth from further environmental degradations.

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