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A REVIEW OF INDIA'S GREEN FUNDING: OPPORTUNITIES & DIFFICULTIES

Manish Kumar * and Vikram Sandhu **

I. INTRODUCTION

In recent times, Green investments has become an integral part of financial institutions worldwide. It has been defined as arrangement of investments in such a way in which Economic, Social and Governance Considerations are taking into account. Environmental Considerations involves Greenhouse Gas Emissions, Biodiversity Loss, and Climate Change. Social criteria deals with Human Rights, Issues of Inequality, Child Labour and Companies relationship with their employees, suppliers and customers. Finally, The Governance Considerations which involves Governance of Financial Institutions (including private and public institutions), Internal Controls, Company's Leadership, Bribery and Corruption etc. Environmental, Social and Governance (ESG) principles are the specific standards for a company's operations by which an investor can assess the sustainability performance of their investments.

Our Economic models are designed when there are abundance of natural resources available and the effect of these economic models on the environment is fully ignored by the historians. These conventional models are designed to maximize the profits. Thus transitioning from current economic models to a sustainable future requires huge investments. From the period of industrialisation human actions continuously exploit the natural resources for satisfying human needs. These unsustainable actions to achieve economic growth and development resulted a huge environmental crisis today.Green finance, a framework of financial techniques devoted to being used for projects that are eco-friendly or efforts that combine elements of climate change, has emerged to address such a worldwide concern. Clean transportation that minimises greenhouse gas emissions, energy-efficient projects like green building, and waste management initiatives that involve efficient disposal, reuse, and recycling are just a few examples of environmentally friendly projects. New financial products, such as Carbon Market Instruments, Green Bonds, and financial institutions

* Research Scholar, University Business School, Guru Nanak Dev University, Amritsar
** Associate Professor, University Business School,Guru Nanak Dev University, Amritsar

must be formed in order to meet the financial requirements for the aforementioned projects. Together, these elements make up green finance.

In order to achieve the above goals, nations around the world requires a holistic approach tochannelize their funds into green and sustainable sector of the economy. In this article we briefly discuss about the green initiatives taken by India and assess the progress of green finance globally, particularly in Asia.

II. MEANING OF GREEN FINANCE

Green finance is an initiative that focuses on the investment policy in eco-friendly instruments with the goal of reducing greenhouse gas emissions, renewable energy, pollution control, waste energy management, and ultimately the overall protection and development of biodiversity and the sustainable development of the nation. Green finance refers to any financial instrument or investment, including equity, debt, grant, purchase, and sale of green products, that combines public and private finance.

III. OBJECTIVES OF THE STUDY

1. To study the recent trends and future scopes in Green finance in India
2. To analyse the challenges and opportunities of Green Finance in India
3. To study the various investment avenues in Green Finance in India
4. To analyse the various products and services are available under Green Finance

IV. REVIEW OF LITERATURE

According to **Sahoo, P. and Nayak, B.P.'s 2007** study, banks should take an active role in incorporating environmental and ecological concerns into their lending principles. Doing so would compel industries to make mandated investments in environmental management, the use of suitable technologies, and management systems. The existing rhetoric of progress, which overuses the natural environment for economic gain, has given rise to a new paradigm of development called sustainable development. Regarding the environmental aspects of their customers and products, banks in India need to exercise extra caution. The author concluded by saying that none of the Indian banks had accepted the equator concepts. The banks and other financial institutions in India have not yet taken many initiatives to take into consideration green finance, despite the fact that banks play a significant role in the economy.

Biswas, N. (2011) clarified that green banking as combining operational and technology efficiencies in the marketplace. The author has also presented the status of India with concerned to green practices adopted by the banking sector. The author suggested in his paper that banks should go green and play a proactive role to take sustainable and environmental aspects into their account as lending principle. The author also states that there is a lack of awareness regarding equator principles in India in which 62 global signatories of banks and financial institutions are the members where Indian banks yet to commit these principles. While concluding the author states that there is a huge ignorance of banks and financial institutions towards the green banking initiatives at international level.

Ameer, R., & Othman, R. (2012) conducted a research on top 100 Sustainable global corporations in 2008 that were chosen from a universe of 3,000 firms from developed and emerging markets for this study. The results shown that the companies who pay attention to the set of obligations, referred to as superior sustainable practices, have better financial performance than those that do not engage themselves in sustainable practices. Furthermore, results suggest that sustainable organizations financial performance has improved and remained stable over time.

Yadav and Pathak (2013) highlights the green banking approaches opted by private and public sector banks for environment sustainability. The author asses the top public and private sector banks performing green activities. Using a case study approach, they found that Indian banks have understood the relevance of taking positive steps towards the environment.However, the study uses secondary data analysis. Using secondary data for analysis limit the researcher to do what is possible from the available data. Moreover the author suggested that the banks are working with Green Business Centre in collaboration with other business organization having focus on promoting green building, energy efficiency, recycling etc. The problem related to environment, maintaining the ecological balance and environmental sustainability has become issues for debate around the globe. Organizations in the banking sector are generally adopting green activities for the environmental sustainability.

De Carvalho Ferreira, Sobreiro V.A, Kimura& De MoraesBarboza (2016) study and discuss about the relationship between finance and sustainability. In this study the author present the results and main gaps from a systematic review of literature from different research papers. The author states that traditional finance theory highly emphasizes the creation of value for the shareholder. Society has increasingly been demanding companies to have an ethical concern in regards to their stakeholders. In the context of sustainable development, the challenged faced by organizations lies in how to make this relationship between social and environmental management more efficient. The Journal of Sustainable Finance & Investment fills an important gap in this context, bringing a multidisciplinary approach. In the study the author includes more than 70 companies in the analysis. . A

Review of Modelling Approaches for Sustainable Supply Chain Management. Decision Support Systems 54 (4), 1513-1520], and then analysed the articles published between 2011 and 2015 in the main journal of the area, the Journal of Sustainable Finance & Investment. While concluding the author focused on companies' financial performance with mandatory adoption of sustainable practices in the organisational culture. In order to address this issue, a journal dedicated to present in depth the subjects of finance and sustainability, with different perspectives of analysis, becomes crucial. The JSF&I fills an important gap in this context, bringing a multidisciplinary approach and following different investigations methods and different perspectives of analysis.

T Tran, H Do, T Vu, N Do (2020) reports in their study thatPost-crisis due to trade-offs between economic development and the environment is clearly shown in many environmental reports, climate change, and sustainable development. Furthermore, the study identifies and measures the factors affecting green investment in Vietnamese using the Exploratory Factor Analysis (EFA) methodology to process the dataset from 208 businesses in different industries in 2018. It can be said that the operating time of surveyed enterprises is long enough to overcome the initial stage of establishment and select green investment. The results show that most of the factors, which were included in the survey, were reliable, maintained statistical significance, and converged into the group of factors.

In "A review of studies on green finance of banks, research gaps and future directions," **Isaac Akomea-Frimpong et al. (2021)** noted that recent environmental protection initiatives, efforts to combat climate change, and the achievement of UN Sustainable Development Goals by 2030 have all increased awareness of green finance. The methodology of this study consisted of a systematic review of 46 pertinent publications on green finance in the banking sector, as well as content analysis techniques. The findings showed that Asia and Europe hosted the majority of the studies that have been done. The study identified 21 major factors of bank green finance, with risks, banking sector regulations, bank size, environmental policies, and climate change ranking as the top 9 determinants.The study also discovered that factors impacting banks' green financing strategies include those related to the environment, the climate, interest rates, risks, social inclusion, and social justice, as well as banking laws. This work also acts as a roadmap for future research. The study's findings will help banks understand the important factors to take into account when adopting, creating, and awarding green finance.

Global Business and Management Research article on global barriers to green financing participation was investigated by **Noryati Ahmad (2021).** The topic of this study is obstacles to using green financing. Five crucial talks based on the perspectives of the government, financial institutions, private users, funding scheme, and solutions have been used to describe each of the seven hurdles. In the financial sector, sustainability wasn't always at the top of people's priority lists. This essay seeks to conduct a thorough analysis of the global obstacles to investors' or borrowers' participation in green financing. Investors, private users, borrowers, financial institutions, corporations, and governments around the world are currently interested in the topic of green finance. It still falls short and requires a more thorough analysis of the available research.The authors looked at 110 papers, and subsequent research will concentrate on obstacles to using green financing. Review research on the variables affecting the adoption or use of green funding is advised. The findings will provide other scholars a comprehensive understanding of green financing overall.

Kaur, S. and Lohani, K. (2022) explained the importance of green finance and why do we need it. The author suggested that India needs to be climate conscious to control the adverse impacts of it. Moreover author gave many suggestions to frame the green policies in India. In order to explore the green finance in India the author also highlights the COP26 meet which was held in Glasgow 2021. Furthermore the present study mentioned that India needs an investment which is estimated around 10 trillion dollars to achieve the zero carbon economy by 2070.The purpose of the present study is to shed light on the current state of green financing in India, as well as its future prospects, by focusing on the actions undertaken by the government in this respect and the path forward.

Ian Burton (2022) have witnessed many environmental issues over the past few decades which are strictly connected with sustainable growth and human survival. A study on Green Finance in India has been published and Social Research (IER) in the Indian city of Kolkata (Calcutta).The Small Industries Development Bank of India (SIDBI) has taken various initiatives to endorse lending for the green and energy efficient technologies in the MSME sector. The study highlighted the concept of Green Finance, its importance, various green products, and practices launched across the globe. The paper established the fact that to mitigate the risks related to environment degradation, India has started taking initiatives over the past few decades.

V. GREEN INITIATIVES TAKEN BY INDIA

F The RBI issued a notification in December 2007 on Corporate Social Responsibility (CSR) Practices; Non-Financial Reporting and Sustainable Development which emphasises the importance of Climate Change and Global Warming in the framework of Sustainable development.

F To mitigate the impact of climate change, the National Action Plan on Climate Change

(NAPCC) was created with the goal of outlining a wider policy framework for reducing the effects of climate change (Jain, 2020).

F The Climate Change Finance Unit (CCFU) was established under the Ministry of Finance in 2011 as a managing organisation for the numerous institutions in India accountable for green finance.

F Since 2012, Security Exchange Board of India (SEBI) made it mandatory for the top 100 listed companies under BSE and NSE to disclosure of sustainability reports and revised it annually. Furthermore, under the Companies Act of 2013, the Ministry of Corporate Affairs imposed mandatory reporting of progress on Corporate Social Responsibilities (CSR).

F The Committee on Corporate Governance proposed in its October 2017 Report that the board of directors meet at least once a year to particularly discuss strategy, budgeting, board evaluation, risk management, ESG, and succession planning.

F The RBI has also taken various measures to promote green finance initiatives which involves priority sector lending under renewable energy i.e. PSL Scheme in 2015. Under this scheme firms are eligible for loans for up to Rs. 30 crores while the households are eligible for up to Rs. 10 Lakhs. In addition, by 2030 India has also a target to achieve 450GW of energyproduction from Renewable energy sources.

VI. INTERNATIONAL PRACTICES OF GREEN FINANCE

Since the first summit of G20 Nations on climate change in 2008, the focus of these nation is to develop a sustainable future with circular carbon economies nations. To reduce the global emission rate various flagship programmes are designed across the globe. These programmes aims to take environmental considerations into their account while financing. These programmes strives to raise environmental awareness and promote funding for sustainable initiatives around the world. Programmes such as Principles for Responsible Investment, Equator Principles for Financial Institutions, United Nations Environment Programme (UNEP). These programmes guide and suggested the ways for implementing sustainable finance and adoption of various climate action strategies among the participants of these flagship programmes.

Table 1:Contribution of Asian Financial Institutions to Global Initiatives

Name of the initiative	Global signatories	Asian Signatories	Global signatories	Asian Signatories
	From Volz, 2018		As at end 2019	
Responsible Investing Principles	1,874	122	2,698	387 *
Financial Institutions Equator Principles	91	12	101	22 **

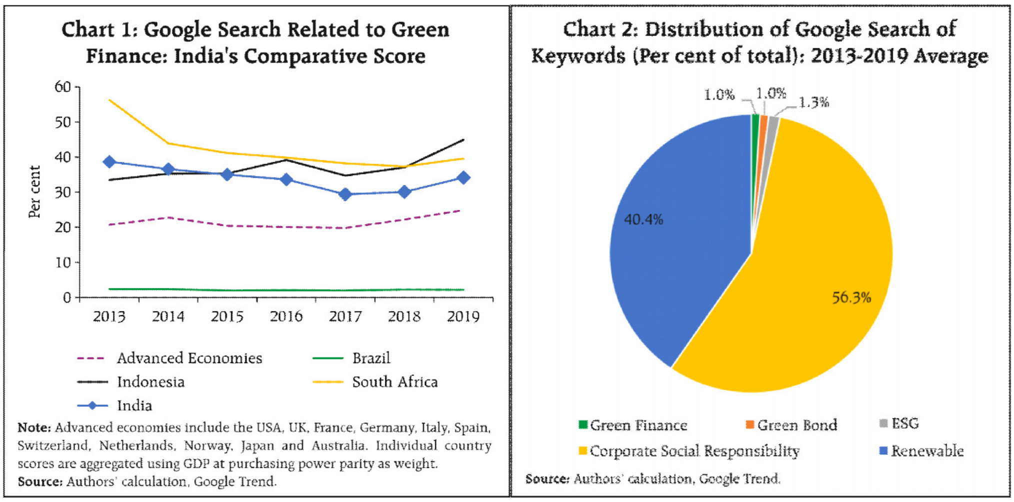
UNEP Statement of Financial Institutions' Commitment to Sustainable Development (2011)	214	38		
Sustainable Stock Exchanges	66	14 ***		
Source: Volz, U. (2018, March). The most recent information gathered from the websites of above programmes. Notes: Asia includes Australia and New Zealand. *: Includes 3 from India: SBI Funds Management Private Limited, Equicap Asia Management Private Limited and Indus Environmental Services Pvt. Ltd. **: Only IDFC from India. ***: Includes both Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) from India.				

In the above Table 1we can see a very few financial institutions are signed up for Global Sustainable Financial Initiatives in Asia. Out of total 1,874 signatories only 122 Signatories (6.5%) to the Principles for Responsible Investment. Moreover, Asia has 38 out of 214 global signatories (17.8 percent) to the UNEP Statement of Commitment by Financial Institutions on Sustainable Development (2011) and, 12 out of 91 Equator Principles Financial Institutions (13%) are from total region of Asia. And out of the 66 Sustainable Stock Exchanges (SSE), 14 are the initiative partner exchanges i.e. (21 percent).

VII. PROSPECTS AND CHALLENGES OF GREEN FINANCE

F Enhancement in Public Awareness

Several studies has been proposed to explain that there is a high growth rate in awareness of green finance among public and potential investors. Evidence based on google trends suggested that there is an increase in awareness in green finance and its part in development of sustainable economy.In the following chart-1it shows that India's comparative score is much higher than the advanced economies (Including USA, Japan, France, Australia, Germany, Netherlands, Norway, Switzerland, Spain, and Italy). In chart-2, it shows that subject matter to corporate social responsibility and renewable energy sources dominate the other topics in India. Furthermore, the reportclarifies that web-search which is related to the green financial instruments such as green finance, green bond and ESG practices are still limited.



(Fig: 01) Source: RBI report of Green Finance in India: Progress and Challenges (2021)

F **Creating Employment Opportunities**

Several studies have been proposed which states that Green Finance is a new way of creating employment opportunities. Furthermore a Mission to achieve net zero in India by 2030 estimated that transition to zero carbon economy will contribute more than 1 trillion dollar jobs in the economy. This aim was setup by our prime minister at conference of parties (COP26) which is held in Glasgow 2021.

F **High Borrowing Costs**

High borrowing cost of green bonds than the other bonds in India is the big challenge that will gradually become a barrier in green finance. The average coupon rate of green bonds is generally higher than the corporate and government bonds with the same tenure.

F **Green finance policies and regulations**

Green Finance Policies and Regulations lack proper clarity.As a result, most investors are hesitant to invest in green finance avenues. As a result, it is critical to develop appropriate policies and regulations in order to attract investors and ensure the scheme's smooth operation.

F **Supporting infrastructure Facilities**

For the successful implementation of green finance should require supporting infrastructure for green finance needs to be strengthened to enable the market to take-off. There is a absence of comparability, transparency and reflectiveness of green projects.

VIII. GREEN FINANCIAL PRODUCTS AND SERVICES IN INDIA

Green Bonds: Green bonds are debt instruments similar to other bonds, except that the difference in the amount received from this bond should be used for energy efficient projects such as renewable energy, emission reduction, reforestation, and so on. IRDA (Indian Renewable Energy Development Agency) issued a tax-free bond for Rs. 1000 each in 2014. This green bond was issued for terms of 10, 15, and 20 years, with interest rates of 8.16%, 8.55%, and 8.55% p.a., respectively. This bond received a AAA rating from CARE and Brick Works. In addition, Yes Bank issued a 10-year green infrastructure bond in 2015 to raise Rs 1000 crores.

Green Insurance: Green insurance schemes are those that provide risk coverage at a low premium and enhanced coverage for green products in order to reduce the impact of climate change, thereby promoting good corporate practises. In India, HSBC is currently collaborating with Allianz to provide green reinvestment insurance to its customers. It covers buildings that have been certified by international environmental standards such as the US LEED (Leadership in Energy and Environmental Design) and BREEAM.

Green Loan Schemes: Commercial banks are making Green Loans available to the public at low interest rates in order to encourage and support investment in energy-efficient projects. State Bank of India has launched a Green Home Bank loan scheme with low interest rates to encourage customers to choose green housing, i.e. buildings certified by rating agencies such as LEED. TERI - GRIHA from TERI- BCSD India, Leadership in Energy & Environmental Design (LEED) India, India Green Building Council (IGBC), and TERI - GRIHA from TERI- BCSD India. Moreover, ICICI has launched a vehicle finance scheme with the goal of lowering interest rates by 50% on loans taken out by the public for the purchase of cars using renewable energy sources.

IX. FINDINGS AND FUTURE DIRECTIONS

F According to the analysis, there is a huge opportunity for green finance in India. Climate change goals, increased pressure on the banking and shadow banking sectors, and limited fiscal space for the government to expand investment,opens up possibilities for green finance.

F For the successful implementation of green finance, our country must take several corrective actions to avoid green finance blockades and should develop strong policy measures. As of now, Green Finance is confronted with obstacles such as structural barriers, supporting infrastructure facilities, and a lack of clarity in policies and regulations.

F We have several Green Finance options in India. Green Bonds, Green Insurance, and other green finance investments are examples of green finance products. IRDA (Indian Renewable Energy Development Agency) issued a tax-free bond for Rs. 1000 each in

2014. In addition, Yes Bank issued a 10-year green infrastructure bond in 2015 to raise Rs 1000 Cr.

F Overall, India was 33% of the way to meeting its 175 GW renewable installed power capacity target for 2022. Whereas public finance contribution is the most needed source of finance for these sustainable development activities, the Indian Government is facing a huge financial deficit in the fiscal year, making it more difficult to meet this target.

X. CONCLUSION

India must develop green finance strategies and products in order to shape economic development in a sustainable manner. By 2040, India will require approximately $4.5 trillion in infrastructure funding to build a sustainable economy. India has already begun to invest in green finance products and services with the assistance of the public, private, and government sectors. The current level of investment in green finance is insufficient to achieve the goal of sustainable development. The Indian government should develop a clear green investment strategy that focuses on the long term and the entire economy. Green finance policies and regulations should also be transparent and clear in order to attract investors.

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