IJCRT.ORG ISSN : 2320-2882
INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)
An International Open Access, Peer-reviewed, Refereed Journal

A STUDY OF GREEN FINANCE IN PROMOTING SUSTAINABLE GREEN ECONOMIC GROWTH IN THE INDIAN ECONOMY

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Abstract: Green finance plays a crucial role in supporting green growth, resulting in substantial decreases in greenhouse gas and air pollution emissions. Green finance used in different areas like agriculture, green building, banking, insurance, investment, and other green projects should increase the economic development of the country. Green finance is a type of market-based investment or lending programme where environmental impact is taken into account in risk assessment or where environmental incentives are used to guide business decisions. In this document, we discuss the current trends in green finance and the prospects and challenges of green finance in fast-growing India. Green investing recognises the importance of the natural capital of the environment. It also aims to improve human welfare and social justice while minimising environmental risks and enhancing ecological integrity.

Index Terms **- green project, green finance, green projects, economic development, green environment.**

I. INTRODUCTION

In the 21st century, green financing has become an essential part not only of business but also of environmental science. Green finance means a structural financial activity that creates and ensures a better environmental outcome and reduces greenhouse emissions. Every country developed and developing alike, ought to pursue green financing. It is estimated that global green financing for green projects will reach $40 trillion between 2012 and 2030. Today, green finance plays a significant role in sustainable economic growth by promoting sustainable investment in green projects and enhancing economic development.

Enhancing green financing is one of the fundamental activities to achieve green growth. Green environmental management has been considered a CSR (corporate social responsibility) activity that companies should strive to do for society. Similarly, green financing is a CSR action of financial companies such as banks, mutual funds, stock companies, etc. (Koo, 2010). This implies that financial companies should focus on green financing, even though it is currently not profitable, as a CSR action. Green financing pursues economic growth and the improvement of the environment.

Ecological Economics (Chopra et al., 2005): For the dispersion of green products, governments ought to support and oversee the green industrial markets and make an effort to increase green consumption. Green growth requires green financing because it provides the capital that businesses need to seize market opportunities. The green industry won't be properly stimulated, green products will be removed from the market, and customers won't be able to buy them if green finance is so inadequate.

In 2019/2020, tracked green finance was INR 309 thousand crores (USD 44 billion) per annum, approximately a fourth of India's needs. The Landscape of Green Finance in India evaluates finance flows

to key real economy sectors-clean energy, clean transport, and energy efficiency. According to the analysis, among the top 20 worldwide providers of climate money are China, India, Brazil, and Russia. India has donated \$765 million for climate finance in solidarity with other developing nations, whereas China has contributed \$1,236 million.
This research paper has stressed green agriculture, green buildings, green banking, green marketing, green finance, and some other green projects. Government and non-government organisations should implement green finance in society for the sustainability of future generations.

Concept of Green Finance:

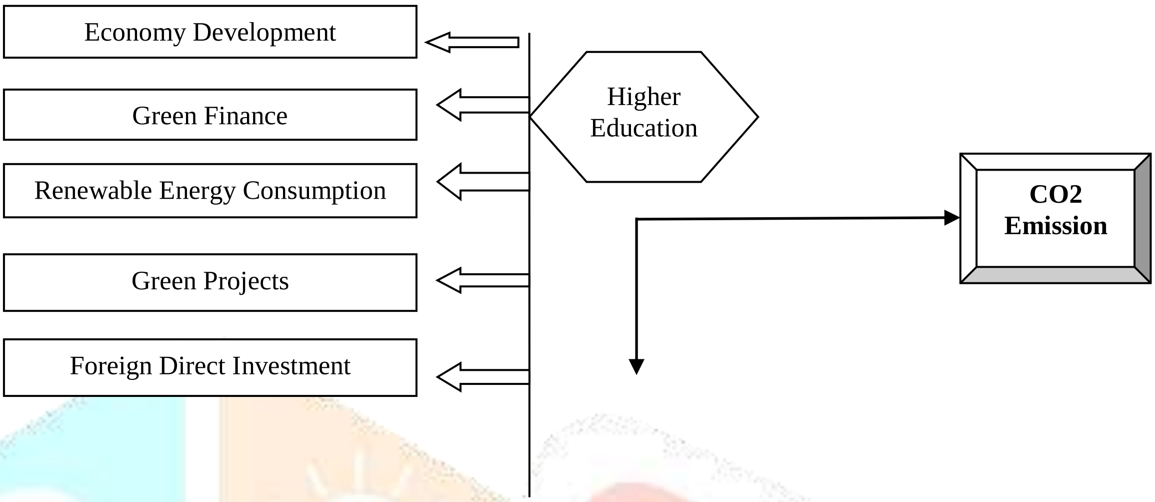

Figure 1: Green Finance, Renewable Energy, Green Projects, FDI, and CO2 under Higher Education

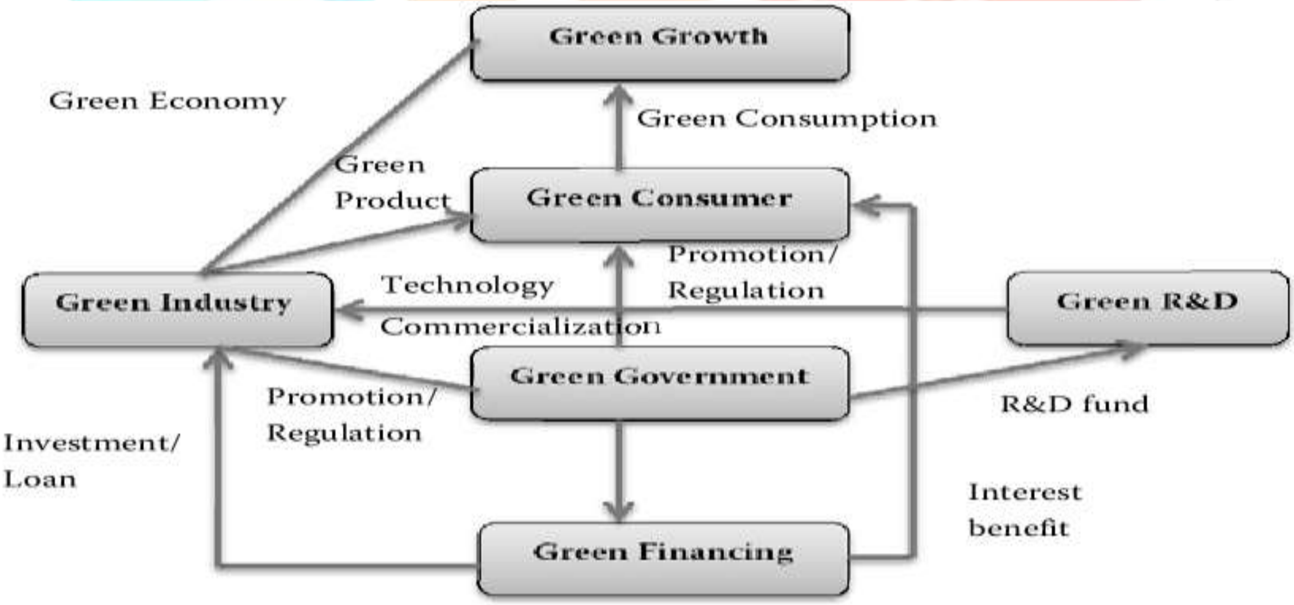

Figure 2: Relationship between Green Growth and Green Financing Source: Koo (2010)

Definition:
Green economy: an economy in which income and employment grow through public and private investment that improves energy and resource efficiency, prevents the loss of biodiversity and ecosystem services, and reduces carbon dioxide emissions and pollution.
Green economic growth is a strategic approach that aims to reduce environmental impacts, create new jobs and income opportunities, and design established economic processes according to ecological principles.

Green finance is a strategic approach that aims to move the financial sector towards resource efficiency and low carbon dioxide emissions.
Important programmes and current events driving the revolution in green finance include:

Green Bonds: Since its launch in 2017, this framework has developed into a thriving ecosystem that has drawn investments totaling over ₹25,000 crore (US$3.3 billion) for energy efficiency, sustainable transportation, and renewable energy initiatives. The government's sovereign green bonds have attracted a lot of interest from investors, leading to others following suit. Imagine that a new yellow shoot appears with every green bond!

Regulatory Structure: Promoting Growth via Incentives: The Reserve Bank of India (RBI) released guidelines for green bonds and green deposits, functioning as a vigilant gardener creating a favourable environment for ethical financing and drawing in green investments. Green investments receive tax breaks from the government, which acts like sunshine for investors seeking financial and environmental returns.

To support sustainable projects and promote green finance, the Indian government has launched multiple initiatives. These are the key points.

- The government announced plans to issue sovereign green bonds in 2023 to mobilise resources for green infrastructure projects.
- The government intends to employ the profits from these sovereign green bonds to fund projects totaling Rs 25,000 crore or almost $3 billion.
- To provide green money for sustainable projects in India, the National Clean Energy Fund and other organisations have been established.
- The government has suggested providing pumped storage projects, a type of renewable energy storage, with concessional climate financial support, including from sovereign green bonds.
- Green finance investments from the public and commercial sectors are supporting renewable energy projects in the country valued at $196.98 billion, according to Invest India.

Strength of Green Finance:

It promotes technological diffusion and eco-efficient infrastructure: Investments in green technologies, such as clean energy, can help reduce their costs and accelerate technological diffusion. Developing countries can avoid the "grow first, harvest later" development model because much of the green investment flows into infrastructure. Such a situation allows the country to leap forward.

Expand economic opportunities: By creating and fostering domestic markets for alternative resources and technology, governments that support green financing assist in protecting their societies from the day when resources become scarce. By entering new markets with significant employment-generating potential, they further improve their economic prospects.

Different Banks' Roles in Green Finance:

Financing for renewable energy projects have started with domestic banks like the State Bank of India, IDBI Bank, and ICICI Bank. Foreign banks that specialise in financing renewable energy include Standard Chartered and ABN Amro. In response to investors' growing desire for exposure to GHG prices, Barclays introduced some of the earliest investment instruments. In response to investors' growing desire for exposure to GHG prices, Barclays introduced some of the earliest investment instruments. Investors now have access to the global carbon markets thanks to Barclays' creation of the BGCI, the first global carbon index of its type. Barclays is in a unique position to assist its clients in understanding and managing their exposure to carbon risk through its various programme, including the EU Emissions Trading Scheme (ETS), the Clean Development Mechanism (CDM), the Joint Implementation (JI), and the Regional Greenhouse Gas Initiative (RGGI). Barclays is a leading provider of financial and commodity risk management solutions to the industry, funds, and investors.

The Bank of Baroda has introduced a program to finance SMEs' purchases of services and equipment as well as their adoption of policies aimed at improving energy efficiency. To provide funding for the implementation of CDM projects, advisory services, and value-added products in the area of carbon credit finance (such as the securitization of carbon credit receivables, carbon credit delivery guarantees, and the escrow mechanism for carbon credits), the State Bank of India has entered into an MOU with a consortium of top Clean Development Mechanism (CDM) consultants. To encourage ecologically friendly residential projects, SBI has also launched a new green home loan program. For projects rated by the Indian Green

Building Council, the scheme gives concessions including 5% in margins, 0.25% in interest rate, and no processing charge (IGBC). Owning wind farms allows the State Bank of India to produce green power.

II. REVIEW OF LITERATURE:

The notion of green finance has garnered considerable attention worldwide as nations strive to shift towards more ecologically conscious and sustainable economic frameworks. The function of green finance becomes critical in the context of the Indian economy, which faces significant environmental issues in addition to its goals for economic growth. The purpose of this review of the literature is to investigate the body of knowledge regarding the role that green finance plays in fostering sustainable green economic growth in the Indian economy.

The literature study emphasises how crucial green financing is to the Indian economy's promotion of long-term, sustainable green economic growth. There are obstacles to overcome, but the potential of green finance to solve environmental issues and promote economic growth is becoming increasingly apparent.

III. OBJECTIVES OF THE STUDY:

1. The study aims to provide a detailed overview of green financing and its impact on the environment.
2. It also focuses on the importance of global green finance programmes in the present and future scenarios to drive sustainable economic growth.
3. The study aims to shed light on the significance of green finance in driving eco-friendly business practices and fostering global sustainability efforts.
4. To understand the various green finance initiatives of public and private sector banks in India.
5. To analyse the trends of green finance in India.

IV. RESEARCH METHODOLOGY:

This is descriptive research that uses secondary data from government reports that have been released by the Indian government as well as reports that have been released by Indian banks, public and private sector organisations, and other entities.

V. DATA ANALYSIS: INDIA'S GREEN FINANCE SECTOR:

India has committed to reducing its emissions intensity by 33–35 percent below 2005 levels by 2030 and increasing the use of renewable energy (RE) by 40 percent of installed electric power capacity by 2030.

The government estimates that over the next ten years, approximately US$ 4.50 trillion (US$ 450 million annually) will be needed to meet the targets for renewable energy and urban sustainability. The government of India announced in the 2015 Union budget that it aims to achieve 175 GW of RE by 2022. Various private and public banks, as well as non-banking financial institutions, have committed funds totaling approximately $2570 million for green initiatives.

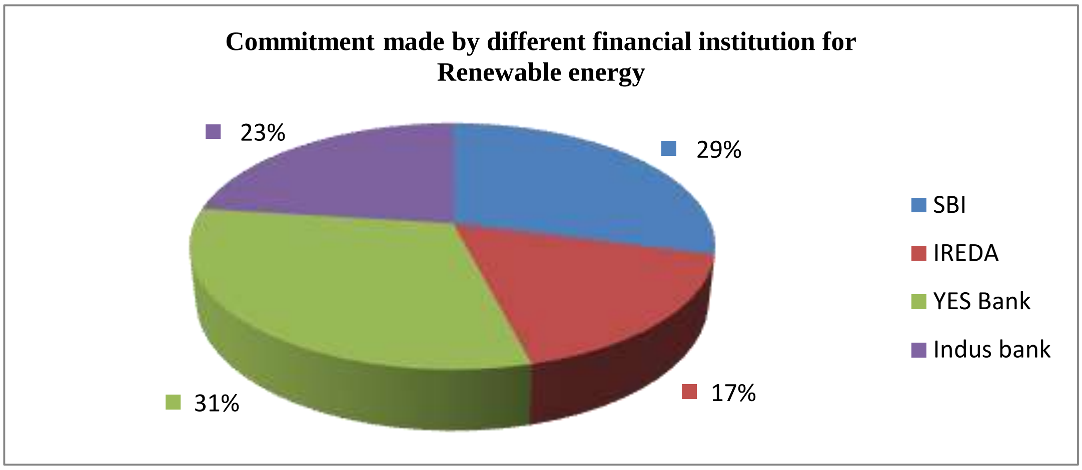

Figure I: Funds Committed by Different Financial Institutions.

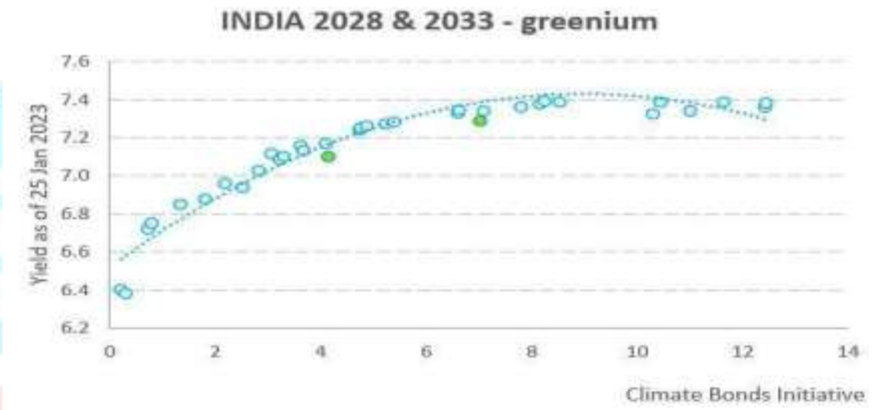

Figure II: Climate Bond Initiative

On January 25, 2023, the Indian government became a member of the Sovereign Green Bonds Club when the Ministry of Finance priced a two-tranche deal worth INR 80 billion, or $1 billion, divided equally between ten and five-year tenors. More than four times as many people oversubscribed for the deal, which allowed the primary market spread to be compressed by two basis points for the 10-year tranche and three basis points for the 5-year tranche. By pricing both tranches within the yield curve, they were able to achieve a geranium or lower borrowing costs. The Reserve Bank of India (link is external) reports that 32 investors received the five-year bond and 57 investors received the 10-year bond. India's total green liabilities increased to INR on February 9th, when each tranche was reopened for INR 40 billion (USD 500 million).

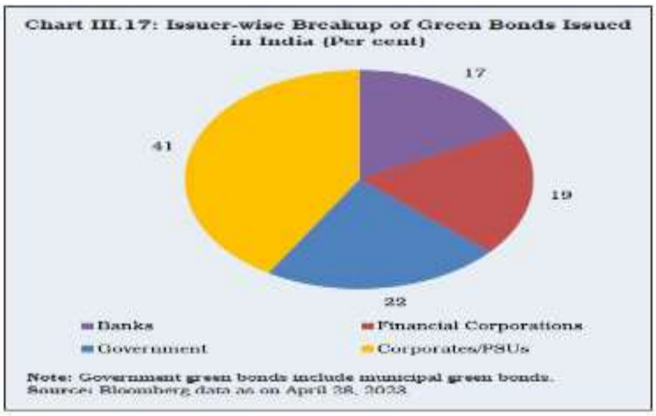

Figure III: Shows the Issuer-wise break down of green bonds issued in India

In India, as of April 28, 2023, 63 green bonds had been issued. Corporate and PSUs have issued the greatest number of these bonds, according to an issuer-wise breakdown.

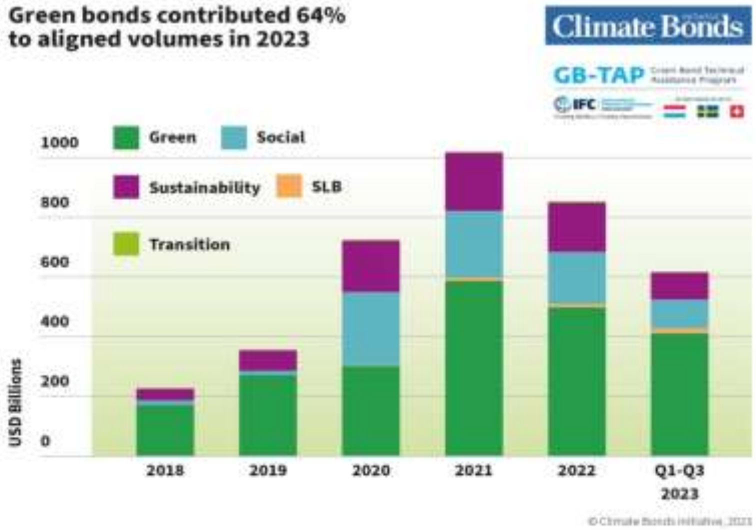

Figure IV: Green Bonds Contribution

The status of green and other labelled debt to the end of Q3 2023 is described in full in the latest market report. Aligned GSS+ bonds (including transition) totaled USD 618.2 billion as of the current year (YTD), a 10% decrease from USD 685.8 billion in the same period in 2022. Aligned GSS+ as a share of total issuance volume stays at 5%, notwithstanding the decrease. By the conclusion of the third quarter of 2023, climate bonds had amassed a lifetime GSS+ volume of USD 4.2 trillion, with 103 countries and supranational origins. The largest source of aligned GSS+ volume (USD660.7 billion) is still supranational, with the largest country sources being China (USD431.28 billion), the USA (USD612.6 billion), and France (USD488.2 billion).

VI. CHALLENGES IN GREEN FINANCING IN INDIA:

- Since the Indian green bond market is still in its infancy, not enough investors have been drawn to it. Bonds with excellent ratings or low-risk investment alternatives are typically where investors put their money.
- To make bonds appealing to investors, the bond market needs a suitable framework.
- Financial instruments are facing significant challenges due to prevailing market behaviours, regulatory oversight, and financial incentives.
- Several threats connected to green finance, such as those about technology, currency risk, and off-taker risk, impede the flow of financial resources.
- Green finance has additional challenges due to investors' ignorance about new financial products.

VII. CONCLUSIONS:

Green financing is vital for the economic development of a country, particularly in addressing the challenges posed by global warming and greenhouse gas emissions. Green finance initiatives can significantly reduce greenhouse gas emissions, leading to a healthier environment and reduced health issues. The utilisation of green buildings further promotes energy efficiency and sustainability efforts, contributing to a more sustainable future for all. The Indian government ought to develop a comprehensive green investment plan with an eye on the long run of the economy. To foster investor trust and confidence, the regulatory policy ought to be more open and accommodating. India ought to concentrate on both foreign and domestic investment.

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