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Catalyzing Climate Action: The Role of Green Taxonomy and the Green Climate Fund in Sustainable Development

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ABSTRACT - The concepts of "green taxonomy" and the "Green Climate Fund" have garnered significant attention as the global push for sustainable economic practices intensifies. A green taxonomy is a classification system that identifies environmentally sustainable investments based on their alignment with specific ecological goals, as defined by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). This study explores the evolving landscape of green taxonomies, focusing on the European Union's Green Taxonomy, the Climate Bonds Initiative, and developments in India, China, and the ASEAN region. Key findings indicate regional disparities in taxonomy design and implementation. The EU framework aims for net-zero emissions by 2050, while the Climate Bonds Initiative focuses on certifying green bonds with measurable impacts. Conversely, China's taxonomy aligns with its national economic goals, showcasing region-specific sustainability strategies. Additionally, the frameworks emerging in India and ASEAN highlight the need for localized approaches tailored to diverse socioeconomic and climatic conditions. The study also underscores the critical role of the Green Climate Fund in facilitating global climate action by financing adaptation and mitigation projects, thereby supporting climate-resilient development across both developed and developing countries.

KEYWORDS- Green Taxonomy, Sustainable Finance & Development, Net Zero Carbon Emissions, Green Climate Fund, Global Climate Action.

I. INTRODUCTION

Climate change represents one of the most pressing global challenges of our time, eliciting deep concern among individuals, communities, and nations. Characterized by rising global temperatures, melting polar ice caps, and the increasing frequency of extreme weather events, climate change poses serious threats to ecosystems, economies, and human well-being. These escalating impacts underscore the urgent need for sustainability and immediate global action. To address the multifaceted challenges posed by climate change, two fundamental strategies have been adopted: mitigation and adaptation. Mitigation focuses on reducing greenhouse gas emissions and stabilizing their concentrations in the atmosphere, while adaptation involves making necessary adjustments to cope with the anticipated effects of climate change. These dual strategies form the cornerstone of international frameworks such as the Paris Agreement and guide initiatives like the development of green taxonomies.

In the current era of heightened environmental consciousness, it is imperative to classify and prioritize green investments. Green taxonomy serves as a structured classification system that identifies economic activities and assets deemed environmentally sustainable. By utilizing such frameworks, countries can ensure their investment strategies are aligned with global climate goals and sustainable development objectives. Green taxonomy is an evolving framework that categorizes economic activities based on their environmental sustainability. Since the introduction of China's first national green taxonomy in 2015, there has been significant momentum globally, with the emergence of various initiatives such as the Climate Bonds Initiative (CBI) and the Green Bond Principles (GBP). The European Union's "Taxonomy for Sustainable Activities," released in 2020, was developed to assist investors in making informed decisions related to sustainable finance. Additionally, the World Bank has provided comprehensive guidelines for the development of national green taxonomies, emphasizing the need for clarity and transparency among financial market stakeholders.

India, through institutions like the Reserve Bank of India (RBI) and the Ministry of Finance, stands to benefit by drawing insights from international experiences, particularly from the ASEAN region, which has actively adopted green taxonomy frameworks to advance sustainable economic pathways. The present study critically examines the evolution and implementation of various green taxonomies across the globe. It aims to evaluate their effectiveness in achieving environmental sustainability by analyzing the current landscape and the extent to which these frameworks have contributed to meeting climate and development goals.

II. REVIEW OF LITERATURE

Green taxonomy has become an important framework for promoting sustainable development in developed and developing countries such as China and India. The literature review examines the studies conducted by

various researchers on green taxonomy to mitigate environmental risks and promote sustainable finance.

Green ICT adoption and the factors that influence organizations to integrate environmentally sustainable practices into their ICT operations. The two determinates one being General Environmental Context that includes cost reduction and strategic initiatives and the other Environmental Management Practices which involves cloud computing and ICT industry dynamics (28)**.** Fuel consumption, emissions reduction, and route optimization are some of the elements of Green Vehicle Routing Problem (GVRP); the taxonomy that improves knowledge and create green logistics strategies leads to more economical and environmentally friendly transportation options (4). The strategic strategies for attaining high-quality development include the possibility of revolutionary economic advancement via equitable investments emphasizing innovation, sustainability, and inclusivity; in order to achieve long-term sustainable growth and further global environmental and social goals, systemic reforms such as market-based policy frameworks, improved governance, and international cooperation are essential (29)**.** Quick rise of green bonds, diversification of green financing products, and the shift of corporate models towards sustainability can help to sustainable development goals; tackling environmental issues and attaining sustainable economic growth depend heavily on increasing openness, encourage public-private partnerships, and harmonizing national and international green finance norms (14)**.**Many current taxonomies often lack verifiable success metrics, sufficient granularity, and validation of sustainability benefits; Aligning taxonomies with specific sustainability objectives, promoting the development of transition taxonomies, enhancing certification and verification processes, and requiring impact reporting for green bonds are some of policy recommendations**(**9).Alignment is critical for transparency and comparability, which aids in sustainable investing, as well as identifying various issues caused by inconsistencies in definitions and criteria across areas; taxonomies continue to evolve to address upcoming challenges such as flexibility, corporate, social, and biodiversity objectives**(**8**)**. Green taxonomy, when integrated with monetary stability considerations, offers valuable insights into the potential effects of the transition to sustainable finance on investment portfolios. In the Euro Area, the alignment of investors' portfolios with green activities remains relatively low, with only 2.8% classified as green. In contrast, their exposure to transition risks stands significantly higher at 11.7%, indicating a notable imbalance between sustainable investments and associated financial risks **(**5**)**. Some of the strategies to enhance green governance, such as strengthening policies, improving institutional capacity, engaging a broader range of stakeholders, and promoting collaboration across different sectors (2). Green innovation improves brand reputation, encourages better resource use, and satisfies stakeholders' increasing demand for sustainability, all of which contribute to greater operational and financial performance. Green innovation in business plans is essential to attaining sustainable growth and new ventures' long-term success (16)**.**Countries are following unique approaches to use green taxonomy tools, focusing on sectors like agriculture, energy, manufacturing, and transportation; green taxonomy sets environmental objectives such as climate change mitigation, circular economy transition, and biodiversity protection to guide sustainable investments and financing programs(1)**.** In developing countries, the implementation of a green taxonomy requires a pragmatic approach. Policymakers in India are increasingly aligning with the European Union's model to avoid fragmentation and inconsistency in sustainable finance frameworks. As sustainable development hinges on timely action, delays in formulating a national green taxonomy place India at risk of missing out on significant green capital flows. To foster green growth across sectors, India must urgently develop a context-specific green taxonomy that carefully balances its economic development objectives with environmental responsibilities (6)**.**Apply ISO standards and the Best available Technique (BAT) to improve resource efficiency and environmental performance; greenhouse gas reduction, climate adaptability, and circular economy principles are the parameters in determining viable green projects (18)**.** By promoting environmentally conscious business practices, a single green taxonomy can improve accountability, transparency, and sustainable growth **(**17**)**.

III. RESEARCH GAP

From the earlier studies, it is observed that the existing system lacks standardization and interoperability, making it difficult to match national taxonomies with global sustainability goals.

Not only do the current taxonomies prioritize climate change mitigation and circular economy goals, but fail to address broader sustainability objectives like biodiversity conservation, social equity promotion, and facilitation of inclusive development. This study focuses on the application of green taxonomies and the various strategies implemented by countries to explore the potential contributions of green funds to both developed and developing nations.

IV. RESEARCH OBJECTIVES

- To examine the global adoption and application of green taxonomies and green climate financing mechanisms.
- To analyze the strategies implemented by different countries in promoting green finance and sustainability.

V. RESEARCH METHODOLOGY

The present study uses a case study technique (for green taxonomy), and descriptive data, as its research methodology, allowing for a complete assessment of green taxonomy practices in various worldwide contexts. Based on objectives, the case study approach provides a complete understanding of the phenomenon in its real-world context.

VI. ANALYSIS AND DISCUSSION

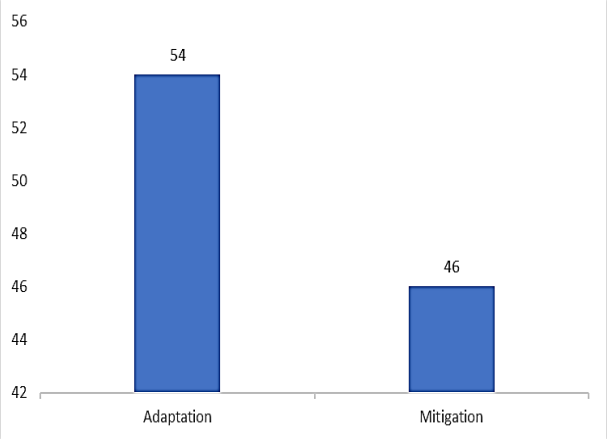
After examining the various studies, it is apparent that certain taxonomies have gained prominence in specific countries, while others are still in the nascent stages of development. As a result, well-established taxonomies, along with their respective countries, have begun to implement these frameworks. The Green Climate Fund is

instrumental in establishing a foundation for green taxonomies by promoting standardized frameworks and financing mechanisms that direct countries toward sustainable development.

A. Green Climate Fund (GCF)

The urgency of combating climate change is surpassing the pace of current global efforts, underscoring the pressing need for stronger commitments and immediate action. Adequate financial resources are vital for all stakeholders involved in this fight. In particular, developed countries must honor their pledge to mobilize USD 100 billion annually to support mitigation and adaptation initiatives in developing nations. The Green Climate Fund (GCF) serves as a key mechanism in advancing this goal. Within the broader context of sustainable development, the GCF facilitates the transition of developing countries toward low-emission and climate-resilient development trajectories. It provides financial and technical support to help limit or reduce greenhouse gas emissions while simultaneously strengthening adaptive capacities in the face of climate-related challenges. The Fund gives special priority to countries most vulnerable to the adverse impacts of climate change.

A cornerstone of the GCF's approach is its commitment to ensuring a balanced distribution of funding between adaptation and mitigation strategies. It seeks to maximize the impact and effectiveness of its investments by supporting projects that both curb emissions particularly in high-emission sectors and build resilience in communities at risk. As the only dedicated climate fund with a mandate to maintain this balance, the GCF aims to allocate 50 percent of its resources to mitigation efforts and the remaining 50 percent to adaptation, thereby reinforcing its role as a crucial instrument in achieving equitable and sustainable climate action across the globe.



(Source: Green Climate Fund (2023)

Figure 1: Funding Amount

The Paris Agreement emphasizes the importance of integrating adaptation alongside mitigation to effectively address the climate crisis, aiming to facilitate a global transition toward low-emission and climate-resilient development. In support of this goal, the Green Climate Fund (GCF) offers targeted assistance to developing countries through its Readiness Programme. This initiative provides up to USD 3 million in financial support for the formulation of National Adaptation Plans (NAPs). These efforts are essential for building adaptive capacity, fostering stakeholder engagement, encouraging private sector investment, and enhancing the resilience of communities facing the adverse impacts of climate change.

The Green Climate Fund (GCF) is essential for establishing green taxonomies. It funds environmentally friendly projects and guides sustainable investments and climate action. By financing climate-resilient projects, the GCF sets standards for "green" investments, aiding in the development of national and regional taxonomies.

The GCF promotes widely accepted criteria for sustainable investments, ensuring consistency across regions. It supports developing countries in creating the rules and expertise needed for green taxonomies. By linking funding to specific green criteria and climate goals, the GCF offers a working model for other nations and engages the private sector to attract climate-focused investments. These efforts position the GCF as a vital player in advancing standardized green taxonomies that support sustainability.

B. Steps to develop a national green taxonomy

Developing a National Green Taxonomy is a strategic process that enables countries to define and classify environmentally sustainable economic activities, thereby facilitating green finance and supporting climate objectives. According to the World Bank's guide, the development process involves several key steps:

Establish a Steering Committee or Working Group:

- Form a multi-stakeholder group comprising representatives from financial regulators, environmental ministries, central banks, industry experts, and civil society.
- Define the scope, objectives, and timeline for developing the taxonomy.

Conduct a Regulatory and Market Assessment:

- Evaluate existing policies, sustainability frameworks, and national climate commitments (e.g., Nationally Determined Contributions).
- Analyze the domestic financial market structure and identify gaps in green finance.

Define Environmental Objectives:

- Align the taxonomy's objectives with national priorities, such as climate change mitigation, adaptation, biodiversity conservation, and pollution reduction.
- Ensure these objectives are consistent with international standards to facilitate cross-border investments.

Identify Priority Sectors and Activities:

- Select sectors based on their environmental impact and relevance to national goals.
- Categorize activities within these sectors as green, transitioning, or excluded, based on their sustainability performance.

Develop Technical Screening Criteria:

- Establish clear, science-based criteria for determining the sustainability of activities.
- Consider factors like greenhouse gas emission thresholds, energy efficiency, and resource use.

Engage Stakeholders Through Public Consultation:

- Conduct consultations with industry stakeholders, financial institutions, and the public to gather feedback.
- Use this input to refine the taxonomy and ensure it is practical and widely accepted.

Pilot the Taxonomy:

- Test the taxonomy with selected financial instruments, such as green bonds or loans, to assess its applicability and effectiveness.
- Make necessary adjustments based on pilot outcomes.

Finalize and Publish the Taxonomy:

- Officially adopt the taxonomy through appropriate regulatory channels.
- Provide guidance documents and tools to facilitate its implementation by financial institutions and other stakeholders.

Monitor, Evaluate, and Update Regularly:

- Establish mechanisms to track the taxonomy's usage and impact.
- Periodically review and update the taxonomy to incorporate new scientific findings, technologies, and policy developments.

By following these steps, countries can create a robust and credible green taxonomy that aligns financial flows with sustainable development goals and environmental priorities.

C. Overview of Green Taxonomies

EU Taxonomy- The European Union has established a comprehensive framework for sustainable finance through the EU Taxonomy Regulation. This taxonomy serves as a detailed classification system for identifying economic activities deemed environmentally sustainable, spanning a broad range of sectors, including energy, transportation, agriculture, and forestry. The primary objective of the EU Taxonomy is to create a unified language and standardized criteria for sustainable investments, thereby supporting the goals of the European Green Deal and guiding the transition toward a net-zero emissions economy by 2050.
By clearly defining what constitutes an environmentally sustainable activity, the taxonomy aims to facilitate informed decision-making among investors and businesses. However, the implementation of the EU Taxonomy presents several key challenges. These include defining eligible activities with precision, ensuring accurate data collection and reporting, achieving regulatory compliance, building investor trust, and preventing the risk of greenwashing. Addressing these issues is essential to realizing the taxonomy's full potential in driving sustainable economic transformation across the European Union.

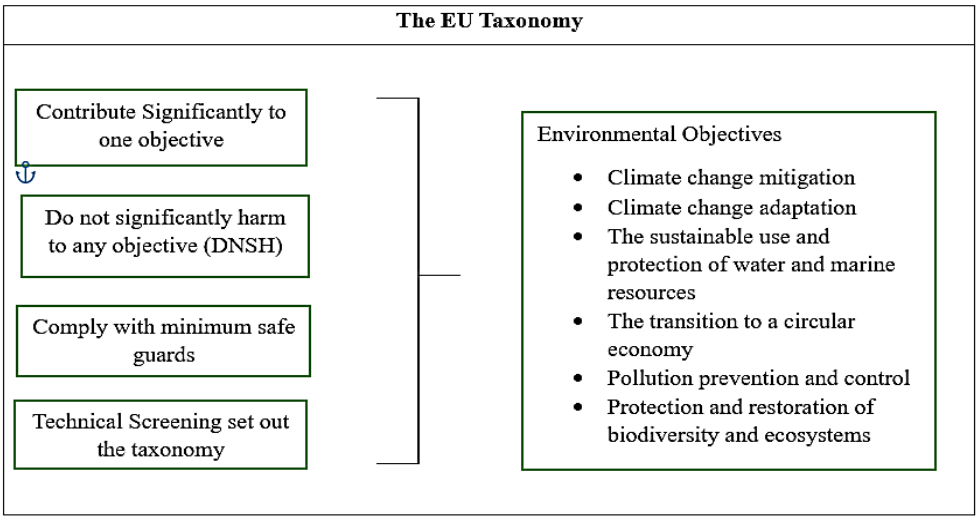


Figure 2: The EU Taxonomy

D. Climate Bond Initiative/Green Bond

The Climate Bonds Initiative (CBI) is a global non-profit organization active in countries such as Brazil, China, India, and Mexico, dedicated to mobilizing bond markets to finance climate change solutions. CBI has worked in close collaboration with governments, regulators, and international bodies including UNEP, UNDP, the European Commission, and OECD member states to foster the growth and development of green bond markets worldwide.

CBI has played a pivotal role in transforming green bonds from a niche financial instrument into a mainstream mechanism for capital allocation, supporting sustainable development and aligning with the goals of the Paris Agreement. As highlighted in a World Bank report, the primary mission of CBI is to provide clear and reliable guidance for issuers of green and climate bonds, as well as for investors, governments, and municipalities, to support the transition to a low-carbon economy.
The Climate Bonds Initiative operates through a range of work streams, including the development of sustainable debt standards and certification, policy analysis and advocacy, market intelligence, communications, public campaigns, events, capacity building, technical assistance, investor engagement, and the formulation of taxonomies. These initiatives collectively aim to ensure transparency, credibility, and effectiveness in green finance practices globally.

E. China's Green Taxonomy: Towards a Sustainable Future

China's green taxonomy has emerged as a critical framework for classifying environmentally sustainable economic activities, playing a vital role in the country's broader strategy for achieving sustainable development. As the world's second-largest economy, China faces considerable environmental challenges including pollution, resource depletion, and greenhouse gas emissions stemming from decades of rapid industrial growth (Zhang et al., 2022). In response, the country has taken significant steps to integrate environmental considerations into its financial and policy systems.

According to the World Bank, China's green taxonomy is anchored in a set of well-defined environmental objectives. These include energy conservation, pollution prevention and control, resource efficiency and recycling, clean transportation, clean energy development, ecological preservation, and climate change adaptation.

One of the cornerstone instruments of this taxonomy is the *Green Bonds Endorsed Project Catalogue*, which exemplifies China's progress in institutionalizing sustainable finance. This catalogue has contributed to the standardization and consolidation of green finance practices, facilitated the expansion of green bond markets, enabled the creation of a more flexible financial infrastructure, and advanced alignment with international standards.

However, despite these achievements, several key challenges remain. According to Mr. Ma Jun Chair of China's Green Finance Committee, Special Advisor to the UN Environment Programme on Sustainable Finance, and Co-Chair of the G20 Green Finance Study Group four major barriers hinder the further advancement of green finance in China (China Dialogue, 2017): Ambiguity in policy signals, Inadequate loan structures for long-term green projects, Limited capacity-building initiatives, and a lack of consensus on the definition of "green assets."

F. ASEAN Green Taxonomy

Alongside recent advances, new classification systems and standards have evolved as efforts to promote green finance activities in Southeast Asia have accelerated. For instance, in November 2021, the initial edition of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) was released. This classification system is ASEAN's own benchmark for sustainable economic activity in a highly diversified region. Climate change and environmental sustainability are two serious issues that the ASEAN area, which consists of ten distinct countries, has acknowledged the importance of addressing. The ambitious targets established by ASEAN collectively aim to raise the proportion of renewable energy in its primary energy mix to more than 23% by 2025. The primary objectives encompass the development of strategies for both climate change mitigation and adaptation, the preservation of biodiversity, the advancement of a circular economy, and the enhancement of resource resilience.

The fundamental principles of green taxonomy include the following:

Principle 1: All AMS shall use the ASEAN Taxonomy as their main framework, which will serve as a shared language and enhance their individual national sustainability programs.

Principle 2: The ASEAN Taxonomy will be contextualized to support a smooth transition towards a sustainable ASEAN, taking into account commonly used taxonomies and other pertinent taxonomies as necessary.

Principle 3: All Asean Member States (AMS) will benefit from and be included in the ASEAN Taxonomy.

Principle 4: The ASEAN Taxonomy must be founded on science when applicable and offer a reliable framework with definitions.

Principle 5: The capital market, banking, and insurance sectors' sustainability measures will be in line with, or at least not conflict with, the ASEAN Taxonomy.

G. India's Climate Finance Taxonomy

India has emerged as a proactive leader in tackling the global challenges of climate change and sustainable development. Demonstrating strong policy commitment, the government is advancing the creation of a comprehensive green taxonomy, a transformative initiative aimed at providing a clear, systematic framework for identifying, classifying, and promoting environmentally sustainable economic activities across various sectors.

The introduction of a green taxonomy in India serves multiple strategic objectives:

- It offers clarity to investors on the environmental impact of their investments.
- It enhances the credibility of green financial instruments while curbing the risk of greenwashing, where misleading claims about environmental benefits may be made.
- It aligns India's sustainability frameworks with international standards, thereby attracting global investors seeking responsible and sustainable opportunities.
- It supports the realization of India's national climate goals.

In the Union Budget 2024–25, India's Finance Minister Mrs. Nirmala Sitharaman announced the development of a "climate finance taxonomy" to enhance the flow of funds toward climate adaptation and mitigation efforts. Reinforcing this commitment, India reiterated its adoption of the Paris Agreement during the recent COP29 summit and reaffirmed its pledge to achieve net-zero emissions by 2070.

Through this initiative, India aims to accelerate the transition toward a low-carbon economy by catalyzing green and sustainable finance, enabling capital to power long-term climate solutions and inclusive development.

H. World Bank's Guidance on India green taxonomy

India is actively advancing its sustainable finance agenda by developing a National Green Taxonomy. This initiative aims to establish a standardized framework for identifying and classifying environmentally sustainable economic activities, thereby promoting green investments and aligning with global climate objectives.The World Bank has been instrumental in supporting countries, including India, in formulating green taxonomies. In its publication, "Developing a National Green Taxonomy: A World Bank Guide," the Bank outlines a comprehensive methodology for creating such frameworks, emphasizing the importance of tailoring them to national contexts and priorities.

I. India's Progress in Green Taxonomy Development:

India has initiated several measures to foster green finance and develop a national taxonomy:

- Sovereign Green Bonds- The Indian government has taken steps to issue its first sovereign green bonds, aiming to raise capital for projects with environmental benefits. This move is expected to set a benchmark for the domestic market and attract international investors.
- Enhanced ESG Reporting- The Securities and Exchange Board of India (SEBI) has revised Environmental, Social, and Governance (ESG) reporting guidelines for the top 1,000 listed companies by market capitalization. This enhancement aims to ensure transparent and standardized disclosures, facilitating informed investment decisions.
- Carbon Market Framework- The Ministry of Power has designated the Bureau of Energy Efficiency (BEE) as the nodal agency to establish a voluntary national carbon market. This framework is intended to promote low-carbon alternatives and provide a structured approach to carbon trading.

J. Key Considerations for India's Green Taxonomy:

- Alignment with International Standards: Ensuring consistency with global practices will facilitate cross-border investments and enhance the credibility of India's green taxonomy.
- Sectoral Prioritization: Identifying and focusing on sectors with significant environmental impacts, such as energy, transportation, and agriculture, will be crucial for effective implementation.
- Stakeholder Engagement: Collaborating with financial institutions, industry experts, and civil society will ensure the taxonomy is comprehensive and widely accepted.
- Regular Updates: Establishing mechanisms for periodic review and revision will help incorporate technological advancements and evolving environmental standards.

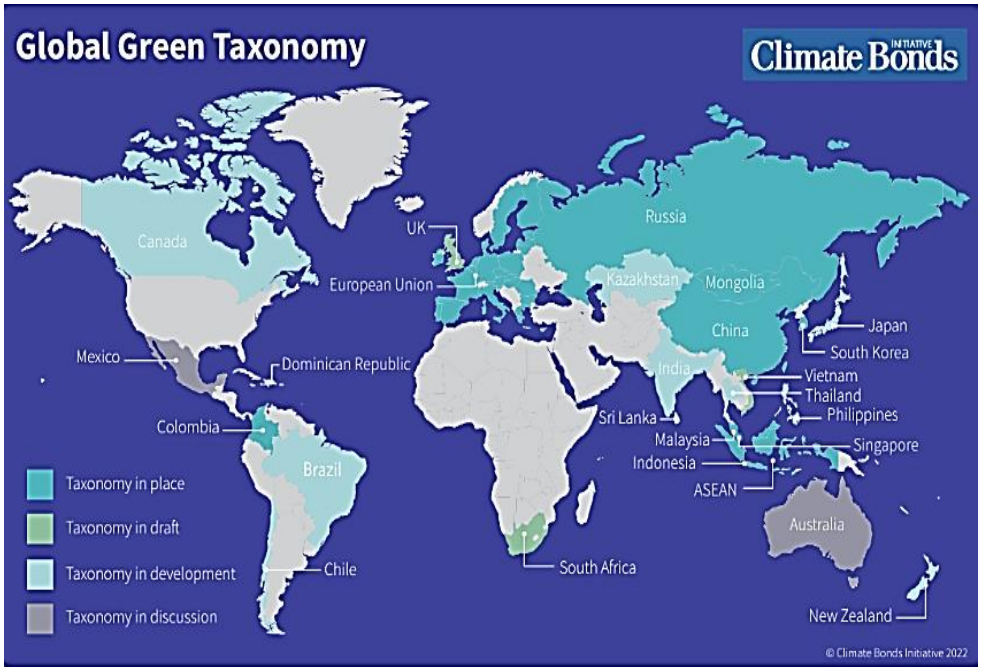
By adhering to these considerations and leveraging guidance from institutions like the World Bank, India can develop a robust green taxonomy that mobilizes sustainable investments and supports its climate commitments.

K. Global Green Taxonomy & Climate Bonds

The figure above illustrates the global status of climate bonds. The main observations from the image are that most developed countries are either implementing or developing climate bonds. In contrast, large areas of Africa and the Middle East show no current activity related to climate bonds.

L. General classification of taxonomies based on SDG's

A Green Taxonomy is a structured classification system that delineates and categorizes economic activities according to their contributions to environmental sustainability. This framework serves as a critical resource for businesses, investors, policymakers, and financial institutions, facilitating the identification of activities that are aligned with essential environmental objectives, including climate change mitigation, biodiversity preservation, sustainable resource utilization, and the prevention of pollution.



(Source: Climatebonds.net/taxonomy)

Figure 3: Global Green Taxonomy & Climate Bonds

Table 1: General classification of green taxonomy

TYPE OF ACTIVITY	SUSTAINABLE GOAL	REGION/FRAMEWORK	EXAMPLES
Renewable energy	G-7 aims to provide affordable and clean energy, Decent work and economic growth and improved innovation and infrastructure	European Union's taxonomy regulation	Can reduce carbon emissions, Energy storage
Green Transport	G-3,11,13 for urban access, public health, climate change.	European Union Taxonomy. ASEAN Taxonomy.	Electric vehicles Charging infrastructure
Circular economy	G-8,12,15 for circular economy and sustainable production and consumption	China Circular Economy promotion, EU taxonomy	Consumption, reuse, Recycling sector production.
Biodiversity	G-15 focuses on protecting life and land, including biodiversity	Green bond initiatives	Net zero by 2050, helps to reduce uncertainties for investors
Agriculture & water management	G-2.6,16,1 Achieving food security and ensuring the availability and rational use of resources.	EU taxonomy. China taxonomy. ASEAN green bond Standards South Africa green finance taxonomy.	Organic farming, Agroforestry.
Power	G-7 By 2030, ensure universal access to affordable, reliable and modern energy services	EU taxonomy, China's and US taxonomy	Reduce GHG emissions and promote clean energy sources
Pollution	G-3,14,6 for good health and well-being and clean resources.	EU taxonomy, ASEAN taxonomy. And Asia	For clean oceans and minimize environmental pollutants.

(Source: World Bank Report)

VII. FINDINGS

The study emphasizes the substantial variations in focus, objectives, and implementation challenges of green taxonomies across different regions, highlighting the need for tailored approaches to enhance their effectiveness and impact. The European Union's taxonomy primarily emphasizes stringent environmental objectives, with a target of achieving net-zero carbon emissions by the year 2050. The Climate Bonds Initiative (CBI) is focused on climate mitigation and adaptation by certifying green bonds that provide measurable impact. In contrast, China's taxonomy adopts a pragmatic approach, prioritizing alignment with economic development and national industrial policy. Emerging frameworks, such as the ASEAN taxonomy and India's climate finance taxonomy, highlight the important need for regional customization to successfully address the diverse socioeconomic situations and climate objectives that exist in different areas.

The Green Climate Fund (GCF) helps developing countries move towards low-emission and climate-resilient development. It ensures that resources are fairly split between efforts to reduce emissions and those to adapt to climate change, focusing on renewable energy, sustainable transportation, and infrastructure. The GCF supports innovation by helping with policy planning, lowering risks for market projects, and aligning financial systems with sustainability goals. It also promotes clear guidelines for sustainable investments and works with the private sector to attract funding for climate change. Through programs like the Readiness Programme and support for National Adaptation Plans, the GCF strengthens community resilience and sets goals for global climate action. Further research on green taxonomies should focus on worldwide harmonization and interoperability across frameworks, as well as regional environmental, social, and economic concerns. Furthermore, study should focus on investment trends and how technology may help monitor compliance with green taxonomy.

Future studies on the Green Climate Fund (GCF) could focus on how well it balances funding between mitigation and adaptation projects and its impact on vulnerable regions like small island nations and least developed countries. Research could explore how the GCF engages the private sector to fund climate projects and whether its strategies effectively attract investments. The role of the GCF in promoting green taxonomies, shaping sustainable investments, and influencing national policies is another key area for study. Examining the GCF's monitoring systems can help ensure transparency and measure the long-term effects of its projects. Comparing the GCF with other climate funds may reveal opportunities for collaboration and improvement. Additionally, studies on community-focused projects could assess their social and economic benefits and ways to involve local populations more effectively. Finally, exploring new financing methods, like green bonds or carbon markets, could provide insights into increasing funding for climate action and surpassing the USD 100 billion annual target. These studies would help strengthen the GCF's role in tackling climate change.

VIII. CONCLUSION

The "green taxonomy" approach is crucial for promoting sustainable finance and investment practices. The study concludes that the countries should adopt more taxonomies so that they can achieve their environmental objectives and requires further deep analysis on green taxonomy. The establishment of a national green taxonomy represents a significant step toward fostering financial investment in environmental sustainability and aligning financial markets with national sustainability objectives. Success in this endeavor relies on a clear and precise framework that financial stakeholders can readily comprehend, as well as

the integration of technical expertise and global best practices.

This approach should be interactive, promoting continuous collaboration and feedback to ensure the taxonomy remains effective and relevant over time. A thoughtfully structured taxonomy can aid in identifying green investments and monitoring progress toward environmental goals; however, it must be accompanied by supportive financial policies and incentives to fully realize its potential. By strategically aligning the taxonomy with national priorities and adapting it to local contexts, countries can leverage it as a vital tool in addressing critical environmental challenges.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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