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Green index to regulate and foster green financing

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Abstract:

We have been warned of climate change and global warming by various scientists worldwide, and the development has continued at an unprecedented pace. The Global Risks Report 2022 published by the World Economic Forum highlights the risk associated with environmental degradation they are Extreme weather, Climate action failure, Biodiversity loss and Pollution harms to human health. The India Meteorological Department (IMD) has reported that India has been the warmest since 1990, the rise in average temperatures could have a cascading effect on extreme weather events, crop patterns and urban disaster management. India recorded 756 instances of natural disasters like landslides, storms, earthquakes, floods, droughts etc. Thus, the need of the hour is sustainable development and not just development. We need to act to develop an environment-friendly ecosystem. Corporate Social responsibility activities are not enough to ensure sustainable growth. It's time to develop green index, which will measure the green and sustainability practices of an organization. Although green banks and green bonds are fostering suitable development and renewable resources, we find that the finance is flowing unabated to the development projects irrespective of their environmental impact or the carbon footprint. Prime Minister Narendra Modi has promised in Glasgow COP26 that India's non-fossil energy capacity will reach 500 GW by 2030; India will transition to net zero emissions by 2070. Carbon neutrality can be achieved by Restricting the flow of finance to the non-compliance of green and encouraging the flow of finance to Renewable energy. This research paper aims at developing a Green Index based on which the flow of finance is regulated at the Banks and Capital Markets. The green index can be based on Clean Transportation, Improved land usage, efficient waste management, water usage, and Green Buildings. The same parameters would be applicable to all types of industries. Even urban development, industrial development, and rural development can use the same parameters to achieve Carbon Neutrality.

Keywords:

Green Index, green finance, sustainable development, green financing, banks

1. Introduction:

“The world is reaching the tipping point beyond which climate change may become Irreversible. If this happens, we risk denying present and future generations the right to a Healthy and sustainable planet - the whole of humanity stands to lose”

-Kofi Anan

In this paper a new corporate sustainability performance index, called: The Green Index, for measuring and assessing the integrated sustainability performance of companies is developed. The Green Index integrates Environmental Performance, Green Innovativeness and Financial Performance, by quantifying the expert opinions toward their integration. Development of the Green Index is a holistic approach in defining and measuring “green” performance for companies, integrated into their market performance. Green Index, for the first time in the literature, introduces Green Innovativeness in defining and measuring Green.

The Green Index, uniquely refers to the collective expert opinion of management researchers, executive managers of corporations, high-tech companies R&D managers, financial managers, corporate social responsibility managers. Hierarchical Decision Modeling is used for the development of Green Index based on expert’s collective decisions. However, the overall objective of green growth can be summarized as economic growth that results in wider access to sustainable socioeconomic opportunities for a broader number of people, regions, or countries, while protecting the vulnerable, all being done in an environment of fairness, equal justice. In this case, green growth should focus on what needs to be done in the future to avoid being locked into unsustainable paths and to generate immediate local benefits. Therefore, it is suggested that green growth policies must be carefully designed to minimize policies and actions that have irreversible negative impacts.

Green finance is the way to increase the level of financial flows from the public, private, and not-for-profit sectors to promote sustainable development priorities. As such, green finance is instrumental in achieving the objective of sustainable development goals that consider green growth. Hence, green growth can be achieved through green finance, as green finance helps to mitigate and build resilience against the negative impacts of climate change.

Placing the Asian economies onto a sustainable development pathway requires an unprecedented shift in investment away from greenhouse gas, fossil fuel and natural resource intensive industries towards more resource efficient technologies and business models. The financial sector will have to play a central role in this ‘green transformation’.

Aligning economic growth with sustainable development is a universal challenge. Yet the challenge is vast for most developing Asian economies given that their growth models have been very resource and carbon intensive. Although the carbon intensity of economic output has declined substantially in most developing Asian economies over the last decades. Moreover, many Asian countries are also extremely vulnerable to climate risk. Myanmar, the Philippines, Bangladesh, Vietnam and Thailand have been among the countries world-wide that have been most affected by climate change over the last two decades.

2. Literature Review:

Comparison of the Inclusive Green Growth Index tells that most countries in developing Asia fail to include all citizens in the growth process, and that achieving environmental sustainability is difficult. It is to measure the quality of growth through the three pillars of economic growth, social equity, and environmental sustainability. IGGI for developing Asia shows environmental sustainability needs the most attention in almost all countries, and this is the highest priority area for investments in development. To overcome from this sound economic policies are important.

2.1. Shikha Jha (October 2018):

The study uses six index parameters to draw the conclusions they are green leadership, resource intensity, externalities/impact, green measures, business value chain, compliance and reporting. The outcome document on Sustainable Development highlighted the role of businesses in realizing green economy and the importance of corporate social responsibility, responsible business practices and corporate sustainability reporting. The index as well the parameters should be standardized, streamlined, and improvised. **(Sapan Thapar 2016)**

The study shows that The Green Index delivers a robust methodological approach and solution toward integrating Environmental Performance, Green Innovativeness and Financial Performance of the companies, by using the Hierarchical Decision Model developed by Kocaoglu in 1976.

2.2. (Ilknur Mary Joy-2014):

The environmental concerns considered in Green Index development such as energy conservation, promotion of renewable energy, water conservation and recycling, waste and air pollution management, GHG emission reduction, and adaptation to climate risks. It concludes that programmes that use energy directly or indirectly should have mandatory requirement to incorporate efficient energy systems. The regulation on use of ground and recycled water is mandatory.

2.3. (N H Ravindranath):

Environmental Strategy, Internal and external Environmental Risks and green opportunities are the parameters which help in the assessment and management of clients' environmental risks. The design and delivery of green financial products such as loans for renewable energy or energy efficiency, sustainable agriculture and non-financial services such as client training on environmentally-friendly practices or businesses. The Green Index 3.0 aims to be useful for all inclusive finance stakeholders: FSPs, Investors, Consulting companies & consultants, Microfinance clients, IT providers, Researchers and academia, Microfinance networks, Rating agencies & auditors, Regulators and central banks, international agencies and development banks.

2.4. (Davide Forcella 2022):

According to the author the relationship between public capital and private capital will change. This needs to be the matter of discussion in sustainability. Those who control significant resources be it high-net-worth individuals, family offices or conventional limited partners have an obligation to show leadership. The line billionaires will save the planet is too crude, but they do have a vital role in recovery.

2.5. (Simon Mills 2021):

The results of this study indicate that in the policy there are four latent variables of environmental regulation policy, green behavior or project policy, reward policy and punishment policy. The theory of green behavior has 3 dimensions in shaping the character that is 1) Green Habitability, 2) Green Barrier and 3) green performance. so the study prove that habitability and barrier behavior cannot separately dimension from green performance.

2.6. (Ram Ariff 2019):

With reference to the report raising awareness among regulators and market participants in the financial sector for environmental and climate risks is important. By this the sustainable financing practices and new lending instruments for financing sustainable projects such as renewable energy and green bonds will emerge.

2.7. (Ulrich Volz March 2018):

The results of study imply that the green financing gap is frequently observed because of low finance levels, poor green project selection, risk and return trade-off, and a lack of analytical tools and expertise in identifying and assessing green project risks. More specifically, regulatory issues have been observed as the main challenge is enhancing green finance. This review showed that there is still a significant green finance gap for inclusive green growth. The

financial gap in green investment is a result of inconsistencies in financial and environmental policy. Therefore, proper policies and regulations are needed to address certain issues. Governments should play a larger role by enacting appropriate environmental policies that force the financial sector to help financial markets become more sustainable.

2.8. (Goshu Desalegn 2022):

The Urban Neighborhood Green Index (UNGI) aims to assess the greenness and can help in identifying the critical areas, which in turn can be used to identify action areas for improving the quality of green. There is a need for getting quantifiable information regarding green structures and their amount and distribution for sustainable planning. The developed index should act as an input to model and evaluate future scenarios in better principles of sustainable community and distribution of green structure.

2.9. (Kshama Gupta 2012):

Financing for sustainable development and limiting public financing to mitigate the effects of climate change have given the private sector its importance. Green finance, which is private finance capital, represents financial support for sustainable development. The study seeks to discuss the need, limitations, and government initiatives for green finance. Mixed financing is needed which can reduce the total cost of capital of private capital investors.

2.10. (Dr. Mahadev Kharade 2021):

Green Index 1.0 aims to provide a full picture of the environmental engagement of a Micro Finance Institution, looking at a wide range of possible strategies. Among 3 dimensions the first dimension relates to the formal environmental strategy of the MFI, and includes indicators such as having a formal environmental policy, appointing a person to manage environmental issues or reporting on environmental performance. The second dimension is linked to environmental risk management. MFIs can look at their internal risks, and for example define mechanisms to reduce paper, water and energy consumption at their office level. They can also look at their external risks, and decide to use an exclusion list, condition access to a subsequent loan to the reduction of environmental risks, or raise client's awareness on mitigation solutions and the third dimension focuses on how MFIs can foster green opportunities, by offering specific financial or nonfinancial services to promote environmentally-friendly business practices or technologies.

2.11. (Marion Allet, 2014):

Green Index 2.0 aims to provide a full picture of the environmental engagement of an MFI or other inclusive finance institutions, looking at a wide range of possible strategies. It is composed of two parts: a qualitative one looking for yes-no answers, aiming to assess and

understand the global environmental performance; and a quantitative one, where instead detailed questions are asked on outreach, implementation, consumption, etc. aiming to support institutions that want to keep track of progress and define sector's benchmarks.

2.12. (Geert Jan Schuite, 2016)

Objectives:

This study aims to develop the concept of Green Index and to

- Develop criteria for Green Index and identify indicators for green indexing of projects
- Develop Green Index Scoring

3. Research Methodology:

Research methods used in this study using literature studies in the field of Green Index. This study is of exploratory in nature and is based on secondary data taken from various published reports from public and private sector institutions, online newspapers, articles and websites.

3.1. Research Analysis and Findings:

3.1.1. Selection of Indicators for Index Development:

A set of main indicators and sub-indicators were identified based on discussions and Stakeholder consultations. It is always desirable to have fewer and a common set of indicators. The rationale for selecting a common set of indicators is as follows:

- Comparison across sectors on environmental performance is possible
- Standardization and large-scale application for all sectors and departments is feasible
- Easy for reporting by all departments
- Easy for public, media and policy makers to understand and appreciate.

3.1.2. Indicators and sub-Indicators for Green Index Development:

Six major indicators have been selected during this phase of development of Green Index for ranking of the industrial, developmental and infrastructural programmes of India. The indicators include:

- Energy Use; Promotion of Renewable Energy and Energy Efficiency
- Water use; Conservation and Recycling
- Waste or air pollution management
- Land and biodiversity; Tree planting, Biodiversity conservation
- Carbon emissions; Emission Reduction and C-Sequestration
- Addressing climate risks – enhancing Resilience to Disasters

3.1.3. Indicators and rationale for inclusion in development of Green Index:

1) Energy Efficiency (EE) and Renewable Energy (RE)

- Most activities require energy
- Energy efficiency opportunity exists for all activities and may lead to cost savings
- Need to shift to RE as opportunities exist for shifting to RE and may be cost effective
- Adoption of low efficient systems and use of fossil fuel-based energy leads to air pollution, land degradation and GHG / CO₂ emissions

2) Water Conservation and Recycling

- Most programmes or activities require use of water
- Water crisis and depleting ground water are major environmental concerns
- Technologies exist for water conservation, harvesting and recycling

3) Waste Treatment and Recycling and Pollution Control

- Most processes and activities using natural resources, energy and materials lead to waste generation or pollution
- Waste minimization, waste recycling and reduction of air pollution are critical environment and health concerns

4) CO₂ Emission Reduction and Carbon Sequestration

- CO₂ or GHG emissions is a national and global environmental concern
- Paris Agreement and NDC require reduction of GHG emissions, estimation and reporting of GHG emissions and mitigation actions
- Need to avoid tree felling and promote tree planting and soil conservation leading to carbon sequestration

5) Biodiversity Conservation

- Biodiversity conservation opportunities exist and must be adopted for sustained flow of ecosystem services

6) Adaptation to Disasters and Climate Change

- Impact of climate change on infrastructure, agriculture, forest, water, health, and disasters needs to be addressed in the long term
- Opportunities and technologies exist for climate proofing or adaptation to climate risks and disasters

Green Matrix with indicators and sub-indicators and indicator scoring for development of Green Index for the proposed programs

Green Indicators	Green Sub-Indicators	Indicator Score				
		1	2	3	4	5
1. Energy Conservation and Renewable Energy	1. Mandatory provision or requirement for adopting Energy Efficiency standards or measures or appliances 2. Mandatory provision or requirement for adopting Renewable Energy technologies or measures					
2. Water Conservation and Recycling	1. Mandatory provision or requirement for water conservation or water harvesting or water recycling measures					
3. Waste Treatment and Recycling and Pollution Control	1. Mandatory provision for wastewater treatment. 2. Mandatory provision for solid waste treatment and recycling measures. 3. Mandatory provision for air pollution control.					
4. Biodiversity Conservation	1. Mandatory provision for regulating tree felling and conservation of biodiversity (trees/fishes/wildlife/others) 2. Mandatory provision for promoting tree planting measures					
5. CO ₂ Emission Reduction and Carbon Sequestration	1. Mandatory provision for CO ₂ or GHG emission reduction measures or tree planting for carbon sequestration					
6. Adaptation to Disasters and Climate Change	1. Mandatory provision for adaptation to minimize damage or cope with any climate or weather related impacts and disasters.					

4. Introduction to Green Index:

The Green Index was developed by the e-MFP Green Inclusive and Climate Smart Finance Action Group (GICSF-AG) in 2014 and was updated (Green Index 2.0) in 2016. Since its first launch, it has become the main framework for assessing the environmental performance of financial services providers (FSP) in green inclusive finance and defining action plans to improve it. The green index is having three versions as 1.0, 2.0 and 3.0. Today, many different stakeholders like investors, microfinance networks, rating agencies, consultants, consulting companies, and FSPs have incorporated the Green Index in their product lines and in their governance. The Green Index has evolved over the years to ensure its relevance and alignment with existing practices and experiences.

4.1. Purpose of green index:

The Green Index is designed to be a core tool to support the inclusive finance sector engagement in the definition, implementation, and monitoring of environmental practices and to mainstream green inclusive finance. More than an assessment tool, the Green Index provides a detailed framework to support the inclusive finance sector to:

- Raise awareness and increase commitment
- Assess activities
- Support strategic planning
- Prioritise activities
- Monitor progress at institutional and sector level

4.2. Green Index in India:

- For the period 2021-2030, India has set the following targets in its "Objective Contribution at the National Level.
- Reduce GDP emissions by 33 to 35 per cent from 2005 levels by 2030
- Achieve approximately forty percent of the accumulated electrical installation capacity of non-fossil gas-based energy assets by 2030 with the transfer of Yuga and Coffee Fee Global Finance from the Green Climate Fund (GCF).
- To create an additional carbon sink equivalent to 2.5 to 3 billion tons of CO₂ by 2030 through additional forest and tree protection.

- Preliminary estimates show that India will need about 6 206 billion (at 2014-15 prices) between 2015 and 2030 to implement agriculture, forestry, fisheries infrastructure, water resources and ecosystem adaptation.

4.3. Recommendation and Suggestions:

- Financial institutions and investors can use this index to determine whether the business is supporting sustainable development. If the score is below the standard of the index either reject the proposals or ask for improvement.
- During the time of IPO companies should submit the application to the SEBI for approval.
- Everyone who is going to finance any kind of projects whether it is urban development project or industrial project they should get through the scrutiny of the Green Index only then we will be able to achieve sustainable development.

5. Conclusion:

The results of Green Index research allow for actual application of the Resource Based View of the firm by making a decision support tool available for resource allocation decisions of the management teams. The Green Index shall facilitate easy computation of 'Green Quotient' for a company, covering a broad range of sustainable indicators. It shall support setting up of 'green benchmarks' for a particular set of industry for others to practice and follow.

6. Future scope of the study:

The index has to be reviewed, it has to be implemented in various institutions and necessary modifications are to be made. This study not covered the requirements of different types of organizations, may be this index could be implemented in different industries to understand the application of this index then they could suggest the necessary modifications for that particular industry.

So, the future researchers can implement the same index to different industries and to different kind of organizations to understand the limitations of this index.

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