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Mapping the research landscape of green tax policy as a pathway to environmental sustainability in India: A bibliometric analysis

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Abstract---India, an economy that is growing very rapidly, must balance maintaining economic growth with protecting the environment for a sustainable future. India is aiming for Net-Zero emissions by 2070, and to achieve this, green tax policies are gaining momentum as an important financial tool to curb pollution, promote the use of cleaner and greener technologies, and align economic growth with environmental goals. **Purpose:** The aim of this study is to provide an organised overview of the expansion of green tax research, with a special emphasis on India, in order to help India build a sustainable future and reach its goal of net-zero emissions by 2070.

Methodology: The study utilised a bibliometric analysis of publications from 2015 to 2025 from the Scopus database to find the trends in the literature published for a sustainable future. The study looks at publication trends, influential authors, leading institutions, and India's place within the world of green tax research. In order to identify major research streams and developing ideas, it uses scientific

mapping methods to perform keyword co-occurrence and co-citation studies. **Conclusion:** According to the study, India's route to environmental sustainability and its goal of reaching net-zero emissions by 2070 can only be attained by boosting the adoption of green tax policies supported by evidence-based research.

Keywords: Green Tax, Sustainable Development, Environment, Taxation, Net-Zero emissions

1. Introduction

The OECD (Organisation for Economic Co-operation and Development) adopted the Polluter Pays Principle (PPP) in 1972, which means that a polluter must bear all the expenses of pollution or harm to the environment they create [\(1\)](#). In India, in the Vellore Citizens Welfare Forum v. Union of India (1996) 5 SCC 647 decision, the Supreme Court decided that the polluter, i.e., the party responsible for pollution, should cover the associated expenses [\(2\)](#).

In this paper, the researcher aims to study the evolution of the Green Tax in India for environmental sustainability. The Indian Government sets a vision of achieving net-zero emissions by 2070, and the green tax can play a pivotal role in achieving this sustainable vision of the Indian Government.

The Green Tax in India is still not fully implemented across all states, although many states are working towards its implementation, such as Uttarakhand recently introduced the automated entry green tax on out-of-state vehicles [\(3\)](#). Some states, including Andhra Pradesh, Telangana, Karnataka, Dadra and Nagar Haveli, Uttar Pradesh, Maharashtra, Jharkhand, Tamil Nadu, and Kerala, have already implemented it [\(3\)](#). Therefore, this is a field of research because the green tax has the potential to achieve India's aim of a sustainable future, but research on its implementation is still insufficient in the scientific literature. That's why our study helps bridge this gap by revealing the growing relevance of the green tax through evidence-based research across the globe.

1.1. Background:

India is the fastest-growing economy, with registered growth of 8% in the first half of FY 2025-26, i.e. April-September 2025, and is on a stable growth path due to structural reforms and digital transformation, with international organisations' confidence backing its trajectory. Continuous monitoring of inflation, streamlined tax structures, and labour reforms support compliance and participation, indicating progress towards a productive, competitive, and sustainable economy [\(4\)](#). Becoming a sustainable economy is important, but environmental sustainability is also important for maintaining long-term sustainable growth. India's rank of 176th out of 180 countries in the Environmental Performance Index, 2024 and 9th in the Climate Risk Index 2026 shows that attention should be paid to activities harming the environment [\(5\)](#) [\(6\)](#).

The United Nations, through the Sustainable Development Goals, prioritises sustainable development for countries, balancing economic growth,

2. Research Methodology:

The study undertook a bibliometric analysis to analyse the recent trends of the literature published from 2015 to 2025 in the field of Green Taxation. Bibliometric analysis helps identify the publication trends, influential authors, leading institutions, and India's position within global green tax research. It applies scientific mapping tools to conduct keyword co-occurrence and co-citation analyses, enabling the identification of core research streams and emerging themes based on previous publications in the field of Green Taxation.

2.1. Research Questions and Objectives:

The study aims to provide a structured overview of green tax research, with a special focus on India, to help create a sustainable future and achieve India's aim of net-zero emissions by 2070.

The Research questions answered in the study are:

- What is the overall research trend in the field of Green Taxation?
- What are the prominent journals, research documents, countries, important keywords, and researchers involved in research involving Green Taxation?
- What are the key research themes in green taxation research?
- What are the future research directions for Green Taxation?

2.2. Method:

The data for the study were collected from the SCOPUS database because of its thorough coverage of excellent peer-reviewed journals, conference proceedings, and books. Scopus was chosen because of its dependability, consistent indexing, and appropriateness for bibliometric study.

2.3. Eligibility and Exclusion Criteria:

From the SCOPUS database, 3149 Documents were selected from the year 2015 to 2025 using combination (TITLE-ABS-KEY ("Green Tax")) (Limit to (Subject areas, "Environmental Science", "Economics, Econometrics and Finance", "Social Sciences", "Energy", "Business, Management and Accounting", "Arts and Humanities" and "Multidisciplinary"), (Limit to (Document Type, "Article", "Book Chapter", "Conference Paper" and "Review")) and (Limit to (Language, "English")). The analysis included English papers from 2015 to 2025 to identify trends in the literature published in the field of Green Taxation for a sustainable future.

2.4. Analysis Techniques and Tools:

The bibliometric package of R through biblioshiny is used for the bibliometric analysis of the literature collected through the Scopus database.

3. Results and Discussion

3.1. Types of Documents:

The documents collected for the analysis comprise 2648 articles, 265 book chapters, 152 conference papers, and 84 reviews, as shown in Fig. 3.1.

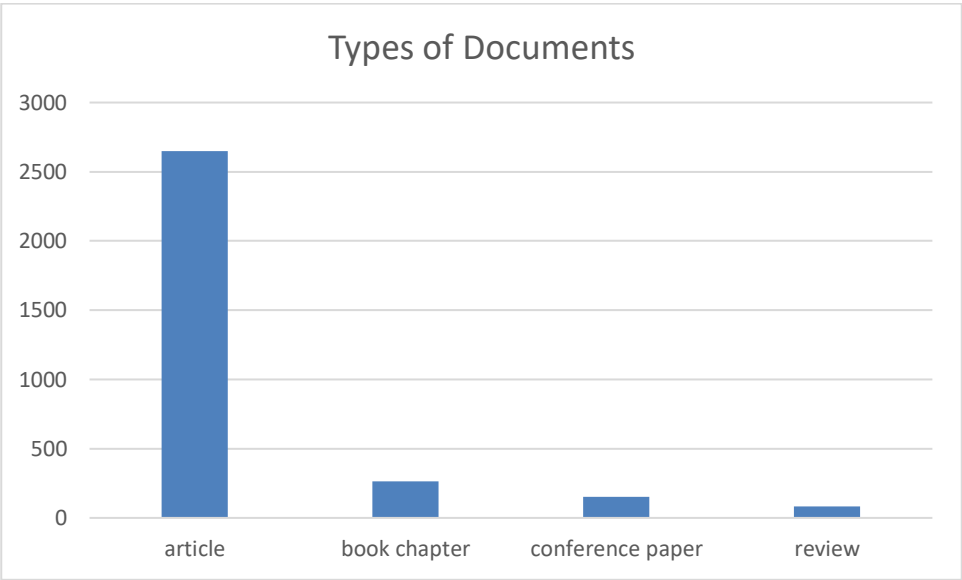


Fig. 3.1. Types of Documents

3.2. Growth:

Research in the field of Green Taxation is continuously increasing, as shown in Fig. 3.2, which shows the growing significance of the field from a global perspective. Fig. 3.3 represents the average number of citations these publications received in the past 10 years, showing the impact of these publications on green taxation over time.

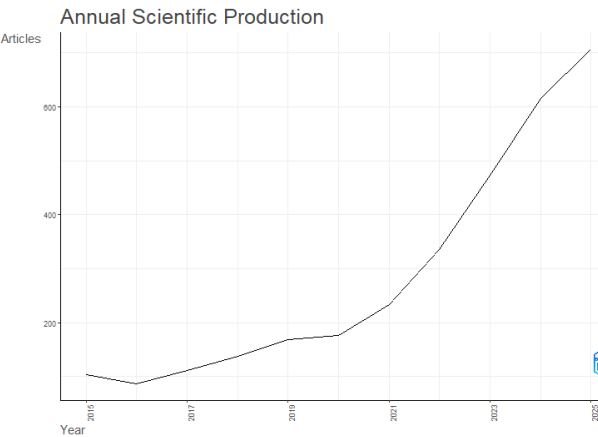


Fig. 3.2. Document Production between 2015-2025

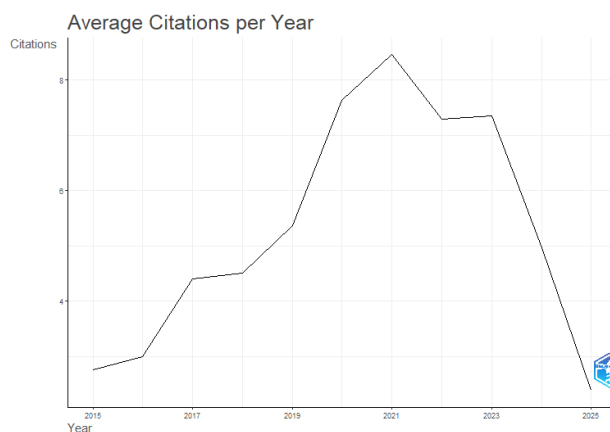


Fig. 3.3. Average Citations between 2015-2025

3.3. Journal-wise Distribution:

The most relevant source, as per the analysis, publishing or working in the field of green tax for a sustainable future, is SUSTAINABILITY (SWITZERLAND) with 220 articles published till 2025, followed by JOURNAL OF CLEANER PRODUCTION with 127 articles, ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH with 94 articles, JOURNAL OF ENVIRONMENTAL MANAGEMENT with 64 articles, RESOURCES POLICY with 58 articles and many more. Table 3.1 shows the total citations received by the top 10 journals in these 10 years, while Figure 3.5 shows the impact of the top 10 journals through their H-index.

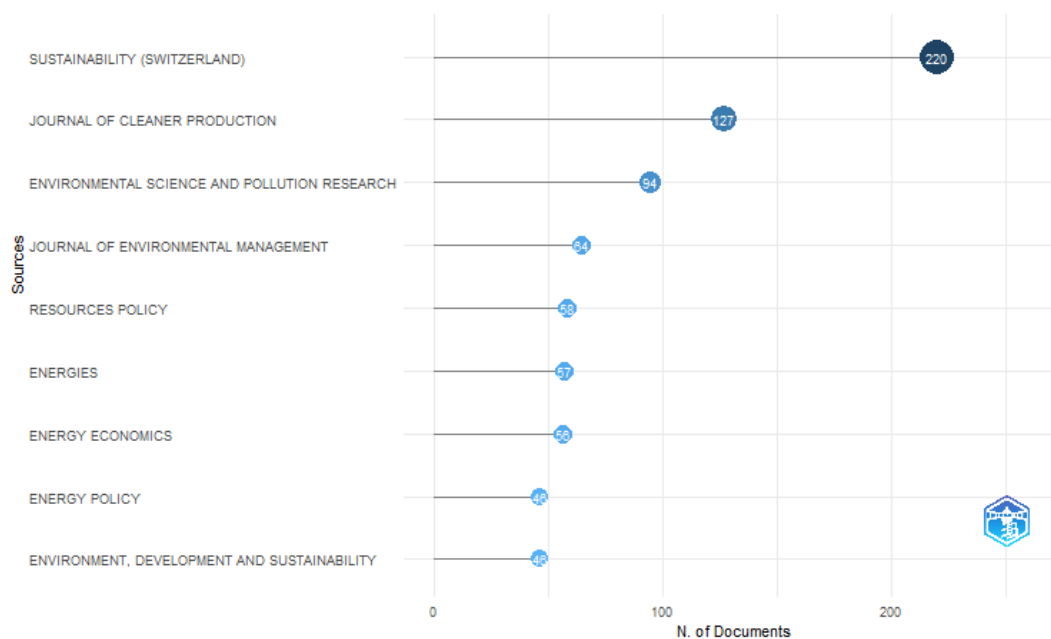
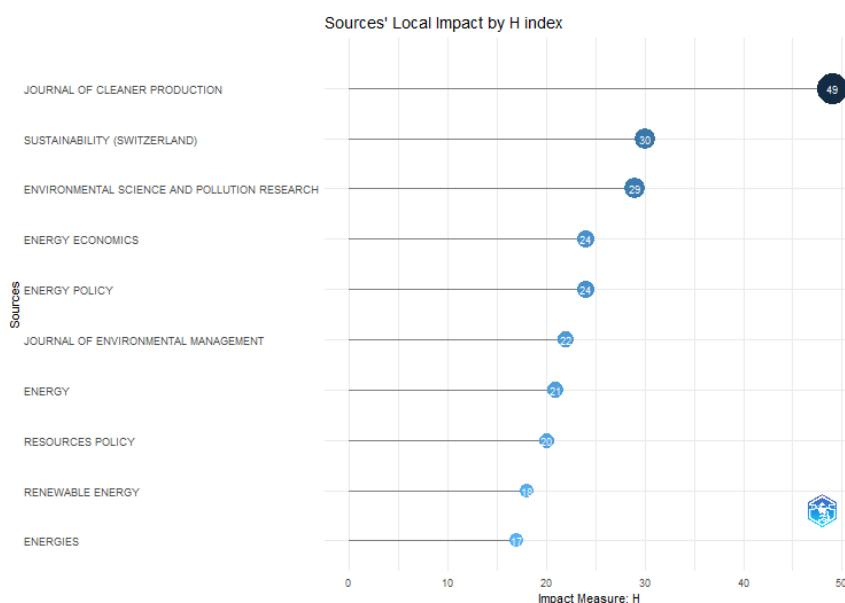


Fig. 3.4. Most relevant sources

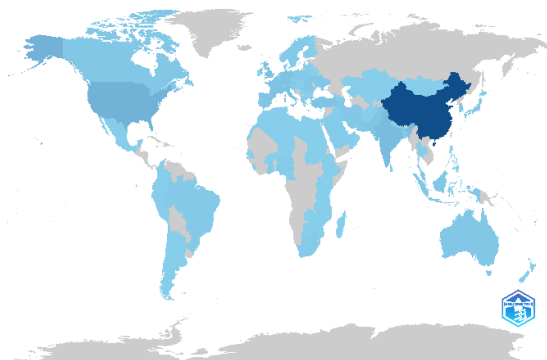
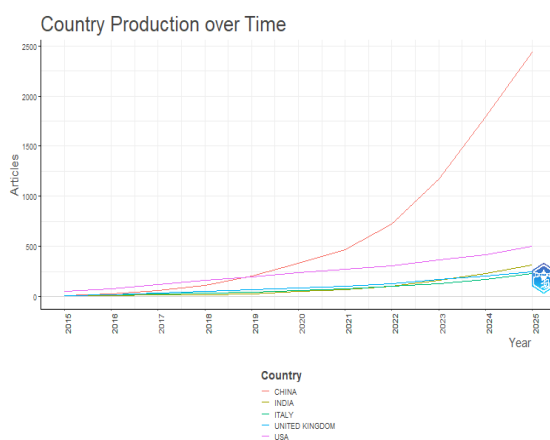
Table 3.1. Top 10 Sources according to the total citations they receive

Sources	TC
JOURNAL OF CLEANER PRODUCTION	7225
SUSTAINABILITY (SWITZERLAND)	3622
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	2600
ENERGY ECONOMICS	1914
ENERGY POLICY	2418
JOURNAL OF ENVIRONMENTAL MANAGEMENT	2409
ENERGY	1407
RESOURCES POLICY	1420
RENEWABLE ENERGY	1172
ENERGIES	1497

**Fig. 3.5.** Most relevant sources according to h-index**3.4. Most impactful countries:**

A country that is working attentively and seriously in the direction of sustainable development, producing numerous research papers in the field, is China, as shown in the figure. 3.6. Over the years, research in the field of Green Taxation has continuously increased, as shown in Fig. 3.7. The research production of the top 5 countries working in the direction of a sustainable future shows the relevance and emergence of green taxation.

Country Scientific Production

**Fig. 3.6.** Most impactful countries**Fig. 3.7.** Literature production of the impactful countries over time

3.5. Most relevant Words

Fig. 3.8 represents the most relevant words that occur many times in the literature, of which taxation is the most relevant word, emphasising that taxing the polluters may result in a reduction of pollution, followed by sustainable development, China, Carbon, pollution tax, green economy and many more. Fig. 3.9 is the tree map showing the occurrence of various words in the literature, and Fig. 3.10 is the co-word net map showing the co-occurrence or interconnectedness between the keywords or research themes. The co-word net map shows strong relationships between keywords like sustainable development and taxation, carbon emission and pollution tax, green economy, environmental tax and environmental economics and many such relationships show the emerging themes of protecting the environment by charging fees for harming the environment from those who are causing such harm to the environment.

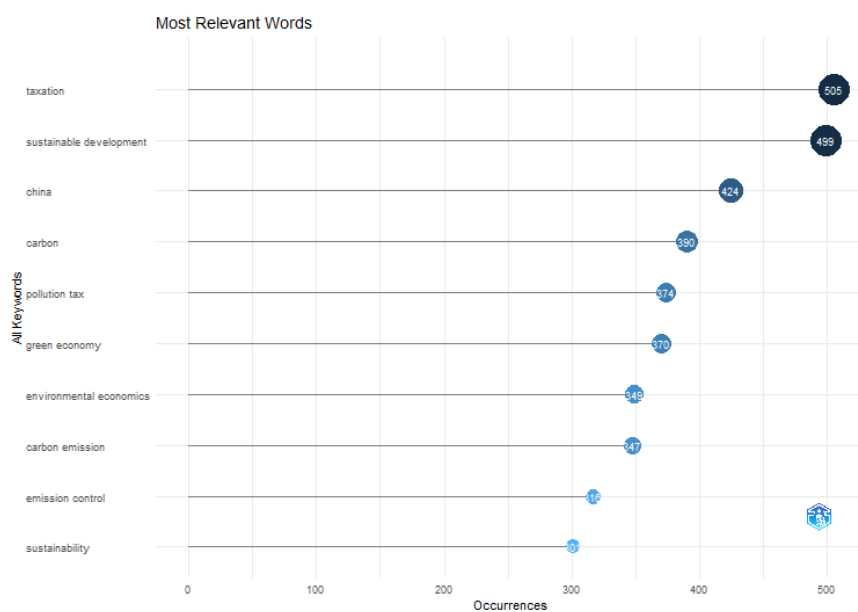


Fig. 3.8. Most Relevant Words

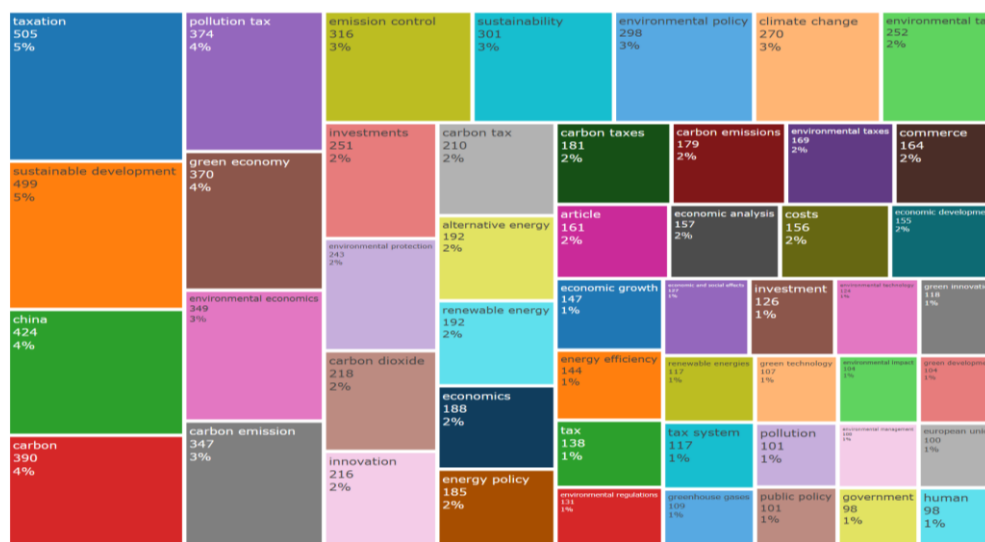


Fig. 3.9. Tree map of the Keywords

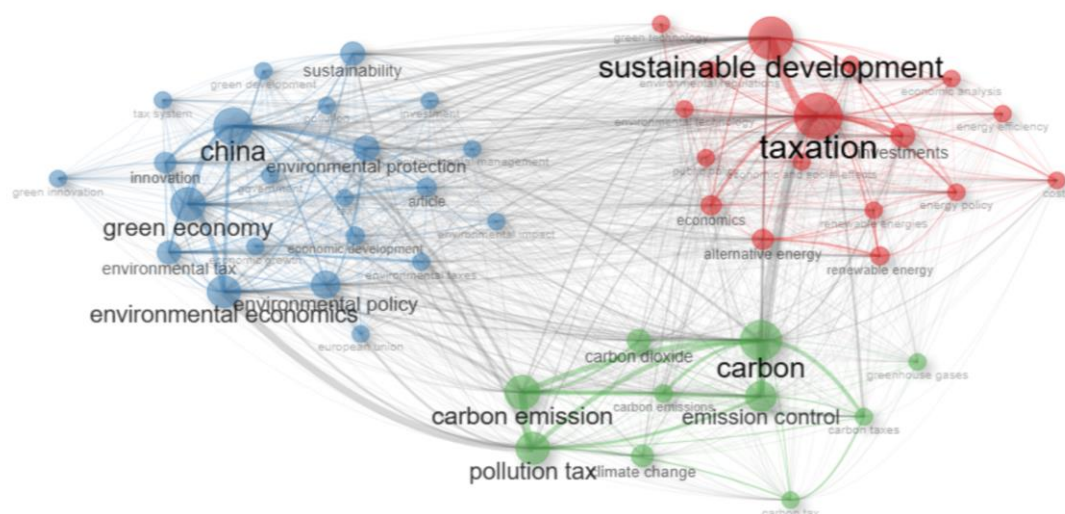


Fig. 3.10. Co-word net map of the Keywords

4. Findings, Suggestions and Conclusion

The analysis of the past 10 years' research-based literature, from the year 2015 to 2025, shows that research on green taxation and its related areas is continuously growing, leading to growing significance from a global perspective. Countries like China are moving towards creating the Green Economy, and India is also working, but still lags far behind China. The frequent occurrence and co-occurrence of words like taxation, sustainable development, carbon, pollution taxes, and green economy show that the economic development of any country should be within ecological boundaries. A country can achieve sustainability by punishing those who are harming the environment.

The tax on pollution is an excise duty on goods that cause environmental damage. As per economic theory, charging taxes on emissions will lower environmental damage by encouraging behavioural changes in households and firms that need to decrease their pollution to minimise costs (11). The implementation of green tax reforms is not politically straightforward, as the world's economies have significant inequalities in terms of resources.

Suggestions: For achieving Net Zero emissions by 2070, strengthening green taxation in India is crucial. Though the government of India is taking steps by charging taxes on the older vehicles on Indian roads (12) and providing GST rationalisation to those products or services that discourage pollution creation like renewable energy technologies, green transportation, biodegradable products, and waste management services (13) to expand waste treatment infrastructure, promote sustainable mobility solutions, expedite the use of clean energy, and stimulate eco-friendly industry for sustainable future and also achieving SDGs goal by 2030.

The Government of India should focus on high-emission sectors like energy, transport, and manufacturing, using carbon levies and environmental cess to incentivise emission reductions and promote a low-carbon economy. The effectiveness of green taxation improves with the adoption of digital tools, enhancing emissions monitoring; data-driven compliance will ensure accurate reporting through strengthened regulatory enforcement and help reduce tax evasion. Additionally, revenue generated from green tax should be transparently allocated for environmentally friendly projects, such as projects for tackling climate change, expanding renewable energy, green infrastructure, and adaptation, to promote credibility and inclusive sustainable growth.

Closing Remarks: The study examines the international taxation literature, suggesting that a well-designed green taxation system helps in reducing emissions and fosters renewable energy adoption when combined with transparent regulations. In the case of India, the study implies the need for a rationalised green tax framework, strengthening the polluter-pays principle, and channelising the revenue systematically into clean and green energy, public transport and environmental restoration. The study reveals a pattern that highlights a lack of India-specific empirical studies quantifying the long-term economic, distributional, and environmental impacts of green taxes. Future research should aim to integrate bibliometric mapping with case study evidence to evaluate policy outcomes and design green tax reforms that can advance India's Sustainable Development Commitments.

Disclaimer:

The Bibliometrix tool in R was used to analyse secondary data for this study in accordance with the PRISMA framework. The results may be constrained by the scope and maturity of current Green Tax research, but they do reflect trends in the scholarly literature that are currently accessible. The authors make no assertions regarding the results' completeness or applicability outside of the examined texts.

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