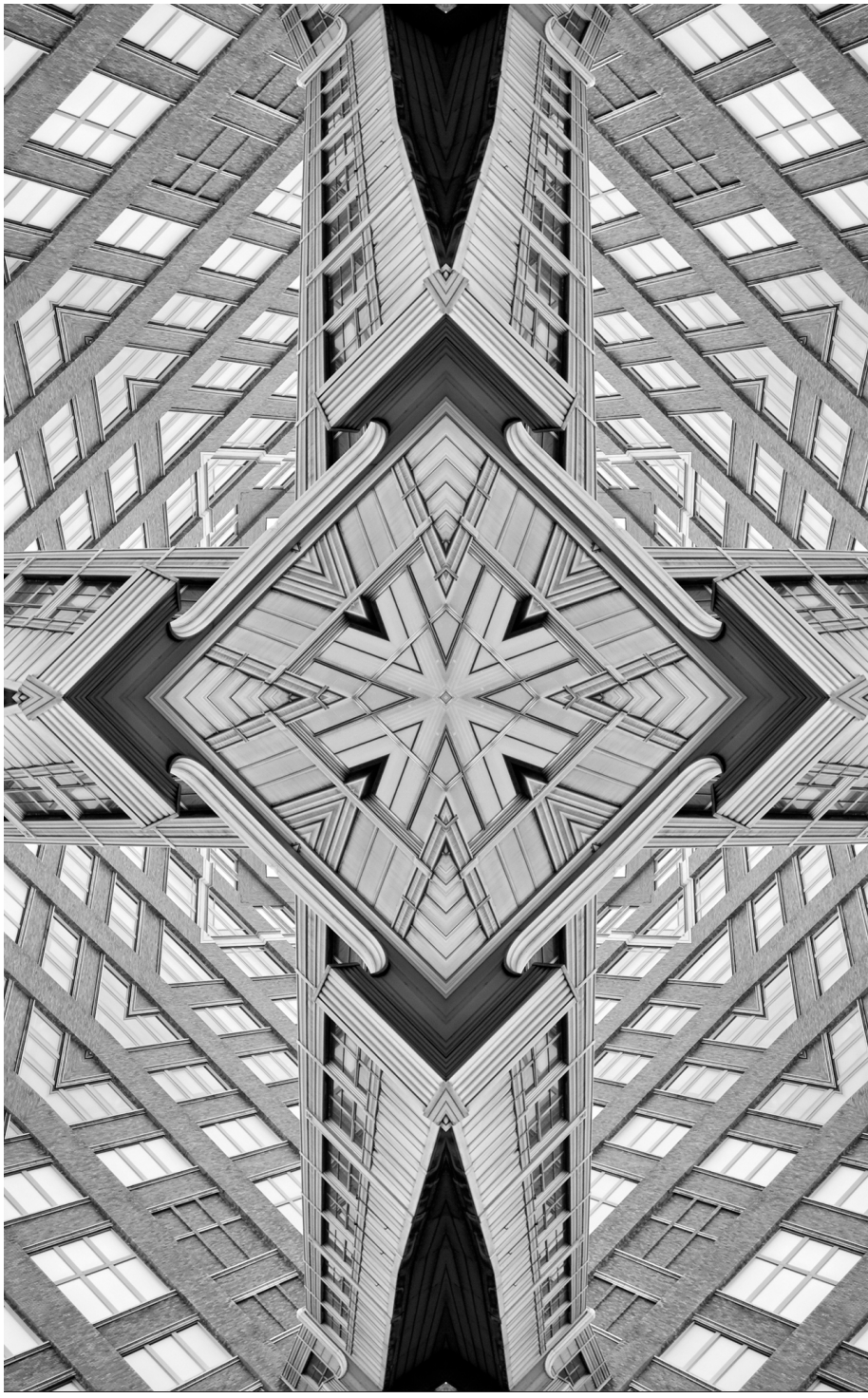
OBSERVER RESEARCH FOUNDATION

Issue Brief

ISSUE NO. 787
MARCH 2025



India's Climate Diplomacy: A Review (2014-2024)

Keshab Ratha and Arta Barik

Abstract

India has a role to play in global climate diplomacy, with its large population, fast-growing economy, and vulnerabilities to the consequences of climate change. Utilising a review of existing literature, this brief evaluates the country's involvement in international climate forums in the past decade, its negotiation strategies and policy coherence, and their effectiveness. It finds that India's strategy for climate diplomacy has aimed for a balance between national and international obligations, while promoting fairness and climate justice. The brief underlines the imperative for a more thorough examination of implementation issues in climate policy and the results of India's engagements with global powers. It outlines recommendations for future research on the ways in which India can enhance its climate diplomacy endeavours.

Attribution: Keshab Ratha and Arta Barik, "India's Climate Diplomacy: A Review (2014-2024)," *ORF Issue Brief No. 787*, March 2025, Observer Research Foundation.

Introduction

India is taking a proactive role in shaping global climate solutions. In November 2021, Prime Minister Narendra Modi announced India's 'Panchamrit' commitments at COP26, including achieving net-zero emissions by 2070, aiming for 50-percent renewable energy capacity by 2030, and reducing carbon intensity by 45 percent by 2030. In 2023 during its G20 presidency, India endorsed the New Delhi Climate Agenda[1]—which focuses on multilateral cooperation, climate finance, and sustainable development—and the implementation of the Paris Agreement, which advocates for equitable climate finance for developing countries. India's G20 presidency also brought renewed attention to green technologies, digital solutions, and low-carbon infrastructure.

India's climate agenda continues to evolve, with its Nationally Determined Contributions (NDCs) emphasising inclusive and just sustainability and balancing development goals with global climate action. These developments highlight India's growing climate leadership on the world stage, despite the country facing disproportionate vulnerabilities to climate change.[2] These are discussed in turn in the following paragraphs.

Water scarcity: Water scarcity is a critical issue due to rapid growth in population, industrialisation, and agricultural demand. India's water resources are under immense pressure, with estimates suggesting a significant decline in per capita water availability by 2050. Added to issues of overexploitation are pollution and the contamination of water sources. Agriculture relies heavily on water for irrigation, and increasing water scarcity is expected to lead to declining crop yields, exacerbating food insecurity and economic vulnerability in rural areas.

India has framed its climate policy to address water security by emphasising the need for better conservation, improved irrigation efficiency, and enhanced water storage capacity. The National Action Plan on Climate Change includes a dedicated National Water Mission, which aims to improve water-use efficiency across sectors. India has also advocated for greater international cooperation on water management in its climate diplomacy.

Monsoon variability: The country's monsoon variability has severe consequences for agriculture, food security, and rural livelihoods. India's advocacy for more robust climate financing to support climate-resilient agriculture has been directly linked to this vulnerability to erratic weather patterns. India has invested in climate-smart agriculture, promoting water-efficient crop varieties.

Extreme weather events: Extreme weather events cause massive hardships, with India's susceptibility to climate-related disasters, including cyclones, floods, and droughts, expected to increase in the coming decades. The rising frequency of cyclones, particularly in coastal regions, underscores the need for resilience-building strategies, such as scaling up early-warning systems to forecast extreme weather events. India's climate diplomacy response includes participation in the Coalition for Disaster Resilient Infrastructure and initiatives like the National Disaster Management Plan.

Key Elements of India's Climate Diplomacy

India's approach to climate diplomacy is a direct response to these vulnerabilities and global responsibilities, and is characterised by an emphasis on climate justice, global cooperation, and fair burden-sharing, particularly in the Global South. It places importance on the principle of common but differentiated responsibilities, advocating for developed nations to take the lead in reducing emissions and providing financial and technological support to developing countries like India.[3,4] Thus, for instance, during COP29, India played a significant role in establishing the Loss and Damage Fund, which helps ensure that the financial burden of climate-related losses is not placed solely on vulnerable nations.

India's stance in international climate negotiations is also distinguished by the careful balancing act it makes between its commitments to global climate action and its national development imperatives.[5] As a rapidly developing economy, India must deal with its rising energy needs while also lowering its carbon impact and strengthening climate resilience. The 'Net Zero by 2070' target is among the efforts to balance national priorities with global climate action. Another is India's continued push for global cooperation on renewable energy, as seen in its growing role in international forums. India has positioned itself as a leader in climate negotiations and demonstrated openness to collaborate on green technologies and innovation with nations like the United States (US), Japan, and countries of the European Union (EU), maintaining a diplomatic stance that encourages collaboration.

India also emphasises the need for climate adaptation finance, advocating for climate-resilient agriculture, water-management systems, and disaster-risk reduction. Further, it pushes for the establishment of a global carbon market, enabling developing countries to trade carbon credits and raise funds for sustainable development projects.

As a member of various climate coalitions, India has been able to assert its position as a key player in multilateral environmental negotiations. India thus plays a crucial role in climate diplomacy and its actions have an impact on the global climate agenda.[6] This brief conducts a review of academic publications, policy briefs, and research studies on India's climate diplomacy.

Search Strategy and Selection Criteria

The search for this study was tailored to four databases—Scopus, Google Scholar, EBSCO, and Web of Science—with a geographical restriction to results from India and the Indian subcontinent. Using search terms like 'climate diplomacy', 'India' and 'diplomacy', results for all English-language journal articles, review papers, and research reports from 2014 to 2024 were considered. As the mapping of the body of research on climate diplomacy in the social and environmental sciences was the primary focus, the search was restricted to the subjects of earth science, environmental science, multidisciplinary research, social science, and arts and humanities.

The PRISMA guidelines served as the foundation for further screening, to ensure transparency, replicability, and comprehensive coverage of relevant literature.

Of the search results, 31 studies that provided a comprehensive understanding of the intersection between climate change and diplomacy in India, with interdisciplinary perspectives from 2014-2024, were selected, forming the core of the analysis. Finally, five articles were identified after an evaluation of each manuscript based on established criteria for inclusion and exclusion. Figure 1 visually maps the process from identification to selection using a PRISMA flowchart, and Table 1 provides an overview of each of the selected five articles.

Quality Assessment

This review only considered original research publications, review papers, and conference papers. The abstracts of the papers selected were examined to ensure the relevance of the academic literature included in the review process. Subsequently, every research report was subjected to an assessment.

Data Extraction

Five articles were chosen for the data extraction phase, and the following attributes were extracted:

1. The article needs to be a conference paper, review paper, and original work. Case studies and published papers were not included.

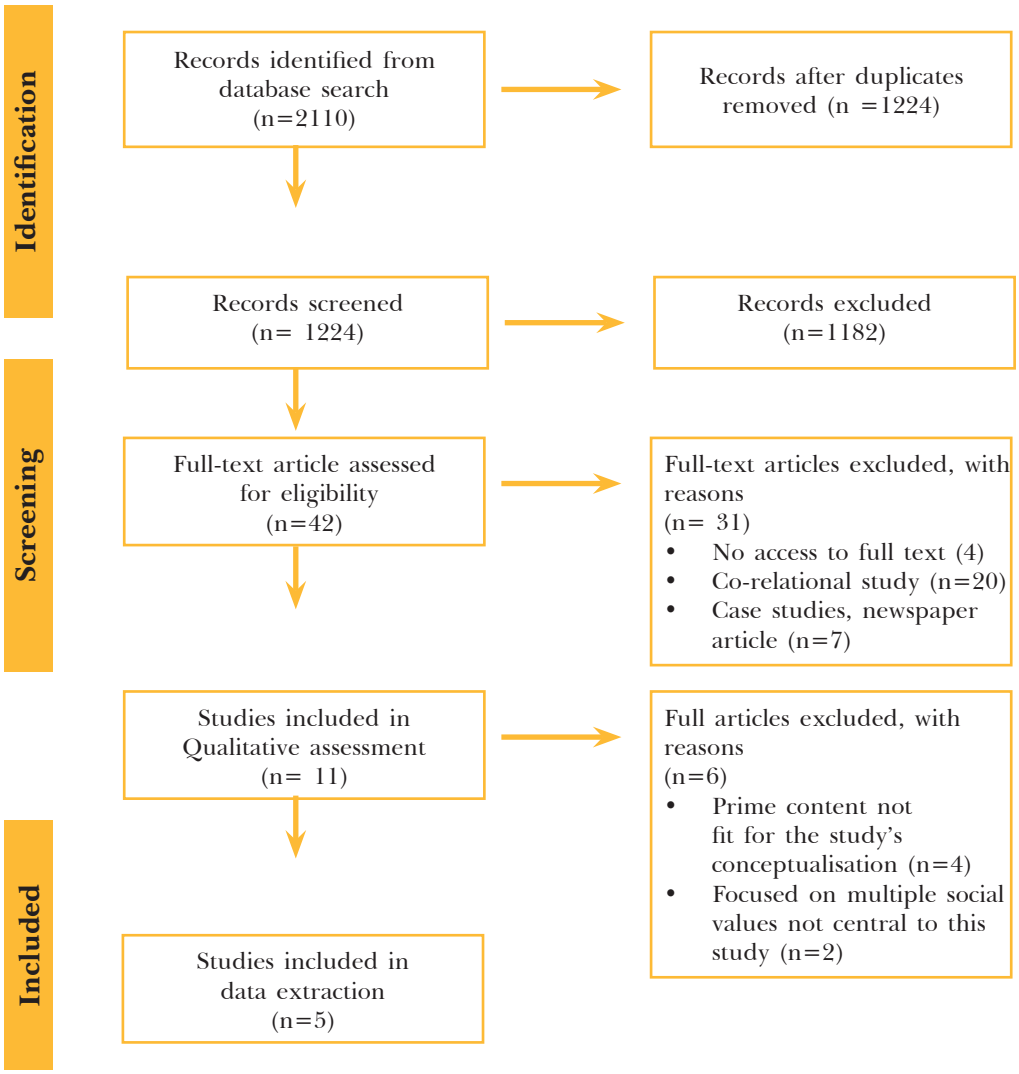
2. The papers must come from the social sciences, business, and economics fields and written in English.

3. The articles that were extracted were released from 2014 to 2024.

4. Only papers from India's neighbouring countries were extracted.

A systematic extraction of relevant qualitative data was conducted from the five selected articles. The key aspects examined in each study included: research focus; methodology; key findings; and policy implications.

Figure 1: Literature Inclusion and Exclusion



Source: Adapted from Moher et al. (2009).[7]

Table 1: Descriptive and Bibliometric Characteristics of Selected Literature

Author(s) & Date	Synopsis	Journal
Joseph & Sadhasivam, (2024)	The Indo-Pacific region needs to respond cohesively to non-traditional security concerns, such as climate change. Effective leadership is required for climate mitigation. India's capacity to emerge as a regional leader in addressing climate change is evaluated.[8]	*Journal of the Indian Ocean Region*
Zhang, J., Zou, X., & Muhkia, A. (2023)	This essay demonstrates how India can reduce carbon emissions to address climate change and reap long-term advantages.[9]	*International Journal of Climate Change Strategies and Management*
Pathak, S., & Parris, C. L. (2021)	India frustrates global stakeholders by opposing carbon limits, while urging immediate global climate action. Its contradictory policies, however, are a reflection of its nuanced goals for both material and moral leadership.[10]	*India Review*
Jayaram, D. (2018)	This study examines India's evolving position on climate change from Copenhagen to Paris, emphasising how it went from being a 'spoiler' to a 'conciliator' and 'bridging' country. It examines the factors that led to this change and India's growing prominence in international climate diplomacy.[11]	*Revue Internationale et Stratégique*
Isaksen, K., & Stokke, K. (2014)	Three climate discourses—Win-Win, Radical Green, and Third World—have emerged in India since 2007. This piece examines India's transition from Third World to Win-Win discourse, which is in line with global climate politics. However, it argues, local politics demonstrate conflicts between both discourses, which have an impact on policy changes.[12]	*Geoforum*

Source: Authors' own

Main Findings

The literature selected for this review offers valuable insights into the current state of climate diplomacy in India, underscoring the crucial role that diplomacy plays in the attainment of climate objectives.

India has adopted a two-pronged approach to climate diplomacy: it focuses on achieving global leadership while building regional capacity and solidarity to address climate change challenges, and it manages its commitments to the global community while also prioritising its domestic goals. This manifests in a sustained advocacy for climate justice—the notion that developed nations must take greater responsibility for the climate crisis. Thus, India is a signatory to the Paris Agreement, which secures ambitious renewable energy targets while ensuring that developing nations are not subject to the same stringent emission reduction targets as the Global North.

India also acts as a bridge between the Global North and Global South in climate negotiations as part of its climate justice efforts, focusing on ensuring that the Global South receives adequate climate finance and technology transfer from developed nations. India has called for reforms in global financial institutions to provide better financial access to developing nations for climate adaptation and mitigation. It is actively working with multilateral development banks to ensure access to low-interest loans and grants for clean energy projects. India has also emphasised the importance of technology transfer without burdensome intellectual property restrictions or exorbitant costs, to developing countries, particularly in clean energy technologies, such as renewable energy, electric vehicles, and energy efficiency.

The International Solar Alliance (ISA), which aims to promote solar energy as a low-cost, sustainable solution to energy poverty and climate change, is one platform where India mobilises financial resources from the Global North to help meet the technology needs of the Global South. India initiated the ISA in 2015, along with France, to harness the potential of solar energy in the Global South. The ISA encourages strategic partnerships with countries in Africa, the Middle East, and Asia. At the regional level, the ISA serves as a tool for strengthening cooperation in the Global South, focusing on joint initiatives to tackle shared climate challenges.

Main Findings

India has built and expanded its network of strategic partnerships with countries in the Global South through other initiatives too. Its participation in South-South Cooperation enables sharing of clean-energy technologies, training, and capacity-building initiatives. India's leadership in the BRICS grouping has contributed to joint initiatives like clean-energy investments and research on sustainable development. India also works closely with the African Union and small island developing states to address climate change through policy advocacy and financial assistance.

India's two-level strategy thus gives it an edge in technological leadership, energy security, and climate change mitigation, along with increased diplomatic influence, economic growth, and job creation. By fostering cooperation in the Global South, India not only contributes to regional development, energy security, and economic growth in the Global South but also enhances its role as a global climate leader.

Domestically, however, India faces challenges in the implementation and consistency of climate policies due to complex and multifaceted factors, such as financial constraints, the lack of political will, weak institutional capacity, and social and cultural challenges.[a]

Despite these challenges, it is largely recognised that India's domestic climate agenda is primarily based on responsible and sustainable development concepts, and climate policy tends to give priority to climate equity, adaptation, and mitigation. This demonstrates the nation's dedication to addressing climate change while giving importance to socio-economic progress. Furthermore, it highlights the capacity of collaborative networks and interdisciplinary collaboration to enhance the effectiveness of climate diplomacy. The consensus among researchers is that India's contribution to global climate objectives extends beyond traditional frameworks, yet effectively managing climate governance outside of UN frameworks and tackling the challenges implicit in adaptation of policy poses complexities.

a Public awareness and buy-in are crucial for the success of policies, while equity concerns can lead to social unrest or policy resistance.

Table 2: Summary of Findings from the Selected Literature

Theme	Findings
Negotiation Strategies	• Two-level approach balancing domestic and global concerns • Diplomatic mechanisms matter
Engagement with Major Powers	• Active engagement with major powers and regional blocs • Diplomatic posturing and pragmatism
Domestic Policy Initiatives	• Emphasis on equity, adaptation, and mitigation • Commitment to sustainable energy transition and climate responsibility
Challenges and Opportunities	• Navigating governance beyond UN frameworks • Leveraging collaborative networks

Source: Authors' own

Knowledge Gaps

The existing research on climate diplomacy provides a comprehensive analysis of India's efforts, shedding light on its practical approach and diplomatic manoeuvring, and providing significant insights into considerations of equity and policy coherence.

Current literature, however, lacks thorough analyses of the challenges in implementing climate diplomacy decisions. An urgent need also exists for a comprehensive analysis of how India's interactions with global powers and regional groups have influenced the global environment. Future studies must aim to understand the impact of these relationships on international collaboration on climate issues, resource distribution, and policy decisions. Research should also examine the evolving dynamics of climate negotiations in response to changing global objectives, emerging economic powers, and geopolitical disruptions.

Another imperative for research is to focus on innovative strategies to enhance climate resilience. Key to this is exploring the intricacies of adaptation beyond conventional frameworks. Researchers can analyse community-based initiatives, indigenous knowledge systems, and localised adaptation techniques to identify best practices for enhancing adaptive capacity in already vulnerable communities and mitigating climate change impacts.

Finally, further investigation into the role of interdisciplinary cooperation in strengthening India's climate diplomacy and developing all-encompassing, context-specific strategies that address the diverse facets of climate adaptation is necessary. How can collaborative networks, knowledge-sharing platforms, and interdisciplinary collaborations contribute to the advancement of climate governance, innovation, and inclusive decision-making processes? By studying successful case studies and analysing network dynamics, researchers might identify strategies for utilising interdisciplinary skills and fostering collaborative approaches to address complex climate issues.

Recommendations and Conclusion

This brief has provided an analysis of current literature on India's climate diplomacy environment, highlighting the country's focus on justice and sustainable development principles, its proactive involvement in international climate forums, and its efforts to achieve a harmonious relationship between economic growth and environmental stewardship. The review also highlights the challenges to India, such as resource constraints, deficiencies in policy execution, and the conflicting objectives of development and climate goals.

The study's findings suggest that India must continue to actively participate in international forums and negotiations for fair climate policies. Involvement in international forums like the United Nations Framework Convention on Climate Change, the ISA, Mission Innovation, Clean Energy Ministerial, the G20 and G7 Summits, the Global Green Growth Institute, and the International Energy Agency is essential to strengthening its leadership in the global green energy transition.

This brief also indicates that improving cooperation in the Global South can form a key element in accelerating India's green transformation. To this end, India could play a pivotal role in establishing regional adaptation hubs to help vulnerable countries develop and implement strategies for climate resilience. Practical steps would include developing a network of climate resilience centres, promoting localised adaptation solutions, and fostering public–private partnerships for green technologies. Regional green technology hubs across South Asia, Africa, and Southeast Asia could focus on the dissemination of solar, wind, and water-saving technologies, and providing training on climate-resilient agriculture practices, waste management, and clean-cooking technologies. Bilateral and multilateral agreements could be formalised with countries in Africa, Southeast Asia, and Latin America to jointly develop and implement climate adaptation solutions. India's role in the ISA has positioned it as a global champion of solar energy. To expand its role, India could spearhead the creation of a solar financing facility under the ISA, establish regional solar innovation hubs, and promote peer-to-peer learning networks.

India must also promote green technology research and development locally. There is scope to enhance its green energy capabilities by focusing on perovskite solar cells, wind energy, green hydrogen, electric vehicles, carbon capture and storage, waste-to-energy, and water purification and desalination technologies. The country has wind energy potential, especially

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along its coastline, and should prioritise scaling up electrolyser technology and infrastructure for hydrogen storage and distribution. India should also invest in solid-state batteries, fast-charging infrastructure, and battery recycling technologies to support the transition to electric mobility. Carbon capture and storage technologies, waste-to-energy technologies, and solar desalination and membrane-filtration technologies can help address India's water scarcity issues.

By focusing on inclusive, scalable, and locally adapted solutions, India can empower both itself and its neighbours to meet the challenges of climate change.

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Endnotes

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