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Policy to Practice: Evaluating Climate Governance and Implementation in India

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Abstract

India is highly vulnerable to climate change, with about 69% of its population dependent on climate-sensitive agriculture and nearly 85% of its land exposed to droughts, floods, or cyclones. In response, the Government of India has developed a comprehensive policy framework, notably the National Action Plan on Climate Change (NAPCC) 2008, which includes eight national missions, along with commitments under the Paris Agreement such as reducing emissions intensity of GDP by 33–35% by 2030. Key institutions like the Ministry of Environment, Forest and Climate Change (MoEFCC), the Prime Minister's Council on Climate Change (PMCCC), and the Apex Committee for Implementation of the Paris Agreement (AIPA) oversee coordination. Additionally, all states have State Action Plans on Climate Change (SAPCCs) to address region-specific concerns. Despite strong policy commitments, including a net-zero target by 2070, implementation gaps persist. Renewable energy capacity has expanded significantly, yet coal still accounts for nearly 75% of power generation, and overall emissions continue to rise. Weak coordination between central and state governments and limited financial resources constrain effective adaptation, particularly in areas like heatwave management. Socially, climate change disproportionately affects vulnerable groups, including women, rural populations, and indigenous communities. Culturally, initiatives such as the Lifestyle for Environment (LiFE) campaign aim to promote sustainable practices rooted in traditional values. Overall, while India's climate policies are ambitious, their effectiveness depends on improved coordination, adequate financing, stronger accountability, and greater community participation.

Keywords: Climate, Ministry of Environment, Forest and Climate Change, Lifestyle for Environment, local communities, etc.

Introduction

India faces acute climate vulnerability due to its geography and socio-economic profile. A large share of its land is prone to droughts, floods, and cyclones, while nearly 69% of the population depends on climate-sensitive sectors like agriculture, livestock, and fisheries. Rising temperatures, erratic monsoons, and extreme weather events increasingly threaten food

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security, livelihoods, and infrastructure. For instance, the 2022 heatwaves and unseasonal rains significantly reduced crop yields in several states. At the same time, India plays a crucial role in global climate governance as the world's third-largest emitter, though with low per capita emissions, and remains a key voice of the Global South in international negotiations.

In response, India has developed a multi-tiered climate policy framework. The National Action Plan on Climate Change (2008) introduced eight missions covering mitigation and adaptation across sectors. More recent initiatives include the National Green Hydrogen Mission and updated targets under its Nationally Determined Contributions (NDCs), such as achieving 50% non-fossil fuel capacity and reducing emissions intensity by 45% by 2030, along with a net-zero target by 2070.

This paper evaluates how these policies translate into practice, analyzing political, economic, social, and cultural dimensions. It highlights state-level initiatives, assesses outcomes, and identifies key challenges such as coordination gaps, financial constraints, and equity concerns in India's climate governance.

Objectives

1. To examine the evolution and structure of India's climate policy framework, particularly the National Action Plan on Climate Change (NAPCC), Nationally Determined Contributions (NDCs), and the 2070 net-zero commitment.
2. To evaluate the effectiveness of institutional mechanisms such as the Ministry of Environment, Forest and Climate Change (MoEFCC), Prime Minister's Council on Climate Change (PMCCC), and Apex Committee for Implementation of the Paris Agreement (AIPA) in translating policy commitments into action.
3. To analyze the implementation of climate governance across political, economic, social, and cultural dimensions, including renewable energy expansion, adaptation strategies, and public participation initiatives like LiFE.
4. To assess the role of federalism and state-level initiatives (e.g., SAPCCs, climate cells, green budgeting) in achieving national climate targets.
5. To identify gaps, challenges, and policy-practice disconnects in areas such as coordination, financing, accountability, and social equity in climate governance.

Hypotheses

- Despite strong policy commitments under the NAPCC and updated NDCs, India's climate governance faces significant implementation gaps due to weak intergovernmental coordination.
- Rapid expansion of renewable energy capacity does not proportionately reduce overall emissions because of continued dependence on coal-based power generation.
- States with institutional innovations (e.g., climate cells, climate budgeting) demonstrate relatively better climate policy implementation compared to states lacking such

mechanisms.

- Adaptation policies in India are underfunded and inadequately localized, limiting their effectiveness in addressing climate vulnerabilities.
- Cultural and community-based initiatives such as the Lifestyle for Environment (LiFE) campaign enhance public engagement but require stronger institutional backing for measurable climate impact.

Methodology

This study adopts a qualitative, analytical, and descriptive research design based on secondary data. It evaluates India's transition from climate policy formulation to implementation. Data sources include government reports, policy documents (NAPCC, SAPCCs, NDC), parliamentary records, and reports from institutions like the World Bank and Climate Policy Initiative, along with academic studies and media case analyses. The framework examines political, economic, social, and cultural dimensions of climate governance. Case studies of Maharashtra, Tamil Nadu, Odisha, and Assam highlight regional variations. Limitations include reliance on secondary data, evolving policies, and lack of standardized climate expenditure tracking, which constrains precise quantitative assessment.

Literature Review

The literature on climate governance in India highlights a shift from strong policy ambition to persistent implementation challenges. Scholars note that while the National Action Plan on Climate Change (NAPCC) offers a comprehensive mission-based framework, its execution remains uneven due to weak institutional coordination. The Ministry of Environment, Forest and Climate Change (MoEFCC) often lacks sufficient authority to ensure effective cross-ministerial integration.

Research by the Centre for Social and Economic Progress (CSEP) points to structural governance issues, including weak coordination between the Union and states and the limited functioning of apex bodies like the Prime Minister's Council on Climate Change. Although institutions such as AIPA mark progress, their integration at the state level remains limited.

Assessments by Climate Action Tracker suggest that India's policies are insufficient to meet the 1.5°C target, as renewable energy gains are offset by continued coal dependence. The World Bank emphasizes social vulnerabilities, noting that women, tribal groups, and rural populations are disproportionately affected, though community-led initiatives improve resilience.

Studies on climate finance reveal gaps in fund utilization and monitoring, while cultural initiatives like LiFE promote behavioral change but face limits without structural reforms. Overall, India's climate governance remains policy-rich but implementation-constrained.

National Climate Policy Framework

The National Action Plan on Climate Change (NAPCC), launched in 2008, remains the cornerstone of India's climate policy framework. It comprises eight national missions

addressing key sectors: the National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Ecosystem, Green India Mission, National Mission for Sustainable Agriculture, and the National Mission on Strategic Knowledge for Climate Change. These missions aim to integrate environmental sustainability with developmental priorities such as energy access, urban planning, and livelihood security, making the NAPCC the overarching structure guiding India's climate action.

Since its inception, India's climate policy has evolved significantly. Between 2020 and 2021, the government announced the "Panchamrit" commitments, culminating in a net-zero emissions target by 2070. In 2022, India enhanced its Nationally Determined Contributions (NDCs), aiming to achieve 50% of cumulative power capacity from non-fossil fuel sources and reduce emissions intensity of GDP by 45% by 2030. New initiatives such as the National Green Hydrogen Mission (targeting 5 million tonnes annually by 2030) seek to decarbonize hard-to-abate sectors like industry and transport. Other measures include the expansion of the National Clean Air Programme (NCAP), sectoral policies on waste management and clean cooking, and the proposed Carbon Credit Trading Scheme (CCTS), expected to regulate industrial emissions.

India's climate framework is further supported by sectoral laws and policy instruments, including the Electricity Act and energy planning documents by NITI Aayog. Internationally, India remains committed to its Paris Agreement obligations, including creating a significant carbon sink through afforestation. At COP26 in 2021, India also introduced the Lifestyle for Environment (LiFE) initiative, emphasizing sustainable consumption and behavioral change, thereby adding a societal dimension to climate governance.

Institutions and Governance

India's climate governance framework is built on a multi-layered institutional structure involving central, state, and local bodies. The Ministry of Environment, Forest and Climate Change (MoEFCC) acts as the nodal agency, overseeing international negotiations, policy formulation, and programme implementation. It leads the National Action Plan on Climate Change (NAPCC) and hosts the National Climate Change Secretariat. At the apex level, the Prime Minister's Council on Climate Change (PMCCC), established in 2008, was intended to ensure coordination across ministries, though its functioning has been inconsistent. To improve coordination, the government created the Apex Committee for Implementation of the Paris Agreement (AIPA) in 2020. Chaired by the MoEFCC Secretary, AIPA includes multiple ministries and focuses on aligning policies with India's Nationally Determined Contributions (NDCs), regulating carbon markets, and integrating global and private climate initiatives.

Despite this institutional architecture, coordination challenges remain significant. The MoEFCC faces limitations in ensuring effective inter-ministerial integration across sectors such as finance, agriculture, and industry. Similarly, the PMCCC has not fully utilized its coordinating role, and AIPA lacks robust mechanisms for state-level engagement, a crucial aspect in India's federal system. These gaps hinder the translation of policy frameworks into cohesive action.

State governments play a vital role through State Action Plans on Climate Change (SAPCCs), which address local vulnerabilities and sectoral priorities. Many states have established Climate Change Cells and initiated localized strategies. For example, Maharashtra has developed a decentralized model through Climate Action Cells, while Tamil Nadu integrates renewable energy and adaptation planning. However, effectiveness varies across states due to differences in capacity and resources.

Climate finance remains a major challenge. India lacks a dedicated climate law or unified funding mechanism, relying on fragmented schemes and budgets. Although the Finance Commission has introduced environmental considerations, issues of underutilization, weak monitoring, and limited tracking continue to constrain implementation.

Implementation and Outcomes

1. Energy and Mitigation

Energy is the largest source of India's greenhouse gas emissions, making the power sector central to mitigation efforts. In recent years, India has achieved significant growth in renewable energy capacity, driven by supportive policies and private investment. By mid-2025, renewable capacity (including large hydro) reached around 220 GW, accounting for nearly 46% of total installed capacity. In FY2023–24, rooftop solar saw record expansion, and for the first time, most new electricity demand was met by renewables. Large-scale solar and wind projects continue to expand rapidly through competitive bidding.

Despite this progress, coal remains the dominant energy source, generating about 75% of electricity. Renewable energy contributes only around 25% of actual generation, reflecting its relatively recent growth. Consequently, India's total emissions are still rising, and current policies are considered insufficient to meet the 1.5°C climate target.

To address this, the government is promoting energy diversification and transition. The National Electricity Plan and Union Budget emphasize renewable expansion, energy storage, and nuclear energy development. However, with significant coal capacity still under construction and projections indicating continued coal use in the coming decades, India faces a complex challenge in balancing energy security with long-term decarbonization goals.

2. Key mitigation policies beyond power include:

Energy Efficiency: The Perform, Achieve and Trade (PAT) scheme and mandatory standards aim to reduce industrial and appliance energy use. The Energy Conservation Act was recently amended to strengthen efficiency regulations.

Transport: Programs like FAME II (now E-DERIVE) provide incentives for electric vehicles. Electric bus procurement is expanding. However, overall EV adoption is still low, and policies to electrify heavy vehicles remain weak.

Industry: The carbon market (CCTS) will set emissions-intensity targets for industries, building on the PAT system. A national green hydrogen mission seeks to supply low-carbon feedstock for refineries, fertilizers and steel.

Forests and Land: The Green India Mission and national afforestation programs aim to sequester carbon. As of 2022, India reported that its sink (forests and tree cover) had already surpassed its target (creating ~3.2 $GtCO_2e$ sink by 2030). Agricultural improvements (e.g. climate-resilient crops) also contribute.

Heat Action Plans (HAPs): India has institutionalized Heat Action Plans across multiple states following severe heatwaves. Cities like Ahmedabad and states like Maharashtra have demonstrated early warning systems and inter-departmental coordination.

Adaptation and Resilience

India's climate policies emphasize adaptation, focusing on water management, disaster resilience, public health, and ecosystem restoration, but implementation remains uneven. Heat Action Plans (HAPs), mandated by the National Disaster Management Authority since 2017, have been adopted by several states. Regions like Maharashtra, Odisha, and Delhi have developed relatively advanced HAPs with early warning systems and public outreach. However, studies show that most HAPs lack local specificity, such as accounting for urban heat islands, and only about 30% include dedicated funding, with others relying on departmental resources.

Broader adaptation efforts include initiatives under the National Water Mission, cyclone preparedness systems in coastal states, and community-based resilience practices. States like Odisha and Andhra Pradesh have strengthened early warning systems and infrastructure, while grassroots efforts especially women-led self-help groups promote water conservation and climate-resilient agriculture. Indigenous practices in tribal and rural areas also play a role, though increasingly threatened by climate variability.

Despite these efforts, significant gaps persist. Many State Action Plans on Climate Change face weak implementation, and climate-related funds are often underutilized. Limited budget tracking and inadequate financial allocation especially for adaptation continue to constrain effective climate resilience in India.

Different Aspects

1. Political and Governance Dimensions

On the political front, India's climate governance reflects its federal structure and development priorities. The Union government wields significant resources and sets national targets, while states and local bodies have much of the regulatory and implementation authority (e.g. electricity distribution, land use, agriculture). This decentralization is double-edged: states can tailor responses to local needs, but misaligned incentives can hamper action. For instance, central ministries may push renewables, but state regulators often prioritize cheap coal power for revenue. The CSEP report argues that existing institutions lack effective horizontal (between ministries) and vertical (with states) coordination. Without strong intergovernmental mechanisms, states may pursue climate goals only when aligned with development agendas.

The formation of AIPA in 2020 was a step toward central coordination. Yet CSEP notes that AIPA currently has "no strong framework for state-level coordination". Experts have proposed

a formal climate law to clearly delineate roles across Union, State and local levels. Meanwhile, traditional environmental clearance processes remain unchanged, reflecting slow integration of climate considerations into regular development approvals. The judiciary and parliament have often pressed the government to act, as in the example of under-spent pollution-control funds. In sum, the political dimension shows a tension between robust central commitments (to show leadership on climate) and the realities of multilevel governance, where implementation requires buy-in from state and sectoral actors.

2. Economic Dimension

Economically, India is undergoing a structural transition. It remains a developing country with 6–8% GDP growth targets. Energy security, industrialization and poverty alleviation are top priorities. Yet India is also investing heavily in green growth. On renewables, the declining cost of solar and wind has allowed India to rapidly scale capacity without severely compromising growth.

However, the legacy of cheap coal poses an economic challenge. Coal employs millions (directly and indirectly) and many regions (Jharkhand, Odisha) depend on mining royalties. The NITI Aayog roadmap notes the difficulty of phasing out coal too rapidly: it expects coal use to rise until the mid-century, and envisions an "Indian Development Model" where energy-intensive growth is powered increasingly by renewables and nuclear. Accordingly, India has not committed to an absolute coal phase-out. Economic policy continues to subsidize fossil fuels (e.g. by exempting certain coal plants from market mechanisms or under-pricing rail freight). Industries like steel and cement argue for longer timelines to transition, highlighting job and competitiveness concerns.

Financing is critical. Public investment in climate change is diffused across dozens of programs. An analysis finds that India's CSS (e.g. rural employment, agriculture, infrastructure schemes) already embeds about $44 billion/year of climate-related spending. But a huge gap remains: achieving India's climate goals is estimated to need several trillion dollars more by 2030. Private finance has been growing (green bonds, equity), but still lags. The climate tracker report suggests leveraging markets: e.g. expanding the Perform Achieve & Trade (PAT) scheme, introducing consumer-facing carbon pricing, and fostering an open carbon market. The CSEP discussion also recommends a dedicated Climate Fund and performance-based grants to states (via the Finance Commission) to ensure fiscal incentives for emissions reduction. In practice, the 16th Finance Commission (2019) did introduce a "climate change fund" in its scheme, but states report delays and complexities in accessing those resources.

3. Social and Cultural Dimensions

India's climate implementation has significant social implications. On the one hand, co-benefits of mitigation (like cleaner air from phasing out coal or vehicles) directly improve public health. On the other hand, social equity concerns arise in both mitigation and adaptation. As noted, vulnerable groups the rural poor, slum dwellers, tribal communities, scheduled castes and women often bear the brunt of climate impacts while having limited capacity to adapt. Women, in particular, are identified as resilience champions: they collect water and fuel, manage farms and households, and often lead community responses to crises. Studies in India

have shown that women spend double the time of men fetching water, and mortality among women is higher in floods due to lack of mobility and resources. The World Bank "Social Dimensions" report

emphasizes empowering women: for example, involving women in constructing irrigation structures (Odisha) or organizing women's self-help groups to disseminate early warning (Jharkhand). Civil society and NGO programs also highlight gender: the Mahila Housing Trust trains thousands of urban poor women in retrofit technologies (rainwater harvesting, efficient stoves).

Rural communities have shown notable adaptation initiatives. Chipko-style forest conservation (predominantly led by village women) exemplifies local activism. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), while not a climate program per se, is being used in many states to build water harvesting structures, plant trees and restore grazing lands under climate-proof livelihoods. In agriculture, millions of farmers are adopting practices like direct seeding of rice, crop diversification and micro-irrigation some supported by government extension programs (e.g. Pradhan Mantri Krishi Sinchayee Yojana for irrigation). Local knowledge (e.g. plant phenology calendars, crop varieties, community grain banks) is being tapped to enhance resilience.

Climate policies in India often involve social trade-offs. Large renewable projects and irrigation expansion have raised concerns about land acquisition, displacement, and resource use. The transition away from coal has sparked debates on a "just transition," especially in states like Jharkhand and Chhattisgarh, where livelihoods depend on coal. While pilot retraining programs exist, broader implementation remains limited. Culturally, initiatives like the LiFE movement promote sustainable living rooted in traditional values such as Antyodaya and Swadeshi. Public engagement through campaigns, education, and programs like Van Mahotsav and urban forest schemes reflects efforts to align climate action with cultural practices.

Moreover, some climate actions intersect with spiritual or heritage narratives. The Namami Gange program frames river cleaning as both ecological necessity and cultural purity. Heritage buildings and city "heritage corridors" are being upgraded with climate-resilient designs, recognizing historical climate adaptation (e.g. stepped water tanks in Tamil Nadu). In sum, cultural campaigns aim to align India's rich tradition of bahujan hitaya, bahujan sukhaya (welfare of many) with modern climate imperatives.

State-Level Case Studies

While the above dimensions are discussed mostly at the national level, many concrete examples can be drawn from specific states:

Maharashtra: The state launched an ambitious Heat Action Plan after deadly 2010 heatwaves, and regularly updates it. In 2024 the Maharashtra government mandated Climate Action Cells in every major city and district, making it a pioneer in subnational climate governance. The Majhi Vasundhara Abhiyan (My Earth Campaign) involves schoolchildren and communities in tree-planting and awareness drives. The capital Mumbai established an Environment and

Climate Change Department, reforming municipal structures to mainstream climate considerations. Maharashtra has also invested in rural afforestation (via MGNREGA and local watershed projects) and is exploring green hydrogen in its petrochemical hubs.

Tamil Nadu: With high industrialization and coastal exposure, TN has both mitigation and adaptation programs. It has become a leader in renewable energy in southern India, with over 11 GW of wind and 4 GW of solar capacity installed. The state's electricity regulator enforces renewable purchase obligations on distribution companies, ensuring steady clean power offtake. On adaptation, Tamil Nadu's SAPCC (last updated 2012) identified coastal areas for protection against sea-level rise and focused on water harvesting in dry zones. The state's Kudankulam Nuclear Power Plant (Russia-built reactors) is also part of TN's low-carbon strategy. Civil society in Tamil Nadu has been active in creating "Tank Federation" cooperatives to manage traditional irrigation tanks, linking ancient water storage culture with climate resilience.

Assam: Flooding is the perennial climate hazard. Assam's government has integrated satellite early-warning systems with traditional community alerts. It has partnered with NGOs to build raised embankments and herbal nursery gardens. In 2021 Assam launched a State Disaster Resilience and Mitigation Fund to finance flood- and earthquake-proof shelters. The state's climate cell also works on haze pollution (from forest fires) which affects regional agriculture. These steps illustrate Assam's locally-adapted focus on its unique vulnerabilities. (Notably, CSEP highlights Assam's flood-management strategies as a successful state initiative.)

Odisha: A disaster-prone state (cyclones, floods), Odisha has a robust Cyclone Mitigation Program including one of Asia's largest storm-surge shelters. Odisha's finance department pioneered climate-responsive budgeting: each year it assigns climate tags to budget lines for water, disaster relief and green infrastructure. Forest Department programs have revived mangroves along the coast. In social dimensions, Odisha involves local Panchayats in disaster planning and has schemes to insure farmers against climate-driven crop loss. These budgeting innovations in Odisha and Assam serve as models for aligning fiscal policy with climate goals.

Gujarat and Rajasthan: These arid states have aggressively pursued solar energy. Gujarat's landmark "solar city" projects (e.g. Charanka) and canal-top solar installations were among India's first. Rajasthan hosts one of the world's largest solar parks (Bhadla). Both states integrate solar pumps in agriculture to reduce diesel use. Rajasthan has also piloted climate-smart agriculture (e.g. millets revival under the "Shree Anna Yojana"). Culturally, these states support conservation of sacred groves and desert biodiversity, tapping tradition to maintain ecosystem services.

These cases show states have innovated, but coordination and funding remain weak. Many State Action Plans are underfunded, and implementation depends heavily on central schemes like AMRUT and MNREGA. Smaller urban bodies lack capacity and resources, making execution difficult. Scaling success requires stronger fiscal support, coordination, and technical capacity at subnational levels.

Challenges and Gaps

Despite progress, major gaps exist between policy and practice:

Coordination and Governance: Federal-state coordination is weak. The CSEP report finds the MoEFCC and PMCCC have not fully engaged other ministries or states. The newly created AIPA lacks mechanisms to involve states. States vary widely in commitment: some update SAPCCs regularly, others have not. Civil society and local governments often fill gaps, but lack formal channels into planning. Analysts recommend creating intergovernmental councils, stronger devolution of powers, and even a national climate law to clarify roles.

Financial Shortfalls: Budgetary allocations often go unspent. The 2024–25 parliamentary audit found that the MoEFCC used only 0.8% of its allocated ₡8.58 billion for a major pollution-control scheme. By Jan 2025 it had utilized merely 54% of its annual budget. Such under-utilization reflects ad hoc planning and low prioritization of environment. Adaptation finance is especially insufficient: a CPI report notes an urgent need to "mainstream heat management into development schemes" and attract private finance, as public funds (even including schemes like RKVY, PMAY) are inadequate for extreme heat resilience. The lack of a consolidated climate fund means agencies must reallocate from other programs each year. Experts call for earmarked climate funds and performance-based incentives (e.g. through the Finance Commission) to ensure that mitigation and adaptation projects actually receive money.

Capacity and Technology: Many local bodies and state agencies lack expertise to implement technical projects. For example, installing solar or wind capacity at scale requires auction design and grid upgrades that some states struggle with. Similarly, climate-proofing infrastructure needs climate data and hazard mapping that are still rudimentary. The CPCB's monitoring network remains sparse, and India's climate modeling capacity (for monsoon projections etc.) is limited. While India has expanded satellite data use, translating that into policy (e.g. crop advisories, insurance schemes) is ongoing work.

Social Inclusion: As noted, climate action can have unintended social consequences. For example, shifting to electric vehicles threatens jobs in fuel retailing and conventional auto repair. Coal-phaseout without planning risks stranded communities. Ensuring a just transition is challenging: India has initiated some green skill development programs, but lacks a national policy on workforce retraining. Public participation in planning is uneven: grassroots movements exist but are not systematically integrated. The CSEP report emphasizes "public participation" in planning and learning from grassroots successes, suggesting the need to involve civil society in policy design and accountability.

Monitoring and Accountability: India has no independent climate watchdog. Reporting is done internally (MoEFCC's Biennial Update Reports, NITI's tracking of missions), but there are no statutory climate targets or legal obligations to achieve them. This makes accountability diffuse. While external actors like the CAG and parliamentary committees review climate spending, their powers are limited to financial propriety, not outcomes. Suggestions include climate scorecards for states (as proposed by CSEP) and an integrated climate expenditure dashboard to monitor progress transparently.

In summary, while India's climate policies are well-articulated, implementation gaps are significant. The country has made clear strides in areas like renewable energy deployment and policy formulation, but structural issues (federal coordination, finance, capacity) continue to impede effective on-the-ground action. Analysts caution that without addressing these gaps, India may fall short of both its own targets and its broader sustainable development goals.

Conclusion

India has moved swiftly from policy to practice in its climate governance, but with mixed results. On the positive side, a comprehensive policy framework exists (NAPCC missions, NDCs, net-zero pledge) and institutional mechanisms have been set up (AIPA, state climate cells). Renewable energy expansion is a notable success, and some state-led initiatives (e.g. Maharashtra's climate cells, Odisha's green budgeting) provide useful models. There is growing mainstreaming of climate into urban planning, disaster management and even public campaigns like LiFE that harness cultural values for environmental benefit.

Yet the reality of implementation reveals persistent challenges. Emissions continue to grow under current policies, suggesting that much stronger action is needed to meet stated goals. Coal-based power, though somewhat supplanted by wind and solar, still dominates generation. Adaptation measures often lack secure financing and local customization. Crucially, weak coordination among ministries and governments means that well-intentioned policies do not always translate to results on the ground. The failure to utilize allocated funds (less than 1% spent on some programs) highlights a need for better budgeting and oversight.

Moving forward, India's climate governance could be strengthened by: (1) creating robust intergovernmental coordination (possibly a formal national climate council or law) to align Union, state and local actions; (2) establishing clear performance metrics and accountability mechanisms (e.g. carbon budgets, state scorecards) to track progress; (3) enhancing climate finance by leveraging public–private partnerships, green bonds and climate budgets (as in Odisha); and (4) ensuring that social equity is central, by protecting vulnerable communities and providing just-transition support to those in high-carbon industries.

In sum, India's experience illustrates the complexities of scaling climate action in a large, diverse democracy. The country's ambitious national commitments have put it on the climate agenda globally, but achieving those goals depends on solving deep domestic governance challenges. With stronger institutions, inclusive policies and adequate resources, India can continue to pioneer a development pathway that is economically dynamic, socially equitable and environmentally sustainable – a model that its leaders have termed the emerging "Indian Development Model". The success of this transition will have profound implications not only for India's future, but for global efforts to limit climate change.

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