



Climate Change and India: Policy Preparedness with a Special Reference to National Action Plan for Climate Change (NAPCC), 2008.

* Ravi Saxena¹  and Rhishikesh Dave² 

¹ Sharda Law School, Sharda University, Greater Noida U.P., India

² Sharda Law School, Sharda University, Greater Noida U.P., India

ravisaxenamumbai@gmail.com

Abstract. India is a vast country in terms of its flora and fauna. In its vastness, India is also vulnerable to climate change impacts like extreme hot weather, irregular seasons, extreme cold, floods and droughts in many parts of the country. The situation becomes worse when a large population of India depends on agriculture sector. It is widely known that climate change has started affecting the weather conditions in India in an unprecedented manner in the present-day era. This research paper analyses and investigates two major aspects- the impact of climate change on Indian agriculture, ecology, livelihood and migration patterns and its social impact. Another aspect this research endeavour tries to critically evaluate is India's policy preparedness in the form of National Action Plan for Climate Change (NAPCC), 2008 in dealing with climate change crises. This research paper addresses the United Nations' Sustainable Development Goals (SDGs) 13 and 15 (Climate Action and Life on Land)

Keywords: Climate Change, Sustainable Development Goals, National Action Plan for Climate Change (NAPCC), 2008.

One of the 21st century's biggest environmental challenges is wildlife conservation. Anthropogenic pressures, habitat degradation, climate change, and biodiversity loss have brought many species and ecosystems close to ecological thresholds. Global estimates show that species extinction is at an unprecedented rate, threatening ecosystem functions and ecological stability [1]. Traditional preservationist tactics have given place to technology-enabled, data-driven, and adaptive governance models in conservation. India is crucial to this global biodiversity ecology. India, one of the world's megadiverse nations, has 8% of all known species despite covering 2.4% of the planet [2]. Its natural diversity includes tropical rainforests, grasslands, marshes, deserts, alpine ecosystems, and huge coastal and marine environments. These environments support endangered Bengal tigers, Asiatic lions, Indian rhinoceros, Asian elephants, snow leopards, and Gangetic dolphins. Protecting wildlife in India is a legal, social, and moral obligation as well as an environmental one. State-led actions and statutory legislation have shaped wildlife conservation in India. The Wild Life

© The Author(s) 2026

R. Dave et al. (eds.), *Proceedings of the International Conference on Conceptualizing Legal Framework and Policies for Domestic Animal and Wildlife Conservation: Issues and Challenges in Hybrid Mode (ICAR 2026)*, Atlantis Highlights in Social Sciences, Education and Humanities 52, https://doi.org/10.2991/978-94-6239-725-5_19

(Preservation) Act, 1972 marked a shift from colony hunting legislation to species and habitat conservation. This law established a mechanism for enforcing hunting regulations, controlling the wildlife trade, protecting areas, and delegating enforcement to state forest agencies. Many National Wildlife Action Plans and conservation efforts like Project Tiger [3] and Project Elephant [4] have augmented this statutory underpinning. Working together, these projects have helped flagship species populations recover and protected area networks flourish. Despite these gains, present conservation issues are revealing the flaws of structural regulatory and enforcement regimes. Rapid economic development, infrastructure expansion, mining, linear projects, and urbanization have increased landscape habitat fragmentation. Climate change affects breeding cycles, migration patterns, and habitat suitability, making species management harder. At the same time, illicit wildlife trading networks have gotten more complex, worldwide, and coordinated, often outperforming standard police efforts. These dynamics show the limitations of static conservation measures like post-facto enforcement, territorial protection, and human patrols. Human-wildlife conflict is another major issue in India [5]. Wildlife populations are recovering in fragmented and shrinking ecosystems, increasing human-animal interactions in peri-urban, agricultural, and forest fringe areas. Conflicts that cause agricultural loss, livestock damage, human injuries & deaths, and retaliatory wildlife murders undermine conservation efforts and public support for protective measures. These concerns require proactive, real-time, landscape-level activities in addition to regulations. Given this, technology is essential to wildlife conservation governance focusing on SDG 15 & 16. Remote sensing, GIS, AI, machine learning, drone surveillance, automated sensors, smartphone apps, and animal forensic science have given conservation agencies more tools [6]. These technologies promise better ecological monitoring, enforcement, threat response, and data-driven decision-making. Importantly, they enable early warning systems and landscape-scale analysis, which promote conservation outside protected areas. Technology is increasingly used in Indian conservation. Satellite imaging and GIS aid land-use planning, corridor mapping, and habitat assessment are some of the examples. Camera traps and computerized recognition software enable large-scale, less disruptive wildlife population survey. AI-enabled systems detect animal behavior and alert humans to reduce wildlife conflict. Drones, digital patrolling systems, and animal forensic devices provide remote aerial monitoring and enforcement and prosecution. This is part of a global trend toward "smart conservation," [7] where technology helps people manage complex socio-ecological systems. Technology in wildlife protection raises governance and policy challenges. Effective technical technologies require institutional competency, regulatory clarity, interagency collaboration, and consistent financial investment. Finance, training, and technology infrastructure disparities among states make India's federal governance structure uneven. Growing usage of surveillance technologies poses privacy-related ethical difficulties, especially for indigenous and forest-dwelling people who live in protected areas. Another major concern is data stewardship. Conservation technology generates sensitive ecological and geographical data including species locations and migratory patterns. Without proper data ownership, sharing, security, and moral application, such data could be exploited or mistakenly released, endangering communities and species. Current conservation efforts, which

consider technology as a neutral operational instrument rather than a socio-legal construct requiring regulatory oversight, often fail to address these governance elements. Technology-driven conservation strategies may promote technocratic decision-making if local groups are excluded from design and execution. India's conservation environment is intertwined with indigenous and forest-dependent groups' rights, livelihood, and ecological knowledge. Thus, sustainable conservation requires democratic governance that incorporates community perspectives and technology innovation [8]. Without this cooperation, technology could worsen local resident conservation official tensions. The huge body of Indian wildlife conservation research has several analytical shortcomings. Statutory interpretation, judicial interventions, and species protection regimes have dominated legal writing, with little consideration to technology. Conservation science research often ignores ethical, regulatory, and governance issues in favor of technical efficiency. Because of this, multidisciplinary research on how conservation technologies are integrated into India's institutional and legal system and if current rules are sufficient to oversee their responsible usage is scarce. This research intends to fill this gap by utilizing a policy-oriented analytical method to study technology's impact on wildlife conservation in India. Instead of evaluating technology in isolation, the study integrates it into institutional practices, policy goals, and legal requirements. It addresses conservation technology governance, constraints, and reforms needed to provide socially just, ecologically sustainable, and legally sound conservation results. The key argument is that technology shouldn't solve wildlife conservation concerns alone. Technology should be seen as an enabling instrument that relies on participatory governance, ethical protections, institutional capacity-building, and sound regulatory frameworks. This study integrates environmental legislation, policy analysis, and conservation technology research to examine technology-enabled and adaptable environmental governance in developing nations. The primary sources include the Wild Life (Protection) Act of 1972, National Wildlife Action Plans, conservation agency program guidelines, and specialist organization publications. Verified policy studies, conservation organization papers, and scholarly journals are secondary sources. Four thematic dimensions frame the analysis: 1. Law and policy behind conservation technology adoption; 2. Functional conservation technique classifications; 3. Institutional limits, governance difficulties; 4. Policy and reform options. No quantitative data analysis or empirical field interviews are included in this study. Even though it limits local perspectives, the chosen methodology is adequate for examining national institutional practices, regulatory frameworks, and policy consistency.

1 Introduction

Climate change poses an unprecedented global threat to the human security and survival of the humans on the earth, without being partial to the countries based on their political borders [1]. This has led to the involvement of United Nations with the efforts to mitigate the conditions of climate change globally. In recent past, international treaties like the Paris Agreement on Climate Change, 2015, United Nations (hereafter UN) has

started negotiating with the international cooperation by setting the targets of climate change mitigation globally. As per the Paris Agreement, 2015, UN has set targets for greenhouse gas emission reduction and facilitating the sustainable development goals (SDGs) and practices. These targets give hope to relatively more vulnerable societies and countries in the world. So that they can sustain and thrive, from generation to generation [2].

Geographically, climate change is not as new as we have started caring about it. It is only in the second half of the twentieth century that we saw the global thought churning about the issues concerning ecological conservation and sustenance. The Stockholm Conference, in 1972, was perhaps the first such official transnational event that attracted the countries to come together and share their common concerns about the future in a formal way. Though, it was expected that this Stockholm Conference was to be attended by the heads of the many major powers from the West vis-à-vis from the South. Unfortunately, though this conference succeeded in attracting the attention of the global powers and other countries, yet not many heads of the states could attend this conference. Indira Gandhi, the then Prime Minister of India, attended this conference and made a remarkable statement that continues to lead the climate change and sustainable development discourses not only in India but across the globe. She said that one cannot call himself or herself truly human until developing a caring consciousness about the ecological environment around [3]. She claimed that every human action must qualify to be 'sustainable'. She gave the example of Ashoka, who forbade the killing of the animals for food. She saw this as an outcome of the perennial cultural ethos of India that keeps 'sustainability' in its core, therefore, rejecting all kinds of violence. She made a clarion call for the sustainable means to govern the society and warned us about the negative consequences of consumerism. She identified Indian tradition and culture infused with a respect for nature and accepting the nature's claim in one's life. Perhaps, much before the Brundtland Commission's definition of the sustainable development in 1987, Indira Gandhi could configure the broad areas of sustainability that the present and the future generations could not ignore!

After the Stockholm Conference in 1972, major transnational cooperation could be seen in the subsequent conferences that took place and set the target for climate change mitigation and encouraging the Sustainable Development. Conferences like The Earth Summit in Rio de Janeiro in 1992 that established the United Nations Framework Convention for Climate Change (UNFCCC) and the Paris Conference, 2015 that came up with the parallel design of following seventeen sustainable development goals (SDGs) are important ones that set the tone for international governmental cooperation in dealing with issues concerning climate change. One of the major outcomes of the Paris Conference (21st Conference of Parties, COP), Paris was to set the target of keep the global temperature increase below 2 degrees Celsius. The Paris Accord is the truly universal climate agreement among the countries that set the national targets to be achieved and measured on the longer path of sustainable development. The Paris Accord was accepted by 195 countries, itself a statement of its success in setting the national goals [4].

2 Why and How Climate Change in India is a Challenge?

Technology India is a geographically tropical and diverse country; therefore, its environment, economy and society are deeply subjected to the impact of the climate change crises with its ever-increasing intensity and frequency. Major climate change challenges India is facing now are increasing temperature, recurring floods and declining ground water, to name few prominent ones. Rise in temperatures, heatwaves, and flooding costs hugely to the Indian GDP. In 2022, around 15 states were struggling with the challenges of heatwaves, flooding, or declining ground water levels. This affected negatively the agricultural yield and posed the livelihood challenges to the farmers in India. Agriculture in India involves most of its population. There is an economic side of climate change; governments must spend a considerable amount of money in mitigating the impact of climate change, in terms of heatwaves and flooding, pollution and dealing with the climate change related human migration. It is estimated by many studies that India may be subjected to spending a substantial amount of its GDP if it does not create the climate resilient ecosystem and infrastructure. Experts have opined that the very impact of climate change can disturb the healthcare facilities in India if things are not treated on priority [5].

Climate change has affected India in recent times in an unprecedented manner. 2024 was considered the hottest year for India, since 1901. More than half of the sub-districts in India could experience more than 10 percent increase in rainfall in the last decade, almost ten percent of talukas could see a 10 percent decrease in rainfall, making the monsoon as a driver of climate aggression. India is considered the rice capital of the world, producing 28 per cent of global yield and 40 per cent of global trade. Between the year 2000-2022, India had suffered 6 per cent decrease in the rice production. This is significant. As per many international reports on climate migration, India is the 4th worst hit country for climate induced migration, resulting into more than 3 million people had to displace due to climate change in recent past. Himalayan glaciers are melting due to increase in the temperature, leading to 40 per cent rise in glacial lakes. This situation may substantially cause the flooding in the country and force migration and stall the human development. Major cities like Chennai, Kolkata and Mumbai are subjected to submerging. Mumbai experiences more than two thousand deaths due to climate change challenge annually. India is ranked 9th in the Climate Risk Index 2026 report due to rise in weather and persistent heatwaves in the summers, etc. India is the third largest emitter of Carbon Dioxide (CO₂). Interestingly, India's per capita CO₂ emission remains lowest if measured per capita, among the G20 countries. This presents before us the peculiar condition of India's climate scene and the challenges around, not ahead. The NAPCC, therefore, holds the obligation to transition challenges towards check on climate change conditions in India.

This led India to come up with a national framework for mitigating the climate change impact and create a climate resilient and sustainable political economy and society. The impact of climate change is not limited to environmental decay and changes only as it is well now by this time. Climate change can jeopardize the livelihood patterns of any society where there seems a nudge of climate change. Environment has changed significantly after the growth of capitalism and

industrialization in the twentieth century. Though this capitalist advancement was not well spread in the whole world, its negative implications, in terms of the repercussions of fossil fuel usage, were found impacting the globe as such, with a variation of degree geographically. Major beneficial economies that built their economic growth and technological advancement on the use of fossil fuel, now have transformed the nature of their industry with less or less dependent on the fossil fuel. These economies are mostly located in Europe and North America. In the Paris Conference, India and China have lobbied against the 'equal sharing of the burden' arising out of climate change and made a strong case that the American and capitalist European economies damaged the environment and got benefitted economically more compared to the countries of global south. Therefore, there should be unequal sharing of the burden of climate change and the developed nations need to pay a higher price for the environmental decay, compared to nations like India, China, Brazil, etc. Interestingly, after a long-lasting lobbying and persuasion, India and China got succeeded and the world agreed for unequal burden sharing where, financially, and technologically, the West took a greater responsibility for creating a sustainable and climate resilient world. India, being poorly hit by the air pollution, finds itself among the last rung of the countries in the major Air Quality Indices globally. This has serious healthcare consequences. This research paper tries to evaluate if India prepares itself with such climate change challenges and marches towards achieving the national targets it has set for itself in the post Paris Accord, 2015.

3 India's Climate Policy Preparedness: National Action Plan for Climate Change (NAPCC), 2008

Uneven institutional India gears up to take the mettle of climate change and has, more specifically in the 21st century, started combating with climate change situations and environmental decay while protecting its melting glaciers, greening its railway pathways, reducing the usage of single-use plastic and creating the network of clean cooking gas across India, to minimize the usage of wood and coal (fossil fuel) for cooking purposes. India is aiming to bring its carbon emissions to zero by 2070 and trying hard to maximize the industrial and economic growth with such policy change. As per the 2022 Intergovernmental Panel on Climate Change (IPCC) report, India has a good track record of per capital (low) emissions compared to many other countries of the world. In a country of more than 1.44 billion people, this works as a good sign to repose faith in a sustainable future. Even after this, India must go a long way and 'strategize' its climate change resilience through policy preparedness and well execution that is based on time bound exercise and measurable results in a phasal manner.

In the first decade of the 21st century, India started to have a robust climate change resilience policy framework to mitigate climate change and sustainable development adaptation. An umbrella policy framework for ecological balance and climate resilience is called National Action Plan for Climate Change, 2008 (hereafter NAPCC). NAPCC 2008 is based on a holistic mapping of climate change challenges before India. NAPCC,

2008 reflects India's ambitious climate policy and underlines India's proactive approach towards a sustainable future. NAPCC 2008 is framed considering India's ever-growing demand as fastest growing economy and perhaps world's biggest consumer market. This puts India into a high-risk zone. Therefore, it is expected from the NAPCC 2008 to institutionalize sustainability in the processes of economic growth and development. NAPCC 2008 seems as one of the most promising and comprehensive policy frameworks to combat climate change across the globe. NAPCC 2008 comply with the international standards and targets India must uphold, like 'common but differentiated responsibilities.'

The NAPCC institutionalized eight main missions at the National level, each of which aims at a specific angle of climate mitigation or adaptation while persistently focusing on India's economic growth. These eight ambitious missions are as under;

1. National Solar Mission (NSM):
2. National Mission for Enhanced Energy Efficiency (NMEEE):
3. National Mission for Sustainable Habitat (NMSH):
4. National Water Mission (NWM):
5. National Mission for Sustaining the Himalayan Ecosystem (NMSHE):
6. National Mission for a Green India (GIM):
7. National Mission for Sustainable Agriculture (NMSA):
8. National Electric Mobility Mission (NEMM):

3.1 National Solar Mission (NSM), 2010.

Uneven Initiated in 2010, the National Solar Mission can be called a flagship mission under India's NAPCC, 2008 policy framework. The mission holds the responsibility to prioritize and promote the usage of solar energy (household and industry; rural and urban) across India. This is to replace the use of fossil fuel as the primary source of energy in a fast-developing country like India and to replace it with a cleaner energy alternative like solar energy. India, being geographically exposed to a hot weather and sun exposure, though this mission, trying to situate the alternative/solar energy as its primary source of energy. To intensify the production and the usage of the solar energy, it is a precondition to create an infrastructural ecosystem that facilitates the vision of this mission. Therefore, the National Solar Mission, 2010 encourages the research in solar power and its multiple usage. To achieve this, mission also foregrounds the international cooperation, particularly with the countries that are the spearheads in the solar power infrastructure, like USA, China, Japan, and Germany, etc.

Under this mission, India's leading solar energy research institution, National Institute for Solar Energy has calculated the potential solar energy potential of 748 Giga Watts (GW). It envisions that around 3 per cent of total waste land area is to be developed with solar panels. National Solar Mission envisions to mitigate India's heavy reliance on the use of fossil fuel for the electricity production and replace it with the solar energy as a clean source of energy and addressing India's energy security. Government of India promotes the states' participation in creating solar power infrastructural ecosystem across India and provides subsidies on solar energy

technology infrastructure [6]. National Solar mission is working towards an ambitious goal of making India a global leader in solar energy. India aims to do away 45 per cent of its reliance on fossil fuel for energy production by 2030 and to touch the zero emissions by 2070.

3.2 National Mission for Enhanced Energy Efficiency (NMEEF), 2008.

Technology The mission sets out the objective to encourage the innovative policies involving cutting-edge technology transfer in reaching to the goal of security sufficiency as per the growing demand of Indian market and industry. In one way the mission works for reducing the energy demands of the present actors in the industry and on the other works incessantly towards an ever-increasing energy supply for the growing industrial ecosystem in India. Though the mission is ambitious, yet India ranks 71st at the global front as per World Economic Forum's Energy Transition Index (ETI), 2025. Ironically, India slipped to this position from 63rd in 2024. This is alarming. As per the Bureau of Energy Efficiency (BEE) in India, five states lead the movement of energy sufficiency, namely, Maharashtra, Andhra Pradesh, Karnataka, Telangana, and Tamil Nadu. India has been the third largest energy consumer globally, targeting for a net-zero economy by 2070. The mission also encourages the public-private projects directed towards the reduced energy consumption and enhanced energy efficiency with less carbon emission, particularly in the cities and the urban areas of India [7].

3.3 National Mission for Sustainable Habitat (NMSH), 2010.

This mission aims to have a sustainable disruption in the construction processes in the cities in India, to reduce the energy consumption and enhance the ecological conservation by tweaking building rules. Mission aims to encourage the environment friendly vehicles and the use of public transport so that the considerable reduction can be experienced in the carbon emissions. Mission also prioritizes the importance of efficient waste management and recycling as the crucial milestones to achieve the sustainable development experiences in Indian cities.

Waste Management in India requires a major procedural and capacity shift. India produces around 62 million tons of waste annually whereas it processes only 12 million tons of waste annually, leaving a huge dependency on landfills. Alarming, India is the first in the plastic pollution emission and 3rd in electronic waste production globally. Poor segregation of waste also poses another significant challenge before India's dream for a sustainable human habitat dream to be achieved in real-time. India is gradually bringing legislation to deal with the issues of waste management more robustly. Therefore, it came up with Solid Waste Management Rules, 2026 with a mandatory segregation of waste (dry, wet, sanitary, and special). Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India manages the municipal waste management in India [8].

3.4 National Water Mission (NWM), 2008.

The goal of the mission is to promote the efficient use of water, especially as climate change has a direct impact on the availability of water. The mission has a target of a 20% increase in how efficiently water can be used across different sectors, by implementing various strategies such as changing water prices, so that people and industries reduce their water wastage. Ironically, with regard to water pollution, India ranks 120th out of 122 countries in water quality index, hinting towards a deep-water crisis. In India, almost 21 per cent communicable diseases are associated with unsafe water. As per the global estimates, around 70 percent of India's water is contaminated. As per CSR Universe, around 55-60 per cent of population in India has access to 'safe' drinking water. Unregulated and fast urbanization, Industrial water waste and the unregulated and inadequate sewerage treatment leads to this leviathan crisis. Government is trying its bit through the mission and have started two major initiatives, Jal Jivan Mission and Namani Gange, though its success ratio has been subjected to criticism.

3.5 National Mission for Sustaining the Himalayan Ecosystem (NMSHE), 2010.

Himalayas are the important subsets of India's ecological balance. Himalayas work as a carbon sink for India. Himalayas regulate the regional climate. They prevent arctic winds and tap the monsoons in India leading to 'hydrological balance' through the melting of its glaciers. Himalayas produce the third largest ice mass on planet earth. Major rivers in India emanate from Himalayas, providing water to largest population of the world. Though launched in 2010 but got approval in 2014 only, this mission under NAPCC, 2008 aims to protect the 2500 kms long Himalayan range. It underlines climate resilience and covers 12 Indian states with an annual budget of Rs. 550 Crores. Major areas of study it focusses are glacier sustenance, biodiversity, and capacity building to mitigate climate change and adoption [9].

3.6 National Mission for a Green India (GIM), 2014.

This mission has an important task to increase the overall forest cover of India. One of its missions has been to plant on around six million hectares of forest land and to gradually extend the present-day forest cover from 23 per cent to 33 percent. It is a herculean task to increase the green cover of the country amidst the fast-extending industrialization, leading to forest decay and ecological imbalance [10]. Launched in 2014, GIM directly contributes towards United Nations' Sustainable Development Goals (SDG)- 13- Climate Action. Considering the gravity of the task, the mission also attracts discourses on climate finance. It channelizes afforestation nationwide and involves community-based forest management. It sets out a meagre budget of Rs 170 crores for 2026-27, almost more than 50 per cent increase when compared with budget allocation in 2025-26. This is a centrally sponsored mission and states are to be funded by the central government for achieving the goals of this mission [11].

3.7 National Mission for Sustainable Agriculture (NMSA), 2014.

It aims to singlehandedly provide the logistic help and guidance to the agriculturalists in India and to create the climate resilient agriculture. It encourages the crop diversification to meet the challenges of climate change. It also facilitates the support to the farmers to match the suitable climate for their crops [12]. Recently, this mission has also helped in ensuring the crops and visions to have ‘ensured crops’ culture. Agriculture, as the largest sector that involves majority of Indian population, remains significant in multiple ways, like community based ecological balance, sustainable village economy, employment to migrant labourers etc. Therefore, this mission becomes important if we look it from the subaltern perspective, from the rural perspective [13]. Initiated in 2014-15, this mission aims to make agriculture and farming more productive, climate-resilient, and intergenerational. The mission also aims to make agriculture a viable economic activity in India, to ensure unregulated migration from rural to urban India [14].

3.8 National Electric Mobility Mission (NEMM), 2013.

Reforming This mission envisions for a greater and faster use of electric vehicles, personal and public, in India, to reduce the carbon emission in a significant way. Launched in 2020, this is the latest mission under the NAPCC, 2008. Mission has started promoting the usage of hybrid and electric vehicles and to achieve the energy security in India [15]. It has set a humble target of selling 6 to 8 million e vehicles annually. The Central government gives subsidy to the electric vehicle producing companies, setting the GST at a low of 5 per cent, to maximize the possibility of the purchase of e vehicles. Yet, the critics feel that the pace of this transition quite slow, may take a decade for achieving the goal of sustainable vehicles with less pollution. India is struggling yet to develop the suitable infrastructure to translate the aims of this mission into reality [16]

4 Climate Policy Performance Assessment and the Way Forward

From 1972 up to now, India’s policy framework for climate change resilience and adaptation has starting rolling well. Still, a long way to go [17]. Though India cannot be accused of experiencing a ‘policy gap or policy paralysis’, yet it seems a herculean task to achieve the various goals of these eight master missions under the National Action Plan for Climate Change (NAPCC), 2008 [18]. India has significantly successful in institutionalizing climate change mitigation framework in a multisectoral way and adhering to the major targets of the Paris Conference, 2015. Indian and China have successfully dealt with poverty reduction in a substantial way. The relationship between the use of fossil fuel and poverty have been mostly hinted as the main reason for the global warming and rise in temperatures globally. Global South houses most of

the poor of the world, therefore, poverty reduction remains one of the guiding indicators towards a sustained world order [19].

Highlighting the Climate Change Gaps, the Economic Survey of 2024-25 questioned the credibility of climate finance. It further claims that in the absence of climate finance, coming largely from powerful political economies of the globe and the major multinational corporations, not much can be achieved to mitigate the climate change challenges posed globally [20]. India becomes more vulnerable to the ill impact of climate change due to the largest population and major dependency on agriculture that requires climate sustenance. Poverty contributes significantly to increase India's trouble in mitigating climate change [21].

As argued in many studies and research papers [22], it can be argued India's road to sustainable development seems distant as there is a 'gap in the institutional coordination'. These major eight missions and various other programmes that aims to mitigate climate change challenges usually lack 'coordination' among each other [22]. This led towards a poor performance of these missions even though there is no policy gap. The need of the hour, therefore, is for 'institutional coordination.' General awareness among the citizens equally promises to achieve unprecedented goals of sustainability in India. Role of community-based forest and climate management at local level and involvement of private sector, involving the constructive use of Corporate Social Responsibility (CSR) obligations of corporations in India towards creating the climate change mitigation facilities and infrastructure equally ensures the fast transition towards a sustainable India. India can take the leverage of having the compulsory corporate social responsibility (CSR) mandate and call for the private sector participation in reducing energy dependency and developing the climate adaptation for a sustainable future not for India but for the South Asia. Bhutan presents a case study, being a carbon neutral country in the region. We can learn from the best practices in safeguarding environmental conservation and pollution reduction in the region [23].

India's path towards sustainability seems a long one due to the bureaucratic hurdles as well. Though India has been successful in corresponding to the international standards and the targets of climate change mitigation, yet it lacks in fetching the regional cooperation similarly required for mitigating climate change in South Asia. Due to the perplexed nature of the geopolitics of South Asia, where India has border issues with China, Pakistan, Bangladesh and Nepal, things are not moving fine in attracting the desirable intergovernmental cooperation in the region. Nations are found trying their strategies in isolation and seeking private participation in climate financing. Need of the hour is to rise above the geopolitical motives and channelize the synergies available at region level to mitigate climate change challenges in the region. Role of suitable laws to ensure sustainability is equally important in achieving the goals as set by NAPCC, 2008 in a rule-bound manner. India lacks significantly in two areas of governance, namely, rules aligned to the existing policies and its desirable execution. At the hindsight, the governmentality does not seem attaching the required attention and importance to achieving the NAPCC, 2008 goals that mostly align to SDGs 13 and 15. The Energy Conservation (Amendment) Bill, 2022 sets out for the currency of carbon credits in India; if translated into legal reality, may contribute significantly towards a rule-and-accountability bound climate governance in India. Role of civil society again requires a rethinking in increasing the fast transition towards a sustainable

India [25]. The days are not far away when India would bring carbon tax, penalize the polluter and reward the champion of sustainability [26].

References

- [1] Paper, I. W. (2008). *Groundwater and Climate Change: No Longer the Hidden Resource*. <https://www.jstor.org/stable/resrep00867.14>
- [2] Upadhyay, D. K. (2014). Coping with Climate Change: India EU Cooperation on Renewable Energy and Clean Technology. *India Quarterly*, 70(3), 241–256. <https://doi.org/10.2307/45072818>
- [3] Thomas, N., & Wu, G. (2026). How is China's Climate Policy Responding to Economic Difficulties? In the Evolving Politics of Climate Change in China (pp. 16–23). Asia Society; <https://doi.org/10.2307/resrep78408.6>
- [4] Kyed, H. M., & Chambers, J. (2026). *Climate, Peace and Security in the UN Security Council: Denmark's Role*. Danish Institute for International Studies; <https://doi.org/10.2307/resrep78026>
- [5] Mota Nieto, J. (2026). Understanding Avoided Emissions. In *Avoided Emissions*: (pp. 2–14). Oxford Institute for Energy Studies; <https://doi.org/10.2307/resrep78305.7>
- [6] Janardhanan, N. (2010). India's Domestic Actions towards Climate Change Mitigation. In *Shaping the Climate Change Agenda in India*: (pp. 5–16). Institute for Global Environmental Strategies; <https://doi.org/10.2307/resrep00825.4>
- [7] Padkone, N. (2010). Climate Change in India: Forgotten Threats, Forgotten Opportunities. *Economic and Political Weekly*, 45(22), 47–54. <https://www.jstor.org/stable/27807078>
- [8] Kapur, D., Khosla, R., & Mehta, P. B. (2009). Climate Change: India's Options. *Economic and Political Weekly*, 44(31), 34–42.
- [9] Lanterna, F., Marin, G., & Sacchi, A. (2026). *Decentralizing environmental public spending: from political platforms to actual policies in the EU countries*. Fondazione Eni Enrico Mattei (FEEM); <https://doi.org/10.2307/resrep78298>
- [10] Luomi, M. (2020). *Global Climate Change Governance: The search for effectiveness and universality*. <https://www.jstor.org/stable/resrep29269>

- [11] Mabey, N., Gallagher, L., & Born, C. (2013). *The evolution of climate diplomacy and the international climate regime*.
- [12] Cifor, & Cgiar. (2015). *Evidence and experience*. Center for International Forestry Research; <https://doi.org/10.2307/resrep01985>
- [13] Pandey, K., & Sengupta, R. (2023). Climate change attribution. In *Climate India 2023* (pp. 48–51). Centre for Science and Environment; <https://doi.org/10.2307/resrep55027.8>
- [14] Janardhanan, N., & for, I. (2011). Shaping the Climate Change Agenda in India. In *Negotiating a Low Carbon Transition in Asia* (pp. 62–84). Institute for Global Environmental Strategies; <https://doi.org/10.2307/resrep00730.8>
- [15] Olsson, M., Atteridge, A., Hallding, K., & Hellberg, J. (2010). *Brazil, South Africa, India, China (BASIC) and the Climate Change Conundrum*. Stockholm Environment Institute. <https://doi.org/10.2307/resrep00459>
- [16] Betz, J. (2012). *India's Turn in Climate Policy: Assessing the Interplay of Domestic and International Policy Change*. <http://www.jstor.com/stable/resrep16485>
- [17] Kumar, J. N., & Peace. (2017). Energy Needs and Climate Change. In *Indian and Chinese Energy Policies* (pp. 3–8). Institute of Peace and Conflict Studies; <https://doi.org/10.2307/resrep09398.4>
- [18] Amirapu, A., Clots Figueras, I., & Rud, J. P. (2022). *Climate Change and Political Participation: Evidence from India*. IZA Institute of Labor Economics; <https://doi.org/10.2307/resrep65964>
- [19] Gupta, H., Kohli, R. K., & Ahluwalia, A. S. (2015). Mapping “consistency” in India’s climate change position: Dynamics and dilemmas of science diplomacy. *Ambio*, 44(6), 592–599. <https://doi.org/10.2307/24670640>
- [20] Never, B. (2011). *Comparing the Evolution of Domestic Climate Governance in India and South Africa*. German Institute of Global and Area Studies (GIGA); <https://doi.org/10.2307/resrep16482>
- [21] Bharadwaj, T., & Peace. (2017). Prospects for Cooperation between India and China. In *Indian and Chinese Energy Policies* (pp. 22–36). Institute of Peace and Conflict Studies; <https://doi.org/10.2307/resrep09398.6>
- [22] Sadat, A. (2014). India’s Treaty Practice in Climate Change. *Journal of the Indian Law Institute*, 56(1), 95–105. <https://doi.org/10.2307/43953691>
- [23] Climate Change: Not Vision, Not Plan. (2008). *Economic and Political Weekly*, 43(28), 5–6. <https://doi.org/10.2307/40277703>

- [24] Maheshwari, D. (2026). *AI's Global South Pivot: Equity, Ethics and Ecology*. Centre for International Governance Innovation, <https://doi.org/10.2307/resrep78405>
- [25] M, M. P. (2008). Social Enterprises in the Competitive Era. *Economic and Political Weekly*, 43(38), 22–24. <https://www.jstor.org/stable/pdf/40277968.pdf?refreqid=search%3A1feeeb8f9f990c07c90a9a616c98d55b>
- [26] Nanthini, S., & Nair, T. (2021). *Framing Climate Change: The Need for a Human Security Perspective*. <https://www.jstor.org/stable/resrep36218>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

