

# **How is India Tackling Climate Change? An Assessment of Major Climate Change Initiatives**

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## **ABSTRACT**

The paper explores the government's major climate change initiatives to combat climate change. The study analyses how various phases of climate change policies and action plans were formulated and implemented in the country. The national action and plan on climate change have made in the context of sustainable development, because development heavily depends on natural resources such as land, water, forest and minerals. The study also explains policies and plans related to direct and indirect part of climate change mitigation. Therefore, a possibility that India will remain in a precarious position due to the anticipated changes in climate consequences. The policy and planning initiatives reflect sustainable development in the context of ecological-based resources capacity building. The fundamental purpose of building climate resilience is to lessen the susceptibility of communities to climate change's multiple repercussions. Reviewing government policy and acts for a comprehensive overview of discourses and content analysis at the national level is the primary method of the present research.

**Key Words :** Forest Policy, Environmental Programme, Mitigation, Adaptation and Sustainability

## **INTRODUCTION**

Climate change raises a severe risk to human being and their environment. Climate events are destroying India's ecological security (Chellaney, 2009). Climate change threatens people's ability to make a living and negatively affects in present and future (Krishnan *et al.*, 2020). India has already felt the effects of climate change in the form of a gradual increase in average temperatures, increased frequency of extreme weather events, shifting patterns of rainfall, higher sea level, and melting of Himalayan glaciers (Krishnan *et al.*, 2020). These climate change phenomena severely impact Indian social, cultural, economic, health and natural resources (Desai, 2010; Brauch and Hans, 2009). National and international leaders have agreed that climate change carries severe and growing challenges to global communities (Brauch and Hans, 2009). According to the Intergovernmental Panel on Climate Change, "The current climate change

crisis is human-made and forecasts frightening consequences unless appropriate steps should be taken" (IPCC, 2007). Although Mearsheimer's view is that climate change/global warming is a "second-order" concern (Mearsheimer, 2003), its catastrophic character has been seen as a "strategic issue" or "first-order" problem (Buzan, 1983; Allenby and Braden, 2000; Brauch and Hans, 2009). For this reason, the current political and scientific establishments are concerned about the possible emergence of climate change's threat to living beings (David and Amit, 2009).

During the Dr. Man Mohan Singh regime, the Prime Minister's Council on Climate Change (PMCCC) formulated the National Policy and Action Plan on Climate Change (NAPCC). The Ministry of Environment, Forest, and Climate Change (MoEFCC) regulates administration and coordination of climate change programmes (NAPCC, 2008). The issues linked to climate change mitigation are implemented and carried out with the help

of the cross-ministerial and institutional network (Ministry of Environment and Forest, 2010). NAPCC partially results from increased international political pressure on India due to a significant emitter of Green House Gases (GHGs) (Brauch and Hans, 2009). India's ongoing participation in international climate change discussions to secure compensation for the country's suffering at the hands of climate change impact (NAPCC, 2008). The NAPCC emphasises domestic and international climate change policy to ease pressure exerted internationally and convince a select group of people at the domestic level about the seriousness of the issue (NAPCC, 2008). There can be classified three goals that the NAPCC is working toward:

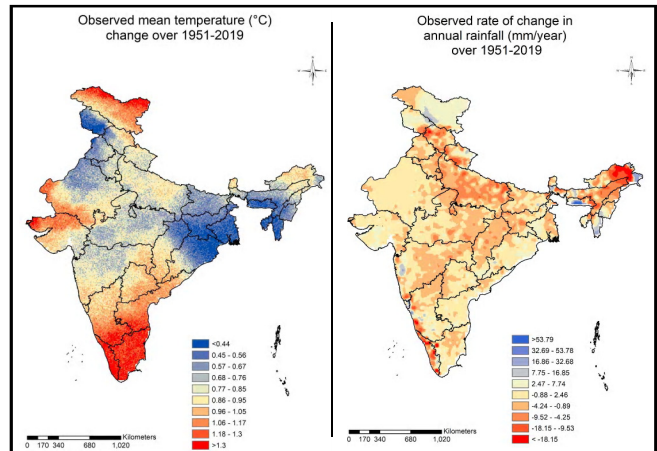
- In order to reduce the pressure that is being exerted on India from the international community to reduce emissions.
- To exert more pressure on developed nations by demonstrating the level of activity inside India to deal with climate change.
- Domestic regulation serves as a framework for taking action nationally in light of many international organisations' ability to agree.

The paper critically examines the focus and scope of India's response to climate change. There is a lake of literature that does not orient policies and regulations concerning climate change perspectives<sup>1</sup>. Even many policies and plans like forest policy, air pollution policy and other regulations and acts, such as the environment act 1986 etc.<sup>2</sup>, are indirect parts of climate change mitigation. So, the present study tries to fulfil the gap.

**Objective:**

- Evaluation of national action and plan on climate change framework to combat climate change and its development.

**The Study Area:**



**Sources:** Forest Survey of India: 2020, Mapping Climate Change Hotspots in Indian Forests based on Observed Climate Change and High-Resolution Climate Model Projections: Ministry of Environment, Forest & Climate Change, Volume 2.

**Fig. 1 : Study area**

India is the seventh-largest country in terms of land area, with 328.73 million hectares. The nation experiences a wide range of climates due to varied geography and the Himalayas' isolation from the rest of the Asian continent. Diverse landscape ranges from the Himalayan Mountains in the north to the coastlines of the Indian Ocean in the south, and from dry salt in the west to the lush rain forests in the east. Approximately 15,200 kilometers of its land border and 7,500 kilometers of its coastline may be found inside its borders. India's vast landmass is roughly divisible into four distinct regions: the peninsula, which is to the south of the Vindhya and Satpura mountain ranges; the Indus and Ganges plains to the northwest and northeast, respectively; and the Himalayan mountains to the northeast.

1. Allenby & Braden, R. (2000); Bhan, M., Sharma, D., Ashwin, A. S., & Mehra, S. (2016); Brauch, & Hans, G (2009); Buzan, B. (1983); Chellaney, B. (2009); David, M., & Amit, P. (2009); Desai, N. (2012). Desai, Nitin. (2010); Divan, S., & Rosencranz, A. (2008); Dubash, Navroz K. (2011, September); Dwivedi, O. P. (1997); Harshal, P. (2008); Jamie Cassels. (1989); Kapur, D., Pratap, B. M., & Khosla, R. (2009, August 31); Krishnan, R., Sanjay, J., Gnanaseelan, C., Mujumdar, M., Kulkarni, A., Chakraborty, S., & Editors. (2020); Mahanta, C. (2009); Mearsheimer. (2003); Ministry of Environment and Forests (A) (1992); Ministry of Environment and Forests. (1988); Ministry of Environment and Forests (2006).
2. Acts and Regulations: Wild Life Protection Act, 1972; Code of Criminal Procedure, 1973; Water (Prevention and Control of Pollution) Act, 1974; Water (Prevention and Control of Pollution) Cess Act, 1977; Forest Conservation Act, 1980 with Forest Conservation Rules, 2003; Environment (Protection) Act, 1986 with Environment (Protection) Rules, 1986; National Environment Tribunal Act, 1997; National Environment Appellate Authority Act, 1997; Ozone Depleting Substances (Regulation and Control) Rules 2000; Biological Diversity Act, 2002; Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2007; National Green Tribunal Act, 2010.

A report by the Ministry of Earth Sciences on “Climate Change Assessment in the Indian Region” calculated and predicted threat of climate change as “The effects of climate change include numerous phenomena, such as an increase in temperature, change in rainfall pattern, droughts occurring, increasing sea levels and cyclones that have become more intense around the middle of the 20th century in India. To a large extent, climatic changes of the twenty-first century will be the result of human activities” (Krishnan *et al.*, 2020).

## METHODOLOGY

The study analyses the discourse of climate change in India and how the government’s policies and action plans were formulated and implemented after independence. The analyses include orientation and development about NAPCC. The research analyses used national policies, plan documents, acts, regulations and reports such as the Ministry of Environment, Forest and Climate Change; Ministry of Jal Shakti; Ministry of Science and Technology; Ministry of Agriculture and Farmers’ Welfare; Ministry of Power; Bureau of Energy Efficiency; Ministry of New and Renewable Energy Resources; Ministry of Housing and Urban Affairs; Cornell University, College of Agriculture and Life Sciences, SRI International Network and Resources Center; and NitiAyog reports etc. **Discourse sources:** include journals, articles and websites on issues related to Indian climate change action and plans.

## RESULTS AND DISCUSSION

### Interventions to Mitigate Climate Change:

India has struggled to formulate effective action and plan to address climate change problems from many years. Indian government started discussing how to handle and deal with the dynamic effects of climate change in the late 1980s<sup>3</sup>. The policies and acts statements had been made to protect the environment concerning

climate change (indirectly) and its resources for future generations in tune with economic development and poverty eradication<sup>4</sup>. India’s National Forest Policy 1952 was created after the country gained its independence. The exclusive power and control of the states over forests had begun, such as production and scientific management (Forest Policy, 1952). The government introduced it again as a “National Forest Policy” in 1988, which aims to find a middle ground between the rights of local communities and the commercial use of forest resources<sup>5</sup>. However, no improvements were made to related statutory interpretations of climate change until 2008. The National Forest Policy 1988 was inspired by Forest Act 1927, but the fundamentals of the Act 1927 and the Policy of 1988 are opposed to one another (Act No. 16 of 1927, 1927) (Ministry of Environment and Forests, 1988). To the extent that the government insisted on treating natural resources as its own property at the expense of the community’s rightful use of such resources, that appeared as the “government was failing to provide the social minimum needs” (Ministry of Environment and Forests, 1988).

1972 was a turning point in the concern of environmental policies and climate change mitigation. Because prior to 1972, a competent coordination structure was absent at the Union and State level related to environmental issues like sewage disposal, sanitation, and public health (Planning Commission, 1971). Moreover, another side, “The United Nations General Assembly”, had asked all member states to report on the environment before the 1972 Stockholm Conference (UNDP, 2012). As a result of this request, a group called the “Committee on Human Environment” was formed to compile the report. Three reports were written as a result: “(i) Report on Some Aspects of Environmental Degradation and its Control in India; (ii) Report on Some Aspects of Problems of Human Settlement in India; and (iii) Report on Some Aspects of Rational Management of Natural Resources. The reports also analysed the effects of a rapidly growing

3. Policies and Plans: National Forest Policy, 1952 which is the first Forest Policy of independent India; Policy Statement for Abatement of pollution, 1992; National Conservation Strategy and Policy Statement on Environment and Development, 1992; National Zoo Policy, 1998; Policy Statement for Abatement of pollution, 1992; National Agriculture Policy, 2000; Wild Life Conservation Strategy, 2002. National Water Policy, 2002; National Environment Policy, 2006.

4. *Ibid*

5. Indian Supreme Court replaced the ‘state monopoly’ over forests and natural resources with the public trust concept by in an act of judicial activism in case of “M. C. Mehta v. Kamal Nath, [(1997) 1 SCC 388]”. Indian Supreme Court belief that “the state is keeping the forest and other natural resources in trust for the public is passed down”.

population on the Indian ecosystems” (Dwivedi, 1997). “The National Committee on Environmental Planning and Coordination” (NCEPC)<sup>6</sup> was founded in 1972 in response to the reports. However, it seemed to be little more than a bureaucratic setup, with little activity and no support from other Ministries. NCEPC duties were taken over by the “National Committee on Environmental Planning” (NCEP) in 1981 (Ministry of Environment and Forests, 1992). Indian policymakers have been motivated to change in response to the ongoing degradation in environmental quality and the Bhopal disaster (Desai, 2012). The “Environmental Protection Act of 1986” was passed because of the urgent need for strict legislation to preserve the environment (Parliament, 1986). After then, India passed a batch of laws to prepare for ratification of international environmental treaties and climate change such as (1) the air act, 1981, (2) the environmental protection act, 1986, (3) the public liability insurance act, 1991, (4) the national environmental tribunal act, 1995, (5) the biological diversity act, 2002 and (6) the wild life protection (amendment) act, 2002.

The Indian government enacted the National Conservation Strategy 1992 (NCS) for the “Policy Statement on Environment, Development and Abatement of Pollution” (Ministry of Environment and Forests, 1992). The NCS expressed dedication to reorienting activities in harmony with an environmental perspective and recommends sustainable development policy. NCS outlines plans of action across sectors, including agriculture, forestry, industrial, mining, and tourism, in light of India’s environmental challenges. The NCS deliberates on a unique bond between women and nature with the importance of non-governmental organisations and the rehabilitation of those displaced by development initiatives. NCS has stated its intention to incorporate environmental factors at various government levels to reduce pollution. To accomplish this, it adheres to a set of core values and beliefs, including such as “(i) prevention of pollution at source; (ii) adoption of the best available technology; (iii) polluter pays principle; and (iv) public participation in decision-making.” However, these policy gadgets remained only in documents (Ministry of Environment and Forests, 1992). No polluter has been required to shoulder the financial burden of his pollution. Similarly, the idea that the public actively participates in these

decision-making processes has largely persisted as fiction (Ministry of Environment and Forests, 1992).

It is also worth noting that India drafted the “National Environment Policy” (NEP) in 2006. NEP attempted to examine pre-existing regulations and create new ones, if necessary. NEP also aims to foster collaboration between different groups for environmental protection, such as government agencies, local communities, academic, scientific and research organisations, the investment community and foreign development partners (Ministry of Environment and Forests, 2006). The NEP’s overarching goal was a state of conservational balance with development progress. According to the NEP, people should be prioritised in sustainable development efforts because they deserve to live fulfilling lives in harmony with nature. Further, it emphasises that protecting Indian natural resources is essential for everyone’s prosperity, with the safest foundation for conservation. The NEP’s overarching objective was to integrate environmental considerations into various economic growth and development phases (Ministry of Environment and Forests, 2006).

Similar proposals are found in the “National Forest Policy of 1988”, which seeks to guarantee climate change (environment) stability and maintain ecological balance, including atmospheric equilibrium (Ministry of Environment and Forests, 1988). The target was to have 33% of the land area under forest or tree cover by 2012 on the national level. This was done to protect the delicate environment and climate change mitigation. This goal must precede any secondary considerations related to direct financial benefit. Forest land and land with tree cover should be viewed as more than just a resource accessible for use in a variety of initiatives and programmes: - Forests are an asset to the nation that must be protected appropriately. Any use of forestland that is not forested should be submitted to the most stringent of inspections before it can be approved. The requirements for the preservation of trees and forests should be considered during the construction of dams and reservoirs, as well as during mining, industrial development, and agricultural growth. Those projects that need such a diversion of resources ought to, at the very least, include monies for afforestation within their investment budgets (Ministry of Environment and Forests,

6. The NCEPC served as the foremost advisory body on issues pertaining to the preservation and enhancement of the natural environment. The Committee was tasked with planning and coordination, while the actual execution of the plan fell under the purview of a number of other ministries and other government bodies.

1992).

The new economic policies developed in India since 1991 promote economic development by connecting the Indian economy with global trade, which challenges environmental protection and climate change (Ministry of Finance, 1992). The environmental policies and actions (forest policies) become ineffective in the implementation of new economic policies, such as industry has been deregulated, environmental barriers to international trade and investment have been removed, and the government has actively supported export-oriented businesses. This means that entire environmental policies and numerous other legislations were less effective in these situations (Madaan and Davinder, 1995; Ministry of Finance, 1992).

The Indian government adopted National Actions and Plans for Climate Change (NAPCC) in 2008 to respond to climate change. NAPCC seeks to achieve national growth and poverty reduction goals while safeguarding the environment and ensuring the poor are cared for through an inclusive and sustainable development process. The NAPCC comprises eight national missions to support policy-based governance on climate change. The eight national missions concentrate on energy efficiency, river water management, sustainable habitat, the Himalayan ecosystem, forestry, agriculture and clean development mechanism (NAPCC, 2008). The overall objective of missions is to integrate various climate change mitigation policies within relevant strategic areas.

The measures India has taken under NAPCC to address climate change are not entirely new because it is based in the same way as previous environmental regulations<sup>7</sup>, but NAPCC addressing climate change is premised on the concept of a centralised and administrative (PMCCC, 2008). The difference between NAPCC and past environmental, water, forests, and energy policies are: **First:** Political, scientific and protective discourse has focused heavily on NAPCC. The previous environmental policy discourse became climate change policies (NAPCC). One manifestation of this was appeared expansion of the Ministry of Environment and Forestry into the new “climate change” portfolio (NAPCC, 2008). In addition, the sustainable

development approach and the importance of geographical interpretation were included in NAPCC. Finally, NAPCC has explicitly highlighted the immediate impact of climate change (NAPCC, 2008).

**Second:** The environment policies were treated as separate entities in the past, and the current climate change policy (NAPCC) has integrated past policies into a single framework, for example, NAPCC integrates National Forest Policies, National Water Policy 2002, Integrated Energy Policy 2006, and National Environmental Policy 2006 etc. NAPCC included new policies like Green India Policy, National Sustainable Habitat Policy, Sustainable Agriculture Policy, Sustaining Himalayan Ecosystem Policy, Strategic Knowledge for Climate Change Policy and Clean Development Mechanism Goals policy (CDM) (NAPCC, 2008). **Third:** - NAPCC is an all-encompassing and ambitious endeavour. NAPCC places intense focus on large infrastructural development, a proliferation of research institutes, the birth of new climate change-related departments and the infusion of vast sums of money. In order to achieve the goals of NAPCC, the federal government has mandated that each state and union territory develop a State Action Plan on Climate Change (SAPCC) (PMCCC, 2008; NAPCC, 2008). The 32 states and union territories have completed SAPCCs so far (MoEFCC, 2018).

#### ***Institutional Arrangements:***

The Prime Minister’s Council on Climate Change (PMCCC) has drafted the NAPCC, which consists of 26 members. The NAPCC was released without any debate or discussion taking place in parliament, as well as without any consultation with political leaders, local expert, social expert and state representatives (PMCCC, 2008). The PMCCC has taken action and made efforts toward the creation of institutional structures that are durable in order to ensure that the NAPCC can be implemented continually. The PMCCC has designated the Ministry of Environment, Forest, and Climate Change (MoEFCC) as the nodal Ministry responsible for the coordination and management of NAPCC. The secretary of the MoEFCC leads a National Steering Committee

7. Policies: National Forest Policy, 1952 which is the first Forest Policy of independent India; Policy Statement for Abatement of pollution, 1992; National Conservation Strategy and Policy Statement on Environment and Development, 1992; Policy Statement for Abatement of pollution, 1992; National Agriculture Policy, 2000; National Water Policy, 2002; National Environment Policy (2006).

under NAPCC. The members include representatives from relevant ministries and departments pertinent to the policy and action formation and implementation. The national steering committee supervises the creation and implementation of the work schedule for the NAPCC so that proper attention and participation may be ensured. The government ministries and departments are mainly concerned with the various aspects of the NAPCC missions. NAPCC has many and varied multidisciplinary aspects that are pertinent to mitigation efforts. Therefore, standard procedure calls for removing any technical explanations of discussions that cover a wide range of topics and involve experts from many fields with the help of the Technical Advisory Committee — as it can guide on technical matters after careful consideration. The committee includes members from the concerned ministries, academic institutions and the public community (PMCCC, 2008; NAPCC, 2008).

#### ***NAPCC Mission in Multidisciplinary Aspects:***

The NAPCC's Eight National Missions have been divided into multi aspects such as science and research, policy development, policy implementation, international cooperation, and forestry (Ministry of Environment and Forest, 2010; MoEFCC, 2016). These are the core element of NAPCC. These multi fields represent “multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change mitigation. The targets and key development under these fields are highlighted in Table 1. Table 1 included various actions and plans of the NAPCC and their progress that began with the creation of NAPCC. The multidimensional strategy identifies actions that advance our development goals while providing co-benefits for effectively combating climate change<sup>8</sup>. It is premised on safeguarding low-income and vulnerable population segments, attaining national growth, deploying suitable technology, and creating new and inventive forms of market. NAPCC contends that the issue of climate change may be solved by implementing various solutions, such as the speedy construction of large water reserves, joint forest management, installation of biomass power plants and other suitable actions. Table 1 presents two

distinct NAPCC approaches as viable options for dealing with climate change. Firstly, to respond to the effects of climate change, and secondly, to further improve India's road toward ecological sustainability in its growth.

#### **NAPCC Implementation:**

The relevant ministries will develop the objectives, implementation strategies, schedules, monitoring and evaluation criteria and present them to the Prime Minister's Council on Climate Change. The council would be accountable for regularly monitoring and reporting on all missions' status (PMCCC, 2008). The declarations represent a broad political consensus and responsibilities of the government as outlined in the Directive Principles of State Policy in Part IV of the Indian Constitution. The mission statements can help determine commitment, but these are not binding in a court of law.

By using available Policy Instruments, the legislature will be able to pass more effective laws, and the court will be able to favour a climate change mitigation interpretation of the law over a more conservative one<sup>9</sup>.

The following are the methods through which these actions and plans are implemented:

#### **Implementation through Statutes and Authorities:**

The Indian legislature has adopted numerous sets of legislation and rules, including the Air Act (Parliament, 1981), the Bio-Diversity Act (Parliament, 2002), the Environment Protection Act (Parliament, 1986), the Forest Conservation Act (Parliament, 1980), etc. under which various authorities have set up in order to put these Policy Statements into action.

#### **Implementation through the Courts:**

Recent years have seen a dramatic increase in environmental protection efforts by India's legal forums. The numerous and varied judgments handed down by India's judicial systems are evidence of this.

#### **Conclusion:**

Several policy, plans, acts and regulations have been enacted that were primarily regulatory. However, it was not until the mid-1980s that the political system took

8. Bases of previous reference (footnote no. 7) readings

9. Along with “these general policies pertaining to environmental conservation there are few sectors specific policies as well such as the National Agriculture Policy, 2000; the National Population Policy, 2000; the National Water Policy, 2002; the National Zoo Policy, 1998; the Wild Life Conservation Strategy, 2002 etc.”

Table 1 : NAPCC's Multidisciplinary Aspects and Development in Different Phases		
Initiative Plan & Policy 2008	Development Till 2015	Development Till 2022
1. India Network for Climate Change Appraisal.	The launch of a network of 130 research institutions and 300 scientists held significant conferences till 2015.	NAPCC has covered 27 ministries and its various programmes. In addition, NAPCC covers over 200 research institutions.
2. Monitoring program of glaciers of the Himalayas.	Comprehensive Himalayan Glacier Science Monitoring Program - Phase I completed; Phase II launched; State of the Himalayan Glaciers Working Paper released.	<ol style="list-style-type: none"> <li>To assist States in the Indian Himalayan region to implement the chosen actions for sustainable development.</li> <li>Creation of new climate-related centres in existing institutions in the Himalayan states.</li> <li>Regional cooperation with neighbouring countries on glaciology.</li> </ol>
3. Indian satellite launched to monitor greenhouse gas emissions.	<p>In 2010, ISRO planned to launch a micro-satellite to research aerosols (soot particles), and then in 2011, the organisation planned to deploy a complete satellite to monitor GHG emissions.</p> <p>In doing so, India will become a member of an exclusive club of countries.</p>	<p>GSAT-9 has been launched since May 5, 2017. The geostationary communication satellite offers a range of communication applications in South Asian countries.</p> <p>The satellite will support applications such as disaster management, disseminating meteorological data, and networking with academic, scientific and research institutions.</p>
4. The forest and forest coverage of India as carbon sinks.	Research estimates the value of India's forests as carbon sinks- the valuation shows that they neutralise 11% of India's annual GHG emissions.	The remaining area in 2016 was 69.22 million hectares area (Mha), and the amount of land converted to forest land in 2016 is estimated at 1.27 Mha. During 2016, the carbon stock rose to 248,610 gigagrams of CO <sub>2</sub> , representing a 15.87% rise.
5. India's Greenhouse Gas Emissions Profile.	India's GHG emission trajectories up to 2030 under different public assumptions show that India will remain a minor emitter per capita even in 2030.	As a direct result of India's proactive and ongoing efforts to mitigate the effects of climate change, the intensity of India's greenhouse gas (GHG) emissions relative to its gross domestic product (GDP) has decreased by 21% throughout the period from 2010 to 2020.
6. Expert Panel on a Low Carbon Economy.	<ol style="list-style-type: none"> <li>A planning group led by the Commission has been established to develop a strategy for India as a low-carbon economy which feeds into the twelfth plan process ending in 2015.</li> <li>Performance, Achieve and Trade (PAT) was launched in 2012 under the National Mission Improving Energy Efficiency, and the first PAT cycle (2012-2015) resulted in energy savings of 8.67 Mtoe and carbon reductions of 31 Mt CO<sub>2</sub>.</li> </ol>	<ol style="list-style-type: none"> <li>Establishment of a national GHG inventory.</li> <li>In PAT Cycle II (2016-2019), 621 designated consumers (CDs) from 11 sectors received Specific Energy Consumption (SEC) targets, with an estimated energy savings of 8.869 Mtoe.</li> <li>The third cycle of PAT was notified in March 2017 to achieve a global reduction in energy consumption of 1.06 Mtoe.</li> <li>The fourth cycle of the PAT began on April 1, 2018, and 109 DCs have been notified so far. These DCs come from the old PAT sectors and two new sectors: petrochemicals and commercial buildings (hotels).</li> </ol>
7. State Action Plans to Address Climate Change.	Delhi is the first state of publishing its Action Plan on Climate Change; other states are finalising their plans.	<p>The individual states make significant contributions to the NAPCC by developing state-level action plans.</p> <p>These plans are intended to serve as extensions of the NAPCC at various levels of government and are coordinated with the eight national missions.</p> <p>32 States/UTs have prepared their State Climate Change Action Plans (SCAAPs).</p>

Contd. Table 1

Table 1 contd...

8. A National Strategy for the Use of Biofuels	National Biofuels Policy approved by Cabinet to promote biofuel cultivation, production, and utilisation for transportation and other applications	National Policy on Biofuels 2018
9. National missions within the National Action Plan on Climate Change framework.	National missions on solar energy, energy efficiency and strategic knowledge agreed upon; other missions in the final preparation phase.	<p>Ongoing programs include:</p> <ul style="list-style-type: none"> <li>• National GHG Inventory.</li> <li>• Voluntary pledge</li> <li>• Mitigation actions in power sector</li> <li>• Energy efficiency-related mitigation actions</li> <li>• Energy access and clean fuels</li> <li>• Buildings sector</li> <li>• Mitigation actions in the transport sector</li> <li>• Agriculture sector</li> <li>• Forestry sector</li> <li>• Waste Sector</li> </ul>
10. First national conference on green construction materials and technologies.	Conference to stimulate the green building sector, to give an example, the government proposes that all its new buildings will comply with GRIHA 4 subject to the conditions of the site.	<p>1. The Energy Conservation Building Code 2017 has been established, and it applies to commercial structures with a connected load of 100 kW or more or a contract demand of 120 kVA or more, and they are designed to be used for business purposes.</p> <p>2. Detailed recommendations for improving the effectiveness of lighting systems have been distributed.</p>
11. Solar Cities	Approval was granted to 35 solar cities to reduce the project's traditional energy demand by 10% through energy efficiency and renewable energy.	In 2018, new initiatives were launched, including Atal Mission for Rejuvenation and Urban Transformation, Smart City,
12. Energy Efficiency Standards for Appliances	Energy efficiency ratings have been mandated for four essential appliances: refrigerators, air conditioners, tube lamps and transformers.	India is a co-leader in the smart grid, off-grid, and sustainable clean fuels innovation issues, and it is a partner with 22 other member countries and the European Union in the clean energy initiative known as "Mission Innovation."
13. Fuel Efficiency Norms	The announcement of a plan for fuel economy standards for vehicles, which are scheduled to go into effect in two years	National Electric Mobility Mission Plan 2020
14. Clean Development Mechanism Program	India is considered the best CDM country; India anticipates neutralising 10% of emissions by 2015.	<p>India and France have also launched the International Solar Alliance (ISA) of 121 countries of the sun to work on the efficient use of solar energy to reduce dependence on fossil fuels.</p> <p>India is a partner of 22 Member States and the European Union in the Clean Energy Innovation Mission and co-leads innovation challenges in smart, off-grid and sustainable biofuels.</p>

Contd... Table 1



Table 1 contd...

15. India to host Rio+20'	Convention on Biodiversity (CBD) marked the 20th anniversary of Rio, its 11th Conference of the Parties (COP) in India in 2012.	<p>MoEFCC has launched a campaign of good green actions, a societal movement aimed at protecting the environment and promoting sustainable lifestyles in the country. This initiative was accepted at the BRICS Environment Ministers' meeting in Durban in 2018 for inclusion in the official agenda of its next ministerial meetings.</p> <p>The Ministry of the Environment and Climate Change participated in and supported WWF's Earth Hour 2018 campaign as an opportunity to raise awareness of the need for a shift in the consumption culture and behaviour change towards sustainability, which would assist in economising operations and reducing costs.</p> <p>The Ministry was also the global host of World Environment Day 2018, which focused on the problem of prohibiting the use of plastics that are only intended for a single use.</p>
16. United Nations Conference on Climatic Technologies.	India successfully hosts the Worldwide Conference on Technology; Delhi Declaration adopted.	<p>The highest level of India's government is dedicated to the country's efforts to fulfil the national commitments it has made to the international world as part of the UNFCCC and the Paris Agreement.</p> <p>In 2018, Prime Minister Shri Narendra Modi was honoured with the prestigious Champions of the Earth award by the United Nations. This award is given out to those who have made significant contributions to the field of environmental conservation.</p>
17. SAARC Environmental Ministers' Conference.	India successfully hosted the SARRC Ministerial Conference in 2010 and accepts common actions on climate change.	<p>Memorandum of Understanding between India and Bangladesh for a project under the SAARC Climate Change Endowment Fund in India – South Asia (CIS-SA) to provide 70,000 improved cook stoves to Bangladesh.</p> <p>The International Training Programme was held in India as part of the India-Africa Forum Summit (2018).</p>
18. Progress Report on Climate Change Submitted by India to the UN Framework Convention on Climate Change	A report documenting India's twelve proactive submissions to the UNFCCC was issued.	Indian Second Biennial Update Report (14) presented to the UNFCCC in 2018.
19. Forest Status Report 2009.	The latest forest status report released shows a steady increase in forest cover in India.	<p>1. The term "Forestry Development Programs" refers to a wide range of programmes, each of which may involve separate national or state plans being put into action in order to target a specific sector. The States and UTs have made the preservation of forests and other forms of biodiversity, agriculture, water resources, and energy as well as the expansion of urban areas and the improvement of transportation systems their top priorities.</p> <p>2. The health, energy, water resources, agriculture and associated sectors, forest and biodiversity, urban development and transportation, and other areas are also addressed by SAPCCs.</p>
20. Launch of CAMPA	Ambitious Rs. 11, 700 crore (USD 2.5 Bn) Forestry conservation program launched.	<p>1. The CAMPA fund has increased gradually, reaching more than 400 billion.</p> <p>2. Specifically, it will make more than 60 billion annually available to State/UTs.</p>

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Table 1 contd...

21. Green India Mission	A new mission under the NAACP is being finalised.	The amount of \$1,439.6 million was spent until March 2018. Nagar Vana Udyan Yojana was created with the aim of supporting urban forestry.
22. Capacity Building in Forestry Scheme	New program Rs. 369 crore (USD 80 min) for forestry staff.	Compensatory Afforestation Fund Act 2016.
23. Intensification of Forest Management.	New Rs. 600 crore (USD 125 Mn) to improve forest management, infrastructure, wildfires, etc.	Preparatory initiatives for GIM, such as institutional strengthening, training, identifying landscapes, and preparing perspective plans at the state/UT level, were funded to the tune of 626 million throughout the fiscal years 2011-12 and 2013-14, and were distributed to 27 states/UTs.
24. Integration of Forestry into NREGA.	Forestry-related activities included as part of India's flagship Employment Guarantee Program to accelerate reforestation; Pilot projects are being implemented.	The convergence guidelines for GIM with MNREGS and CAMPA have been drawn up.

Sources: : Various Reports from the Ministry of Environment, Forest and Climate Change; Ministry of Jal Shakti; Ministry of Science and Technology; Ministry of Agriculture and Farmers' Welfare; Ministry of Power; Bureau of Energy Efficiency; Ministry of New and Renewable Energy Resources; Ministry of Housing and Urban Affairs; College of Agriculture and Life Sciences, SRI International Network and Resources and National Policy on Biofuels 2018.

serious notice of the environment, including climate change mitigation (indirectly) issues facing India. Since January 1985, the Ministry and its forerunners, such as the National Committee for Environmental Planning and Coordination (1972-80), have worked hard to reach their legislative and administrative goals.

The focus of India's climate change policies and actions has shifted from mitigation to adaptation and the conservation of natural resources and the environment through the introduction of the nation's action and plan on climate change (NAPCC) since 2008. The government introduced the Environment Act 1986 and National Forest Policy" in 1988, which became part of climate change mitigation initiatives. However, there were no changes to the interpretation of relevant statutes relating to climate change until 2008. Since 2008, the NAPCC has been balancing development requirements and environmental concerns by targeting diverse sectors involved in climate change processes. NAPCC has adopted proactive in climate protection such as shifting to cleaner technologies, investing in R&D, lowering CO<sub>2</sub> emissions, energy efficiency, enhancing water management, sustainable habitat, protecting Himalayan ecology, agriculture management, increasing forest cover and climate change mitigation appliances. The mission's overarching goal is to implement multiple policies for reducing the effects of climate change across all affected strategic domains.

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