

India's Progression in Addressing Climate Change: An Overview of Current Legislative Reforms

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ABSTRACT

The issue of climate change is complex and has significant effects on India's legal system as well as its socio economic environment. The purpose of this research paper is to investigate the legal aspects of climate change in India by looking at its effects, current legal remedies, and future legal actions. In India, the consequences of climate change are seen in a number of areas, such as infrastructure, public health, agriculture, and water resources. Natural disaster frequency, water scarcity, and food insecurity are all made worse by rising temperatures, unpredictable rainfall patterns, and extreme weather occurrences. Studies on some effects of climate change have been made on Asian region also. Social inequality is exacerbated by these effects, which disproportionately harm underprivileged communities. From a legal standpoint, India has addressed climate change with a number of policies and laws.

Keywords: Climate change, impacts, public health, agriculture, forest, water resources, rising temperatures, erratic rainfall, extreme weather and food insecurity.

Introduction

“One can see from space how the human race has changed the Earth. Nearly all of the available land has been cleared of forest and is now used for agriculture or urban development. The polar icecaps are shrinking and the desert areas are increasing. At night, the Earth is no longer dark, but large areas are lit up. All of this is evidence that human exploitation of the planet is reaching a critical limit. But human demands and expectations are ever-increasing. We cannot continue to pollute the atmosphere, poison the ocean and exhaust the land. There isn't any more available.”

Stephen Hawking, Physicist & Author

The 21st century has seen the rise of climate change as a major worldwide concern. The rapid acceleration and increasing intensity of this phenomenon have caused global repercussions. India has also seen the severe effects of climate change, which have led to major changes in the country's urban, socioeconomic, and environmental domains. In terms of the country's most impacted by extreme weather events linked to changing climatic patterns, India had risen to seventh place by 2019.

Due to its complex topography, large population, and complex socioeconomic dynamics, India is especially vulnerable to the unpredictable effects of climate change. An urgent example of this vulnerability is the growing national concern over air pollution, which has an iron grasp on public opinion and consequences that are made worse by the threat of climate change.

India's air pollution originates from a multitude of diverse causes, including the belching chimneys of industry, the toxic fumes released by vehicles, the smoldering remnants of burning biomass, and the ubiquitous veil of dust particles suspended in the air.

With a focus on the broad effects of air pollution and climate change, this review seeks to bring attention to these urgent issues in India. It explores possible routes to accomplishing Sustainable Development Goal 13 (Climate Action) as well as the intricacies of these issues. This investigation aims to address the pressing need for action in the fight against climate change, with a focus on both adaptation and mitigation solutions.

Furthermore, in the context of India, the review highlights how climate change and Sustainable Development Goal 11 (Sustainable Cities and Communities) connect. It emphasizes the necessity of building resilient and healthy communities in the face of climate change by looking at how it affects things like sustainable infrastructure and public health.

Effects on Forest

The effects of climate change on forests are evident in several natural disturbances that jeopardize the health of these ecosystems. Among these difficulties are pest infestations, the introduction of alien species, severe storms, and wildfires, each of which poses a unique risk. These unplanned, sudden perturbations wreck havoc on forest environments. Their effects are felt by populations that depend on forest resources, underscoring the significant effects of climate change on means of subsistence. India is a country with mega-biodiversity, with more than one-fifth of its area dedicated to forests. Local populations rely heavily on these resources, with around 173,000 villages classified as forest villages [1] the effects of climate change on India's vegetation are diverse. As an illustration, the Himalayan region is particularly vulnerable, as seen by the decline in alpine meadows and the rising tree-line movement brought on by rising temperatures.

Effects on agricultural sector

According to recent research, dry anomalies may be responsible for about 9% of the farmland expansion that has occurred in developing countries during the previous 20 years. To counteract the output losses brought on by these unfavorable weather circumstances, farmers have increased the size of their agricultural lands. [2]

Effects on human health

The complex and substantial effects of air pollution and climate change on human health are intertwined. [3] Future initiatives must be better coordinated in order to effectively address these linked concerns. Due to the fragility of their respiratory and cardiovascular systems, vulnerable populations—such as young children, the elderly, and pregnant women—face increased health risks as a result of air pollution [4]; Young infants are especially vulnerable to these dangers because of their rapid breathing rates and ongoing organ development.[5]

Because of the high temperatures and increasing pollution levels, residents of metropolitan regions are particularly susceptible to negative health effects.

A more sophisticated narrative that acknowledges the urgency and complexity of the task at hand is necessary given the trend of climate change research in India. Climate research in India must take a sophisticated, region-specific approach due to the country's changing environment. It is critical to comprehend the distinct effects across the country, including variable temperatures, unpredictable precipitation patterns, and extreme weather occurrences. These kinds of findings are essential for

developing customized adaptation plans that address the vulnerabilities specific to each place.

The core of India's economy and the source of food for millions of people, agriculture, is especially vulnerable to the whims of the climate. To strengthen food security in the face of changing climate norms, research must give priority to the implementation of climate-smart farming.

The environmental protection clauses found in the Indian Constitution make it unique in the world. The 42nd Constitutional Amendment Act of 1976 introduced Articles 48 A and 51 A (g), which gave the state and its people the responsibility of protecting the environment. In spite of this, India's environmental laws have evolved gradually and frequently in response to particular incidents. Examples of this include the adoption of the Water Act, the Air Act, the Forest Conservation Act, and the environmental measures found in the Constitution. The need for strict laws was witnessed in the Indian legal system after the Bhopal Gas Disaster of 1984.

There are important trigger events that can be linked to the development of Indian environmental law. The United Nations Conference on Human Environment at Stockholm in 1972 was one such occasion that encouraged the passing of multiple environmental laws. A few instances are the Forest Conservation Act, the Water Act, the Air Act, and the Constitution's inclusion of environmental clauses. Frameworks for laws, regulations, and policies are essential for reducing the effects of climate change. Important instruments in this endeavor include the National Tariff Policy of 2006, which requires the purchase of a specific percentage of renewable energy, and the Energy Conservation Act of 2001, which promotes energy efficiency. Furthermore, the National Action Plan on Climate Change offers important guidance for India's adaptation and mitigation plans.

A growing corpus of scholarly works and authoritative declarations has explored climate change from the perspective of human rights in recent years. An important early instance was the appeal that a coalition of US and Canadian Inuit organizations filed with the Inter-American Commission on Human Rights in 2005. An important step towards tying climate change and human rights was taken with the petition that an alliance of Inuit groups from the US and Canada filed with the Inter-American Commission on Human Rights. The petition claimed that US greenhouse gas emissions were infringing on the Inuit people's human rights. Even though the petition was denied by the Commission, it added a fresh viewpoint to the conversation about climate change.

The Maldives' activities kept up the momentum, and the Human Rights Council eventually adopted resolution 7/23. Incorporating the viewpoints of states and other stakeholders, this resolution called for the Office of the United Nations High Commissioner for Human Rights (OHCHR) to carry out a detailed study on the relationship between climate change and human rights. And this study revealed a critical link between climate change and the fundamental fabric of human rights. It illuminated how various aspects of our rights, such as the right to life, access to sufficient food and water, healthcare, secure housing, and the ability to determine our own destinies, are all poised to be impacted by the changing climate. [6]

Future directions for Indian studies on climate change

When contemplating the future trajectory of climate change research in India, multiple significant pathways come to light:

Localized Impact Assessment: The effects of climate change differ greatly among the various areas of India. Subsequent research endeavors may concentrate on doing localized effect evaluations in order to comprehend the distinct vulnerabilities, adaption tactics, and mitigation techniques that are required for various locales, ranging from coastal states to Himalayan states.

Integrated Approaches: The relationship between socioeconomic problems, biodiversity loss, and climate change is becoming increasingly apparent. Subsequent research endeavors may embrace comprehensive methodologies that take into account these various aspects concurrently, providing comprehensive resolutions to intricate problems.

Technology and Innovation: New developments in artificial intelligence, big data analytics, and remote sensing provide effective instruments for researching climate change.

Steps taken by Indian Legislature in combating Environmental pollution and Climate Change:

There isn't a single law in India that is only focused on addressing climate change. When it comes to addressing environmental issues, the Air (Prevention and Control of Pollution) Act of 1981 is the main player. This legislation, which was passed by Parliament in accordance with Article 253 of the Indian Constitution [7], is aimed at reducing air pollution because it is known to have a negative influence on flora, wildlife, and human health. The Act targets climate change indirectly by regulating greenhouse gas emissions that contribute to global warming, even if it doesn't mention it outright. The Act established Central and State Control Boards, which monitor, and use fines and legal action to enforce regulations pertaining to air quality. Therefore, even though the Air Act does not specifically address climate change, it is vital in reducing its consequences by addressing causes, effects and appropriate actions to be taken. Therefore, as an alternative, the Air (Prevention and Control of Pollution) Act of 1981, also known as the Air Act, makes a major advancement in tackling environmental issues. The Air Act focuses on reducing air pollution, which indirectly tackles a significant component of climate concerns even though it doesn't specifically address climate change. It addresses the relationship between air quality and more general environmental problems. The Air Act is significant because it outlines procedures for preventing, controlling, and reducing air pollution, which is harmful to people, other living things, and plants when it exists in the atmosphere. [8]

India is becoming an increasingly important global participant in the fight against climate change while the globe struggles with how urgent it is to do so. India's contribution to reducing environmental degradation cannot be understated, given its enormous population and varied ecosystems. The Indian government has implemented a number of legislative initiatives targeted at addressing climate change head-on and promoting sustainable development in response to growing environmental concerns.

A number of significant climate change legislation has been passed in India in an effort to solve environmental issues and advance sustainable development. The following are some important laws: [9]

- The Environmental Protection Act of 1986 gave the federal and state governments the authority to stop and lessen environmental contamination as well as to preserve and enhance the quality of the environment.
- Act of 1981 for the Prevention and Control of Air Pollution: The State can investigate factories, set emission guidelines for air pollutants, and take other necessary actions to control pollution. For all industries, compliance with this act is obligatory.
- The 2010 National Green Tribunal Act: The National Green Tribunal, which guarantees the prompt and efficient resolution of cases pertaining to environmental protection, is governed by the legislation. This NGT Act gives the Tribunal the power to independently oversee its procedural matters under Section 19. Furthermore, it makes it clear that the Tribunal is unrestricted by the procedural guidelines included in the Indian Evidence Act of 1872 and the Code of Civil Procedure, 1908. Instead, natural justice serves as its driving philosophy.
- The Energy Conservation Act of 2001 encourages the adoption of energy-efficient technology and comprehensive power development by providing a legislative framework for energy efficiency.
- The 1980 Forest Conservation Act: This act, which was passed in order to preserve and safeguard the nation's woods, declares all forests to be government property. It also describes how forest diversion will be compensated for.
- Act of 1977 for the Prevention and Control of Water Pollution: The purpose of this law is to stop home, industrial, and agricultural trash from contaminating waterways. Additionally, it controls the water usage cess paid.
- The Wildlife Protection Act of 2002 aims to control the illegal wildlife trade, create a network of national parks and wildlife sanctuaries, provide uniform laws, and safeguard wildlife within India's boundaries.

- The Biological Diversity Act of 2002 encourages the fair distribution of India's biodiversity resources and was passed with the goals of protecting and preserving biodiversity.

Together, these laws cover a range of topics related to sustainable development and environmental protection, demonstrating India's dedication to halting climate change and protecting its natural resources.

While India has a vast and developed body of environmental legislation, the Indian Constitution is unique in the world for having sections devoted to environmental protection. By delving into the domains of both intergenerational and intragenerational fairness, the study presents prospects for the advancement of climate change jurisprudence in India. It proposes using the diverse array of human rights and environmental legal frameworks currently in place to protect developmental agendas against compromise. [6]

The Supreme Court's recent decision upheld Indian's Constitutional rights to protection "from the detrimental impacts of climate change," as stated in Articles 14 and 21. The Great Indian Bustard and the Lesser Florican, two endangered bird species, was the subject of a writ suit filed by conservationist MK Ranjitsinh, [10] which resulted in this decision. Leading the three-judge panel was Chief Justice of India DY Chandrachud, with Justices JB Pardiwala and Manoj Misra. The judges stressed that everyone has a fundamental right to a clean environment and clean air, which is a necessary component of the rights to equality, life, and personal liberty. [11]

The Supreme Court's momentous ruling has expanded the scope of fundamental rights to include "the entitlement to protection from the detrimental impacts of climate change." This admission highlights the serious threat that climate change poses to human survival.

Perhaps a new chapter in the history of Indian environmental law is about to begin due to climate change. While enacting laws limiting greenhouse gas emissions at this point may not be prudent, India's legal system already includes certain environmental and human rights law principles that demand government intervention. Rather than obstructing the nation's development goals, these concepts might serve as the cornerstone of an emergent Indian climate change jurisprudence that tackles the pressing concerns of equity between the current population and future generations.

Impacts of Climate Change across Different Geographic Regions

To offer a comparative viewpoint, let us examine the results obtained by the Global Climate Risk Index (CRI). [12] Puerto Rico, Myanmar, and Haiti have been regularly identified as some of the most severely affected countries in recent evaluations. The assessment for 2018, however, showed a different picture, with Germany, the Philippines, and Japan assuming the lead positions as the nations most vulnerable to and at danger from climate change. [12]

Particularly in the Western Hemisphere, there has been a discernible increase in public awareness of the effects of climate change in recent years. Before the corona virus pandemic (SARS-CoV-2) hit, conversations on climate change were commonplace in Western media. Millions of students throughout the globe demonstrated in the streets every week, fervently calling on their governments to enact strict environmental regulations that would keep global warming to below 2°C, as per the Paris Agreement.[13] Even though many scientists have highlighted the connection between climate change and the rise in zoonotic illnesses, public awareness of climate change has decreased throughout the COVID-19 pandemic.[14] In fact, the repercussions of climate change will surely be more severe and long-lasting than those of a pandemic, even though the former's effects may be more transient. The worldwide threat posed by climate change calls for concerted international action to address its issues.

The socioeconomic effects of climate change are significant and affect the basic necessities of human life on a global scale, including food, water, health, and the use of land and the environment. As earlier studies and research attempts have established, the implications are apparent throughout multiple industries in Asia, including the Philippines.

Food Security and Agriculture in Asian region:

Asian agriculture is seriously threatened by the negative effects of climate change [15] including high temperatures, protracted droughts, flooding, and degraded soil. The possibility of food shortages and the depletion of water resources are increased by these difficulties. In addition, future changes to ocean currents, sea levels, temperature, salinity, and marine ecosystems are predictable due to these climatic conditions.

When the two strongest El Niños to have hit the country—1982–1983 and 1997–1998—struck the Philippines, the country's agriculture sector's volume of production and gross value added (GVA) decreased the most. The four major crops (rice, corn, sugarcane, and coconut) had a fall in their GVA and output volume. The beneficial rainfall patterns of La Nina years are attributed to GVA improvements in rice and corn production.[16] The majority of Filipinos support a "ambitious" global plastics treaty that calls for a decrease in the production of plastic, according to a study report. In a survey conducted across 19 countries, 94% of Filipinos said they thought a ban on plastic manufacturing would reduce plastic pollution, end biodiversity loss, and keep global warming to 1.5 degrees Celsius.[16] As a result, Filipinos support strict regulations that would reduce the production of plastic. This overwhelming support is a reflection of a pervasive conviction that limiting plastic production is essential to halting the alarming rate of global warming, protecting biodiversity, and fighting pollution.

Climate change and policy in India

India's various temperature zones, geographical features, and ecosystems make it vulnerable to significant threats associated with climate change. The results of the 2021 Global Climate Risk Index support this claim.[17] According to the State of India's Environment in Figures 2022, from March 11 to May 18, 2022, India recorded 280 heat wave days—the most in the previous 12 years.[18] Climate change highlights the pressing need to protect vulnerable populations against a wide range of dangers, including natural catastrophes, health emergencies, and unstable economies. Its effects include population displacement, livelihood instability, agricultural yield disruption, poverty cycle perpetuation, and threats to biodiversity and the stability of our food systems. [19]

The Indian government unveiled the National Action Plan on Climate Change (NAPCC) on June 30, 2008. It outlined eight crucial National Missions aimed at tackling the problems caused by climate change. The National Solar Mission and the National Mission for Enhanced Energy Efficiency are two of these missions. The Energy Conservation Act of 2001 was implemented with the intention of addressing associated issues and encouraging the effective use and conservation of energy. The Bureau of Energy Efficiency (BEE) is to be established and formalized as a result of this legislation.

The Ministry of Power (MoP) is designated as the central coordinating authority under the Energy Conservation (Amendment) Bill 2022, with the Bureau of Energy Efficiency (BEE) serving as the operational arm. The Business Allocation Rules provide that the Ministry of Environment, Forests, and Climate Change (MoEFCC) is in charge of environmental standards and climate change. [20]

The recently approved Energy Conservation (Amendment) Act, 2022 made amendments to the Energy Conservation Act, 2001. On 19th December 2022, the President approved the amended Act. And on 26th December 2022, the Ministry of Power sent out a notification, and on 1st January 2023, the modified Act and all of its provisions took effect. The Amendment Act aims to hasten decarbonization and quickly achieve sustainable development milestones by introducing novel concepts like carbon trading and enforcing the use of non-fossil resources by designated users.

Conclusion

In order to effectively tackle climate change, we need to use a wide range of environment-friendly technologies. To guarantee the broad adoption of developed technologies, especially those that improve energy efficiency, international cooperation and knowledge sharing are essential. UNDESA's most recent

World Economic and Social Survey emphasizes how urgently developing nations must increase their investments in renewable energy. Accessibility problems are made worse by the fact that most people cannot afford renewable energy sources, even when they are commercially available. This problem is especially severe in areas where access to energy is expensive and unstable, impeding socioeconomic development. It is recommended to make significant investments in renewable energy in order to close this gap. The purpose of this calculated action is to accelerate technology progress and cost reductions so that everyone can afford renewable energy. The goal is a future in which all citizens, regardless of socioeconomic background, have access to renewable energy. But realizing this goal will require strong international financial assistance for underdeveloped countries. The size of the investments needed and the continued high cost of renewable energy highlight how important international cooperation and support are to promoting sustainable energy transitions across the globe. We can bring about a revolutionary change in the energy environment that will benefit both the current and upcoming generations by combining our resources and knowledge. In India, the courts and legislature have occasionally been crucial in the fight against environmental problems. Environmental awareness should be prioritized at all levels. Apart from governmental initiatives people's participation and awareness is also very important factor in protecting the Environment.

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