



Research Journal of Pharmaceutical, Biological and Chemical Sciences

Environmental Acts and Role of Regulatory Bodies - A Review.

Gyana Sinha, Sonali Bhosale*, and Aparna Gunjal.

Department of Environmental Sciences, Dr. D. Y. Patil, Arts, Commerce & Science College, Pimpri, Pune, Maharashtra, India

ABSTRACT

The environment is very important. Pollution, global warming, climate change, etc. are serious environment issues and need to be solved urgently. The various Acts such as water, air, soil, biodiversity, etc. are discussed in this review which describes their importance. These Acts are important because they set some standards and limits and thus help the environment. The various environment regulatory bodies and their role are also discussed in this review. The regulatory bodies maintain the policies and regulations. This review is important as the Acts discussed in this review will help to control pollution, global warming, climate change, etc. The various environment issues will be solved due to these Acts and regulatory bodies.

Keywords: Biological, Climate, Ecosystem, Forests, Sustainable

**Corresponding author*



INTRODUCTION

India, a country with a prominent range of natural ecosystems from tropical rainforests and snow-capped Himalayas to arid deserts and extensive coastlines has been widely acknowledged for its exceptional biodiversity and ecological richness. These natural systems have not only supported forestry, agriculture, and traditional livelihoods for centuries but have also shaped the country's spiritual and cultural heritage. In recent decades, there has been a dramatic escalation of environmental pressures on India's ecosystems due to rapid industrialization, urban expansion, a demographic surge, and ecologically burdensome policies [1]. These pressures have led to increased air and water pollution, large-scale deforestation, declining groundwater reserves, soil degradation, and significant biodiversity loss threatening both ecological stability and public well-being.

In response to the growing urgency of environmental degradation, the Government of India has established a well-defined and hierarchical legal framework for environmental protection. These efforts draw their foundation from the Constitution particularly Article 48A, which urges the state to protect and improve the environment, and Article 51A (g), which emphasizes the duty of every citizen to preserve the natural world. Since the 1970s, India's environmental jurisprudence has significantly evolved, beginning with targeted laws such as the Water (Prevention and Control of Pollution) Act of 1974 and the Air (Prevention and Control of Pollution) Act of 1981. These early legislative efforts laid the groundwork for a more unified approach, culminating in the enactment of the Environment (Protection) Act of 1986.

The Environment (Protection) Act granted the central government the authority to implement measures aimed at environmental protection, establish uniform national standards, and coordinate with state authorities for effective enforcement [2]. This foundational legislation has been further strengthened by complementary laws such as the Wildlife Protection Act of 1972, the Forest Conservation Act of 1980, and various specialized regulations addressing hazardous waste, electronic waste, and biodiversity conservation. Together, these laws contribute to a more robust and integrated environmental legal framework in India.

Despite having a considerably strong legal framework, the actual enforcement of environmental laws in India faces several challenges. One of the major issues is the fragmented distribution of responsibilities among central, state, and local authorities. This often leads to overlapping jurisdictions, gaps in coordination, inconsistent enforcement practices, and weakened accountability across various levels of governance [3]. Moreover, having numerous environmental laws and regulations has not guaranteed effective outcomes on the ground. This is largely due to institutional shortcomings, including a shortage of staff, lack of technical expertise, inadequate financial resources, and limited political will. As a result, environmental rules are frequently violated by industries, enforcement by pollution control boards remains weak, and local communities often lack a voice in decisions that directly affect their environment [4].

Adding to this complexity is the involvement of multiple stakeholders in environmental governance. Key government institutions such as the Ministry of Environment, Forest and Climate Change (MoEFCC), along with the Central and State Pollution Control Boards, play a vital role in implementing and overseeing environmental regulations. However, the functioning of these bodies is often hampered by bureaucratic delays and external pressures. In contrast, civil society groups and grassroots movements have played an essential role in advocating for environmental rights and pushing for more participatory governance, especially when legal and regulatory mechanisms fall short. The judiciary has also become a critical actor, with the National Green Tribunal (NGT) and the Supreme Court of India delivering landmark judgments that have helped shape environmental law and bring attention to neglected ecological issues [5]. Still, an over-reliance on judicial intervention raises concerns about institutional balance and whether court-driven governance alone can ensure long-term environmental sustainability.

The constant tension between economic development and environmental protection highlights the need for a thorough re-evaluation of India's environmental legal and institutional frameworks. While current laws prescribe environmental standards, impact assessments, and penalties for violations, enforcement remains inconsistent and, at times, largely symbolic. As climate risks intensify, natural resources become scarcer, and environmental degradation increasingly impacts public health, there is a growing recognition that

existing laws must not only be strengthened but also restructured to support a more integrated, inclusive, and adaptive system of environmental governance [6].

Water Act

The Water (Prevention and Control of Pollution) Act of 1974 is a landmark legislation in India aimed at addressing the growing concerns surrounding water pollution and ensuring the sustainable management of water resources. Enacted by the Indian Parliament, this act provides a comprehensive framework for preventing and controlling water pollution and promoting the conservation of water bodies across the country [7]. The primary objective of the Water Act is to regulate and control the discharge of pollutants into water bodies, including rivers, lakes, streams, and groundwater sources. It empowers the central and state pollution control boards to set standards for the quality of water, prescribe effluent standards for industries, and regulate the treatment and disposal of sewage and industrial effluents.

The Water Act sees to maintain the standards and limits required. These boards are responsible for granting consent to industries for discharging effluents, conducting water quality monitoring, and taking enforcement actions against violators. The act sets the standards and limits for the discharge of pollutants in water bodies. These standards serve as benchmarks for assessing water quality and guiding pollution control efforts.

The Water Act regulates various activities that contribute to water pollution, including industrial processes, municipal sewage discharge, and agricultural runoff. Industries are required to obtain consent from the pollution control boards for discharging effluents and comply with effluent standards to prevent water contamination. The act establishes mechanisms for monitoring water quality through regular sampling and analysis of water samples from different sources. It promotes the use of cleaner production technologies, recycling and reuse of wastewater, and the adoption of best practices to minimize environmental impacts. The effective implementation and enforcement of the act remains crucial for achieving its objectives and ensuring the conservation of water resources for future generations.

Forest Conservation Act

This act was introduced by the central government that came into effect on October 25, 1980. The Forest Conservation Act of 1980 stands as a pivotal piece of legislation in India's environmental legal framework, aimed at safeguarding the nation's dwindling forest cover and biodiversity. The primary objective of the Forest Conservation Act is to preserve and maintain the forest resources. Recognizing the critical role of forests in maintaining ecological balance, watershed protection, and carbon sequestration, the act imposes stringent restrictions on the felling of trees and clearance of forested areas.

The forest conservation act lays down specific criteria and guidelines for granting approval for forest land diversion, taking into account factors such as the ecological significance of the forest area, the extent of forest cover, the impact on wildlife habitats and the availability of alternative sites. The forest act involves the reforestation of an equivalent area of degraded or non-forest land to offset the loss of forest covers and restores ecological balance. The Forest Conservation Act establishes mechanisms for monitoring compliance with its provisions and ensuring the effective implementation of forest conservation measures. Central and state governments along with forest departments and regulatory authorities are tasked with overseeing forest land diversion projects and enforcing regulatory norms.

The Air Pollution Prevention and Control Act

The Air Pollution Prevention and Control Act of 1981 [8] is a law passed by the Parliament of India to prevent and control the harmful effects of air pollution in India. This act is important to control the air pollution. The cause of pollution started more after 970s. The air act defines 'air pollution' as the presence of any dangerous pollutant that makes the air unbreathable. Unlike previous environmental laws, the air pollution act was passed by the central government in India in the face of impending air pollution and rising numbers of environmental cases across the country. It focuses so deeply on the maintenance of air quality by



prohibiting poor air conditions (i.e., toxicities and poisonous gas and pollutants) and hazardous substances which is dangerous. It also opposes the use of chemicals, pollutants, and industrial hazards for the cause of environmental security. The law has a similar function to establishing Central and State Boards to observe the air quality from time to time.

National Conservation Strategy

India adopted the National Conservation of Strategy (NCS) act right back two and half decades ago and began its NCS where the following objectives are met:

- Establishment of environmentally friendly developmental technology
- Conservation of forest resources and protection of wild animals
- Fight for Poverty mitigation
- Promotion of ecological development
- Development of inclusive growth strategy without social cost
- Protection of natural resources and human environment

National Biodiversity Act

The National Biodiversity Act of 2002 stands as a key legislation aimed at promoting the conservation, sustainable use, and equitable sharing of benefits derived from India's rich biological diversity. It is aimed to conserve the biological resource within a defined territory of a sovereign country and recognizes its authority to use them [9].

The National Biodiversity Act includes the establishment of Biodiversity Management Committees (BMCs) to facilitate community participation in biodiversity conservation and sustainable resource management. The act emphasizes the conservation and sustainable use of biological resources, promoting practices that enhance ecosystem resilience, protect endangered species, and maintain ecological balance. The act also addresses issues related to intellectual property rights (IPRs) and traditional knowledge protection, ensuring that traditional knowledge holders receive recognition and compensation for their contributions to biodiversity conservation and sustainable development. By providing a legal framework for biodiversity governance and promoting community participation, the act aims to preserve India's biological diversity for future generations while fostering equitable sharing of benefits derived from its rich natural resources.

National Action Plan on Climate Change

The National Action Plan on Climate Change (NAPCC) was released by the Prime Minister on 30th June 2008.³ It aims to adapt to climate change and enhance the ecological sustainability of development path. There are eight National Missions which work on sustainability and other aspects related to climate change. They focus on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.

Current Environmental Issues and Challenges in India

Air Pollution

Air pollution has affected many human beings in India. The report from the International Energy Agency (IEA) says that by 2040, there might be 9 lakh deaths because of air pollution. According to the 2021 World Air Quality Report, India is home to 63 of the 100 most polluted cities, with New Delhi named the capital with the worst air quality in the world. The study also found that PM_{2.5} concentrations tiny particles in the air that are 2.5 micrometres or smaller in length – in 48% of the country's cities are more than 10 times higher than the 2021 WHO air quality guideline level. There are many reasons for increase in air pollution which are carbon emissions from cars, smoke from cooking, burning of agro residues, etc.



Ground water Depletion

Rapidly depleting levels of groundwater is one of the biggest threats to food security and livelihood in the country. According to news reports, excessive exploitation of limited groundwater resources for irrigation of cash crops such as sugarcane has caused a 6-percentage point decline in the availability of water within 10 metres from ground level. Low rainfall and drought are also reasons for groundwater depletion. The north western and south eastern parts of the country are the worst hit. These are also the regions responsible for most of the country's agricultural production and food crisis is a natural corollary.

Climate Change

The increasingly tormenting heat waves in the past years are but an indication that global warming and climate change are real challenges that the country is facing now. With the Himalayan glaciers melting at an alarming rate, floods and other such natural disasters are occurring with increasing frequency.

Use of Plastics

Unrestrained use of plastics is another major concern for the country. According to data from the Plastindia Foundation, India's demand for polymers is expected to go up from 11 million tonnes in 2012-13 to about 16.5 million tonnes in 2016-17. India's per capita plastic consumption went up from about 4 kg in 2006 to some 8 kg in 2010. By 2020, this is likely to shoot up to about 27 kg. An average plastic beverage bottle could take up to 500 years to decompose naturally.

New Green Laws Initiatives under Current Government

National Hydrogen Mission (NHM) was announced by the ruling current government on 15 August 2021, while addressing the August gathering in Lalkila (Red Fort). This is a comprehensive scheme that involves all energy sources including solar, wind, and electricity together. This is also useful to reduce the dependence on petroleum products and oil scarcity. Further, the process of energy supply, trading, and export-import globally will be promoted based on ongoing demands. At the same time, even the government has decided to fulfil this goal by 2029. Net-Zero Carbon policy is another sound step that India imagines to march towards a clean India process to achieve by 2070. The Plastic Waste Management (Amendment) Rule, 2022 Act generally replaced the Plastic Waste Management Rule of 2016. It can be believed that India produces 26 thousand tonnes of plastic waste in a single day. Their processing is also hardly challenging and is naturally not imitable and decomposed. In simple it is hazardous. Now micro plastics are also found in the human body and animals. Hence, the recent rule tries to emphasize to ban on the use of plastic materials in any form and content of polythene, bottles, glasses, and so on. Swachh Bharat Abhiyan, Jal Jeeva Mission, Namami Ganga Project, and National Solar Mission are some of the schemes to strengthen environmental laws in India.

Regulatory Bodies in India

There are various regulatory bodies in India such as:

Ministry of Environment, Forest and Climate Change (MoEFCC)
Central Pollution Control Board (CPCB)
State Pollution Control Board (SPCB)
National Biodiversity Authority (NBA)
Central Ground Water Authority (CGWA)
Wildlife Crime Control Bureau (WCCB)
Animal Welfare Board of India
Forest Survey of India (FSI)
Indian Council of Forestry Research and Education (ICFRE)
National Green Tribunal (NGT)
Genetic Engineering Advisory Committee



These regulatory bodies help to maintain standards, limits, policies, etc.

CONCLUSION

The various environmental issues such as pollution, global warming, climate change, etc. are necessary to be controlled. There are various regulatory bodies for this and these regulatory bodies will help to solve environmental issues. The Act will help to set various policies and regulations.

REFERENCES

- [1] Singh R, Kumar D. Ecological degradation in India: Causes and legislative response. *Ind J Sustainable Develop* 2019; 7:10-25.
- [2] Sharma R, Rajput M. The evolution of environmental laws in India: An overview. *Environ Studies Rev* 2022; 14:71-88.
- [3] Ghosh S. Environmental challenges in India: A legal perspective. *J Environ Policy Law* 2020; 50:97-110.
- [4] Kothari A, Pathak N, Vania F. Redefining environmental Governance: Lessons from Indian practice. *Econ Political Weekly* 2017; 52:66-73.
- [5] Banerjee S. Environmental jurisprudence in India: Role of the National Green Tribunal. *Ind J Environ Law* 2020; 4:23-39.
- [6] Jha A. Institutional frameworks for environmental Governance in India. *Public Policy Rev* 2021; 11:45-62.
- [7] Varghese B. The rise in river pollution and the need for reforming Water Act, 1974: A critical analysis. *Int J of Law Manage Humanities* 1990; 4:947.
- [8] Srimannarayana G, Lakshmi V, Dondapati A, Ratnakar T, Dhanunjay P, Satyanarayana P. Legal blueprint for clean air: The Air (Prevention and Control of Pollution) Act, 1981 in India. *J Namibian Stud* 2023; 35S1:691-712.
- [9] Shamsuddin. The Biological Diversity Act 2002: Nature, scope and effectiveness. *Inter J Eng Appl Sci Technol* 2016; 1:43-47.