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**THE ENVIRONMENTAL DANGERS OF HARMFUL
PESTICIDES AND THE ROLE OF INDIAN JUDICIARY IN
PROTECTING HUMAN HEALTH AND THE ENVIRONMENT:
AN OVERVIEW**

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Abstract

The right to a safe and healthy environment is a basic human right guaranteed by the United Nations through various conventions and documents. It is also a fundamental right guaranteed by the constitutions of various countries. In India, the "Right to Safe Environment" is not expressly defined as a fundamental right in the Indian Constitution. However, the right to a clean and healthy environment is included as a fundamental right under Article 21 (Right to Life) of the Indian Constitution. It says that "No person shall be deprived of his life or personal liberty except according to procedures established by law." The Constitution (Forty-second Amendment) Act, 1976, gave environmental protection constitutional status, by the introduction of Articles 48A and 51 A (g). Furthermore, on many occasions, the judiciary has construed the right to a safe and healthy environment as part of the right to life guaranteed by Article 21 of the Constitution. As held in *Chameli Singh v. State of U.P.*³, any civilized society that guarantees the right to live also guarantees the right to food, water, a decent environment, shelter medical care, education, and all other allied rights. However, these rights are being challenged by the rampant and uncontrolled use of pesticides, which has posed a major threat to the environment in the current century. In this regard, the author examines how the right to a safe environment is being jeopardized by unprecedented pesticide use, as well as the efforts made by the judiciary to protect it.

Keywords: Right to a Safe Environment, Human Health, Pesticide Hazard

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³ *Chameli Singh v. State of U.P.*, (1996) 2 SCC 549

Introduction

In recent years, environmental protection has gained tremendous momentum on a global scale with rising pollution levels and global warming. As the negative effects of pollution and hazardous practices become more apparent, the role of the judiciary in protecting the environment has assumed critical importance. The pesticides, designed to combat vermin and increase agricultural productivity, frequently pose substantial risks to ecosystems, wildlife, and human health⁴. Pesticides, while serving their intended purpose of insect control, can have severe environmental consequences. They can contaminate soil, water sources, and the air, jeopardizing the delicate equilibrium of ecosystems and resulting in the extinction of species. Pesticide exposure through the environment has been linked to a variety of negative health effects in humans, such as developmental disorders, hormonal imbalances, and an increased risk of cancer.

As a result, today, the use of pesticides is one of the most pressing problems facing the world, which has a detrimental effect on the environment and human health. Governments have enacted various environmental laws and regulations to regulate pesticide use to protect human health and the environment, and the judiciary on the other hand has played an admirable role in enforcing and interpreting these legal frameworks. Over the years, landmark cases have influenced the judiciary's approach to pesticide-related issues and guided environmental protection. Often, environmental advocates, affected communities, agricultural industries, and government entities are at odds in these cases.

Recent years have witnessed the emergence of judicial activism as a potent force in advancing environmental law and resolving the challenges associated with pesticide exposure. The courts have adopted a proactive stance by expanding legal standing, permitting litigation in the public interest, and advocating the precautionary principle⁵. This judicial activism has aided in raising awareness, stimulating public discourse, and shaping policies that prioritize environmental and public health protection.

⁴ García, A. M. (2003, November 14). Pesticide exposure and women's health. *American Journal of Industrial Medicine*, 44(6), 584–594. <https://doi.org/10.1002/ajim.10256>

⁵ Shaikh, D. A. (2019). The Indian Constitution and the Role of Indian Judiciary System in Protection of Environment in India. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3375640>

A Background of Pesticide Environmental Hazards

Pesticides are the most effective tools for controlling pests in modern agriculture, including insects, weeds, and fungi, to protect crops, livestock, and public health. However, when pesticides are misused or improperly applied, they can have several negative consequences, including irreversible environmental damage. Excessive use of pesticides, unscientific use of pesticides, use of pesticides in combination and use of banned pesticides are common misapplications that cause serious negative effects on the environment, leading to air and water pollution and land degradation. Pesticide pollution by more than one active ingredient threatens 64% of agricultural land worldwide (approximately 24.5 million square kilometres), with 31% at high risk. Approximately 34% of high-risk areas are in high-biodiversity areas, 5% are in water-scarce areas, and 19% are in low- and lower-middle-income countries⁶.

When pesticides are sprayed widely, they seep into the soil, contaminating groundwater and reducing soil fertility. Pesticide runoff pollutes surrounding lakes, ponds, and surface water. To control weeds and mosquitoes, local governments also use pesticides and insecticides on ponds, riverbanks and other water surfaces. During the use of these pesticides, harmful substances mix in the ponds and atmosphere causing huge losses to the aquatic life and environment. Furthermore, pesticides are supplied in plastic cans, bags, pouches, etc. There are no proper guidelines on how to dispose of these bags after the use of pesticides. Usually, these containers are dumped in water bodies or on land or burnt, which will further affect the environment. After being applied, some pesticides have the potential to evaporate or volatilize into the atmosphere, which can travel great distances and result in air pollution. As the pesticide is being applied, particularly in spray form, the pesticide particles are being carried by the wind to unexpected locations. Pesticides may end up deposition in the air and on surfaces distant from the target site as a result of this. Pesticide residues are detected in air, soil and in almost all the rivers of India and watersheds in India have been identified as areas of high concern⁷.

There are many incidents of air pollution and soil erosion in India as a result of the use of pesticides, causing loss of flora and fauna. Even after multiple ministries and legislations, many cases of pesticides affecting human health and the environment have reached the doors of the

⁶ Tang FHM and others, "Risk of Pesticide Pollution at the Global Scale" (2021) 14 Nature Geoscience 206 <<http://dx.doi.org/10.1038/s41561-021-00712-5>>

⁷ *Ibid*

judiciary, the judiciary, on the other hand, has always considered citizens health and safe environment as a priority and ensured that citizens constitutional rights are well protected. The Endosulfan case of Kerala is one such example where the Indian Judiciary has played a decisive role in providing justice to the victims and protecting the environment.

The Approach of Indian Judiciary to Environmental Cases Involving the Effects of Pesticides

*Union of India v. Union Carbide Corporation*⁸ (1989) is the first significant case of pesticide-related environmental hazard in India to be reported. In December 1984, a gas breach at the Union Carbide pesticide manufacturing unit in Bhopal, India, caused the discharge of toxic methyl isocyanate gas, resulting in the Bhopal gas tragedy, one of the world's worst industrial catastrophes. The catastrophe resulted in the loss of thousands of lives and had severe effects on health and the environment.

The case involved legal proceedings for compensation and liability against Union Carbide Corporation, the parent company of the Bhopal facility. In its ruling, the Indian judiciary acknowledged the company's culpability for the calamity and ordered Union Carbide to compensate the victims and implement the necessary environmental remediation measures. In the review petition against the same case, *Union Carbide Corporation & Ors vs Union of India & Ors*⁹ the Hon'ble Supreme Court placed responsibility on the Union of India to take appropriate medical group insurance cover in favour of victims from the General Insurance Corporation of India or the Life Insurance Corporation of India. Further, while deciding the curative petition in March 2023, filed by the central government against the same case, the Hon'ble Supreme Court noted that the Central government has not taken out the relevant insurance policies.

This landmark case demonstrated the significance of holding corporations accountable for their actions resulting in environmental and health consequences. In cases involving environmental catastrophes caused by industrial activities, the court emphasized the need for rigorous liability and corporate responsibility.

⁸ 1989 SCC (2) 540

⁹ (1991) 4 SCC 584

In another case, *Dr. Ashok v. Union of India*¹⁰ one Dr. Ashok had written a letter to the Chief Justice of India saying that India uses a lot of pesticides, color additives and food additives which many developed countries have already banned because they are known to cause cancer. Around 21 chemicals were mentioned in the annexure submitted with the letter. The Hon'ble Supreme Court of India treated this letter as a petition under Article 32 of the Constitution of India and took up the matter as a Public Interest Litigation. At a later stage, a list of 19 more chemicals was submitted with a request to the respondent i.e. the Central Government to immediately ban the import, manufacture, distribution, sale and use of the listed chemicals, so as not to expose the citizens to the potential hazards of the listed chemicals. Thus, the petitioner's overall request to ban the manufacturing, import, distribution, or sale of insecticides stood at 40. Furthermore, one more point was raised challenging the Central Government's notification asking for the phase-out of the manufacturing and use of Benzene Hexachloride (BHC) by revoking BHC registration certificates.

Considering the prayer of the petitioner, the Hon'ble Supreme Court ruled that the right to life includes all aspects of life that make it meaningful, complete, and worthwhile to live. The Hon'ble Supreme Court further observed that "the ecosystem is imbalanced due to uncontrolled use of natural resources and hazardous chemicals, endangering human existence and health. Excessive use of chemicals for agricultural production poses a significant threat. Pesticide use significantly impacts the global environment, exhibiting diverse behavioural patterns and modes of action, impacting man's ecosystem and potentially contaminating the food chain. Developed countries ban hard pesticides on crops while developing countries continue using them without considering environmental side effects." Hon'ble Supreme Court also highlighted the lacuna in the present pesticide control law of India i.e. Insecticides Act, 1968.

In *Democratic Youth Federation of India vs Union of India and Ors.*¹¹ Endosulfan a highly toxic organochlorine pesticide that was extensively used for agricultural purposes in India had caused a huge environmental disaster. The aerial spray of Endosulfan, on cashew plantations in Kerala had severe environmental and health consequences, contaminating soil, water bodies, and vegetation, as well as causing fish mortality and food chain infiltration.

¹⁰ (1997) 5 SCC 10

¹¹ Writ Petition (C) No. 213 of 2011 decided on May 11, 2013

In 2011, in response to widespread protests and scientific evidence of the pesticide's detrimental effects, a lawsuit in the public's interest was filed before the Supreme Court of India. The Hon'ble Supreme Court ordered a nationwide prohibition on the manufacture, distribution, and use of endosulfan. The judiciary recognized the right to a pure environment and the necessity to safeguard human health and the ecosystem. Various directives were issued to the State Governments and the Central Government to protect human health and the environment due to the impacts of endosulfan. Recently, the court directed the respondents to release un-disbursed compensation of Rs.5 lakhs each to affected persons within three months. The State Governments were also asked to consider providing medical facilities or treatment for life-long health problems arising from endosulfan's effects. The court left it to the State Governments to recover the compensation from the concerned industry.

The Judgement of the endosulfan ban in India was a major victory for environmental justice. It resulted in the implementation of rehabilitation measures for the affected communities, including medical assistance, compensation, and efforts to restore the harmed ecosystems. The intervention of the judiciary was crucial in recognizing the afflicted communities' rights and holding pesticide manufacturers accountable.

In *Vanashakti Vanashakti And Ors. v. UoI And Ors.*¹² A petition has been filed in the Supreme Court of India, requesting that the Central Government investigate and restrict the use of 85 pesticides that pose serious health and environmental risks. According to the application, the committee, tasked with reviewing the use of 66 pesticides banned in other countries, has not even looked at the harmful pesticides in issue. The application also requests that all pesticides be examined and that the review committee consist of independent health specialists concerned with pesticide health effects, state government representatives, and ecological agriculture experts.

The petition submitted seeks to enforce the right to health of farmers, farm workers, and consumers by asking for the prohibition and restriction of harmful pesticides that are used in India but have been banned/restricted by other countries. The use of these harmful pesticides has caused serious environmental and health problems in Punjab, Kerala, and Maharashtra, in particular. Cancer, DNA damage, brain and nervous system damage, Parkinson's disease, birth defects, immunological abnormalities, and negative effects on the physical and mental development of

¹² Vanashakti Vanashakti And Ors. v. UoI And Ors , WP(C) No. 237/2017, Supreme Court of India

children in farmers, agricultural workers, and their families are among the health risks associated with these pesticides. Following the orders of the Hon'ble Supreme Court, various expert committees have been appointed by the central government. Supreme Court has even questioned the appointment of different subsequent committees when one committee has already recommended the ban of the pesticides in question. The final judgement of the Supreme Court is yet to come since the matter is pending the government's response.

These case studies from India illustrate the environmental impact of pesticide exposure and the role of judicial interventions in addressing these issues, promoting environmental justice, and protecting the environment and public health. They highlight the importance of scientific evidence, public awareness, and legal frameworks for influencing policy changes and ensuring accountability in pesticide regulation.

Key Principles That Evolved from Judicial Precedents in Environmental Cases

1. The precautionary principle:

The precautionary principle states that in the face of scientific uncertainty, precautions must be taken to protect the environment and human health. When the potential hazards of pesticide exposure are suspected but not yet fully understood, courts frequently rely on this principle. It emphasizes the necessity of erring on the side of caution and taking preventative measures¹³.

2. The Sustainable development principle:

The courts recognize the sustainable development principle¹⁴, which emphasizes the integration of environmental protection, social welfare, and economic development. In cases involving pesticides, courts frequently attempt to strike a balance between the need for agricultural productivity and the preservation of ecosystems and human health. They take into account the long-term effects of pesticide use and seek to promote sustainable practices that minimize environmental damage.

¹³ Dwivedi, Suneet Kumar and Kashyap, Pradip, Environmental Protection Law and Policy in India (May 16, 2013). Available at SSRN: <https://ssrn.com/abstract=2266021> or <http://dx.doi.org/10.2139/ssrn.2266021>

¹⁴ Indian council for enviro-legal actions v. union of india, (1996) 3 SCC 212.

3. The public trust doctrine:

The public trust doctrine holds that the government holds certain natural resources, including air, water, and forests, in trust for the public's benefit. The courts rely on this principle to defend the environment from pesticide exposure-related damage. They acknowledge the public's right to a pure and healthy environment and endeavour to preserve these resources for future generations¹⁵.

4. The polluter pays principle:

The polluter pays principle states that those who create environmental damage should endure the costs of mitigating and correcting that damage. Courts frequently apply this principle to cases involving pesticide exposure, holding responsible parties accountable for their actions' environmental and health consequences. They may order compensation payments or the implementation of measures to restore or rehabilitate affected ecosystems¹⁶.

5. Scientific Evidence and Expert Testimony:

Courts rely heavily on scientific evidence and expert testimony when determining the environmental impact of pesticide exposure. Evaluation of the potential risks and hazards associated with pesticide use is based on studies, research findings, and expert opinion. The importance of scientific evidence in establishing causation, demonstrating the need for regulatory action, and guiding judicial decisions cannot be overstated.

6. Procedural fairness and public participation:

In pesticide-related cases, courts frequently emphasize the significance of procedural fairness and public participation. They may necessitate that government agencies conduct public consultations, seek expert opinions, and include stakeholders in decision-making processes. This ensures that diverse viewpoints are considered and that affected communities can express their concerns.

7. Fundamental right to a pure and healthy environment:

Along with the above-mentioned principles, the Courts also recognize the fundamental right to a pure and healthy environment through explicit constitutional provisions or interpretations of

¹⁵ Pal, A. (2018). The Evolution of India's Environmental Jurisprudence and the Role of the Judiciary. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3492633>

¹⁶ Turaga, Rama Mohana & Sugathan, Anish. (2020). Environmental Regulations in India. 10.1093/acrefore/9780199389414.013.417.

existing laws. Judiciary employs this principle to defend individuals and communities from pesticide's harmful effects. The right to a pure environment encompasses freedom from pollution, toxic substances, and environmental degradation.

By applying these principles, the courts seek to achieve a balance between agricultural requirements, environmental protection, and public health¹⁷. They evaluate the interests of various stakeholders, the weight of scientific evidence, and legal frameworks to render decisions that uphold the principles of sustainability, environmental justice, and the preservation of ecosystems and human welfare.

Conclusion:

Despite its limited jurisdiction, the Courts have played an important role in these cases. More importantly, from an environmental standpoint, a vision for the future is required. There are many incidents where the lacunae in the legislation have been highlighted by the Supreme Court. The precautionary principle states that in the face of scientific uncertainty, precautions must be taken to protect the environment and human health. When the potential hazards of pesticide exposure are suspected but not yet fully understood because of a lack of scientific evidence, courts frequently rely on this principle. Also, the principles of absolute liability, strict liability, and polluter pays principle have been seen in cases such as endosulfan. In a nation like India, where the principle of separation of powers is being followed and the authority of courts is restricted, it is remarkable how hard the Indian judiciary has worked on environmental cases involving pesticides. Overall, the Indian judiciary has made a tremendous contribution to protecting the environment, ecology, forests, wildlife, and human life from the dangers of pesticides.

¹⁷ Chavan, Nishant. (2021). Environmental Protection Acts in India. *International Journal of Scientific Research in Science and Technology*. 480-483. 10.32628/IJSRST218560.