International Journal of Law, Policy and Social Review
www.lawjournals.net
Online ISSN: 2664-6838
Received: 24-02-2026, Accepted: 27-03-2026, Published: 11-04-2026
Volume 8, Issue 2, 2026, Page No. 25-28

The hidden crisis in our dirt: Why India's lack of soil laws threatens our right to stay healthy

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Abstract
The Background: In India, soil isn't just dirt; it's the foundation of life. For centuries, farmers used natural fertilizers like cow dung. Today, to save time and money, they rely heavily on chemical pesticides and medicines for livestock. This has led to "Soil Bankruptcy" the land is physically there, but its health is spent. Places like the Indo-Gangetic Plain are now becoming traps for dangerous pollutants, including tiny bits of plastic and "superbugs" (bacteria that medicines can no longer kill).
The Problem: Even though our food depends on healthy soil, India has a legal hole. We have specific laws for clean air and clean water, but we have no "Soil Act" or "National Soil Quality Standard'' and no official rules defining what "clean soil" actually looks like.
Our current laws only track how chemicals are sold , not how much poison is left in the earth. Without a "thermometer" to measure soil health, we can't hold polluters accountable or help farmers whose land has been ruined by chemicals.
How I Researched This: This research adopts a doctrinal and analytical approach , examining constitutional provisions under Article 21, existing environmental statutes , and recent judicial precedents from the National Green Tribunal (NGT) and the Supreme Court of India .
What I Found: The study finds that the absence of soil standards facilitates "Food Toxicity." Crops might look healthy on the outside, but they are absorbing poisons from the ground and passing them on to us when we eat.
Conclusion: It is submitted that this constitutes a direct violation of the Constitutional Right to a Healthy Environment . The paper recommends the immediate legislative notification of ' Soil Quality Standards' and the integration of "One Health" monitoring to bridge the gap between agricultural productivity and public health safety , ensuring that soil remains a source of life rather than a carrier of silent toxicity .
Regulatory Vacuum: A "legal hole" or "missing rules."
Unsaturated Zone: The layer of earth between the surface and the groundwater.
Doctrinal Approach: Researching by reading and analyzing books, laws, and court cases.
Bio-accumulated: When toxins build up inside a plant or animal over time.
One Health: The idea that human health is perfectly linked to the health of animals and the environment.

Keywords: Soil bankruptcy, food toxicity, legal gap / regulatory vacuum, right to healthy environment, one health

Introduction

The Sacred Bond: Soil in the Indian Consciousness

In the Indian subcontinent, soil is not just a means for farming, it is honored as 'Dharti Maa' (Mother Earth). For many centuries, the connection between farmers and the land was based on mutual support and nourishment. Traditional farming methods depended on organic materials, mainly cow manure and natural compost, which helped preserve a sensitive ecological balance. This spiritual and physical link is acknowledged worldwide through events such as World Soil Day on December 5 [th] [1], highlighting that soil is a limited, living resource.

The Silent Shift: From 'Manure' to 'Medicine'

Nevertheless, the latter part of the 20th century signified a major change. In order to keep up with the needs of an increasing population and to save time that was previously spent on laborious tasks, the traditional "long process" of making manure was replaced with faster chemical methods.

- **The Chemical Influx:** Large amounts of artificial pesticides and synthetic fertilizers are now being introduced into the soil.
- **The Antibiotic Threat:** Contemporary animal farming depends significantly on the use of veterinary antibiotics. Because animals eliminate up to 70-90% of these medications without altering them, using "modern" animal manure as fertilizer has transformed our fields into reservoirs for Antimicrobial Resistance (AMR).

The Issue of "Bio-accumulation" and Public Health

There is a harmful misunderstanding that soil pollution remains confined below the surface. In reality, soil serves as the top layer of the earth's unsaturated zone, acting as a home for many different organisms. When this layer becomes contaminated, it causes a "Ripple Effect":

1. **Crop Uptake:** Harmful chemicals do not always destroy the crop; rather, the plant takes them in.
2. **Food Toxicity:** These harmful substances enter the human food chain via "Bioaccumulation," resulting in serious health issues, such as cancer and organ failure.
3. **Cross-Media Pollution:** Polluted soil particles can transform into gases, contributing to air pollution and demonstrating that "unhealthy soil" results in an "unhealthy environment."

The Legal Vacuum: A Constitutional Crisis

As a law student with roots in agriculture, the most alarming discovery is the absence of regulation in India. Although the

Indian legal system has set clear "Standards" for Air and Water
(via the Air Act of 1981 and the Water Act of 1974), there are no compulsory National Soil Quality Standards (NSQS).
The existing Insecticides Act of 1968 controls the sale of chemicals but does not effectively oversee their excessive use in agricultural areas. The "transfer of documents" between the Ministry of Agriculture and the Ministry of Environment has led to no one being held responsible. This study claims that the lack of soil standards constitutes a direct breach of the
Right to Life and Health guaranteed by Article 21 of the Indian Constitution. [2]

Literature Review and Research Methodology

1. Literature Review: Mapping the Toxic Trail

Current academic research on soil health in India is mainly grouped into three areas, although there is still a notable legal gap in combining these fields.

- **The Scientific Perspective (AMR and Residues):** Recent research conducted by the Indian Council of Agricultural Research (ICAR) [3] has shown that veterinary antibiotic residues, like Tetracycline, can remain in the soil for extended periods of time. Studies show that when animal waste is spread on fields without any treatment, it serves as a "horizontal gene transfer" pathway, leading to the development of antibiotic-resistant bacteria. Nevertheless, the majority of scientific papers only reach the stage of identifying the toxin and do not propose a legal solution.

- **The Health Perspective (bio-accumulation) :** Medical studies from the "Cancer Belt" in Western Uttar Pradesh and Punjab repeatedly associate elevated concentrations of heavy metals such as (Pb, Cd, As) in the soil with chronic kidney diseases and cancerous growths among the local population. Scholars such as Vandana Shiva have claimed that the "Green Revolution" prioritized immediate crop production over the long-term health of the soil, yet the legal structures needed to deal with this "trade-off" remain largely unexamined.

- **The Legal Perspective (The Regulatory Gap):** Legal experts frequently refer to the Environment (Protection) Act, 1986 [4], as "Umbrella legislation." However, a review of the Insecticides Act, 1968 [5], shows that it focuses more on commerce than on conservation. It controls the quality of the poison sold to farmers, but does not regulate the amount or the overall impact on the unsaturated zone of the soil.

The Research Gap: There is very little legal literature that suggests establishing a "National Soil Quality Standard" (NSQS) [6], akin to the National Ambient Air Quality Standards (NAAQS) [7]. This paper aims to fill that gap.

Research Methodology

To guarantee the authenticity of this research and eliminate any potential gaps, a multi-faceted approach has been employed:

1. **Doctrinal Research:** An in-depth examination of primary legal materials, such as the Indian Constitution, the Pesticides Management Bill 2023, and significant rulings from the Supreme Court and the National Green Tribunal (NGT).

2. **Qualitative Observation (The Farming Perspective):** Rooted in a farming background, this study employs "Ground-Truth" observations to examine the real-world challenges farmers encounter, such as the physically demanding process of traditional cow-dung composting compared to the time-efficient appeal of chemical pesticides.

3. **Comparative Analysis:** The research provides a brief comparison between India's soil conservation regulations and the European Union's Soil Strategy for 2030 [8], highlighting international "Best Practices" that could be applied within India.

4. **Data Synthesis:** Secondary data from government sources such as EnviStats India and the Soil Health Card Scheme are examined to emphasize the absence of "Toxicity Markers" in existing soil testing procedures.

The Triad of Regulatory Failure in India

The present decline in soil quality in India is not just a random environmental issue; it reflects a failure in laws and governance. This study highlights three particular "shortcomings" within the Indian legal framework that enable soil pollution to persist without facing any legal consequences.

1. The "Commerce-Centric" Fallacy: The Insecticides Act of 1968

The main legislation regulating pesticides in India is the Insecticides Act of 1968. Nevertheless, in terms of soil health, this Act is seriously deficient.

- **The Issue:** The Act was created to oversee the registration, production, and distribution of pesticides. Its primary purpose is to guarantee that the farmer purchases poison of a "standard" quality.

- **The Gap:** It largely overlooks the situation after the sale. There are no legal limits on the total amount of pesticide a farmer can apply to the soil.

- **Legal Argument:** Since the law emphasizes "Commerce" (the sale) instead of "Conservation" (the soil), the excessive use of chemicals goes unnoticed under the law. The law governs the bottle, but it no longer applies to the land.

2. Jurisdictional Fragmentation: The "Shuffling of Files"

A major challenge in safeguarding the earth's "unsaturated zone" is the lack of a single authority responsible for it.

- The Conflict The Ministry of Agriculture emphasizes "Yield and Productivity." Their policies frequently provide financial support for chemical fertilizers to save farmers time and accelerate crop growth.
- The Ministry of Environment emphasizes "Protection," but typically only steps in regarding industrial or forest areas, leaving agricultural land in a sort of "No-Man's Land."

- The Result When a farm is contaminated with heavy metals or veterinary antibiotics, the two ministries "pass the buck," each insisting that the other is to blame. This divided responsibility makes sure that no corrective measures are ever implemented.

3. The Lack of "National Soil Quality Standards" (NSQS)

This represents the most significant gap in Indian Environmental Law. Under the Environment (Protection) Act of 1986, India has effectively established:

1. **NAAQS:** National Ambient Air Quality Standards (used to assess air quality).

2. **Drinking Water Standards:** (for assessing Water).

- **The Missing Link:** India lacks compulsory guidelines for soil quality.

- **Legal Implication:** In the absence of a "Standard," a lawyer is unable to demonstrate "Pollution" in court. If the law does not clearly define "Clean Soil," then it is not possible to legally penalize "Dirty Soil." We have a "thermometer" for air and water, but the soil is left to "burn" without any temperature monitoring.

The Constitutional Mandate and Judicial Activism

Soil degradation is not merely an environmental concern; it poses a direct risk to the Fundamental Rights of every Indian citizen. As soil is the main source of our food and wellbeing, safeguarding it is a fundamental constitutional requirement.

1. Article 21: The Right to "Clean" Food and Health

The Supreme Court of India has broadened the interpretation of Article 21 (The Right to Life) to encompass the right to a healthy environment.

- **The Argument:** When soil is filled with veterinary antibiotics and harmful pesticides, the crops that grow in it are naturally "unhealthy."

- **The Violation:** When a citizen is compelled to eat food contaminated with bioaccumulated toxins due to the State's failure to regulate soil quality, their Right to Health is infringed. As established in the case of Francis Coralie Mullin v. The Administrator [9], the right to life encompasses more than simply "breathing"; it involves living with dignity and in good health.

2. Article 48A and 51A(g): The State's Responsibility

The Constitution also includes a "Directive Principle" and a "Fundamental Duty" related to the environment:

- **Article 48A [10]:** Requires the State to safeguard and enhance the environment.

- **Article 51A(g):** Requires each citizen to safeguard the natural environment, such as "lands and rivers."
- **The Gap:** By not establishing National Soil Quality Standards (NSQS), the State is failing to meet its required obligation outlined in Article 48A.

3. The Public Trust Doctrine

It explains that specific resources such as air, water, and soil are managed by the government on behalf of the public in a "trust" [11] arrangement.

- **The Loophole:** At present, the government classifies agricultural soil as "private property," allowing farmers to use (or damage) it as they see fit.

- **The Solution:** We need to make the case that soil should be considered a Public Trust. Even if a farmer owns the land, they do not possess the "Right to Destroy" its long-term biological health, as that soil belongs to future generations.

4. The Precautionary Principle

It's difficult to prove precisely which chemical is responsible for a specific type of cancer. This is where the Precautionary Principle [12] comes into play:

- **The Law States:** When there is a "risk of significant or irreversible harm" to the soil, the absence of complete scientific certainty should not be used by the government as a justification for postponing action.

- **Application:** Even without an established "Soil AQI," the known presence of AMR

(Superbugs) in cow dung provides sufficient grounds for the law to take action now.

The "One Health" Legal Framework (The Solution)

In order to eliminate any gaps, we need to suggest a fresh perspective on the legal system. We refer to this as the "One Health" Approach.

- A legal system in which the Ministry of Health, Ministry of Agriculture, and Ministry of Environment collaborate.
- How it works:

1. If a veterinarian gives a cow an antibiotic, it needs to be documented.
2. The record needs to be connected to the soil health card of the farm where the manure is applied.
3. This forms a "Traceable Chain" of health extending from the animal to the soil and then to humans.

Conclusion and Recommendations

1. The Synthesis of Crisis and Opportunity

The study finds that the "Silent Crisis" on Indian land results from a legal framework that has focused more on immediate agricultural gains than on ensuring the long-term survival of the environment. As this paper shows, the shift from traditional organic inputs to an unregulated use of chemical pesticides and veterinary antibiotics has led to a "Toxic Legacy." Since the law currently views soil as an inert commodity instead of a living biological system, the "Right to Health" guaranteed by Article 21 continues to remain an unfulfilled promise for Indian citizens.

2. Specific Legal Recommendations

To move from a "Regulatory Vacuum" to a strong protection system, the following changes are suggested:

1. **Notification of National Soil Quality Standards (NSQS):** The Ministry of Environment, Forest and Climate Change (MoEFCC) should use its authority under the Environment (Protection) Act, 1986, to establish required standards for soil. These standards should establish the "Upper Legal Limit" for heavy metals, microplastics, and antibiotic residues.

2. **Amendment to the Pesticides Management Bill:** The new legislation should transition from a "Sales-Only" approach to a "Life-Cycle" approach. The text should include measures related to Extended Producer Responsibility (EPR) [13], holding chemical producers financially accountable for restoring agricultural land affected by contamination.

3. **Enhancement of the Soil Health Card (SHC) Program:** The existing SHC should be required by law to incorporate "Toxicity Markers." A soil health card that focuses solely on measuring nutrients (NPK) and overlooks harmful substances (such as lead and antibiotics) is a misleading document that risks public health.

4. **Establishing a Unified "Soil Authority":** In order to stop the "passing around of documents" between different ministries, a legal entity known as the National Soil Authority (NSA) should be created. This body would be tasked with combining agricultural productivity and environmental safety within a "One Health" legal framework.

3. Final Conclusion: A Vision for the Future

The soil represents the shared heritage of all humankind, safeguarded by the current generation on behalf of future generations. Growing up on a farm, I have seen firsthand the tangible effects of land that is being "depleted" by a system that prioritizes quick results over long-term sustainability. This study suggests that the "Sacred Bond" we share with our land can only be reestablished by upholding the "Rule of Law."

In order for India to reach its objective of becoming a healthy and thriving nation by 2047, it needs to first strengthen its foundation. We need to go beyond the limited perspective of the 1968 Insecticides Act and adopt a contemporary, comprehensive approach to soil protection law. Only when the law acknowledges the "Right of the Soil to be Healthy" can we genuinely ensure the "Right of the Citizen to be Well."

References

1. Food and Agriculture Organization of the United Nations (FAO), World Soil Day: Soil and Water, a source of life, (Dec. 5, 2024).
2. INDIA CONST. art. 21.
3. Indian Council of Agricultural Research (ICAR), Annual Report: Soil Health and Nutrient Management, (202425).
4. The Environment (Protection) Act, 1986, No. 29, Acts of Parliament, 1986 (India).
5. The Insecticides Act, 1968, No. 46, Acts of Parliament, 1968 (India).
6. Ministry of Environment, Forest and Climate Change, Draft Guidelines on Soil Quality Parameters, (Comparison with International Standards, 2023).
7. Central Pollution Control Board (CPCB), National Ambient Air Quality Standards Notification, (Nov. 18, 2009).
8. European Commission, EU Soil Strategy for 2030: Reaping the benefits of healthy soils for people and nature, (Nov. 2021).
9. Francis Coralie Mullin v. The Administrator, Union Territory of Delhi, (1981) 1 SCC 608.
10. INDIA CONST. art. 48A, amended by The Constitution (Forty-second Amendment) Act, 1976.
11. M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.
12. Vellore Citizens' Welfare Forum v. Union of India, AIR 1996 SC 2715.
13. The Pesticides Management Bill, 2020, Bill No. XXII of 2020 (as introduced in Rajya Sabha).