

**Examine the major sources of environmental pollution and degradation in India. Discuss how existing legal frameworks address these challenges.**

### Question Understanding - Finding Information

- **Precise Syllabus Mapping:** Environmental Pollution and degradation.  
(GS Paper – III)
- **Marks and words limit:**
  - The marks-oriented approach to answering **(10-mark, 150-word)** questions in the question is to use **Bullet Points** (one idea per bullet point), **Brainstorming**, or a combination of both.
  - The way to score good marks in questions worth **(15 marks. 250 words)** is to use the **Heading** and **Subheading** method while writing your answers.
- **Directive words:**
  - Examine → Identify and explain key sources with reasoning
  - Discuss → Explain how laws respond, with scope and limitations
- **Focal points of the questions:**
  - Role of environmental conservation in India's development
  - Current challenges weakening conservation efforts

## Answer Writing Structure (Outline)

### Introduction Paragraph

- Major sources of pollution and environmental degradation
- Role and scope of existing legal frameworks

### Body Paragraph

#### A. Major Sources of Environmental Pollution and Degradation

➤ *Dos & Don'ts: Focus on categories, not exhaustive listing.*

- **Industrial and Energy Activities**
  - Emissions, effluents, hazardous waste
  - Coal-based power and heavy industries
- **Urbanisation and Transport**
  - Vehicular emissions and congestion
  - Solid waste, sewage and construction debris
- **Agriculture and Rural Practices**
  - Excessive fertiliser and pesticide use
  - Crop residue burning
- **Resource Extraction and Land-Use Change**
  - Mining, deforestation and infrastructure expansion
  - Wetland and coastal degradation
- **Household and Informal Sector Sources**
  - Biomass burning
  - Informal recycling and waste handling

#### B. Existing Legal Frameworks Addressing These Challenges

- **Constitutional and Policy Basis**
  - Environmental protection as a state responsibility
  - Citizen duty towards environment
- **Core Environmental Legislations**
  - Laws addressing air, water and waste pollution
  - Framework for environmental impact assessment
  - Biodiversity and wildlife protection

- **Regulatory and Institutional Mechanisms**
    - Pollution control authorities
    - Standards, monitoring and penalties
  - **Judicial Interventions**
    - Environmental jurisprudence
    - Polluter pays and precautionary principles
  - **Strengths and Limitations**
    - Comprehensive legal coverage
    - Challenges in enforcement, compliance and capacity
- ***Dos & Don'ts: Avoid technical legal sections; focus on functionality.***

### **Conclusion (max. 40 Words)**

- Synthesize information

## **Dos & Don'ts**

- **Do for Maximum Marks**
  - ✓ Use Key terms: Environmental governance, Polluter pays principle, Sustainable development
  - ✓ You can use Diagram idea: Pollution sources → Legal response → Outcomes (flowchart)
  - ✓ Categorise pollution sources logically
  - ✓ Link environmental degradation to development activities
  - ✓ Explain how laws address problems, not just name them
  - ✓ Maintain analytical and neutral tone
  - ✓ Highlight enforcement and institutional issues
- **Don't do these Common Mistakes**
  - × Do not list Acts without explanation
  - × Avoid moralistic or activist language
  - × Do not overload with case laws
  - × Avoid turning it into a GS-II governance answer
  - × Don't ignore informal and rural pollution sources

## Notes Oriented Content for Writing Answer

Environmental pollution and degradation in India are multifaceted challenges driven by rapid industrialization, urbanization, and agricultural intensification. While a robust legal framework exists, its effectiveness is often hampered by implementation gaps and emerging crises.

### Major Sources of Environmental Pollution and Degradation

- **Air Pollution (Industrial & Vehicular):** Rapid urbanization has led to a spike in automobile use and industrial activity. **Example:** Delhi consistently ranks among the world's most polluted cities due to a combination of vehicular emissions and industrial waste.
- **Agricultural Practices:** The burning of crop residue (stubble burning) and the overuse of chemical fertilizers significantly degrade air and soil quality. **Example:** Stubble burning in Punjab and Haryana creates hazardous winter smog in the Indo-Gangetic Plain.
- **Water Pollution (Untreated Sewage & Effluents):** Direct dumping of untreated domestic sewage and industrial toxic waste into rivers. **Example:** The Yamuna River in Delhi is often covered in toxic foam due to high levels of industrial effluents.
- **Waste Mismanagement:** India generates roughly 62 million tonnes of municipal solid waste annually, with only a small fraction being scientifically processed. **Example:** The Ghazipur landfill in Delhi reached a height of 65 meters (213 feet) by 2019, posing severe environmental and health risks.
- **Land Degradation & Deforestation:** Infrastructure projects and mining lead to large-scale habitat loss and soil erosion. **Example:** Extensive coastal sand mining along Indian coasts threatens marine ecosystems.

## Existing Legal Frameworks Addressing the Challenges

India has a comprehensive "umbrella" legislative structure, primarily evolved after the 1972 Stockholm Conference.

Act/Framework	Focus & Mechanisms
Water Act (1974)	Established the <b>Central and State Pollution Control Boards (CPCB/SPCBs)</b> to set and enforce water quality standards.
Air Act (1981)	Empowers boards to designate air pollution control areas and enforce emission limits for industries and vehicles.
Environment Protection Act (1986)	An <b>umbrella legislation</b> giving the Central Government sweeping powers to regulate hazardous substances and set general environmental standards.
Wildlife Protection Act (1972)	Provides legal protection for endangered species and regulates trade in wildlife products.
Forest (Conservation) Act (1980)	Restricts the diversion of forest land for non-forest purposes without central approval to prevent deforestation.
National Green Tribunal (NGT) Act (2010)	Created a specialized judicial body for the <b>expeditious disposal</b> of environmental cases (targeting a 6-month resolution).

## Challenges in the Legal Response

Despite these laws, several systemic issues persist as of 2026:

- **Implementation Deficit:** There is a significant gap between "theoretical laws" and practical ground-level enforcement due to a lack of resources and technical expertise in Pollution Control Boards.

- **Weak Penalty Structure:** Fines are often seen as "costs of doing business" rather than effective deterrents.
- **Institutional Coordination:** Overlapping jurisdictions between national and state bodies often lead to delayed action and fragmented efforts.
- **Emerging Pollutants:** Existing frameworks are still catching up with modern challenges like E-waste and microplastics.
- **Climate Transition:** New global regulations, such as the EU's Carbon Border Adjustment Mechanism (CBAM) effective in 2026, place additional pressure on India's carbon-intensive sectors.

In conclusion, India's environmental challenges are significant, stemming from its development trajectory. While the legal framework is robust on paper, its actual impact is often a result of active judicial intervention to bridge the gap between law and practice.

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