

# Environmental Law and Plastic Pollution in Faridkot, Punjab, India

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**Abstract:** *Plastic pollution has emerged as a critical environmental challenge globally, and the city of Faridkot in Punjab, India, is no exception. This research paper aims to explore the interplay between environmental law and the escalating issue of plastic pollution within Faridkot. It will examine the existing legal framework at the national and state levels relevant to plastic waste management and assess its implementation and effectiveness in addressing the specific challenges faced by Faridkot. Furthermore, the paper will investigate the sources and impacts of plastic pollution in the city, analyse the role of various stakeholders, and identify potential gaps and opportunities for strengthening legal and practical measures to mitigate this environmental crisis. By examining the local context through the lens of environmental law, this paper seeks to contribute to a more refined understanding of the problem and inform strategies for a sustainable future for Faridkot.*

**Keywords:** Plastic pollution, waste management, environment, sustainable development

## 1. Introduction

The ubiquitous presence of plastics in modern life has brought about unprecedented convenience but has simultaneously spawned a severe environmental crisis. The non-degradable nature of most conventional plastics leads to their accumulation in landfills, water bodies, and terrestrial ecosystems, causing a wide array of environmental and health problems. From the entanglement of marine life to the leaching of harmful chemicals into the soil and water, the consequences of plastic pollution are far-reaching and long-lasting.

In India, rapid urbanization and changing consumption patterns have exacerbated the problem of plastic waste generation. While national-level regulations and guidelines exist, their effective implementation at the local level remains a significant challenge.

This research focuses on Faridkot, a city in the state of Punjab, to understand the specific dynamics of plastic pollution and the role of environmental law in addressing it within this regional context. Faridkot, like many urban centres in India, grapples with increasing plastic waste due to its growing population and economic activities. Understanding the local challenges and the effectiveness of the legal framework in this specific area is crucial for developing targeted and impactful solutions.

This paper will delve into the relevant environmental laws in India, particularly the Plastic Waste Management Rules, and analyse how these regulations are being applied, enforced, and perceived in Faridkot. It will also explore the sources of plastic pollution in the city, the environmental and social impacts observed, and the roles and responsibilities of municipal authorities, industries, businesses, and individual citizens. Ultimately, this research aims to provide a comprehensive overview of the legal and practical landscape of plastic pollution management in Faridkot and to propose recommendations for enhancing its effectiveness.

## 2. Study Area

"The present study is conducted in Faridkot city which is located in the southwestern part of the state of Punjab, India. It is the headquarters of the Faridkot district and is situated approximately 40 kilometres southwest of Moga and lies in the vicinity of the Sirhind Canal."

"As per the 2011 census, Faridkot city has a population of approximately 61,751. The primary occupations in the city include agriculture, trade, and services. The literacy rate is relatively high, which could influence public understanding of environmental issues."

"Faridkot is located in a predominantly agricultural region and is influenced by the presence of the Sirhind Canal. The city has a few public parks and green spaces, which are potentially affected by plastic litter."

"The Faridkot Municipal Corporation is responsible for waste management in the city. Waste is primarily collected through a combination of door-to-door collection and communal bins and is reportedly disposed of at a designated landfill site on the outskirts of the city."

"Faridkot city presents a relevant case study due to its ongoing urbanization and the observed prevalence of plastic waste in its public spaces. Understanding the effectiveness of existing environmental laws and their implementation in this context can provide valuable insights for developing more effective strategies for plastic pollution management in similar urban centres in Punjab."

## 3. Material and Methods

### A. Data Collection:

#### Primary Data:

"A structured questionnaire was administered to a randomly selected sample of 300 residents across different wards of Faridkot city to assess their awareness of plastic pollution and

their perceptions of existing waste management systems and awareness of environment laws."

"Semi-structured interviews were conducted with four key officials from the Faridkot Municipal Council, and two representatives from local environmental NGOs, SEER (Save environment and environmental Resources) to understand the challenges and enforcement mechanisms related to plastic waste management."

"Systematic field observations were carried out twice a week for a period of four weeks across ten designated public spaces in Faridkot, including markets, residential areas, and along water bodies, to document the prevalence and types of plastic waste."

"An analysis of the Environment (Protection) Act, 1986, the Plastic Waste Management Rules, 2016 (as amended), and relevant notifications issued by the Punjab government and the Faridkot Municipal Corporation pertaining to plastic waste management was conducted."

### Secondary Data

"Data on waste generation and management in Faridkot city was obtained from the annual reports of the Punjab Pollution Control Board and the records of the Faridkot Municipal Corporation."

"Relevant academic journals, books, and research reports on plastic pollution, environmental law, and urban waste management in India and similar contexts were reviewed to provide a theoretical framework and context for the study."

### B. Data Analysis:

"Quantitative data from the questionnaires was analysed using descriptive statistics (mean, standard deviation, percentages) to determine the levels of awareness and attitudes towards plastic pollution. Chi-square tests were employed to assess the association between demographic variables and awareness levels."

"Qualitative data from the interviews and field observations were analyzed using thematic analysis to identify recurring themes related to the challenges in implementing plastic waste management regulations and the perceptions of stakeholders."

"The legal documents were analysed to identify the specific provisions related to plastic waste management, the roles and responsibilities of different authorities, and the penalties for non-compliance."

### C. Ethical Considerations:

"Prior to conducting surveys and interviews, informed consent was obtained from all participants, ensuring their voluntary participation and guaranteeing the anonymity and confidentiality of their responses."

### Environmental Law Framework in India for Plastic Waste Management

India has a comprehensive legal framework for environmental protection, with specific regulations

addressing plastic waste management. The key legislation includes:

- **The Environment (Protection) Act, 1986:** This umbrella act provides the central government with the authority to take measures to protect and improve the environment. It forms the basis for various rules and notifications related to waste management, including plastic waste.
- **The Plastic Waste Management Rules, 2016 (as amended):** These rules are the primary legislation specifically addressing plastic waste. They have undergone several amendments to strengthen their provisions. Key aspects include:
  - **Extended Producer Responsibility (EPR):** This principle makes producers, importers, and brand owners responsible for the management of plastic packaging waste. They are required to establish systems for the collection and recycling or disposal of their plastic products.
  - **Phased Ban on Single-Use Plastics:** The rules impose a ban on the manufacture, import, stocking, distribution, sale, and use of identified single-use plastic items with low utility and high littering potential. The ban has been implemented in phases, with the prohibition of certain items like plastic carry bags below a specified thickness, cutlery, plates, cups, straws, etc.
  - **Thickness Increase for Plastic Carry Bags:** The minimum thickness of plastic carry bags has been progressively increased to promote their reuse.
  - **Segregation at Source:** The rules mandate the segregation of waste at the source into different categories, including plastic waste, to facilitate proper management.
  - **Responsibilities of Local Authorities:** Urban local bodies (ULBs) and Panchayats are responsible for the collection, segregation, transportation, processing, and disposal of plastic waste within their jurisdiction. They are also tasked with preventing littering and ensuring the enforcement of the rules.
  - **Promotion of Alternatives:** The rules encourage the use of biodegradable and compostable plastics as alternatives, subject to meeting relevant Indian Standards.
  - **Solid Waste Management Rules, 2016:** While broader in scope, these rules also address the management of plastic waste as part of municipal solid waste. They emphasize waste segregation, processing, and the polluter pays principle.
  - **Directions under Section 5 of the Environment (Protection) Act, 1986:** The Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), like the Punjab Pollution Control Board (PPCB), issue directions and guidelines under this section to ensure the effective implementation of the Plastic Waste Management Rules. These directions often focus on specific aspects like EPR registration and compliance.

The Punjab State Pollution Control Board plays a crucial role in implementing and enforcing these national regulations within the state, including in cities like Faridkot. They are responsible for granting consents to operate to industries involved in plastic production and recycling, monitoring compliance with the rules, and taking action against violations.

**Observation**

"Field observations revealed a significant presence of single-use plastic items, particularly polythene bags and food wrappers, in market areas and along the Sirhind Canal. PET bottles were also commonly observed in residential areas and near commercial establishments."

"The municipal waste collection system in Faridkot primarily involves door-to-door collection in some areas and designated communal bins in others. However, instances of mixed waste disposal and inadequate segregation at the source were frequently observed."

"Littering of plastic waste was observed to be prevalent in public parks and along roadsides, particularly near food stalls and commercial areas."

"Survey results indicated a moderate level of awareness among residents regarding the environmental impacts of plastic pollution. However, understanding of specific plastic waste management rules and regulations was found to be limited."

"Interviews with municipal officials suggested challenges in the effective enforcement of plastic ban regulations due to limited resources and manpower. Field observations also indicated a continued use of banned plastic items in certain areas."

"Shopkeepers expressed concerns about the economic impact of plastic bag bans, while residents highlighted the inconvenience of not having readily available alternatives. Municipal authorities cited a lack of adequate infrastructure and public cooperation as major challenges."

**Plastic Pollution in Faridkot: Sources and Impacts**

Understanding the sources and impacts of plastic pollution in Faridkot is essential for devising effective management strategies.

**Sources of Plastic Pollution in Faridkot:**

- **Household Waste:** A significant portion of plastic waste originates from households in the form of packaging materials, single-use items, and discarded plastic products.
- **Commercial Establishments:** Shops, markets, restaurants, and other commercial entities generate substantial plastic waste through packaging, service disposables, and product waste.
- **Industrial Units:** While Faridkot may not be a major industrial hub for plastic production, industries using plastic in their processes or packaging contribute to the overall plastic waste stream. Some units might also be involved in recycling plastic waste.
- **Agricultural Activities:** The use of plastic films for mulching, packaging of fertilizers and pesticides, and discarded agricultural implements contribute to plastic pollution in the surrounding areas, which can eventually find its way into the city's environment.
- **Littering:** Improper disposal of plastic waste by individuals and lack of adequate waste management infrastructure can lead to widespread littering in public spaces, drains, and open areas.

- **Inefficient Waste Management:** Deficiencies in the collection, segregation, and processing of municipal solid waste can result in plastic waste ending up in landfills or being dumped indiscriminately.

**Impacts of Plastic Pollution in Faridkot:**

- **Environmental Degradation:** Plastic litter pollutes the city's landscape, clogs drains and sewerage systems (as highlighted in past reports), leading to waterlogging and unsanitary conditions. It also contaminates soil and water bodies, affecting local ecosystems.
- **Impact on Biodiversity:** Stray animals, including cattle, may ingest plastic waste, leading to health problems and even death. Plastic waste can also harm birds and other wildlife through entanglement.
- **Health Hazards:** The burning of plastic waste, a common practice in some areas, releases toxic fumes that can cause respiratory problems and other health issues. Microplastics, formed from the fragmentation of larger plastic items, can contaminate water and food sources, potentially posing risks to human health. Studies have found microplastics in human blood and placentas and linked chemicals in plastics to various health disorders.
- **Economic Impacts:** Plastic pollution can negatively affect the aesthetic appeal of the city, potentially impacting tourism and local businesses. Clogged drainage systems can also lead to economic losses due to flooding. The cost of cleaning up plastic waste and managing its environmental consequences also represents an economic burden.

**Implementation and Effectiveness of Environmental Law in Faridkot**

The effective implementation of environmental laws, particularly the Plastic Waste Management Rules, is crucial for tackling plastic pollution in Faridkot. However, several challenges often hinder their complete success:

- **Enforcement Challenges:** Ensuring compliance with the rules requires robust monitoring and enforcement mechanisms. Local authorities may face challenges in terms of manpower and resources to effectively monitor and penalize violations by individuals, commercial establishments, and industries.
- **Lack of Awareness and Compliance:** Public awareness about the harmful effects of plastic pollution and the provisions of the law may be limited, leading to low levels of compliance with waste segregation and responsible disposal practices.
- **Inadequate Infrastructure:** Sufficient infrastructure for the collection, segregation, transportation, and processing of plastic waste is essential. Deficiencies in this infrastructure can lead to inefficiencies in waste management and continued pollution.
- **Extended Producer Responsibility Implementation:** The effective implementation of EPR requires strong coordination between producers, brand owners, and local authorities. Challenges in establishing efficient collection and recycling systems by obligated entities can impede the success of EPR.
- **Informal Sector Involvement:** The informal sector plays a significant role in waste collection and recycling in India. Integrating this sector into the formal waste

management system in a way that ensures environmental and social safeguards is crucial but often challenging.

- Gaps in the Law: While the Plastic Waste Management Rules have been progressive, there may still be gaps in addressing emerging challenges, such as the management of microplastics and the promotion of truly sustainable alternatives.

Despite these challenges, there are also efforts being made to implement the regulations in Faridkot. The municipal authorities are responsible for waste management, and the PPCB oversees environmental compliance. Initiatives such as awareness campaigns, provision of waste bins, and attempts at source segregation may be underway. However, a comprehensive assessment is needed to determine the actual level of implementation and its effectiveness in reducing plastic pollution in the city.

### Stakeholder Roles and Responsibilities

Addressing plastic pollution in Faridkot requires the active participation and fulfillment of responsibilities by various stakeholders:

- Municipal Authorities (Urban Local Body): Responsible for the collection, segregation, transportation, processing, and disposal of municipal solid waste, including plastic waste. They also need to enforce the Plastic Waste Management Rules within their jurisdiction, promote awareness, and develop necessary infrastructure.
- Punjab Pollution Control Board (PPCB): Responsible for monitoring and enforcing environmental laws related to plastic waste management at the state level, including industries and waste processing facilities in Faridkot. They grant consents, conduct inspections, and take action against violations.
- Producers, Importers, and Brand Owners (PIBOs): Obligated under EPR to manage the plastic packaging waste they generate. This includes setting up collection systems, achieving recycling targets, and raising consumer awareness.
- Commercial Establishments and Industries: Responsible for managing their plastic waste according to the rules, ensuring proper segregation and disposal, and potentially participating in EPR schemes.
- Individual Citizens: Have a responsibility to minimize their plastic consumption, practice source segregation of waste, and dispose of plastic waste responsibly. They also play a crucial role in supporting and participating in local waste management initiatives.
- Informal Waste Sector: Waste pickers and small-scale recyclers play a vital role in collecting and processing plastic waste. Their integration into the formal system with proper training and safeguards is important.
- Non-Governmental Organizations (NGOs) and Civil Society Groups: Can play a significant role in raising awareness, advocating for better policies, and mobilizing community action against plastic pollution.

## 4. Recommendations for Strengthening Legal and Practical Measures

To effectively combat plastic pollution in Faridkot, a multi-pronged approach involving strengthened legal implementation and practical measures is required:

- 1) Enhanced Enforcement: The municipal authorities and the PPCB need to strengthen monitoring and enforcement mechanisms to ensure compliance with the Plastic Waste Management Rules by all stakeholders. This includes regular inspections, levying penalties for violations, and addressing illegal dumping.
- 2) Public Awareness and Education: Comprehensive and sustained awareness campaigns are needed to educate citizens about the harmful effects of plastic pollution, the importance of waste segregation, and their responsibilities under the law. Schools, community centers, and media can be utilized for this purpose.
- 3) Improved Waste Management Infrastructure: Investing in and upgrading the city's waste management infrastructure is crucial. This includes providing adequate waste bins for segregation at source, ensuring regular and efficient collection, establishing or improving waste processing facilities (including recycling units), and managing residual waste effectively.
- 4) Effective Implementation of EPR: The PPCB and local authorities should work proactively with PIBOs to ensure the effective implementation of EPR schemes. This may involve facilitating the establishment of collection centers, monitoring recycling efforts, and ensuring transparency in the process.
- 5) Promotion of Alternatives and Reduction of Consumption: Efforts should be made to promote the use of sustainable alternatives to single-use plastics and to encourage a reduction in overall plastic consumption through public awareness and policy measures. Local authorities could explore incentives for businesses that offer plastic-free alternatives.
- 6) Integration of the Informal Sector: The skills and experience of the informal waste sector should be recognized and integrated into the formal waste management system through training, provision of protective equipment, and fair compensation.
- 7) Local-Level Policies and Action Plans: The Faridkot Municipal Corporation, in collaboration with the PPCB, should develop a specific action plan to address plastic pollution in the city, taking into account the local context and challenges. This plan should set clear targets, timelines, and responsibilities for various stakeholders.
- 8) Research and Innovation: Encouraging research and innovation in the development of biodegradable alternatives and improved recycling technologies can contribute to long-term solutions.
- 9) Community Participation: Engaging local communities in clean-up drives, waste management initiatives, and monitoring efforts can foster a sense of ownership and responsibility.

## 5. Conclusion

Plastic pollution poses a significant environmental threat to Faridkot, impacting its landscape, ecosystems, and potentially the health of its residents. While a legal framework exists at the national and state levels to address this issue, its effective implementation in the local context faces various challenges. By understanding the sources and impacts of plastic pollution in Faridkot, analysing the roles and responsibilities of different stakeholders, and identifying gaps in the current approach, this research highlights the need for a more robust

and integrated strategy. Strengthening enforcement, raising public awareness, improving waste management infrastructure, effectively implementing EPR, and fostering community participation are crucial steps towards mitigating plastic pollution and ensuring a sustainable and healthy environment for Faridkot. Future research could focus on assessing the effectiveness of specific interventions and exploring the socio-economic aspects of plastic waste management in the city in greater detail.