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## Short Paper

# Problem Faced by Dwellers in Dehradun Due to Improper Waste Disposal

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### ARTICLE DETAILS

### ABSTRACT

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**Key words:**

Industrial Pollutant,  
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Dehradun, the capital of Uttarakhand, India, is grappling with significant environmental and public health challenges due to improper waste disposal. This study investigates the multifaceted problems faced by Dehradun's residents, focusing on health impacts, environmental degradation, and socio-economic consequences. By analyzing current waste management practices and their shortcomings, this article aims to provide a comprehensive understanding of the issue and propose potential solutions.

## 1.Introduction

Waste disposal is the process of taking apart, destroying, or storing damaged, used, or unwanted items. This includes household, commercial, and agricultural packing waste (made of glass, paper, or plastic). Disposal, which includes landfill sites for burial and dumping (Adogu et al., 2015) People need to be aware of how to dispose of household waste. It's critical that people are aware of proper waste management practices. Waste treatment and disposal facilities have been important factors for health hazards, especially post-COVID-19 pandemic. Improper waste disposal causes air, soil, and water pollution, which indirectly contributes to the greenhouse gas effect, which affects human health, the environment, and the economy (Chowdhury et al., 2022). Furthermore, the disposal of solid waste has been recognized as posing a significant environmental risk to numerous communities (Sewak, Deshpande, Rundle-Thiele, Zhao, & Anibaldi, 2021). Dehradun has witnessed substantial urban growth over the past few decades, leading to increased waste production. The city's population has risen significantly, and with it, the volume of municipal solid waste (MSW) generated. According to recent estimates, Dehradun produces approximately 400-500 metric tons of waste daily, a figure that continues to rise with urban expansion and changing consumption patterns. The Dehradun Municipal Corporation (DMC) is responsible for waste management in the city. The current system primarily involves waste collection, transportation, and disposal at designated sites. However, the infrastructure for waste segregation, recycling, and treatment is inadequate. Most of the waste is either dumped in open areas or sent to overflowing landfills, which exacerbates the problem. The Waste Management Rules established by the Indian government mandate segregation at source, recycling, and proper disposal. Despite these regulations, enforcement in Dehradun is weak. The lack of awareness among residents and insufficient facilities for waste processing contribute to the widespread practice of improper waste disposal. Improper waste disposal in Dehradun poses significant health, environmental, and socio-economic challenges. Addressing these issues requires a multifaceted approach involving improved infrastructure, regulatory enforcement, public education, and sustainable practices. By adopting these measures, Dehradun can work towards a more effective waste management system, ultimately enhancing the quality of life for its resident. . A clean environment promotes health and raises people's standards of living. For householders, garbage disposal awareness and education are crucial (Jatau, 2013). The ecosystem

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needs to be protected therefore proper trash disposal is essential. The two main causes of incorrect trash disposal are ignorance and sporadic, unplanned waste dumping. One of the main issues with human health is inadequate information about garbage disposal. Dustbins and garbage containers are essential tools for disposing of rubbish. People encounter numerous issues as a result of ignorance and a deficiency of dustbins in their homes (Kiran et al., 2015). All materials produced by human and animal activity that are thrown away or rendered worthless are considered waste.

A door-to-door collection system is widely employed in most industrialized nations, but because of administrative and financial constraints, municipalities in underdeveloped countries are only able to offer this service to a small percentage of the population. Waste is consequently deposited into openlandfill sites and dumpsites, which become sources of environmental and health risks for local residents. Numerous cities in developing nations face serious environmental degradation and health risks as a result of ill-designed municipal waste management systems. Trash and health variables are strongly linked, according to numerous research that have looked into the effects of trash dumping on the ecosystem and human health. Researchers are now heavily involved in the investigation of environmental contamination and its impact on microorganisms as a result of the findings of these investigations. The consequences of solid waste on the environment and human health of those who live close to waste dumpsites, however, have not been thoroughly studied. In the healthcare sector, healthcare waste is a serious issue (Janik Karpinska et al., 2023). Growing urbanization in developing nations causes a sharp rise in the generation of solid waste, which has detrimental effects on the environment and the socioeconomic system [1-3]. Poor trash collection services and improper disposal are the results of poor infrastructure and land use rules. Furthermore, improperly managed municipal garbage leads to a host of problems for the environment and human health, particularly in the areas surrounding dump sites. Waste dumping has a severe negative impact on impoverished urban slum populations, making them especially vulnerable [4]. The initial step in the waste management process is waste collection.

### 1.1 Objectives

It assesses their knowledge and raises awareness about different types of waste.

By modifying people's attitudes and thinking regarding waste disposal, the model can improve their practices in various waste disposal methods

To analyze the current waste management system in Dehradun.

To identify the key challenges faced by the municipal corporation and residents.

To explore the effectiveness of waste segregation, recycling, and disposal practices.

To provide recommendations for improving waste management practices in the city.

## 2. Method

This study is based on Primary and secondary method. Primary method involves used of structured questionnaire and secondary involves gathering information from published and un published sources.

## 3. Results

### 3.1 Analysis of current waste management practice

#### 3.1.1 Waste Collection and Transportation

Waste collection services in Dehradun are sporadic and inefficient, leading to accumulation of waste in public areas. Transportation infrastructure is inadequate, and waste collection vehicles are often insufficient to handle the volume of waste generated.

#### 3.1.2 Waste Segregation and Recycling

Segregation of waste at source is minimal, with most residents mixing recyclable and non-recyclable waste. The lack of effective recycling facilities means that valuable materials are lost, and the volume of waste sent to landfills increases.

#### 3.1.3 Public Awareness and Participation

Public awareness campaigns about waste segregation and disposal are limited. Many residents lack the knowledge and motivation to participate in proper waste management practices, exacerbating the problem.

### 3.2 Problems faced by dwellers in dehradun

#### 3.2.1 Health Impacts

Improper waste disposal leads to numerous health issues for Dehradun's residents. Uncontrolled dumping of waste results in the proliferation of vector-borne diseases, such as dengue fever and malaria, due to stagnant water in discarded containers. The presence of hazardous waste and untreated garbage also poses respiratory risks and can lead to long-term health complications.

#### 3.2.2 Environmental Degradation

The environmental consequences of improper waste disposal are severe. Open dumpsites emit harmful gases like methane, contributing to air pollution and climate change. Leachate from landfills contaminates groundwater sources,

affecting both drinking water quality and soil health. The visual pollution from littered streets and unmanaged waste undermines the city's aesthetic value and ecological balance.

### 3.2.3 Socio-Economic Implications

Improper waste disposal has significant socio-economic impacts. The deterioration of public spaces and infrastructure reduces property values and hampers local businesses. Additionally, the economic burden of managing waste through makeshift measures strains municipal resources. The social stigma associated with unclean neighborhoods affects community well-being and quality of life.

## 4. Proposed solution

- **Enhancing Waste Management Infrastructure** Investment in modern waste management infrastructure is crucial. This includes upgrading waste collection and transportation systems, establishing waste segregation facilities, and expanding recycling programs.
- **Strengthening Regulatory Enforcement** Enforcing waste management regulations more rigorously can improve compliance. This involves regular inspections, imposing fines for non-compliance, and incentivizing proper waste management practices.
- **Community Engagement and Education** Raising public awareness through educational campaigns and community engagement programs can foster a culture of responsible waste management. Initiatives such as waste segregation workshops and public clean-up drives can mobilize residents to take proactive measures.
- **Promoting Sustainable Practices** Encouraging sustainable practices, such as reducing waste generation and adopting eco-friendly alternatives, can alleviate the pressure on waste management systems. Government policies and incentives that support waste reduction and recycling are essential.
- **Improper waste disposal in Dehradun poses significant health, environmental, and socio-economic challenges.** Addressing these issues requires a multifaceted approach involving improved infrastructure, regulatory enforcement, public education, and sustainable practices. By adopting these measures, Dehradun can work towards a more effective waste management system, ultimately enhancing the quality of life for its resident

## 5. Conclusion

Improper waste disposal in Dehradun has significantly impacted the health, environment, socioeconomic challenges and quality of life of its residents. The challenges faced by dwellers include increased air and water pollution, clogged drainage systems leading to urban flooding, and the spread of diseases due to the accumulation of waste in public areas. Improper waste management has led to the proliferation of pests and harmful pathogens, exacerbating public health concerns, particularly in densely populated and low-income areas. The absence of effective waste segregation and recycling systems further aggravates these issues, as much of the waste ends up in open landfills, contaminating soil and water sources. Additionally, the lack of public awareness and engagement in sustainable waste management practices contributes to the ongoing problem, while limited resources and inadequate infrastructure strain the city's ability to cope with the growing waste generated by rapid urbanization. Addressing these issues requires coordinated efforts between municipal authorities, local communities, and environmental organizations. By implementing stricter waste management regulations, promoting waste segregation at the household level and investing in modern recycling and composting technologies, Dehradun can mitigate the harmful effects of improper waste disposal and work towards creating a cleaner, healthier environment for its residents.

Addressing these issues requires a multifaceted approach involving improved infrastructure, regulatory enforcement, public education, and sustainable practices. By adopting these measures, Dehradun can work towards a more effective waste management system, ultimately enhancing the quality of life for its residents

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