

## Environment Degradation in Haryana

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### ABSTRACT

*Proper disposal techniques, recycling, and composting are the primary components of waste management. Negligible attention to waste management practices may lead to environmental damage and health problems. Public opinion on solid waste management in the Indian state of Haryana is the subject of this article. It gives a quick rundown of how people are making use of public resources for garbage collection and disposal. Additionally, it emphasises the recommended actions that the government should take to ensure that household garbage is collected, segregated, and disposed of correctly.*

**Keywords:** Waste Management, Haryana, Recycling, Environment, Degradation.

### Introduction

In rural areas, the ability of a woman to care for her family is contingent on her capacity to effectively manage and make use of the natural resources that are available on the land. The majority of the time, women are the ones who supply food, fuel, and water for household purposes (such as cooking, heating, drinking, and washing). Through the process of gathering food, medicine, fuel, fodder, water, and other essentials, women engage in direct interaction with the natural environment in order to fulfil their many daily requirements. Women also gather water and manage how it is used in the community. There is a significant relationship between women and the environment due to the fact that women play a crucial role in the utilisation, management, and conservation of natural resources. Additionally, the majority of rural families are dependent on these resources for their means of subsistence. Farmers who are women are the ones who produce food and other agricultural goods. As a result of their obligations in agriculture, animal husbandry, and the household, they are required to manage the living environment on a regular basis.

Due to the fact that men are primarily responsible for providing for their families, it is only logical that women be more concerned about the devastation of the environment. They have a deep understanding that preserving the environment is essential to guaranteeing that they will be able to care for their family in the future, and they make a concerted effort to ensure that this remains the case. Time is essential because they are more concerned with and have a better understanding of the present environment in which they find themselves. In light of this, research on women and the environment that is conducted through the prism of gender carries with it an increased level of relevance. The congestion of cities, the burning of coal, the production of toxic industrial waste, the use of plastics, the contamination of indoor air, the extraction of groundwater, and the disposal of biomedical and municipal trash are all examples of human activities that contribute to the degradation of the

environment. When the value of the environment falls or is deteriorated, this is an example of environmental degradation.

One of the many places in the world where environmental degradation is a serious problem is the Indian state of Haryana. However, this is not the only place where this problem exists. It is one of the states in India that is seeing significant expansion, and one of the issues that it is facing is finding a method to strike a balance between the growth of the economy and the preservation of the environment. Inadequate waste management, industrial pollution, agricultural practices, and fast urbanization are some of the most major contributors to the environmental degradation that has occurred in Haryana. Other factors that have contributed to this degradation include rapid urbanization. One of the most major issues that the state is now facing is trash management, which has an impact on both urban and rural regions. This is one of the most significant challenges that the state is currently facing.

The pollution of the air is one of the most significant problems that has to be addressed in the state of Haryana. The state's proximity to the National Capital Region (NCR) and the growth of its own industrial sector are two of the many reasons that have contributed to the alarmingly high levels of air pollution that have been observed in the state. This information was given by the National Air Quality Monitoring Programme in the year 2022, indicating that the average annual PM<sub>2.5</sub> concentration in Haryana was 98 micrograms per cubic meter. Compared to the national standard of 40 µg/m<sup>3</sup>, which is believed to be the ideal amount, this particular value seems to be much higher. The poor quality of the air has enormous ramifications, not only for the general population's health but also for the quality of life in the state.

The water supply in the state of Haryana is being negatively impacted by a tremendous amount of strain. The following is a picture that should give rise to anxiety, as shown in the research that was conducted by the Central Ground Water Board; Within the state of Haryana, sixty percent of the groundwater resources have been used beyond their capacity. Furthermore, it was discovered that thirty percent of the groundwater samples had levels of nitrate pollution that were greater than the permissible limits. This condition not only puts the state's agricultural production in jeopardy, but it also poses risks to the health of the general population and it makes it more difficult for the state to have access to water in the long term.

The status of the economy, the state of public health, and the overall quality of life in Haryana are all strongly influenced by these environmental challenges, which are related to one another and have far-reaching effects. It is necessary to implement a comprehensive plan in order to properly address these problems. This approach should include legislative interventions, technological improvements, and active participation from the general community. This study is being conducted with the intention of making a contribution to this attempt by researching the viewpoints of the general public about waste management strategies in the state of Haryana. This research will yield insights that might be utilized to build environmental policies and programs that are more successful, and those insights will be provided by the participants.

### **Literature Review**

**Gupta (2022)** In the article that he wrote with the title "Industrial policy for village in Delhi issue and recommendation," the author emphasizes the fact that, historically speaking, all of the settlements were situated in different parts of the countryside. The progressive development of rural locations into urban settlements may be attributed to a number of factors, including physical limits, socio-economic upheavals, transformations, and movement within society. The author conducted a study in 1984 that included eight typical industrial urban towns that had the largest concentrations of industrial units at the time. Due to the fact that the findings demonstrated that the habitats of these communities were very contaminated, it is imperative that both preventive and developmental actions be taken in order to eradicate the pollution. The villages in question are referred to by their respective names: Basai Darapur, Shalimar Bagh, Haiderpur, Peeragarhi, Wazirpur, Khyala, and Rampura. During the course of this investigation, he made the unexpected discovery that between 80 and 85 percent of the industrial units were located in non-conforming locations and were causing significant pollution to the environment.

**Bhadmi (2019)** During the course of his research on the environmental impact of enterprises located in the Hoogly industrial belt, he came to the realization that this belt is home to both environmentally conscious and environmentally conscious firms. The Hoogly River is supplied with a significant quantity of water as a result of these kinds of businesses. A comprehensive analysis of the

current status of industrial transformation and the environmental impacts created by a variety of enterprises is presented in this article.

**Bentinck and Chikara (2018)** conducted research on the case, including its beginnings and the path that it is expected to take in relation to Delhi's illegal enterprises. This study investigates two villages in Delhi that have seen the establishment of businesses that are in violation of the laws put out by the government. The researchers who conducted the study are of the opinion that the degree of pollution in the nation's capital has reached a critical point as a result of industrialization. When it comes to resolving the policy issue that is associated with the transfer of industries in Delhi, there have been significant delays to be faced. There are various illegal businesses that violate the norms that are located in the metropolitan areas that are nearby. As the primary contributor to industrial pollution, this research focuses on the illegal land supply in the communities that are located nearby and in the surrounding areas.

### **Research Methodology**

- **Place of Study**

Haryana State, which is located in India, is the subject of the study. The state of Haryana is divided into 22 districts. The population of Haryana is roughly 25.35 million people, and the gender ratio is 879 females for every 1,000 men, as stated in the Census report for the year 2021 for the state of Haryana. In the year 2011, the literacy rate was around 75.55%. At a latitude of 27°39' to 30°35' North, Haryana is situated, and at a longitude of 74°28' to 77°36' East, it is situated.

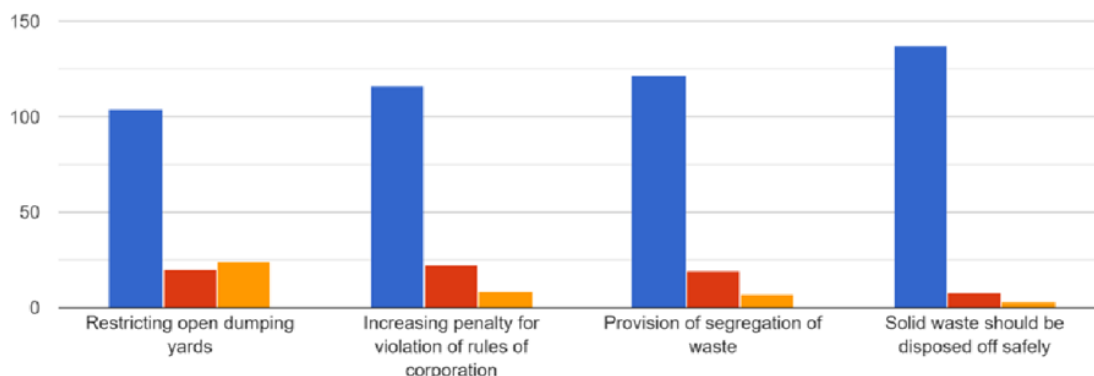
- **Methods of Data Collection and Sampling**

The primary data collection is carried out via the use of a questionnaire, which includes basic information about the respondents, such as their employment, age group, district, and the management of solid waste per household. It has been determined that the information of 150 homes from various districts in Haryana has been collected.

In order to offer a larger perspective for statistical analysis on environmental indicators, secondary data was collected from government publications and databases, such as the Central Pollution Control Board and the Swachh Bharat Mission (Urban) Dashboard. In order to make sense of the data, descriptive statistics like percentages and frequency distributions were used. The findings are provided in tabular style for clarity, and the analysis was done using statistical tools.

### **Results**

The attitudes that individuals have regarding the procedures for dealing with solid waste are shown in Figure 1. Seventy-one percent of respondents are in favour of regulating open dumping yards, ninety-four percent are unsure, and twelve point eighty-four percent reject the idea. As a result of the information that was gathered, it has been determined that 77% of the population is willing to accept the limitation of open dumping yards. One of the reasons why there is resistance to restricting outdoor dumping yards is that there are not enough government services available to handle domestic garbage from households. 7 percent of individuals are in favour of raising the punishment for violating the rules of the business, while 15.54 percent are uncertain and 6.08 percent are against the idea. 92.57 percent of respondents are in favour of safe disposal of solid waste, 2.03 percent are against it, and 5.40 percent are unsure. In the analysis of the attitudes of respondents on the waste segregation procedure, it is found that 82.4% of them are in favour, 4.71% are against it, and 12.84% are uncertain. It is because of a lack of understanding on the segregation process that there are viewpoints that are either unsure or opposed.



**Figure 1: The attitudes of individuals towards the procedures involved in the treatment of solid waste.**

Table 2 presents the many methods that individuals use in order to dispose of garbage from their homes. MCD staff are responsible for collecting and disposing of the residential garbage of 63.5% of the respondents.

**Table1: The several approaches that individuals use in order to get rid of rubbish from their homes**

Disposal Method	Percentage (%)
Collected by MCD workers	63.5%
Any Other	12.8%
Burn it	8.1%
Throw it in open space or on the street	8.1%
Bury it in the ground	8.1%

Among the respondents, only 49.3% have separate systems or receptacles for biodegradable and non-biodegradable household garbage, while the remaining 50.7% do not have such systems or receptacles. These results demonstrate that there is a worrying gap in the practices of trash segregation. The fact that more than half of the houses do not have separate receptacles is indicative of problems such as poor infrastructure, a lack of knowledge, or inadequate municipal services. In addition, 49.3 percent of respondents have reported that there are insufficient services for the collection and disposal of solid waste, which further complicates attempts to establish waste management methodologies that are successful.

There is a need for enhanced waste management services, more public knowledge, and improved access to waste segregation facilities, as shown by the almost equal split in replies. It is essential to address these concerns in order to encourage a greater number of families to adopt environmentally responsible waste management methods, which will, in turn, contribute to the reduction of environmental contamination and the promotion of a better living environment.

**Table 2: Availability of separate receptables for non-biodegradable and biodegradable household solid waste generated**

Response	Percentage (%)
Yes	49.3%
No	50.7%

**Table3: Services provided by the government in relation to the collection and disposal of solid waste**

Response	Percentage (%)
Yes	54.7%
No	45.3%

Public health and environmental integrity depend on efficient solid waste collection and disposal services provided by the government. Table 4 displays the level of satisfaction that respondents expressed about the services offered by the government. Just over half of the population feels supported in their attempts to control garbage, as 54.7% of respondents report obtaining appropriate assistance. On the other side, there seems to be a major problem with the service delivery, as 45.3% of respondents are unhappy.

Inconsistent garbage collection schedules, insufficient disposal facilities, and a lack of access to waste management resources are among the obstacles that explain why almost half of the respondents do not obtain sufficient services. Negligible waste management methods, including unlawful dumping or burning, may result from this discontent and pose significant risks to human and environmental health.

The report highlights the need of the government improving waste management infrastructure, making ensuring garbage collection services are frequent and dependable, and raising public knowledge about the need of efficient trash disposal. The government can enhance waste management procedures and make everyone's environment cleaner and healthier if it addresses these challenges.

- **Haryana's Environmental Challenges**

The Indian state of Haryana, which is located in the north, is now grappling with a number of significant environmental problems. Despite its relatively small size, the state faces difficulties that threaten the well-being of its ecosystems as well as the people that live there. Both Gurugram and Faridabad, which are two of the most polluted cities in India, are at the top of the list of locations that are experiencing significant environmental issues. There are a number of factors that contribute to pollution, including emissions from vehicles, industrial activities, and agricultural practices such as burning crop residues.

Another significant issue that Haryana faces is the contamination and scarcity of water. As a result of over extraction of groundwater resources, water tables are rapidly decreasing in a number of locations. The problem is made even more severe by the cultivation of water-intensive crops and the use of irrigation methods that are insufficient. The pollution of water bodies, such as the Yamuna River, by industrial effluents and sewage that has not been treated is an additional factor that contributes to the complexity of the water issue.

There is also a significant issue with deforestation and the deterioration of land in the state of Haryana. The proportion of land that is covered by forests in this state is among the lowest in India, with just around 3.5% of the total land area being covered by forests. This scarcity of vegetation is a contributing factor in the deterioration of soil erosion, the loss of biodiversity, and the intensification of the consequences of climate change. The state's natural ecosystems have already been depleted, but the urbanization and industrial expansion that has occurred in recent years has further reduced the amount of green spaces and agricultural lands that are available.

A complex relationship exists between the environmental challenges that Haryana is confronted with and the agricultural practices that are used in the state. The over use of chemical pesticides and fertilizers has led to the degradation of soil structures as well as the contamination of water sources. Due to the fact that the steps taken by the state to address these issues via environmentally friendly laws and practices are not always simple to put into effect, it will be necessary for the public sector, the private sector, and the government to work together in order for them to be successful.

- **Statistical Analysis**

In their study from 2021, the Central Pollution Control Board suggests that the amount of municipal solid waste (MSW) generated in Haryana on a daily basis is around 4,500 metric tons. Only forty percent of the trash that is collected is processed and treated, despite the fact that the state's garbage collection system is reported to be eighty-five percent efficient. As far as the figures are concerned, Haryana is mostly concerned with the lower stages of this hierarchy, which are collection and disposal. This indicates that there is a significant amount of room for development in terms of recycling, waste reduction, and prevention.

**The General Public's Views on Waste Management**

Procedure	In Favor (%)	Unsure (%)	Against (%)
Regulating open dumping yards	71.00	94.00	12.84
Safe disposal of solid waste	92.57	5.40	2.03
Waste segregation	82.40	12.84	4.73

There may be obstacles to perceived behavioral control (such as a lack of infrastructure) or subjective norms (such as a lack of social pressure to separate garbage) due to the low rate of actual adoption of waste management measures, despite generally good sentiments towards these activities.

#### Administration and Physical Plant

Aspect	Yes (%)	No (%)
Availability of separate receptacles for waste	49.3	50.7
Satisfaction with government waste management services	54.7	45.3

There is complete door-to-door garbage pickup in 86% of Haryana wards, according to the Swachh Bharat Mission (Urban) Dashboard (2023). Source segregation has been adopted by 60% of the urban local authorities in the state, nonetheless. According to the numbers, all three might need some work. Developing operational capacity (such offering separate receptacles) and bolstering assistance via better service delivery are two areas that may use the most improvement.

#### Effects on the Environment

- **Air Quality:** The average annual PM2.5 concentration in Haryana was 98  $\mu\text{g}/\text{m}^3$  in 2022, which is far higher than the national standard of 40  $\mu\text{g}/\text{m}^3$ , as reported by the National Air Quality Monitoring Programme.
- **Water Pollution:** Sixty percent of Haryana's groundwater resources have been overused, according to the Central Ground Water Board (2023), and thirty percent of the samples had nitrate pollution levels that were too high.
- **Soil Degradation:** Land degradation in its many manifestations affects around 28 percent of Haryana's entire geographical area, according to the Indian Council of Agricultural Research (2022).

#### Conclusion

In accordance with the statistics, individuals are expressing a favourable reaction to the concept of solid waste management. Deficiencies in infrastructure, such as those pertaining to composting, recycling, and government services, are the primary cause of the imbalance that exists in the management of solid waste. Individuals should be encouraged to segregate their solid household rubbish via the implementation of awareness initiatives through the government. It is possible for the general people to contribute to the prevention of environmental degradation and health issues by taking part in awareness programs that consist of things like surveys, seminars, and other similar activities.

#### Recommendations

Local governments should enhance waste management services by increasing the reliability and frequency of collection, particularly in areas that have been ignored. Making investments in modern equipment, defining and publishing systematic collection schedules, and other similar activities might potentially improve both the efficiency of operations and the satisfaction of residents. There has to be a stricter enforcement of the regulations regarding open dumping, with fines for those who violate them and benefits for communities who choose to adhere to them. While this is going on, the government needs to simultaneously invest money into appropriate rubbish disposal facilities in order to replace open dumping areas. Sanitary landfills and waste-to-energy plants are two examples of environmentally beneficial technologies that the government need to invest in because of the high degree of public support for the safe disposal of garbage. The establishment of recycling centers and the implementation of extended producer responsibility programs are two potential ways to reduce the amount of waste that is deposited in landfills. The battle against severe water and air pollution requires the implementation of stringent emission limits, the construction of renewable energy sources, and the implementation of greening projects in urban areas.

The development of water treatment facilities, the treatment of industrial effluent, and the establishment of regulations that regulate the extraction of groundwater are all potential methods for decreasing the pollutants that are released into the water supply. Agricultural policies that promote sustainable practices, such as crop rotation, organic farming, and techniques of soil conservation, should be implemented in order to solve the issue of land degradation. In addition, it is of the utmost importance to make investments in irrigation systems that are both water-efficient and compatible with drought-resistant crops. In conclusion, in order for these ideas to be properly implemented, the capacity of the

local government must be improved via the implementation of rigorous monitoring systems, improved interdepartmental coordination, and effective training.

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