

Prakash Chand Kandpal

# Combating Air Pollution

Comparisons between Delhi and Mexico  
City

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*This book is dedicated to my father, the late Prof. Maheshwar Dutt, a teacher, mentor, social reformer, hardcore environmentalist, true friend, and guide who taught me to respect every minuscule life present on earth and instilled in me the value of caring for nature.*

*I will always be indebted to his constant guidance and support in all my endeavors in life.*

# Introduction

The issue of air pollution in Delhi is closely associated with the model of development that policymakers have followed since independence. This model promoted urbanization, industrialization, and centralization of resources at the cost of agriculture and rural development. One of the outcomes of this is the destruction of natural resources and extreme air pollution in our big cities. The issue of air pollution also reflects the inactiveness of our executive to address environmental problems and the politics on the issue. Timely, effective, and sincere efforts are the need of the hour to address the issue of air pollution in cities like Delhi. A sufficient amount of state capacity is urgently required to make genuine progress in this direction. The present book is an attempt to examine and suggest viable solutions to the problem of air pollution in Delhi.

## The Context

High level of air pollution is one of the major environmental problems being faced by Delhi, the capital of India. The air quality in Delhi, according to a WHO survey of 1600 world cities, is the worst of any major city in the world (WHO, 2014:25). In November 2016, in an event known as the Great smog of Delhi, the air pollution spiked far beyond acceptable levels. Levels of PM<sub>2.5</sub> and PM<sub>10</sub> particulate matter hit 999 micrograms per cubic meter, while the safe limits for those pollutants are 60 and 100, respectively (Behra, 2016:6). The situation became so acute that for the first time in the Capital's history, many schools were forced to shut down their schools due to the bad air quality. A new report "Ambient Air Pollution: A Global Assessment of Exposure and Burden of Diseases" (2016) by the World Health Organization (WHO) on ambient air pollution levels shows that with very high levels of particulate matter measuring 10 microns or less, Delhi is among the most polluted cities in the world, second only to Riyadh among the big cities. The PM<sub>10</sub> concentration in Delhi's air was found to be in the 225 microgram per millimeter square range (WHO, 2016:57).

Air pollution has emerged as the main threat to the public health in Delhi. A study (2014) shows that due to air pollution Delhi is the most vulnerable city in India in terms of diseases like lung cancer, asthma, and heart diseases and ailments like newborn babies having premature and poor mental growth (TOI, 2014:7). Delhi's inhabitants inhale the most polluted air in the country. The direct impact of deteriorated air quality on human health can be assessed by the fact that everyday 23 people die in Delhi due to the polluted air (The Hindu, 2015:3). Extremely high levels of heavy metals in PM<sub>2.5</sub> were found in schools throughout Delhi (Greenpeace India, 2015). These levels may have an impact on a child's cognitive and motor development. As per the report, children are breathing contaminated air in classrooms. Deciphering Delhi's air, it revealed elevated amounts of zinc, cadmium, lead, and arsenic, surpassing not just the WHO standard but also the Indian standards, in certain instances.

The result signifies that school children are exposed to exceeding levels of heavy metals that increase the risk of cancer and developmental problems (TIO, 2016:4). A study by Maulana Azad Medical College during odd-even experiments in Delhi (1–15 January 2016) revealed that due to air pollution, 40.2 percent office-goers in Delhi are suffering from a disorder in lung-functioning. Additionally, a person in Delhi is said to have more DDT in his blood than people in most other parts of the world, the largest concentration of dust particles in Delhi's environment compared to all other Indian cities, and respiratory illnesses in Delhi are already 12 times higher than the country as a whole. The polluted air of Delhi is responsible for higher incidences of lung infections, respiratory and heart diseases. Thus, experts are suggesting an emergency pollution control plan for the Capital city.

The above examples make it clear that air pollution has emerged as the biggest environmental challenge in Delhi. Keeping in mind this fact the book is aimed at identifying the main causes and consequences of air pollution in Delhi, examining the policies and programs initiated by the Government, and exploring the reasons behind increasing air pollution despite the existing policies and programs. The second major focus of the study would be examining the politics over pollution: why the issue is being politicized and its implications or is this politics the main reason behind deteriorating air quality of the Capital?

The other important part of the book is to examine the initiatives taken by the policy makers of the Mexico City, the Capital of Mexico, which was declared the most polluted city in the world by the United Nations in 1992. The air quality had gone so bad that the Government had to declare an environmental emergency in 1992. However, the city has been successful in its fight against air pollution as compared to India which is still struggling in its fight. The 2016 air pollution data released by the WHO shows that the PM<sub>2.5</sub> and PM<sub>10</sub> in the air of the Mexican City was 20 and 42 which is moderate as compared to 122 and 229 for Delhi which is extremely high (WHO, 2016:56). The experiences of the Mexico City to defeat air pollution will provide insights on the challenges and opportunity facing other megacities of the world, especially Delhi.

The primary objective of the book is to probe into the menace of air pollution in Delhi, which has emerged as the main threat to public health and environment in the

capital city and explore the viable solutions to the problem. The study examines the existing policies and programs developed by the Government and the policy makers to address the issue, traverse the hurdles in the implementation of these policies, and reveal the politics over air pollution in Delhi. The book also explores how the most polluted cities of the world specifically the Mexico City, who has faced environmental emergencies due to air pollution in the past, have prepared themselves to combat the menace of air pollution, so that we can learn from their experiences to face the same situations in a better way.

Given this background, the book besides introduction and conclusion is divided into five chapters. The introductory chapter gives a basic introduction to the subject. It also summarizes the main idea of the book. Chapter 1 begins with a brief account of development and environmental discourse in India. The primary focus of the chapter is on developmental path followed by India in the post-independence period and its implications for the environment. It analyzes the role of the state, judiciary, and the civil society in environmental governance in India. The dynamic relationship between the three actors is discussed in detail. The chapter highlights the main hurdles in the functioning of these actors and suggests in order to make them significant players in the environmental governance in India.

A very high growth of urbanization and commercialization of activities in Delhi has resulted in a very high influx of immigrants. Vehicles, industries, and domestic wastes are the major sources of pollution in Delhi. The rapid economic growth has actually polluted the environment of Delhi and the environmental degradation is badly affecting the health and quality of the people in Delhi. Chapter 2 primarily deals with three components: socioeconomic profile of Delhi, its impact on the environment and public health, and the origin of environmentalism in Delhi.

Chapter 3 is aimed at identifying the main causes and consequences of air pollution in Delhi, examining the policies and programs initiated by the Government, and exploring the reasons behind increasing air pollution despite the existing policies and programs. The second major focus of the chapter is to examine the politics over pollution: why the issue is being politicized and its implications for deteriorating air quality of the Capital.

Chapter 4 deals with the Air Pollution management in Delhi. Air Pollution in Delhi and the National Capital Region (NCR) has been in the public eye since the mid-2010. It was in 2015–2016 that the various stakeholders such as media, civil society, and citizen's groups started taking serious note of the poor air quality in the region. This was spurred by the increase in the particulate matter (PM) concentration. But it was in the 1990s that Indian cities started turning into a toxic hell. This deterioration took place despite a spate of strong legislation on pollution control during the 1980s. This chapter deals with the air pollution management and the politics over air pollution in Delhi.

Chapter 5 intends to explore how the most polluted cities of the world specifically Mexico City, which has faced environmental emergencies due to air pollution in the past, have prepared themselves to combat the menace of air pollution and how can we learn from their experiences to face the same situations in a better way.



The concluding section summarizes the main findings of the book and also highlights the significance of the book from a policy perspective.

Delhi, the Capital City of India, is facing the acute problem of air pollution. The book is significant, as it is an endeavor to examine the main causes of air pollution as well as the politics over air pollution in Delhi, and has tried to explore the viable and sustainable solutions to the problem. It is unique as it examines the strategy and mechanisms being adopted by the other most polluted cities in the world, especially Mexico City, and how it has effectively addressed the challenge of air pollution. Based on these findings long-term planning can be chalked out for the management of air pollution in Delhi. The book is relevant not only for policy makers and national and state governments but also for researchers, environmentalists, and the common masses.

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# Chapter 1

## Development-Environmental Policy Discourse in India



The pressing issue of environmental degradation is deeply intertwined with how societies choose to develop. India like many developing nations has achieved significant technological advancements in recent decades. This progress however has come at a cost. Our ever-growing resource demands have pushed the Earth's capacity to the limit. Industrial processes and consumer habits generate pollutants at an alarming rate exceeding the environment's ability to absorb them. The consequences of this imbalance are evident on a global scale. The presence of industrial byproducts in remote locations like the Arctic (Berry, 1988) serves as a stark reminder of humanity's profound impact on the planet's chemical composition

This chapter will delve into the complex relationship between development and environmental policy in India. It begins by exploring India's post-independence development trajectory and its impact on the environment. Then it examines the policy framework that the Indian government has established to address these environmental challenges.

### Introduction

India's development path after gaining independence has been largely focused on poverty alleviation and rapid industrialization. This model has seen the implementation of various policies and projects aimed at achieving these goals. However, this focus on development has often come at the expense of environmental considerations. Large dams, sprawling industrial zones, and intensive agricultural practices have all had significant negative consequences. Water and air pollution, deforestation, and improper waste management are just some of the pressing environmental issues India faces today. Furthermore, the burden of environmental degradation often falls disproportionately on certain communities, raising concerns about environmental justice.