Emerging Public Health Concern and Air Pollution: A Case Study of Delhi’s Air Pollution Governance

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Abstract

Air Pollution is a cause of concern in the present world as it is not responsible for only deteriorating our environment but is associated with severe health risks to the human life as well. With the increasing levels of air pollution the burden of diseases on health has increased too in quite evident ways. A healthy environment is prerequisite for the well-being of all and hence handling this risk becomes crucial. Air pollution in Delhi is not a recent phenomenon rather a recurring case. There are several contributing factors to it which combines to make Delhi ‘gas chamber’. This study focuses on the management of this risk, through the governance aspect which can contribute in making Delhi's air healthy.

This is a qualitative research wherein case study method has been applied to understand air pollution governance as a means of risk management. Delhi which has multi-level governance has become the study area wherein the risk of air pollution is evermounting. This paper also investigates the case of air pollution and its governance in Delhi transversing into a public health emergency in the recent times, keeping public trust doctrine as the conceptual basis to look at governance.

National Capital Territory of Delhi can be considered as a victim of the Air Pollution and its consequent impacts. The lack of integrated approach in Delhi for risk governance makes the governance process multifaceted and a challenging task. From this study it can be stated that emerging public health concern due to air pollution and its governance, have not kept an equal pace even with the backing of legislative measures and intervention of court of law. Right to Life and Right to a Healthy Environment are being violated by increasing air pollution levels in the city time and again. As the levels of air quality continues to be poor, good governance for reducing air pollution is need of the hour.

Keywords: Air Pollution, Delhi, Governance, Public Health

Introduction

An Overview to Emerging Air Pollution and Delhi’s case

Clean air and healthy environment are a pre-requisite for well-being of people. In the modernising world, urban expansion and industrialisation has been a rapid process. With industrial expansion and rapid urbanisation, clean air in cities has become rare phenomena. Though, Air Pollution has increasingly become an environmental health hazard over the years in India and the World. The exposure to air pollution has put people at risk of several kinds, of which health risk is the most prominent one. According to a report by World Health Organisation (WHO) on an estimate 7 million people die each year prematurely as a result of air pollution throughout the globe.

Meanwhile the world in present time’s desires to achieve Sustainability, Delhi’s unsustainable and deteriorating air quality is put under the scanner, time and again. India is a signatory to the Sustainable Development Goals. Goal three which calls to promote good health and well-being has Indicators directly linking to air pollution and health.
From the thorough review of various scientific and health attributable to PM India together account for 52% of the total global deaths worldwide. The same report observes that China and risk factors attributing to deaths and has accounted for exposure to PM severely because of increasing levels of pollutants. Global Air 2017 Report, the burden of death has increased to Public Health throughout the world. According to State of Air Pollution has been evidently recognised as direct threat to health but also deadly for human life as well. The Air that the world breathes today contains varied amounts of dangerous gases such as Particulate Matter (PM), Ozone (O), Sulphur Dioxide (SO) and Nitrogen Oxide (NO). Urban Spaces today experiences high air pollution levels, which has gone forth in affecting the human health to a large extent. With each breath that goes inside the lungs, people are put at an unavoidable health risk. While due to presence of these pollutants in the air as these gases are proving to be not only injurious to health but also deadly for human life as well.

Air Pollution in India has become an issue of national importance. Many urban and rural spaces to some extent in India have highly deteriorated air quality. Delhi, being India’s capital is top in the red list. Delhi has also been consistently part of Central Pollution Control Board’s list of Non-attainment cities list with respect to ambient air pollution. This paper is based upon the research conducted upon Delhi’s case of air pollution.

Delhi is a union territory and a sub-state; the federal complexities of risk governance of air pollution here has become a tedious task. Since there’s an underlined interface between the public health concern and governance of this health risk. Risk management here is of immense importance and hence governance comes into the picture which has become significant for this study. Air pollution in Delhi is not a contemporary cause of concern but has been now deliberated for long by various agencies. Time and again various policy initiatives have been introduced by different governments and authorities to save the Delhi’s Air. This paper through its different sections tries to trace the evolution and structure of this governance process and analyses’ the same. Towards the end, various issues of concern for the air pollution governance in Delhi have been identified and few suggestions have been chalked.

Section One: Health Risk and Air Pollution

The Air that the world breathes today contains varied amounts of dangerous gases such as Particulate Matter (PM, PM), Ozone (O), Sulphur Dioxide (SO) and Nitrogen Oxide (NO). Urban Spaces today experiences high air pollution levels, which has gone forth in affecting the human health to a large extent. With each breath that goes inside the lungs, people are put at an unavoidable health risk. While due to presence of these pollutants in the air as these gases are proving to be not only injurious to health but also deadly for human life as well.

Air Pollution has been evidently recognised as direct threat to Public Health throughout the world. According to State of Global Air 2017 Report, the burden of death has increased severely because of increasing levels of pollutants. The exposure to PM has been leading to the environmental risk factors attributing to deaths and has accounted for about 4.2 million deaths and ranks fifth among all risks worldwide. The same report observes that China and India together account for 52% of the total global deaths attributable to PM.

From the thorough review of various scientific and health related studies, it has been found that there are several impacts on health of people who are exposed to Air Pollution. Health impacts however may vary for short-term and long-term exposure. The health impacts have been found ranging from cardiovascular diseases, strokes, respiratory diseases and lower respiratory infections (LRIs), chronic obstructive pulmonary disease (COPD) in the short run; and impacts on brain, lung cancer, other heart diseases and reduction in life expectancy as anticipated consequences of long-term exposure to the polluted air.

Meanwhile outdoor pollution is considered as the most prominent form of pollution but indoor air pollution has also emerged as one of the major sources of origin of pollution and a place of high exposure altogether. ‘Dual Exposure’ to ambient (outdoor) and household (indoor) pollution has been observed as more dangerous as it puts people at heightened exposure increasing their health risk directly.

Section Two: The Case of Delhi’s Air

Air pollution in Delhi is a contemporary issue but not a recent phenomenon. Over the decades the pollution levels have increased in Delhi to an extent that in 2017, Indian Medical Association declared Delhi as Public Health Emergency with Delhi government directing shut down of industries and closing down of schools. Prior to this in 2014 World Health Organisation (WHO) classed Delhi as the world’s worst city for air pollution, a claim which India disagreed on.

Tracing from the past experiences it has been found that from late 1980’s and till date situation hasn’t come under control but has rather increased manifold over the years. This is evident from the fact that in Delhi, between the years 1991-94, the average total suspended particulate matter (SPM) levels in Delhi was 375 micrograms per cubic meter (µg/m³) which was approximately 5 times high than the Air Quality Guidelines (AQG) by WHO. In the present times too, levels of Particulate Matter have been observed to have overshot the WHO standards. As per the present WHO mandates the levels of PM should be 10 µg/m³ annually but in Delhi it reached up to 120 µg/m³ for year 2016. On the other hand, the PM levels as per WHO standards should be 20 µg/m³ annually but it in Delhi reached up to 300 µg/m³ for 2016. It should also be noted here that the statistical levels of pollutants presented above for 2016 are also overshooting the national parameters set as Air Quality Index by CPCB.

There are different set of reasons for why Delhi is polluted which are directly related to sources which are contributing in making the air polluted. Delhi’s geographic location (being landlocked), its climatic conditions (wind speed, atmospheric pressure, temperature), and its concrete urban space with expanding urban sprawl makes it hotspot of pollution.
The emission source is not single but are many which all together contributes to the deterioration of the air pollution in Delhi. The issue is of grave concern as it directly impacts people’s health. According to a study conducted in Delhi (1991-94), Air Pollution is statistically significant determinant of daily deaths for all categories of deaths (except those among the very young i.e. 0 to 4 years and the very old i.e. 65 and above).\textsuperscript{13} The trends of deteriorating health conditions, reducing life expectancy and emerging health concerns are evidently presenting deadliness of air and dangers associated with the sustainability of life in Delhi. Eventually it has become a critical case to manage this crisis.

**Section Three: Air Pollution Governance in Delhi**

Air pollution governance is a comprehensive process, which has now been actively contested for more than two decades. Since there’s a significantly visible interface between air pollution and public health, it has become the responsibility of governing regimes to address it. Moreover, as per the Public Trust Doctrine, government owns the natural and resources of the country and it is the government’s responsibility to protect, prevent and maintain it from deterioration for citizens.\textsuperscript{14} Delhi is a union-territory commanded and controlled by central government appointed Lieutenant Governor. It is a sub-state as well with its own elected representatives leading the state government legislature. The third tier of governance in Delhi is composed of different local governments (municipalities) operating on the ground at municipal zones and ward levels. Governing an environmental issue of air pollution here in such a governance system becomes a complex task. This study here tries to bring out several doctrinal and explanatory aspects of the governance debate, in the following sub-sections for a broad picture of which it has been structured as:

1. Constitutional Framework
2. Air Pollution Monitoring and Air Pollution Control Regimes

**Constitutional Framework**

- Air (Prevention and Control) of Pollution Act, 1981
- Environmental Protection Act, 1986
- National Environmental Appellate Authority Act, 1997
- National Green Tribunal Act (NGT), 2010
- National Health Policy, 2017 Para Three (3.2) Preventive and Promotive Health: “Reducing indoor and outdoor air pollution”; “Health Impact Assessment”\textsuperscript{15}

**Air Pollution Monitoring and Control Regimes**

There are many Constitutional bodies and Authorities in Delhi which are engaged in the Air Pollution Monitoring and Control work the following table has been formulated to comprehend the same:

**Table 1. A broad list of major contributors to the air pollution in Delhi**

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Results and Discussion
Past to Present: Air Pollution Governance in Delhi

This section of paper brings out how over the years risk of air pollution has been governed in Delhi along with the policy plans and their implications. The multi-level governance of Delhi has tried to administer the risk of air pollution since 1980’s and till date process is on. The constitutional framework for the country evolved with the Air (Prevention and Control of Pollution) Act in 1981. Thereafter a few notifications such as Notification for National Ambient Air Quality were issued by Ministry of Environment, Forest & Climate Change. Despite of that no significant air pollution governance process was initiated in the Union Territory of Delhi, in that decade.

With rapid urbanisation and industrialisation, Delhi started expanding and various industries came up in the heart of the city, and the population grew up rapidly too.

Over time, Delhi’s air had deteriorated and this period can be marked as the beginning of an era of Environmental Jurisprudence for Delhi and India. Environmentalist lawyer M.C. Mehta has contributed enormously by starting the crusade against Air Pollution in Delhi. He had filed two key writ petitions in the Supreme Court in 1985 and later in 1996. Many of the significant initiatives that were introduced in Delhi draws their roots from these judgements which sought to improve air quality in city. While setting up of EPCA under Section 3 of the Environment (Protection) Act was ruled by Supreme Court on the hearing of same petition’s on 7th January 1998. The conversion of catalytic convertors in engines, conversion of all public and commercial vehicles operating in Delhi into CNG fuel mode and relocation of hazardous industries were few remarkable decisions. Despite of all of the decisions and mandates gaps in translation of Court’s decision into strong policy and taking stringent action has been found in the long run.

The Environmental Jurisprudence for coping up with Delhi’s Pollution came up with its own pro’s and con’s. The consecutive governments and authorities at different federal levels introduced different set of policy plans in the following times. Here on it was marked with the introduction of standards and norms as Bharat Stage norms, National Air Quality Index, formulation of Annual Action Plans, Graded Response Action Plans and Comprehensive action plan by Central Pollution Control Board, Clean Environmental Cess was levied, and initiatives like National Clean Air Programme, Odd Even vehicle rationing scheme, amongst others were introduced to ‘tackle’ and ‘manage’ the risk of air pollution more than ‘reduce’ the risk with long term constructive measures.

Meanwhile, the Air Quality has been touching low each year over the last five years or so. Policy initiative are mostly Band-Aids and not Surgery from the root cause to control the levels of pollution. Many experiments were tried and tested such as trail of Anti-Smog guns and proposals for Anti-Pollution Towers. MOEF&CC and Delhi Government had led Clean Air Campaign in Delhi initiated for a week in February 2018. A private member bill is also sought to be introduced in Parliament of India demanding Right to Clean Air as an entitlement Honorable Minister of Parliament Deepender Hooda.

All said and done, the levels of air quality now remains poor for most of the year which can be validated well from the CPCB’s data. Air Pollution has turned truly hazardous and putting up mask to aim preventive action for better health can not be the real solution. Delhi has been declared Public health emergency on various occasions, various health studies have proven it as well. Strict and constructive policy measures needs to be introduced inorder to truly manage the ever-mounting risk of Air Pollution in Delhi and its neighbourhood region and build safer and sound environment for its citizens.

Conclusion
National Capital Territory of Delhi is severely facing menace of Air Pollution and its consequent impacts. From the above sections of this paper, it’s very clear that Air Pollution Governance in Delhi is a multi-layered and multi-institutional process. The web of federal structure imposes restraints in governance of air pollution in Delhi as it obstructs the mediation of actions within inter-departmental and inter-agency system of working. Much has been done and much awaits in this crusade. Right to life and right to a healthy environment are being violated by increasing air pollution levels in the city. With which over the years the burden of diseases has increased too. It has certainly become essential to not only control the levels of pollution but also to make Delhi’s air worth living. Air Pollution governance in Delhi is an on-going issue of concern and hence its governance would also be a never-ending process till the time air quality reaches to prolonged period of satisfactory levels. As Air has become a Public Health concern, governance has to keep the pace with the increasing health risk.

Conflict of Interest: None

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4. Central Pollution Control Board. Non-attainment cities with respect to Ambient Air Quality India (2011-15).
5. Ibid.


14. Ibid.


