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**AN OVERVIEW ON AIR POLLUTION IN INDIA
AT PRESENT SCENARIO**



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ABSTRACT

Environmental conservation became a major concern. Pollution is the major threat in most of regions in the world. India is also witnessing the environmental pollution due to rapid economic growth and insufficient implementation of environmental pollution control measures. Though the measurement of air quality is complicated, there are a few pollutants which regulators keep under supervision through regular monitoring. The most observed pollutants includes PM, NO₂, SO₂, CO₂ etc. This paper aims to provide an overview of environmental pollution especially air pollution and concentration pollutants (PMs, SO₂, NO₂ etc.).

Keywords:

Environmental pollution, air pollution, trend and status.

INTRODUCTION

Environmental pollution is the contamination in the environment that cause harm or discomfort to life or that damage the environment which can come in the form of chemical substances or energy such as noise, heat or light. Pollutants can be generated by nature or manmade but they are considered contaminants when in excess of natural level. Environmental pollution is not only problem of developing countries but spread in all over the world. Pollution reaches its most serious proportions in the densely settled urban-industrial centres of the more developed countries (Kromm, 1973). The enhancement in developmental activities and rapid urbanisation and industrialisation have resulted massive stress on natural resources' and quality of life and the trend of increasing pollution in environment through deteriorating air, water and soil quality, higher level of noise, increasing vehicular emissions. The industrialisation of the developing world is creating unsustainable pollution levels and rising pollution is ranked as the sixth most significant global trend. Developing countries will suffer the most from the weather - related disasters and increase water stress caused (World Economic Forum report 2013). The solution requires a technological and intellectual revolution; an alternative route to economic prosperity that preserves resources and limits pollution to be developed before it's too late.

India has experienced rapid growth since 1991. In 2007 India was reflecting a 42.67% growth during in this 20 years (Economic survey of India, 2010-11, Ministry of Finance). In 2005 India became fifth largest polluter and remains in this position (World Resources Institute, World Economic Forum). The impact of rising toxins in the air is clearly visible as according to Lancet study in 2012, air pollution was found to be the sixth biggest killer with an annual estimated toll

of 66million. A three year analysis of the water quality in 290 rivers by the Central Pollution Control Board said about 66% of the stretches monitored had high organic pollution.

India provides a compelling setting to explore the efficacy of environmental pollution and environmental conservation regulations for several reasons. First, population of India is nearly accounts about 17% of population of the world and second is the country is experiencing rapid economic growth of about 6.4% annually in last two decades, which is placing significant pressure on the environment. Consequently, India is witnessing pollution as major threat. Recent reports suggest that India has extremely high levels of environmental pollution especially air pollution. India is the home to 13 of 20 top cities in air pollution. It is because India's air has a lot of particulate matter 2.5 (World Health Organisation).

AIR POLLUTION

The atmosphere is an insulating blanket around the earth. This evolving mixture of gases contains huge numbers of solid and liquid particles (D.S. Lal, Climatology). It is the source of the essential gases, temperature, rain, air and protect from UV rays and meteors (Ecology and Environment, P.D. Sharma). Growth in population, rapid growth in urbanisation and industrialisation, rising demands for energy and motor vehicles are worsening air pollution level (Mishra, 2003). He also added that some other factors play vital role in air pollution such as poor environmental regulation, less efficient technology of production, congested roads, and poor maintenance of vehicle. Polluted air contents one, or more, hazardous substance, pollutants or contaminant that creates a hazard to general health (health and energy, 2007). The main pollutants found in the air include, particulate matter, PAHs, lead, ground level ozone, heavy metals, SO₂, CO, NO₂, and benzene (European Public Health Alliance, 2005).

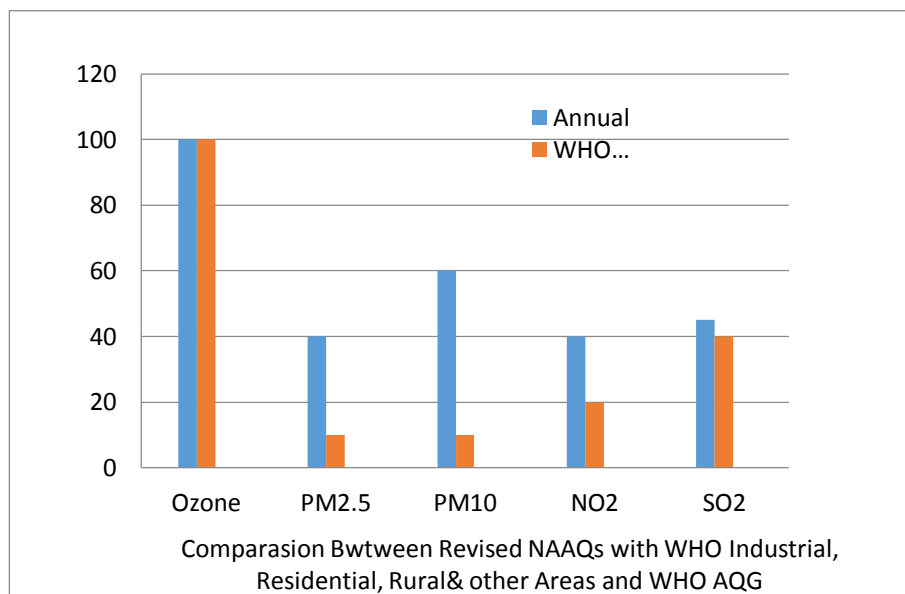
Table 1: Major air pollutants and their major impacts on human health(source-WHO)

PRINCIPAL AIR POLLUTANTS	POLLUTANTS SOURCE(S)	MAJOR EFFECTS ON HEALTH
Suspended particulate Matters(SPM, PM ₁₀ , PM _{2.5})	Mixture of solid and liquid organic and inorganic materials including sulphate nitrates, sodium chloride, carbon, ammonia, mineral dust and water	Disrupts gas exchange function of lungs and respiratory illness
Carbon dioxide(CO ₂)	Burning coal, oil and natural gases	Lower oxygen levels, causes vision defects, reduces brain and respiratory system
Carbon monoxide(CO)	Cigarettes and burning petrol, diesel and wood	Lower blood oxygen levels, increase confusion and sleepiness, slow reflexes
Sulphur dioxide(SO ₂)	Burning fossil fuels and industrial process	Only 10 minutes exposure decreases pulmonary function, causes eye irritation and respiratory inflammation e.g. coughing, infections
Nitrogen dioxide(NO ₂)	Part of PM _{2.5} and O ₃ , found in nitrate aerosols, produced by	Long term intake is toxic, reduce lung function and causes bronchitis in asthmatic children

	burning fuels, electricity generation and vehicle engines	
Ozone (O ₃)	Part of photochemical smog produced by the interaction of sunlight and air pollutants.	Increases respiratory infection (pneumonia, cold), breathing difficulties and asthma.
Lead (Pb)	O ₃ - Petrol, diesel, lead batteries, paints and colouring agents	Damages nervous system in children

AIR POLLUTION TREND IN INDIA

An Environmental performance Index report put India at the bottom of the 132 countries assessed. In some of Indian cities air has particulate matter (PM) levels five times more than safety limits (28), nearly 52% cities at critical PM₁₀ level (equal or more than 1.5 times limit). In recent times sulphur dioxide (SO₂) levels have dropped but nitrogen dioxide (NO₂) levels are rising all over India because of the rise in the number of vehicles. PM concentration fell quite steadily from 252.1 µg/m³ to 209.5 µg/m³ (1987-1990 to 2004-2010) so that SO₂ decreased from 19.4 µg/m³ to 12.2 µg/m³ (according to WHO report 2010). But according to CPCB almost half of the total cities monitored under National Air Quality Monitoring Programme (NAMP) have critical levels of PM₁₀. Air quality monitoring data clearly showed comparatively lower concentration of gaseous pollutants (SO₂, NO_x) and higher concentration of SPM and RPM in the ambient air.



REFERENCES

1. Sharma, Anuja and Roychowdhury, Anuja. (1996), "Slow Murder: The deadly story of vehicular pollution in India". Centre for Science and Environment, New Delhi.
2. Hadden, Susan G. (1987), "Statutes and Standards for Pollution Control in India". Economic and Political Weekly, 22(16)

3. Sharma H.C.(1994), "ENVIRONMENTAL POLLUTION COMPLIANCE." CBS, Publisher, New Delhi, India.
4. Sankar, U. (2004). "LAW AND INSTITUTIONS RELATING TO ENVIRONMENTAL PROTECTION IN INDIA." *The India: Environmental Management Capacity Building Technical Assistance Project, the World Bank.*
5. CPCB, (1995). "Air Pollution and Its Control." *Parivesh Newsletter, Central Pollution Control Board.* pp 20.
6. CPCB, (2000). "Air Quality Status and trends in India, National Ambient Air Monitoring Series: NAAQMS". Central Pollution Control Board, New Delhi.
7. World Bank, (1996). "India's Environment: taking stock of plans, programs and priorities. South Asia Regional Office, The World Bank, pp 319.
8. CPCB, (2010). "NATIONAL AMBIENT AIR QUALITY STATUS AND TRENDS IN INDIA". Central Pollution Control Board, Ministry of Environment and Forest, New Delhi.
9. Hosamane, Sateesh N. and Dr. Desai. (2013). "Urban AIR POLLUTION TREND IN INDIA- PRESENT SCENARIO". *International Journal of Innovative Research in Science, Engineering and Technology. Vol.2 Issue 8. pp 3738 -3747.*
10. CPCB, Air quality trends, <http://www.cpcb.nic.in/Trends.php>, 2007.
11. The World Bank report, "India: green growth- overcoming India's environment challenges to promote development". (2013). <http://www.worldbank.org/en/news/press-release/2013/07/17/india-green-growth-neccessary-and-affordable-for-india-says-new-world>.
12. Lal, D.S.(2007). "Climatology." Sharda Pustak Bhawan Publishers & Distributors, Allahabad.