

ENVIS-IITM NEWSLETTER

Indian Institute of Tropical Meteorology, Pune

Acid Rain and Atmospheric Pollution

(The project of Ministry of Environment, Forest & Climate Change, Govt. of India)

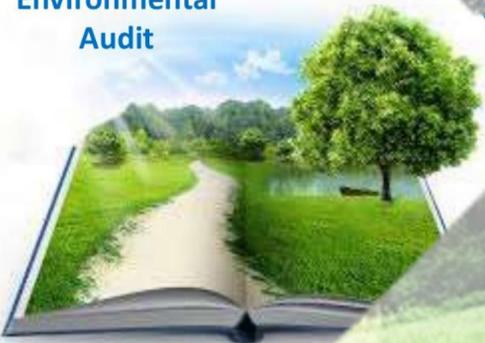


प्रदुषण मुक्त
शहर बनाएंगे!
नया साल मनाएंगे

CNG



Environmental
Audit



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EDITORIAL

Air pollution is one of the major growing problems all over the world. There is a rapid increase in urbanization in Indian cities, in particular, at the ***State Capitals*** that have become major centers for commerce, industry and education. Various contaminants continuously enter the atmosphere through natural and man-made processes and these contaminants interact with the environment to cause disease, toxicity, and environmental decay and are labeled as ***pollutant***. Air Pollutants means any solid, liquid or gaseous substance present in the atmosphere in such concentration that tend to be injurious to human beings, other living creatures, plants, property and environment.

Now a day there is a growing awareness of the linkages between human health, weather and climate. Several studies have proved that deteriorated air quality is associated with increased health problems resulting in increased hospital admissions due to cardiovascular and respiratory disorders. In winter, dense blanket of smog caused due to pollution, envelopes many Indian cities, reducing visibility to force cancellation /delay in flights. Elevated pollution level is reported to hamper overall agriculture production. In order to arrest the deterioration in air quality, Govt. of India has enacted Air (Prevention & Control of Pollution) Act in 1981. The responsibility has been further emphasized under Environment (Protection) Act, 1986. This newsletter covers major reforms adapted in India to curb the problem of air pollution in India.

G. Beig



Air Pollution in India

During past decades rapid economic growth has brought many benefits to India but at the same time it has imposed notable adverse impacts on the local and regional air quality and other environmental parameters. In recent study it has been recognized that the major problem in India which contributes 28% to the total cost of environmental damage is outdoor air pollution, followed by indoor air pollution (23%), crop lands degradation (19%), water supply, sanitation and hygiene (14%), pastures degradation (11%) and forest degradation (4%). The combustion of fossil fuel- Coal & petroleum products, Biofuels for energy generation, heating and other purposes results in the release of major greenhouse gases & air pollutants including CO₂, NO_x, CO, SO₂, particulate matter etc. in to the atmosphere altering the normal composition of air imposing adverse impacts on health and environment.

Today in most of the urban areas air pollution related health and environmental problems are more common and their increasing number is of great concern. In India, the problem of air pollution is more intense particularly in metropolitan cities like Delhi, Pune, Mumbai, Chennai, Kolkata, Hyderabad, Bangalore, etc. As a result urgent need of air quality management (AQM) is felt to improve the ambient air quality within a city or state.

Major Air Pollution Sources in India



Biomass Burning



Crop Burning



Dust from Paved & Unpaved road



Industries & Power Sector



On road Vehicles



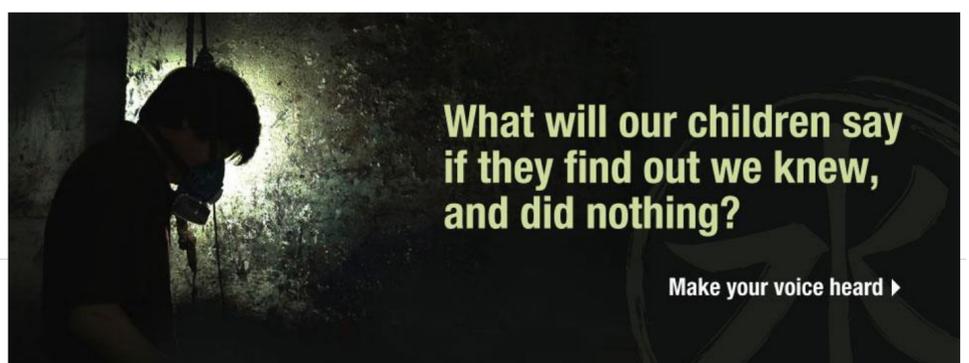
Fuel adulteration



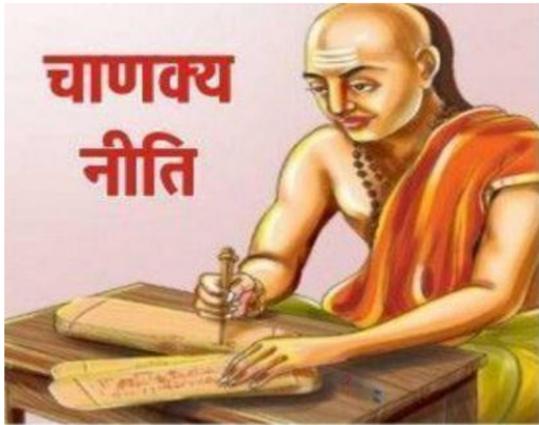
Construction Activity



Waste Management



Air Pollution Control and Legislations in India-History



In India the concern for the environmental protection is not new concept and the evidence for the same can be seen in the “Arthshastra”, an ancient Indian treatise on statecraft, economic policy and military strategy written in Sanskrit by Kautilya, the prime minister of Magadh, during the regime of Chandra Gupta Maurya, 300 B.C. Mauryan King Ashoka, Emperor Shivaji depicted compassion for environment.

There were number of laws prior to independence of India which deals with environment and air pollution control including following

1. The Oriental Gas Company Act, 1857
2. Indian Penal Code, 1860
3. Indian Explosive Act, 1884
4. The Bengal Smoke Nuisance Act, 1905
5. The Bombay Smoke Nuisance Act, 1905
6. The Indian Boilers Act, 1923
7. Indian Petroleum Act, 1934
8. The Motor Vehicles Act, 1939



Laws after independence which were indirectly deals with the air pollution control in India

- 1.The Factories Act, 1948 :** This is the first act of independent India indirectly focusing on air pollution. Chapter III, Sects. 13, 14 and 15 of this act focuses on proper ventilation, dust, fumes and humidity related to the health of labor. The amendment of 1987 has sharpened its environmental focus and expanded its application to hazardous processes.
- 2. The industrial (Development and Regulation) Act, 1957 :** This was the first act providing Power to central government to cause investigation to be made into scheduled industries or industrial undertakings. The extent was limited to the purpose of conserving any resources of national importance which are utilized in the industry along with the regulation of production and industrial development.

3. **The Mines Act, 1952** : In the act the consideration of air pollution was limited to the ventilation, actions to be taken in respect of dust fire and inflammable and noxious gases including precautions against spontaneous combustion, underground fire and coal dust.
4. **The Inflammable Substances Act, 1952** : The solitary purpose of the act was to declare certain substances to be dangerously inflammable and regularizing such substances with Petroleum Act 1934.
5. **The Atomic Energy Act, 1962**: The act was addressing only health impact and safety from the radioactive substances with the sole purpose of control over atomic energy and radioactive substances.

42nd Constitutional Amendment, 1976

Important step towards environment protection in India

In the former constitutional law of India there were few Articles including 39, 42, 47, 48 and 49 which were indirectly dealing with the subject of environmental pollution and protection. However, in the year 1976, 42nd constitutional amendment was adopted in response to the Stockholm International Conference on Human Environment in 1972 and came into effect on 3rd January, 1977. With this background India became the first country to insert an amendment into its constitution allowing the state to protect and improve the environment for safeguarding the public health, forests and wild life.

The Directive principles of State Policy (Article 48-A) 38 and Fundamental Duties (Article 51-Ag) 39 under the Constitution of India explicitly announced the national commitment to protect and improve environment and preserve air quality. Now days through judicial interpretations, the right to clean air has been identified as element of right to life under Article 21 of the Constitution. The language of the Directive Principles of State Policy (Article 47) requires not only a protectionist stance by the state but also compels the State to look for the improvement of the polluted environment. Policy statement for the amendment of pollution (1992) declares the objective of the government to integrate environmental considerations into decision makings at all levels.



Environmental pollution is an incurable disease. It can only be prevented.

— Barry Commoner —

The Air (Prevention and Control of Pollution) Act, 1981 and further development

The constitutional provision made in 1976 were backed by a number of laws-acts, rules, and notifications. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests in 1985. It has been renamed as Ministry of Environment, Forest and Climate Change in 2014, which clearly indicates government's acknowledgement to the challenge posed by climate change on countries economy and brought the term on top agenda.

The Air (Prevention and Control of Pollution) Act is the first Act in the country which directly deals with the control and prevention of air pollution. The Act was enacted under Art. 253 of the constitution to implement the decision taken at the United Nations Conference on Human Environment held at Stockholm in June 1972, in which India participated. It was established to carry out the purposes, of boards, for conferring on and assigning to such boards powers and functions relating to the matters concerned. It entrusts the power of enforcing this act to the Central Pollution Control Board (CPCB). The **Air (Prevention and Control of Pollution) Rules, 1982** defined the procedures of the meetings of the Boards and the powers entrusted to them. Later the amendment made in the Air (Prevention and Control of Pollution) Act in 1987 empowers the central and state pollution control boards to meet with grave emergencies of air pollution.

Afterwards **The Atomic Energy Act** was passed in **1982** which deals with the radioactive waste. **The Environment (Protection) act, 1986** came into force on 23rd May 1986, to provide the protection and improvement of environment. This act is serving as an umbrella act for many other rules and laws. Eg. Notification for lead free petrol and catalytic convertors for vehicles in metropolitan cities, 1995 etc. **Motor Vehicle Act, 1988**, deals with control of automobile emissions and specifies vehicular emission standards. **On 15 March 1990, India signed Basel Convention, 1989**, which is designed to reduce the movement of hazardous waste between nations, especially from developed to less developed countries indirectly helping to air pollution problem. This convention was intended to minimise the generation of toxic waste, to ensure the eco-friendly waste management as close as to the source and to assist less developed countries for waste management. **On 1 November 1993, India signed the United Nations Framework Convention on Climate Change (UNFCCC)** which is an international environmental treaty negotiated at the "Earth Summit", held in Rio de Janeiro from 3 to 14 June 1992. The objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. **In 1997 India signed Kyoto Protocol** to the United Nations Convention on Climate Change, which was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. India is categorised as operating under Article 5 paragraph 1 of the Montreal Protocol Regulation of production and consumption of ozone depleting substances. This protocol resulted into **The Ozone Depleting Substances (Regulation and Control) Rules, 2000**, which deals with prohibition on new investments with ozone depleting substances,



regulation of import, export and sale of products made with or containing ozone depleting substances along with monitoring and reporting requirements for the same. It categorised 95 ozone depleting substances in groups with their ozone depleting potential. The Ozone cell established by MoEF&CC has been given the responsibility for carrying out all tasks relating to phase out of ozone depleting substances. Ambient air quality monitoring has been made mandatory at the landfill sites including installation of landfill gas control system under **The Municipal Solid Waste (Management and Handling) Rules, 2000**. India signed **Stockholm Convention on Persistent Organic Pollutions (POPs) on 14 May 2002**. This is the global treaty to control and reduce the use of persistent organic pollutants which can remain intact in the environment for long period, accumulate in the fatty tissue of living organisms and are toxic to human health. In implementing the convention government is taking measures to eliminate or reduce the release of POPs into the environment. Government of India has published a National Missions in 2008 as a response to the multilateral negotiations in UNFCCC for climate change.

Apart from above in recent years government has taken several new initiatives to minimise the impact of air pollution at local level. They include;

- Notification of revised National Ambient Air Quality Standards for 12 health hazardous pollutants
- Formulation of regulations or statues
- Setting up of monitoring network for assessment of ambient air quality. CPCB is executing National Air Quality Monitoring Program (NAMP). The network consists of 324 operating stations covering 127 cities/towns in 16 states and 4 union territories.

MOST RECENT DEVELOPMENTS

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- India has signed **the Paris Agreement** of UNFCCC on April 22, 2016, which is the outcome of COP 21 which took place in Paris, France, during 30 November to 11 December 2015.
 - Clean India Mission (**Swatch Bharat Abhiyan**) has been launched
 - **National Air Quality index** was launched by the Prime Minister in April, 2015 starting with 10 cities
 - Regular co-ordination meetings are being held at official and ministerial level with Delhi and other State Governments within the National Capital Region (NCR) to control environmental pollution in NCR adopting air-shed approach
 - The Delhi government has proposed the **odd/even rule** wherein cars with odd-numbered registration plates would play on odd dates and those with even-numbered registration plates would do so on even dates. The idea is to reduce congestion as well as to reduce pollution resulting from vehicular emissions. The trial for the same was done during 1st to 15th January 2016 (Phase I) and 15th to 30th April 2016 (Phase II) for Delhi NCR Region.

- Incorporating cleaner production processes, setting up common pollution control facilities to control industrial pollution.
- Introduction of cleaner fuel like CNG, LPG
- Promotion of public transport.
- Government is giving high priority for public partnership in lane discipline, car-pooling, vehicle maintenance, pollution under control certification etc.
- Stringent industrial standards have been formulated and notified for public/stakeholder's comments.
- Draft Rules for handling and management of municipal waste have been notified for comments of stakeholders.
- Standards for sewage treatment plants have been notified for comments of stakeholders.
- Implementation of Bharat Stage IV norms in the 63 selected cities and Bharat Stage III norms in rest of the country.
- Relevant draft rules, including those pertaining to construction and demolition waste have been notified.
- Short-term plan has been reviewed and long-term plans have been formulated to mitigate pollution in NCR.
- Out of 2800 major industries, 920 industries have installed on-line continuous (24X7) monitoring devices.

All the developments done in India so far indicate its strong will to protect the environment from adverse impact of human activities and to adopt sustainable life style where environment and development can grow hand in hand. The same has also been reflected in the speech of Mr. Narendra Modi, the Prime Minister of India, in COP21 held during 30 November to 11 December 2015.

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