



ORIGINAL RESEARCH PAPER

Law

THE EVOLUTION OF LEGAL FRAMEWORK FOR THE PREVENTION AND CONTROL OF AIR POLLUTION

KEY WORDS:

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ABSTRACT

The concept of air pollution is not new, it has been in prevalence since time immemorial. The problem of air pollution precedes the history of mankind. It existed even before the birth of mankind but in a negligible form. After the birth of mankind, environmental pollution started increasing. In the process of growth of the human race from a simple-minded fruit and root gatherer, the hunter and the grower of food who worshipped nature in turn to a self-centered destroyer of nature and finally to the twenty-first-century human being which has in a sense becomes synonymous with deforestation, desertification and progress with pollution. In the present paper, the author has tried to cover the major incidents of air pollution across the world. The laws enforced from time to time to tackle this problem in various countries like the United States of America, European countries and India are also covered in the present paper.

INTRODUCTION

Right from the mother's womb, one needs unpolluted air to breathe, uncontaminated water to drink, nutritious food to eat and hygienic condition to live in. These elements are *sin quo non* for the sound development of human personality. In the absence of these, the overall development of man is not possible. Since time immemorial human beings are adapting themselves to surrounding the environment for their survival but rarely pay attention to its improvement, either because of their indifference towards it or their lack of ability to improve or change it or because of their ignorance of it.

Although air is in abundance in the atmosphere but it contains a lot of impurities. No doubt mother nature possesses an inherent quality of curing pollution itself but over time, there is a drastic increase in various types of contaminants entering the atmosphere of the earth by natural and man-made activities. Air pollution is not a new phenomenon. It has been around for centuries. There exist numerous incidents of pollution in the local atmosphere resulting from the use of coal in domestic fires.

HISTORICAL PERSPECTIVE OF AIR POLLUTION IN THE UNITED KINGDOM AND UNITED STATES OF AMERICA

Air Pollution in the United Kingdom and European Nations

The origin of air pollution on the earth dates back to the time when man started using firewood as a means of cooking and heating. Hippocrates mentioned air pollution in 400 BC. As time passed and society developed, humans discovered new methods for cooking and heating and finally started using coal. With the increasing use of coal, air pollution became a serious problem especially which was recognised in urban areas. It was recognized as a problem in the form of smoke pollution around 700 years ago in London during the reign of King Edward I. At last in the year 1273, the first anti-pollution law was made with the sole objective to restrict people from using coal for domestic heating. In the year 1300, another Act banning the use of coal was passed. The provision of capital punishment was also made for those defying the law. In 1866, the first paper on the health effects of air pollution was presented.

England went through a period of great industrial growth and migration between 1780 and 1830. The population in the urban areas of England grew very fast, especially between 1550 and 1820. Due to rapid industrialization and the increasing population in London, the skies were dark, full of vaporized tar and soot coming from the factories. The atmosphere above the people of London was polluted with toxic gases. The industrial revolution increased the use of coal to drive new machinery and it produced very acidic emissions as a consequence of the 'alkali works' which used the Leblanc process to produce soda. This chemical process

emitted hydrochloric gas into the atmosphere which, when mixed with water, created a new phenomenon called acid rain.

In the early 1900s the term 'smoke-fog' began to be used, which was then shortened to 'smog', and in turn become a synonym for air pollution. The first use of this term came from London in 1905. It described the smoke and fog combination that then commonly obscured visibility. This smog resulted from the sulfur dioxide, soot, and tarry materials that were being produced from the uncontrolled burning of high-sulfur coal. In the first half of the twentieth century, severe episodes in England and the United States caused thousands of deaths.

Air pollution and its effects on population health became an increasingly serious problem during the Industrial Revolution because of the reliance and the increasing need for energy relied upon by the burning of fossil fuels. As a consequence of this, during unfavourable weather conditions, urban smogs were caused. These bad smog events caused thousands of premature deaths of people like the smog of the 1950s and 1960s. Some of the events that occurred in the United Kingdom are as follows:

- i. 1306- Due to increasing air pollution, King Edward I declare a ban on burning coal in London.
- ii. 1873- Smog in London resulted in an estimated 268 deaths.
- iii. 1909- Inversions and smoke accumulations in Glasgow, Scotland affected over 1,000 persons.
- iv. The term "smog" as for smoke fog was coined by Dr. Harold Antoine DesVoeux
- v. 1952- Poisonous smog killed an estimated 4,000 people in London
- vi. 1956- Parliament enacted the Clean Air Act to reduce coal burning

Laws and Regulations for Air Pollution Control in the United Kingdom

The concern for increasing air pollution in the country led to the setting up of a Royal Commission to look into the problem of alkali pollution. Finally, the Commission made the recommendations that led to the passing of the first Alkali Act, 1863. It made the first attempts at restricting the composition of emissions with the introduction of primitive emission standards.

There was an increase in the incidents of air pollution in the 1950s and 1960s. The Government immediately responded by setting up the Beaver Committee to report on the difficulties surrounding smoke pollution. The recommendation of the committee was to introduce legislation to eliminate particulate emissions such as smoke, dust, and grit so that such conditions would not arise again. With the introduction of the Clean Air Act 1956, later

supplemented by the Clean Air Act 1968, controls were introduced to restrict the production of smoke, grit, and dust from all commercial and industrial activities not covered by Alkali Acts but also, more importantly, domestic fires as well. The Acts introduced such concepts as smoke control areas and the complete prohibition of dark smoke from chimneys.

In 1961, the United Kingdom established the world's first coordinated national air pollution monitoring network, called the National Survey. It monitored black smoke and sulphur dioxide at around 1200 sites in the United Kingdom. Over the years, several legislations and other programmes were introduced to combat and measure air quality in the United Kingdom.

Due to the introduction of cleaner fuels and technologies, and successful legislation, there has been a dramatic decline in both black smoke and sulphur dioxide concentrations. In 1987, the UK established an automatic urban monitoring network, to monitor compliance with the emerging European Commission Directive limit values on air quality. In 1992, the then Department of Environment established an Enhanced Urban Network (EUN). In 1995, all statutory and other urban monitoring was consolidated into one comprehensive programme.

The European Legislation introduced the concept of integrated pollution prevention and control, which in England and Wales is implemented by Part I of the Environment Protection Act 1990. Later the Pollution Prevention and Control Act, 1999 Regulations, and standards for emissions are made by the Secretary of the State. Provisions regarding air pollution are dealt under Part 1 of the Environment Protection Act 1990 known as "Integrated Pollution Control and Air Pollution Control by Local Authorities". One of the European Legislation provides for ambient air quality assessment and management.

Air Pollution in the United States of America

In late 1300, concern for air quality in and around cities was increasing in the United States which resulted in the enactment of local laws and regulations. In the 1980s, American power plants were releasing huge amounts of sulphur dioxide which was resulting in acid rain, damaging lakes, forests, and buildings. To control this some regressive step was taken in form of a command-and-control approach requiring scrubbers to be installed which increased the cost of production by a huge amount. When George H.W. Bush came to power in 1988, attorney Boyden Gray sought to break the impasse over acid rain and wanted to employ the marketplace approach. Many objections were raised and apprehensions were made over whether there would exist a market for emissions. The environmentalists believed that it is a channel for firms to buy their way out to pollute the environment. But ultimately all these objections were overruled by President Bush and emissions trading became a part of the Clean Air Act of 1990. It was included as part of the United States Acid Rain program in Title IV of the Act. That year saw three-million tonnes cut in acid rain emissions which resulted in a wide appreciation for the new tool.

Some events which took place are:

- i. 1881- Cities, such as Chicago and Cincinnati, enacted limited municipal smoke abatement laws and regulations to reduce smoke and ash from factories, railroads, and ships.
- ii. 1928- The United States Public Health Service began checking air pollution in eastern cities and reported that sunlight was reduced by 20 to 50 percent in New York City.
- iii. November 1939- The city of St. Louis experienced nine days of extreme smoke air pollution with near zero visibility at midday. City officials and community, business, and industry leaders developed and implemented controls and regulations; St. Louis was the

first major United States city to limit the use of soft, low-quality coal.

- iv. In the late 1940s- Serious smog incidents in Los Angeles further heightened public awareness and concern about this issue.
- v. 1948- In Donora, Pennsylvania air pollution killed 20 people and sickened 14,000 inhabitants.
- vi. November 1953- A smog incident in New York City resulted in the death of between 170 and 260 people.
- vii. 1963 and 1966- Air pollution in the New York City area, resulted in 405 and 168 deaths, respectively.

Laws and Regulations to Control Air Pollution in the United States of America

In 1955 the first legislation in the United States of America (USA) dealing with air pollution was enacted, and in 1963 the Clean Air Act was passed. Congress passed the landmark Clean Air Act in 1970 which in turn formed Environment Protection Authority (EPA). The legal authority to regulate pollution from cars and other forms of transportation. EPA and the State of California together put a national effort to reduce vehicle pollution by adopting increasingly stringent standards. Further, the United States of America adopted two kinds of standards for checking pollution:

- i. Primary Standard,
- ii. Secondary Standard.

The United States Environment Protection Agency (EPA) has promulgated six ambient standards on sulfur dioxide, particulate matter, carbon monoxides, hydrocarbons, nitrogen dioxide and photochemical oxidants. The National Ambient Air Quality Standard (NAAQS) is a ceiling in the USA for individual pollutant concentrations. That should not be exceeded anywhere in the country. Section 110 of the State Implementation Plan requires the State to prevent and control air pollutants at their source. The State Government has to submit a plan approval after a public hearing.

HISTORICAL PERSPECTIVE OF AIR POLLUTION IN INDIA

The concept of air pollution in the Indian context can be divided into the following periods namely:

- 3.1. Pre-Independence Period
- 3.1 (a) Prevention and Control of Air Pollution in Ancient and Medieval Periods
- 3.1 (b) Prevention and Control of Air Pollution during the British Period
- 3.2. Post-Independence Period

Pre-Independence Period

For the convenience of the study, the pre-independence period can be divided into the ancient period (Vedic and Post-Vedic periods) and the medieval period.

Prevention and Control of Air Pollution in Ancient and Medieval Period

In ancient India, due importance was given to cleanliness and protection of the environment. It was considered to be the essence of Vedic culture. The maintenance of a pure environment and its conservation was regarded as necessary being reflected in the daily lives of the people and was also enshrined in myth folklore, art, culture, and religion.

• Vedic Period

Hinduism which is one of the ancient religions has given importance to the different aspects of nature. There is a beautiful description of nature in 'Svetasavatra Upanishad'. In this sage praising God says:

"Yo devo agmau yo apsu yo visam bhuvanamavivesa |
Ya osadhisu yo vanaspitisu tas mai devaya namo namah | |"
That is, the God who is in the fire, who is in water, who pervades the whole universe, who is in medicines, who is in vegetation, we salute that God."

The term "environment" in the Sanskrit language means

"Paryavarna" which literally means "Pari-aavaran" which is an external covering or a thing encircling or encompassing the human existence. The Indian viewpoint viewed man and environment as a part and whole of the same thing. Rig Veda fixes the responsibility and accountability of man to the environment.

In Yajur Veda, Diraghatama Rishi in one of the Shloka explains the relationship between man and environment and things relevant from the point of view of man and environment.

- Respect for every form of living as well as non-living.
- Consumption is based on 'Tyaga'. Extreme exploitation of natural resources born on greed and profit be avoided.
- One's duty should be to perform and avoid conflict disharmony and imbalances in the ecosystem.

Vedic view on the environment is well defined in one of the verses of the Atharva Veda where three coverings of our surroundings are referred to as Chandamsi:

'Wise utilizes three elements variously which are varied, visible and full of qualities. These are water, air and plants or herbs. They exist in the world from the very beginning. They are called Chandamasi meaning covering available everything.'

Vedic religion emphasized the reverence of natural elements. The rule of Bramha, popularly recognized as 'Panchamahabhuta' ordains that every component of nature has to move towards Bramha. Indian philosophy of PanchMahabhutas explains that the five great elements –

- i. Earth,
- ii. Air,
- iii. Space,
- iv. Water and
- v. Fire (Energy)

These all elements are interconnected, and interdependent and they form the web of life. According to Panchmahabhuta, Atma (soul) moves towards Bramha, water towards the ocean, air towards the sky (vayu mandal), earth towards land and fire towards the sun. These elements are part of the environment. Indian sages have established a relationship between these five elements (Panch Mahabhutas) and five sensory organs. The human nose is related to earth, the tongue to water, eyes to the fire, the skin to air and ears to space. The relationship establishes the fact that people need to give them the same importance as they give to their sensory organs. These Five Mahabhutas are cosmic elements that create, nurture and sustain all forms of life, and after death or decay, they absorb what was created earlier. Thus, they play an important role in preserving and sustaining the environment.

Trees which are the source of clean and fresh air have also been given importance in Hindu mythology. Atharva Veda considers that various gods and goddesses reside in trees. In Narsimha Puran trees have been personified as God Brahma. In Varaha Puran and Matsya Puran, the plantation of trees has been given importance. In the Vedic era, there was the consciousness of adverse pollution effects of indiscriminate destruction of natural resources among the people. In Devi Karacham of Durga Saptasi, it has been clearly said that so long as the earth has mountains, forests, trees, plants, etc. human race will continue to survive.

Air (Vayu), according to Brahadaranyaka Upanishad, the air is the bond and thread which keeps the universe together. Vayu is also Pran (Life Sustaining Breath) and without pran nothing survives. When in about 200 BCE Charaka wrote about Vikrti (pollution) and diseases, he mentioned air and water pollution specifically as a cause of many diseases.

The Vedic seers knew the importance of air for life. They understood all about the air in the atmosphere and also about the air inside the body. Air resides in the body as life. The

concept and significance of air are highlighted in Vedic verses. Rigveda mentions 'O Air! You are our father, the protector'. Air has medicinal values 'Let the wind blow in the form of medicine and bring me welfare and happiness.' Ancient Indians, therefore, emphasized that the unpolluted, pure air is a source of good health, happiness, and long life. Vayu god is prayed to blow with its medicinal qualities.

• **Mauryan Period**

The Maurya Period was the golden period in the protection of the environment. Kautilya's Arthashastra mentions various measures taken by the then authorities for environment protection like the functional classification of forests were made, the appointment of a superintendent of forests, punishments for cutting trees, damaging forests and killing wild animals. The constitution of the eco-friendly economy has been emphasized in Arthashastra. During this period duty was imposed to protect nature and its resources as these were considered inevitable for human life.

• **Buddhist Period**

The advent of Buddhism and Jainism had taken place at the end of the Vedic period. The essence of Buddhism is non-violence, truth, love and respect for living creatures including plants and trees. Buddhism promoted compassion for animal life, plants, trees and other natural resources and considered them as God's gift to this universe which should be preserved and protected by a man. In Buddha's sermons, there are compassionate calls to show due care and loving-kindness towards all sentient creatures. He was one of the greatest environmentalists and once said,

"How astonishing it is, that a man should be so evil as to break a branch of the tree, after eating fill."

The Buddhist ethic of living is in harmony with nature. According to him, there is enough in nature for man's needs but not for his greed. The fundamental principles of Buddhism are simplicity and non-violence. The principle of non-violence under the Buddhist religion applies to all whether living or non-living bodies. The great emperor Ashoka promoted the principle of non-violence to other countries and promoted environmental protection and compassion for other living creatures.

• **Sikh Period**

Sikh religion also emphasized the protection and preservation of nature and its resources in various forms. It speaks regarding the conservation and preservation of natural wealth. In view of Guru Nanak Dev, the spirit of God is present in nature and human beings depend on nature. Guru Nanak Ji said:

Air is a vital force, water the progenitor, the vast earth the mother of all, day and night are nurses fondling all creation in their lap (Jap Ji Sahib)

Guru Granth Sahib Ji which is the holy book of Sikhs emphasizes that human beings are composed of five basic elements of nature that are earth, air, water, fire, and sky. In the Sikh religion also, a close relationship has been drawn between nature and man for the preservation and protection of nature.

Prevention and Control of Air Pollution during the British Period

India has a long history of commerce and industry. The industries in India have been spread over villages and have been dependent on raw materials easily available from nature. The then Indians never allowed it to be a burden on the natural resources, because such a burden would have led finally to the destruction of the natural environment.

British arrived in India in 1600 as a trading company known as

East India Company for the trading of goods and slowly and gradually they conquered the whole of India. The early days of British rule in India were days of plunder of natural resources. After 1858, India became officially a British colony as the British crown took control of India from the East India Company. The British crown put a Secretary of State for India in charge of India with advisory powers to Indian Council. India was divided into three administrative zones:

- i. Bengal,
- ii. Madras and
- iii. Bombay

• **Industrial Revolution and Air Pollution**

British Empire during both world wars contributed significantly to the large-scale denudation of forests. At the same time due to the rapid development of science and technology in western countries new products and items of human comforts came into existence and consequently, its effects also reached India. The development in science and technology led to the advent of the Industrial Revolution and this brought a drastic change in the relationship of man with nature. The threat of pollution of the environment was realized first in western countries which were the father of modern industrialization and civilization. However, at that time India was also almost on the threshold of a pollution era.

The industrial revolution started in 1860 in western countries. The colonial countries became the suppliers of raw materials to these countries. India was one of the biggest suppliers of raw materials to Britain. By around 1860, Britain had emerged as the world leader in deforestation, devastating its woods and the forests of many other countries for shipbuilding, iron-smelting, and farming. Their treatment of the forests reinforces the claim that 'the destructive energy of the British race all over the world' was rapidly converting forests into deserts. Due to this destructive attitude of the Britishers, the Indian handloom industry was completely destroyed and Industries was set up in many Indian cities like Kolkata, Bombay, Madras, etc. under British rule.

The laws made during British Rule in India aimed at controlling air pollution indirectly or directly followed by certain central enactments containing relevant provisions dealing with air pollution. The oldest statute dealing with air pollution in India was the Orient Gas Company Act, 1857. It contained provisions for regulating the emission of gas from the company during the course of operation and in turn resulting in pollution of air.

The Act provides that:

'Whenever any gas shall escape from any pipe laid down or set up or belonging to the said company, they shall immediately after receiving notice thereof in writing, prevent such gas from escaping, and in case the said company does not, within twenty-four hours next after service of such notice, effectively prevent the gas from escaping, wholly remove the cause of complaint, they shall for every such offence forfeit the sum of fifty rupees for each day during which the gas shall be suffered to escape, after the expiration of twenty-four hours from the service of such notice.' (Section 16)

It is to be noted that the Act had limited application with regard to the escape of gas from the company's pipes and did not provide for the application to other sources of air pollution.

Other legislations also dealt with this problem. For example, some specific provisions were introduced in the Indian Penal Code, 1860 to tackle this problem of environmental pollution. Section 278 of the code provides that, 'Whoever voluntarily vitiates the atmosphere in any place so as to make it noxious the health of persons in general dwelling or carrying on business in the neighborhood or passing along a public way, shall be punished with fine which may extend to five hundred

rupees.'

Other legislations like Indian Explosives Act, 1884 and Boilers Act, 1923 also dealt with the problem of air pollution although to a small extent. The earliest example in India is possibly the Bengal Smoke Nuisance Act, 1905, which provided abatement of nuisance from the smoke of furnace or fireplace in Calcutta at first and later the entire state of West Bengal, prescribing among other things by rules, the density of emissions in certain key areas, the time of emission and the minimum altitude of chimneys. Later on, to control the nuisance from smoke the Act was enacted in the province of Bombay known as, the Bombay Smoke Nuisance Act, 1912.

Post-Independence Period

After the Second World War industrialisation and population affected the environment in an alarming situation and indisputably led to increasing pollution. It is to be noted that pollution is not a series of unrelated problems concerning air, water, the sea, land dereliction and the like but is a single problem concerning waste, which often may be disposed of in numerous different ways. Although the problem of pollution in India can be credited to the East India Company and the Crown and necessary steps were taken in the form of legislative provisions but they failed in effectiveness with the changing time and technology.

The post-independence period can be divided into the following periods:

Period Of The 1940s And 1950s

With the dawn of independence, India stood up to achieve economic development to become self-dependent and recognized the way of industrialization and urbanization. All this resulted in adverse effects on the natural environment.

Thus, the period from 1947 to 1972 can be considered the period of continuous deterioration of the environment due to fast industrialization, urbanization, population growth and increasing poverty. The environment continued to be degraded due to deforestation, loss of wildlife, increasing air, water, soil pollution, development of slums, and occurrences of floods and droughts. Although water and sanitation were emphasized in the five-year plans and policies of the Government, pollution and the environment as such were not emphasized much. Finally, the Government of India in the year 1948-1949 appointed an Environmental Hygiene Committee which in turn recommended a comprehensive plan for water supply and sanitation facilities for ninety percent of the population. In Five Year Plans also no efforts were made to control pollution. During the initial years of independence, the main focus of the five-year plans was on increasing industrialization and fulfilling other basic needs of the growing population.

Period Of The 1960s And 1970s

All the efforts during this period were mainly focused on public health and sanitation and not on the control of pollution. As a result, the pollution level in the environment increased to an alarming level, especially in the large urban areas in the country. For the first time the concern for the preservation of the quality of life and promoting the environment along with industrialization and other developmental activities was expressed for the first time in the Fourth Five Year Plan (1969-1974), wherein it was mentioned that strictly steps should be taken to regulate pollution.

The year 1972 marks a watershed in the history of environmental management in India. During this period the twenty-fourth United Nations General Assembly convened a conference on the human environment and requested each member country to submit a report on the status of the environment within their country. As a consequence, a Committee on Human Environment under the chairmanship

of Pitambar Pant, a member of the Planning Commission, was set up to prepare India's report. Three reports were prepared by this committee and with the help of these reports, the existing status of environmental problems was examined. As a result of these reports, the Government felt the eminent necessity to establish greater coordination and integration of the environmental policies and programmes. Finally, in February 1972, a National Committee on Environmental Planning and Coordination (NCEPC) was established in the Department of Science and Technology. It was an apex advisory body in all matters relating to environment protection and improvement.

In the Fifth Five Year Plan (1974-79) it was explained that the National Committee on Environment Planning and Coordination (NCEPC) should be involved in all major industrial decisions so that environmental goals should be fully taken into account. In Sixth Five Year Plan (1980-85), an entire chapter on 'Environment and Development' was included. This chapter mainly emphasized the sound environmental and ecological principles. It was also devoted to the discussion on the problem of environmental degradation and provided environmental guidelines to be used by administrators and resource managers while formulating and implementing various programmes and policies. It laid down an institutional structure for environment management by central and state governments. It provided a good starting which addressed the degraded environmental conditions in the country.

Constitutional Provisions

The Constitutional (42nd Amendment) Act, 1976 explicitly incorporated national commitment for environmental protection and improvement. Article 48A was added to the directive principle of state policy. It declares that: "the state shall endeavor to protect and improve the environment and to safeguard the forest and wildlife of the country." A new chapter entitled Fundamental Duties, imposes a duty on every citizen "to protect and improve the natural environment including forests, lakes, rivers, and wildlife, and to have compassion for living creatures..."

Liability Under The Law Of Torts

The law of torts is a primitive law that provides legal remedies against air pollution. The doctrinal roots of the present environmental laws are found in the law of torts. Most pollution cases under tort law can be adjudicated under the categories of, Nuisance, Negligence; Strict liability; and Absolute liability. Nuisance is an unlawful interference with another's use or enjoyment or of right over or in relation to, land or damage resulting from such interference. It can be public or private. In a case compensation and an injunction prohibiting an increase in smoke from the adjacent cotton mill were granted by the court.

A common law action for negligence might be brought to prevent environmental pollution. The most important case on the point of strict liability is that of Rylands v. Fletcher, ((1868) L.R. 3 H.L. 330). It was held in this case that although the defendant is not guilty of negligence, he would be liable. The rule in Rylands v. Fletcher holds a person strictly liable when he brings or accumulates on his land something likely to cause harm if it escapes, and damage arises as a natural consequence of its escape. With the expansion of chemical-based industries in India, there is an alarming increase in the number of enterprises that store and use hazardous substances. These activities are not banned because they have great social utility (namely, the manufacture of fertilizers and pesticides). Traditionally, the doctrine of strict liability was considered adequate to regulate such hazardous enterprises. The doctrine allows for the growth of hazardous industries while ensuring that such enterprises will bear the burden of the damage they cause when a hazardous substance escapes. Shortly after the Bhopal gas leak tragedy

of 1984, the traditional doctrine was replaced by the rule of 'absolute liability', a standard stricter than strict liability. Absolute liability was first articulated by the Supreme Court and has since been adopted by Parliament. The genesis of absolute liability was the Shriram Gas Leak Case (M.C. Mehta v. Union of India, A.I.R. 1987 S.C. 1086) which was decided by the Supreme Court in December 1989. The Oleum gas leak case was an incident that occurred in Delhi. Oleum gas leaked from Shriram Food and Fertilisers Ltd. complex in Delhi. This incident took place on December 4, 1985. It occurred just one year after the Bhopal gas disaster in which a large number of persons both among the workmen and the public were affected. One person died in the incident and a few were hospitalized.

Period Of The 1980s

During the 1980s another change took place in the administration of the environment. The Government of India constituted a High Power Committee under the Chairmanship of the Deputy Chairman of the Planning Commission, Mr. N.D. Tiwari. The Committee made recommendations on administrative and legal measures for environment protection, identifying environmental pollution, land and water resource management, etc. The committee expressed the need for creating a Department of Environment at the center that could explicitly recognize the pivotal role of environmental conservation in sustainable national development based on the recommendations of the committee. As a result, the Government of India set up a Department of Environment with effect from 1 November 1980.

On 4 January 1985, the Department of Environment under the Ministry of Science and Technology was expanded into a full-fledged Ministry of Environment and Forests (MoEF) for developing a more comprehensive and effective institutional framework to respond to the growing scale of the environmental challenge. The primary concerns of the Ministry are the implementation of policies and programmes relating to the conservation of the country's natural resources including its lakes and rivers, its biodiversity, forests and wildlife, ensuring the welfare of animals, and the prevention and abatement of pollution. While implementing these policies and programmes, the Ministry is guided by the principle of sustainable development and enhancement of human well-being. On the recommendations of the Tiwari Committee, the National Committee on Environmental Planning and Coordination (NCEPC) was replaced by National Committee on Environment Planning (NCEP) in 1981. The main functions of this authority were to prepare an annual "state of environment" report, to arrange public hearings or conferences on significant environmental issues and to establish a nationwide Environmental Information and Communication system to propagate environmental awareness through mass media.

Period Of The 1990s

The Seventh Five Year Plan (1985-90) emphasized 'sustainable development in harmony with the environment'. This plan called for environmental awareness with the help of government and voluntary agencies. The other five plans did not emphasize much on the environment and particularly air. During this period the National Conservation Strategy and Policy Statement on Environment and Development, 1992 was issued which was a policy document that laid down a comprehensive agenda of action to be taken for the protection and conservation of the environment. One of the objectives of this policy was to promote clean fuels and clean technologies.

In February 1992 the Union Government published its policy for the abatement of pollution. The statement declares the objective of the Government to integrate environmental consideration into decision-making at all levels. To achieve

this goal, the statement adopts fundamental guiding principles namely:

- i. Prevention of pollution at source;
- ii. The adoption of the best available technology;
- iii. The polluter pays principle; and
- iv. Public participation in decision-making.

Period of Economic Liberalization

This period had a deep impact on the environment because, during this period, India adopted new economic policies to spur development. This period of economic liberalization with liberal Monopolies and Restrictive Trade Practices rules led to industrial growth and side by side environmental pollution. Globalization also contributed to the destruction of the environment through pollution and the clearing of vegetation cover. With the construction of companies, the emissions from manufacturing plants caused environmental pollution which further affected the health of many people followed by the construction business which destroyed the vegetation cover important for the very survival of both humans and animals. The 1995 Economic Survey of the Government of India indicated that each day the vehicles, factories, and power plants together discharge around 3000 tons of pollutants into New Delhi's air. As a consequence, allocations to prevent and control pollution were cut by 3.5 percent in five years when the government's economic liberalization policies were likely to increase the pollution problem.

Air Pollution Prevention and Control Legislations

Although since independence many steps were taken by the Government both at the center and state level to control environmental pollution. But there were no concrete provisions that particularly dealt with air pollution until 1981. Finally, in the year 1981, after securing enabling resolutions from 12 States, the Air (Prevention and Control of Pollution) Act, 1981 was enacted thereby invoking the Central Government's power under Article 253 to make law by implementing decisions taken at international conferences related to the environment. The preamble of the Act states that the Act represents an implementation of the decisions made at the United Nations Conference on the Human Environment held in Stockholm in 1972. Although it is a central statute, it provides that the executive functions under the Act are to be carried out in states by State Pollution Control Boards by the very provision of Article 258(2) of the Constitution of India, 1950. Article 258(2) requires the Central Government to compensate the states for the cost of carrying out these delegated functions.

The Act was amended in the year 1987 and major changes were made in the Act. First, the Act grants discretion to each state government to designate particular areas as 'air pollution control areas.' Second, the Act enables a magistrate to restrain an air polluter from discharging emissions (Section 22A) and empowers both the Central and State Boards to give directions to industries which if not followed, can be enforced by the board closing down the industry or withdrawing its supply of power and water (Section 31A). Third, citizens can not only sue to enforce the Act to gain compliance from the industries but can also require the board to provide the emission data needed to build a citizens' case (s. 43).

Before this Act other legislation also dealt with the problem of air pollution but to a very limited extent, in Factories Act, 1948. In this Act, provisions have been incorporated to ensure safety and avoid an accident. The Act specifies safety against explosive or inflammable dust in factories and provides that where the manufacturing process produces dust, gas, fumes or vapours of such character as may explode in the ignition, precautionary measures are to be taken for the removal or prevention of the accumulation of such dust, gas, fume or vapour (s.37). Other legislation indirectly dealing with air pollution include the Industrial (Development and

Regulation) Act, 1951, Mines and Minerals (Regulation and Development) Act, 1957.

Period Of The 2000s

During this period some concrete steps were taken to tackle the problem of air pollution.

• **National Environment Policy, 2006**

This was the comprehensive policy statement intended to mainstream environmental concerns in all developmental activities. It outlined the strategies for addressing key environmental challenges the country was facing. The major principles of the policy include the right to development and equity along with environmental standard setting and a precautionary approach.

• **National Action Plan on Climate Change (NAPCC)**

India released the National Action Plan on Climate Change (NAPCC) to mitigate and adapt to climate change on June 30, 2008. The action plan outlines many steps to be taken simultaneously advance India's development and climate change-related objectives. The National Action Plan on Climate Change (NAPCC) encompasses a wide range of measures. It focuses on eight missions like National Solar Mission, National Mission for Enhanced Energy Efficiency, Green India Mission, etc. Other incentives, like, power generation, in which the government is mandating the retirement of inefficient coal-fired power plants, renewable energy, energy efficiency, etc. were also initiated.

• **Ministry of Environment, Forest and Climate Change (MoEFCC)**

In 2014 Ministry of Environment and Forest (MoEF) was renamed as Ministry of Environment, Forest, and Climate Change which is the nodal agency of the Central Government established for planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies, programmes and legislations relating to the environmental protection at the center.

• **Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCB)**

The Air Act provides for and empowers the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCB); the agencies for the creation of programmes to control emission levels prescribe regulations for industries and related entities engaged in activities potentially hazardous to the environment. Section 16 of the Air Act sets a mandate on CPCB to maintain the desired air quality in the country and empowers it to take all necessary measures to this end.

The CPCB under the Air Act is empowered to issue guidelines and promulgate programmes aimed at monitoring emission levels in India. In November 2009 the CPCB notified the revised National Ambient Air Quality Standards (NAAQS) and prescribed the emission levels of 12 identified pollutant categories. The CPCB has established the National Ambient Air Quality Monitoring (NAMP) Network to assess air quality by using NAAQS of regions, covering more than 248 cities of the country and collecting, compiling and disseminating information on air quality.

The CPCB here is only a monitoring agency, working collectively with SPCBs, Pollution Control Committees (PCCs) and the National Environmental Engineering Research Institute (NEERI). The data generated is transmitted to the CPCB for scrutiny, analysis and compilation, with the aim to inform an Action Plan designed to address the needs of a specific region, such as, to identify the source of pollution and take necessary actions, such as relocation or withdrawal of consent of operation of pollution units.

India has set ambient air quality standards for several

pollutants. According to the rules of the Central Pollution Control Board (CPCB), the monitoring agency, the NAAQS should meet for at least 98 percent of the days in a year. They may exceed the limit only for 2 percent of the time, but not on two consecutive days of monitoring. But air-quality monitoring carried out in at least 263 cities shows that the majority do not meet standards. Further, pollution levels continue to rise in many cities, even smaller ones. According to the World Health Organization (WHO) data, 13 out of 20 of the most polluted cities are in India.

• **National Green Tribunal Act, 2010**

In the light of an increasing trend in the number of pollution accidents and disasters and rapid increase in number of cases seeking compensation for damages to human health, property and environment. It was enacted by Parliament for ensuring speedy payment of compensation to those who fall victim to pollution caused by the use of hazardous substances in industries. From July 2011 to January 2017 the total number of cases filed before NGT was 23,626 out of which 19,066 had been disposed of.

CONCLUSION

India is the second most populous country in the world after China. Recently, India replaced China and became world's most populated Country. According to the Census of India 2011, the population of India is 1,210,193,422. At the time of independence, the country's population was 342 million. The number has multiplied three-fold. Due to the increase in population, there is a continuous increase in urbanization and industrialization in a haphazard manner which in turn is creating the problem of environmental pollution. An increased number of industries and vehicles are emitting dangerous gases. Vehicular traffic is the most important source of air pollution. In the year 1950-51, the total number of registered vehicles per lakh population in India was 85 only, almost doubling the rate every decade. From 1950-51 to 1988-89, it increased almost 24 times. The total number of registered motor vehicles in India was 21,00,23,289 as of 31.03.2015. These increased numbers of vehicles that are not checked properly are contributing to the problem of smog in megacities like Delhi.

Air is one of the five essentials (air, water, heat and light) required for the survival of human beings. On daily basis, a man exhales 2200 times and inhales approximately 15 kg of air. So for a healthy life clean air is essential. But the number of people dying due to deteriorating air quality is rising every year and little is being done to deal with air pollution in India. A stupendous 51779 people are estimated to have died prematurely in 36 Indian cities due to air pollution in 1995 as against 40351 in 1991-92, a rise of 28 percent over the three years. Air pollution is the cause of 4.2 million premature deaths in the world each year. Of these 1.1 million deaths happen in India according to Global Burden of Diseases (GBD) estimates by the US-based Health Effect Institute (HEI). The rate of increase in early deaths in India is alarming. The report of the State of Global Air 2017 serves as a warning to India. India has registered an astounding 148 percent increase in early deaths. All this suggests urgent action.

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