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Solvable Air Pollution Challenges: R&D on Improved Systems

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Abstract: ***More than 660 million Indians do not meet Indian national air quality standards. Studies show that meeting these standards will extend India's average life expectancy by one year. Furthermore, if you meet the World Health Organization (WHO) international standards, life expectancy is expected to take 4.7 years. We review a wide range of empirical evidence both inside and outside India and recent materials on Delhi's recent food rationing programs and industry emissions from Gujarat and Maharashtra. Extract three lessons for effective regulatory reform: (i) ensure that regulatory data is reliable and unbiased, (ii) establish regulations that are economically efficient and provide incentives in the range of actors affected, to manipulate and evaluate new policies as scientific pathways to achieve better results. We present the possibility that market-based policy tools can address some of the problems of existing regulations in India, reduce air pollution and reduce compliance costs at the same time. State-level environmental and forest and central pollution control departments cooperating to protect the environment and state-level environmental and national pollution control departments were established. The delegation and control of these agencies is well defined and the strong link between central and state agencies is terminated. With respect to evolving strategies for air pollution prevention and management, this approach includes (i) tackling pollutants; (ii) controlling the sources at the source; And (iii) the tackle of the contaminated area. A number of laws have been enacted to implement the above strategy. In addition, various pollution prevention and control programs are being implemented. The efforts of government agencies through participation of public agencies have begun to pay dividends in terms of checking the level of air pollution.***
Keywords: India, Pollution, Regulation, Transparency, Emissions Trading, challenges and remedies

I. INTRODUCTION

There is little we can do about natural disasters and we can certainly limit our involvement in natural processes so that there is no known (short-term or long-term) harmful effect on our lives and our activities on the atmosphere. Therefore, the emission of air pollutants must be limited to minimize the adverse effects on the air environment. This is the basic philosophy of air pollution prevention and control and must be a key point in planning all pollution control strategies. Strategies should focus on determining the extent to which development can be sustained by the local environment and determining appropriate technology, design, and pollution control or remediation measures. Air pollution is now considered a serious threat to the quality of our lives and perhaps to its existence itself. Therefore, there is increasing pressure on the need to have adequate strategies for pollution control and its implementation. The Government of India is fully aware of this manifestation of many existing pollution control programs in place.
Literature reviews provide a clear picture of what has been done in a particular field in recent years, as well as a clear view of what to do in the field. This chapter analyzes the authors' views and key findings on the concept of atmospheric and atmospheric changes in photosynthetic pigments in selected plants due to industrial and transportation air pollution, which has attracted the attention of experts in the field of air pollution.

II. EFFECT OF AIR POLLUTION AND IT'S REMEDIES

A. Effect of Air Pollution in urban areas

Srinivas DSRK (1999) attempted to investigate the spatial pattern of air pollution in Delhi relative to sulfur dioxide (SO2), nitrogen oxides (NOx) and suspended particulate matter (SPM). The concentrations of suspended particulate matter exceeded the national air quality standard, which has always been the highest average of more than 380 g / m3 in many seasons in Delhi, and several strategies have been proposed to reduce air pollution in Delhi. Special atmospheric pressures for total oxidants were evaluated at four selected sites of Tiruchirapalli, studied by Ravichandran, C. et al., (2001). Concentrations of sulfur dioxide and nitrogen oxides were sampled with the total oxidizing agent and were found within the specified limits. Air pollution has forced many plants and

animals into extinction, and the rapid changes in climate have been reported by Tripathy B.D and Dwivedi A.K since air pollution sources are far from origin due to the influence of weather factors. (2002).

Verma S. S (2002) studied the formation and destruction behavior of sulfur oxides during combustion on a wide range of temperatures, and found that the conversion of sulfur dioxide to sulfur trioxide is temperature-sensitive, dependent and important. Garg, A., et al. (2002) analyzed that India's Large Point Sources (LPS) contributes significantly to carbon dioxide and sulfur dioxide emissions and is useful in making policy decisions to mitigate these pollutants and their effects. Ravindra Khaiwal, et al. (2003) reported the importance of rainfall in eliminating air pollutant standards such as SO2, NO2 and TSP, which were significantly reduced in concentrations at Shahdara in Delhi after the initial and subsequent monsoon rains.

An interesting relationship between population density and suspended particulate matter (SPM) and respirable suspended particulate matter (RSPM) concentrations was observed by Prasad Rajendra (2004) 7, which does not depend largely on local meteorology and climate, but varies from region to region Contamination. Dirt contamination from vehicles in the city of Aligarh was observed on the Kanpur road (46.44 gm / m2 / month), where Lone, PM, et al. (38.94 gm / m2 / month) and Delhi Road (34.52 gm / m2 / month) followed by Anoopshahar Road (20.10 gm / m2 / m2 / month Average dust drop rate recorded. Attri, S. D (2005) is currently paying close attention to quantifying the implications of climate change due to natural and anthropogenic sources. The rising levels of greenhouse gases are responsible for the rapid changes in the climate system.

B. Effect of Particular Matter in Urban Areas

Particulate matter (PM) is a term for solid or liquid particles dispersed in air. It comes from a variety of artificial sources, including diesel trucks, power plants, wood stoves and industrial processes. These particles are particularly harmful to human health because they can penetrate deep into the lungs. Scientific studies demonstrate the association of PM2.5 alone or with other contaminants with a range of important health effects. Literature studies related to the impact of particulate matter in urban areas are discussed below. Sivacoumar, R., et al. (2000) conducted a detailed air pollution survey at Pammal, 26 km southwest of Chennai, pointing out that the higher the particle and silica content, the healthier the people last longer. The total concentrations of airborne particulate matter and respirable dust on the roads of Indore City observed by Joshi Gunwant and Jain Chandresh (2000) show that the high concentrations of respiratory and non-respirable particulate matter exceed the maximum allowable limits. Poor road conditions and heavy vehicle movements are major contributors to the high concentrations of particulate matter that are increasing slowly due to the high rise buildings on both sides of the road in urban areas.

Sivacoumar, R., et al. (2001) explained that the various unit operations associated with stone crushing are likely to release fugitive dust and the process in which human health problems are more associated with fine particulate inhale particulate matter (PM2.5) . This study indicates that most people have respiratory diseases. It uses the existing tree-lined canyon model, which is widely known as Johnson air quality model predicted by Kulandi Samy, I. et al. (2001). Goyal P, Sidhartha (2002) studied the concentration of sulfur dioxide (SO 2) and suspended particulate matter (SPM) in Delhi. Monthly and seasonal changes in concentration and wind are analyzed. The monthly average concentration of sulfur dioxide was in the range of 16.15-34.44 mg-3, and the highest peak in winter season and seasonal seasonality were the highest according to the season. The airborne particulate samples collected by Negi, B.S., et al., (2002) in background sites located on the east coast of Thar Desert, Rajasthan, India, were analyzed by SPM and elemental compositions. SPM values in summer were 3 to 5 times higher than average.

C. Effect of Automobile Pollution

Chandrasekaran (GE, et al., 1997) investigated air quality in some areas of Bangalore City and found that other air pollutants, except lead concentrations in Bapuji Nagar, pucca road. A quick evaluation of the air quality of the city of Jaipur can be found in Das, DB, et al. (1997) to identify critical zones for developing appropriate environmental management strategies. Concentrations of SO2, NO2, and CO as gaseous pollutants were presented and analyzed for maximum concentration observed per day.

Sivacoumar R, Thanasekaran K (2000) speculated that a detailed survey of vehicle pollution in Chennai was conducted to assess the pollution contribution of the transport sector. Traffic density in the typical car category in India has been used with each emission factor together with the emission scenarios. Dayal, HV, and Nandini SN (2000) show that vehicle contamination is one of the major sources of air pollution in Bangalore City, and the parameters include suspended particulate matter, nitrogen oxides, and sulfur dioxide oxides. And sulfur dioxide are within the specified limits in all areas

Jayshree, J. (2000) attempted to identify various types of pollutants emitted by automobiles in the city of Thiruvananthapuram, and the various modes of operation of the vehicle affected the amount of pollutants emitted by them. Mondal R., et al. (2000) published a program to measure the concentration of nitrogen oxides for one year at 19 major traffic intersections in the city of Calcutta. The

results of nitrogen oxides are the minimum of winter and peak seasonal winds. Lal Shishir, Patil R.S. (2001) reported the physical and chemical fate of NOx released into the atmosphere from the vehicle, which is the main source of atmospheric NOX. As the distance from the road decreases, the level of NO decreases but the harmful NO2 concentration remains. And a possible change in the NO2 concentration as a result of the emission change.

Mahendra SP, Krishnamurthy (2003) evaluated air pollution concentrations in road traffic in Bangalore and measured air pollution concentrations of CO, NOx, SO2 and SPM simultaneously. The traffic volume at the research intersection has been at a high CO concentration, exceeding the CPCB stipulated limit, and the traffic flow near the intersection is likely to be interrupted by 'stopping' and 'ongoing' situations. India's automotive activities are contributing to the serious health and welfare effects of automobile emissions and energy instability, acidification and climate change. Badami, M.G. (2004).

Sarutk Guttikunda and Rakesh Aggarwal (2009) investigate the contribution of transport emissions to air pollution levels through monitoring data, source distribution and variance analysis of filter samples for particulates, and present ongoing analysis of air pollution monitoring and source allocation analysis Emphasized the contributions of the city of Hyderabad to the transportation sector. Jun Wu, et al. (2009) concluded that air pollution occurs due to air pollution, pre-eclampsia and early delivery at the South Coast Air Branch in California and air pollution during local pregnancy. Preeclampsia, birth of premature babies, birth of premature babies and delivery of premature babies and is associated with adverse reproductive outcomes.

D. Statutory Regulations

India is the first country to provide environmental protection provisions to the Constitution. The Constitution implements its obligations to the State to take steps to protect and improve the environment and mandates that all citizens of India protect and enhance the natural environment. In 1974, the National Pollution Control Act was adopted in 1974 when the Water (Pollution Prevention and Control) Act was enacted as a follow up to the UN Conference in Stockholm in 1972. Then the environmental laws of India came a long way. Like today, there are about 200 laws relating to health, the environment and the environment. However, there are seven laws related to environmental pollution control.

The Water (Prevention & Control of Pollution) Act, 1974; (ii) The Water (Prevention & Control of Pollution) Cess Act, 1977; (iii) The Air (Prevention & Control of Pollution) Act, 1981; (iv) The Environment (Protection) Act, 1986; (v) The Motor Vehicles Act, 1988; (vi) The Public Liability Insurance Act, 1991; and (vii) The National Environmental Tribunal Act, 1995.

The Government has formulated several rules, established many agencies and developed an administrative mechanism for implementation of these Acts.

E. Administrative Structure for Environmental Protection

The administrative structure of India includes the federal government and the state or provincial governments. The powers and administrative controls on various central and state entities are well defined in the Indian Constitution. There is a strong link between the central and state governments for the smooth operation of the government and for the enforcement of various laws and laws. The link between central and provincial governments is complementary to environmental pollution control.

The CPCB was created at the federal level under the Water Supply Management Act of 1974 (1974) in 1974. The CPCB was then commissioned to implement the various provisions of the Airline Act (1981) and the Environmental Protection Act (1986) The CPCB, which is a voluntary organization and fully funded by the MoEF, is a central level drug agency for pollution control planning and enforcement and the creation of the surrounding environment. It must comply with environmental and source emissions and national emissions standards. The mandates of CPCB include (i) advice the Central Government on pollution control matters; (ii) collect, collate & disseminate information on pollution and measures for prevention & control of pollution; (iii) formulate ambient and source specific standards; (iv) co-ordinate activities of State Pollution Control Boards; (v) sponsor investigations and research; (vi) organize training and awareness programs; and (vii) plan and cause to be executed a Nation-wide program for pollution control.

The State Pollution Control Boards (SPCBs) were created at the State level with primary responsibility of issuing of consent or permit for operating an industry subject to certain evaluation and emission limits. Besides this, SPCBs also perform functions at State level similar to what CPCB does at National level.

F. Tackling Of The Pollutants

This aims to minimize the amount of pollutants themselves. Waste minimization techniques include process modifications, use of clean / low waste technology, conservation of energy and natural resources, recycling of waste, and recovery of valuable products from waste. Reduction of lead content in motorspeed, reduction of sulfur content In diesel, coal beneficiation and use of clean fuel

in industrial processes are typical examples of direct control of pollutants. This approach is well reflected in Indian government policies and programs, particularly environmental audits and clean technology promotion.

The Indian government has mandated environmental audits, and industries must submit annual environmental claims from 1992-93. In addition to regulatory requirements, industry concerns are felt to be responsible for pollution reduction and this tool should be used as a self-regulatory mechanism. This not only helps to comply with legal and regulatory compliance, but also helps to assess the performance of process and pollution control systems and plays an important role in minimizing waste. This reduces loss and pollution loads and creates potential cost savings. The annual statement helps you identify concerns and practices that are constantly changing, and help you plan for dealing with side effects.

Small industries are a feature of the Indian economy. At times, however, it is difficult for small industries to cope with pollution control costs. Therefore, in the industrial sector, the possibility of adopting better & clean process technology to provide better / lower contamination should be sought. The government provides financial and technical assistance to identify and demonstrate such technologies. Development and adoption of clean technologies including environmentally friendly biotechnology are also being promoted.

Car exhaust, a major concern in urban areas, is a deadly cocktail of toxic gases and particulates that affect humanity, plants and buildings. The CPCB recognized the seriousness of the problem and paid special attention to reduce emissions of exhaust from vehicle exhaust. The strategy for treating pollutants in automobiles is to reduce pollutants in two stages. (i) a pre-combustion stage in which the quality of the fuel can be upgraded; (ii) a combustion stage requiring engine modification.

The Central Pollution Control Board develops industry-specific standards for pollutant emissions, including emissions. Generally, two key aspects are considered for standard development. One is about the adverse effects on human health and the environment and the possibility of achieving pollutant limits by introducing appropriate pollution control measures. The latter approach aims at using the best available and economically feasible technology. The economic aspect of available technology ensures that the cost of pollution prevention measures will remain within the economics of the industrial sector. The standards developed under this principle are techno-economic standards and are uniform across the country. The advantage of the technology-based approach is that the scope of the pollution control measures within a particular industry group is the same. This standard also serves to preserve the environmental quality of uncontaminated areas without modification. Of course, these standards are not related to the potential for contamination or the ability to assimilate the local environment, but the development of standards based on local environmental conditions is not a practical proposition in countries like India. However, in order to provide protection for the local environment, the local executive authority (SPCB) should, in some cases, assess the local environmental conditions by lowering the pollutant limits. In these exercises, this standard acts as an industrial and regional characteristic.

III.CONCLUSIONS

The above-described approach to embody the various programs' strategies and practices for air pollution prevention and management of air pollution certainly pays dividends from the perspective of improving air quality or at least preventing further deterioration. However, the goal of maintaining a cleaner environment in the years to come can be achieved through the continued commitment of pollution control agencies, the commitment of polluters and the public's participation.

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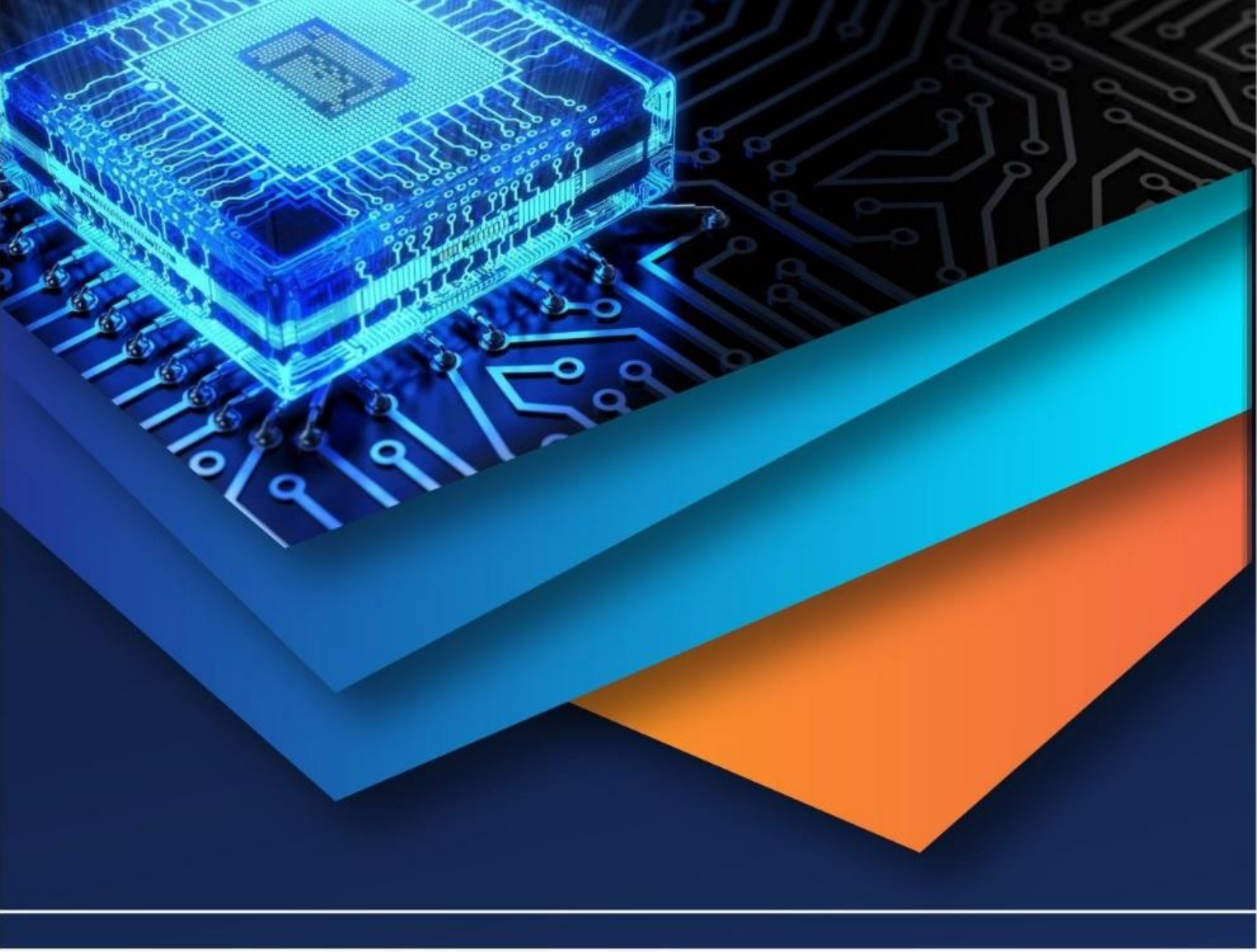

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