

Editorial

Green Development for Healthy Air

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E D I T O R I A L

An adult, when resting, inhales and exhales about 7 or 8 liters of air per minute that makes a total of 11,000 liters of air per day. This is the largest requirement of human body to survive on Earth. Any deviation of composition of air in troposphere may have severe consequence of health. Then personal habits like tobacco smoking, room heating with coal or kerosene or gas, burning of mosquito's repellent coils and incense sticks, using perfumed and scents are other substances added in this pollution. Exposure to particulate matter and air pollutants for a long time can lead to respiratory and cardiovascular diseases such as asthma, bronchitis, lung cancer and heart attacks.

Our atmosphere is consisting of following layers: 1) troposphere - extends from ground to 14 km above and having all-natural phenomenon such as cloud formation, rain, winds, etc. 2. Stratosphere - extends upto 30 Km suitable for airplanes and also known as ozone layer; 3) Mesosphere - extends upto 30-60 Km; 4) thermosphere extend to 60-200 Km; and 5) Exosphere spread from 200-1000 Km. Atmosphere composed of nitrogen (about 78%), oxygen (about 21%), argon (about 0.9%) with carbon dioxide and other gases in trace of hydrogen, helium, and other «noble» gases and water vapors.

Environmental risk factors, such as air, water and soil pollution, chemical exposure, climate change and ultraviolet radiation, contribute to more than 100 diseases and injuries. Among all these, air pollution is presently a matter of great concern. According to State of Global Air 2019, air pollution is the fifth highest mortality risk factor globally and is associated with about 4.9 million deaths and 147 million years of healthy life lost. It is also stated that more than 90% of people in the world live in areas exceeding the WHO Guideline for healthy air. When stringent air quality targets of WHO are taken then more than half of the world population live in areas that do not even meet those targets.¹

Causes of air pollution in India are fuelwood and biomass burning, fuel adulteration, vehicle emission and traffic congestion.² Road traffic increases the dust on road and in nearby areas. Diesel fuel is having high carbon and PM2.5. Dust emits by car, buses, two and three wheelers when it moves. Vehicles emit CO₂, PM2.5, NO_x and Methane gases. Noise is another pollution of air due to all kinds of traffic. The statistics of vehicles in terms of emission particularly CO₂ were interpreted an alarming figure came out. Rough estimates were calculation for

Delhi only where 10 million vehicles exist and one vehicle consumed on an average of 2 liters per day means 20 million liters of petrol or diesel are consumed per day. Around 2.5 kg of CO₂ is produced from one liter of petrol means 50 million kg of CO₂ is produced every day in Delhi itself by vehicles.

Nobody talks about air pollution from airplanes which are actually major source of pollution. In the world there are around 30 million flights per years. Each kilo fuel in airplane that produce 3kg of CO₂, NO_x and Ozone is also produced. In Delhi alone there are on an average of 1000 flights per day and 500 to 7000 kg fuel per hour is consumed by airplanes depending on types and make that means 12000 kg to 168000 kg per day of fuel per flight and if there are 1000 flights per day means 12 million kg to 1680 million kg fuel day consumed. If one kg of fuel emits 3kg of CO₂ per day then 36 million kg to 5400 million kg of CO₂ per day is emitted in Delhi's atmosphere. Although airplanes contribute 17% of the total pollution caused by vehicular traffic.

Industrial and power plants emission are other sources of smoke in air. In the middle of October and November in Delhi, large scale crop residue burning in agriculture fields - a low cost alternative to mechanical tilling - is a major source of smoke, smog and particulate pollution.³⁻⁵ India has a low per capita emissions of greenhouse gases but the country as a whole is the third largest after China and the United States.⁶

Another area of concern of pollution is drains system. In the process of sewage treatment, many gases such as Ammonia (NH₃) and Hydrogen Sulphide (H₂S) and chemicals released in air which give rise to putrefying and noxious odor. As number of sewage treatment unit increases in the city, air pollution also increases many folds.⁷

Similarly, open drains are also sources of poisonous gases, causing air pollution and spreading foul stench in nearby locality through which it is passes. In Delhi only there are 36.6% of the households open drainage system and 4.2% do not have drain at all according to Census 2011. There are 22 drains in Delhi which are not only pollute Yamuna river but also air.

Air pollution is closely tied to levels and trends in economic and social development. Besides, rapidly increasing industrialization, urbanization, population growth and demand for transportation along with meteorological conditions influence air pollution in many Indian cities.

Cambridge dictionary explained development as the process in which someone or something grows or changes and becomes more advanced; it further elaborates as a recent event that is the latest in a series of related events or the process of developing something new or an area on

which new buildings are built in order to make a profit. People broadly perceived development as the process of acquiring more and more power, money, property, and material goods. It is applied on individual, family or country. As the history of man unfold with lot of claims of development, we have witnessed the environmental degradation. It is need of hour to examine the concept of development. The most appropriate definition would be as the process that creates growth, progress, positive change or the addition of physical, economic, environmental, social and demographic components. The purpose of development is a rise in the level and quality of life of the population, and the creation or expansion of local regional income and employment opportunities, without damaging the resources of the environment.⁸

According to Amartya Sen, development is a tool enabling people to reach the highest level of their ability, through granting freedom of action, i.e., freedom of economic, social and family actions, etc. This approach became a basis for the measurement of development by the HDI (Human Development Index), which was developed by the UN Development Program (UNDP) in 1990. Martha Nussbaum further added the gender empowerment to this development tool.⁸ However, this tool directly not taking care of environment sustainability.

According to above concept, all human activities which emit substances into the atmosphere causing air pollution include: Carbon Dioxide (CO₂), Sulfur Oxides (SO_x), Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Volatile Organic Compounds (VOC) - Methane (CH₄) or Non-Methane (NMVOCs), Particulate Matter (PM) originated from traffic, forest and grassland fires, persistent free radicals, toxic metals, Chloro Fluoro Carbons (CFCs), ammonia (NH₃) odors and radioactive pollutants are non-development activities.

Urban areas mainly cities, are considered to be most developed areas and people migrate from rural to urban areas because of this development. According to a WHO study, 13 of the 20 most-polluted cities in the world are in India. States most affected due to air pollution are Haryana, Delhi, Punjab, Bihar, Rajasthan, West Bengal and Uttar Pradesh.

Not only Delhi but other cities are witnessing the air quality crisis and all initiatives taken by Government of India such as controlling emission from industries, vehicles, power generation activities; creating ridges to prevent dust, compaction of disturbed soil, prevention of dumping of earth materials along road side, are not enough to curb the air pollution.

Restriction on the ownership to possess more and more vehicles or material goods is considered as against the development. In such situation a global program on reverse

development means a green development is required. Unnecessary air or any type of travel should be avoided. Concept of development of villages having contented, simple and happy life in natural environment need to be explored. Extensive public awareness program is required using most green technology.

No such preventive and control measures would be successful if it is not based on concrete time bound action plan and implementation strategy.

In conclusion, a long-term measure is required to reverse the environmental pollution. For that the concept of green development should be promoted in all domains of life.

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