

50  
FAQS  
ON  
AIR  
POLLUTION



## **From the desk of Dr R K Pachauri**

Over half the population of the world today lives in urban areas, and even though in India we still have almost two thirds of our population living in villages, in the next few decades we would also have a majority of our citizens living in towns and cities. One of the realities of urban life is its remoteness with the pristine existence of all things natural. Urban children in North America when asked where milk comes from generally respond that it comes from plastic bottles or cardboard cartons. They have no knowledge that cows provide us with milk that we drink.

A good psychologist friend of mine who is a professor at Yale University, Paul Bloom, has been researching for years now on what provides human beings joy and happiness. His research reveals that the greatest pleasure human beings experience is derived from being in the company of nature and indulging in the delights that we sense when we are in the midst of beautiful scenery or in the company of animals, birds, plants and flowers. The richness of the environment around us is a source of joy that many of us living in urban areas miss greatly, day in and day out.

Children in particular need to see and feel the benefit of life that exists in the kingdom of plants, birds, animals and insects. It is only when they touch, feel and smell the environment in open areas that they realize the richness of our natural heritage.



**R K Pachauri**

Director-General, TERI

Chairman, Intergovernmental Panel on Climate Change

# 50 FAQS ON AIR POLLUTION



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# Preface

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**A**ir is vital to life and it surrounds the Earth like a blanket. It is because of this blanket of air called atmosphere that life exists on Earth. But if anything additional – gas particles, or pollutants – is introduced to this blanket, the natural balance of air is destroyed, and it affects various forms of life on planet Earth.

Before the advent of urbanization and industrialization, nature's own systems kept the air fairly clean. But humans have now released more wastes into the atmosphere than nature can cope with, affecting the quality of air. While the entire humanity is being affected by air pollution, it is the younger generation or kids who are getting more affected than adults. The reason being children spend more time playing outside.

Air pollution can easily travel and spread, because air is all around us. Research says that pollutants from China have been traced in the Central Valley of California, USA! Atmosphere cannot be restricted to political boundaries. Therefore, it is our individual responsibility to stand up and take responsibility.

Find out more about it through *50 FAQs on Air Pollution*, so that you can also make a difference.

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## What is air?

Air is a mixture of a number of gases. The three major gases found in air are nitrogen (78 per cent), oxygen (20.9 per cent), and argon (0.93 per cent). Other gases include carbon dioxide (0.035 per cent), ozone (0.0008 per cent), hydrogen (0.000053 per cent), neon, helium, methane ( $\text{CH}_4$ ), xenon, and krypton, among others. We can't feel it but air has weight, due to which it exerts pressure as well. Earth's atmosphere is composed of air.

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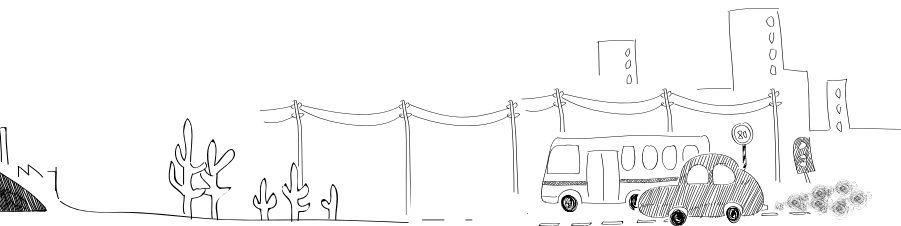


## How do I define air pollution? Who or what are polluting the air we breathe?

Air pollution is the presence of contaminants in air. These could be dust, chemicals, or other particulate matter that affect the quality of clean air, thereby affecting humans and animals.

The major sources of air pollution are industries, agriculture, traffic, and various processes of energy generation. For example, electricity is produced in thermal power plants by burning coal. During the process, air pollutants such as sulphur dioxide ( $\text{SO}_2$ ), nitrogen oxides ( $\text{NO}_x$ ), and carbon dioxide ( $\text{CO}_2$ ) are released in the air. A number of industrial activities are also responsible for emissions of  $\text{CO}_2$ , CO or carbon monoxide,  $\text{N}_2\text{O}$  or nitrogen oxide, and others. Widespread use of artificial fertilizers in agriculture adds to the existing levels of  $\text{NO}_x$ ,  $\text{CH}_4$ , and  $\text{NH}_3$  or ammonia in the atmosphere.

Toxic fumes from tailpipes of automobiles too contain  $\text{CO}_2$ , CO,  $\text{NO}_x$ , and aerosols (microscopic particles in air). Certain personal habits like smoking cigarettes too release CO and  $\text{CO}_2$ , while burning kerosene emits toxic fumes.



## What are VOCs?

A more commonly used term for volatile organic compounds (VOCs) is "hydrocarbons". Hydrocarbons contain hydrogen and carbon. Examples of VOCs include acetone, formaldehyde, toluene, xylene, and benzene. They are mainly emitted from petrol engines and from evaporation of paint, varnishes, and upholstery fabrics. VOCs typically have low boiling points (less than  $100^{\circ}\text{C}$ ), so they evaporate quickly. Exposure to VOCs leads to a variety of problems – eye, nose, and throat irritation, nausea and dizziness, cancer, liver damage, kidney problems, and even failure of the central nervous system.

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# 50 FAQs on Air Pollution : know all about air pollution and do your bit to limit it



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