

»» A better quality of life thanks to cleaner air in cities

No 11, 02 October 2018



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Every year, more than 7 million people die as a result of poor quality air. The majority of these people live in cities. In most cases, air pollution is caused by humans themselves. Over 80 percent of the world's population lives in areas with excessive air pollution. One of the groups most affected by this are urban residents in low-income countries. In developing countries, 98 percent of cities fail to meet the WHO air quality guidelines. Even in countries with a high level of income, only half of all cities have "clean" air.

Most pollution caused by particulate matter

Various forms of pollutants contribute to air pollution and could cause detrimental health issues as a result. The pollution caused by particulate matter affects most people and has the biggest impact on their health. However, ground-level ozone, nitrogen dioxide and sulphur dioxide pose a risk to health as well. The highest concentration of these substances is found in countries with low or moderate incomes. The situation in the regions of the eastern Mediterranean and South-East Asia is particularly problematic. The average annual figures for these regions is often 5 to 10 times higher than the limits permitted by the WHO.

Falling air quality, rising health risks

The various forms of pollutants cause a range of health risks. Particulate matter contains particles that can make their way into the circulation system and lungs. This can increase the risk of circulatory or respiratory diseases and even lead to lung cancer. Ozone is the main trigger for morbidity and asthma mortality. Breathing in nitrogen dioxide

and sulphur dioxide can lead to asthma, as well as bronchial problems, pneumonia and reduced lung capacity. Furthermore, pollutants can also trigger short-term problems, such as irritation to the body's mucous membranes and eyes, respiratory problems, shortness of breath, headaches and allergic reactions.

Higher risk in cities: smog on the streets and smoke in homes

The sources of air pollution can be found both inside and outside buildings. The main source is combustion processes, which cause particles to be released. Inside buildings, these processes can take the form of cooking and heating with harmful fuels (e.g. wood, coal, kerosene) and inefficient technology. Over three billion people still use open fires for cooking or heating on a daily basis. Poor ventilation in buildings exacerbate the effects.

Further sources of air pollutants are found outside. Road traffic is one such source. As well as causing toxic emissions, braking and tyre wear can also generate particulate matter. Another source is the combustion of fossil fuels for heat and power generation or for industrial purposes. Particulate matter is emitted during a number of production processes too. An urban source of pollution can also be municipal waste management, e.g. municipal solid waste and landfill gas from waste disposal facilities as well as pollutants emitted during waste incineration.

So, what can be done?

Significant improvements to the air quality in cities can only be achieved over the long-term. Nevertheless, there is an array of short-term measures that can contribute to improving air quality, including:

- Standards for fuels (banning lead, sulphur)
- Switch to natural gas
- Introduction of city tolls in conjunction with promoting public transport

Promotional programmes can encourage people to switch from cooking with charcoal to less polluting forms of energy. In the long run, power should be generated without any emissions (e.g. hydro, wind or solar power).

One particularly suitable solution for significantly improving air quality is switching from very harmful forms of personal transport to a functional public transport network. The use of public transport significantly reduces harmful emissions and air pollution in cities. City planners also bear some of the responsibility for maintaining existing corridors of fresh air.

Low-emission city living therefore combines health, energy efficiency, mobility and positive effects on the climate. This is a major challenge that can only be tackled over the long-term. Only then can we gradually start to make our air better and healthier. ■