

Addressing the challenge of air pollution in India

Air pollution is a major environmental health problem affecting everyone. It occurs when the environment is contaminated by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Stoves at home, motor vehicles, industrial facilities and forest fires are common sources of air pollution.

Air pollution, in and outside of people's homes, is the world's single largest environmental health risk. In India, the major sources of air pollution in homes are tobacco smoke and the smoke from solid fuels with inefficient and leaky cooking stoves. Most sources of outdoor air pollution are well beyond the control of individuals, and demand actions by national and international policymakers in sectors like clean energy for cooking and other domestic needs, transport, energy waste management, buildings and agriculture.

Health and air pollution

Pollutants of major public health concern include particulate matter, carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide. Both ambient (outdoor) and household (indoor) air pollution cause respiratory and other diseases, which can be fatal.

Strong links have been established between exposure to air pollution (indoor or outdoor) and cardiovascular diseases, such as strokes and heart disease; cancers; chronic obstructive pulmonary diseases; respiratory diseases, including acute respiratory infections (especially in vulnerable groups like children and elderly); poor birth outcomes, etc. These entail adverse health, economic and developmental consequences.

Challenges

The biggest air-pollution related burden on health is observed in low- and middle-income countries in the WHO South-East Asia and Western Pacific Regions.

Lack of universal access to clean household energy presents a major challenge to improving health and protecting the environment. Furthermore, failure of the public transport system to cope with the rapid pace of urbanization and economic activity has aggravated the burden of air pollution related diseases. Implementation of pollution control laws despite an overwhelming number of motorized transports on the streets is another challenge to ensure safe air quality. Additionally, the tobacco control legislation in India prohibits smoking in public places but does not have laws to protect people, especially vulnerable populations like children and pregnant women from frequent exposure to second-hand smoke in their homes.

The distribution of exposure is now recognized to be complex with multiple determinants (*fuel/stove type, kitchen area, ventilation, and quantity of fuel, age, gender, time spent near the cooking area, etc.*) that influence the patterns of exposures within and between households. While most of the solid-fuel

use related exposures occur in the rural indoors, the high exposures is not uncommon among the urban poor, who may be suffering from a double burden - of polluted outdoor and indoor air.

WHO's role

The World Health Organization is working with Member States to turn around this situation and reach the suggested new standards for air quality. WHO's core function on the issue of air pollution is to identify air pollutants with the biggest impact on people's health. This helps the Member States to focus their actions on the most efficient way to prevent, or reduce the risks. WHO's task is to review and analyze the accumulated scientific evidence, and based on their expertise, draw conclusions and formulate recommendations. Most of the activities necessary for reducing pollution levels require long-term actions and commitments.

Reducing air pollution

Two primary categories of options are available to address the burden of household air pollution in the country. These are: (i) making clean sources of energy available (like liquefied petroleum cooking gas), or (ii) making extensively available source clean (like solar energy)

In many developing countries, the inability to acknowledge the detrimental health effects of the pollution or under-appreciation of its magnitude, are big obstacles in defining the actions and mobilizing resources. Household air pollution strategies are community-level approaches. Simultaneous adoption of clean energy sources by all the houses in the community will yield optimum results as the movement of polluted air out of households into the ambient environment will result in negating any gains achieved. Thus widespread uptake of clean cooking energy and moving away from traditional energy sources and cooking practices, necessitate social and behavioural changes.

There is no single option for reducing outdoor air pollution and a wide range of interventions are available: Avoiding vehicle use as much as possible, promoting walking and cycling, shifting from individual transport to public transport or vehicle pooling, and finally improving of vehicle technologies to reduce pollution. Relocation of heavy industries, including thermal power plants can bring also down city-level emissions to a great extent.

Addressing air pollution in India

Data from Global Burden of Disease (GBD) for 2010 shows that over 600,000 deaths and about 18 million DALYS are attributed to Ambient Air Pollution while Household Air Pollution leads to one million deaths and 31 million DALYS.

Following the endorsement of Global Action Plan and Monitoring Framework for prevention and control of NCDs in 2013, India became the first country globally to develop country specific targets and indicators, in line with the global framework, with targets and indicators contributing to lowering the burden of indoor air pollution. Presently a National Multisectoral Action Plan is underway to facilitate in achieving the national targets and indicators. WHO is supporting GoI throughout these endeavours.

India is a signatory to Framework Convention on Tobacco Control, which demonstrate GOI commitment to minimize the burden of household air pollution. WHO is playing a supportive role in framing and implementing tobacco control initiatives like the Cigarette and other tobacco Products Act, 2013 and National Tobacco Control Programme.

Cognizant of the fact that multisectoral engagement is the most effective approach for addressing air pollution, MoHFW, GoI, constituted a Steering Committee in 2014, with members from health, and related non-health sectors like new and renewable sources of energy, petroleum and natural gas, environment, rural development, as well as development partners like WHO etc. The Committee is addressing the challenge of air pollution in a holistic manner, inclusive of ambient and household air pollution; and is mandated to (a) collate evidences from global and national best-practices towards mitigating the health effects of air pollution; and (b) recommend policy and programmatic responses across sectors to address this issue. This is a significant first step towards a multisectoral engagement on the subject.

It is now increasingly advocated that a concerted and coordinated whole-of-government and a whole-of-society approach in developing and implementing relevant policies and programmes is adopted. This is the key to addressing the growing burden of air pollution.

Some useful links:

WHO's Air Quality Guidelines

http://www.who.int/phe/health_topics/outdoorair_aqg/en/index.html

Full text of the Guidelines including background material is available on

http://www.euro.who.int/InformationSources/Publications/Catalogue/20070323_1

Fact sheet: <http://www.who.int/mediacentre/factsheets/fs313/en/index.html>

Clean household energy can save people's lives

<http://www.who.int/features/2014/clean-household-energy/en/>

Ambient (outdoor) air quality and health

<http://www.who.int/mediacentre/factsheets/fs313/en/>

Household air pollution and health

<http://www.who.int/mediacentre/factsheets/fs292/en/>

WHO Framework Convention on Tobacco Control

http://www.who.int/fctc/text_download/en/

Noncommunicable diseases

<http://www.who.int/mediacentre/factsheets/fs355/en/>

Clean household energy can save people's lives

<http://www.who.int/features/2014/clean-household-energy/en/>

Regional meeting

<http://www.searo.who.int/mediacentre/releases/2014/pr1589/en/>

Related links

[National Air Quality Monitoring Programme, Government of India](#)

[Ministry of Environment and Forests, Government of India](#)

[Central Pollution Control Board](#)

[The Energy and Resources Institute \(TERI\)](#)

<https://sustainabledevelopment.un.org/sdgsproposal>