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10-20% rise in ozone levels in India, harmful for lungs and crops: Report

'50% Increase In Deaths Due To O₃ In S Asia'

Jayashree Nandi | TNN

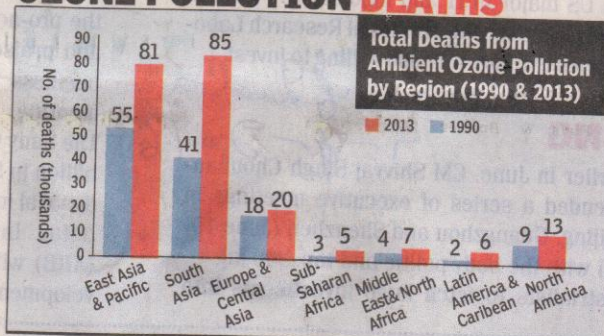
New Delhi: While Indian cities are still grappling with the impacts of severe particulate matter (PM) pollution, a new report has raised the flag on ozone levels (O₃) too.

'The Cost of Air Pollution', a report by the World Bank and Institute of Health Metrics and Evaluation (IHME) released on Thursday, estimates that the concentrations of O₃ has increased by 10 to 20% in India between 1990 and 2013. The trend is similar in neighboring countries and in Brazil, while a declining course was seen in the US and Indonesia, among others.

High ozone levels are not only associated with serious health impacts like reduced lung function, chronic obstructive pulmonary disorder (COPD), aggravating asthma and respiratory conditions, but also with widespread crop loss.

The study also estimates

OZONE POLLUTION DEATHS



Sources: World Bank and IHME, using data from IHME, GBD 2013

that total deaths due to increase in exposure to O₃ increased by 50% between 1990 and 2013 in South Asia. For this report, the health and economic burden of O₃ is only based on COPD incidence from it. Total deaths due to exposure to PM_{2.5} have also increased in South Asia during the same phase, but not as steeply as with O₃.

Interestingly, even though the cost of O₃ related premature deaths are far lower than that of PM_{2.5} (both household and outdoor), O₃ associated economic or welfare losses for South Asia are equivalent to that of North America. The welfare losses due to O₃ exposure are

to the tune of 0.4% of gross domestic product (GDP) equivalent, the report states. If you consider man days lost, it's about 0.09% of GDP equivalent, it says.

Air quality experts said O₃ could be a serious concern soon. "Even before we could deal with health damage from particulate pollution we are falling into the pincer grip of ozone pollution that damages both lungs and crops. This is also the sign that emissions of toxic gases are increasing rapidly in our country. Keep in mind that for estimating health damage from ozone this report has only considered chronic obstructive pulmonary diseases. The actual

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CSE clean air programme head

cost of health damage could be way higher," said Anumita Roy Chowdhury, head of Centre for Science and Environment's clean air programme.

Ozone is not directly emitted from any source, it is created by chemical reactions between oxides of nitrogen and volatile organic compounds in the presence of sunlight. It's mainly released from combustion sources which includes vehicles and industries.

A 2014 study by scientists at Indian Institute of Tropical Meteorology estimated that ozone-induced damage to wheat and rice is enough to feed roughly 35% of 270 million BPL population in India.

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