

#OneSouthAsia Conversations

A World Bank series exploring ideas for regional cooperation in economic connectivity, climate change, and human development

BREATHING UNEASY: REGIONAL RESPONSE TO AIR POLLUTION IN SOUTH ASIA



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Top row, from left: Cecile Fruman, Zahid Hussain, Bidya Banmali Pradhan

Bottom row, from left: Bjarne Pedersen, Sundeep Singh

A choking haze of pollutants spewed by industrial plants, vehicle exhaust, brick-making kilns, and crop stubble fires is inescapable in much of South Asia. The pollution reduces the average lifespan by nearly two years in Bangladesh, India, and Pakistan, and contributes to respiratory disease throughout the region. Fighting this major public health problem is made more complex by how airborne pollutants freely move across national borders.

Air quality experts at a #OneSouthAsia Conversation, [Breathing Uneasy: Regional Response to Air Pollution in South Asia](#), said raising public awareness, capturing reliable data, and exchanging information to set regional targets are among the steps needed to clear the air. The July 27, 2021 event was the latest in a bimonthly series of [#OneSouthAsia Conversations](#) on regional integration and cooperation issues.

"This is an urgent and pressing issue and it has transboundary impacts," said [Cecile Fruman](#), the World Bank director of regional integration and engagement in South Asia. "This is threatening lives and it's threatening economic growth." Air pollution is also suspected of increasing the vulnerability of some people to COVID-19 infection.

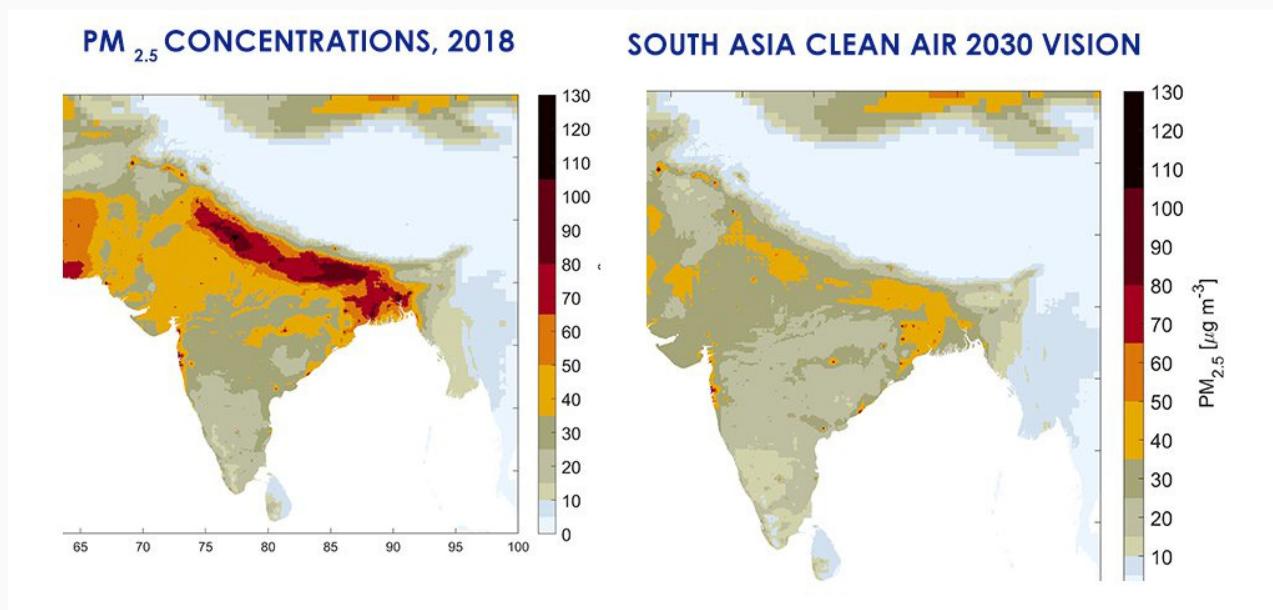
The most recent [World Air Quality Report](#) found South Asia has 37 of the world's 40 most polluted cities. Unhealthy air contributes to cancer, strokes, heart attacks, and respiratory ailments. As many as one-fourth of deaths in the region are blamed on exposure to dirty air, with the highest rates in Bangladesh, India, and Pakistan, according to Swiss-based IQAir, which measures air quality in 106 countries. Air pollution also hobbles economic growth. Dirty air in South Asia is estimated to reduce the region's GDP by [7.4 percent](#).

Regulation is built on accurate data

Panelists at the event emphasized data is the cornerstone of effective regulation. Reliable, accurate data is essential to create targeted control measures and to carry out a science-based, air quality management system.

"It sounds very simple but it's an incredibly complex task," said [Bjarne Pedersen](#), executive director of [Clean Air Asia](#). Local, state, and national governments in South Asia need pollution experts with skills and equipment to capture accurate air quality data, he said. And ideally, all experts throughout the region use the same data protocol and data standards.

There has to be some uniformity in generation of data" so regulators can accurately inventory and prioritize sources of pollution, said [Sundeep Singh](#), a director within India's [Ministry of Environment, Forests and Climate Change](#). "We should all be working on the same platform with the same scientific language and the same methodology." Leading technical institutions in India have paired up with nearby cities to help them improve data gathering and air monitoring mechanisms, he said.



PM_{2.5} refers to tiny particulate matter measuring less than 2.5 microns. The World Bank is working with the region to cut the level by more than half by 2030. World Bank illustration.

Pollution worst over Indo-Gangetic Plain

Some of the region's worst air quality is in an airshed bordered on its north side by the Himalayas. The low-lying Indo-Gangetic Plain stretches from Pakistan in the west, over northern India, to Bangladesh and

the Bay of Bengal in the east. The area has some of the largest concentrations of particulate matter pollutants measuring 2.5 microns or less – tinier than the width of a human hair. PM2.5 pollutants are closely watched by experts because they are easily inhaled into the lungs and then enter the blood stream. Particulate matter forms by gases that mix in the atmosphere through a combination of emissions from smokestacks, vehicle exhaust, farm fertilizers and sources such as manure that emit ammonia. The World Bank is working with South Asian governments to significantly reduce PM2.5 by 2030 and has active programs in India, Bangladesh, and Pakistan.

The Indo-Gangetic Plain is darkened by a thick layer of haze that can be seen from satellites during winter months. The [average annual level of PM2.5 there](#) is as high as 161 micrograms per cubic meter in Ghaziabad, Uttar Pradesh. That far exceeds [World Health Organization air quality guidelines](#) that suggest reducing the annual mean PM2.5 level to about 10 micrograms. It also exceeds India's own target of about 40 micrograms.

Pakistan targets vehicles, bricks, farm fields

Pakistan is focusing on reducing emissions from vehicles, industry, brick-making kilns, and crop burning. All contribute to air pollutants into the Indo-Gangetic Plain.

What should be priorities to fight air pollution?

Experts at the #OneSouthAsia Conversation were asked to identify one regional action that should be prioritized to alleviate air pollution. Here are their responses:

Bidya Banmali Pradhan ICIMOD

Air pollution needs an integrated regulatory approach that recognizes and addresses all major sources of pollutants, she said. "The major problem is crop burning because it impacts most of the fog issue and the haze issue, so I see a lot of potential on that."

Sundeept Singh India Ministry of Environment, Forestry and Climate Change

"The first thing has to be that all parties should sit together and realize that, it's not my problem or his problem. It's a common problem," he said. "The first thing is to have a collaborative effort and then sharing of whatever knowledge we have in air pollution mitigating measures."

Zahid Hussain

Punjab Environment Protection Department

An immediate implementation of the 1998 Male Declaration would "make a very conspicuous difference" in prioritizing regional cooperation, he said. Pollution activities should be "delinked" from political issues because clean air "has to do with our future lives, which are far more precious than other considerations." Also, he said governments throughout the region "should allocate sizable funds" for research into pollution interventions in agriculture and industry.

Bjarne Pedersen Clean Air Asia

"A regional mechanism for knowledge exchange and work on clean energy transition co-benefits and co-controls with an explicit quadruple focus: reducing air pollution, protecting public health, mitigating climate change, and increasing the resilience of countries post-pandemic."

Pollution has no boundaries. It is the direction of the wind that determines which province of the two countries – Indian Punjab or Pakistan Punjab – is the recipient of this smog,” said [Zahid Hussain](#), secretary of [Punjab’s Environment Protection Department](#).

Punjab, Pakistan’s most populated province, has an ambitious green program that is spending \$35 million to get dirty vehicles off the road and replace them with cleaner-burning ones. The program plans to spend nearly as much on industrial plant scrubbers that limit pollutants from smokestacks. Punjab has nearly 8,000 brick-making kilns – a coal-fired industry and major polluter – and all are required to adopt “zigzag” technology to cut fuel consumption and carbon emissions. An added benefit: the technology produces higher quality bricks.

Farmers, meanwhile, are getting new equipment to update their practices. Farmers traditionally burn rubble left from a rice harvest in the autumn to quickly prepare soil for the next crop. The government has introduced a shredding machine that transforms rice stubble into mulch. Another machine, a seed drill, follows behind to punch holes through the mulch and sow a new crop, typically wheat. “With these interventions, we hope we will be making a noticeable difference in the coming months and years,” Hussain said.



India sets targets

New Delhi, the capital of India, sits in the middle of the Indo-Gangetic Plain and is blanketed with pollutants from local sources plus windborne PM2.5 coming from neighboring states. Two years ago, India adopted a [National Clean Air Programme](#) with emission reduction targets in more than 100 cities. The program aims to reduce particulate matter by at least 20 percent by 2024 from the baseline year of 2017. Although the national standard is higher than WHO guidelines, India has identified short-term and long-term measures cities can adopt to further reduce pollutants, such as expanding mass transit.

“We are slowly identifying the causes and we are prioritizing,” Singh said. “Definitely, there will be a lot of things that will be long term [but] now we know which cities will have cleaner fuels available by 2024.” Early signs are encouraging. IQAir data indicates some [Indian cities have improved air quality since 2018](#), unrelated to the economic slowdown during the pandemic. But cleaning up pollutants in airsheds over large areas, such as the Indo-Gangetic Plain, demand collaboration to be effective.

Regional mechanisms to manage airsheds

One instrument that could help South Asia map a cooperative approach is the [1998 Malé Declaration](#). Signed in the capital of Maldives, the landmark declaration on air pollution control established an

intergovernmental network with Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka. The network eventually went dormant without a funding mechanism to prioritize and coordinate air pollution work.

"We are trying to revive this [Malé] declaration," said [Bidya Banmali Pradhan](#), air pollution coordinator with the [International Centre for Integrated Mountain Development](#) (ICIMOD). Governments that signed the declaration met in April 2021 to explore how to move forward. "Regional cooperation is very crucial," she said. "Strategies now need to be redefined for the present context." ICIMOD, an intergovernmental organization, [recently called](#) for the region to speak with one voice on air quality issues at the COP26 climate meeting in Glasgow.

South Asia can learn from regional programs in Asia that have varying degrees of success. ASEAN's [2002 transboundary haze agreement](#), for example, showed "the need to establish common language accountability," said Pedersen of Clean Air Asia. Another project, [EANET](#), was established to monitor acid rain from fossil fuels burned in East Asia, and is now tackling data standards for regional air pollution.

Pedersen urged South Asia to focus on an agenda linking air pollution and climate change to build resilience. "A long-term vision that includes regional cooperation, and also firm targets, would really put South Asia on the forefront," of air quality work in Asia. Such targets, he added, could include complying with WHO air pollution guidelines and reducing premature deaths linked to air pollution by two-thirds by 2030.

India, Pakistan endorse cooperation

Air quality is a life or death issue for many South Asians. The officials from India and Pakistan said their governments are ready to work together to improve public health.

"At the end of the day, it is the health impact and the consequences which we are trying to reduce. The causes are irrespective of geographical location," India's Singh said. "We look forward to sharing knowledge." Information exchanges between the two nations should include best practices in using monitoring equipment, analyzing big datasets, and sharing unexpected issues with pollution control programs, he said.

"We should rise above the traditional blame game scenarios," Punjab's Hussain said, referring to air pollutants. "If a problem crosses [national] boundaries, the solution to that problem should cross boundaries. We are ready to cooperate, we are ready to share our experiences in three sectors -- agriculture, industry, and transport." He proposed that India and Pakistan government pollution experts hold a virtual meeting "and think of strategies so that we can move toward the goal of effective control of this menace."

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