

# OneSouthAsia Conversations #14

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

## Effective Regional Responses for Transboundary Air Pollution

#OneSouthAsiaConversations

Striving for Clean Air in South Asia:  
Effective Regional Responses

THURSDAY  
JANUARY 19,  
2023 8:00 AM ET  
Washington D.C.

6:00 PM Islamabad/ Male  
6:30 PM Colombo/ New Delhi  
6:45 PM Kathmandu  
7:00 PM Dhaka/Thimpu

Moderated by: Cecile Fruman  
Director, Regional Integration and Engagement, South Asia Region, World Bank

Opening remarks: Dr. Rangan Banerjee  
Director, Indian Institute of Technology, New Delhi

Namaraj Ghimire  
Director General, Department of Environment, Ministry of Forests and Environment, Nepal

Roshni Sen  
Principal Secretary, Department of Environment, West Bengal, India

Samia Saleem  
Additional Secretary, Environment Protection Department, Punjab, Pakistan

Dr. Abdul Hamid  
Director General, Department of Environment, Ministry of Environment, Forest, and Climate Change, Bangladesh

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***Countries, states or provinces, and cities cannot achieve air quality targets on their own given the spatial interdependence of air quality, highlights our 14<sup>th</sup> OneSouthAsia Conversation held in January 2023.***

When it comes to statistics on air pollution, South Asia’s regional picture is covered in thick smog. The region is home to 9 out of world’s 10 most polluted cities and over 60 % of the population here lives in areas where the deadly soot particles, also called PM<sub>2.5</sub> levels, are higher than the least stringent World Health Organizations (WHO) Interim Target. The polluted air is causing a public health and a development crisis, with an estimated two million premature deaths per year and staggering economic costs.

As the dusty soot rises, it is not contained by physical boundaries— it travels hundreds of miles across municipal, state, and even national borders. Take the example of the “two Punjabs” between India and Pakistan— about 30% of the air pollution in the Indian state of Punjab comes from neighboring Pakistan, and a similarly, more than 18% of air pollution in Pakistan’s Punjab state comes from neighboring India. Dhaka, the capital city of Bangladesh, receives an estimated 30% of the pollution that has origins in India, given the predominant wind direction from the northwest to the southeast.

With the spatial interdependency of the air quality, cities, states or provinces, and countries are dependent on the “spillovers” from the neighbors. This makes cooperation and joint action imperative to air quality management efforts in the region. The latest World Bank report, [Striving for Clean Air: Air Pollution and Public Health in South Asia](#), estimates that cooperative approaches

to air quality management can be around 45 % less expensive in comparison with approaches that have no regional component. These approaches are also more effective and deliver better results faster.

To layout collaborative policy actions and build on the recommendations of the report, the 14<sup>th</sup> OneSouthAsia Conversation, [Striving for Clean Air: Effective Regional Responses](#), was held in January 2023. The panel brought together senior government representatives from the four countries of the Indo Gangetic Plain—Bangladesh, India, Nepal, and Pakistan that share a common “airshed” or similar air quality given the common climate and geographical factors. The IGP airshed is considered the most polluted in the region. The online event was held in partnership with the Centre of Excellence for Research in Climate Change and Air Pollution, Indian Institute of Technology, New Delhi. Here are some key messages:

### **Mainstreaming Air Quality Management in National Policies**

Air quality management is steadily making its way up as a priority for national and state policy actions. For instance, in India, the government is implementing the [National Action Clean Air Program](#) since 2019 to improve air quality across 131 cities most polluted cities. A dynamic [Portal for Regulation of Air Quality in Non-Attainment Cities or PRANA](#) is tracking the air pollution data, money-spent, and effectiveness of city and state-based pollution abatement measures. Roshni Sen, Principal Secretary, Department of Environment in the Indian state of West Bengal said that the states, cities are aligning efforts with national priorities, generating data, and taking policy decisions accordingly.

Adjacent to West Bengal, Bangladesh is revamping efforts with new Air Pollution Control Rules of 2022. Abdul Hamid, Director General, Department of Environment in Bangladesh said that earlier natural disasters, diseases, and pandemics were taking precedence as major risks to health and lives of the people. This is changing now. “We are fast recognizing that air pollution is a silent killer,” he said, adding that the new air pollution rules have unique features that allow the environment directorate to declare an area as “degraded airshed” and prioritize targeted action for reducing pollutant levels.

Other countries of the IGP including Pakistan and Nepal are formulating policies as well. Pakistan Clean Action Plan is to guide policy actions, both at national and provincial levels. This will include efforts at establishing and expanding air quality monitoring networks, setting up environment endowment fund, enforcing environment protection standards including those specific to high pollutant industries, said Samia Saleem, Additional Secretary, Environment Protection Department, Pakistan, Punjab

In Nepal, the right to “clean and healthy environment” is a constitutional provision, making clean air a part of citizen’s fundamental right, said Namaraj Ghimre, Director General, Department of Environment in Nepal. Air quality management is embedded in country’s ambitious plan to reach zero emission targets by 2045. The country’s response ranges from institutional action like

setting up environment protection council and environment protection fund to abatement measures like emphasizing use of electric vehicles.

Other low-cost measures including mitigating road dust, using smokeless cooking stoves, shifting to a more efficient and less polluting “zig zag brick-kiln technology”, using concrete blocks instead of bricks, proper waste burning are a few common measures that are being implemented across South Asian cities to yield effective results.

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*“The priority for us is to forge partnerships and cooperation for air quality management. For that, as a first step we need a proper source apportionment study in each country and in the region, using the same model. Instead of presumptions, a proper study using a uniform model will help us get a clearer picture. Then we can identify pollution hotspots, causes, and take informed decisions. We need more interactions and regional cooperation, not just through the mediation of the World Bank, but also initiated by the countries.”*

**Roshni Sen**

**Principal Secretary, Environment, Govt of West Bengal, India**

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*“Air pollution is a true interdisciplinary problem—a problem where there are technical solutions with evidence, models, interventions, and policies. When we talk about pollution and pollutants, the physical systems do not respect any political boundaries. We look in terms of air sheds and there is a mutual benefit in understanding it regionally. We can also look at sharing technical knowledge among countries, our local best practices, and pooling resources to understand the uncertainties and give clear messages to the policymakers.”*

**Dr Rangan Banerjee**

**Director, Indian Institute of Technology, New Delhi**

### **Cooperative Approaches are Better, More Effective, and Less Costly**

Air pollution is transboundary, interconnected, and knows no national boundaries—a fact that was echoed by all panelists. Even as governments across the regions and states are adopting a range of policies, the efforts will fall short of reaching the required air quality targets if there is no regional coordination.

For example, if the National Capital Territory in Delhi, [which is among the most polluted capitals in the world](#), were to fully implement all technically feasible air pollution control measures by

2030, Delhi would not meet the WHO Interim Target if other neighboring states and countries continue to follow their current policies. This is because the inflow of pollution from these states and bordering countries in the airshed outside of Delhi accounts for more than 50% percent of air particulate matter in Delhi.

The modelling in the new report lays it out clearly that working together would be more effective, and less costly- almost 45 % less expensive. For example, if regions in South Asia were to implement all technically feasible solutions to reduce air pollution separately, the average exposure would fall to just 17  $\mu\text{g}/\text{m}^3$  by 2030. But the cost would be enormous at USD 2.6 billion per  $\mu\text{g}/\text{m}^3$ . However, if there is full coordination, and governments in pollution hotspots aim to reduce pollution under a common strategy that leverages more cost-effective abatement measures, the average exposure of  $\text{PM}_{2.5}$  in South Asia could be cut to 30  $\mu\text{g}/\text{m}^3$  at a much-reduced cost of USD278 million per  $\mu\text{g}/\text{m}^3$ .

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*“Air sheds do not recognize national boundaries. In reference to the “two Punjabs” (Indian and Pakistani side), we have the same sources of air pollution, same seasonal patterns, geographical and meteorological conditions, and we affect each other. The airshed approach is the right strategy. We should develop a joint-working group, explore a regional scientific community platform that can act as regional advisory support, and also explore setting up an air quality monitoring communication support system.”*

**Samia Saleem**

**Additional Secretary, Environment Protection Department, Pakistan, Punjab**

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*“ The government has declared that by 2045 Nepal will be a ‘zero emission’ country. We have developed the Pollution Control Action Plan for mega cities; have set up an Environment Protection Council headed by the Prime Minister; and have started the Environmental Protection Fund. South Asian countries have limited resources, so we need to share knowledge and technical capacity, set up regional resource center, and if possible, even a regional fund to support these efforts. We also need to create awareness in local languages to reach out to people across the region. ”*

**Namaraj Ghimire**

**Director General, Department of Environment, Ministry of Forests and Environment, Nepal**

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## Next Steps to Collaborate and Clean the Air

Collaborations for air pollution management start with knowing that isolated measures can not win the battle. Dr Rangan Banerjee, Director, Indian Institute of Technology, New Delhi, pointed to the mutual benefit in understanding the airsheds, source of pollution, and measures regionally. He also emphasized the central role of science, evidence, and technical models in designing solutions and evidence-based policies. Here are a few suggestions from the panelists to strengthen cooperation:

- Gathering evidence and conducting source apportionment studies across the countries, cities, using the same standards. This will help identify sources of air pollution and policies jointly for effective results.
- Sharing technical knowledge, local best practices, and pooling resources on air quality management.
- Organizing joint missions to other neighboring countries within South Asia for learning and understanding common measures that can be implemented.
- Developing a framework for regional cooperation which will set air quality targets and goals, based on the baseline indicators in each country, state or province.
- Establishing a regional scientific platform- a community of scientists and technical experts for collaboration.

### WB Report's Three-Phased Roadmap for Clean Air

**Phase 1: Better Monitoring and Improved Institutions:** Expand air pollution monitoring beyond the big cities; share data with the public, create and strengthen credible scientific institutes that analyze airsheds, and taking a whole-of-government approach.

**Phase 2: Additional and Joint Targets for Cost-effective Abatement:** Broaden abatement measures beyond the traditional pollutant sources of powerplants, large factories and transportation and target cost-effective solutions like air pollution from agriculture, solid waste management, cookstoves, brick kilns, and other small firms. At the same time, introduce airshed-wide standards can be introduced.

**Phase 3: Mainstream Air Quality in the Economy:** Provide incentives for greener solutions and technologies in the private-sector, explore emission-trading schemes within air-sheds, and tap on the synergies with climate change policies.

## The Struggle for Clean Air in South Asia

- South Asia is home to 9 of the world's 10 cities with the worst air pollution.
- Air pollution causes an estimated 2 million premature deaths across the region each year and incurs significant economic costs.
- Concentrations of fine particulate matter such as soot and small dust (PM<sub>2.5</sub>) in some of the region's most densely populated and poor areas are up to 20 times higher than what WHO considers healthy (5 µg/m<sup>3</sup>)
- More than 50% of the air pollution in major cities is not local, but travels from outside.

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*"Air pollution is not restricted by boundaries. More than the 50% of air pollution in major cities in South Asia travels from neighboring states and countries. Cities, states, provinces, and countries of the Indo Gangetic Plain cannot reach air quality targets by themselves and are fully dependent on the 'positive spillovers' from the neighbors. Evidence is clear that by working together, countries will get better results, quicker and cheaper. Cooperative approaches can also save more than 750,000 lives annually. "*

**Cecile Fruman**

**Director, Regional Integration and Engagement, South Asia, World Bank**

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*" Air pollution is a silent killer in South Asia and was largely ignored. Natural disasters and other calamities had taken precedence when it came to national action in Bangladesh. Now air quality is being mainstreamed and we have introduced the Air Pollution Control Rules in 2022. Under the new rules, you can declare an area as a degraded airshed, which will have different air quality management criteria. There is also greater consensus on the transboundary flow of pollutants. We need to ensure there is more collaboration on joint research and scientific knowledge, followed by developing concrete cross-border action plans."*

**Dr. Abdul Hamid**

**Director General, Department of Environment, Ministry of Environment, Forest and Climate Change, Bangladesh**

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**COOPERATIVE APPROACHES TO COMBAT  
AIR POLLUTION IN SOUTH ASIA ARE  
45% LOWER IN COSTS THAN  
'AD-HOC APPROACHES' THAT  
HAVE NO REGIONAL COMPONENT**

*Striving for Clean Air: Air Pollution and Public Health in South Asia, (World Bank Report, 2022)*

**#OneSouthAsia**  
Striving for Clean Air in South Asia:  
Effective Regional Responses



# Striving for Clean Air

Air Pollution  
and Public Health  
in South Asia



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