

The Asian Co-benefits Partnership (ACP) serves as an informal and interactive platform to improve information sharing and stakeholder coordination on co-benefits in Asia. The ACP was launched with the support of the Ministry of the Environment, Japan in 2010 to help mainstream climate and environmental co-benefits into decision-making processes in Asia. Learn more about us at our website. <http://www.cobenefit.org/>



Highlights



Putting Air Pollution in Perspective

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How did you become interested in the impacts of air pollution on health?

In a world where countless news stories compete for our attention, a few years ago I was drawn to a striking and often overlooked figure: air pollution causes more than 5 million deaths annually. Majoring in international relations in graduate school, the most discussed forms of largescale human suffering were child mortality (in less developed countries), conflict and war, and human displacement. I was aware that pollution harmed health, but the 5 million deaths statistic motivated me to look more closely at how pollution emitted in one place impacts those living elsewhere. The air we breathe, and pollute, is also a clear example of an externality. Externalities are an area that is often featured in international relations—but air pollution is not typically a focal point of international relations research.

In addition, the air pollution statistic connected to personal experience. Growing up in the United States clean air is something that I have generally taken for granted. A forest and trail for hiking were practically across the street. But I also recall from time spent in Delhi, Mexico City, and Lima—cities where one's throat feels scratchy at the end of a day and blowing your nose leaves blackened tissue—that this is not always the case. I wanted to know more about the impacts of air pollution on health.

What have you found in your scoping of how the air pollution impacts compare to other areas of public policy?

My current interest has focused on the effect of short-lived climate pollutants (SLCPs) on human health, climate change, and agriculture. The latest research in

the State of Global Air 2020 report shines a light on the magnitude of these impacts; that report clarified that air pollution in 2019 contributed to an estimated 6.67 million deaths, representing 12% of world totals and the fourth greatest risk factor for mortality. This also does not account for the hundreds of millions of people whose lives are shortened by air pollution. Although this may not be news to those who have studied this issue for years, the magnitude of these impacts was an eye opener when compared to my previous frame of reference. For instance, the number of deaths due to armed conflicts and homicides—a data point familiar to those working on international relations—is around 550,000 annually.

Additional perspectives come to mind in reviewing air pollution. It has such a wide-ranging effect on humankind, with everyone affected, though of course in some locations more than others. The deaths are on par with smoking, which kills around 7 million persons each year. In addition, air pollution is truly a cross-cutting issue in that it also affects food systems and climate change, among other issues. Furthermore, it may be less recognized by the general public, due to air pollution's relatively hidden nature.

What else has the research revealed? As measurements become more accurate, we are better understanding not simply aggregate but a more varied set of effects. Questions are now focusing on who is impacted (really, everyone in some way or another), and by what level of air pollution (even small amounts, and including for a short time period). At the same time, an ongoing challenge is the difficulty of disaggregating some of the effects of improved air quality--i.e. how much does reduction of one type of air pollutant compare to another? In addition, we are increasingly seeing that

those affected are also not just in cities, as millions in rural communities are also harmed. It seems difficult to overestimate the wide range of negative impacts from air pollution. Yet information is not enough – despite the more accurate measurements, and knowledge of its harms, the problem still exists and stronger policies and actions are required.

What might be some of the implications of the size of air pollution impacts for policy?

Considering responses to air pollution, we already understand its causes and what needs to be done. Whether upgrading technologies in factories, or providing safe means for a family to cook at home, the knowledge is there. The main obstacle seems to be policy implementation. Beyond continuing to raise awareness, we can encourage – and pressure – those in leadership positions to commit to improvements. In a world of limited resources, including what governments spend on environmental improvements, we will also need to focus on the most cost-effective solutions. As such, we will need to put more effort in creating political incentives for action while also demonstrating the cost

and benefits of actions.

There is also a somewhat under-discussed geographic and developmental story to the impacts of air pollution on health. In an unequal world, higher levels of development are associated with lower exposure to PM_{2.5} and household air pollution. Air pollution remains a huge threat in some countries, particularly those in Asia. Great gains can be made by focusing on countries such as China, India, Bangladesh and Pakistan, four of the top eight by population size. Humans are now an urban species, but as mentioned before, we also need to look beyond cities, and direct attention to peri-urban and rural areas as places affected by and affecting poor air quality.

Lastly, solutions to air pollution are interrelated with climate solutions – reducing its causes, for example, is tied to cleaner sources of energy that are more climate friendly. Hence, using a co-benefit framing can help bring down air pollution. A focus on air pollution will improve health and reduce mortality, and it will also be made visible through its effect on slowing climate change and protecting agriculture and food systems.

Updates

ACP-IIASA Webinar held on 22 February

IGES and IIASA (International Institute for Applied Systems Analysis) co-organised, with ACP collaboration, a webinar entitled “How can systems analysis help align climate change, air pollution and sustainable development policies in Asia: Opportunities for collaboration”. The first session covered ‘Systems analysis to identify integrated solutions: Lessons from IIASA and Japan’ and presented ongoing collaborative research projects between IIASA, the Ministry of Environment Japan, and ACP. The second session highlighted progress on a co-benefits approach to air pollution control and climate change mitigation and followed by the panel discussion reflecting outcomes of the sessions and planning how to promote co-benefits. All presentation materials can be downloaded at: <https://www.iges.or.jp/en/events/20220222-2>



Publications

- Guo, Jiawen., Dong, Huijuan., Farzaneh, Hooman., Geng, Yong., Reddington, Carly. 2022. Uncovering the overcapacity feature of China’s industry and the environmental & health co-benefits from de-capacity. *Journal of Environmental Management* 308: 114645.
- Zhang, Yusheng., Griffith, Bruce., Granger, Steve., Sint, Hadewij., Collins, A. 2022. Tackling unintended consequences of grazing livestock farming: Multi-scale assessment of co-benefits and trade-offs for water pollution mitigation scenarios. *Journal of Cleaner Production* 336: 130449
- Sarira, Tasya., Zeng, Yiwen., Neugarten, Rachel., Chaplin-Kramer, Rebecca., Koh, Lian Pin. 2022. Co-benefits of forest carbon projects in Southeast Asia. *Nature Sustainability*. <https://doi.org/10.1038/s41893-022-00849-0>