ACP ASIAN Co-benefits Partnership

The Co-benefits Corner
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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

Bridging Research and Policy on Co-benefits in Indonesia

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The Asian Institute of Technology (AIT) is the leading Asian-Pacific regional postgraduate institution for the promotion of technological change and sustainable development through higher education, research and outreach. In this interview, Professor Nguyen Thi Kim Oanh and Dr. Didin Agustian Permadi reflect on their research on co-benefits in Indonesia.

What were the main reasons to begin conducting research on co-benefits?

(answered only by Prof. Kim Oanh)

I have been doing practical research on air pollution in Asia for the past 25 years. Over the time, I have witnessed how the air quality has steadily worsened in Asia, especially in urban areas. I have also seen population growth, industrialization, and urbanization lead to sharp increases in the number and intensity of emission sources. The impacts of this growth are readily apparent in the rapidly increasing emissions from expanding vehicle fleets and frequent traffic jams in Asia's cities. The adverse effects of these emissions on human health (i.e. number of premature deaths) and ecosystems (i.e. crop, forestry) are enormous in Asia. In fact, many of these effects are so great that they have begun to hurt the quality of life and slow regional economic development. Cost-effective measures to improve air quality are therefore urgently needed in Asia.

At the same time that policymakers need to take quick action on air pollution, climate change has become a pressing concern for many countries. Yet efforts to cut greenhouse gases (GHG), especially carbon dioxide (CO_2), will take time to achieve their desired results. One way forward is to recognize that toxic air pollutants and GHGs often come from common sources (i.e. fuel combustion in industry, power plant, vehicles, cooking, etc.). Co-control opportunities that aim to reduce both air pollution and GHGs (e.g. cleaner and more efficient combustion technologies in power plants) offer a no-regrets course of action. Another prudent move is targeting toxic air pollutants, such as black carbon (BC), that also have near-term climate effects. These pollutants are called short-lived climate pollutants (SLCPs).

A few years ago, I served as a vice-chair and co-author for several chapters for the UNEP–World Meteorological Organization "Integrated Assessment of Black Carbon and Tropospheric Ozone" that provided a scientific assessment of how measures aim at reducing the SLCPs would bring co-benefits. The report helped to lay the foundation for the Climate and Clean Air Coalition (CCAC) that is now helping countries take some of the actions it recommended. Working on this report convinced me of the power of science to improve the health and well-being of millions of people. It also has been part of a larger effort to bring research on co-benefits to bear on policy in Asia.

What are the key findings from the research on co-benefits in Indonesia?

One place where we have conducted applied policy research on co-benefits in Indonesia. Over the past two years, our research team at AIT has worked with IGES

and two prominent universities in Bandung and Semarang on co-benefits projects supported by the Ministry of Environment, Japan. In Bandung, we cooperated with the Bandung Institute of Technology to collect data on vehicle technology distribution, driving patterns and traffic volume; Diponegoro University supported similar data collection work in Semarang. The data was then used to prepare input to run the International Vehicle Emission (IVE) model to construct an air pollutant and GHGs emission inventory for on-road transport. Several traffic management scenarios, based on IGES policy studies, were then analyzed to quantify reductions in toxic pollutants and GHGs.

The results of the studies showed that motorcycles, buses and passenger cars contributed the most to different type of pollution in Bandung. Introducing eco-driving for these vehicles would lead to reductions of 3-21% in air pollution and 12.5% in global warming potential (GWP) (20-year time horizon) for Bandung. In Semarang, the study showed that eco-driving and the promotion of Bus Rapid Transit (BRT) would help achieve significant co-benefits. More concretely, a mode-shifting scenario from private fleets to BRT (that was consistent with the government's expansion plans) would help to reduce air pollution by 3.9% and GWP (20-year) by 4.5%.

What is needed to take the results of co-benefits research and ensure they serve as the basis for decision making in Indonesia?

There are a few features of the Indonesia co-benefits research that make it potentially valuable for policymakers. The first is that the emissions inventory developed in these studies used high-quality data on driving patterns, engine technology, and traffic volume. Because of the quality of the data, the inventories offer a relatively accurate representation of emissions from Bandung and Semarang's transport sectors. The inventories can therefore be used as a credible baseline for evaluating the effects of different transport policies and measures.

A second notable feature involves Indonesia's Ministry of Environment and Forestry Decree 15/2013 on the measurement, reporting and verification (MRV) of GHGs. The studies could help cities comply with the MRV regulation if it is passed down to the subnational level.

A third relevant consideration involves increasing awareness of co-benefits. One of the main reasons that awareness of co-benefits remains low is that different agencies or departments work on climate change and air pollution. Breaking down these institutional barriers can help raise awareness and disseminate research on co-benefits.

A fourth need in this area involves increasing the number of cities where co-benefits research is conducted. Research on co-benefits in other Indonesian cities could help make analyses of co-benefits more familiar. The spread of this research could also draw interest from the national government as it checks its own measurements of emissions against an expanding pool of city-level data.

Updates

IGES held a side event at UNFCCC COP 22: The Co-benefits from Mitigating Climate Change and Air Pollution in Asia: From Quantification to Demonstration, 11 November, 2016. The session focused on the discussion how to move from quantification to concrete demonstrations of co-benefits in Asia. It also strengthened relationship with existing (SEI York) and new partners (Centre for Policy Research, New Delhi) for the ACP.

Publications

Bain, Paul G., Taciano L. Milfont, Yoshihisa Kashima, Michał Bilewicz, Guy Doron, Ragna B. Garðarsdóttir, Valdiney V. Gouveia et al. 2016. "Co-benefits of addressing climate change can motivate action around the world." *Nature climate change* 6(2): 154-157.

Activities

The Nordic Development Fund supported Asian Development Bank Workshop on Gender-Responsive Climate Change Mitigation in Asia and Beyond will be held in Hanoi, 19th-20th December, 2016. Visit the web platform for further information: https://gender-climate.iges.jp

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