



Air quality co-benefits should be considered in climate policies

Measures to reduce greenhouse gas (GHG) emissions have the additional benefit of reducing air pollutants. However, these benefits are rarely included in the design and evaluation of climate change policies. A new study suggests that considering these benefits in climate change policy could reduce the cost of such policies, and engage stakeholders who are otherwise unmotivated to tackle climate change.

GHG abatement measures, such as changes in technologies to produce and consume energy, can also improve air quality by reducing emissions of pollutants including nitrogen oxides, sulphur dioxide, particulate matter and mercury. This can lead to substantial public health benefits. Even though the air quality co-benefits of climate change actions are well established, climate change policies do not typically account for them. Instead, the focus is on minimising the cost of climate change actions.

This study recommends that policy makers should be able to directly compare the cost of climate change actions with the economic value of their benefits, in terms of avoided damage to human health and the environment.

The researchers evaluated the potential benefits of including air quality co-benefits in climate decisions to put an estimated value on the co-benefits. By surveying existing studies in this area, they found 48 estimates, (expressed in US dollars per ton of avoided carbon dioxide emissions). These ranged from \$2-196 (around €1.5 -140) per ton of carbon dioxide avoided, with the mean average figure of \$49 (€35) per ton of carbon dioxide avoided (2008 values).

Incremental health benefits are larger when the starting levels of air pollution are high. Therefore as pollution emission reductions become more stringent, air quality co-benefits become less significant. The greatest air quality co-benefits were found in developing countries with high levels of air pollution. Even small reductions there are likely to have large health benefits. This implies that the most important time to include air quality co-benefits in long-term climate change strategies is at the beginning, particularly for developing countries without major air quality initiatives.

However, there are still large uncertainties in valuing the costs and benefits (including air quality benefits) of climate change mitigation. Improved evaluation techniques for both climate and air quality benefits in climate policy are needed; this is becoming an important area of research. Air quality co-benefits may not be considered important driving forces for strong climate policies unless their value can be reliably estimated.

In addition, there are barriers to including air quality co-benefits in international policy regimes. Countries may adopt divergent priorities on climate change and air quality. For example, developing countries might value avoided climatic damage as a co-benefit of their pursuit of air quality improvement, while developed countries might focus on climate impacts directly, with improved air quality as an ancillary benefit.

The study highlights a number of advantages to considering air quality in climate change debates. Firstly, including air-quality co-benefits reduces the cost of climate policy for wider society. Also, improved health through better air quality is more evident on a local, near-term level than climate change, which tends to be regarded by many as a long-term, future issue with many uncertainties. This integrated approach could be used to engage stakeholders who are reluctant to pay for mitigation actions or who are unmotivated to avoid climate damage. For example, developing countries might have stronger incentives to participate in international agreements when air quality co-benefits are included with climate benefits. Accommodating diverse preferences about whether to prioritise climatic or air quality benefits will require a high degree of flexibility in the international climate regime.

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