Building on success to tackle climate pollutants

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International Institute for Sustainable Development president Scott Vaughan joined the Canadian-based public policy think tank in early April, leaving the office of Canada's Commissioner of the Environment and Sustainable Development, where he had served for five years.

One of the most pressing issues facing policy-makers is climate change. For the first time, levels of carbon dioxide in the atmosphere have exceeded 400 parts per million, and projected emissions of carbon pollutants are forecast to keep increasing.

For more than two decades, climate change has been categorized as an environmental issue. However, long ago its effects began exerting significant economic impacts on core areas such as infrastructure, public safety, public health, farming, forestry and mining.

Accordingly, delegates at the 2013 World Economic Forum in Davos spent a lot of time looking at the impacts of climate change, and the head of the International Monetary Fund warned the single most important economic challenge of the 21st century wasn't the eurozone's slow global growth, or price volatility, but climate change.

Forecasts exceed global warming threshold of 2°C

The recent draft report of the National Climate Assessment and Development Advisory Committee (NCADAC)[1] to the United States federal government reflects the economic and other powerful effects of climate change.

The report is important for three reasons. Firstly, it contains one of the most comprehensive scientific overviews to be issued prior to the next Intergovernmental Panel on Climate Change (IPCC) assessment report due in 2014.

Secondly, the report collects the views and concerns of 13 US federal agencies - from NASA and the US Environmental Protection Agency to the Pentagon, the Department of Commerce and the State Department. This collection of federal agencies reflects not only the multiple economic dimensions of climate, but also the foreign policy and security-related issues such as prolonged drought, food scarcity and political instability.

Finally, the scientific findings of the US report underscore that little has been achieved to date in bringing down climate pollutants.

At the 2009 climate change talks in Copenhagen, countries around the world (including Canada) committed to cap climate pollutants like greenhouse gas emissions in order to stabilize warming at 2 degrees - set as the threshold needed to constrain the most extreme climate impacts.

However, there are already enough greenhouse gases in the atmosphere to warm the planet by at least 2.4°C during this century.

More deeply troubling is the NCADAC report's conclusion that we are on a path to significantly surpass the 2°C threshold, with projections of as much as a 4° or even 6°C rise in this century. The report notes that the scientific evidence of observed climate change already abounds, by way of extreme weather events like drought, flooding, coastal storms and tornadoes.

Against the backdrop of these kinds of forecasts, many are asking why comparatively little is being done to lower the level of climate pollutants. It may be that we have become accustomed to hearing about climate change as a distant issue. Perhaps we have tuned out the warnings or accepted them with resignation, as tackling greenhouse gas emissions is too complex and expensive and the multilateral system has delivered too little?

Yet there has been some success, and it is important to build upon those solutions in order to tackle the environmental threats with urgency.

The Montreal Protocol: example of success

The single most successful global environmental treaty was born in Canada, with the signing of the 1987 Montreal

Protocol. The treaty emerged to protect the Earth's stratospheric ozone from destructive chemicals such as chlorofluorocarbons (CFCs), once used widely in aerosols and other applications.

In the past 25 years, the Montreal Protocol has been a model in merging science, finance, and the cooperation and leadership of companies to phase out not only CFCs, but a generation of other ozone-depleting chemicals. Because of the Montreal Protocol, the significant destruction of the Earth's stratospheric ozone layer was averted in the 1980s and is on the path to full recovery by 2075. In turn, this will lead to the prevention of literally millions of cases of skin cancer around the world - an estimated six million in the United States alone - as well as other human health and environmental benefits.

Along the way, the Montreal Protocol has also become the single most successful international instrument in reducing climate pollutants. The chemical composition of ozone-depleting substances means that they also act as powerful agents, on a per molecule basis, in atmospheric warming. Therefore, by reducing and banning those ozone-depleting substances, the Montreal Protocol has done far more - as much as eight times more - to reduce climate pollutants than the Kyoto Protocol, according to estimates by the Institute of Governance and Sustainable Development. In fact, the Montreal Protocol has led to the avoidance of more than 200 Gigaton (Gt) of carbon dioxide ($C0^2$) equivalent from 1990 to 2010, compared to approximately 5-10 Gt $C0^2$ equivalent that the Kyoto Protocol is projected to achieve during its first commitment period of 2008 to 2012.

A growing group of countries are now looking to the Montreal Protocol as a means to accelerate actions to combat climate pollutants. A specific proposal that is gaining ground is to include within the Montreal framework a new category of particularly destructive ozone-depleting substances - hydrofluorocarbons (HFCs). This chemical, used in refrigeration and insulating foams, is already being replaced in some categories with cost-effective substitutes. Many believe their complete withdrawal from the marketplace wouldn't be missed.

The inclusion of HFCs in the Montreal Protocol would be the equivalent of reducing over 100 billion tons of carbon dioxide by 2050. And the cost of reduction is estimated to be just pennies per ton. The proposal to include HFCs within the Montreal Protocol has the support of over 100 countries, including Canada, the US and Mexico.

The focus on HFCs is an example of a growing interest to tackle other short-lived climate pollutants, such as black carbon and methane, which stay in the atmosphere for 15 to 30 years - compared with up to 50,000 years for some greenhouse gases.

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In February 2013, the US State Department launched the Climate and Clean Air Coalition (CCAC) to fast-track and commercialize HFC substitutes. Canada and more than 20 other countries are strong advocates, along with non-governmental organizations such as IISD, which is also a member of the CCAC.

The Montreal Protocol shows that progress can be made in practical ways, away from the media spotlight of negotiations, with actions anchored in science. We can accelerate concrete, measurable and cost-effective actions to reduce short-lived climate pollutants and to marry those efforts with current work in reducing greenhouse gases like carbon dioxide.

With the 400 parts per million carbon dioxide threshold already passed, we need to build upon these examples of success to urgently tackle climate pollutants. ■

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On June 8, 2013, United States President Barack Obama and Chinese President Xi Jinping pledged to cut production of hydrochlorofluorocarbons (HFCs). This chemical, used in refrigeration and insulating foams, is already being replaced in some categories with cost-effective substitutes.

According to Vaughan, the agreement will greatly bolster calls by a growing number of countries to include HFCs within the 1987 Montreal Protocol.

1. http://ncadac.globalchange.gov/