How to Ensure a Stronger Voice for Evidence in Government Policy Making!

Symposium: Evidence-Based Decision Making
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Moderators: **Janet Bax**, Former Interim President of the Council of Canadian Academies; **Paul Dufour**, Principal PaulicyWorks, Adjunct Professor, University of Ottawa; **Gerard Kennedy**, Chief Executive Officer, Alpha Healthcare Group; **Heather Douglas**, Waterloo Chair in Science and Society, Associate Professor, Department of Philosophy, University of Waterloo; **Kamiel Gabriel**, Professor, Department of Automotive, Mechanical and Manufacturing Engineering, Faculty of Engineering and Applied Science, University of Ontario Institute of Technology

Speakers: **Kamiel S. Gabriel**, Professor, Department of Automotive, Mechanical and Manufacturing Engineering, Faculty of Engineering and Applied Science, University of Ontario Institute of Technology; **Gordon McBean**, President, International Council for Science & Co-Chair, Governing Council, Future Earth: Research for Global Sustainability; **Paul Dufour**, Principal PaulicyWorks, Adjunct Professor, University of Ottawa; **Heather Douglas**, Waterloo Chair in Science and Society, Associate Professor, Department of Philosophy, University of Waterloo; **Monica Gattinger**, Director, Institute for Science, Society and Policy, University of Ottawa; **Dr Chandrika Nath**, Deputy Director, U.K. Parliamentary Office of Science and Technology; **Gerard Kennedy**, Chief Executive Officer, Alpha Healthcare Group, **David Hall**, Associate Professor of Animal Health, University of Calgary; **Micheal Kruse**, Board Chair, Bad Science Watch; **Margaret Dalziel**, Associate Professor, Conrad Centre for Business, Entrepreneurship and Technology, University of Waterloo & Vice-President Research, The Evidence Network; **Graham Fox**, President and CEO, Institute for Research on Public Policy; **Rees Kassen**, Professor and University Research Chair in Experimental Evolution, University of Ottawa

Takeaways and Recommendations

- Establish a framework for evidence to encourage integration of science into practice
- Integrate and synthesize evidence and bring to policymakers in a meaningful way
- Ensure evidence is accessible to policy makers by using common outcome measures understood by scientists, policymakers, politicians, industry and public
- Design process to determine when you have sufficient credible evidence. Transparency is key in building trust and credibility
- Make advice of the Science, Technology and Innovation Council (STIC) public and make its information accessible, transparent and reflective
- Ensure the research and policy making communities take responsibility in evidence generation seriously
- Build a scorecard of how science departments are responding to integrity and transparency, as well as a checklist to demonstrate how evidence used in policy decisions
- Engage Parliament and establish a parliamentary science office
- Fellowships and training for science community to better understand policy making
- Science policy office should be non- partisan & located within the parliamentary apparatus
- Network and support independent organizations communicating science evidence in all forms
- Civic engagement and participation
- Generation of evidence (citizen science, direction of research, evidence on public values)
- Evaluation of evidence
- Hold elected officials accountable
- Promote leadership in Canadian science policy and develop alliances with other players
- Understand and engage all stakeholders nationally and internationally (e.g. Quebec chief scientist)
- Explore potential role for the CSPC

The policy issue: Evidence-based decision-making (EBDM) has emerged as a defining issue in S&T research and policy circles, energizing discussion and debate over the role science plays in informing government. Enthusiasm for EBMD is surging in Canada following the election of a Liberal government that has committed to science and evidence in decision-making as central to its governing strategy.

The CSPC devoted a full day to EBDM, exploring central issues such as environmental sustainability, science integrity and best practices from an international perspective. Consensus emerged that while science is a fundamental competitive resource in a knowledge-based economy, existing Canadian science advisory bodies are failing to bring EBDM into the decision-making process.

Participants discussed and debated how evidence should be presented to government and parliament to ensure it will be seriously considered.

The policy options: McBean provided an international perspective on the issue. He said a framework is needed that encourages integration of credible evidence from sources that may be is internal or external to government, or from Canada other countries. That framework must be able to assess the reliability of the science and while ensuring universal access to reliable data and an effective decision-making mechanism to help synthesize information into a credible plan for presenting to government.

Perspectives on the Canadian context were offered by Dufour and Gabriel. Previously employed models for delivering EBDM should be examined when establishing the new mechanisms for providing science advice, Dufour said. This was considered particularly relevant given Science Minister Dr. Kirsty Duncan's mandate to "Create a Chief Science Officer mandated to ensure that government science is fully available to the public, that scientists are able to speak freely about their work, and that scientific analyses are considered when the government makes decisions".

Dufour noted that he preferred the term science-informed decision-making to EBDM to reflect the multiple of inputs to the decision-making process and the gap in language used by scientists and politicians.

There's a sense that Canada has fallen behind in using EBDM. Dufour said Dufour current mechanisms for informing the political realm with science—the Council of Canadian Academies and the Science-Technology and Innovation Council (STIC)—are insufficient for the complex and often diffuse ways in which legislators utilize science.

Dufour recommended a close examination of Quebec's chief scientist's role when the federal Liberal government weighs its options for new advisory bodies. Other recommendations included a scorecard to determine whether science-based departments and agencies are performing with respect to scientific transparency and integrity and making any reports developed by government advisory bodies public.

"Confidential advice is aberrational especially in a democracy," said Dufour.

Science is only one of many factors governments consider when crafting legislation, placing the onus on selecting the most appropriate mechanisms to ensure that science is not crowded out.

"Focus on the Canadian context and requirements," said Gabriel. "Science is only one input among many and science literacy is required to assess its capabilities and limitations."

In determining the most effective role for EBDM, panellists agreed that politicians—not scientists—should make policy decisions as they are democratically accountable. Canada's currently weak accountability and feedback mechanisms could be bolstered through the use of citizen science which helps form consensus and direct the science to where it is most needed.

Public values should also be weighed, said Douglas, adding that specially convened forums are more effective than telephone surveys where self-interest colours opinion. Douglas said the collaborative weight of evidence analysis is useful in bringing the public, stakeholders and scientific evidence together when considering contentious issues.

"Scientists set the research agenda (and) citizens gather and assess evidence," said Graham. "It helps to resolve controversy in a transparent way by allowing scientists to address concerns. Involving the public builds trust in science and science literacy."

The symposium heard how evidence can be effective in confronting challenges with major economic impacts. For the Canadian meat industry, EBDM could have helped allay the widespread fears unleashed in the wake of an outbreak of Bovine spongiform encephalopathy (BSE), commonly known as mad cow disease.

University of Calgary researcher Dr. David Hall said surveillance is a key policy tool for supporting Canadian agriculture in the international markets that have banned the import of Canadian beef. Surveillance allows for the early identification of problems and engagement to ensure the damage is limited and not repeated. He noted that, while Canada is belongs to several international oversight organizations, it's "not always at the table. It needs to be".

"Early and open reporting maybe detrimental in the short term but it's beneficial in the long term," said Hall. "Freedom from disease is a strong competitive advantage when exporting."

Bad Science Watch's Cruse said EBDM could be used to better inform the public and policy makers about the potential drawbacks of natural health products (NHPs). Currently, these products are subject to "lax oversight and it's getting worse", as reflected in lower standards of evidence and shorter review times.

"We need an office of evidence-based policy and mandatory quality assurance programs," said Kruse. "There should be the removal of NHPs from exemption in Bill C-17. There's no consumer voice in these decisions."

Dalziel offered 10 suggestions for using EBDM when formulating and assessing government business support programs. These range from creating a culture of learning and striving for business support that's transformational to revamping the tax credit program for business R&D and designing programs for effectiveness rather than measurability.

One group aiming to improve the use of science in decision-making is the Science Integrity Project (SIP), which recently released a statement of principles for sound decision-making in Canada. Comprised of 75 science policy experts from coast to coast, the SIP has conducted in-depth interviews with science policy leaders and held a national conference in February, 2015. SIP also developed a set of five principles to utilize the full range of evidence that exists and create mechanisms to help move evidence into decision-making:

Principle 1: The best available evidence—produced by methods that are transparent, rigorous, and conducted with integrity—should always inform decision-making.

Principle 2: Information should be openly exchanged among scientific researchers, indigenous knowledge holders, decision-makers and the public.

Principle 3: Research results should be preserved, protected, interpreted and shared in a way that is broadly understandable and accessible.

Principle 4: Decision-making processes, and the manner in which evidence informs them, should be transparent and routinely evaluated.

"There's a feeling that the best evidence is not getting a fair hearing at all levels of government," said Kassen. "The last nine years have been a motivation to engage."

Kennedy said that with the appointment of Duncan as Science Minister, the timing is excellent to advocate for greater EBDM. He called on practitioners and promoters to form a committee or panel to advocate for greater use of EBDM.

"You have a seat at the Cabinet table. You don't want this to go away," said Kennedy. "The science policy community must demonstrate they're in for the long haul and have skin in the game when it comes to giving government advice. Make it inevitable."

Former MP and Liberal Science critic Hsu said the best time to engage the new government is within the next two months.

Watters, an innovation consultant, said there needs to be a process to gain a deeper understanding of the work done in the symposium. He also suggested looking at EBDM in the private sector, pointing to efforts by the former UK government of Tony Blair in this area that "yielded excellent results".

"Get the diagnostics right and ensure that the social sciences are included," said Watters.