

Do you want to build a(nother) snowman?

Possibilities for the new Chief Science Officer concept

Paul Dufour, ISSP, UOttawa

I think we are all familiar with our Nordic clime and the Canadian habit of building snowmen. What's nice about them is that you can use your creativity and imagination to build them to any specification under the right conditions. No two are alike—just like snowflakes. But snowmen have a structural –if not temporal, flaw—while some may last through a winter, they will all eventually melt—leaving the water to dissipate---until we build them again in another winter if the conditions are propitious.

The history of Canada's science advisory experiments are just like these snowmen—we build them (at times with interesting features) but in the end, they are doomed to disappear leaving little visible trace. We simply have not learned how to keep them from melting.

We are now yet again exploring another science advisory mechanism. We know that it is a mandate by the PM to the new science minister who is now consulting broadly seeking input on this Chief Science Officer concept. But we don't know its form or function. We don't even know if we need one—but it does seem to be a good idea.

And it is trendy. There have been conferences or summits to discuss best practices in this area, including 2014 events in Auckland hosted by the International Council for Science and the New Zealand Chief Scientist, Sir Peter Gluckman, as well as a preceding meeting of Chief Scientists and Opinion Leaders convened by Québec's Chief Scientist, Dr. Rémi Quirion. A new International Network for Government Science Advice has been established. It provides a forum for policy makers, practitioners, academics, and academics to share experience, build capacity and develop theoretical and practical approaches to the use of scientific evidence in informing policy at all levels of government.

Going back to the CSO issue here, it does strike me as passing strange that we are only exploring one small part of the organizational ecology of our advisory apparatus. The South African science minister has just appointed a special **institutional landscape review** to establish whether the institutional landscape is able to optimally assist in achieving the objectives of South Africa's National Development Plan (NDP) and socio-economic needs. This includes identifying any gaps in the current institutional landscape. This is but one example but other countries are doing same. Advisory structures are one element of that, but no means the only dimension. I raise this case because ultimately it is a dangerous thing to assume that with a science advisor in place, one can effectively address expectations about the use, direction, scale and scope of knowledge in your country.

Science advice is not science—it is an art. And it operates in a complex policy and political environment. As Gluckman said at the CSPC meeting in Ottawa last November:

We... need to recognise that the systems developed to deliver science advice are complex and evolve according to local history, culture and approach to public reason. A complete system needs to consider the diversity on the demand side both in need and in type; the executive branch, the legislative branch (if distinct) and the policy community all have different needs.

Let me also be clear about one other expectation. If science, technology and innovation advisory functions are to be effective, they must be clearly linked to, and perceived to have an impact on, government decision making, priority setting and policy development, coordination and implementation.

Linkages need to be made at the political level – Ministers, Cabinet and Parliament, and within the federal bureaucracy. In order to assist decision-making, there is a requirement for accountability to Parliament and a need to provide Parliamentarians with regular information and objective analysis of science and technology relevant to the policy issues of the day.

Most recently in the House, the NDP has yet again suggested a type of Parliamentary Science Office akin to the Parliamentary Budget Office structure that now exists as a watchdog for government finances. Such a structure might well be helpful for a new CSO to have—providing of course, that a PSO remains non-partisan and that there is a demand for this service. In Research Money, Jean-Marc Mangin of the Canadian Federation of the Social Sciences and Humanities said: *To be effective, the new Chief Science Officer must be part of the central machinery of government, positioned to understand the policy context, able to integrate insights from all disciplines, and be a superb communicator. However, creating a Chief Science Officer is not on its own sufficient to democratize science advice. Parliamentary committees should be able to make full use of Canada's abundant research insights in their deliberations, calling on postsecondary institutions, scholarly associations and non-profit organizations in all scientific disciplines.*

And this includes traditional knowledge as well. The Indian PM said as much at the 103rd Indian Science Congress in January when he noted: *Like traditional knowledge, science has also evolved through human experiences and exploration of Nature. So, we must recognize that science, as we see it, does not constitute the only form of empirical knowledge about the world. And, we must bridge the distance between traditional knowledge and modern science, so that we can craft local and more sustainable solutions for our challenges).*

Here then are my ten observations on making things work for any structure implicating a chief science advisor:

1. There is no ideal structure-- historical experience and culture matter
2. CSAs need to undertake a systems approach; at the end of the day, their effectiveness is measured in their ability to understand context, crisis, the policy world and political-social interactions--not to mention how to communicate well to both the public and media
3. There is no training or proving ground for CSAs--perhaps there should be
- 4 A key to successful CSAs appears to be their ability to frame complex issues in such a way as to have their political masters-- and the informed public-- grasp the essence of the issues
- 5, CSAs should always be on tap--not on top (sometimes they forget)
6. There is no such thing as an independent or objective CSA-- all come with baggage and values; but they must be non-partisan to be effective
7. Chemistry matters- personal relationships are key to making such arrangements work--sometimes organizational--- design ---however well intentioned, can get in the way.
8. The most qualified person in terms of credentials or research is not necessarily the most effective CSA
9. While the UK and other Commonwealth models are often go-to structures, they should be assessed critically before borrowing some of that experience; What Works Centres, POST and MP Pairing Scheme nonetheless are worth a more intensive look
10. CSAs best operate with a suite of other advisory structures to both complement their work, but also to provide needed outreach for effective advice and implementation.

So if we want to build something a bit more permanent that will not disappear at the first signs of spring, we might wish to consider some of these principles. After all, we can build a durable snowman or as the song from Frozen says: maybe something else.

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