

Sailing Without a Map

The need for evidence-based policies

POLICY MAKERS ARE THE NAVIGATORS, THEY HAVE TO MAKE DECISIONS — SCIENTISTS ARE THE MAP MAKERS.

— *Dr. Youba Sokono*

Alana Westwood

“No science, no evidence, no truth, no democracy,” declared waving placards held high by hundreds of scientists marching on Parliament Hill in the summer of 2012. The connection that troubled them, declared during a protest unprecedented in type and scope, has not been so apparent to federal Canadian policymakers. Since 2006, politicians have taken the knife to scientific and evidence-gathering infrastructure. They haven’t realized the consequences of their actions: stripping the radar and scuppering the boat.

Incredible changes have befallen scientific and evidence-gathering infrastructure in Canada. Hundreds of federal programs and institutions and thousands of federal scientists have been eliminated, ostensibly for the sake of reducing costs. Libraries have been closed and books destroyed. Much of what has been lost is not just jobs and materials, but also the past and the future. By shutting down archives and monitoring programs, Canada is losing the ability to backcast. After eliminating skilled scientists and long-term programs, we cannot forecast. We can’t remember where we’ve been, and can’t see where we are going. The maps have been tossed into the sea.

Yet, here we are: floundering in the face of economic uncertainty, climate change, sweeping technological reform, and rapid social

evolution. We expect our political leaders to guide us safely across unknown waters, and to predict, avoid, or — at least — weather the tempests. The best guide for decision-making is the same as it has always been: reputable evidence. There is a reason the scales of justice are weighed on evidence, and hinged on its rational evaluation. Without data, or predictions arising from data, it is impossible to compare alternatives.

Despite the recent unprecedented attack on science¹ and evidence in Canada, we also have an opportunity. There is still time to reverse course, to patch the holes. What the current crisis around federal science has created is something that has never been seen before: a media and advocacy-led mass eye-opening. For perhaps the first time in history, the Canadian public is aware of, and actively discussing, the paramount importance of evidence for democracy.

THROWING AWAY THE MAP

Knowing that Canadian citizens have been voicing a demand for science and evidence in their democracy, the Harper Government asserted in 2013 that their support for science was greater than any other government in Canadian history. This statement was at best, misleading, and worse, patently false. Though the trend



*One of 17 simultaneous nationwide Stand Up For Science rallies, September 16, 2013.
Photo: Kevin O'Donnell*

started earlier, accounts of a sustained affront against science, scientists, librarians, and a host of other evidence-gathering institutions have abounded since 2006. Hardly any scientific institutions have been spared from cuts, manifested through three main vehicles. It is important to discuss some key examples to establish the consequences of loss.

1. Reductions in communication of science and evidence

Starting in 2006, communication policies for federal government scientists began to shift. The number of federal communications officers increased by 15%¹, and a 2008 federal media protocol for Environment Canada advised:

Just as we have one department we should have one voice. Interviews sometimes present surprises to ministers and senior management. Media rela-

tions will work with staff on how best to deal with the call (an interview request from a journalist). This should include asking the programme expert to respond with approved lines.²

It did not take long after changes to this and many other departmental protocols for stories to emerge of government scientists being restricted from talking about their research to journalists and the public. New policies at the Department of Fisheries and Oceans increased the bureaucracy involved for government scientists to publish their work in scientific journals, escalating concerns of political inference. Surreal stories emerged of government scientists unable to attend to conferences without chaperoning media minders and unable to speak to the press at all.³ Meteorologists were forbidden from saying the words ‘climate change.’⁴ By 2013, even federal librarians and archivists were silenced,⁵ whereby attending conferences, speaking in classrooms, or speaking up at public meetings were considered “high risk” activities that must be cleared with managers. The new code of conduct stressed duties of loyalty to the elected government, rather than the Canadian public, and discussed reporting offenders. It should have been no surprise that on the heels of this came an announcement that the House of Commons was imposing a loyalty agreement on employees that could be used as a lifetime gag order.⁶

National non-profit Evidence for Democracy studied the communications policies of federal

government departments relating to science and technology, and found that these policies overwhelmingly do not support open communication, and more shockingly, that policies do not protect scientists' right to free speech or protect against political interference.⁷

Policy is one thing, but practice can be quite another. The union group representing federal scientists, the Professional Institute of the Public Service of Canada (PIPSC), was able to survey their members about muzzling allegations. Over 90% of responding members (25% of all members) felt they couldn't speak freely about their work, while 86% felt unable to report actions that might harm the public without being reprimanded. Just under half had seen the public or government to be misled or misinformed due to withheld information, and 43% had been personally asked to alter or exclude information from documents for non-scientific reasons. Most sobering of all: *half* of respondents claimed they had seen instances where political interference in science compromised public health and safety.⁸

Despite wide media coverage and public outcry, no changes in policies have been made, and there is no indication that the chilled climate for federal scientists will be lifted.ⁱⁱ

2. Erosion of our science and evidence gathering capacity

It's difficult to collect evidence without either people or tools. After omnibus budget bills of 2012 and 2013, almost 1,900 federal government scientists were laid off,⁹ and these numbers do not include support staff. At least 157 federal scientific institutions have received staff cuts, funding reductions, or complete elimination.¹⁰ Though almost every federal scientific and monitoring institution was affected, the vast majority of those hardest hit were environmental – particularly those concerning monitoring of water and air quality, or conservation of species at risk. However, cuts have been across the board... even the research budget at Justice Canada was slashed, and a substantial portion of staff at the Canadian Food Inspection Agency laid off.

Media coverage and resistance surrounded the (attempted) closure of institutions such as the National Round Table on Environment and Economy, the Polar Environment Atmospheric Research Laboratory, and the Experimental Lakes Area. In the wake of relentless public pressure, the latter two were reinstated: the former with a smaller temporary grant, and the second transferred to NGO management with some provincial funding. But as for the dozens of other shuttered institutions, their long-term data and monitoring is now defunct, and the millions of taxpayer dollars that established them seems wasted.

Federal science was hard-hit, but academic research funded by government didn't feel the squeeze until 2011. Thereafter, there was a marked downward trend of funding contributed to the federal Tri-Council, responsible for distributing research money to investigators (primarily academic) in science, engineering, medicine, and social sciences.¹¹ Funding was re-oriented with an explicit shift towards short-term commerce-driven innovation, and industry partnership – away from basic science. In 2013, Canada's global ranking dropped from 16th to 23rd in expenditures on research and development relative to GDP.¹²

Perhaps most dramatically Orwellian was the sudden and unexpected closures of federal libraries. The story broke in earnest in late 2013 with the closure and destruction of collections from the Department of Fisheries and Oceans libraries. However, unbeknownst to most Canadians, this was only the latest. Since 2012, dozens of libraries had been quietly shuttered, including those from the departments of Health Canada, Citizen and Immigration Canada, and Employment and Social Development Canada.¹³ With these closures came the loss of irreplaceable materials (undigitized gray literature), the value of which will never be known.

3. Diminished role of evidence in policy decisions

Governments diminishing of the role of evidence in policy is not a recent development in Canada. Unfortunately, it has always been the



The Grim Reaper herself makes an appearance at the Death of Evidence Rally, July 10, 2012. Parliament Hill, Ottawa.

aim of some political actors to govern on the basis of ideology, not evidence, in the interest of a particular agenda. However, if government decisions are to be in the public interest, given the great diversity of ideologies in the Canadian public, it is essential that evidence be part of the equation. After all, as Daniel Patrick Moynihan put it, “everyone is entitled to [their] own opinion, but not [their] own facts.”

Whereas ignoring or omitting evidence in policy decisions has probably occurred since Confederation, recently, the public has taken notice. Much has been said about a number of federal decisions since 2010 in particular, with media specifically focusing on seemingly-deliberate ignorance of evidence. These issues included controversial changes to the Fisheries Act, slashing the role of the *Canadian Environmental Assessment Act*, attempts to close the safe injection program Insite despite strong results, the approval of the Northern Gateway pipeline despite many serious flaws with the science during the project’s assessment, and a host of others.

Though the environment has been in the spotlight, another devastating change has been the serious impairment of Canada’s ability to adequately deal with social issues. Accurate demographic data is necessary to plan crucial social institutions such as hospitals, daycares, welfare programs, and the like. The long-form census, Canada’s prior main avenue for collecting demographic data, was cancelled in 2010 and replaced with the voluntary National Household Survey. Munir Sheikh, StatsCan’s Head Statistician resigned shortly thereafter. Of this change, he wrote “It is a statistical fact that a voluntary survey cannot hope to act as a substitute for a mandatory census. A voluntary survey will inevitably result in uneven response rates... many data users who depend on the long-form census – including the federal government – will lose the data quality they need.”¹⁴

Since the change, serious problems have been identified by StatsCan staff and statisticians and demographers worldwide.¹⁵ StatsCanada itself, upon releasing 2011 results,

cautioned against significant gaps in data for many geographic areas and groups, including languages, immigrants, visible minorities, and Aboriginal peoples.

THE SINKING SHIP

Whatever the short-term political benefits may be, the long-term consequences of eroding evidence, evidence-gathering institutions, and its role in policy are dire. These are twofold: practical, threatening environmental and human health, and political, threatening our democracy itself.

1. National problems require national solutions

All federal scientific and research institutions share a common feature: there was an important reason they were created in the first place. Most programs had major goals: to gather data to help policy-makers respond to a problem, or to gather baseline data for predicting or detecting problems. Often, federal science and research were developed to address cross-jurisdictional problems, such as water contamination, airborne pollutants, and food safety.

Though many of these programs and institutions are now gone, the problems themselves have certainly not disappeared. Perhaps the thought from the federal level was that other jurisdictions would fill the vacuum, to deal with environmental and health issues at the local level.

This has rarely been the case. A notable exception is the Experimental Lakes Area, where a concerned citizens' coalition emerged after funding was cut and campaigned to save the renowned and highly important scientific institution. However, for the most part, provinces, municipalities, universities and individuals simply do not have the capacity to adopt large-scale monitoring and research projects. Even if they can do so in the interim, there are no guarantees on the longevity of the support.

More importantly, though, it is not even desirable for cross-jurisdictional problems to

be addressed at the local level. A national effort is needed to ensure quality and consistency. Take, for example, water quality monitoring. Only a national policy can create broad regulations, establish data standards, and ensure both coastal and freshwater management are included (which are inextricably linked). Canada has felt the impact of an uncoordinated, disjointed effort: contamination has led to sickness and in some cases, death.¹⁶

Many modern concerns are cross-jurisdictional: oil pipelines, climate change, infectious diseases, fisheries collapse, and many others. It is apparent that cuts and closures to institutions and programs like the *Action Plan on Clean Water*, the *Chemicals Management Plan*, *Species-At-Risk Program*, *Environmental Risks to Health Program* (just to name a few) put Canadians and Canada's environment at risk. Local band-aid solutions simply are not appropriate – not when the scope is so large and the stakes so high. National issues require data collected at the national scale, which adheres to standardized procedures and regulations. This can only be completed by federal initiatives.

2. Eroding the foundations of democracy

"In the absence of rigorous, scientific information – and an informed public – decision-making becomes an exercise in upholding the preferences of those in power." - Carol Linnitt

Democracy, at its foundational core, relies on an engaged and informed citizenry. As put by Michael Delli Carpini and Scott Keeter, "Factual knowledge about politics is a critical component of citizenship, one that is essential if citizens are to discern their real interests... Knowledge is a keystone to other civic requisites."¹⁷

In industrialized nations, this requirement is on shaky ground: voters are increasingly disenfranchised with politicians and politics, with voter turnouts in Canada near all-time low. Perhaps this is voter apathy: many citizens may not particularly care to know about the issues. However, there is a crucial difference between



Death of Evidence Rally, July 10, 2012.
Parliament Hill, Ottawa.
Photo: Richard Webster

not knowing and not being able to know. Though the public may not always be well-informed, it is critical that they can be.

Informed voters need to be able to answer the questions ‘What are the issues, and why are they issues?’ and ‘What are our options, and can we compare between them?’ Answering these questions requires that research-based evidence is available, archived, and publically accessible. When this is not the case, voters *cannot* be informed, and a key principle of democracy is violated.

It is not just citizens that need these answers, but politicians themselves. Politicians campaign and create legislation through debate. Most platforms and policies concern empirical things: taxes, education, health care. An empirical argument needs empirical evidence. Even where argumentation might be perceived by some to fall exclusively into the realm of moral reasoning (e.g. criminal punishment), evidence

is needed to demonstrate that the issue needs addressing in the first place (e.g. increasing crime rates over time; prisons over capacity).

We like to hope that our democratic institutions have a semblance of transparency and accountability. This demands that government decisions, and their justifications, be made explicit. In the absence of some justified evidence, all that is left is hand-waving and ideology. As Christopher Hitchens noted, “that which can be asserted without evidence, can be dismissed without evidence.”¹⁸

Without facts to serve as a check on the political power, those with the most power (and persuasive rhetoric) win. As Delli Carpini and Keeter put it, “In the absence of adequate information neither passion nor reason is likely to lead to decisions that reflect the real interests of the public.”¹⁹ Though ignoring, suppressing, or omitting evidence may be effective way to advance an agenda, it certainly isn’t something any reasonable observer could call a functional representative democracy.

CHARTING A NEW COURSE

Canada isn’t the first country to have suffered self-imposed short-sightedness. During the tenure of George W. Bush in the United States, similar (if less drastic) occurrences of muzzling of federal scientists occurred. Public organizing and responses to this were similar, including the emergence of national advocacy groups and an American survey on scientific muzzling which led to policy changes that were deemed significant, and have not suffered a subsequent reversal.²⁰

We have an opportunity to go beyond mere remediation. Yes, some of the holes cannot be plugged: data lost from long-term monitoring

programs, censuses, and libraries will never be recovered. What can be done, now, is to capitalize on unparalleled awareness of this issue. The time has come not just to establish a vision for science, evidence, and research in Canada, but to enshrine it into due diligence and political process. Canadian leaders need to be brave, and to undertake legislative amendments that directly address the critical role of science and evidence in a healthy democracy, a healthy citizenry, and a healthy environment. This could take many forms. For example: regulations explicitly requiring for Ministerial decisions to be informed by rigorously collected evidence. A Parliamentary Science Officer, perhaps. Or, for the exceptionally ambitious, a requirement for decision-making based on evidence could be included in a constitutional amendment supporting the rights of citizens (and perhaps the environment) to health and well-being.

Though we have seen widespread attacks on science, archiving, research, and evidence in Canada, there has been one positive outcome: people are talking about it. The term ‘evidence-based decision-making’ has entered the public lexicon, and ‘science and evidence’ are in the rhetoric of political hopefuls. Canada’s most-read newspaper addressed the downfalls of federal science policy in its major year-end editorial,²¹ and major publications country-wide are discussing this issue every day in an unprecedented way.

It’s ironic: though the information available to the public has been decreasing, the public has become more informed about the need for good information. The next step that must be taken in this country is to make this explicit: commitments to

evidence-based decision-making from politicians, and support for research and monitoring institutions. Most of all, we need a regulatory framework that includes a very simple requirement: absolutely no sailing can be done until we’ve got a map. •

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Notes

i. ‘Science’, as it shall be used in this essay, refers not just to the scientific disciplines but the process of gathering evidence according to a rigorous, repeatable method. This includes research and data

collection in sociology, anthropology, history, economics, etc.

ii. Although it was announced in 2013 that the Information Commissioner of Canada would investigate communications obstruction of federal scientists by the government, no results had been announced at the time of writing.

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