

# **The Science Policy Interface**

## Reflections of a Science Policy Advisor: The Good, the Bad and the Ugly

Science-Policy Interface: International Comparison Workshop  
May 23<sup>rd</sup>, 2014

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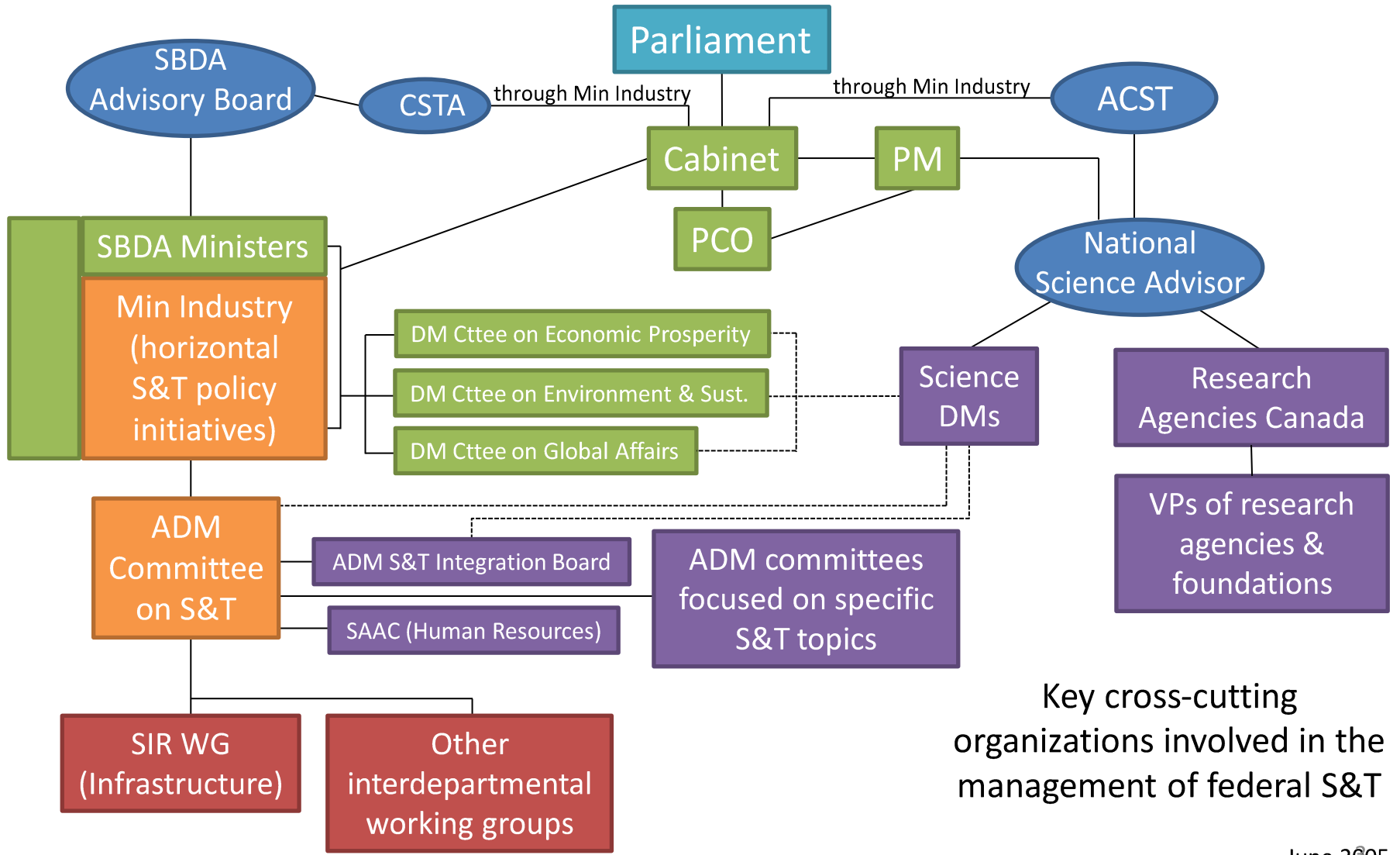


# Role and Priorities of National Science Advisor to the Prime Minister

***“The National Science Advisor is assisting the Government to ensure that investments are strategic, focused and delivering results, and is working to bring about a fuller integration of the Government’s substantial in-house science and technology activity.”*** Speech from the Throne, October 2004

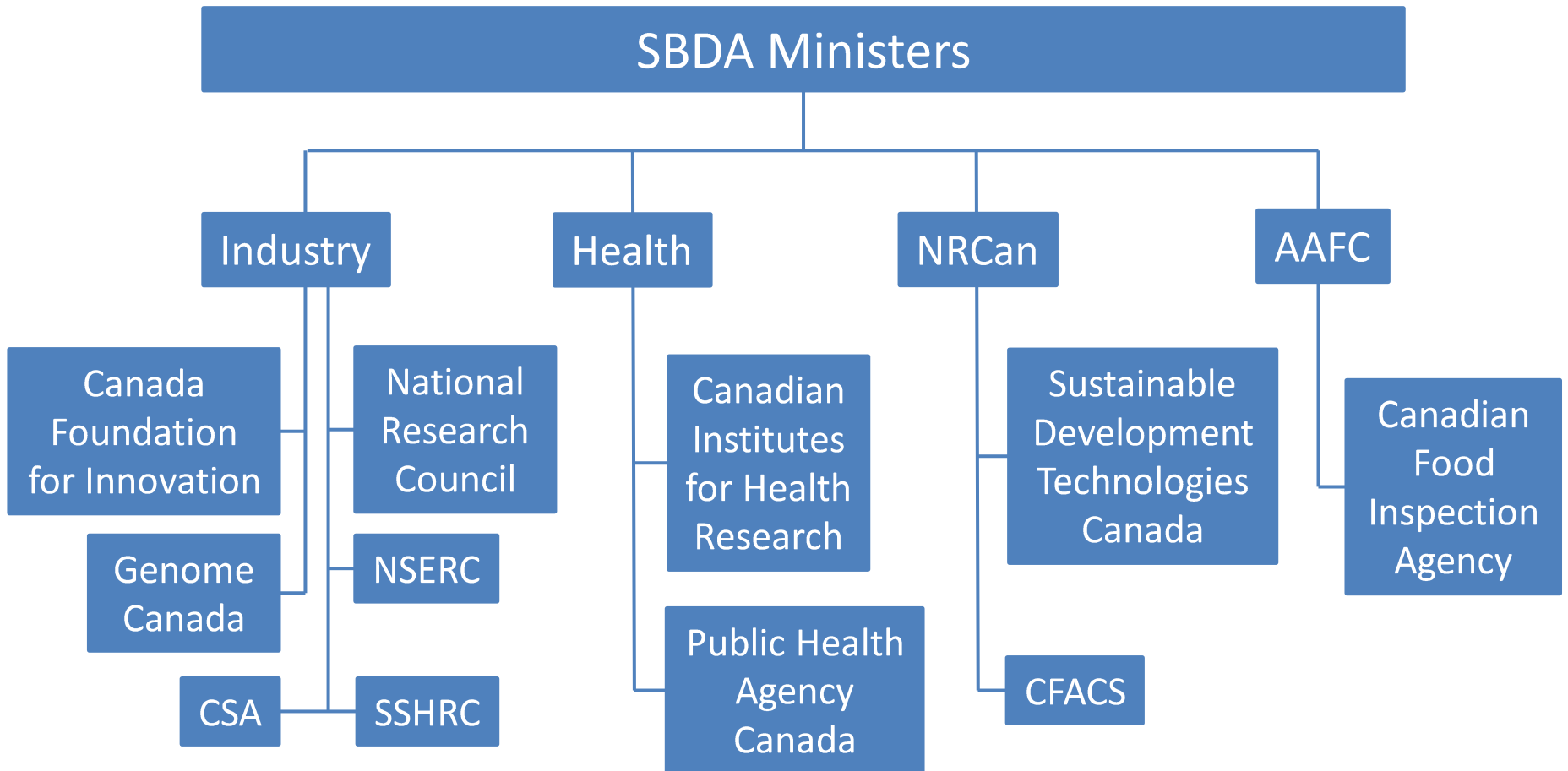
- Position announced in December, took office in April 2004
- Provide sound, independent, non-partisan advice on directions and priorities
  - Long-term vision for S&T in Canada: balance excellence in R&D with benefits to society and the economy
  - Commercialization and innovation
  - Revitalizing government science: horizontal collaborations between departments, agencies, institutions, and business
  - International S&T and challenges of the developing world
  - Major science investments (Big Science)

# NSA within the S&T Governance System



Key cross-cutting organizations involved in the management of federal S&T

# Federal Science – Ministerial Accountability



# Budget 2005 Assessment

- S&T remains a continuing priority for the federal government in support of its public policy goals
  - \$1.2B for direct S&T support (e.g. Granting Councils, Indirect Costs, Genome Canada, Canadian Space Agency, National Research Council Clusters, TRIUMF...)
- Another \$2.4B in new initiatives with a substantive science, technology and innovation component particularly under the themes of Climate Change, sustainable development and energy, and in meeting our global responsibilities

# Integration and Horizontality

## S&T Policy and Management

- Two parallel DM level working Groups (bi-monthly)
  - Science-based performers and S&T policy departments
  - Extramural R&D funders – Councils, Foundations and Agencies
- Overall goal is to map out an integrated science agenda for the Federal government that pulls together the three elements of the Science and Innovation system in Canada – industry, universities and government
- Need for greater mutual understanding, cooperation, and partnership. Develop a common front and approach on issues. Reduce barriers to horizontal collaboration and gaps.

# Canada's International Legacy

*“Our strategy for international commerce has moved well beyond simply looking for export markets, and marketing our natural resources. . . In today’s economy, it is ever more important to promote strong international investment and scientific and research relationships around the world . . . The future belongs to knowledge-based economies, and steps are being taken now by government and the private and academic sectors to make sure Canada is equipped to benefit.”*

Prime Minister Paul Martin

Foreword to Canada’s International Policy Statement

April 2005



# Canada's International Legacy

- Mobilize Canada's S&T assets in support of foreign policy goals especially with respect to international development
- Prime Minister's challenge to devote 5% of S&T investments to developing world issues
- \$20M in Budget 2005 for new international S&T agreements: India, China, Israel and Brazil
- Big step forward in broadening Canada's participation in international S&T
- S&T embedded in International Policy Statement as an essential driver of trade, investment, development and diplomacy



# International Polar Year 2007-08



- A major, exciting opportunity to show national and international leadership
- Focus on *human dimensions* will provide a unique opportunity to link social and natural sciences
- Critically important issue given arctic vulnerabilities to climate change
- Commitment for the creation and support of a national steering committee and secretariat
- Milestone for delivering on a Northern Science Strategy for Canada



# Big Science

- Large scale scientific projects and facilities have become more complex, costly, interdisciplinary and international
- Major international science projects are developing: 30 Metre Telescope; Linear Collider; Mars space mission; Square kilometre Array; Neptune...
- Poses important science policy challenges for governments and academia on how we agree on priorities, make decisions and manage investments in big science
- Need for an accountable and transparent procedure to manage major science investments including **evaluation, revision, approval, prioritization, and monitoring** of projects from **creation, through operation to decommissioning**
- Discussion paper released for comment in February 2006 – 70 written responses received
- Workshop and final draft planned for fall



Photo courtesy of Canadian Light Source Inc.

# The Canadian Academies of Science

- Federally –incorporated, not-for-profit organization which joins together Canada’s three internationally recognized national academies – Modelled after the US National Academies of Science
- Budget 2005 announced \$30M:
  - Carry out government requests for independent expert assessments on the state of scientific knowledge underpinning policy issues facing Canadians
  - Ensure that Canada is represented effectively in international fora where important questions of scientific methods and findings are being discussed
- Agreement now signed by all three founding agencies and Industry Canada
- Treasury Board approval in March

# The Council of Science and Technology Advisors (CSTA) Framework for S&T Advice

(Derived from the SAGE Report: Science Advice for Government Effectiveness)

## Science Advice for Government Effectiveness (SAGE)

A Report of the  
Council of Science and Technology Advisors

May 5, 1999

This framework (circa 1999-2000) was designed to ensure that government policy, regulatory and management decisions are informed by sound S&T Advice.

### **Desirable Outcomes:**

Sound government decisions

Minimize crises

Capitalize on opportunities

### **An Effective Advisory Process:**

brings both sound science and the best science advice to bear on key issues.

# Council of Science and Technology Advisors (CSTA)

- Created in 1996
- Members selected from the Advisory Boards of Departments & Agencies of Federal Government.
- Mandate: to help federal departments/agencies to achieve goals of the 1996 S&T Strategy “Science and Technology for the New Century”.
  - Assess past performance of federal S&T; identify emerging opportunities & needs
  - Set goals for federal S&T
  - Ensure governance of S&T was well positioned to respond to challenges through access to strategic advice

# The Council of Science and Technology Advisors (CSTA) Framework for S&T Advice

## Principles:

### 1. Early Issue Identification

Cast a wide net to identify current and future issues. S&T Foresight.

### 2. Inclusiveness

Draw advice from many sources and experts in relevant disciplines

### 3. Sound Science & Science Advice

Government should employ measures to ensure the quality, integrity of science and science advice it uses. Ensure also that the science advice is used in policy making.

# The Council of Science and Technology Advisors (CSTA) Framework for S&T Advice

## Principles:

### **4. Uncertainty and Risk**

Science always contains uncertainty that must be assessed, communicated and managed. Absolute answers are very rare.

### **5. Transparency and Openness**

Government is expected to employ decision making processes that are open and transparent to stakeholders and the public. Secrecy and control have no place in a sound science advisory system.

### **6. Review**

Subsequent review of science based decisions is needed to assess whether recent advances and new science will have an impact on policy decisions.

# UK Chief Scientific Advisor

## Guidelines

**for how advice should be sought and applied**

- 1.** Identify early the issues needing scientific and engineering advice and where public engagement is appropriate
- 2.** Draw on a wide range of expert advice
- 3.** Adopt an open and transparent approach and publish the evidence and analysis
- 4.** Explain publicly the reasons for policy decisions
- 5.** Work collectively to ensure an integrated approach



# Gluckman's Principles of Science Advice to Government

**1. Maintaining Trust:** public; media; decision makers; politicians; scientific community. In Canada, the public and scientific community have lost trust in government. Government does not take advice, and secrecy and control have become the new norm!

**2. Protect Independence of Advice.** Important that the CSA provides independent advice, un-influenced by political interference or departmental policy. **CSA should not report to a line department.**

**3. Access to the Head of Government** to ensure that Ministers with mandates impinging on the issue or turf to protect, do not play an interfering role.

# Gluckman's Principles of Science Advice to Government

## 4. Science for Policy vs Policy for Science.

An advisor playing both roles – the latter one of advocacy will likely have a conflict of interest and be accused of lobbying. However, being an overall advocate for science is a genuine role.

## 5. Science Advice should be on tap not on top.

It is rare that science advice alone will determine policy. Science will inform policy making. Policy makers and elected officials will have their inputs. The science advisor will do a thorough analysis of options based on what is known and unknown.

## 6. The importance of **S,T,I** in almost every aspect of our

society, means that science advice should be privileged input at the highest levels of government. Scientific knowledge comes from a well-established process of experiment, observation, analysis, conclusion and peer review. These principles counter dogma, hearsay and suspicion and should be especially valued.

# Gluckman's Principles of Science Advice to Government

## 7. Science Advisors should not overstate the Case for Science.

While science can help address complex challenges, on many occasions it cannot provide absolute answers to questions. CSA's should not over-exaggerate the chains for science.

**8. CSA's as Advocates.** There is a danger in a CSA becoming an advocate for science funding. Or taking a highly weighted position on say climate change. A balanced view should preferably be maintained or credibility may be affected.

## 9. Engagement with the Science Community & Policy Community.

The CSA needs to communicate, inform and make best use of the science community as a source of valuable information and advice on issues. No single advisor can know or be an expert on everything. Too close an advocacy role can prejudice interactions and communication with the policy and decision making community.

# General Principles on Science – Government Relations in Japan

1. The role of scientific advice in policy-making.
2. Seeking scientific advice in a timely and pertinent manner.
3. Ensuring the independence of scientific advisers.
4. Awareness of responsibility as scientific advisers.
5. Achieving broad perspectives and balance.
6. Ensuring the quality of advice and integrating viewpoints.
7. Proper handling of uncertainty and diversity.
8. Free disclosure of scientific knowledge.
9. Even-handed treatment of scientific advice by the government.
10. Ensuring transparency of the scientific advice process.