

A Global Forward Look- Past

Trends and a Vision for S&T Diplomacy
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The role of science and technology will continue to expand. It is probable that, not more than ten or twenty years from now, the locus of decision-making in many sectors will shift from the national to the international level. Thus, the need to develop a capability for properly assessing costs and benefits, in both the political and scientific spheres, will be increasingly felt.

Science Council of Canada, Canada, Science and International Affairs, April 1973

HOW THE WORLD SEES CANADA:

← SANTA



embassy

- Tim's Foreign Policy



Why Engage in Global Science

- To maintain and continually improve the quality of domestic science by applying global standards of excellence
- To provide access by domestic scientists to the frontiers of science without regard to national borders
- To increase the productivity of domestic science through collaborations between domestic scientists and the world's leading scientists
- To strengthen the value of domestic science through visits, exchanges and immigration by scientists from other nations
- To increase development and economic prosperity by fostering improvement of conditions in other countries through increased capacity in knowledge
- To address national interests of such a global nature that no country or region alone can satisfy
- To enhance security and address humanitarian objectives
- To improve understanding and outreach of science as a global institution
- To discharge obligations negotiated in connection with treaties
- To strengthen trade and investment opportunities

Global questions

- What changes has the financial and economic crisis generated in science and innovation performance, both in OECD and in emerging countries?
- Which technologies, what industries, and which countries, might lead in terms of science and innovation in the coming decade?
- How is the current expansion and geographical diversification of the global research community impacting science and innovation?
- What are the conditions for science and innovation to contribute to a sustained, global economic recovery?

Global questions

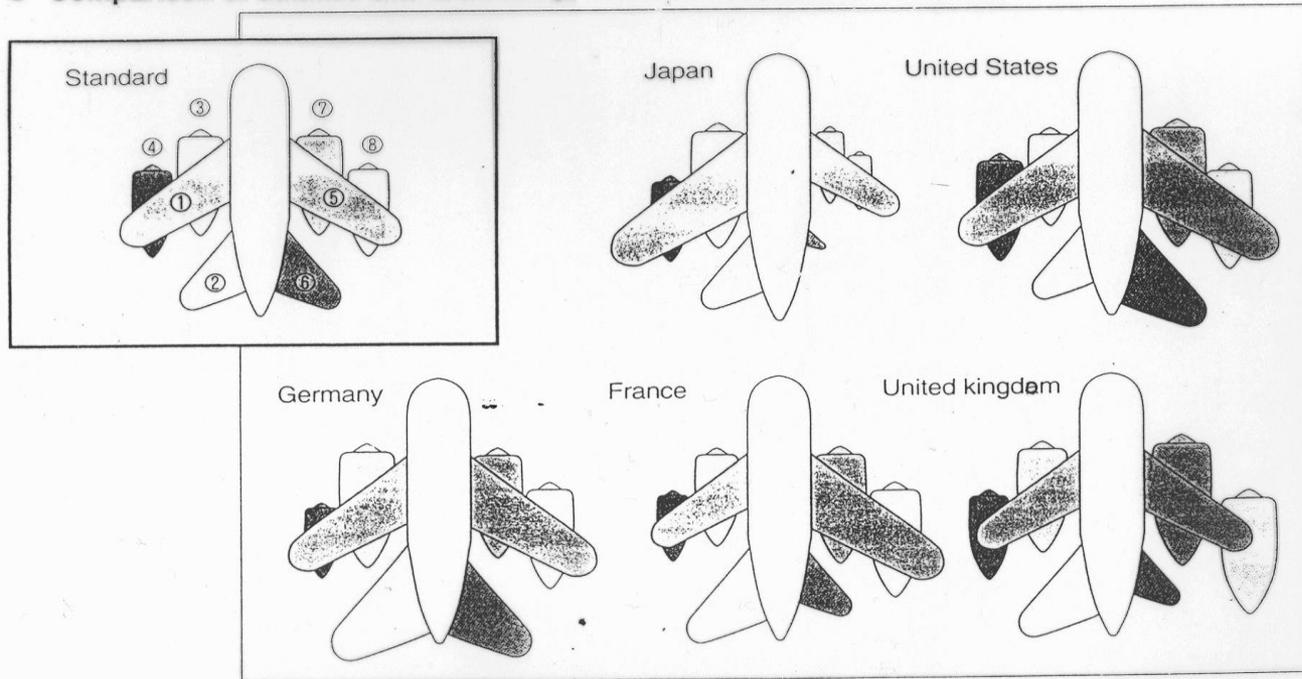
- What types of new funding schemes are being used?
- Why are countries adopting research excellence funding schemes?
- How are new schemes implemented, how do they co-exist with more traditional modes still in place?
- Are these funding schemes strengthening the national research landscape for OECD and emerging countries alike?

Global questions

- What drivers of change are likely to have the biggest effect on policy development?
- What are the most important challenges for policy in different parts of the world?
- How are policies likely to change in different environments?
- Are there common challenges and policy solutions across countries
- How can global responses to global challenges be initiated and supported?

Culture Matters

● Comparison of science and technology activities by selected countries



Notes) 1. Each figure indicates relevant countries' scales in science and technology activities compared with its national power (GNP)
 ("Standard" figure indicates the normal form (in area) when one country has equal ratio of scale in relevant science and technology activities to its national power.)

2. ① R&D expenditure financed by private sector (1991)
- ② Number of patents granted abroad (1991)
- ③ Value of exports in high-tech products (1986)
- ④ Value of exports in technology trade (1991)
- ⑤ R&D expenditure financed by government (1991)
- ⑥ Number of Nobel prize laureates (1984~1993)
- ⑦ Number of citation (1984~86) in papers from abroad
- ⑧ Number of papers co-authored with foreign researchers (1981~85)

Global Trends

- UNESCO World Science Day for Peace and Development (November-2013 water collaboration)
- Japan Science and Technology in Society Forum (2013)
Science and technology diplomacy enhances relations across national boundaries.

Supporting education, research and local entrepreneurship is essential for capacity -building in developing countries.

Funding agencies should finance international science collaboration programs promoting multilateral arrangements, especially on global issues. We welcome the science and technology ministers' Round Table and the peer meetings held by the presidents of universities, science and engineering academies, research institutes or funding agencies at the STS forum as complementary to official science and technology diplomacy

Africa

- AFRICAN SCIENCE ACADEMIES MEET IN ETHIOPIA;
'BIOTECHNOLOGY FOR AFRICA'S DEVELOPMENT' IS THEME OF
CONFERENCE (2013)
- Raising the African Voice' on Climate Change
The science academies of Africa issued a [joint statement](#) at
their annual meeting in Lagos, Nigeria, calling on the African
scientific community to intensify its study of the impact of
climate change.

Science advice in the global commons

- The Global Network of Science Academies, which comprises 106 science academies from both developed and developing countries, responded to the UN-established High Level Panel's post-2015 agenda for global development and stressed the pivotal role of science in defining the agenda's priorities. The world's science academies stand ready to provide expert guidance to the panel and the international community as they further develop the agenda and take action to implement it.

Academies

- Past Statements

2013 - Drug Resistance in Infectious Agents – A Global Threat to Humanity

2013 - Driving Sustainable Development: the role of Science, Technology and Innovation

2012 - Improving Knowledge of Emissions and Sinks of Greenhouse Gases

2012 - Energy and Water Linkage: Challenge to a Sustainable Future

2012 - Building Resilience to Disasters of Natural and Technological Origin

2011 - Joint G8+ science academies' statement on Water & Health

2011 - Joint G8+ science academies' statement on Education for a Science-Based Global Development

2010 - Joint G8 science academies' statement on Innovation for Development

2010 - Joint G8 science academies' statement on Health of Women and Children

2009 - G8+5 Academies' joint statement: Climate change and the transformation of energy technologies for a low carbon future

2008 - Joint Science Academies' Statement: Global Health

2008 - Joint Science Academies' Statement: Climate Change Adaptation and the Transition to a Low Carbon Society

2007 - Joint science academies' statement on growth and responsibility: sustainability, energy efficiency and climate protection

2007 - Joint science academies' statement on growth and responsibility: the promotion and protection of innovation

2006 - Joint Science Academies' Statement: Energy Sustainability and Security

2006 - Joint Science Academies' Statement: Avian influenza and infectious diseases

2005 - Joint science academies' statement: Global response to climate change

2005 - Joint science academies' statement: Science and technology for African development

G8 and More

- [The Global Young Academy \(GYA\) Recommends Measures to Foster a Global Research Culture](#)

- G8 Science Ministers Statement, London, June 13, 2013

We acknowledged that there is a broad range of global challenges requiring our attention in the near future. We highlighted in particular, urbanisation, pollution, energy security, climate change, biodiversity, ocean acidification, youth unemployment, inequality, how to translate basic science to personalised and regenerative medicine, the ageing population and neurodegenerative diseases during our discussions – whilst recognising that this was not a definitive list.

Carnegie Group

- The Carnegie Group of Science Advisers to Presidents and Prime Ministers was established in 1991 by William T. Golden, businessman, chairman of the Board of the American Museum of Natural History and long-time adviser on national science policy issues in the US, and D. Allan Bromley, a Canadian-born physicist who was the national science adviser to President George H. W. Bush. It has met twice yearly since its creation, but since 2009 meets annually. Members of the Group alternate in hosting the meetings.
- Last meeting in Bethesda, Maryland, Nov 2013

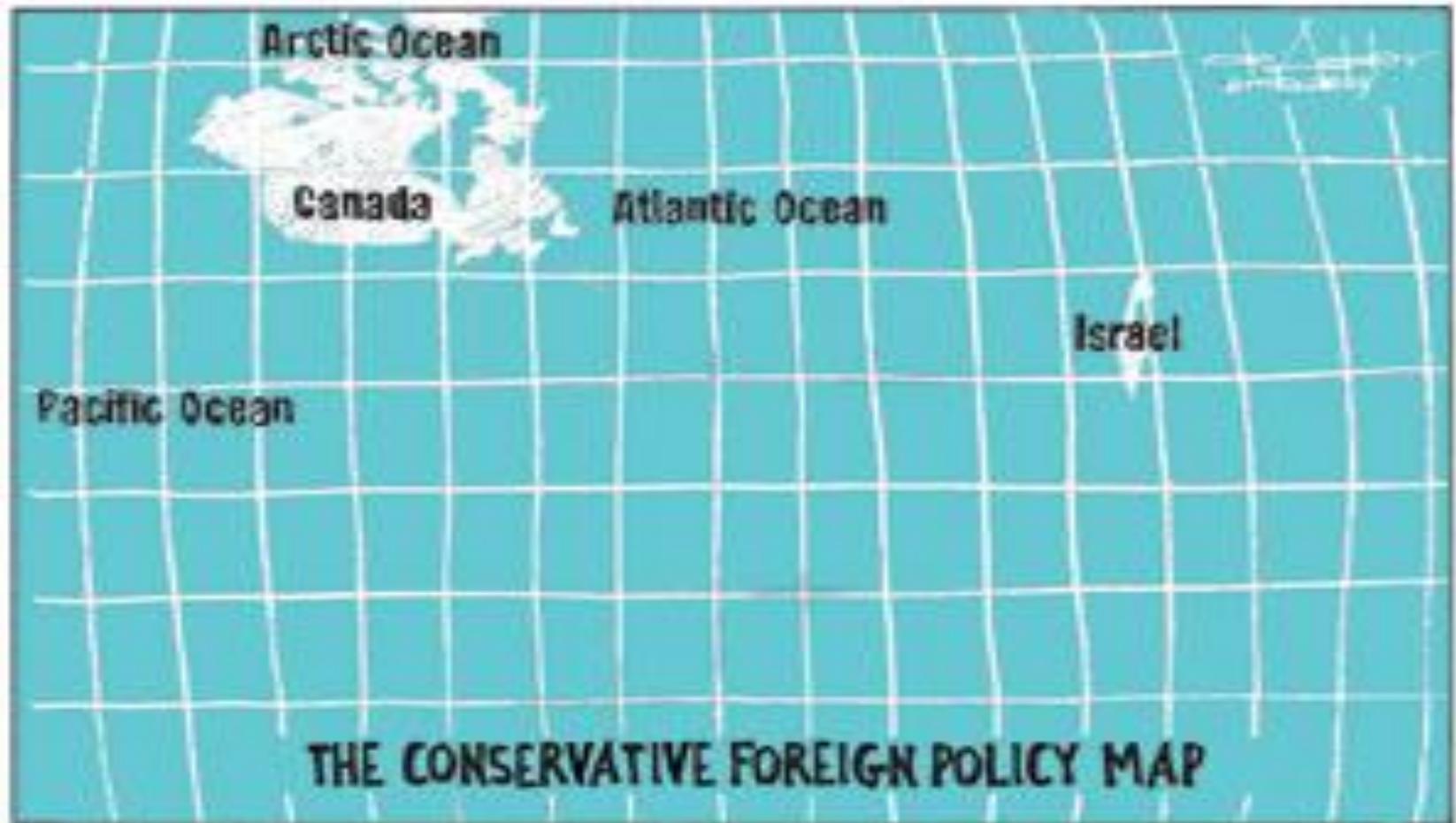
Global Research

- Heads of 70 research funding organisations from around the world met on 27– 29 May 2013 in Berlin / Endorsed statements concerning “Open Access” and “Research Integrity”
- The Global Research Alliance (GRA) is an international network promoting the application of science and technology to solve large scale issues facing developing countries.
The GRA uses the best science and technology to solve some of the biggest problems in the developing world. These global issues span borders, cultures and religions and require a cross-boundary response.

Reminders

- “Canada’s most effective contribution to international affairs in future will derive from the judicious application abroad of talents and skills, knowledge and experience, in fields where Canadians excel or wish to excel” (1970 Foreign Policy for Canadians)
- “Canada will be obliged to earn its way internationally in large part through its intellectual capacity and policy leadership through broad based intellectual partnerships, transnational policy inquiry and our mastery of new technologies”. (1996, IDRC)

Not our Foreign Policy



Anatomy of a global science project

- Canadian PM suggests target of 5% of national R&D devoted to S&T for development
- Surveys conducted to assess scope of existing expenditures
- Exploration undertaken of key science partners with Canada from developing world (56 countries)
- Links to G8 Summit Agenda and G8 Science Ministers
- Working group continued to examine means to strengthen domestic capacity with development work

Future Vision- Potential Steps

- “Intermestic” strategy- link forthcoming federal science and innovation strategy to international S&T issues
- A Chief Scientist-Ambassador at Large in DFATD?
- A growing role for ISTPP- trade and innovation diplomacy?
- An expanded look at mobilising young talents for international science linkages
- A re-engagement with the developing world via grand challenges, scholarships, research chairs and centres of excellence
- Foreign diplomacy training in science policy literacy and science linkages to statecraft
- Upgrading higher education international linkages