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**Science Diplomacy – An International Comparison**

Organized by: Urs Obrist, Embassy of Switzerland

Speakers: Shiho Fujiwara, First Secretary, Embassy of Japan in Canada; Urs Obrist, Senior Science and Technology Counsellor, Embassy of Switzerland; Antoine Rauzy, Science and Higher Education Attaché, Embassy of France; Marcus Stadthaus, First Secretary, Sustainable Development, Energy, Embassy of Germany

Moderator: Mehrdad Hariri, Founder, CEO & President, Canadian Science Policy Centre

**Takeaways and recommendations**

**Japan**

* In Japan, S&T diplomacy is supported by the Science and Technology Basic Law of 1995; one of its objectives is to “contribute to the progress of S&T globally in the world and the sustainable development of human society”.
* Japan established an S&T advisor in 2015: provides advice to the Foreign Minister and relevant departments on the utilization of S&T in various foreign policy makings. It also reinforces networking among S&T advisors and scientists/academics.
* The S&T advisor’s first policy, released in 1996, stressed the importance of diplomacy for S&T but there was no mention of S&T for diplomacy; the term “S&T diplomacy” (which includes both *S&T for diplomacy* and *diplomacy for S&T*) was incorporated into policy in 2011.
* Japan has bilateral S&T agreements with 47 countries and institutions; the one with Canada has been in place since 1986.
* Japan also participates in multilateral meetings that involve S&T: recent examples include the G7 S&T Ministers’ Meeting (agreed to cooperate on global health) and the Tokyo International Conference on African Development (stressed importance of S&T promotion).
* It is important to have common goals when collaborating bilaterally or multilaterally.
* Future opportunities for S&T diplomacy include:
  + Working together to solve global programs (i.e. support data/evidence-based policy decisions and the UN Sustainable Development Goals).
  + Deepening relations between partner countries by promoting opportunities for collaboration (e.g. S&T Research Partnership for Sustainable Development – SATREPS) and strengthening networks among scientists.

**Switzerland**

* Switzerland has 20 S&T counsellors around the world and 5 Swissnex offices (the first Swissnex office opened in Boston 17 years ago)
* The Swissnex model’s strengths include:
  + Flexible outreach mechanisms (i.e. the network includes main offices and smaller satellite offices globally, as well as mobile offices)
  + A mechanism for supporting Swiss education, research and innovation institutions with their internationalization endeavours.
  + Mixed funding and flexible partnerships (public, private, academia, foundations, local partners).
  + Open collaboration.
* Switzerland’s biggest natural resource is its “grey matter”, thus the importance of participating in multinational organizations like CERN and the Arctic Council.
* Switzerland has been ranked world’s leading innovator for 7 years in a row according to the INSEAD/WIPO Global Innovation Index and, like Canada, has 7 universities ranked in the top 200. This ambition for academic excellence and the structural similarities with multilingualism and federalism are a good basis for enhanced scientific relations between the two countries.
* Two government departments are directly involved in science diplomacy: the FDEAER, which oversees the State Secretariat for Education Research and Innovation, and the FDFA (where embassies and consulates have scientific counsellors who work for foreign affairs department).
* Flexibility is key to Swiss scientific diplomacy.
* Main tasks for science diplomacy include:
  + Monitoring and anticipating developments in science policy.
  + Establishing and maintaining contacts.
  + Organizing events and multidisciplinary activities.
  + Stimulating and supporting cooperation projects in the areas of university or industry research (with an emphasis on priority areas for Switzerland).
  + Promotion of Switzerland as a cooperation partner in STI.
  + Support of internationalization efforts of universities, start-ups and spin-offs.

**France**

* Several bilateral agreements provide a foundation for cooperation between Canada and France, including: the Enhanced Cooperation Agenda; the Declaration on Innovation; the France-Canada Research Fund; and the Youth Mobility Agreement.
* The French diplomatic and scientific network includes: ministries of foreign affairs and higher education and research; 80 scientific advisors or attachés; foreign offices of major research institutions (e.g. CNRS, Pasteur Institutes); and researchers (e.g. international labs of major research organizations; R&D labs of large French companies; foreign-based branches of French universities).
* France built the world’s second international network for scientific and cultural cooperation: its two main objectives are excellence and influence.
* Priorities for supporting French science’s excellence at the international level:
  + The international deployment of the national research and innovation strategy.
  + The organization of French research abroad.
  + The attractiveness of France for foreign researchers.
  + The intelligibility of the French research structure.
  + The participation of French researchers in very large research infrastructures, and promoting the installation of such infrastructures in France.
  + The internationalization of French social and human sciences.
* France and Canada have strong bilateral S&T linkages between institutions of higher learning, research clusters and centres of excellence.
* The France-Canada Research Fund, an agreement between the Embassy of France in Canada and Canadian universities, promotes and develops scientific and academic exchanges, particularly among young researchers.
* There is a natural interplay between traditional diplomacy and science on global issues such as climate change, sustainable development, health, biodiversity, cybersecurity and energy.
* It is important to maintain S&T links between countries that have difficult relations.
* Diplomacy also means participating in policy development through involvement in international scientific and cultural organizations, such as: the European Space Agency, WHO, UNESCO, Arctic Council, CERN and the International Space Station.
* The “French Touch” in science diplomacy includes: core values (e.g. freedom of research and the scientific approach); promotion of gender equality, diversity and accessibility; study of human and social sciences; MOPGA initiative (resident permit for scientists).

**Germany**

* 50 German embassies and consulates have science departments; half of those S&T attachés are diplomats; the other half are from Germany’s ministry of education and research.
* Centres of excellence and innovation houses have been established around the world (none in Canada yet).
* Germany’s underlying principles of its approach:
  + Freedom of science: is enshrined in German’s constitution. Germany has only one funding institution for science (DFG) and its only criteria is academic excellence. Scientists decide where to spend money; there is no earmarking from the political level.
  + Attracting and advancing the brightest minds.
  + Institutional architecture for broad-based scientific enquiry.
  + Internationalization: Germany has implemented an internationalization strategy (have more than 300,000 international students in Germany).
  + Strong science culture: includes science literacy.
* Germany’s non-university research organizations support the full spectrum of research, from fundamental to applied.
* 68% of Germany’s R&D comes from industry, with the remainder coming from government and universities. (Germany has doubled its investments in R&D since 2005.)
* Canada is the #1 partner in the DFG; Canada hosts 11 out of the DFG’s 39 international research training groups. (e.g. NSERC CREATE program)
* DAAD: Awards 1000 scholarships for Canada-German academic exchanges annually; DAAD has an information centre in Toronto.
* The Germany embassy in Canada assists in hosting science delegations – to Canada from Germany, and from Canada to Germany. Its role is to facilitate, inform and connect.
* The German embassy also hosts its own events in Canada (e.g. Future of Energy, Future of Mobility).
* Future opportunities for scientific collaborations with Canada include: artificial intelligence, big data and advanced manufacturing.
* As the German and Canadian governments “are on the same track when it comes to science policy, the time is ripe to deepen our collaboration”.
* For more information on funding your research in Germany, visit: [www.research-in-germany.org/dms/downloads-en/rig-publications/RiG-Funding-your-research-in-Germany-2016/Funding%20your%20research%202016%20barrierefrei.pdf](http://www.research-in-germany.org/dms/downloads-en/rig-publications/RiG-Funding-your-research-in-Germany-2016/Funding%20your%20research%202016%20barrierefrei.pdf)