



**UNITED NATIONS
UNIVERSITY**

UNU-INWEH

**Institute for Water,
Environment and Health**

**United Nations University
Institute for Water, Environment and Health**

brief for

**The House of Commons' Standing Committee on
Environment and Sustainable Development**

in the context of its study on

FRESHWATER

April 2021

INTRODUCTION – ABOUT UNU-INWEH

United Nations University Institute for Water, Environment and Health -[UNU-INWEH](#) -is part of the United Nations University (UNU) - an academic arm of the UN. The University's 13 research and training institutes are located in 12 countries and address a range of global development challenges. UNU-INWEH's primary focus is water; it is the entry point to UNU-INWEH's research and training activities in the areas of environment and health. The Institute works to bridge the gap between the wealth of knowledge that exists on water resources and their management, and the practical needs that political leaders and decision makers, particularly in low- and middle-income countries of the Global South, have. UNU-INWEH was established in 1996 and celebrates its 25-th anniversary in 2021. Its operations are secured through long-term host-country and core-funding agreements with Global Affairs Canada. The Institute is located in Hamilton, Ontario; its facilities are supported by McMaster University. UNU-INWEH is the only Institute in the UNU that focuses exclusively on water issues. It is also the only entirely water-focused UN entity in Canada.

In terms of interactions with federal departments and agencies, due to its mandate (focus on global water issues of primary importance to developing countries) and status in Canada (a UN entity), UNU-INWEH primarily interacts with Global Affairs Canada (GAC). UNU-INWEH also is engaged in IDRC-funded projects. There are of course numerous partnerships with various Universities, organisations and professional networks in Canada through activities of mutual interest, as well as very extensive networks of partners globally – both within UN and beyond. UNU-INWEH foresees the engagement with the future Canada Federal Water Agency primarily in the context of promoting the visibility of Canada at the global water stage. Due to this, the rest of this brief is focusing entirely on International and business issues (the last section recommended by the Guide for Briefs).

INTERNATIONAL AND BUSINESS ISSUES

Canada definitely should and can play a greater role internationally in helping find solutions to the challenge of global freshwater security- through both government and the private-sector involvement. Given the importance of water to the economy of Canada and to the identity of Canadians, it is only logical that Canada demonstrates leadership in the global water agenda. There is a significant role for government at all levels, but especially federally, in this process.

Other countries are attempting, in various ways, to position themselves more prominently on the global water stage. Tajikistan, for example, led the development of the UN Resolution for and subsequent launch of the Water Action Decade for Sustainable Development (2018-2028), and is hosting a regular high-level water conference (similarly to Hungary's regular Water Summit in Budapest). Japan and Germany are the top investors (in absolute terms) in overseas water development aid.

A recently released [US Global Water Strategy](#) explicitly recognizes that a growing global water crisis may undermine economic growth, foster insecurity and state failure, and have adverse impact on US national interests. To address this global challenge, the US will aim to increase sustainable access to safe drinking water and sanitation services; encourage the sound management and protection of freshwater resources; promote cooperation on shared waters, and strengthen water-sector governance, financing, and institutions. The US will provide technical assistance; make targeted investments in sustainable infrastructure and services; promote science, technology and information; mobilize financial resources; engage diplomatically; and strengthen partnerships and intergovernmental organizations. Implementation of this Strategy will be coordinated through an Interagency Water Working Group comprised of representatives from 17 different US federal agencies.

Canada does not need to replicate the paths of other countries internationally. And it has already committed to implementing the UN Sustainable Development Goals (SDGs) nationally, including the “water goal”-SDG6. The [Federal Sustainable Development Strategy](#) (FSDS) establishes specific national goals and targets aimed at promoting clean growth, ensuring healthy ecosystems and building safe, secure communities. Of the 13 goals of FSDS, six (6) relate directly and four (4) relate indirectly to water.

It makes sense to articulate the Country’s own, unique, approach to achieve better visibility and impact in the global water sector. One possible avenue may include a combination of **i) showcasing how water-related problems of global significance have been resolved at the national scale in Canada ii) well-focused regional and thematic allocation of development aid and iii) more active promotion of Canadian water experiences – technological and governance - overseas.**

To do that, it may be useful to have clarity on what Canada can showcase and offer. A group of Canadian water experts led by UNU-INWEH has recently attempted to conduct such assessment ([Sandford et al 2018](#)) focusing on water education and research, water development aid, water governance and technology. These elements are briefly summaries below.

The **water education** establishment in Canada is represented by i) education at larger universities, where “water,” with a few exceptions, is a cross-faculty topic, and ii) colleges, focusing primarily on operational water-utility training. Analysis suggests that to date few universities have specifically labelled undergraduate or graduate programs in water education, and overall, they have yet to develop well-integrated programs that address the many interconnected water problems and processes. Specific postgraduate water management programs are emerging though. Part of the problem of water education is its interdisciplinary nature, which translates into the requirement for many different skill sets. Yet, to meet the needs of sustainable development, universities must find ways to enhance water education, including through development of programs with an undergraduate specialization in water management, and fostering more interdisciplinary and multidisciplinary studies at the graduate level.

Also needed is an organized and comprehensive listing of water-related educational activities in universities and colleges. This would be useful for potential students navigating their way through the complex mix of water related studies, and for potential employers seeking qualified personnel. On a larger note, very **few countries know what water-related capacity they have and what capacity they need** in the context of achieving national water-related targets. **Canada could help develop such an inventory and share with the rest of the world the approach used to develop it, which may be very useful for many developing nations.** Another pioneering move would be **development of a proper ranking system of universities on the strength of their water programs.**

The review of recent Canadian **water research**, although not exhaustive, revealed strong and diverse resident capacity that places the country among global leaders in this field. There is a range of university research centers, institutes and national research networks involved, supported by funding from three dedicated thematic research councils, as well as by provincial and territorial governments, private foundations, corporations and non-government organizations. Canada appears to be in the list of top 10 countries globally in terms of water research productivity (publications) and research impact (citations). Canadian water research has been very strong traditionally in restoration and protection of the Great Lakes, prediction of changes in climate, water and cryosphere (areas where water is in solid forms such as ice and snow), floods and droughts, to mention a few directions. Canada currently runs the Global Water Futures research program (GWF) – a seven-year (2016–2023) initiative with a mission to improve disaster warning and inform adaptation to change and risk management; this covers much of Canada’s national water

resources research agenda. This is the largest university-led water research program of its kind in the world, and one of the largest water science collaborations in history. Being unique, due to its sheer size and range of partners, GWF has a chance for a big development impact, and for illustrating how influential the well-resourced, well-coordinated and targeted water research can be. GWF (and its subsequent phases) can also be a natural nucleus around which Canadian-wide water research contribution to the solution of global water challenges can be built. It is important though to **avoid fragmentation and focus on development impact rather than just research impact** measured by “citations” and “impact factors”. By way of illustrating the resolution of global water problems at the national scale, Canada can, for example, **focus on a limited number of issues which can turn into “quick wins”**, e.g. *predictions in ungauged river basins, free sharing of any water data nationally, effective water quality monitoring or similar*. Such achievements could then be widely communicated globally showcasing even stronger Canadian water research leadership.

Although Canada remains outside of the top 10 **global water aid** donors in absolute dollar terms, the forerunners are, as a rule, the countries with higher GDP per capita. The proportion of water-related development aid in the total Canadian aid mix is currently under 2%, while for larger donors, this number varies, as rule, from 2% to 8%. Canadian investments in water development in Africa were consistently higher over many years relative to its investments in other regions of the global South. Those contributions dropped significantly in recent years overall, with significant decline in the African aid flow. Canada has, however, been and remains quite visible in this domain with its IDRC- and GAC – branded support to a range of water-related projects. Also, the characteristic and charismatic feature of Canadian overseas development aid strategy has been and remains a strong gender-equality focus that also influences water-related investments. Canadian [Feminist International Assistance Policy](#) is a commitment to support women and girls to improve their access to natural resources, like water, as well as their participation in environmental decision-making. Therefore, **even with comparatively smaller absolute investments, Canada has managed to position itself very well** in this domain. This approach of **targeting specific developmental or regional challenges, needs to continue**, bringing Canada good international visibility and **“quick wins” in development even with relatively small overseas investments**. It might make sense to **articulate what specific water problems of global nature Canada will aim to eradicate in certain regions/countries and within what time frame**.

There is a potential for enhanced export of Canadian **water-related products and services**. These can be enhanced with better information on emerging global challenges, business and partnership opportunities in the international aid and development sectors, as well as new federal strategies and programs that support the global growth of Canadian cleantech companies. In this context, there may be a need an inventory of such services and products as well.

Canada should also consider strengthening and **diversifying the existing UN links**. It can leverage on its past and present experiences and processes of moderating conflicts and consider **spearheading** one or two **water-related UN Resolutions**, as some other UN member states have done. Possible foci for such resolutions, underpinning and reinforcing current water-related SDG processes, may include **improved global groundwater governance and management, commitment to good environmental water management standards**, and similar.

Canada has **diverse water governance experience** and models that have value to be shared with or applied in other parts of the world. The Canada Water Act calls for joint consultation between the federal and provincial governments in matters relating to water resources. And projects undertaken jointly by the federal and provincial governments involve the regulation, apportionment, monitoring, survey and planning

of water resources. Health Canada, along with provincial and territorial health departments and public health organizations collect and synthesize data on waterborne diseases. All jurisdictions in Canada are actively addressing challenges related to aging or inadequate drinking water and wastewater treatment infrastructure. Federal-provincial-territorial ministerial councils play important roles in environmental protection with impacts on water as part of their focus on sustainable development. Although the provision of appropriate water and sanitation facilities to Indigenous Nations remains a problem in Canada, some jurisdictions are already successfully engaged in consent-based governance tables with Indigenous Nations, the most exciting of which are in the area of legislative and policy development and agreement-making regarding water. The collaborative consent approach, which here forms the basis of respectful, nation-to-nation governance founded on common agreement on the importance of careful management of water, may well be something that Canada can share with the world. If the country, by 2030, resolves this internal water challenge once and for all— as it should — it will demonstrate leadership in this domain. This may then give an impetus to complete **resolution of similar water problems for Indigenous Nations worldwide.**

Overall, a global water strategy that Canada's Federal Water Agency may consider to champion could be focusing primarily on clearly defined results rather than on processes. Canada should be innovative in selecting the means and avenues to significantly enhance its visibility and impact on the global water stage, and, in this context, aim for "quick wins" and good examples of global problems resolved nationally. The suggestions made in this Brief will hopefully help coordinating and orchestrating the significant capacity in Canada's water sector for the benefit of the country and the world.