Water Governance in Canada: Concepts, Approaches and Opportunities

Prepared by Raimo Kallio
Water Policy and Coordination Directorate

Based on the presentation by
Jennifer Moore, Director General
Water Policy and Coordination Directorate
Environmental Conservation Service
Environment Canada

Canada has been largely shaped by its geography — particularly its rivers and lakes, which have provided a focal point for settlement, economic development, and transportation. Aboriginal people have always derived physical and spiritual sustenance from water. Waterways carried furs, trade goods, and explorers, stimulating the exploration of Canada's vast interior.

Canada's Constitution does not contain direct references to water resources, but provides the basis for how water management responsibilities are assumed by the federal and provincial governments today. The provinces have jurisdiction over property rights and public lands and therefore, the responsibility for managing natural resources including water. Provincial governments are responsible for most day-to-day and long term management of water including infrastructure, water quality, licensing water uses. Municipalities derive their roles from provincial governments and they have key roles in providing drinking water and wastewater services and setting land use decisions, which impact surface and groundwater quality and quantity.

The federal government has exclusive constitutional authority with respect to coastal and inland fisheries, navigation and shipping, Indians and lands reserved for Indians, and federal property and transboundary waters, as well as exclusive power to implement agreements with other countries, e.g., the Boundary Waters Treaty. Additionally, the federal government shares constitutional jurisdiction with the provinces with respect to agriculture, health and the environment. Although not expressly stated in the Constitution, the federal government plays a leadership role in the areas of science and research to support water management by all jurisdictions.

Canada is a nation with apparent abundant water resources. Annually, Canadian rivers discharge approximately 7 percent of the world's renewable water supply to the sea. Lakes cover 7.6 percent of the country's land mass, wetlands 14 percent and perennial snow and ice 2 percent. The distribution of water resources is not even across the country. The south west area of Alberta and the interior of British Columbia in the Okanagan Valley region are classified as semi-arid.

Most of Canada's population lives in a narrow band within 300 kilometres of the southern border with the U.S. while many of our major rivers flow north to Hudson Bay and the Arctic Ocean. The concentration of population and industry places high demands on water supplies and increases conflicts between upstream and downstream users.

Water is essential for all life, and a competitive and sustainable economy. It is required for irrigating crops, for supporting fish and wildlife resources, commercial fisheries, recreation, tourism, transportation, manufacturing, and other industrial production, and for municipal and household use. It is used extensively for the large-scale generation of electricity. Freshwaters perform essential ecological functions, including the provision of habitats for many species.

Although Canada can be considered to have an abundance of water, we face many challenges in managing our freshwater resources. The semi-arid regions of the country face problems of water supply and allocation, along with pollution control. Our per capita withdrawal for domestic uses is 326 litres per day, almost double the European average. The price that some Canadians pay for water does not reflect the full cost of providing the service.

While surface water is generally plentiful and clean, there are areas of local or regional pollution. Pollution enters water bodies in a number of ways, including industrial and municipal discharge, runoff, spills, and deposition of airborne pollutants. In the last half-century, increased amounts of industrial, agricultural, and municipal wastes entering Canadian rivers, lakes, and marine areas have had a serious impact on water quality. Acid rain continues to be a problem in eastern Canada. Wetlands, which act as natural storm buffers, sinks for pollutants and heavy metals, and regulators of flood water, are being lost across southern Canada.

Canada has made significant progress in reducing some major water pollution problems. Increasingly, Canadians are focusing on preventing rather than remediating pollution. Changing agricultural practices, including the development and use of more environmentally friendly pesticides and fertilizers, and increasing conservation tillage have contributed to improvements in water quality. Sewage treatment has improved. There is a significant decrease in the amount of toxic pollutants coming from industries such as petroleum refining, mining and smelting, and pulp and paper.

There are emerging issues, and ones that have reappeared, such as, bulk water removal or export, alien invasive species, new toxic compounds, endocrine disruptors, etc.

To address the existing and emerging issues, the senior levels of government need to review our collective approaches to water governance and water

management. Globally, governance can be defined as the process whereby societies or organizations make important decisions, determine whom they involve and how accountability mechanisms are used they render account. All levels of government, and individuals, share responsibility for effective water management.

In many national and international flora, Integrated Water Resources Management (IWRM) has been proposed as the basis for effective water governance and management. The following are the key IWRM principles that should be implemented on a watershed or drainage basin basis: supportive policy, legislation and resources; shared vision, with clear focussed goals and targets; drainage basin as the basis for a holistic approach; effective partnerships and community-based actions; and, engagement of those responsible for implementation when developing strategies and action plans.

Over the previous decades, Canada has implemented a variety of governance mechanisms for water, both domestically and internationally. In the international sphere, the basis for water management is the Boundary Waters Treaty and the bi-national International Joint Commission (IJC) that was subsequently created to deal with Canada-U.S. boundary waters issues. Nationally, the Canadian Council of Ministers of the Environment (CCME) has initiated various task groups including water quality and water conservation and efficiency.

The federal government through Environment Canada, and under the aegis of the Canada Water Act, launched a number of ecosystem initiatives under agreements with the provinces, e.g., Great Lakes, St. Lawrence River, Georgia Basin in south western B.C., Atlantic Coastal Action Plan. A number of federal/provincial/territorial drainage basin boards were also created to manage designated water issues. Examples include the Mackenzie River Basin Board for one of our major northern watersheds and the Prairie Provinces Water Board for the prairies.

Canada's progress is expanding in more integrated approaches to water management. Recently, several provinces have produced comprehensive provincial water policies, e.g., Alberta, Saskatchewan, Ontario, and Quebec. These policies focus on integrated water resources management on a drainage basin basis. Other complementary activities include Ontario's source water planning and the IJC's pilot watershed boards on the Red and St. Croix Rivers.

I have described major advances in the implementation of IWRM, but full implementation will challenge governments and stakeholders. This will require transparent and effective mechanisms to resolve water issues and conflicts, the constructive engagement of all stakeholders and the adequate resourcing of strategies and actions.

How can we improve water governance and management in Canada, and what opportunities exist to advance this agenda? An important development has been the recent announcements of the provincial water policies that I previously referred to. The new policies promote IWRM implementation, and in a few cases call for new basin advisory organizations. From the federal point of view, we manage the major ecosystem initiative agreements in conjunction with provinces and, as they come up for renewal we will ensure that IWRM principles are embedded in the programs. There will be opportunities in the near future as we begin preparations for re-negotiating international agreements and treaties such as the Great Lakes Water Quality Agreement and the Columbia River Treaty. Also, we will ensure IWRM principles are paramount in the CCME-related initiatives and work of the Water Quality and Water Conservation and Economic instruments Task Groups. CCME Ministers have agreed to consider development of an Environmental Sustainability Framework to guide cooperative actions. In federal jurisdiction, the government has underway a major program to provide water and wastewater services to First Nations communities. Program design and delivery is based on the IWRM approach, including source water and source to tap protection goals. We also have the opportunity to guide the national research agenda to improve science and information tools, e.g., the development of new environmental indicators.

As I have described, we have made significant achievements towards IWRM implementation and good governance mechanisms for water management, and there are a number of opportunities in the near future for further advancements. As we move along this path, we will challenge and engage the water resources community to assist us to answer some key questions: how might governments collaborate to define and advance a common water management agenda for Canada; is a common approach to IWRM watershed management desirable; and, what specific tools need to be developed to address water management issues?

Deutscher Abstract:

Wassersteuerung in Kanada: Konzepte, Ansätze und Möglichkeiten

In Kanada ist Wasser ein Medium welches nicht nur vielseitige Verwendung findet sondern auch eine spirituelle Bedeutung erfährt. Insgesamt bestehen die Flächen in Kanada zu 7,6% aus Seen, 14% Feuchtgebiete und 2% beständiger Schneeflächen. Die Ressource Wasser unterliegt einer hohen Nutzung durch die Bevölkerung als auch die Industrie, die teilweise mit lokal- bzw. regionalmaßstäblichen Verschmutzungen einhergehen. Unser pro Kopf Wasserverbrauch je Haushalt liegt bei 326 Liter pro Tag, fast das Doppelte des europäischen Durchschnitts. Gegenmaßnahmen beinhalten z.B. Verbesserungen landwirtschaftlicher Techniken und der Minderung toxischer Emissionen.

Als Basis einer effektiven Wassersteuerung und Managements wurde ein Integriertes Wasserressource und –management (Integrated Water Ressources and Management, IWRM) vorgeschlagen. Weiterhin werden derzeit

internationale Vereinbarungen und Abkommen wie das Große Seen Wasserqualität und das „Columbia River Treaty“ neu verhandelt.
Wassersteuerung ist die Vereinbarung wichtiger Entscheidung darüber wer involviert werden soll, wie jeweilige Verantwortlichkeiten verteilt werden.
Die Regierungen, sowohl auf Bunde- als auch auf Landesebene, sind dazu aufgefordert die gemeinschaftlichen Ansätze zu Wassersteuerung und –management zu überprüfen.