

PLAN 597 - HW 3 Analytical Exercise III

A National Water Strategy for Canada

Nature of the strategy: Keeping it clear, keeping it simple

If we ignore the administrative boundaries, Canada can be considered as a mosaic of watersheds framed by four main drainage basins. With access to nearly 20% of the world's fresh water stock and 7% of the world's renewable water flow Canada is water-rich, but perhaps not water-wise (Stats Can, 2003). A number of examples of polluted water bodies, such as the Great Lakes in Ontario, indicate the latter to be likely. For Canada to become water-wise, a better strategy for managing water needs to be developed and implemented. This strategy will address a complex structure of water related issues, and to avoid "getting lost in the details", it is useful to consider three *common sense aspects of water*:

- ① Use only what you really need
- ② Equitable allocation of water
- ③ Keep water clean and clean up messes made

These three principles should be embedded within a national water strategy. Canada's current national water strategy generally follows a supply-oriented status quo, is 20 years old and is highly fragmented (Brandes & Mass, 2006); furthermore, there is little to no consistency between provincial water management frameworks and there is an absence of a strong central agency. Less focus should be placed on defining the boundaries, and rather emphasis should be placed on looking for opportunities to integrate systems across boundaries using the principles of IWRM.

Using IWRM principles

The "IWRM approach promotes coordinated development and management of water, land, and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (GWP TEC, 2004). This description of IWRM approach indicates that the process is more of a means than an end. According to Mitchell's paper on "IWRM In Practice: Lessons From Canadian Experiences" Canada has already accumulated a great deal of experience using IWRM principles in water management practice. IWRM principles that extend beyond

the river basin system level are useful for future national water management in Canada, and the following aspects should be considered:

- a shared national vision for a desired future,
- natural system approach,
- planning and implementation options need to be practical and need to occur in a timely manner,
- consider the four main spatial scales for data collection (watershed, sub-watershed, tributary, and site level), and
- better and stronger partnerships between stakeholders in a catchment.

Content of the strategy: integrative

The content of the national water strategy which keeps the main principles clear and simply stated should specify actions, implementation, responsibilities and timing based on the following key components:

- Demand management
 - Integration of water sources and users
 - Sustainable and equitable use of all water
- Improving water quality
 - Surface water
 - Groundwater
 - Oceans
- Preserving the health of natural systems/Restoring degraded systems

Table 1 below provides further detail about these three components.

Using the strategy

To be effective, the strategy will have to be transitioned into Federal Legislation by:

- Creating a strong central leadership through an overarching body
- Establishing government incentives
- Creating legal mechanisms for accountability
- Delegating authority to Watershed Districts
 - Analysis of watersheds
 - Development of watershed plans
 - Implementation of plans with action programs

Who, how, in what time and spatial scale should the strategy be implemented? Figure 1 illustrates how the scale of management for the national water strategy should change as level of detail required changes. As the detail increases, the planning is more context specific (ie: should be analyzed by Watershed Districts).

Filling gaps

It is imperative that for this type of national water strategy to work, buy in from all sectors that impact and are impacted by water development and management occur. Furthermore, the strategy should be dynamic in that it can be adapted to reflect future changes in demands, and availability from impacts like climate change and urbanization. By keeping the nature of the strategy simple, and by using the principles of IWRM as a basis for content development, a comprehensive national water strategy can begin to be developed.

Table 1 - Integrated National Water Strategy (Content and Implementation)

Details of component	Method of Implementation	Responsibility	Timing
Demand Management			
Awareness campaign (aimed at reducing consumption).	Federal initiative aimed at education. Funding required.	Federal Government	Short-long term
Address water use by sectors/ consideration of alternative supplies (e.g. water storage or recycling).	Provincial legislation/ rebates for retrofitting. Funding required.	Provincial and Municipal Government	Long term
Water as an economic commodity/ reduce consumption through metering and pricing.	Metering and pricing with a subsidy program for affordability. Funding required & profits received.	Municipalities	Long term
Manage groundwater extraction.	Improved licensing and monitoring through Watershed District. Funding required & profits received.	Watershed Districts	Short-medium term
Compulsory compliance with sustainability (i.e. green building, water sensitive urban design etc).	Set standards through Provincial legislation (e.g. refine LEED program). Funding required & profits received.	Provincial Governments	Long term
Regulate water efficient appliances (e.g. water efficient fixtures, washing machines, dishwashers etc).	Federal legislation setting minimum standards/ rebates for retrofitting. Funding required.	Federal Government	Short-medium term

Details of component	Method of Implementation	Responsibility	Timing
Improving Water Quality			
Improve surface water quality.	Set national standards for pollution and discharge. Regulate through licensing. Funding required & profits received.	Federal Government	Medium term
Provide certainty in water quality (i.e. surface water, ground water and oceans).	Increased monitoring programs and data sharing initiatives between Provinces and watersheds (available via web). See Figure 1. Funding required.	Provincial Government/ Watershed Districts	Medium term
Awareness campaign (aimed at improving water quality).	Federal initiative aimed at education. Funding required.	Federal Government	Short-long term
Ensuring the Health of Natural Systems/ Restoration of Degraded Systems			
Develop specific environmental assessment requirements for development in sensitive locations.	Land use planning controls at a Provincial level. Funding required & profits received.	Provincial Government	Medium-long term
Strategic land and water capabilities assessment of the physical capability of natural features of land and waterways to identify appropriate types and intensities of land use that will not adversely impact on water quality and catchment health.	Provincial policy requiring Watershed Districts to undertake strategic land & water capability assessments. Funding required.	Provincial Government/ Watershed Districts	Medium term
Develop context specific strategies to prioritize and begin restoring systems.	Provincial policy requiring Watershed Districts to develop Watershed plans. Funding required.	Provincial Government/ Watershed Districts	Medium-long term

< W O R D

C O U N T :

1 0 2 5 >

Figure 1 - Nature of an Integrated National Water Strategy for Canada

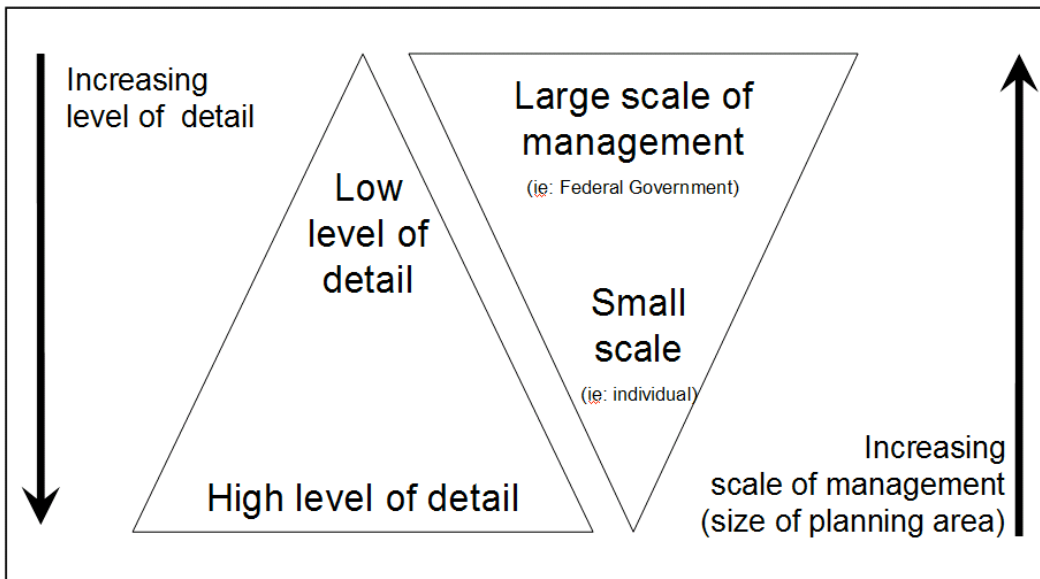
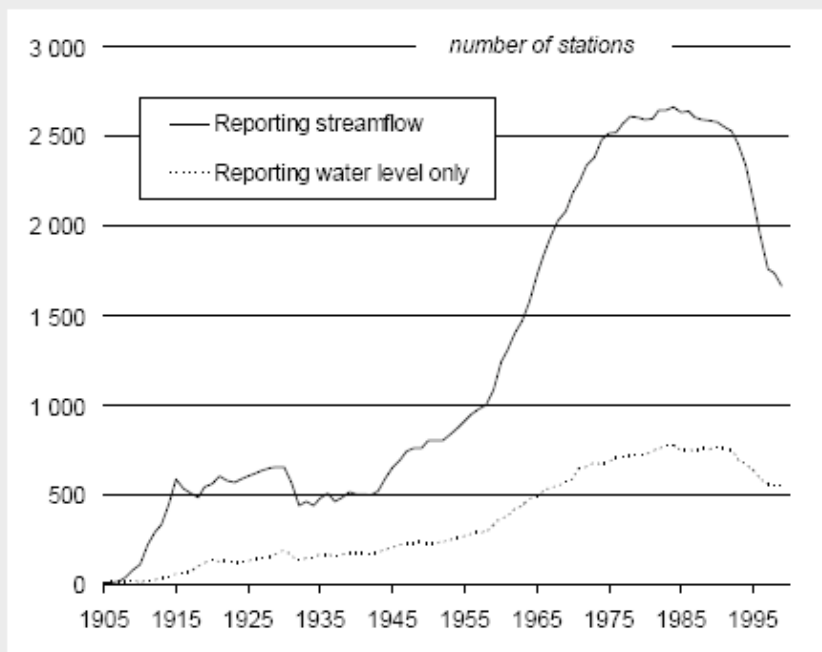


Figure 2 - Gauging Stations

Number of gauging stations reporting water data since 1905



Source:
Environment Canada, 2001, *Surface Water and Sediment Data*, Hydrometric database (HYDAT) version 99-2.00, Water Survey of Canada, Ottawa.

References

- Australian Government National Water Commission Website (2008), Intergovernmental Agreement on a National Water Initiative, <http://www.nwc.gov.au/nwi/index.cfm>, accessed March 2008.
- Australian Government, Natural Resource Management Ministerial Council Website (2008), <http://www.mincos.gov.au/>, accessed March 2008.
- Australian Water Association Website (2008), <http://www.awa.asn.au/>, accessed March 2008.
- Brandes, O., Mass, T. (2006). What we govern, and what governs us. Developing sustainability in Canadian water management. Prepared for Canadian Water Resources Association 59th Annual Conference: "Working from the source towards sustainable management". June 2006. http://www.waterdsm.org/pdf/whatwegovern_june06.pdf, accessed March 2008.
- Council of Australian Governments (COAG) Website (2008), <http://www.coag.gov.au/>, accessed March 2008.
- Environment - Water - Water Framework Directive Website (2008), http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm, accessed March 2008.
- EU Water Initiative Website (2008), <http://www.euwi.net/>, accessed March 2008.
- GWP TEC (2004). Unlocking the door to social development and economic growth: how a more integrated approach to water can help. Global Water Partnership (GWP) Technical Committee (TEC).
- Introduction to the European Union Website (2008), <http://www.bized.co.uk/learn/economics/international/eu/notes/eu1.htm>, accessed March 2008.
- Mitchell, B. (2006) IWRM in Practice: Lessons from Canadian Experiences. *Journal of Contemporary Water Research & Education* 135; 51-55.
- NSW Government (2004), BASIX Building and Sustainability Index, www.basix.nsw.gov.au, accessed March 2008.
- NSW Government (2007), Drinking Water Catchments Regional Environmental Plan No 1., <http://www.legislation.nsw.gov.au/viewtop/inforce/epi+289+2006+FIRST+0+N/>, accessed March 2008.
- NSW Government (2002) Coastal Protection State Environmental Planning Policy No.71, <http://www.legislation.nsw.gov.au/fullhtml/inforce/epi+816+2002+FIRST+0+N>, accessed March 2008.
- Stats Can (2003) "Fresh water resources in Canada" (Section 1 of report). *Statistics Canada Report 2003*. Available at <http://www.statcan.ca/bsolc/english/bsolc?catno=16-201-X&CHROPG=1>.