

31. Integrated Water Management for Canada's Water Resources

Issue

Canada needs a more integrated approach to governing crucial water resources.

Background

Water is greatly undervalued as a strategic asset in Canada. Approximately 12% of Canada's surface is covered in water, which accounts for an estimated 7% of the world's renewable freshwater (CCME, 2006). Studies suggest that water contributes \$7.5 – \$23 billion annually to the economy (PPEG, 2009) and that approximately 60% of Canada's GDP is directly dependent on water (EC, 2016), including key sectors such as agriculture, resource extraction, manufacturing, and agriculture and agri-foods. Water and energy production are also fundamentally connected (e.g., thermal electrical, hydroelectric power generation, oil and gas extraction, etc.) Canadian water resources need to be used wisely, for both economical and ecological reasons.

Canada is one of the highest per capita water consumers in the world (ECCC, 2015) and is facing increasing pressure to improve water management resulting from competing interests for available supply (CBoC, 2016). Pressure on water resources will increase given that Canada's population is expected to grow by 25% by 2050 and the Canadian economy is predicted to expand by 55% by 2030 (G3, 2009). Climate change will exacerbate these challenges to water management by altering rainfall, increasing evapotranspiration, changing stream flow, and degrading water quality (Kundzewicz et al., 2007). This will have significant implications for businesses dependent on water resources for production, cooling and other operations.

Land and water use planning is highly fragmented in Canada with little coordination (Simms and de Loë, 2010). To date, no overarching authority exists to monitor ecological indicators and manage watershed as holistic systems. Given that water use allocation is subject to the methods of different jurisdictions, there is variability and fragmentation in rules governing individual operations and sectors. Furthermore, the methods and rules used to determine and control water consumption and allocation differs significantly between jurisdictions. As a result of this lack of coordination, the ever-increasing and competing demands for the finite supply of water has resulted in the degradation of ecosystems, contamination of water bodies and overconsumption of water in many regions.

Governments in Canada are beginning to acknowledge the need to integrate ecosystem and watershed management approaches that employ sustainable development principles (EC, 2013). Integrated Watershed Management (IWM) is a multidisciplinary and iterative process that optimizes aquatic resources in response to the social, environmental and economic issues facing Canadians by acknowledging the intrinsic and integral roles of aquatic ecosystems. The application of IWM ensures that decision-making integrates business and economic considerations with other crucial elements, such as sustainable water, water protection, ecosystem protection and human and environmental health. Canadian jurisdictions must actively continue progressing toward adopting integrated water resources management to create the policies and legislation to support those changes.

Although integral to Canadians and the Canadian economy, water issues are not often associated with broader issues of energy, food security, health, climate, globalization, poverty or sovereignty (EC, 2010). Accordingly, businesses and the public must be educated to change the existing attitudes about water, shifting it from a free, dispensable commodity to a strategic natural asset and public trust. Greater efforts must be made toward conservation, stewardship and understanding the cumulative impacts of continued poor management.

Recommendations

That the federal government:

1. Enhance the type and availability of information needed for sustainable water use, including better understanding of water use, conflict and national economic and ecological repercussions;

2. Encourage innovation and collaborative approaches across provinces and territories to address concerns associated with water use.

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